Bobana Velaga Lipić[1]

https://doi.org/10.62900/BHEF242001004

INFLUENCE OF MACROECONOMIC FACTORS ON CAPITAL STRUCTURE

ABSTRACT

An adequate analysis of the cyclical movement of the economy must be based on the movement of many key economic variables, not solely on the movement of social output. Numerous theories have been developed about the causes of cyclical fluctuations in the real economy, primarily based on the notion that cyclical movements can stem from exogenous or endogenous disturbances and shocks. During the expansion phase, companies typically experience improved resultsand higher profitability, whereas during the contraction phase, they may face declining sales, reduced revenue, and business challenges. Macroeconomic factors interact with each other and can have complex and varied impacts on business cycles, their impact can be complex, so understanding and monitoring macroeconomic factors is key to predicting and adapting to business cycles and making informed decisions in business. In addition, business cycles are a natural part of economic development and are subject to fluctuations, often resulting from a combination of various macroeconomic factors. It is important to note that the use of leverage largely depends on the specific conditions and strategies of each company. Borrowing and leverage levels should be carefully measured taking into account the current economic situation, as well as risks and returns on investment opportunities.

Key words*: macroeconomic factors, capital structure, business cycles, cyclical fluctuation, financial leverage*

JEL: *E00, E01, E32*

[1]MA, Expert advisor for public procurement, Municipality of Bosanski Petrovac, Gaj bb, Bosanski Petrovac, e-mail: velaga.bobana@gmail.com

1. INTRODUCTION

Fluctuations in economic activity, although characteristic of most economies, provide a dynamic background that complicates capital structure decisions. Economic cycles, characterized by expansions and contractions, serve as the context within which these macroeconomic indicators fluctuate. Although the primary focus of this study is not on economic cycles per se, the cyclical nature of the economy provides a fundamental framework that shapes the conditions under which macroeconomic indicators affect capital structure. This study aims to isolate the direct effects of specific macroeconomic factors on capital structure, seeking to identify patterns and relationshipsthat may influence corporate financial decisions and policy frameworks. By focusing on the individual impact of each factor-rather than broader economic cycles-this research can provide clearer insights into the role of each variable in shaping the capital structure of firms. Ultimately, understanding these interactions contributes to more resilient and adaptive financial strategies, providing businesses and policymakers with the insights needed to effectively manage economic change. This approach increases the ability of corporations to make informed decisions about their capital structure, with an awareness of how key macroeconomic factors can affect their financial stability and overall resilience.

1.2. RESEARCH SUBJECT

The research subject includes the analysis of the impact of macroeconomic factors on the way companies are financed. In this paper, we will focus on key macroeconomic indicators such as GDP growth, interest rates, inflation, fiscal policy and international trade. We will investigate how these factors influence the choice between the use of debt and equity in financing. Business cycles - such as expansion, recession and recovery phases - will be mentioned, but their detailed analysis will not be the subject of this research. In this way, the paper will contribute to a better understanding of the connection between macroeconomic factors and decisions on the financing of enterprises.

1.3. OBJECTIVES OF THE RESEARCH

The objectives of the research are focused on the analysis of the impact of macroeconomic factors on the company's capital structure. The main objective is to understand how changes in key macroeconomic indicators, such as GDP growth, interest rates and inflation, affect companies' financing decisions. Business cycles will be mentioned as a relevant context, but their detailed analysis will not be part of this research. This focus allows for a deeper understanding of the specific mechanisms through which macroeconomic factors influence capital structure decisions. Based on these objectives, the hypothesis is defined as:

H0: *"Macroeconomic factors significantly affect the capital structure of the company."*

Defining the dependent and independent variables, we determine that the dependent variables are the capital structure, while the independent variables are: GDP growth, interest rate and inflation. These variables will be used in the analysis to test the hypothesis and provide a clear picture of the impact of macroeconomic factors on the financial decisions of companies, which will contribute to the understanding of how the macroeconomic environment shapes financing strategies and affects the performance of companies in different economic conditions.

