

Determinants of Credit Growth in Selected Central and Eastern European Countries

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Abstract. *The objective of the paper was to identify the main determinants of the dynamics in lending within selected Central and Eastern European countries, namely Romania, the Czech Republic, Hungary and Poland during the period 2005-2023. Credit dynamics is essential for financial stability, being influenced by various macroeconomic factors whose impact remains insufficiently explored. This gap serves as an important motivation for this study. Two approaches were used in this regard – specific links were analyzed based on multivariate regression models, on the one hand, from an aggregate perspective by means of a panel data model for the selected countries and, on the other hand, at the level of each country. The determinants of the lending dynamics were found both for the non-governmental lending, as well as at the sectoral level – household loans and corporate loans. The panel data model for the selected countries shows that the main determinants of credit are government spending, interest rate, unemployment rate, and gross domestic product per capita. In addition to the four factors in the main model, in the secondary models, another significant factor in the credit dynamics is the financial stress indicator. For the country-based analysis, as a general feature, in all the four states, an expansionist fiscal policy, materialized in a government spending increase, has a positive effect on non-governmental lending. Furthermore, a higher level of financial stress has the effect of decreasing lending activity at both the aggregate level and the sectoral level.*

Keywords: credit, government spending, interest rate, unemployment rate, financial stress indicator.

Introduction

The world economy, despite short-term improvements, is still fragile and vulnerable. In this context, the pressure on financial sector stability is more pronounced, being influenced by the economic development of a country. The paper focusses on determining the factors that influence the dynamics of non-governmental credit (both in the aggregate form and at the sectoral level, for the household segment and for companies) in four states from Central and Eastern Europe (Romania, the Czech Republic, Hungary, and Poland), states chosen for their similarity in terms of economic characteristics and for the availability of the data set.

Based on previous studies dedicated to this subject, it is tested if government expenditures dynamics, interest rate, unemployment rate, Country Level Index of Financial Stress (CLIFS) and GDP per capita dynamics have an imprint on the growth of non-governmental credit.

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The results indicate in almost all the models, with two exceptions (for Hungary and Poland, in both cases regarding corporate credit), that the expansionary fiscal policy, materialized in increases in government expenditures, has a credit-stimulating effect. An argument that could support this result is that an increase in government expenditures may be correlated with a positive evolution of private consumption, which could boost credit at the level of that economy.

The research results illustrate once again the importance of coordination between sound fiscal and monetary policy, hoping that the lessons from the 2008-2009 crisis have been thoroughly learnt, when the safety net provided by the state encouraged the banks to act imprudently.

Literature review

Macroeconomic trends show a short-term improvement in the global economy, but the economic situation is still fragile, vulnerable to turbulences that can generate new shocks. The economic development of a country is closely related to the stability of the financial sector, which is why several authors, through their research carried out, have analysed the influence of macroeconomic factors on the dynamics of the financial cycle.

Gabeshi (2020), based on a qualitative and quantitative analysis, conducted a study of the evolution of the determinants of lending activities, focussing on the factors that have an impact on credit growth, and the results of his work highlighted that economic growth, credit quality, the rate of financial intermediation, and, at the same time, external and internal funding sources are the main determinants of credit growth. From the perspective of decision makers, understanding the determining factors and the evolution of credit demand and supply is important for analysing the capacity of monetary policy tools aimed at influencing credit activity, notwithstanding the severe multi-layered, cross-sectoral moral hazard behaviours – involving both households and corporations (Jora 2013) –, incentivised by poor monetary/credit (de)regulatory measures.

In the analysis carried out in the case of Croatia, Dumičić and Ljubaj (2018) revealed that there are both demand and supply factors that limit lending activity for households and companies, the main determinants being largely influenced by the domestic macroeconomic environment. Cuciniello and di Iasio (2020), using data covering mainly loans to households and businesses from banks in Italy over the past 20 years, presented empirical evidence that credit declines during a recession, mainly due to reduced net creation of debtors. The results of the study show that loans to new borrowers have been important drivers of credit fluctuations in Italy over the past two decades.

