

## Analysis of The Corporate Debt Situation Implication on Risk Company's Development

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### Abstract

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High corporate indebtedness is a significant problem for companies' finances, often blocking their balance sheets, also difficult debt repayment can lead to insolvency. This is a problem not only for companies, but also for the economies of countries. The purpose of the study is to track changes in indebtedness for the period 2008-2018. Time limits are set due to access to statistical information and for most countries the latest data are for 2018. The base year is in line with the development of the financial and economic crisis to clarify its impact on indebtedness. The object of study are non-financial corporations, and the subject is an analysis of changes in their corporate debt. To achieve this goal, the following tasks are set: to choose an appropriate methodology, to study the literature on the subject, to compare the changes in the indebtedness of non-financial corporations in key countries in Europe and beyond. Based on the statement that due to the financial and economic crisis and the aggressive investment policy during the studied 11-year period, corporate debt increases significantly, and this puts at risk the company's development and the world economy.

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## INTRODUCTION

The global financial and economic crisis has deepened imbalances and demonstrated the unpreparedness of the economies of Central and Eastern Europe. It affected the trajectory of economic growth and worsened the growth potential in the medium term (Chobanov, P., 2019), while destroying the fragile balance of intercompany indebtedness, with the resulting problems. The catastrophic collapse of financial markets and drastically increased levels of risk limit access to finance for businesses. This has a negative impact on demand and sales, which causes a sharp contraction in production and employment, and permanently worsens the situation on the labor market. This market situation catalyzes the growth of corporate indebtedness, causes a significant increase in arrears and often leads to bankruptcies of companies in various sectors. The levels of some of these negative phenomena are reaching critical values because of the final measures aimed at maintaining fiscal stability.

### Literature Review

The indebtedness of non-financial private sectors (i.e. households and non-financial corporations) in the euro area increased rapidly over the past decade, broadly until 2009 (ECB, 2012). There are several publications, but most of them examine different relationships of indebtedness with other indicators such as investment activity, efficiency and others. In a fundamental study by the European Central Bank "Corporate debt and investment: a firm level analysis for stressed euro area countries", the authors look for the relationship between corporate debt and the amount of investment. It uses data for five peripheral euro area countries - Italy, Spain, Greece, Portugal and Slovenia for the period 2005-2014. The study is based on the existing literature, which shows that high debt distorts investment due to higher default risks, and higher financing costs, while low levels of leverage would not have a negative impact on investment. One of the authors' concerns is that the threshold between high and low leverage is often determined exogenously and ad hoc, so

they take an empirical approach that allows them to assess debt thresholds endogenously (Gebauer, S., Setzer, R. Westphal, A., 2017).

As for the relationship between indebtedness and investment in the presence of financial market turmoil, the Modigliani and Miller (1958) theorem is not valid and the net value of firms, largely determined by investment decisions, depends on their financial structure. According to the commercial theory of capital structure, companies set a target leverage ratio by balancing the costs and benefits of debt. The benefits of debt include, among others, the tax deduction of interest rates (Modigliani, F., Miller, M., 1963), the disciplinary effect of debt in case of problems between managers and shareholders (Jensen, M., Meckling, W., 1976; Grossman, S., Hart, O., 1982) and the signaling role of debt in relation to firm productivity, for example, if managers have inside information about the future profits of firm productivity (Leland, H., Pyle, D.). 1977; Ross, S., 1977). Debt costs are linked to potential bankruptcy costs, so an increase in debt relative to equity increases the likelihood of default as the share of equity-backed assets decreases. Higher probability leads to new capital needs, which is reflected in higher external financing premiums or credit rationing (Myers, B., 1977; Stiglitz J., Weiss, A., 1981).

In the publication "The Impact of Debt Restructuring on Firm Investment: Evidence from China", the authors empirically examine the causal effects of debt restructuring on corporate investment. The results show that the effects of debt restructuring on corporate investment are diverse between different property rights, industries, payment restructuring regimes and amounts, and debt renegotiation characteristics. (Jiang, J., Liu, B., Yang, J., 2019).

In their study "Corporate Indebtedness and Low Productivity Growth of Italian firms" G. Anderson and M. Raissi (2018) examine the long-term impact of the permanent accumulation of corporate debt on the productivity growth of Italian companies and

seek an answer to the question of whether the overall growth of factor productivity varies depending on the level of corporate indebtedness.