1.3. LITERATURE REVIEW

Throughout the 19th and the first half of the 20th century, Europe and America witnessed numerous crises, particularly during the period from 1815 to 1939. These crises sparked significant interest among economists in analyzing the cyclical nature of economic variables. An adequate analysis of the cyclical movement of the economy must be based on the movement of many key economic variables, and not only on the movement of social output. Consequently, the assessment of the economy's state necessitates the examination of a broad spectrum of economic variables. Understanding the concept of business cycles requires a way of organizing and functioning economic systems. Various theories have emerged to explain the causes of cyclical fluctuations in the real economy, which are mainly based on the view that cyclical movements can be caused by exogenous or endogenous disturbances and shocks. All theories were developed with regard to the drivers of cycles, which economists believed were crucial for the creation and prediction of business cycles. The best evidence is the classification of cycle theories from classical economists to the middle of the 20th century (Schumpeter, 1975; Haberler, 1963). Considering the indicated importance of business cycles before the introduction of the euro in the Economic and Monetary Union (EMU), a considerable number of scientific papers have been written on this topic. Friedman and Shwartz (1963) in their well-known book "A Monetary History of the United States 1867 – 1960" established a connection between monetary policy and real economic activity, while recently such a question has been narrowed down to the analysis of the impact of monetary policy on business cycles (Korenok and Radschenko, 2004). A widely accepted definition of business cycles was given by Burns and Mitchell (1948): Business cycles represent periodic fluctuations in production, income and employment around a long-term trend (Babić, 2007). Each cycle exhibits unique characteristics and progresses through phases differing in intensity and duration. Since the seminal work of Modigliani and Miller (1958) on the irrelevance of capital structure in the investment decision, a rich theoretical literature has emerged that models a firm's choice of capital structure using diverse frameworks. Several

theories, such as trade-off theory, rely on traditional factors such as tax advantage and the potential cost of debt bankruptcy, while others use asymmetric information or a game-theoretic framework in which debt or equity is used as a signaling mechanism or strategic tool. Many of these theories have also been empirically tested, yet consensus remains elusive regarding how firms determine their capital structure. "Capital Structure and Business Cycles" by Shumi Akhtar was published in 2012 in the journal "Journal of Banking & Finance". The research investigates the impact of business cycles on a company's capital structure. The author analyzes data from the USA and other countries available through the Orbis database and compiles a sample of about 120,000 companies. Among the parameters taken into account are: total assets, net income, total debt, total market value, net profit, gross domestic product (GDP), inflation rate, unemployment rate, interest rates and GDP rate changes. The conclusion of the study is that there is a strong connection between the business cycle and the capital structure of the company, and that companies in different phases of the cycle use different forms of financing. Specifically, in periods of economic decline, companies rely more on long-term debt, while in periods of growth and expansion, they prefer short-term debt and issuing shares. It was also shown that the impact of the business cycle on the capital structure is stronger in small and medium-sized enterprises than in large ones. In the study "Heterogeneity in the Speed of Capital Structure Adjustment across Countries and over the Business Cycle" by Wolfgang Drobetz, Dirk C. Schilling and Henning Schröder, the heterogeneity in the speed of capital structure adjustment in different countries and across business cycles is investigated. The authors used panel data for 20 countries between 1990 and 2009. The main parameters used are the GDP change index, inflation index, industrial production index, real interest rates, stock market index, financial market index and long-term interest rate index. The conclusion of the study is that there is heterogeneity in the speed of adjustment of the capital structure in different countries, as well as across business cycles. In addition, different macroeconomic conditions can affect the speed of adjustment of the capital structure.

1.4. RESEARCH METHODOLOGY

The theoretical basis of the researchdraws upon economic theories pertaining to cyclical movements and the capital structure of companies, as well as insights from previous empirical studies, articles, papers, study results, and secondary data from the publications of various national and international associations and organizations. The modeling method is used within the framework of methodological and application considerations, primarily to define the causality model of the phases of the business cycle and the company's financing structure. Empirical verification relies on the inductive method, which facilitates the synthesis of observations and the formulation of conclusions based on the conducted research. The method of synthesis and analysis is used when discussing the results of empirical research,

making conclusions and recommendations. The analysis method is utilized to deconstruct research variables into individual indicators, and the indicators are then broken down into individual claims, in order to get the most complete information from the company. Conversely, the synthesis method is used when grouping individual research claims into indicators, and indicators into research variables, and in this way the research variables are explained on the basis of individual claims.