In the case of emerging countries, the high growth rates are also due, to some extent, to the process of recovering the economic gap compared to developed countries. However, credit booms are internationally synchronized and show several striking similarities in industrial and emerging economies (Mendoza and Terrones 2012). It is interesting that the research of Égert, Backé and Zumer (2006), undertaken two years before the outbreak of the crisis, indicated that in the Baltic States and Bulgaria an excessive growth of credit was identified, while in Romania and Slovenia the growth was a moderate one.

Țătu et al. (2023) emphasize the importance of fiscal instruments such as tax deductions, tax allowances, tax exemptions or tax credits to reduce income inequality. The disposable income of people targeted by these measures is thus increased, with an effect on improving the credit score (Dettling and Hsu 2021). Therefore, the disposable income could represent one of the central factor of the conditions that must be met to be able to access a credit.

Jones and Rabanal (2021) showed that there is a connection between credit cycles, fiscal policies, and global imbalances. In a sample of 38 advanced and emerging economies, the authors highlighted the fact that the credit cycle has an impact on the foreign exchange account of a country

in the sense that, when credit increases, the current account deteriorates, and when credit decreases, the current account improves.

In an economic recession, the cost of credit increases and access to credit is low, so that, in this context, fiscal incentives can not only contribute to increasing output, but also to decreasing the cost of credit (Auerbach, Gorodnichenko and Murphy 2020). Soederhuizen, Teulings and Luginbuhl (2023) indicated that the multiplier of government investment is influenced by the phases of the financial cycle: when we have a recession, the multiplier almost exceeds 1, while in a boom, the multiplier reaches zero or is even negative, concluding that governments should invest more during economic downturns to stimulate the economy. Elekdag and Han (2015) highlighted the main drivers of credit growth in emerging Asia, finding that internal factors, compared to external factors, have a greater influence.

Methodology

The focus of our analysis is determining the factors that influence the dynamics of non-governmental credit in 4 countries from Central and Eastern Europe, namely: Romania, the Czech Republic, Hungary, and Poland. The reason why these states were chosen is related both to the similarity in terms of economic characteristics, being part of the same peer group, and the availability of the data set. The period analysed was between 2005-2023, using data with a quarterly frequency. As a proxy for the dynamics of the financial cycle, the *non-governmental credit growth rate* was used, both in the aggregate version and at the sectoral level, for the household segment and for companies.

The main factors analysed in the paper are: *government expenditures dynamics*, *interest rate*, *unemployment rate*, *CLIFS indicator* and *GDP per capita dynamics*. To select the variables integrated in the model, similar analyses were considered, at the level of other states; two of these are Elekdag and Han (2015) and Gozgor (2014). For the dynamics of government expenditures, the annualized growth rate of this variable was used. For the interest rate, the interbank rate with a maturity of three months was used as a proxy. The unemployment rate was used in its standard form, as was the CLIFS indicator. Regarding GDP per capita, an annual growth rate of this indicator was calculated. The dynamics of lending, both at the aggregate and sector level, was introduced into the model in the form of annualized quarterly growth rates.

Data on non-governmental credit, as well as sectoral data for households and companies, were taken from the ECB database; from the same database, the data series for the CLIFS indicator were extracted. Data on government expenditures, interest rate, unemployment rate, and GDP per capita were taken from Eurostat.

In the analysis, two types of econometric models were used: a model with panel data, having a structure similar to that of Gozgor (2014), and a particular analysis of each country. The form of the panel data model used is shown in formula (1).

$$\ln\left(\frac{CNG_{i,t}}{CNG_{i,t-4}}\right) = \gamma_1 \pm \gamma_2 \times \ln\left(\frac{GE_{i,t}}{GE_{i,t-4}}\right) \pm \gamma_3 IR_{i,t} \pm \gamma_4 UR_{i,t} \pm \gamma_5 CLIFS_{i,t} \pm \gamma_6 \times \ln\left(\frac{GPC_{i,t}}{GPC_{i,t-4}}\right) + \varepsilon_{i,t} \quad (1)$$

where $CNG_{i,t}$ represents the volume of credit granted to the non-governmental sector in quarter t within state i; $GE_{i,t}$ represents the volume of government expenditures in quarter t within state i; $IR_{i,t}$ represents the interest rate in quarter t within state i; $UR_{i,t}$ represents the unemployment rate in quarter t within state i; $CLIFS_{i,t}$ represents the CLIFS indicator in quarter t within state i; and $GPC_{i,t}$ represents the GDP per capita in quarter t within state i. In addition to the determining factors of the dynamics of non-governmental credit, our paper also analysed the case at the sectoral level, for the household segment and that of nonfinancial companies.