Several scientific studies on the topic of corporate indebtedness try to present different points of view on this problem. In a study of corporate diversification and debt structure, the authors examine whether the external and internal assets of American companies are financed with loan funds. The regression analysis used documents a positive relationship between external assets and long-term debt and a negative relationship between external assets and short-term debt. The evaluation results show that an increase of 1% in external assets leads to an average of 39% increase in financial leverage, an economically important effect (Olibe, K., Zabihollah Rezaee, Z., Flagg, J., Ott, R., 2019). The capital structure of the enterprise is of key importance for its financial condition. Some companies do not understand this issue and avoid the use of attracted capital because they consider it to be extremely risky. In this way, the cost of financing often comes out higher. José Clemente-Almendros and Francisco Sogorb-Mir (2018) examine the reasons for the conservative policy of companies regarding the use of debt capital by looking for the effects of tax relief on debt and using data from Spanish companies in the empirical study. Qianqian Huang, Feng Jiang and Szu-Yin Wu draw attention to the disciplinary role of short-term debt in companies with significant amounts of cash, concluding that high levels of short-term debt in these companies are associated with higher returns. (Huang, Q., Jiang, F., Wu, S., 2018). Fabio La Rosa, Giovanni Liberatore, Francesco Mazzi, Simone Terzani (2017) present a new look at corporate indebtedness. The authors try to address the controversial issue of how non-financial performance affects the price of debt and access to it, looking for the link between corporate social responsibility and the two models of measuring corporate debt - accounting and market, and applying a multi-theoretical framework combining economics with social theories. The study proves a negative

relationship between corporate social efficiency and interest rates and a positive relationship between corporate social efficiency and debt rating (according to the rating scale).

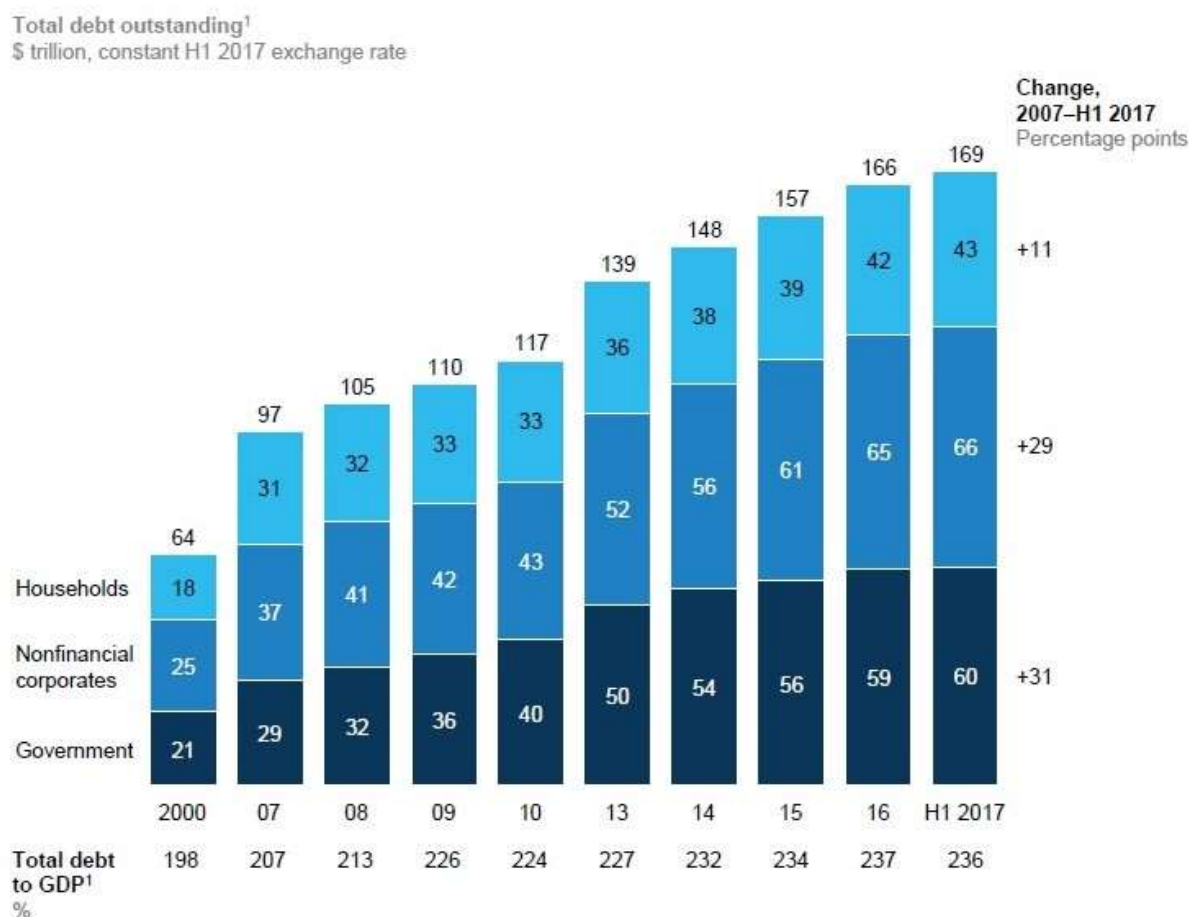
It is necessary to clarify whether the corporate debt generates problems that are outside the financial relations between the companies, resp. does not require a special financial analysis or on the contrary: shows a tendency towards significant differences (compared to the rest of the world), resp. requires a special financial analysis. It should be noted that the scientific literature is not rich in such analyzes and publications, but rather information is scarce and difficult to access. This situation is explainable insofar as national statistics are not organized in a way conducive to these surveys, on the one hand and on the other hand, data on key financial ratios and indicators that directly reveal (or allow to justify) the level of corporate indebtedness, in a sense, they are a corporate secret and companies (in general) are reluctant to share publicly (and with regular frequency) information about their financial condition.