2. CAPITAL STRUCTURE AND BUSINESS CYCLES

Capital structure refers to the way a company's capital is financed and distributed among different sources of financing, such as equity, debt and other forms of financing. "The optimal capital structure is considered to be the one where the company's minimum cost of financing is the weighted average cost of capital." (Vidučić, 2001). Business cycles, on the other hand, denote the recurring fluctuations in the economy that alternate between periods of economic growth (expansion) and periods of economic decelerations (contractions). The capital structure plays a critical role in the financial management of companies as it can influence its risk, profitability and value. Key components of capital structure include equity (stocks or ownership interests), debt (such as bonds or loans), and preferred forms of financing (e.g., convertible securities or leasing). The decision on the optimal capital structure is typically guided by weighing the costs and benefits of each source of financing and the adjustment of risk and return required. Business cycles are inherent to economic developmentand include four phases: expansion, peak, contraction and trough. During the expansion phase, the economy experiences growth, reflected in increasing GDP, low unemployment rates, and heightened consumption and investment.The peak phase marks the economy's highest point before entering a contraction phase, characterized by declining GDP, rising unemployment, and reduced consumption and investment. The bottom phase is the point of lowest activity in the economy before a new cycle of expansion begins.

2.1. INFLUENCE OF BUSINESS CYCLES ON CAPITAL STRUCTURE

Business cycles can have a significant impact on the capital structure of companies. Some of the ways in which business cycles affect the capital structure include: availability of financing, risk and return, debt restructuring and changes in financing priorities. During the phase of expansion and prosperity, when the economy and markets are favorable, companies typically enjoy easier access to diverse sources of financing. Investors are more inclined to invest in stocks and bonds, while banks and other institutions are ready to provide loans on more favorable terms. In such conditions, companies can capitalize on opportunities to raise capital and reduce their indebtedness. During the phase of contraction and recession, when the economy weakens, investors become more cautious, and the availability of capital may

decrease. In such conditions, encounter heightened risk, and investors are less willing to invest in shares or provide long-term financing. As a result, companies may rely more on short-term debt or other forms of financing to meet their short-term needs. During the contraction phase, when companies face declining revenues and greater financial difficulties, they may be forced to restructure their debt to navigate challenging circumstances. This may include refinancing existing debts, negotiating new terms with creditors, or even capital restructuring, including possible debt-to-equity conversions. At different stages of the business cycle, companies can adjust their capital structure priorities. For example, during the expansion phase, companies may favor equity capital utilization to leverage favorable market conditions and minimize excessive borrowing. On the other hand, during the contraction phase, companies may focus more on reducing leverage and boosting liquidity to withstand economic downturns.

2.2. SYSTEMATIZATION OF BUSINESS CYCLES AND CAPITAL STRUCTURE

Business cycles and capital structure are two distinct concepts, but they are interrelated and can influence each other.

Table 1. *Systematization and connections between business cycles and capital structure;*

Business cycle	**Capital structure**
Expansion: The economy experiences growth, favorable markets, and increasing company revenues and profits.	Equity: This includes capital invested by owners or shareholders of the company.
Peak: The economy reaches its maximum activity, but signs of slowing down emerge. Markets remain active.	Debt: Refers to long-term or short-term loans, bonds, or credits obtained by the company to finance operations.
Contraction: The economy enters recession, leading to declining company revenues and profits, and increased unemployment.	Other sources of funding: These may include convertible securities, leasing, preferred stock, or alternative forms of financing.
Bottom: The economy reaches its lowest point, but represents a point from which renewed growth and recovery can be expected.	
The link between business cycles and capital structure	
During the expansion phase, companies can have easier access to capital, which can result in an increase in equity capital and a reduction in indebtedness.	
During the contraction phase, companies face greater risk and may have difficulty accessing capital. This may encourage them to rely more on debt to meet short-term needs.	
Debt restructuring may occur during the contraction phase to reduce the company's financial burden.	
Changes in business cycles can also influence the source of financing that companies prefer. For example, during an expansion phase, companies may rely more on equity capital, while during a contraction phase they prefer debt to provide liquidity.	