The descriptive statistics for the variables used are presented below (Table 1).

Table 1. Descriptive statistics of the variables included into the model

	GR_CNG	GR_CC	GR_CH	GR_GE	IR	UR	CLIFS	GR_GPC
Mean	8.66	6.64	11.01	7.06	3.76	6.39	14.06	6.72
Median	5.07	4.87	5.34	6.88	2.69	6.4	9.75	6.96
Maximum	68.17	58.98	100.08	88.39	16.45	16.8	80.03	36.8
Minimum	-13.32	-14.24	-16.31	-16.61	0.04	1.7	1.35	-18.75
Std. Dev.	14.27	12.23	19.3	10.62	3.29	2.73	12.77	8.71
Observations	288	288	288	288	288	288	288	288

Note: The GR structure in front of a variable represents the fact that its annual growth rate has been calculated. CC is the acronym for nonfinancial companies credit, while CH is the acronym for household credit.

Source: authors' calculations based on data provided by ECB and Eurostat.

In addition to the analysis with panel data, the influencing factors on lending were calculated for each state separately, using regression models presented in formulas (2) - (5). Within the models, in accordance with the results from the specific literature, variables with a delayed effect (lag) and an autoregressive factor of first order were also included. State-level models were also applied separately to each sector of credit activity, households and non-financial companies.

$$\ln\left(\frac{CNG_t}{CNG_{t-4}}\right) = \gamma_0 \pm \gamma_1 \times \ln\left(\frac{CNG_{t-1}}{CNG_{t-5}}\right) \pm \gamma_2 \times \ln\left(\frac{GE_t}{GE_{t-4}}\right) \pm \gamma_3 IR_t + \varepsilon_t \quad (2)$$

$$\ln\left(\frac{CNG_t}{CNG_{t-4}}\right) = \gamma_0 \pm \gamma_1 \times \ln\left(\frac{CNG_{t-1}}{CNG_{t-5}}\right) \pm \gamma_2 \times \ln\left(\frac{GE_t}{GE_{t-4}}\right) \pm \gamma_3 UR_t + \varepsilon_t \quad (3)$$

$$\ln\left(\frac{CNG_t}{CNG_{t-4}}\right) = \gamma_0 \pm \gamma_1 \times \ln\left(\frac{CNG_{t-1}}{CNG_{t-5}}\right) \pm \gamma_2 \times \ln\left(\frac{GE_t}{GE_{t-4}}\right) \pm \gamma_3 CLIFS_{t-1} + \varepsilon_t \quad (4)$$

$$\ln\left(\frac{CNG_t}{CNG_{t-4}}\right) = \gamma_0 \pm \gamma_1 \times \ln\left(\frac{CNG_{t-1}}{CNG_{t-5}}\right) \pm \gamma_2 \times \ln\left(\frac{GE_t}{GE_{t-4}}\right) \pm \gamma_2 \times \ln\left(\frac{GPC_{t-1}}{GPC_{t-5}}\right) + \varepsilon_t \quad (5)$$

Results and discussions

In the article, the analysis was performed using a panel data model, both at the level of each state and in aggregate form for the selected group of CEE states. To identify the main determinants of lending, three perspectives were considered: initially, the determinants of non-governmental credit dynamics were studied, followed by a sectoral analysis at the level of credit for households and credit for non-financial companies. The results of the panel data models are presented in Table 2.