## METHODS

One of the most important moments in any scientific research is the selection of the correct methodological tools for analysis, which will help to obtain correct initial data and will allow the interpretation of the obtained results. The methods that will be used for the realization of the research project include research of specialized literature sources, documentary analysis, comparative analysis, expert evaluation, empirical research method, analysis and synthesis, induction and deduction, modeling, mathematical methods. The solution of the set tasks, through which the research goal is realized, is both through the strict adherence to the general scientific methods of research and through the application of the special research tools, characteristic for the economic researches and in particular for the financial analysis. The debt in the statistics databases includes three financial instruments defined by the ESA: -

Loans (AF4) for all institutional sectors (households, NFCs, general government); - Debt securities (AF3) for NFCs, general government. The used debt ratios in the current analysis are non-financial corporations' debt to GDP ratio and non-financial debt to surplus ratio, both measured in percentage. The last part lists and comments on the payment practices of non-financial corporations in Europe and other countries. The article analyzes and comments on data obtained from some key studies of foreign authors on the topic. The following figure shows the change in total global debt to GDP as a

percentage of base year 2007. Includes debt of households, non-financial corporations and general government, but excludes debt of financial corporations. Since the financial crisis of 2008, global debt has continued to rise. Total debt has increased by 72 trillion \$, or 74 percent, from 97 trillion \$ in 2007 to 169 trillion \$ in the first half of 2017. Government debt accounts for 43 percent of this increase, and nonfinancial corporate debt for 41 percent (MGI, 2018). Non-financial corporate debt consists of loans taken out with banks and debt securities issued (most often invested in financial markets).



**Figure 1.** Change in total levels of global debt to GDP (%) compared to 2007  
Source: MCKinsey Global Institute, Bank for International Settlement

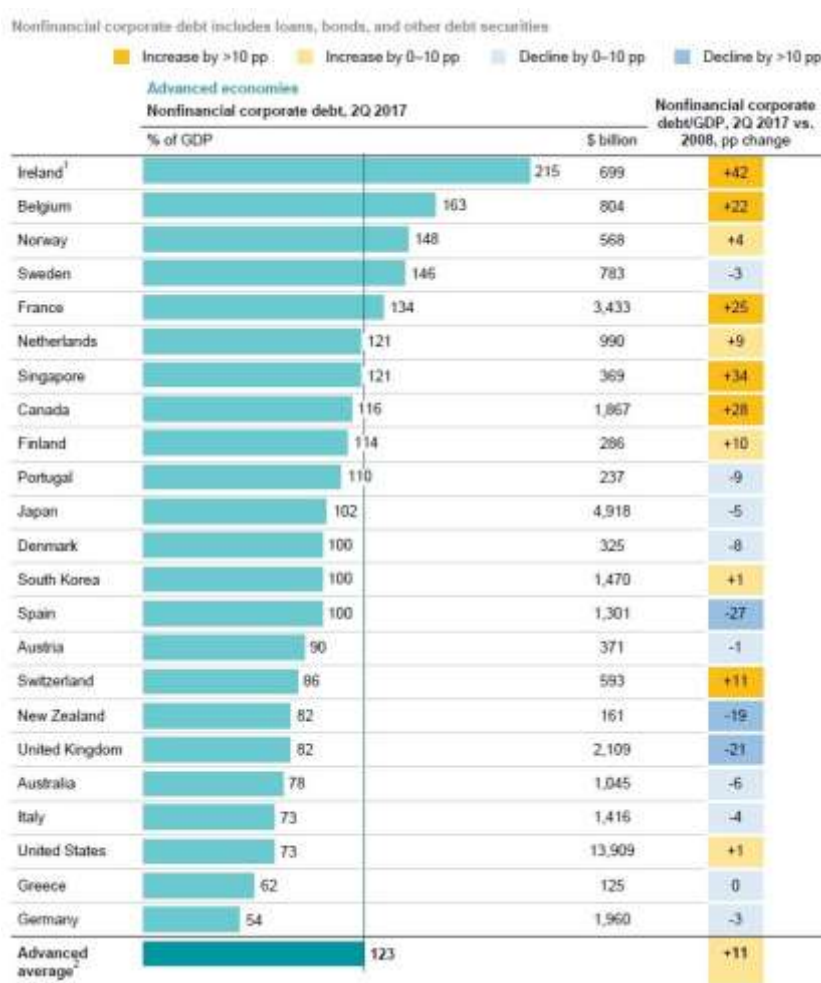
According to the MCKinsey Global Institute (2018) analysis, total debt (including to households, non-financial corporations and government) increased by three quarters after the financial crisis from 97 trillion \$ in 2007 to 169