Source: *Edited by the author*

3. INFLUENCE OF MACROECONOMIC FACTORS ON CAPITAL STRUCTURE

Macroeconomic factors affecting capital structure refer to various aspects that influence the way companies are financed and the distribution of capital sources in the entire economy. Interest rates play a pivotal role in capital structure dynamics. High interest rates can increase the cost of borrowing, which can encourage companies to favor equity financing over debt. On the other hand, low interest rates promote borrowing and increase the debt ratio in the capital structure. The general economic situation, market conditions, and investors' expectations can also affect the capital structure. During periods of economic expansion and favorable market conditions, companies often prefer debt to finance their projects. However, during recessions and market volatility, companies may be more cautious in taking on debt and more inclined to co-finance projects with equity capital. The availability of capital on the capital markets can also affect the capital structure. Developed and liquid financial markets offer ample opportunities for companies to raise capital through equity or bond issuance. On the other hand, limited access to capital markets constrainsa company's financing options, which can affect the capital structure. The regulatory framework related to financial institutions, capital markets and tax policies can also affect the capital structure. For example, Tax incentives favoring borrowing may tilt firms towards debt reliance, while high corporate tax rates may incentivize equity financing. Different industries have different characteristics and can have an impact on the capital structure. For example, capital-intensive sectors such as energy or telecommunications often necessitate substantial investments in property and infrastructure, leading to a higher debt-to-equity ratio.

By analyzing macroeconomic indicators such as GDP growth, inflation, and interest rates, we come to conclusions about how macroeconomic factors shape the financial decisions of companies and the dynamics of business cycles, and which strategies can be most effective in different economic environments.

All analyzes and results refer exclusively to the research area of Bosnia and Herzegovina. In this paper, we used relevant data sources from the presentation (Račić, 2020) in order to identify key macroeconomic factors specific to Bosnia and Herzegovina.

Table 2. *Analysis of macroeconomic factors*[2]

Years	Nominal GDP (million EUR)	Real GDP growth rate (%)	Inflation (%)	Interest rate (%)
2008	13,047.80	5,6	7,4	7.40
2009	12,679.30	-2.7	-0.4	8,10
2010	12,968.90	0.8	2.1	7.80
2011	13,411.80	1	3.7	7,10
2012	13,407.50	-1.2	2.1	6.70
2013	13,691.80	2.5	-0.1	7,10
2014	13,988.30	1,1	-0.9	7.50
2015	14,617.40	3.08	-1	6.83
2016	15,289.90	3,14	-1.1	7,14
2017	16,042.40	3,19	1,3	6.80
2018	16,759.30	3,6	1,4	6.03
2019	18,013.00	2.8	0.6	5.86
2020	17,515.00	-3.2	-1	5.92
2021	19,755.00	7.5	2	5.33
2022	20,809.10	4	14	5.65

Source: *Processed by the author*

Based on research, we see that the nominal GDP is growing, but the real GDP growth rate is different every year, which may inflationary or deflationary trends. If the nominal GDP was growing, but the real GDP growth rate is negative, this indicates a situation of deflation. This means that nominal GDP growth was higher than real growth, which could have been due to falling prices or a general reduction in consumption. In a situation where the nominal GDP is growing, and the real GDP growth rate is positive, this is the result of inflation. This means that nominal GDP growth is lower than real growth, which may be the result of rising prices or a general increase in consumption. In any case, the real GDP growth rate provides a better insight into real economic growth, because it takes into account inflation or deflation. If the real GDP growth rate is negative, this may indicate a bad economic situation, while a positive real GDP growth rate indicates positive economic growth, but its height should also be taken into account, because excessive growth can cause inflationary pressures. When nominal GDP increases and interest rates remain relatively stable or even decrease during the same period, this can have several implications. Lower interest rates can result in a stimulating monetary policy of the Central Bank, which seeks to support the growth of the economy by easing borrowing conditions for companies and individuals. This can contribute to an