Table 2. Econometric results for the selected CEE group – dependent variable – dynamics of non-governmental credit

Regressors	I	II	III	IV
GOV_EXP	0.7186 (0.0614)***	0.7532 (0.0643)***	0.7255 (0.0635)***	0.3567 (0.0693)***
INTEREST	1.228 (0.2092)***	1.1462 (0.2136)***	1.5906 (0.2441)***	1.1145 (0.2215)***
UNEMPLOYMENT		0.4597 (0.2629)*	0.3627 (0.2591)	0.7669 (0.2290)***
CLIFS			-0.2025 (0.054)***	-0.0653 (0.052)
GDP_CAPITA				0.7947 (0.088)***

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

To determine the type of effects used in the models, the Hausmann test was applied. The main model (IV) for the analysis at the level of the selected group of CEE states, based on all five

regressors, shows that only four of them have a statistically significant impact on the dynamics of non-governmental credit, specifically: government expenditures, interest rate, unemployment rate, and GDP per capita. Regarding the direction of influence, an increase in government expenditures generates a non-governmental credit increase, a result also obtained by Auerbach, Gorodnichenko, and Murphy (2020). In their work, Bird et al. (2022) even considered credit as a transmission channel for fiscal policy measures. An argument that could support this result is that an increase in government expenditures may be correlated with an increase in private consumption, which could boost credit at the level of that economy. The second important aspect illustrates the relationship between GDP per capita and the dynamics of non-governmental credit. Thus, an increase in GDP per capita, associated with a higher level of prosperity in that group of states, generates a credit increase, a conclusion also outlined by Gozgor (2014). It should be mentioned that even the CLIFS indicator has a statistically significant value in the third model (III), and its coefficient is negative, illustrating that an increase in the level of financial stress leads to a decrease in credit.

Table 3. Econometric results for selected CEE group – dependent variable – dynamics of household credit

Regressors	I	II	III	IV
GOV EXP	0.8887 (0.08)***	0.9941 (0.0903)***	0.962 (0.0898)***	0.5371 (0.1027)***
INTEREST	1.602 (0.299)***	1.3532 (0.2999)***	1.8681 (0.3451)***	1.3195 (0.3281)***
UNEMPLOYMENT		1.3991 (0.369)***	1.2868 (0.3663)***	1.7524 (0.339)***
CLIFS			-0.2347 (0.0808)***	-0.0765 (0.0779)
GDP CAPITA				0.9156 (0.1304)***

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

Similarly, to the case on non-governmental credit dynamics, in the case of household lending, the most significant factors are related to the dynamics of government expenditures, interest rate, unemployment rate, and GDP per capita (Table 3), determinants that, without unemployment, coincide in the case of credit dynamics granted to nonfinancial companies (Table 4). However, it should be noted that an increase in government expenditures has a stronger effect on household credit than on the credit for non-financial companies.

Table 4. Econometric results for selected CEE group – dependent variable – dynamics of corporate credit

Regressors	I	II	III	IV
GOV EXP	0.6376 (0.05)***	0.624 (0.0543)***	0.5974 (0.0533)***	0.2654 (0.0569)***
INTEREST	1.0727 (0.17)***	1.105 (0.1805)***	1.5301 (0.2049)***	1.1014 (0.1818)***
UNEMPLOYMENT		-0.1815 (0.2221)***	-0.2742 (0.2175)	0.0895 (0.191)
CLIFS			-0.1937 (0.048)***	-0.0701 (0.0432)
GDP CAPITA				0.7155 (0.0723)***

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

In addition to the results at the aggregate level of the CEE group of states, the specific case of each country was also analysed. The first country examined was Romania. Regarding the determinants of non-governmental credit dynamics, the results show that significant influences are manifested due to the dynamics of government expenditures, CLIFS and interest rate (Table 5). In

terms of the direction of influence, an increase in government expenditures results in an increase in non-governmental credit dynamics, an increase in CLIFS leads to a decrease in non-governmental credit dynamics, and an increase in interest rate results in a decrease in non-governmental credit dynamics within this country.

Table 5. Econometric results for Romania – dependent variable – dynamics of non-governmental credit

Regressors	I	II	III	IV
CREDIT_NGOV(-1)	0.9225 (0.032)***	0.8661 (0.0264)***	0.8689 (0.0249)***	0.8664 (0.0366)***
GOV_EXP	0.1358 (0.035)***	0.1877 (0.0357)***	0.1409 (0.034)***	0.1739 (0.0355)**
INTEREST	-0.4306 (0.149)***			
UNEMPLOYMENT		0.4619 (0.2855)		
CLIFS(-1)			-0.1665 (0.0499)**	
GDP_CAPITA(-1)				-0.0114 (0.0662)

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

Regarding the impact on household credit, variables whose effects tend to be significant are government expenditures, interest rate, CLIFS, and unemployment rate. In this case as well, an increase in government expenditures leads to an increase in lending for the households. On the contrary, as the interest rate increases, the dynamics of lending to households decreases. Furthermore, in the case of an increase in the level of the financial stress index (CLIFS), the effect on the dynamics of credit granted to households is negative. However, it should be mentioned that this effect occurs one quarter after the increase. In terms of the impact on the credit granted to companies, the variables whose effect tends to be statistically significant are government expenditures and CLIFS.