trillion \$ in the first half of 2017 constant exchange rate. Government debt represents 43% of GDP; more significant is the growth of the debt of non-financial corporations, which are 66% of GDP. The change compared to 2007 for

government debt is 12 percentage points, for non-financial corporation's 29 percentage points, and for governments 31 percentage points. Compared to world GDP, the level of total global debt seems worrying: it increased from 207 percent of global GDP in 2007 to 232 percent in 2014 and has been similar ever since. The most important of the overall level of debt, however, is the composition of its growth and the creditworthiness of borrowers. 43% of the total increase is due to the jump in government loans after the crisis, from 29 trillion \$ in 2007 to

60 trillion \$ in mid-2017, as advanced economies fell into recession. Global non-financial corporate debt, including bonds and loans, has more than doubled in the last decade, rising by 37 trillion \$ to 66 trillion \$ in mid-2017. This growth is higher than government debt growth at 31 trillion \$.

The following Figure 2 (MGI, 2018) shows the percentage of non-financial corporate debt to GDP of economically developed countries as of the second half of 2017 and the change compared to 2008 in percentage points.



**Figure 2.** Total Debt to GDP (%) of NFC

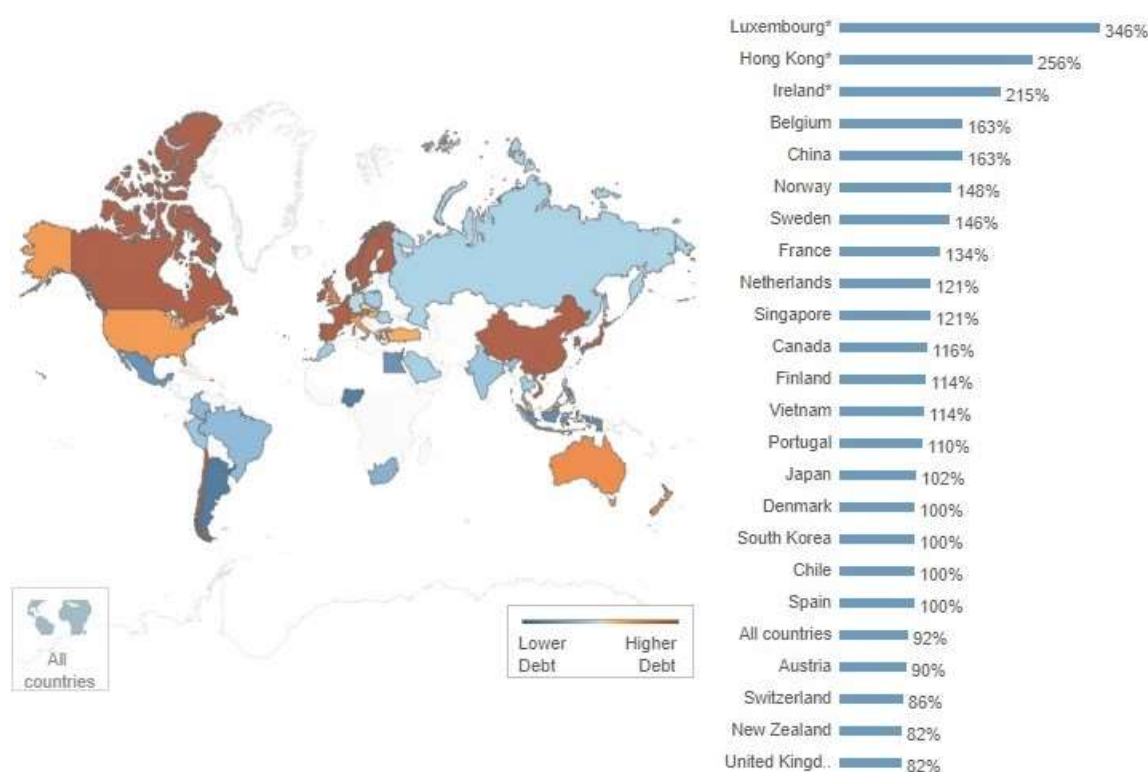
Source: Mckinsey Global Institute, Bank for International Settlement

What is striking is that Ireland (215%), Belgium (163%), Norway (148%) and Sweden (146%) are the countries with the highest debt of non-financial corporations to GDP. In terms of the highest change compared to 2008, Ireland

ranks with 42 percentage points, followed by Singapore with 34 percentage points, Canada with 38 percentage points. and France with 25 percentage points. The lowest indicators are Germany (54%), Greece (62%) and the United