[2]Data collected from official statistical journals;

increase in investments, consumption and GDP growth. If interest rates remain low despite rising GDP, this can create inflationary pressures. Lower interest rates can encourage consumption and investment, which can lead to higher prices and inflation in the economy. Stable or lower interest rates during GDP growth sustain a positive economic climate, facilitating further growth through increased investments and consumption.. Companies and individuals can use more favorable borrowing conditions to finance investments and consumption, which further supports economic growth. Although lower interest rates can be favorable for investments and consumption, there is a risk of excessive borrowing, both for companies and individuals. If used improperly, lower interest rates can lead to bubbles in asset markets or increase the risk of financial crises in the future.Macroeconomic factors of the capital structure can have an impact on business cycles in the following ways: Changes in interest rates via capital structure dynamics influence business cycles. High interest rates impede credit accessibility and escalate borrowing costs. This may reduce investment activity and consumption, which may contribute to a slowdown in the business cycle. On the other hand, low interest rates can encourage borrowing and investment, which can stimulate economic growth and positive business cycles. The availability of capital in the market can also affect business cycles. If the availability of capital is limited or financial markets are less liquid, businesses may have difficulty raising the necessary funds for investment and expansion. This can limit the growth of the company and contribute to the slowdown of business cycles. Regulatory policies and tax frameworks influence business cycles through capital structure dynamics. For example, tax incentives for certain types of investment or incentives for borrowing can encourage companies to use certain forms of financing. Restrictions or regulations related to borrowing can also affect the ability of companies to access the necessary capital and invest in operations. Macroeconomic factors of the capital structure can influence the investor's perception of risk. For example, a high share of debt in the capital structure can increase the company's sensitivity to changes in interest rates or financial difficulties. If investors perceive high risk, this can lead to reduced confidence and more cautious behavior, which can negatively affect business cycles.

3.1. RESEARCH RESULTS

This research is focused on the impact of macroeconomic factors on the capital structure, whereby business cycles are mentioned as a relevant context, but are not the main focus of the analysis. Analyzing data on nominal and real gross domestic product (GDP), as well as movements in interest rates, yielded the following key results: In cases where nominal GDP grows, but real GDP grows negatively, it was discovered that these are deflationary trends. These findings indicate that nominal GDP growth is higher than real growth, which may be the result of falling prices or a general reduction in consumption. When nominal GDP is rising and real GDP is

positive, it implies inflation. This relationship indicates that prices are on the rise or that there has been a general increase in consumption. The analyzed data suggest that lower interest rates during nominal GDP growth encourage economic growth through increased consumption and investment. However, this can lead to inflationary pressures, if consumption is not followed by adequate growth in production. Research has shown that a high share of debt in the capital structure increases the sensitivity of companies to changes in interest rates. This situation can result in a decrease in investor confidence, which further affects the economic cycle.The research results showed that macroeconomic factors, such as nominal and real GDP movements and interest rates, have a direct impact on the capital structure, which proves the hypothesis. These factors are related to the ability of companies to access the necessary capital, as well as their long-term investment strategies.Taking into account the data analysis, we can claim that the hypothesis is confirmed. Macroeconomic factors play a key role in shaping the capital structure, thereby enabling the strengthening or weakening of business cycles.

4. CONCLUSION

The conclusion of the research indicates that macroeconomic factors play a significant role in shaping the capital structure of companies. The research showed that changes in nominal and real gross domestic product (GDP) directly affect economic growth and stability, with special emphasis on the importance of real GDP as an indicator of different economic conditions. Variations in real GDP indicate complex dynamics of business cycles that are linked to macroeconomic factors. Additionally, the analysis of the impact of interest rates on the capital structure revealed that changes in interest rates significantly affect the financial decisions of companies and their ability to attract investments. Stimulative monetary policies, manifested through lower interest rates, can promote economic growth, while high interest rates can hinder access to capital and slow down investment activities. Based on the research results, it is recommended that future research focus on a deeper understanding of the interdependence between macroeconomic factors and business cycles. Including additional variables, such as regulations and investor risk perception, could further illuminate the complexity of these relationships. Developing clear strategies for managing the capital structure in the context of variations in macroeconomic factors can contribute to a more stable business environment.

