FINANCIAL AND ECONOMIC CRISES IN COMPARATIVE PERSPECTIVE

Zemla, Sebastian

Consortium of the International Joint Cross-Border PhD Programme in International Economic Relations and Management
Academic Scientific Committee for Research and Doctoral Studies

Juraj Dobrila University of Pula
Fakultet ekonomije i turizma "Dr. Mijo Mirković"

Sebastian Zemla

International Joint Cross-Border PhD Programme in International Economic Relations and Management

FINANCIAL AND ECONOMIC CRISES IN COMPARATIVE PERSPECTIVE -

Crisis management and their phenomenon of repetition / return

DOCTORAL DISSERTATION

Doktor znanosti (dr.sc.) / ekvivalent PhD

Supervisor: izv. prof. dr. sc. Dean Sinković

Pula, 2021

Acknowledgements

My dissertation project at the University of Applied Sciences Burgenland and the University of Pula marked a challenging and developmental step for me, which, however, would not have been possible without various participants.

In this regard, I would first like to thank those who accompanied me organizationally and professionally through this project. This includes Ms. Univ.-Prof. Dr. Dr. h. c. Irena Zavrl, whose excellent supervision throughout the program meant that she had an open ear for her doctoral students at any time. My special thanks go to my doctoral supervisor Prof. Dr. Dean Sinković, who not only acted as my academic mentor, but also stood by me with guidance and resources. He was not only an exemplary and reliable supervisor in every phase of this research project, but also granted me freedom in the choice of the dissertation topic and independence in the successive processing of the manuscript. The collaboration with him will always remain as a decisive success factor in my memory. Furthermore, I would like to thank Prof. Dr. Marinko Škare for taking over the second opinion.

My final thanks go to my family, who always showed the necessary patience and to whom I owe profound words of thanks. This includes in particular my parents and my late grandmother, who always believed in me. Thanks also go to my brother, with whom I often had professional exchanges. In addition, I must put my wife in front of me, who has accompanied me on the very exhausting and complex journey from day one and who contributed to my motivation in a special way. My two children deserve the greatest appreciation throughout this time, as they had to forego many of their father‘s hours. In the end, they gave me the strength to make this project a success. This work is dedicated to them.

About the author

Sebastian Zemla was born on 10th of April 1979 in Bottrop, Germany. His academic career started more than two decades ago by completing a diploma degree in Economics from the University of Applied Sciences in Essen, Germany. He started his professional career in the telecommunication sector at Deutsche Telekom AG by passing various positions, from a commercial trainee to an expert in the finance & controlling unit. After his move to the energy industry and first scientific work at the Free University of Berlin he performed different functions in the finance & controlling department (Financial Controller, Deputy Group leader and Group leader Accounting).

Mr. Zemla is fluent in German, Croatian and English and can refer to more than 15 years of relevant experience in the area of finance. In the 4th quarter 2018 he started as a doctoral student in the International Joint Cross-Border PhD Programme in International Economic Relations and Management, at the University of Applied Sciences in Eisenstadt, Austria. In his doctoral project at the partner University Juraj Dobrila of Pula, Faculty of Economics and Tourism "Dr. Mijo Mirković", he dealt intensively with financial and economic crises and focused on crisis prevention and the search for repetitive patterns with regard to economic indicators. His doctoral dissertation with the title "*Financial and economic crises in comparative perspective - Crisis management and its phenomenon of repetition / return*" aimed to develop a prevention catalog in order to take precautions to better prepare for future crises. The topic received special attention due to the current events, so that the author was forced to implement the current Corona Crisis in his investigation afterwards.

Mr. Zemla has published several professional and scientific articles. The list of publications is attached:

"Monitoring of economic indicators in the context of financial and economic crises" (with Sinković, D. & Zemla, N.) – scientific paper, Contemporary Economics, University of Economics and Human Sciences in Warsaw. Submitted in March 2021. Publishing in progress.

"Monitoring of economic indicators in the context of financial and economic crises" (with Sinković, D. & Zemla, N.) – scientific paper, 6th International Scientific Conference for Doctoral Students and Early Stage Researchers, University of Applied Sciences Burgenland in Eisenstadt, Austria. Conference proceedings. Submitted in July 2020. Publishing in progress.

"Financial policy and instruments in the capital markets - a critical assessment in the light of the current developments and sustainability issues" (with Zemla, N. & Gelo, F.) - scientific paper, International Scientific Conference "Modern Economy, Smart Development", University of Sopron, Alexandre Lamfalussy Faculty of Economics, Hungary. Conference proceedings. Published in November 2019. ISBN: 978-963-334-348-7.

"10 years after the Subprime Crisis - Where do we stand?" – Presentation (September 26th, 2019) in Poreč, Croatia, 9th International Scientific Conference "Tourism, Innovations and Entrepreneurship", Juraj Dobrila University of Pula, Croatia.

"Factors influencing tourism growth in Croatia" (with Zemla, N. & Gelo, F.) – scientific paper, 9th International Scientific Conference "Tourism, Innovations and Entrepreneurship", Juraj Dobrila University of Pula, Croatia. Conference proceedings. Published in February 2021. ISBN: 978-953-8278-54-9.

"Financial and economic crises in comparative perspective - Crisis management and its phenomenon of repetition / return" – scientific paper, Our Economy - Journal of Contemporary Issues in Economics and Business. Published in March 2020. DOI: 10.2478/ngoe-2020-0006.

"Financial and economic crises in comparative perspective" – scientific paper, 5th International Scientific Conference for Doctoral Students and Early Stage Researchers, University of Applied Sciences Burgenland in Eisenstadt, Austria. Conference proceedings. Submitted in September 2019. Publishing in progress.

Information on supervisor

Dean Sinković was born in 1975 in Pula, Croatia. He is an Associate Professor of Economics, Vice Dean for Research and International Relations of Faculty of Economics and Tourism - Juraj Dobrila University of Pula. He holds a MBA in Marketing and Finance from the University of Illinois at Chicago and a MSc in Economics from the University of Pula. He finished his PhD in Economics at the University of Pula in 2011. His academic background is in teaching and research on economic growth and theories, microfinance, investments as well as financial and policy development.

Prof. Sinković authored or co-authored many research papers and books and is Managing Editor for the Journal Economic Research-Ekonomska Istraživanja at the Faculty of Economics and Tourism "Dr. Mijo Mirković", Juraj Dobrila University of Pula. In addition he works as a visiting professor at the International Joint Cross-Border Ph.D Program, University of Applied Science, Fachhochschule Burgenland (Austria) and at the graduate program, International Burch University in Sarajevo (Bosnia and Herzegovina). He also served as a visiting professor at the MBA program, Albstadt Sigmaringen Hochschule (Germany, 2006-2008). In 2016, he was appointed as an advisor to the Deputy Prime Minister of the Republic of Croatia for Economy, Finance and EU funds and held numerous visiting lectures and keynote presentations at universities and institutions in Europe, South America and Asia. Along with Prof. Milford Bateman he was one of the first open critics of the microfinance model developed by Mohammad Yunus, which he published in internationally recognized journals and books. During his MBA time in Chicago, he also worked for Archer Daniels Midland Company at the Chicago Board of Trade trading unit. Prof. Sinković coordinated several large-scale investment projects in Croatia and was a member of the supervisory board of Plinacro, the largest natural gas transmission system operator in Croatia.

Prof. Sinković is married and father of two children.

Abstract

Crises trigger attention in society and arouse our further interest, depending on the degree of the concern raised. In the recent past, this was the case with the financial crisis with the label ‚Great Recession' which started in 2007 in the USA. And as history shows, global crises are not isolated phenomena. They repeat themselves at indefinite intervals. Another well-known crisis is the Great Depression of the 1930s, and both represent two special examples that are familiar to economists in particular and sober contemporaries in general. The origin of both crises in the USA is obvious and opens space for some relevant commonalities in both events.

The topic of this dissertation is based on a comparative crisis debate induced over a couple of years. In a first step the dissertation aims to evaluate essential parallels and distinctions regarding both crises methodologically via a comparative analysis and to illustrate the phenomenon of repetition that is their characteristic mechanism. In addition, the focus is on the accompanying fiscal policy circumstances of crisis management, which can be assigned to specific economic theories for each era.

In the upper context there was always caution and fear that such events, which have jolted the economy as a whole, may be repeated. In fact, this is exactly the kind of situation we are in right now. With the so called ‚Corona Crisis' we have been experiencing a new crisis since the first quarter 2020. It will broaden the scope of the study.

Based on observations presented in this work, explanations are suggested that crises are significantly related to the development of various indicators. In particular, it's about the impact of economic indicators like GDP, key interest rates or debt ratios and - as the Corona Crisis shows - supposedly unforeseen factors or shocks. The study deals with a comparative analysis of indicators regarding the three mentioned crises, with the aim of identifying trends or patterns to use these insights as a support for the birth of further crises. The work aims to provide a contribution to current crisis research in a comparative context and to advance findings in the field of early warning, crisis education and recommendations for future crisis avoidance.

Key words: financial and economic crises, economic indicators monitoring and comparison, crisis management, crisis prevention, future inevitability

Expanded abstract

Crises trigger attention in society and arouse our further interest, depending on the degree of the concern raised. These include financial and economic crises which are phenomenal incidents, shock the economical world and pose significant challenges to the governments. In the recent past, this was the case with the financial crisis with the label ‚Great Recession' or ‚Subprime Crisis' which started in 2007 in the USA and in 2008 in Europe. It became the primary topic in domestic as well as foreign news unlike any other before. There was a bundle of events and processes that preceded it and contributed to its emergence, whether it be economic, political or ideological.

And as history shows, global financial and economic crises are not isolated phenomena. They repeat themselves at indefinite intervals. Another well-known crisis is the Great Depression of the 1930s, and both represent two special examples that are familiar to economists in particular and sober contemporaries in general. The origin of both crises in the USA is obvious and opens space for some relevant commonalities in both events. The topic of this dissertation is based on a comparative crisis debate induced over a couple of years. In a first step the dissertation aims to evaluate essential parallels and distinctions regarding both crises methodologically via a comparative analysis and to illustrate the phenomenon of repetition that is their characteristic mechanism. In addition to the comparative approach, the paper focuses directly on the typical repetitive mechanism (Reinhart & Rogoff: "recurrent pattern of banking and sovereign debt crises", 2011): overheating, the forming and the bursting of the bubble, largely started in the USA. Specific aspects included in this research area are crisis management in the decades mentioned above, the role of governments and banks, as well as the observation as to which crises are possible in the future. Considering the crisis management, the focus is on the accompanying fiscal policy circumstances, which can be assigned to specific economic theories for each era.