The second country studied is the Czech Republic. The first type of analysis for this country concerns the impact of determining factors on the dynamics of non-governmental credit. Among the factors that show a statistically significant impact are government expenditures and CLIFS (Table 6). Regarding the direction of influence, an increase in government expenditures results in an increase in the dynamics of non-governmental credit, while an increase in CLIFS leads to a decrease in the dynamics of non-governmental credit.

Table 6. Econometric results for the Czech Republic – dependent variable – dynamics of non-governmental credit

Regressors	I	II	III	IV
CREDIT_NGOV(-1)	0.8347 (0.0614)***	0.7961 (0.0618)***	0.8219 (0.0571)***	0.8789 (0.073)***
GOV_EXP	0.2203 (0.0947)**	0.2598 (0.1057)**	0.1934 (0.0871)**	0.2336 (0.0944)**
INTEREST	-0.3153 (0.3236)			
UNEMPLOYMENT		0.3836 (0.3166)		
CLIFS(-1)			-0.1041 (0.043)**	
GDP_CAPITA(-1)				-0.1496 (0.1078)

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

The second type of analysis for the Czech Republic is the one in which the main factors influencing the categories of loans, namely household credit and loans granted to nonfinancial companies. For the first category, the statistically significant factors are only government

expenditures and GDP per capita. For the second category, the main determinants of the credit dynamics are government expenditures and the CLIFS dynamics.

The third country that was analysed is Hungary. In this case, the variables that have a significant impact on the dynamics of non-governmental credit are unemployment rate, CLIFS, and government expenditures (Table 7). The highest level of statistical significance was recorded for the parameter of the CLIFS variable. While the effect of an increase in government expenditures encourages lending activity, an increase in the CLIFS index has the opposite effect.

Table 7. Econometric results for Hungary – dependent variable – non-governmental credit

Regressors	I	II	III	IV
CREDIT_NGOV(-1)	0.9104 (0.0472)***	0.8935 (0.0454)***	0.9371 (0.0443)***	0.9283 (0.047)***
GOV_EXP	0.0706 (0.0604)	0.0289 (0.0629)	0.0219 (0.0593)	0.1158 (0.066)*
INTEREST	-0.0149 (0.1015)			
UNEMPLOYMENT		-0.3147 (0.1654)*		
CLIFS(-1)			-0.0679 (0.0232)***	
GDP_CAPITA(-1)				-0.1013 (0.0676)

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

With respect to household credit in Hungary, the variables that generate a significant impact on its dynamics are: CLIFS, government expenditures, and GDP per capita. Regarding the direction of influence, an increase in government expenditure leads to an increase in the dynamics of household credit, while an increase in CLIFS is associated with a decrease in household credit. Regarding the impact on the dynamics of credit granted to nonfinancial companies, the variables that generate a significant impact are the unemployment rate and CLIFS. In this case, an increase in the unemployment rate has a negative effect of lending activity; the same type of effect is also generated by a higher level of financial stress, measured through CLIFS.

The fourth country analysed is Poland, where the determining factors for the dynamics of non-governmental credit are government expenditures, unemployment rate, CLIFS and GDP per capita (Table 8).