States (73%). But here it is clarified that it is a question of the debt of non-financial enterprises in the countries. As for the public debt in these countries, the situation is quite different, especially for America and Greece. The most significant decline in the liabilities of non-financial corporations to GDP compared to 2008 was observed in Spain and the United Kingdom. There is also an analysis of emerging economies, but Bulgaria is not present, so it is not presented in the current study. The current survey lacks some of the most indebted countries in this indicator, so the following Figure 3 will

present another view of the debt and GDP situation. In six of the countries surveyed, the situation deteriorated significantly compared to the base year, partly due to the impact of the financial and economic crisis. In five of the countries it changed slightly in the direction of deterioration, and in eleven countries the indicator improved or remained unchanged. However, the comparison is made for the second half of 2017 compared to 2007. If we look at the data for the years after 2007, it will turn out that in most countries the situation is deteriorating due to the crisis.



**Figure 3.** Total Debt to GDP (%) of NFC (2018)  
Source: MCKinsey Global Institute

Figure 3 shows that Luxembourg and Hong Kong are ahead of Ireland, with much higher rates. The debt of non-financial corporations in 2018 is 346% higher than GDP in Luxembourg and 256% in Hong Kong. These values are dangerously high, and countries should take measures to limit such growing corporate debt, otherwise they will face corporate bankruptcies and deteriorating economic indicators. In the next part, another

point of view will be sought by considering the corporate debt to surplus ratio.

### Corporate Debt to Surplus Ratio

An important indicator maintained by international statistical agencies is the debt to surplus ratio, which is an indicator of their capacity to meet interest costs and debt repayment with generated operating profits. Debt in this case is calculated as the sum of the following categories of liabilities: currency and

deposits, debt securities, loans, insurance, pensions and standardized guarantee schemes and other payables. Gross operating surplus is the value added generated by production activities after deducting employee compensation. Non-financial corporations (S11) include all private and public enterprises that produce goods and non-financial services in the markets. For example, if the ratio is 2.5, this means that the outstanding debt is 2.5 times greater than the market value of the outstanding equity (OECD, 2020).

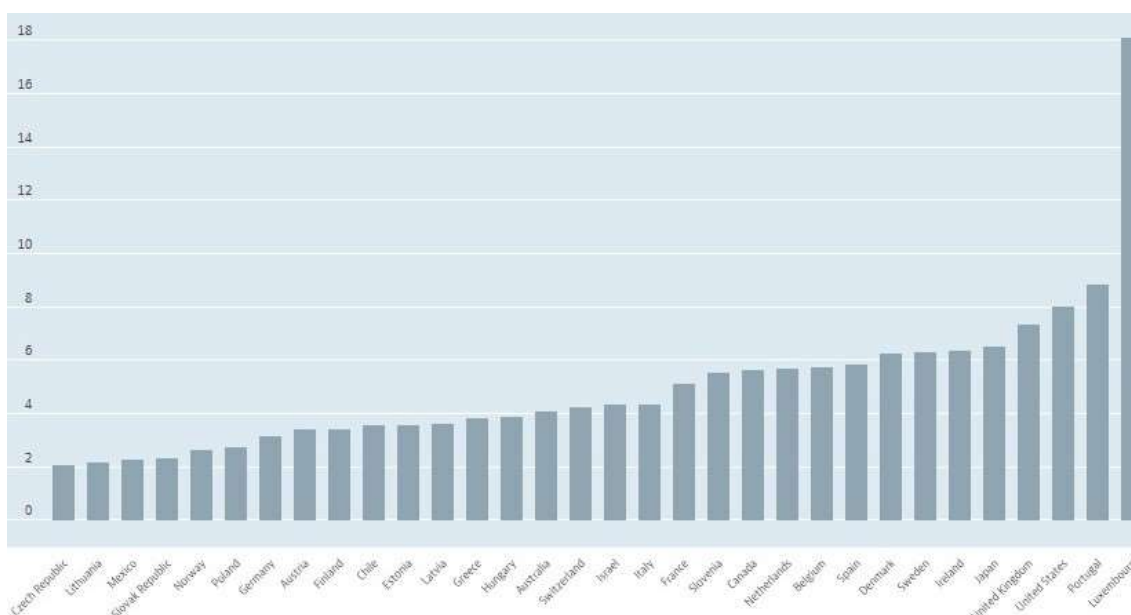
**Table 1.** Non-financial corporations Debt to Surplus ratio