Looking at the current monetary systems led by complex financial instruments and addicted to low interest rates, it is not far-fetched that such developments are prone to deliver another serious financial crises. In this context there was always caution and fear that such events, which have jolted the economy as a whole, may be repeated. In fact, this is exactly the kind of situation we are in right now. We have been experiencing a new crisis since the first quarter 2020, which

is referred to in the media and in non-popular science sources as the ‚Corona Crisis'. It will broaden the scope of the study.

Based on observations presented in this work, explanations are suggested that crises are significantly related to the development of various indicators. Relevant indicators include the impact of economic indicators (e.g. GDP, key interest rates, debt ratios), capital markets and - as the current Corona Crisis shows - supposedly unforeseen factors or shocks. The study deals with a comparative analysis of indicators regarding both crises and the Great Depression, with the aim of identifying possible trends or patterns. Using the comparative method, significant similarities will be shown, which insight can be seen as a support for the birth of further crises. The work aims to provide a contribution to current crisis research in a comparative context and to advance findings in the field of early warning, crisis education and recommendations for future crisis avoidance. In addition to supervisory measures for banks, efforts to build general trust play a role in crisis management and prevention in a holistic view, such as the voluntary orientation of a business policy adapted to sustainable principles.

Key words: financial and economic crises, economic indicators monitoring and comparison, crisis management, crisis prevention, future inevitability

List of Abbreviations

BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (Financial-Services Regulator)
CEO	Chief Executive Officer
cf.	confer/conferatur = compare
dpa	Deutsche Presse-Agentur
e.g.	exempli gratia = for example
et al.	et alia = an others
EUR	Euro
f./ff.	following page (s)
FRED	Federal Reserve Economic Data
G20	Group of Twenty
GBP	Great British Pound
GDP	Gross Domestic Product
HICP	Harmonised Index of Consumer Prices
HRE	Hypo Real Estate
IHK	Industrie- und Handelskammer (Chamber of Industry and Commerce)
IKB	Deutsche Industriebank AG
IMF	International Monetary Fund
IMRAD	Introduction, Methods, Results and Discussion
LB	Landesbank
LLC	Limited Liability Company
MBA	Master of Business Administration
MSCI	Morgan Stanley Capital International
NV	Naamloze vennootschap (limited company)
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
pp.	page / pages
QE	Quantitative Easying
S&P	Standard & Poor‘s
SME	Small and Medium Enterprise
UK	United Kingdom

USA	United States of America
USD	US Dollar
Vol	Volume

Table of Contents

Acknowledgements II
About the author III
Information on supervisor V
Abstract VI
Expanded abstract VII
List of Abbreviations IX
Table of contents XI

1. INTRODUCTORY PART 1
1.1. Topical introduction 1
1.2. Comparability criteria 3
1.3. State of research 5
1.4. Research question and hypothesis explication 9
1.5. Methodological approach 10
1.6. Structure of the work 13

2. GREAT DEPRESSION 16
2.1. Background and causes 16
2.2. Economic consequences 17
2.3. Policy measures 19
2.3.1 The USA 19
2.3.2 Europe 22
2.4. Economic Indicators 27
2.4.1 Key interest rates including additional US-crises (digression) 27
2.4.2 Inflation 31
2.4.3 GDP development 34
2.4.4 Public and private debt developments 36
2.4.5 Stock markets and real estate developments 39
2.5. First crisis results including economic theories 42

3. GREAT RECESSION 48
3.1. Definition and background 48

3.1.1 The term “Subprime Crisis” 48
3.1.2 Background and causes 48
3.2. Economic consequences 52
3.3. Policy measures 57
3.3.1 The USA 57
3.3.2 The European Union 63
3.4. Economic Indicators 68
3.4.1 Key interest rates 68
3.4.1.1 Look at the history of US-crises (digression) 68
3.4.1.2 Period around the Great Recession 71
3.4.2 Inflation 72
3.4.2.1 Look at the history of US-crises (digression) 72
3.4.2.2 Period around the Great Recession 73
3.4.3 GDP development 77
3.4.3.1 Look at the history of US-crises (digression) 77
3.4.3.2 Period around the Great Recession 77
3.4.4 Public and private debt development 79
3.4.4.1 Look at the long-term history (digression) 79
3.4.4.2 Period around the Great Recession 81
3.4.5 Stock markets and real estate developments 86
3.5 First crisis results including economic theories 92

4. CORONA CRISIS 96
4.1. Background and causes 96
4.2. Economic consequences 97
4.3. Policy measures 100
4.3.1 The USA 100
4.3.2 The European Union 107
4.4. Economic indicators 118
4.4.1 Key interest rates 118
4.4.2 Inflation 120
4.4.3 GDP development 121
4.4.4 Public and private debt developments 122
4.4.5 Stock markets and real estate developments 126

4.5. First crisis results including economic theories 129

5. COMPARATIVE DISCUSSION OF THE CRISES RESULTS 135
5.1. Discussion on crises endings 135
5.1.1 Reflection on past crises 135
5.1.2 Classification of the three investigated crises 137
5.2. Comparison of economic indicators 141
5.2.1 Key interest rates 141
5.2.2 Inflation 144
5.2.3 GDP development 145
5.2.4 Public and private debt developments 147
5.2.5 Stock markets and real etstate developments 153
5.3. Financial market and morality 155
5.3.1 The relationship between market and morality 155
5.3.2 Viewpoints 155
5.3.3 Interim conclusion and final considerations in view of the current developments 157
5.4. Hypothesis testing 158
5.4.1 Economic indicators follow (certain) patterns within crises 158
5.4.2 Crisis management, economic theories and crisis periods are interdependent 159
5.4.3 Crises are avoidable phenomena 160

6. RECOMMENDATIONS FOR ACTION 162
6.1. Return to a normal interest rate level 162
6.2. Debt discipline 163
6.3. Limiting inflation 165
6.4. Review of foreign trade dependencies 167
6.5. Strengthening of financial market regulation and stability 168
6.6. Future investments with a focus on digitization 170

7. CONCLUSION 172

List of figures XV
List of tables XVII
Bibliography XVIII

The term “author” in the context of the work basically refers to the view and perspective of the author of this dissertation.

1. INTRODUCTORY PART

1.1. Topical introduction

Crises trigger attention in society and arouse our further interest, depending on the degree of the concern raised. In the recent past, this was the case with the financial crisis with the label ‚Great Recession' or ‚Subprime Crisis', which started in 2007 in the USA and in 2008 in Europe and became the primary topic in domestic as well as foreign news unlike any other before. The causes of the crisis were unambiguous and focus on the dramaturgical structure of the real estate bubble in the USA, whose bursting should prove particularly momentous (Zeise, 2009: 9). Its effects were visible not only at the national level, but also had harmful consequences for the global economy, in particular Europe. The seriousness of the situation, for example, in Germany as the largest economy in the European Union (EU) can be illustrated as follows. The Federal Ministry of Economics and Technology categorized it as "the worst economic crisis since the Federal Republic of Germany" (Federal Ministry for Economics and Technology, 2010).

And as history shows, global financial and economic crises are not isolated phenomena. They repeat themselves at indefinite intervals. Well-known crises such as the mentioned ‚Great Recession' or the global economic crisis ‚Great Depression' of the thirties are two special examples that are familiar to economists in particular and sober contemporaries in general. It didn't take long after the Great Recession broke out before economists, politicians, political scientists and contemporary, were inclined to compare both crises. "Black Friday" and the accompanying stock market crash, the beginning of the global economic crisis in the USA and suffering of the national economic evoked many perspectives in crisis consciousness and simultaneously memories of sad scenarios (Jahnke, 2009: 9). The origin of both crises in the USA is obvious and provides space for some similarities. The topic of this work is based on a comparative crisis debate that has been conducted over a number of years. These two crises were selected for the study because, immediately after the outbreak of the Great Recession, numerous comparisons with the 1930s were made in the press, popular scientific literature and specialist literature. After first presenting general parallels in section 1.2. to ensure comparability, the dissertation aims to evaluate the peculiarities and developments regarding both crises.

In the crisis context there was always caution and fear that such events, which have jolted the economy as a whole, may be repeated. In fact, this is exactly the kind of situation we are in right now. We have been experiencing a new crisis since the first quarter of 2020, which is

referred to in the media as well as in non-popular science sources as the “Corona Crisis”. It is based on a virus pandemic and has now caught the entire global economy cold. The associated virus has its origin in China (Grömling, 2020) and spread rapidly to all continents in the course of global interdependencies. These dependencies have arisen in particular due to the enormous growth and global economic importance of China in recent years. In order to avoid the risk of infection, interpersonal contact was kept to a minimum. Appropriate strategies to control the transfer were also implemented, which nevertheless meant a painful experience in the context of the overall economy (Sinn, 2020a). In addition to the temporary closure of numerous production facilities, factories and shops, the travel industry and the airlines in particular as well as catering and entertainment sectors were forced to face this crisis up close (Herz, 2020). Due to the currency the topic gained, it was inevitable to include the Corona Crisis in the investigation. The original object of investigation, which should “only” focus on the Great Recession and Great Depression, had to be expanded accordingly to include the current crisis.

In the emergence of the current Corona Crisis and its characteristics, there are currently different evaluation and discussion patterns that shape science. Some see it primarily as a crisis caused by an “external shock” that does not really fit into the original phenomenology of the crises in the 20th century (e.g. Zürn, 2020 or Kooths, 2020). For the others, it was only a matter of time before a crisis broke out. The reasons for this can be traced back to the developments in recent years with rising private and public debt ratios as well as the formation of economic bubbles and a sluggish global economy (Sinn, 2020b or Sinković, 2020: 20f.). It makes sense to analyze this development connected with the situation on the financial markets in the course of the study. Because this is characterized by a dynamic that raises questions. This includes, on the one hand, the development on the stock markets and that of the key interest rates.

Reading crystal balls is certainly not a practical way to anticipate crises. But premonitions can tell their own stories, which are most likely to result from the strict observation of so-called economic indicators. These could be suitable for discussing the preliminary phases of such crises, for following them and getting to the bottom of the “matter”. If you look at the last characteristic financial crisis, the Great Recession, there were a whole series of events that preceded it and contributed to its emergence. Rather, “it is the result of very complex and interrelated economic, political and ideological processes” (Hirsch, 2009: 75). The Great Depression also had its history with several years of specific developments and indicators, whereas the Corona Crisis apparently could not show a directly connected history due to its

unique and abrupt outbreak. It will therefore depend more on the framework conditions that this crisis is currently exposed to. This is exactly where this work comes in and requests its respective economic history in the three crises mentioned. The observations within this work aim to explain that economic affairs like crises are significantly related to the development of various indicators or key figure aggregates. According to the reference works, relevant indicators include the impact of capital markets with regard to interest rates and equities (Brunner, 2009: 44ff.), economic indicators - e.g. GDP, inflation, public and private debt ratios (Jahn, 2013: 137) - as well as the development of the stockmarkets and the real estate sector (Jahnke, 2009: 9). The present doctoral work deals with a comparative analysis of the above indicators in relation to the current Corona Crisis, the Great Recession and the Great Depression, aiming to identify possible trends or patterns and additionally, to show the phenomenon of repetition that is their characteristic mechanism. In order to obtain and examine these findings, this work uses a comparative method in order to reveal some significant similarities between the three crises. Should such insights prove to be true they can be seen as a support for the birth of further crises. The work is intended to provide a contribution to current crisis research in a comparative context and to advance findings in the field of early warning and crisis education.