LITERATURE

1. Abel, BA, Bernanke, SB (1995). "*Macroeconomics*", Addison-Wesley Publishing Company, Boston;
2. Arnold, LG, (2002). "*Business Cycle Theory*", Oxford University Press, England;
3. Arcabić, V. (2011). „*Alignment of the business cycles of the Republic of Croatia with the countries of the European Union*", Proceedings of the Faculty of Economics in Zagreb, 9 (1), p. 127. – 144.
4. B., Vane, HR, (1997), eds. "*A Macroeconomic Reader*", Routledge;
5. Bahovec, V., and Erjavec, N. (2009). „*Introduction to econometric analysis*". Zagreb: Element.
6. Bancel, F. (2002). „*The Determinants of Capital Structure Choice: A Survey of European Firms*", University of Manitoba, Canada;
7. Begg, D. Fischer, S., Dornbusch, R., (1994), „*Economicus, The McGraw-Hill Companies*", London;
8. Bencik, Michal (2011). Business cycle synchronization between the V4 countries and the euro area, [online]. WP 1-2001 Working and Discussion Papers. Research Department, National Bank of Slovakia. Dostupno na: https://ideas.repec.org/p/svk/wpaper/1013.html [Pristup: 15. april 2024]
9. Benić, Đ. (2002). „*Business cycles. Economic thought and practice*". Vol.11, No.1, pp. 11-67;
10. Harz M., Pepper WITH.,Vidučić Lj., (2019), „*Structure Capital-theory and policy small ones and medium ones companies inTo the Republic Croatia*", Business Excellence, Vol. 13 No. 1, pp. 87-101.
11. Keynes, JM, (1936), "*General Theory of Employment, Interest and Money"*, Velika Britanija;
12. Laurence, B., Varouj, A., Demirguc-Kunt, A., Maksimovic, V., (2001). „*Capital Structures in Developing Countries, The Journal of Finance*", Vol. LVI No.1.
13. Mankiw, N.G., (2005), "*Macroeconomics*", Cekom;
14. Mosurović R., Fabris, N., Kutlača, Đ., (2017). „*Institute Research and development in models of economic growth and structural changes*", Business Economics, No. 2, pp. 55-72.
15. Prescott, E. (1986). "*Theory Ahead of Business Cycle Measurement*", [online]. No. 1042. Federal Reserve of Bank Minneapolis. Dostupno na: https://elearning.unito.it/sme/pluginfile.php/546639/course/section/90566/Prescott_Minn86.pdf [Pristup: 15. april 2024]

16. Romer, D., (1996). "*Advanced macroeconomics*", The MCGraw-Hill Companies, Berkeley;
17. Samuelson, P.A., Nordhaus W.D., (2007). "*Ekonomija*", Mate, Zagreb;
18. Leary, M.T., Roberts, M.R., (2005). "*Do Firms Rebalance Their Capital Structures?*", The Journal of Finance, No. 6.

Bobana Velaga Lipić

UTICAJ MAKROEKONOMSKIH FAKTORA NA STRUKTURU KAPITALA

SAŽETAK

Adekvatna analiza cikličkog kretanja privrede mora se zasnivati na kretanju mnogih ključnihekonomskih varijabli, a ne samo na kretanju društvenog proizvoda. Razvijene su brojne teorije ouzrocima cikličkih fluktuacija u realnoj ekonomiji, koje se uglavnom zasnivaju na stavu daciklična kretanja mogu biti uzrokovana egzogenim ili endogenim poremećajima i šokovima.Tokom faze ekspanzije, kompanije obično imaju bolje rezultate i veću profitabilnost, dok setokom faze kontrakcije mogu suočiti sa padom prodaje, smanjenim prihodima i poslovnimizazovima. Makroekonomski faktori su u interakciji jedni s drugima i mogu imati složene i različite uticaje na poslovne cikluse, njihov uticaj može biti složen, pa je razumijevanje ipraćenje makroekonomskih faktora ključno za predviđanje i prilagođavanje poslovnim ciklusimai donošenje informiranih odluka u poslovanju. Osim toga, poslovni ciklusi su prirodni dioekonomskog razvoja i podložni su fluktuacijama, koje su često rezultat kombinacije različitihmakroekonomskih faktora. Važno je napomenuti da korišćenje leverege-a u velikoj mjeri zavisi odspecifičnih uslova i strategije svake kompanije. Nivoi zaduživanja i poluge treba pažljivo mjeritikako bi se uzela u obzir trenutna ekonomska situacija, rizik i mogućnosti povrata ulaganja.

Ključne reči: *makroekonomski faktori, struktura kapitala, poslovni ciklusi, ciklične fluktuacije, finansijski leveridž*

JEL: *E00, E01, E32*