Location	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Australia	4.08	3.91	3.41	3.34	3.65	3.84	4.43	5.04	4.35	4.09	3.920
Austria	3.39	3.80	3.77	3.65	3.80	3.92	3.81	3.75	3.67	3.63	3.63
Belgium	5.72	6.37	5.78	6.28	7.01	5.72	5.56	5.88	6.61	6.09	5.95
Canada	5.61	6.86	6.25	5.97	6.36	6.43	6.46	7.89	7.91	7.63	7.51
Chile	3.53	3.22	2.81	3.31	3.59	3.85	4.16	4.52	4.44	4.16	4.44
Colombia	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.97	1.87	1.78	1.74
Czech Republic	2.08	2.11	2.21	2.34	2.31	2.43	2.22	1.99	2.00	2.05	2.26
Denmark	6.24	6.95	5.95	6.04	6.07	5.72	5.57	5.84	5.87	5.86	5.58
Estonia	3.55	4.39	3.63	2.92	2.97	3.03	3.24	3.36	3.45	3.21	3.01
Finland	3.39	4.20	4.18	4.20	4.53	4.39	4.46	4.52	4.28	3.82	3.82
France	5.13	5.91	5.95	6.24	6.26	6.30	6.97	6.62	6.65	6.61	6.71
Germany	3.14	3.56	3.10	2.97	3.13	3.21	3.02	3.04	3.06	3.12	3.31
Greece	3.80	4.12	4.65	4.46	4.21	4.03	4.30	4.25	4.43	4.03	3.87
Hungary	3.85	4.52	4.22	4.22	3.93	3.58	3.39	3.09	3.06	2.91	2.88
Ireland	6.37	6.57	6.34	6.52	6.72	6.30	7.03	6.31	6.39	5.58	5.18
Israel	4.31	4.06	4.06	3.82	3.59	3.30	3.33	3.24	3.22	3.22	n/a
Italy	4.32	4.91	4.90	4.83	5.19	5.10	5.01	4.77	4.34	4.18	4.18
Japan	6.53	7.51	6.60	7.20	6.70	6.41	6.54	6.15	6.26	6.16	n/a
Korea	n/a	n/a	5.10	5.15	5.21	5.18	5.30	5.14	5.01	4.84	n/a
Latvia	3.61	3.78	3.51	2.90	2.49	2.52	2.43	2.72	3.02	2.96	2.89
Lithuania	2.17	2.19	1.85	2.23	1.46	1.39	1.36	1.51	1.81	1.84	1.84
Luxembourg	18.10	24.44	19.24	15.74	17.89	17.54	19.17	19.59	16.42	18.40	16.86
Mexico	2.25	3.06	2.72	2.71	2.19	2.89	2.92	3.23	3.44	3.29	3.19
Netherlands	5.65	6.41	6.26	6.45	6.72	7.03	7.75	7.28	7.35	6.89	6.69
Norway	2.61	3.22	3.15	2.89	2.99	3.14	3.44	4.04	4.25	3.84	3.45
Poland	2.71	2.30	2.40	2.54	2.46	2.48	2.60	2.56	2.86	2.78	2.79
Portugal	8.85	8.33	8.32	8.42	8.25	7.38	6.87	6.39	6.06	5.88	5.88
Slovak Rep.	2.32	2.72	2.40	2.52	1.81	2.01	2.06	2.01	2.27	2.50	2.41
Slovenia	5.51	6.46	6.69	6.32	6.12	5.60	4.90	4.36	4.09	3.72	3.60
Spain	5.82	5.75	5.96	5.82	5.35	4.99	4.79	4.41	4.07	3.85	3.84
Sweden	6.31	6.89	5.56	5.69	6.13	6.36	6.06	5.59	5.76	5.94	6.06
Switzerland	4.23	5.10	4.58	5.06	5.51	4.63	5.20	5.35	5.47	5.91	5.95
Turkey	n/a	n/a	2.00	1.90	1.97	2.14	2.15	2.29	2.67	2.53	n/a
UK	7.33	7.22	6.71	7.43	7.08	6.42	6.92	6.52	7.02	6.88	6.76
USA	8.00	8.27	7.45	7.30	7.20	7.23	7.42	7.71	8.33	8.43	n/a

Source: OECD, 2020

It is unclear why the mentioned statistics, limited to the EU countries, lack information only for Bulgaria. According to the results for 2018, the share of outstanding debt is highest in Luxembourg, Great Britain, the Netherlands, France, but the situation has improved compared to the base year, in which Portugal, Ireland and Sweden also have high indicators. The lowest values are observed in Lithuania, the Czech Republic, Poland, Slovakia and Latvia. The next two figures show the change in the indicator in 2018 compared to 2008. Table 1 shows in green the years in which the coefficient improves compared to the base year, and in red

when it deteriorates. The aim is to make it clear in which countries the crisis is leading to a deterioration in the indicator and whether this is a common phenomenon or rather an isolated one. In eight of the countries surveyed, the indicator deteriorated steadily (Austria, Belgium, Canada, Finland, France, Greece, the Netherlands and Norway). In the Czech Republic, Japan, Korea, Slovenia and Slovakia, the situation has worsened in and after the crisis, but has improved in recent years. In some countries there is no influence such as Denmark, Israel, Portugal, Sweden).