It would be beyond the scope of this work to include all countries affected by significant impacts of the crises. For this reason, the study focuses mainly on the USA and the EU, and to some extent on the EU heavyweight Germany, also partly France, Italy and the United Kingdom. To round off the investigation, recommendations are being drawn up on how to confront the effects of the crisis in the future and how preventive positioning should be implemented.

Even if the Corona Crisis is far from over, it was unavoidable for the investigation to include it due to the topicality and explosiveness of the current events.

1.2. Comparability criteria

To ensure the comparability of the two ended crises at least ten parallels between the Great Depression and the Great Recession can be found. According to the contributions from the representatives of economics, political science and political economy these are the following:

1. Both crises are known to set out on the world's largest financial market, the USA (Jahnke, 2009: 9).

2. In both cases, a recession accompanied the price falls on the capital market, from which “a long-lasting depression - comparable to the global economic crisis in the first third of the 20th century - was developing” (Bischoff, 2009: 27f.; Hollnagel, 2009: 41ff.; Galbraith, 2009: 9f., 17).
3. The outbreak of both crises was preceded by a real estate boom. Regarding the period in the Great Depression it was the so-called Florida crisis and property boom of the mid-twenties (Jahnke, 2009: 9; Galbraith, 2009: 35f.).
4. Both crises were characterized by high levels of borrowers and investors' indebtedness (Braunberger/Fehr, 2008: 9; Mußler, 2008: 81).
5. In both crises, overproductions emerged in the consumer goods market (Köhler, 2009: 68; Glebe, 2008: 80), in the newer crisis especially noticeable in the automotive sector (Kirchhof, 2009: 8).
6. In both crises, the share of corporate payouts in relation to US economic output peaked up to gloss values of 5% (Jahnke, 2009: 23).
7. The renowned economist John Kenneth Galbraith indicated for both crises an unequal distribution of income and wealth in the USA. In 1929, 5% of all households registered approximately one third of the whole national income, in 2004 it was 6% of all households who registered the same dimension (Galbraith, 2009: 13).
8. Banks were hit by the most destructive consequences of the crisis: “The banking crisis as the core of the global financial and economic crisis.” Countermeasures were essential here (Paul/Kösters, 2009: 41f.; Soros 2009: 25f.).
9. Both crises caused a jolt in the entire world economy (Zeise, 2009: 11ff.).
10. In both crises, specialized financial instruments were responsible for tightening the stock market. After 2000 for example “Hedge-Fonds”,“Private Equity” or asset backed securities, before 1929 “Investment-Trusts” (Galbraith, 2009: 10), as a result of which “a new service industry has emerged, the financial investors. They took ... mainly three strategies:

- They engaged in risky speculative transactions in which they use large amounts of credit, ...
- They change company policy and focus on the short-term realization of high returns (shareholder value control), ...
- They put a lot of pressure on states (governments and parliaments) where they invest to enforce tax cuts and privatizations” (Huffschmid, 2009: 109f.).

However, this author-elaborated enumeration does not put sufficient affirmation in order to be regarded as prevailing and conclusive. The political scientist Uwe Andersen expressed back then a first relativization of the apparent parallels: “In the dimension of both the systemic threat and the real world impact, the current global economic crisis is comparable only to the global economic crisis of 1929, even if there are important differences (crisis origins, reactions and time course) to be considered” (Andersen, 2009: 5). The parallels shown allow a comparison, because apples are obviously not compared with pears. The author will use them as a basis in the investigation to move on to the next step. These not only apply to these analyzed crises, but they can develop potentials for future crises and offer a practical model for crisis discussions.

1.3. State of research

The question about the comparability of both economic and financial crises has already been discussed in various literary works, news and the Internet contributions. In particular, questions were discussed whether the Great Recession repeats at the same level as the one of the 1930s - with all its impacts on the financial markets, economic and political scene. This discussion has put forth many scientifically substantiated contributions, and the quantity of popular scientific publications grew almost infinitely. The finance scientist Rainer Elschen offers in “Der Werdegang der Krise - Von der Subprime- zur Systemkrise” a decidedly overview work about the causes, progress and impacts of this crisis. The following causes were favored: “The current crisis knows in its causes and amplifiers a conglomerate of massive failure of regulation …, market based structure errors … and glaring market failure” (Elschen, 2009: 360f.). Joachim Jahnke also offers an appealing approach to the topic. In his literary statements he reflects not only on the Great Recession but also partially on the 1930s crisis (“Weltwirtschaftskrise II” 2008 and “Die zweite große Depression” 2009). He described both crises as stages of “financial capitalism” and questioned the then architecture of the financial markets in terms of the results. He also called for increased regulatory measures for the excessive bank transactions in the “neoliberal globalised world”, which the author initially supports without any assessment due to the pursuit and observation of numerous studies. Such systematic and theory-based comparisons of the two crises have been made both on a scientifically level and in numerous popular science articles.

The debate about negative capitalist connections in the financial markets has been discussed in publications focusing on the Great Recession (cf. e.g. Andersen 2009, Althammer 2009, Altvater 2009, Raddatz 2009, Schäfer 2009). In this context, analytical excerpts in the context

of business ethics are also frequently found. These aim to clarify the question of the extent to which the bankers' greed for profit is responsible for the great extent of the crisis. After all, this type of discussion has not infrequently led to works that argue in terms of corporate and economic ethics, such as Ulshöfer and Bonnet 2009: “Corporate Social Responsibility auf dem Finanzmarkt - Nachhaltiges Investment - politische Strategien - ethische Grundlagen”.

In the course of the accused criticism of freedom of movement, liberalization and privatization in the financial markets, the neoliberalism debate increasingly came into focus. Increased attention has been paid to the question of the extent to which the state, in conjunction with the opening of the financial markets, has helped to favor activities there. German left-wing politician Gregor Gysi, for example, did not leave this market state uncommented on February 15, 2008 at the 143rd session of the German Bundestag in Berlin: “Every day, 1 900 billion dollars are turned over worldwide. For the entire goods and services sector, this amounts to 38 billion dollars a day, or 2% of this figure. This means that 1 862 billion dollars are turned over daily for purely speculative purposes. Politics has made this possible.” In terms of specialist literature, the following works, among others, are to be registered within this radius: Scherhorn 2009 (“Geld soll dienen, nicht herrschen”) or the interdisciplinary joint publication “Krisen Analysen” by Altvater, Bischoff, Hickel, Hirsch, Hierschel, Huffschmid and Zinn from 2009. Through their analyses in the fields of political economy, economics and sociology, finance, political science, economic policy and economics, they offer different positions and assessments of the financial crisis at the time. The opening of the financial markets not only allowed the free movement of ordinary monetary transactions, it also left room for highly speculative financial products. In this context, studies of so-called “hedge funds” also proved to be technically productive (e.g. Berg 2007: “Financial crises and hedge funds - financial magicians or crisis triggers”). They were increasingly associated with the causes and triggers of the financial crisis due to their product-related intransparency and willingness to take risks.

Initiated by the investigation of possible errors in the global financial system - primarily in the Anglo-Saxon region - a number of possible solution concepts and stimulus measures were then taken up in the EU, for example in Germany. This also applies to the discourse concerning the recurrence of what happened and which mistakes have been done in the crisis of the 1930s (cf. exemplary Storbeck 2009: “Die Jahrhundert-Krise - Über Finanzalchemisten, das Versagen der Notenbanken und John Maynard Keynes” or Grömling, Hüther, Jäger, Kroker 2009: “Deutschland nach der Krise: Aufbruch oder Depression? - Wirtschaftshistorische Betrachtung

und wirtschaftspolitische Leitlinien". In his work "The Return of Depression Economics and the Crisis of 2008" from 2009, the Nobel Prize winner in economics, Paul Krugman, quite reasonably criticized the lack of regulation of today's financial markets in the following modus operandi: "Banks are wonderful things, when they work. And they usually do. But when they don't, all hell can break loose – as it has in the United States and much of the world over the course of the past year. But wasn't the age of banking crises supposed to have ended seventy years ago? Aren't banks regulated, insured, guarenteed up the wazoo. Yes and no. Yes for traditional banks; no for a large part of the modern, de facto banking system" (Krugman, 2009: 153). The parallels or repetitions of offenses on the capital markets as in the 1930s (including unpredictable flows of capital and money, banking crisis, collapse of the international financial markets) were discussed as standard questions in various literary versions. The title "The Fallback - The New World Economic Crisis" translated from German in 2003 from the original edition "The End of Globalization" by the British historian Harold James already aptly questions the above fact. However, the analogy found is to be classified as worrying for him.

A detailed analysis of the causes and course of the Great Depression in the 1930s can be found in the work "Die Weltwirtschaftskrise 1929-1939" by the American economist Charles P. Kindleberger in 1973, but essentially from an American perspective: "In order to threat the thirties the book describes the world economy during the Depression. As far as it was inevitable, it is written from the American point of view. The editor is a little unhappy that it doesn't contain any more about the Soviet Union and Asia. In this respect, the picture is distorted, but you shouldn't fake knowledge that you don't have." A focus on Germany in a study is offered, for example, by James ("The German Slump") in 1986, who dealt intensively with the local crisis development there. It is a study of the economic crisis of the interwar years in Germany, its effects on political life and the influence that politics had on the development of the economy.

According to the author the debates of the parallels taken up so far over the triggers and developments of the Great Recession and the Great Depression are scientifically well prepared. Due to the current topic and explosiveness, an analysis of the parallels, differences and characteristics with the new Corona Crisis proves to be productive and has at first glance a completely different background. Within a very short time, a seemingly endless number of popular scientific articles has been published since March 2020. In these, however, you can find partially scientifically-based articles or interviews with well-known experts from the

economy, politics and the health sector. First scientifically oriented monographs in the field of business administration, such as that of the renowned economist Clemens Fuest “How we save our economy”, are devoted to the effects of the corona pandemic and make initial comparisons with the Great Recession. Fuest even describes the recent crisis as “more dramatic”. In addition, the work offers an insight into the economic stimulus packages against the crisis as well as detailed references to the EU area, the previous Euro Crisis and the resulting challenge to further globalization. It also contains initial suggestions on how to find a way out of the Corona Crisis (including digitization, solidity of public finances and safeguarding growth). In addition, there are already published works that deal, for example, with legal issues concerning the Corona Crisis. Thus the voluminous complete work “COVID-19 Rechtsfragen zur Corona-Krise” from May 2020 and under the direction of the German lawyer Hubert Schmidt covers the legal evaluation of eighteen fields of law (e.g. credit, travel or tenancy law). The primary question here is how (legal) challenges posed by the consequences of the corona pandemic are to be overcome and the legal assessment of changed life circumstances.