Table 8. Econometric results for Poland – dependent variable – non-governmental credit

Regressors	I	II	III	IV
CREDIT_NGOV(-1)	0.8505 (0.0668)***	0.8021 (0.0656)***	0.8515 (0.059)***	0.9417 (0.0684)***
GOV_EXP	0.0874 (0.0785)	0.1514 (0.0816)*	0.1004 (0.0755)	0.2149 (0.0917)**
INTEREST	0.1144 (0.4068)			
UNEMPLOYMENT		0.4524 (0.2301)*		
CLIFS(-1)			-0.1385 (0.0679)**	
GDP_CAPITA(-1)				-0.2943 (0.126)**

Note: *the parameter is statistically significant at a 10% level; **the parameter is statistically significant at a 5% level; *** the parameter is statistically significant at a 1% level. For each of the variables, the estimated parameter is presented, and in parentheses, the level of the standard error is indicated.

Source: Own processing based on data provided by Eurostat and ECB.

Regarding the dynamics of household credit in Poland, the factors with a significant effect are the same as in the case of non-governmental credit dynamics. Therefore, an increase in government expenditures results in an increase in the dynamics of credit granted to households.

Furthermore, an increase in financial risks leads to a decrease in household credit. The determining factor for the dynamics of credit granted to companies is the CLIFS level.

Table 9 presents a synthesis of all factors with a significant effect on the dynamics of private credit in the CEE countries.

Table 9. Variables with a significant effect on the dynamics of lending in selected CEE countries

	Romania	Czech Republic	Hungary	Poland
Non-governmental credit	GOV_EXP INTEREST CLIFS (-1)	GOV_EXP CLIFS (-1)	GOV_EXP UNEMPLOYMENT CLIFS (-1)	GOV_EXP UNEMPLOYMENT CLIFS (-1) GDP_CAPITA (-1)
Corporate credit	GOV_EXP CLIFS(-1)	GOV_EXP CLIFS (-1)	UNEMPLOYMENT CLIFS (-1)	CLIFS (-1)
Household credit	GOV_EXP INTEREST UNEMPLOYMENT CLIFS (-1)	GOV_EXP GDP_CAPITA (-1)	GOV_EXP CLIFS (-1) GDP_CAPITA (-1)	GOV_EXP UNEMPLOYMENT CLIFS (-1) GDP_CAPITA (-1)

Source: Own processing based on data provided by Eurostat and ECB.

Conclusion

The purpose of our study was to identify the main factors that influence lending activity within the selected countries in Central and Eastern Europe. In this sense, two approaches were used: on the one hand, from an aggregate perspective, by means of a panel data model and, on the other hand, at the level of each state included in the analysis. Likewise, the determinants of lending activity were determined both in terms of non-governmental lending and at the sectoral level – households and companies.

The panel data model for the CEE group of states shows that the main determinants of credit activity are: government spending, interest rate, unemployment rate, and GDP per capita. In addition to the panel data model, a model was also analysed at the level of each state. In the case of Romania, the results show that significant influences on credit dynamics materialize as a result of the dynamics of government expenditures, interest rate, CLIFS, but also unemployment rate. In the case of Hungary, the variables that show a significant impact on the dynamics of non-governmental credit are government expenditures, unemployment rate, CLIFS and GDP per capita. In the case of the Czech Republic, among the factors that show a statistically significant impact on credit dynamics are: government expenditures, CLIFS, but also GDP per capita. In the case of Poland, the determining factors for the dynamics of non-governmental credit are: government expenditures, unemployment rate, CLIFS and GDP per capita.

As a general feature, in all four analysed states, an expansionary fiscal policy, materialized in increases in government expenditures, has a credit-stimulating effect, both on the non-governmental credit and, at the sectoral level, on lending to the households and companies. Moreover, an increase in the level of financial stress, materialized in the level of CLIFS, has the effect of decreasing lending activity at both the aggregate level and at the sectoral level.

The results obtained illustrate the importance of coordination between sound fiscal and monetary policy. If monetary policy measures have direct implications on credit dynamics through the interest rate channel, the results in the article illustrate that, indirectly, fiscal policy measures also have an effect on credit. This is the reason why the application of a monetary policy measure must consider the fiscal policy measures that could be implemented later because they can strongly

influence its level of efficiency. At the same time, fiscal policy makers should analyse the implications of a measure on the financial sector, not just on the real economy.

As a future research direction, the study can be extended to include a larger group of states; a possibility would even be to create a model with panel data for all 27 states of the European Union. Another element that could be addressed in future analyses is the inclusion of a wider set of variables to be tested for statistical significance as determining factors in credit dynamics.

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