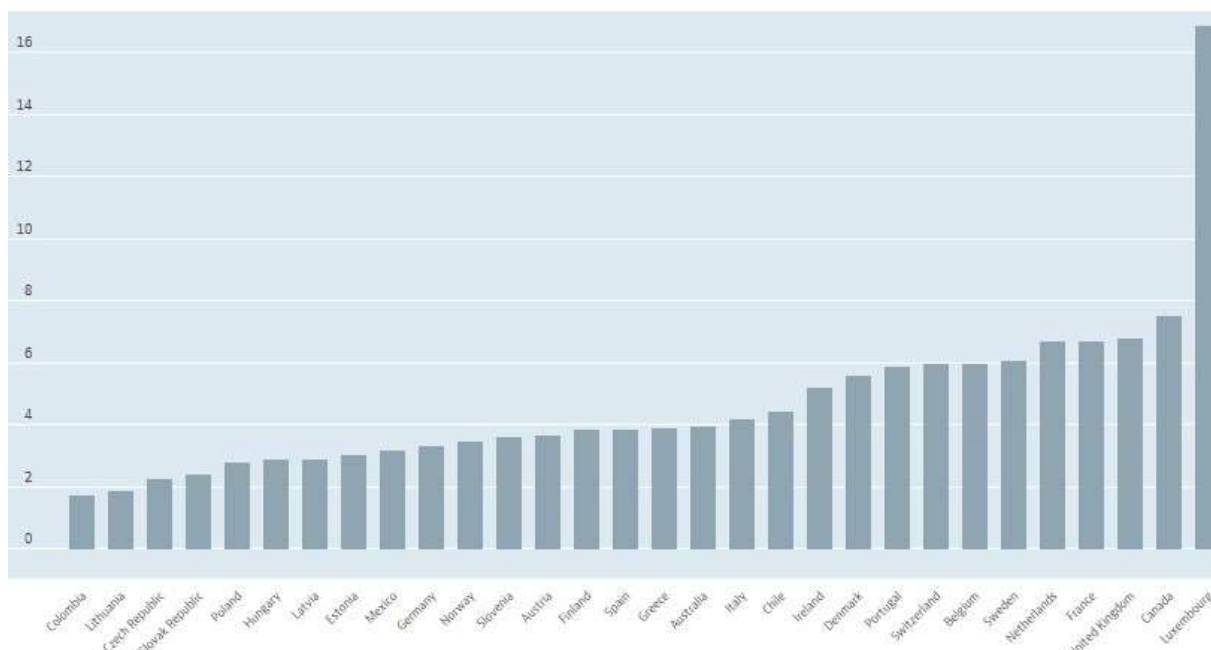
**Figure 4.** Debt to Surplus Ratio 2008

Source: OECD, 2020

In 2008, the highest rates were in Luxembourg, Portugal, the United States and the United Kingdom. It is noteworthy that the levels of the indicator in Luxembourg are particularly high compared to other countries.

The Czech Republic, Lithuania, Mexico and Slovakia have the lowest coefficients in 2008. The following graph shows how the countries in this ranking have moved in 2018.





**Figure 5.** Debt to Surplus Ratio 2018

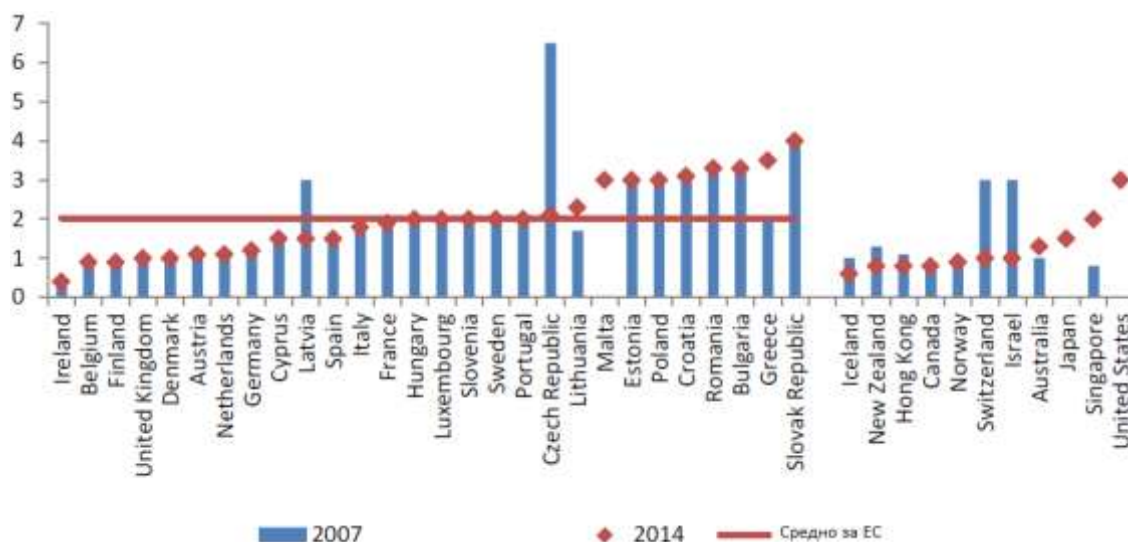
Source: OECD, 2020

Figure 5 shows that Luxembourg again has the highest rate. The difference compared to 2008 is that the next positions are followed by Canada, Great Britain, France and the Netherlands. The lowest figures are for Colombia, Lithuania, the Czech Republic, Slovakia and Poland. Luxembourg's surplus debt is well above other countries as in 2008.