Other authors also focused on positive aspects of the Corona Crisis, such as Joseph Aoun, president of Northeastern University in Boston. In his book “We Will Remain: A University, a Global Crisis, and the Lessons of Leadership” from 2020, he graphically illustrates how his university has dealt with this crisis and at the same time ensured the quality of higher education. In terms of process, the pandemic ensured that students were sent home from dormitories, classes were moved online and offices and laboratories were closed. In addition to providing insights into management decisions and illustrating the transition to distance learning, Aoun talks about how his university has overcome a crisis with uncertain boundaries and now offers teaching for any organization.

Separately observed, there are various articles and publications that report on the economic measures of the respective epoch. Thus, there are works on the 1930s crisis, which are partially devoted to the topic of measures (cf. exemplary Rothermund 1993). In addition, there are good overview publications with a special focus on Germany (James 1986, Blaich 1990, Bachmann 1996). With regard to the Great Recession and the measures initiated there, attention should first be paid to the 2008-2009 annual report of the German Council of Economic Experts (Federal Statistical Office Germany, 2008). This German economic report entitled “Finanzkrise meistern - Wachstumskräfte stärken” provides an excellent overview of fiscal policy measures in the context of the Great Recession. More frequently there were also evaluative statements

that assessed individual measures at the policy field level, for example the President of the Association of Taxpayers Germany Karl Heinz Däke from 2009 in the work “Die Krise - Politik zu Lasten der Steuerzahler”: “The economic stimulus packages include various tax and duty reductions. This was welcomed by the Taxpayers' Association, not least for reasons of growth policy. However, it is not at all in the taxpayers' interest to use the billions of euros spent on the economy to support individual industries and to make dubious government investment projects a reality. This paper shows where waste is currently threatening or already occurring in the course of the economic stimulus packages.” These initial remarks prove that critical statements in a crisis context were not rare and that the discourse was conducted open-mindedly.

The examination of the three crises is scientifically well prepared after taking into account the reflective statements and the author’s opinion. Various works were produced, most of which serve as an adequate basis for setting up a crisis topic. Previous scientific comparisons have been made with different emphases, reinforced between the Great Recession and the Great Depression. First comparisons with the Corona Crisis did not start until 2020 due to its topicality and were, as expected, more to be found with the Great Recession. A combination of three crisis discourses, including the background, crisis management, and a pre- and post-crisis analysis of economic indicators, has so far taken place only in isolated manner. The ongoing investigation offers the opportunity to generate insights from the pool of three crises that others have only selectively considered. Admittedly, an intensive analysis of three major crises - which at first glance appear to be different in character - can also produce better recommendations on how countries can take a more preventive approach in the future. In this area there is still potential to gain scientific knowledge in a crisis context.

1.4. Research question and hypothesis explication

The discussion concerning the comparability of the three periods, including their causation and impacts, considers both economic and political aspects, and looks for similarities and diversities. Considering on the above object of study, the research question is as follows:

Which development trends of economic indicators can be identified in the Great Depression, Great Recession and Corona Crisis and what insights do they provide with regard to future crisis prevention?

To analyze the primary question the following sub-questions have to be considered:

- What were the backgrounds, causes and consequences of each of the three crises?
- What have been the policy measures within the crisis management?
- What trends and patterns in economic indicators can be observed?
- Which economic theories can be assigned to each crisis occurrence?
- What findings emerge on the basis of a comparative discussion of the crisis results?
- What recommendations for action can be given to avoid the next crisis?

While the sub-questions listed follow the chronological structure of the dissertation and capture the topic in the overall context, the specific hypotheses below should work in batches towards answering the research question. The following hypotheses need to be examined:

Hypothesis 1: Economic indicators follow (certain) patterns within crises.
Hypothesis 2: Crisis periods, crisis management and economic theories are interdependent.
Hypothesis 3: Crises are avoidable phenomena.

The evaluation of these three hypotheses in form of a confirmation or rejection takes place in Chapter 5 and is linked to the findings of the investigation, which will be discussed in detail.

1.5. Methodological approach

As part of the methodological approach, the author focuses on two approaches. On the one hand, there is a qualitative analysis of existing quantitative data, in which the meaning of the quantitative results and developments is interpreted. It involves primarily economic indicators and data that belong to the three investigated crises. The difficulty in reanalyzing existing data is whether the data collected by other researchers fits into your own question. For official statistics, it is generally advisable to use this very extensive and detailed material for your own analysis purposes in order to save the entire process of collecting primary data. It is rather a challenge not to lose sight of the vast variety and to filter out the right values that contribute to answering the question. It is not uncommon for scientists to access archived data and carry out follow-up evaluations or formulate questions (Lang, 2010: 9).

Additionally, in the secondary analysis, the author uses the methodology of comparing that has its origins in political science (Nohlen, 1994: 507). The representation of the method of comparison is regarded as the “royal way of political science”, because “Aristotle has already

made it a central subject of his policy as an empirical-analytical science in the form of a constitutional comparison" (Massing, 1974: 37). It is suitable in many ways, for example regarding a comparison of different government policies in which the policy results ("outcome") are contrasted. Nevertheless, this approach is well suited in the present study to learn from the experiences, successes and failures of earlier political-economic processes and to transfer these findings to the future (Schmidt, 1988: 2ff.). Comparative methods are used in both economic and political sciences, only the positioning differs. Nohlen noted that in the social sciences, comparative studies might be the method most closely related to political science (Nohlen, 1994: 507).

As part of the explanation of the method, it should be noted that the comparison by itself does not represent a methodical approach. Because comparisons are also made regularly in everyday life. In contrast and according to Jahn, in science the "comparative method can achieve generalizable results." On this basis, the ongoing investigation is intended to check whether a generalization can withstand several cases (or several crises). The comparison is therefore not the goal, but rather the means to an end and thus the instrument (Jahn, 2013: 163). However, this methodological comparison is not carried out without reflection, but based on a logical approach. In this context Jahn concretizes additionally the actual core of this science, "to discover facts by a systematic comparison, which otherwise would be hidden" (Jahn, 2013: 32).

Przeworski's statement also fits into the perspective above, as he in comparative research prefers explanations and not comparisons as an essential component: "A consensus exists that comparative research consists not of comparing but of explaining" (Przeworski, 1987: 35). It is also determined by scientific comparisons if established explanations prove their worth or need to be revised. For this purpose, comparison criteria must be defined in advance that go beyond the appearance of individual phenomena. The objects of investigation (in this case the three crises) should at least at first sight allow comparability, even if there are differences in character (Jahn, 2013: 168). The extent to which the objects of investigation are comparable therefore depends on the objective of the knowledge and the comparison criteria. If comparison criteria are not properly thought out or are derived from the objective of the knowledge, the corresponding comparisons "lag" accordingly. The same applies if the criteria are not equally relevant for all cases (Abromeit/Stoiber, 2006: 19). In order to specifically address the subject of the investigation, it is legitimate to evaluate the connection between the three crises as units

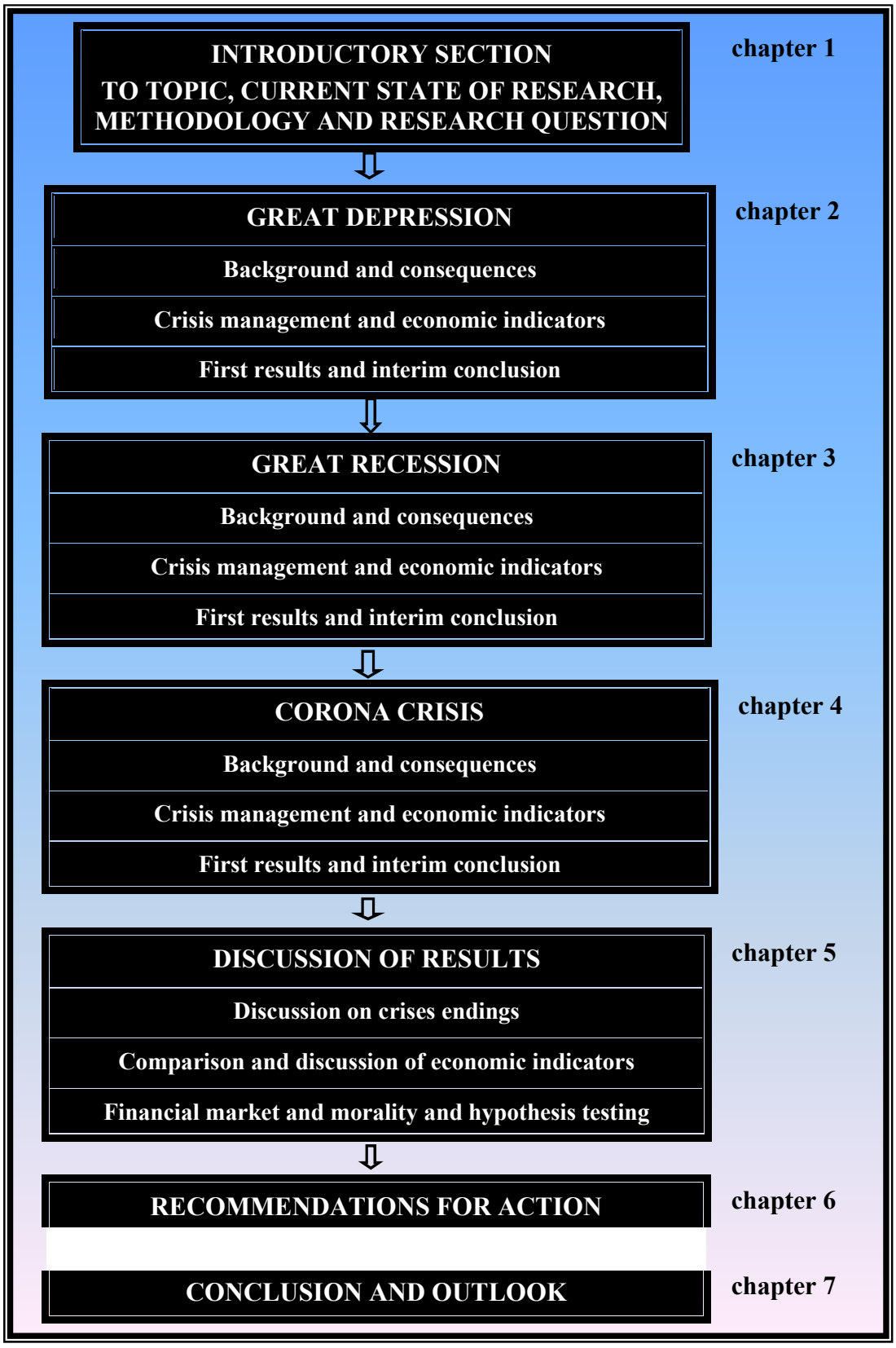
of investigation and the economic indices or indicators such as GDP or inflation rates (Jahn, 2013: 168).

When it comes to the subject of comparing financial and economic crises, however, it should not be ignored that it is a difficult and very complex matter, of which individual sub-areas have already been addressed by a wide variety of scientific disciplines. Its interdisciplinary approach includes economics as its main field, also political science affected by historical elements. The examination of economic and financial crises provides a wide radius of experimental possibilities, including a descriptive, analytical, empirical or comparative approach. This is particularly evident in the large number of works and publications available on the topics of crisis management, business cycle policy, capitalism, globalization and comparative economic history. In this context, the following versions of Bellers and Kipke are suitable for the research plan. They use the example of a "relatively late arised political science" to describe that "no science … - quasi self-sufficient - can evolve from itself" (Bellers/Kipke, 2006: 221).

Along with systematical comparisons, the discipline of comparative politics according to Berg-Schlosser and Müller-Rommel can also use complementary other methods, such as the historical comparative methods (Berg-Schlosser/Müller-Rommel, 2003: 14). For example, the "comparative science of history" - according to the explanations of the historian Marc Bloch - looks "for similarities and differences in analogue rows from different social areas in order to explain them." Rather, the compared objects - in the present study the crises - will be analysed separately to compare them subsequently in certain viewpoints (Bloch, 2000: 115f.).

1.6. Structure of the work

Table 1: Structure and image of the investigation



The dissertation follows the IMRAD structure and is divided into an introductory part, five main chapters and a final chapter, which successively aim to answer the research question. The dissertations‘ introductory chapter presents the most important key points such as the thematic introduction, the state of research, the methodological approach and the hypothesis explication. The next three chapters serve as the main investigation chapters for each of the three crises. Subsequently, we begin in chapter 2 based on a chronological order with the Great Depression of the thirties. Section 2.1 and 2.2 have an introductory character with backgrounds and consequences, followed in section 2.3 by the associated fiscal policy instruments that were used. In the next step, the author decisively examines several economic indicators, both before, during and after the crisis. At the end of the chapter, an initial interim conclusion is drawn on the basis of the contributions made, which summarizes the striking features of the crisis and classifies them in terms of economic theories.

The 3rd chapter as the next main chapter is structured analogous to the 2nd chapter and is dedicated to the Great Recession. The history of the Great Recession and its effects are described in detail in section 3.1. In section 3.2, the economic consequences are introduced, followed by the government measures to combat the crisis in section 3.3. The core section on economic indicators, numbered 3.4, forms the penultimate part, before this main chapter is rounded off with first results of the Great Recession. These can be seen as an interim conclusion which transfer into a classification of the economic theories.

Chapter 4 as the third and final crisis presentation, looks extensively at the current crisis surrounding the corona pandemic, initially with its background in section 4.1 and economic effects in section 4.2. After the respective economic measures are explained in section 4.3, section 4.4 is devoted to the respective economic indicators before and during the Corona Crisis, analogous to its two forerunners. This main chapter is also rounded off with an interim conclusion.

Chapter 5 as the penultimate chapter deals in particular with the comparative evaluation of the previous chapters for the purpose of a comparative analysis and further discussion. In addition to the evaluation, commonalities are also examined and that is aimed at answering the scientific question. Section 5.1 begins with a partly philosophical problem definition to what extent the three crises can or may be called a crisis end. In section 5.2, the essential evaluation of the economic indicators in comparative discourse with each other is presented, followed by an

economic-ethical examination of the financial markets in section 5.3. At the end of the chapter, the hypotheses are verified.

Finally, in chapter 6 as a central part of the study, the whole chapter experiences a development of various recommendations for future crisis prevention, which answer an essential part of the research question and make a significant scientific contribution to the work.

The investigation is concluded in the final chapter 7 with a concised version of the most important findings. Here, in addition to the most significant results of the comparative analyses, a summary of the conclusions is provided. The final chapter is then devoted to the future challenges in crisis situations and how countries should best preventively position themselves. Further components of the work are the bibliography and a list of figures and tables.

2. GREAT DEPRESSION

The following main chapter contains a comprehensive description of the Great Depression of the thirties consisting of its background and consequences, followed by the applied crisis management and effects on the economic indicators, which are also closely related to the economic theories.

2.1. Background and causes

The origin of the Great Depression goes back to the First World War and its incidents. The war and its consequences led the industrial countries in Europe, such as France, England and especially Germany, to forfeit large parts of their positions (Rothermund, 1993: 22f.), causing the death of over 10 million people and twice as many injuries (Rattner/Danzer, 2007: 20). Additionally, there were countless losses of labour and an appreciable increase in debt (Ullmann, 2003: 226ff.). The USA entered the war in 1917 and benefited from the economic devastation in Europe. A key driver was the economics of war which helped large American companies to expand their production capacities and lay the foundation for double added value from 1914 to 1919. Further developments appeared in form of a change in the leading currency from British Pound to US Dollar, and simultaneously, the shift from the major financial centre in London to New York (Jäger, 1973: 49ff.; Menzel, 2010: 98). Due to these developments, the post-war period in the USA was characterized by a noticeable balance of payments surplus, especially in relation to higher goods and capital exports to Europe (Rothermund, 1993: 48). According to Galbraith, the nineteen-twenties and the subsequent years were, not accidentally but as expected, economically successful for the USA. Production figures from 1925 to 1929 increased by over 10%, and the automotive industry saw a 25% growth in new orders (Galbraith, 2009: 34f.).

The defeat in the First World War put Germany in a forced situation to pay reparations (Plumpe, 1984: 56ff.). To build up liquidity, Germany needed U.S. loans in subsequent years, which acted as a driving factor for the German economy's recovery. Nevertheless, Blaich relativized the situation with terms such as “dollar bill blossom” or “living off credit", even though investment activities in the mid-1920s were increasing, among other things in transport infrastructure, administration buildings, schools, apartments and hospitals (Blaich, 1990: 79). This economic recovery entered history as the “roaring twenties” and marked an upswing for the USA and many European countries, but largely driven by loan financed speculation fever (Plumpe, 2011: 80f.). In the USA in particular, the irrepressible economic optimism generated

a real estate boom and intense stock speculation. Galbraith saw the brief economic recovery as a “speculative illusory world” whose persistence should only be short of breath (Galbraith, 2009: 35f.). In the late twenties growing prosperity, supported by optimism and speculation fever, reached a level where small investors and corporations borrowed more and more money to invest in short-term expected returns on stocks (Jäger, 1973: 66f.). This optimism and financing were also reflected in technological inventions such as radios and automobiles (Blaich, 1990: 79).

At the end of the nineteen-twenties after the consumer goods market was saturated, the reality came to light. Production overcapacities turned out to be the result of overconfidence in the global upswing. The general oversupply of industrial goods exceeded the demand by far and led to price declines (Born, 1967: 31ff.; Blaich, 1990: 80, 94). The simultaneous loan-financed speculation fever led to further problems and a dangerous combination in particular in the USA and Western Europe, starting with nervousness on the stock markets and then resulting in price drops. Kindleberger identified the market peak in September 1929, which began to decrease in October, ending on the so-called “Black Thursday” (October 24, 1929) with the New York stock exchange panic reactions and start of the economic downturn (Kindleberger, 1973: 121f.). Europeans fixed the date to Friday 25 after the news of the stock market crash reached Europe. The sense of a stock market crisis caused considerable panic selling in Europe as well (Blaich, 1990: 7).

2.2. Economic consequences

A starting recession combined with huge declines on the capital markets (Galbraith, 2009: 17; Blaich, 1990: 7) rapidly resulted in a depression in December 1929, accompanied by massive price losses of $ 15 billion (Galbraith, 2009: 89). While the index was at 191 points at the beginning of 1928, it doubled to 381 points by September 1929 (Kindleberger, 1973: 111), which then fell to a low of just 41 points in July 1932 (Zschaber, 2010: 71; James, 2008). These were the first figures to show that the USA was hit the hardest by the crisis. Galbraith characterized this depression as lasting more or less ten years, with varying intensity, which is confirmed by the following data: GDP in 1933 was a third lower than in 1929. It did not return to its 1929 level until 1937, but then dropped again immediately. Until 1941, the volume of production remained at the 1929 level, but at least the unemployment rate fell below eight million for the first time after the outbreak of the crisis. Nearly thirteen million people were out of work in 1933, meaning every fourth American was unemployed. In 1938, every fifth person

was still without a job (Galbraith, 2009: 207; U.S. Congress. Joint Committee on the Economic Report, 1953).

While manufacturing capacity utilization slipped noticeably, an increased number of bankruptcies also became apparent, just as profit declines of many companies. When illustrating the four-year development in the USA from 1929-1932, the fall in wholesale prices for agricultural products by 50% and the decline in total industrial production also by almost 50% weighed heavily (Junker, 2004: 131f.). In connection with the price drop a credit systemic crisis was revealed as debts had to be settled by lower profits (Rothermund, 1993: 40ff.). This lack of money paved the way for a run on the banks and their deposits, which led to a bank collapse. Investors lost confidence and demanded deposits in cash, forcing banks to liquidate loans. From 1929 to 1933, thousands of American banks had to file for bankruptcy (40% of all banks), which led to a loss of control within the US financial system. This was namely under the influence of international money transactions and stepped over to the European markets. With the gradual withdrawal of American capital, the banking crisis also gripped Europe. Additionally, measures were arranged including custom duties and import restrictions in order to protect domestic products from the outer world (Mußler, 2008). The volume of world trade then suffered a dramatical collapse by 1933 (Kindleberger, 1973: 179f.; League of Nations, 1934: 51).