### Corporate Debt Payment Practices

The high level of private debt in many EU countries emphasizes the role that insolvency frameworks (prerequisites) can play in resolving the debt excess problem and in clearing bank

balance sheets of insolvent loans. The EU study (DP32, 2016) for the period 2000-2014 examines the macroeconomic significance of insolvency frameworks from an EU perspective, discusses the problems of insolvency regime design and presents the main characteristics of insolvency frameworks in selected EU Member States. The adopted reforms are reviewed and the remaining priorities for reforms from a macroeconomic perspective are considered. In the study, the information is visualized by means of the following figure (Bricongne, J., Demertzis, M., Pontuch, P., Turrini, A., 2016).



**Figure 6.** Debt repayment period required (years)  
Source: European Commission, World Bank

The graphical analysis of Figure 4 shows that the Czech Republic, Slovakia, Bulgaria, Romania, Croatia, Poland and Estonia are among the slowest private sector debt repayments with higher-than-average EU levels. The best results are for Ireland, Belgium and Finland. It should be borne in mind here that the data do not include only non-financial corporations, but the share of the private sector, i.e. and households. According to this indicator, the situation after the financial and economic crisis for most countries does not change. Exceptions are Lithuania, Australia, Singapore. Most non-financial corporations in European countries continue to pay their debts at the same time as during the crisis.

The European Payment Practices Survey 2018 is significant. In partnership with the Independent Institute for Market Research

Kantar, EOS conducted telephone interviews with 3,400 companies in 17 European countries on the prevailing payment practices in the respective countries. 200 companies in each of the countries Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Switzerland and the United Kingdom answer questions in the spring of 2019 d. in terms of own experience with payments, as well as current issues related to risk management and receivables. Some of the results are synthesized in the following table, which clearly shows the differences between Eastern and Western countries. 81 percent of customers in Europe pay on time. But why do some people pay their bills too late or not at all? What are the consequences for the companies - and how do they react to this?

**Table 2.** European payment practices for 2018 (in% or in days)

	WEST										EAST									
Payment turns in day	TOTAL	WEST	EAST	GERMANY	DENMARK	BELGIUM	D	UK	SPAIN	FRANCE	POLAND	SLOVAK REP.	CZECH REP.	SLOVENIA	CORATIOA	HUNGARY	BULGARIA	RUSSIA	GREECE	RUMANIA
	3	3	3	2	2	3	3	3	39	32	3	35	33	33	33	37	34	25	46	35



practices in the business environment are receivables from customers, trade payables, insolvency and lack of staff capacity. The top 4 effects of deteriorating solvency include lower profits, cash flow problems, higher interest rates and reduced investment. The most applied measures by companies are the immediate invoicing and non-granting of a grace period for payment, use of the professional services of collection companies and checking the credit status of customers.

## CONCLUSION

The topic of corporate debt is relevant, interesting, and important for the financial practice. The ability to deal with the problems of outstanding debts between companies will be determined by access to financial resources. Measuring corporate debt is an extremely important issue that is often overlooked by statistical agencies. States need to place more emphasis on measuring corporate indebtedness indicators to analyze and prevent risky situations for the economy. The main goal of the research is achieved, namely the measurement of the changes in the corporate debt of non-financial corporations for the period 2008-2018. The research thesis is not fully proven. In some countries, the corporate debt situation is deteriorating, in others the opposite is true. From the data it can be concluded that the highest debt of non-financial corporations to GDP have Luxembourg, Ireland, Belgium, China, Norway and Sweden, and the lowest Germany, Greece and the United States. For the studied period on this indicator the largest growth is in Ireland. In terms of debt to surplus ratio, the highest figures are for Luxembourg, well above all other countries. These results outline Luxembourg's non-financial corporations as the most indebted compared to the other countries surveyed. They considered the payment practices of non-financial corporations and outlined the main reasons, consequences and measures that are applied.

It is not possible at this stage to measure whether these changes are due to the financial

and economic crisis or to other factors. Research on the topic, which the author plans, is related to the study of the impact of the CoVid-19 crisis on corporate indebtedness, and for this purpose the respective econometric model is built and tested. Unfortunately, the statistical information will be available 3-4 years later.

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