In addition to the USA, many other countries also initiated protectionist measures based on the "run for your lives" principle, and thus the crisis worsened (Junker, 2004: 131). The gross national product of the seven leading industrialized countries suffered a loss of 20% between 1929 and 1932 (Temin/Voth, 2001) and the unemployment figures developed a similar correlation. James worked out that, during the worsening situation of the crisis, almost every third employable citizen was jobless in Germany, and every fourth in Great Britain (James, 1988: 24; Mitchell, 1978: 67f., 180f.). After the USA, Germany was second most hit by the crisis and dependent on American (foreign) loans after the First World War. In addition, there were reparation requirements of the Young Plan that had to be met. These set in motion money flows in the billions between the individual nations, which were not matched by any exchange of goods or services (Blaich, 1990: 81f.). With the exhaustion of domestic finances and the "run on Germany" by foreign creditors, the banking crisis began in Germany. Simultaneously, there was a run by citizens on their savings deposits (Kindleberger, 1973: 163f.). To avoid a total bank crash the government nationalized major banks as the last resort. Therefore Dresdner Bank

at a rate of 91%, Commerzbank 70% and Deutsche Bank 35% were nationalized (Born, 1967: 167ff.). James sees the banking crisis and its outbreak in summer 1931 as the decisive initiator of the transition in the German depression, providing similar examples and parallels with other European countries. Comparable crises occurred in other Central and Eastern European countries with banking failures in Austria und Hungary. In France, after the collapse of the Banque Adam in Boulogne-sur-Mer in November 1930 and the bankruptcy of the Banque Nationale de Credit, there were also fears to lose the stability of the banking system. In Italy, a major banking crisis could only be avoided after the government's intervention (James, 1988: 275ff.).

Besides the banking crisis, other indicators reflecting the German economy in the period manifest a fairly straightforward result: a drop in national income by almost 40% from the end of 1928 to 1932. Similar figures are recorded in the area of wages and salaries as well as in trades and industrial production (Wagemann, 1935: 50ff., 95, 176f.; State Council of the American Occupation Area Germany, 1949: 600). Rationalisation measures resulting in numerous layoffs, bank closures and the rise of unemployment figures concerned over six million people (Wagemann, 1935: 16ff.). The beginning of crisis management implemented by the German government contained an austerity policy consisting of measures such as tax increases, restrictive monetary policy and cuts in public spending, mainly in the form of reduced salaries for civil servants or social benefits (Blaich, 1990: 65ff., 96). Citizens' dissatisfaction with these tough programs shifted from the economic crisis to a new one after Hitler came to power in January 1933 and prepared the ground for the National Socialism in Germany (Hüwe, 2007: 46ff.).

2.3. Policy measures

2.3.1 The USA

The following subsection is dedicated to crisis management by the US government during the Great Depression. Exceptions to this are the decisions of the Federal Reserve System (Fed), whose reactions to the crisis are examined in subsection 2.4.1.

For several years after 1929, economic indicators remained at a sometimes catastrophic level, with unemployment rising as high as 25% and the industrial production index at 63 (compared with 100 in 1929). Nevertheless, for a long time there was a firm and influential opinion, especially from the state leadership, that the depression would correct itself over time. Galbraith

experienced these assertions from Washington at first hand and regularly in the form that everything would be better “soon”. Statements saying that the economy was “fundamentally healthy” and that the “fundamentals” were “solid” were part of the regular debate between President Herbert Hoover and the White House along with predictions of an immediate recovery. In addition, discussions on the economy lingered with the constant emphasis on the need to maintain and renew confidence in the economy. This also meant limiting the role of the state. Ultimately, these principles, taken as a whole, formed one of the errors in American economic history, as it would later emerge. The hoped-for self-healing powers of the markets and the economy were still non-existent up to and including 1932. The few government measures implemented at that time ultimately had no appreciable effect. These initially included a reduction in income tax, which, although considered bold and constructive, remained practically imperceptible in times of already low tax revenues. Among the other few state measures granted was the establishment of the “Reconstruction Finance Corporation” in December 1931, which had the intention of helping severely weakened banks out of a tight spot. In addition, under Hoover's term of office, something was also done to increase spending on state construction contracts. The result was an increase to a record level, but this placed a heavy burden on government spending and the budget deficit. This governmental turning away from conservative financial policy earned not little criticism, as it damaged confidence in the economy and could potentially worsen the depression (Galbraith, 1995: 98ff.).

Through the presidential election in 1932, the United States received Franklin D. Roosevelt as a new president from 1933, who was to have a lasting impact on the period that followed the Great Depression. His announcement in the 1932 election campaign to pursue a responsible financial policy and a balanced budget initially did not really differ in tone from Hoover's principles (Galbraith, 1995: 100). With the change of government, however, the urge for change also grew, after the “credible salvation of the market” became questionable over time and previously prevailing views made people think (Galbraith, 1995: 106). This became concrete with the so-called 'New Deal', an economic and political program, which consequently marked Roosevelt's political direction in the USA. In summary, it lasted five years (until 1938) and was characterized in established literature as a path to recovery, signifying a simultaneous political turnaround in which “the power of the federal government was expanded”. It consisted of public work projects, stabilization of industrial and agricultural production, and reforming the financial system, including regulating the stock market to prevent events like the 1929 crash (Smith, 2014: 2; Soboczynski, 2005).

The codified program items can be specified as follows. In June 1933, the temporary National Recovery Act (NRA) was implemented, which corrected Hoover's previous austerity policy. During his tenure, industrial companies were forced to lower their prices due to the slump in demand. This step, however, went hand in hand with wage cuts and a high layoff rate, which in turn limited overall economic demand and worsened the crisis. Roosevelt's NRA intended to introduce elements of central economic planning into the liberal market organization by giving companies permission to stop the previous price cuts and thus also wage cuts and layoffs through joint agreements. The new basic concept also made it possible to improve the situation of employees through trade union formations and to promote the mood (Kindleberger, 1973: 211; Galbraith, 1995: 106f.).

An essential pillar of the New Deal was the direct employment of the unemployed through the targeted creation of jobs, organized by the so-called Public Works Administration (PWA) and the Works Progress Administration (WPA). Both organizations were mutually dependent and responsible for major state projects for the construction of office buildings or bridges, but also other infrastructure such as theaters or art halls. While the award of contracts and project planning fell into the competence of the PWA, the WPA dealt with the specific creation of jobs. For one, the measure of success lay in what had been built, and for the other, how many people were given a job (Galbraith, 1995: 113).

Closely linked to the previous section, another important initiative of the New Deal could not be missing, that of social security. For this purpose, the Social Security Act (SSA) was brought into being in 1935, which provided for the creation of state social insurance and thus counteracted the previous system of socio-political abstinence. Nevertheless, the coverage remained at a very modest level (Galbraith, 1995: 114f.).

In addition to government building projects and worker support, there were still enough items for which the New Deal needed funds. These included the Federal Emergency Relief Administration, which provided grants to the impoverished for relief purposes, as well as special farmers' programs and other government contracts for infrastructure improvement. The latter were run in May 1933 under the name Tennesse Valley Authority (TVA) and concentrated locally on the Tennesse River Valley, which was supposed to take the dam and nitrate plants under state control and to coordinate flood protection and river navigation (Kindleberger, 1973:

211; Galbraith, 1995: 118). Then there was the Civilian Conservation Corps (CCC), whose labor service moved young men off the streets to do community forest work (Galbraith, 1995: 118).

One piece of legislation of lasting substance was the government-sponsored guarantee of bank deposits, which both Hoover and Roosevelt long resisted. Both saw the risk that the weaker banks could become a burden for the strong ones. The implementation of the above decision then resulted more from the initiative of Congress than from the democratic government (Kindleberger, 1973: 211). With the enactment of the two new securities laws "Security Act" of 1933 and the "Security Exchange Act" of 1934, particularly spectacular stock market excesses such as those of 1929 were to be prevented in future by obliging the issuers to issue new securities completely. The latter led to the US stock exchanges being placed under state supervision in order to strengthen their credibility (Galbraith, 2005: 204f.).

All in all, the list of measures in this subsection shows a striking departure from the "orthodox economic thinking" of the time, in whose world view the free market was the maxim and could not be reconciled with state intervention or excessive borrowing (Galbraith, 1995: 108). Even if the New Deal with its economic and social reforms was not without political controversy and critics also expressed skepticism about its effectiveness, it at least laid the first foundation stone in the direction of a welfare state. And when Roosevelt's first term was in its final phase, the economy gradually showed an upward trend. Both agricultural prices and incomes showed the first signs of recovery, as did economic activity in general. In 1936, for example, the national product returned to the level of 1929, indicating that the economic policy measures of the New Deal did not fail to have the desired effect (Galbraith, 1995: 124).

2.3.2 Europe

The following subsection contains the reactions of European governments to the Great Depression of that time including partial backgrounds. In order not to go beyond the scope of the investigation, the focus is only on the largest and most influential economies of the time for the purpose of the desired overall statement.

Starting with Germany as the currently largest economy in Europe, it should be noted in advance that the fight against the crisis fell through during the term of office of four different Chancellors due to its explosive nature. The first and longest term of office was represented by

Chancellor Heinrich Brüning from March 30, 1930 to May 30, 1932. He ordered the country to pursue strict austerity measures on the basis of a forced deflationary policy. Ongoing cuts in civil servants' pay, state wages and salaries and social benefits paved his political way, along with increases in taxes, contributions and duties. In addition, it was exposed to even more difficult circumstances due to the Young Plan, which obliged the country to make reparation payments after World War I. As a result, his room for maneuver was quite limited and partly also externally controlled (James, 1986: 48ff.). Nonetheless, in the historical, political or economic literature, he was given the attribute of an exaggerated “hunger chancellor”, which resulted in particular from the consequences of his decisions (James, 1986: 70f.). It was the imposed shortage of money, which developed a vicious circle in Germany and was characterized by a rapid decline in population purchasing power and tax revenues as well as a considerable decline in industrial production. The resulting layoffs caused a drastic increase in the number of unemployed, which obliged a very large part of the population to use public funds and left a corresponding picture of melancholy. In the end, the decline in government spending was not crowned with success. In addition to citizens' displeasure, economic activity was also underscored by many corporate insolvencies and payment difficulties for banks (Blaich, 1990: 65ff.). At that time, the dirigistic requirements from the Young Plan and the Reichsbank Act, the credit expansion and devaluation of the Reichsmark were precarious and were so clouded with the idea of economical housekeeping that the scarcity of the money supply remained a central characteristic (Blaich, 1990: 95f.).

The nationalization measures as a direct counter-reaction to the banking crisis in Germany at the time were an exception. The big banks in particular got into major liquidity problems due to the foreign capital withdrawals, which is why the Reich government under Brüning felt compelled to use state funds to strengthen their equity base and thus save it (Born, 1967: 170ff.).

A first change in economic policy took place with the replacement of Brüning by Franz von Papen, who shortly after his appointment as chancellor started the so-called ‘Papen Program’ in September 1932 as the first monetary expansion. This focused on programs for public investment and thus did justice to a revival of the job creation policy. To speak of an expansive economic policy here would be too much, but the first revolutionary upheavals could be felt (Blaich, 1990: 108f.). Von Papen's successor, Kurt von Schleicher, also relied on government procurement, which he financed by issuing tax vouchers, during his short term in office of several months. Current tax payments were treated as loans and repaid in the form of tax rebates

in times of better budgetary situations. This program, with a volume of 500 million Reichsmarks, also formed the basis of Hitler's job creation and investment policy, for whom the slowly beginning economic recovery played into the cards and paved the way for National Socialist ascent. By focusing on the armaments industry, an effective step was also taken to eliminate mass unemployment, which in 1933 fell below four million for the first time and created a positive mood among the population (Blaich, 1990: 114ff.).

Without going into the different political measures and reactions of the leading European countries at the time, it can be said that Germany was not the only country that had to deal with deflationary problems in the crisis phase. Starting with the United Kingdom (UK), it should first be noted that the island nation was hit by the crisis at an early stage. The background was the deflationary circumstances, which resulted in particular from the decision of the then finance and economics minister Winston Churchill in 1925. He ensured that the pound sterling returned to the gold standard (Galbraith, 1995: 119) and thus marked a step towards conservative fiscal policy, in which the British currency was overvalued. The excessive exchange rate led to overpricing of British goods in the export business, from which the export economy suffered greatly. The stock boom in the USA towards the end of the 1920s made matters worse, tying up large amounts of British capital on Wall Street. The government responded by raising interest rates to discourage investors from transferring more money to New York or Paris. This move, however, prevented investment and consumption; instead, the increased interest rates, deflation and capital outflow had a direct impact on the British economy. The Wall Street Crash and the resulting interruption in the outflow of further capital finally gave the impetus to temporarily lower the prime rate from September 1929 and to make it possible for companies to obtain credit at more bearable conditions, as well as for consumers. This was an initial economic policy measure to counter the crisis, but it was not enough. The interim collapse of world trade had immediate consequences for the British economy, with the value of British exports falling by about 38% from 1929 to 1931. The overvaluation of the British pound therefore paid its tribute and the government started with unpopular austerity measures in the second half of 1931 in the form of cuts in government spending, unemployment benefits and public service wages to balance the national budget (Pressler, 2013: 91ff.). The development of the country called for a more weighty solution and so the government finally decided on September 21, 1931 to abandon the peg of the British pound to the gold standard in order to subject it to a 20% devaluation. The resulting reduction in the price of its articles on

the world market served the country as an export boost and a stimulation of the labor market in order to initiate the first steps out of the crisis (Sturm, 2011: 59).

The next steps in the abandonment of deflationary policy were implemented in stages after the Bank of England lowered the key interest rate, which had recently been raised again to 6%, to 2% from February 18 to the end of June 1932. Another endeavor was the conversion of the 5% war loan repayable from 1929 to 1947 into a 3% war loan, payable in 1951 at the earliest, to reduce the costs of servicing the national debt. The conversion was a success in the autumn of 1932, as the loan was exchanged in 92% of the cases. It had a volume of 2,085 billion pounds and was equivalent to 27% of the national debt. The primary political goal was to reduce the price of money to support the English economy in the 1930s. The housing construction industry in particular benefited from the policy of cheap money, which was confirmed by a 70% increase in construction volume between 1931 and 1933 (Kindleberger, 1973: 188f.). The second half of the 1930s was also devoted to armament efforts, which also contributed to the economic recovery (Pressler, 2013: 91). Overall, it can be said that the abandonment of deflationary policies was an essential part of how the UK was able to overcome the crisis.

France, as another great power in Europe, was initially spared in parts from the early phase of the Great Depression, only to be hit by the events all the more from 1931-32 (Pressler, 2013: 91). The country was not affected by the collapse on Wall Street, nor was it so dependent on American loans or, like Great Britain, on exports. In addition, the country protected its domestic agricultural market by imposing high tariffs so that the fall in agricultural prices on the world markets did not affect French farmers. The gold peg of the franc was still maintained, and the currency was considered undervalued, but its stability strengthened the French economy. The country experienced moderate inflation during this phase, while neighboring countries suffered from deflation (Pressler, 2013: 96f.).

Despite the buffer against the crisis due to its undervalued currency and the special economic position of the country, the signs began to change noticeably towards the end of 1930. Finally, France could not withstand the effects of the global collapse either. Despite the lower importance of exports compared to other European heavyweights, French exports experienced a noticeable slump and gradually built up deflationary pressure. The manufacturers were exposed to price pressure because the goods intended for foreign countries now had to be sold domestically, even though the market was saturated. With the departure of Great Britain from

the gold standard in September 1931, the previous currency advantage of the undervalued franc was also lost. Now the franc and other currencies appeared to be overvalued and the country - like Great Britain before it - began to experience considerable problems in its export business, which made it necessary to cut prices. French agricultural prices plummeted by 30 to 40% as there was no adequate opportunity to sell the agricultural overproduction either domestically or abroad. While the unemployment rate remained below the 5% mark and the situation was better than in Great Britain or Germany, the discontinuation of German reparations payments based on the Young Plan and the Hoover moratorium caused a strained budget situation. Austerity measures such as cutting government spending and public sector salaries became the order of the day, while devaluing the franc was out of the question, driving the country even further into deflation. Even when the USA abandoned the gold standard in 1933 and devalued the currency, the country stuck to the gold peg and lost competitiveness. As a result, the French price level was around 20% above that of the world market. After a period of several years of political instability, changing governments and popular displeasure due to many public austerity efforts, it was not until 1939 before the first stabilization began. This development was preceded by moderate currency devaluations since 1936, which however did not have the desired effect due to the adherence to the gold standard (Pressler, 2013: 97ff.).

In summary, the conclusion can be drawn for the two major European powers in the Great Depression that they got into economic difficulties, especially due to their adherence to the gold standard. Both countries were classic examples whose currencies were overvalued and thus suffered from the inflexibility of exchange rates. As a result, their export industries lost competitiveness and almost collapsed. The deflationary policy necessitated by the gold standard hampered domestic demand and was intensified by high interest rates and reduced government spending. Only a departure from the gold standard provided the scope for effective crisis management (Pressler, 2013: 103).

The example of Sweden shows that the way out of the crisis does not have to be based solely on major currency conversions. Here, more of its own efforts were to be emphasized, which crystallized in a stronger job creation policy and simultaneous credit subsidies. This focus was even reinforced from January 1933 with the imposition of public job creation programs and planned investment expenditures, which were attributed a noticeable share in the upswing. This was offset by additional inheritance tax revenue, which was to be used for refinancing in the

medium term. Finally, the arms industry rounded off the economic recovery (Kindleberger, 1973: 190f.).

Finally, to complete the section, reference should be made to another burdening factor that has so far only been hinted at in the context of the existing deflationary policy. The enormous foreign trade and tensions in the exchange rate system were partly responsible for the crisis spreading internationally. In addition, the high gold exchange standards were identified by many countries as a cause that was intended to prevent foreign trade deficits and the outflow of gold. The protectionist Smoot-Hawley Tariff of the USA, which caused many countries to raise their tariffs, dealt a severe blow to the international trading system from 1930 onwards. High customs duties and import levies then paved the way for cross-border trade activities, in which the protection of the domestic economy was the primary concern (Plumpe, 2011: 83f.).

2.4. Economic indicators

2.4.1 Key interest rates including additional US-crises (digression)

The next graphic includes the key interest rates of the Fed before, during and directly after the Great Depression. The concrete data of the Great Depression can be found under no. 5 with the widest shaded background.

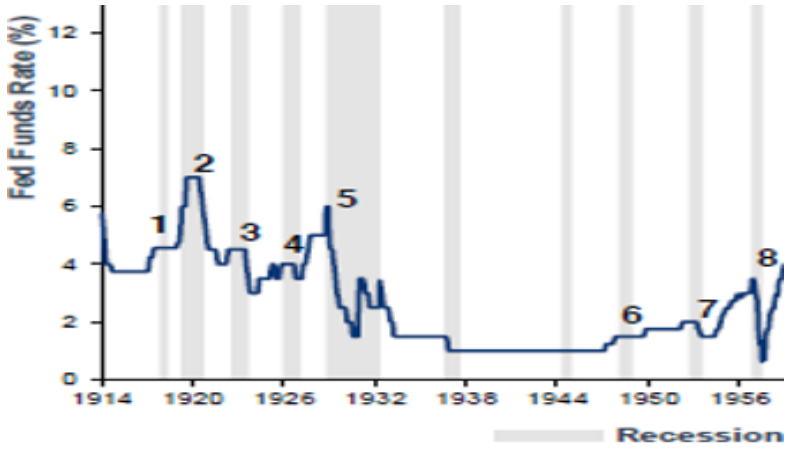


Figure 1: US Recessions and Effective Federal Funds (1914 - 1958)
Source: Fed, Stoeferle & Valek AG (2018: 59)

Point 1 shows the graph's first recession after the World War I, which lasted only seven months from August 1918 to March 1919. The background to this recession was a fiscal shock caused by the direct consequences of the war. In fact, the phase at the end of the war was characterized by a decline in the military and its production. This was accompanied by overcapacities of

labour, which were caused by the influx of returning troops and that resulted in an unemployment increase. The Fed tried to counteract this development with a low interest rate policy and thus also supported the Treasury Department in its sales of the Victory Bond issue. The low interest rate policy was in line with the bond prices (Tallman/White, 2017: 4).

Point 2 shows the next recession, more deserving the title of a “depression”, which started 10 months after the previous one and lasted from January 1920 to July 1921. The country was still characteristically in the transition from a war to a peace economy. Both the high public debt at that time due to the former enormous war expenditures and the annual consumer price inflation rates - which had even increased by more than 20% by the end of the war - continued to weigh on the economic situation. As a result, federal spending was drastically cut from 1919 to 1920, from $ 18.5 billion to $ 6.4 billion (-65%). The Fed also raised key interest rates to a record level at the time, which further favored price deflation. From 1920 to 1921 this became so severe that the consumer price index fell by 15.8% from June 1920 to June 1921. The Fed's tight monetary policy was evidently having an impact here and had a significant impact on the collapse of the monetary base from 1920 to 1921 (Murphy, 2009).

Even if the depression described was very painful and the unemployment rate reached a high 11.7% in 1921, its recovery nevertheless resulted in the very successful “roaring twenties” in American history. This does not change the fact that the two following recessions under points 3 (May 1923 - June 1924) and 4 (October 1926 - November 1927) were officially classified as mild recessions due to declining economic indicators and growth. They were only able to slow the steady growth, but not to stop it (Peicuti, 2014: 56). The described economic path of the “roaring twenties” marked a phase in which the USA and many European countries were in upswing mainly driven by credit financed speculation fever (Plumpe, 2011: 80f.). The subsequent events and effects have already been reported in detail in sections 2.1 and 2.2. However, point 5 from August 1929 to March 1933 is dedicated to, as described, the harshest of all crises, the Great Depression, so the gray shaded background is the widest. The stock market crash as well as the following banking collapse and the worldwide downturn went down in global economic history as an unprecedented impact (Mußler, 2008). The graph shows that the Fed cut key interest rates immediately when the crisis broke out, but also raised them again to almost 4% in the relatively short term. This step was not conducive to the long period of severe depression, especially since general economic activity slowed and many other countries

had also entered recessions. In addition, the monetary base did not grow as monetary policy was not relaxed enough (Fricke, 2016; Davies, 2012).

The next recession between May 1937 and June 1938 is also called “Roosevelt recession” in the literature and was characterized by a 3.4% decline in GDP and more than four million unemployed (19.1%). The causes stem from tight fiscal policies resulting from efforts to balance the budget after Roosevelt's “New Deal” was spent. Further aggravating circumstances were to be found in the stock market crash of 1937 and in a new Social Security Insurance program in which $ 2 billion were held in a Federal trust fund and large sums of money were withdrawn from payments (Roncal, 2009).

The next recession took place from February to October 1945 and is thematically related to the end of the World War II, when the decline in government spending resulted in a sharp drop in GDP, which technically indicated the trend towards a recession. This was the result of demobilization and the shift from war to peace, which subsequently caused GDP to fall by 12.7% but the unemployment rate remained moderate at 5.2% (Padala, 2011). Another post-war recession followed between November 1948 and October 1949 (Point 6) was characterized by a brief economic downturn in which GDP only fell by 1.1% and unemployment rose slightly to 5.9%. To make matters worse, a large number of war veterans rejoined the workforce and ousted the remaining civil workers. This led to an increase in unemployment, which was not nearly as worrying as inflation was at the time. Accordingly, there has been very little government intervention (Roncal, 2009).

The next phase under point 7 describes a recession that arose immediately after the Korean War. GDP fell by 2.2%, at least the unemployment rate was on a not that bad level at 2.9%, the lowest level since World War II. At the end of the Korean War, more funds were allocated to national security. This phase was also marked by a strong inflation period, which the Fed curbed with a monetary tightening. The resulting increase in interest rates led to a lack of consumer confidence and reduced product demand (Roncal, 2009).

In the context of this subsection, we remain indebted to the knowledge whether similar central bank policy decisions regarding the key interest rate have occurred in Europe during the Great Depression. For this purpose, Germany should be used as the heavyweight of Europe in the comparative context.

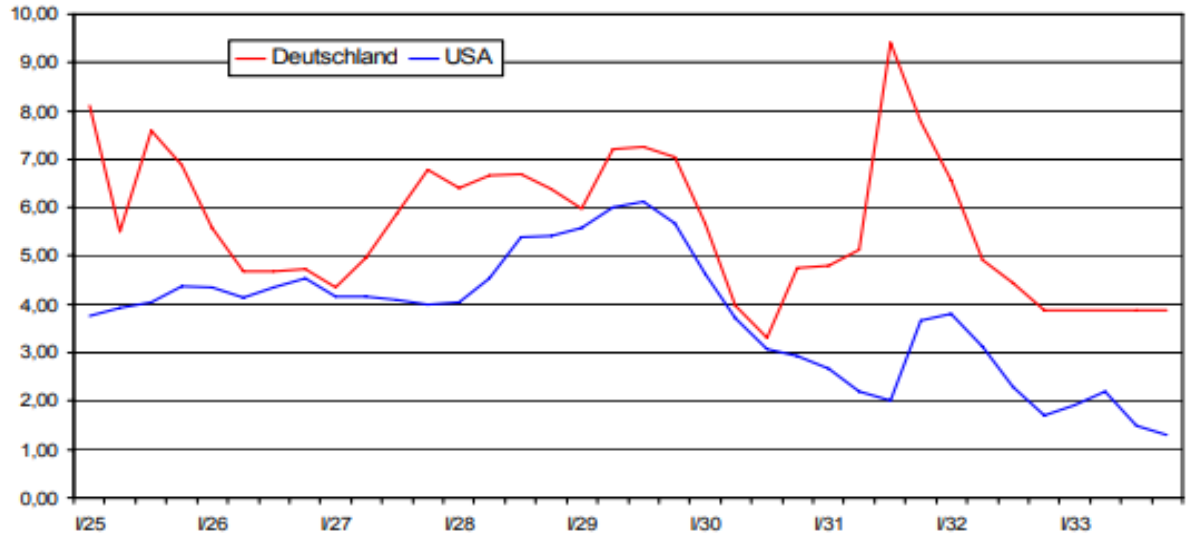


Figure 2: Comparison of discount rates between the Reichsbank in Germany and the Fed in the USA from 1925 - 1933 (in %); *Source*: Pfister (2019)

At first sight the viewer tends to declare German interest rates as a high interest rate phase. It is trivial to note that the relatively high discount rates of the German Reichsbank made loans for domestic economic subjects such as companies and private and public budgets expensive, which showed monetary policy as restrictive at the time and, accordingly, the Reichsbank did not pursue an active economic policy. In addition, high interest rates attracted foreign capital in the form of foreign exchange and consequently increased the liabilities of German banks (Rosengarten, 2001: 73ff.). The deterioration of the economic situation due to the crisis forced the Reichsbank to lower the discount rate from 7% to below 4% within one year, starting in 1929 (Haase, 1962: 42f.). A short-term rate hike in 1931 to over 9% due to the German banking crisis was quickly corrected and lowered again to 4% in order to accommodate the difficult economy. Nevertheless, at this level the German key interest rate still outperformed all European interest rates, mainly that in France (2.5%) and in Great Britain (2%). Rosengarten aptly described the Reichsbank's interest rate policy at the time as a “special way” to support the German economy in attracting foreign capital for investment. This reasoning is understandable against the background that by the turn of the year 1931-1932 the German interest rates were twice as high as comparable foreign rates. The lack of liquidity in Germany was further aggravated by the debt service for war bonds and the compensation payments in the form of reparations. This makes it clear that Germany was dependent on foreign loans (Rosengarten, 2001: 73ff.).

Looking at the development in UK as another large and important economy in Europe at that time, remarkable parallels can be seen in the course of development, especially with Germany.

Figure 3: Bank of England: Policy rates in the UK from 1925 - 1935 (in %)

Source: Bank of England, FRED (2020)

2.4.2 Inflation

The following graphic shows the US inflation trend at that time in a 15-year period around the Great Depression (1923-1939).

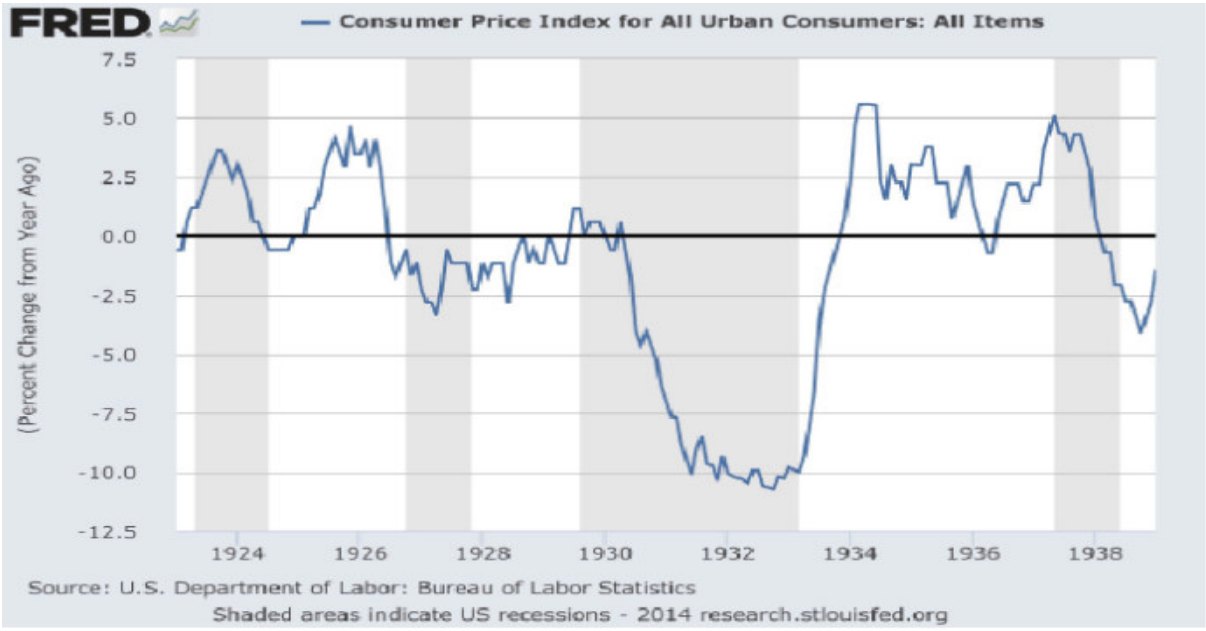


Figure 4: US consumer price index (all items) in times of the Great Depression

Source: U.S. Department of Labor: Bureau of Labor Statistics (2014)

The recessions and crises that occurred at that time are visible. Not surprisingly, the Great Depression is the thickest gray column in this graphic. The volatility of inflation shown before and after the Great Depression extends far beyond what we have experienced in the past 20 years with its dimensions from -10% (highly deflationary) to over 5%. And yet the period immediately after the First World War was one of the most volatile in the last century in terms of consumer prices and largely influenced by the direct (economic) consequences of the war. From 1922 until the end of the decade the consumer prices remained relatively stable. Inflationary drivers were increasingly food prices, which showed a higher volatility and a remarkable increase in 1925. However, the relative stability from 1922 to 1929 did not mean that policymakers were not concerned with price changes: heated debates about prices and attempts at comprehensive regulation were formative for this period (Reed, 2014).

In 1929 the signs suddenly changed. In terms of price, these were very worrying times as the prices of many goods fell below their 1913 level. This included falling prices, which in combination with enormous declines in production followed the declining economic trend. In terms of numbers the overall consumer index fell from October 1929 to its lowest point in April 1933 by 27.4%, as seen in figure 4 (Reed, 2014). In addition, the economic key figures for the whole of 1932 were in a catastrophic state. Real GDP and industrial production were far from stabilizing and on the way to a decline from the pre-crisis peak of 27% and 52% in 1929 (Davies, 2012). All major consumer price categories were lower in June 1933 than in June 1929. The most volatile commodity prices were still food and clothing which accounted for almost 30% of a household's expenses. At that time groceries in particular took over a more dominant part of the market basket, compared to today. And this proportionality was even higher in times of the world wars (Reed, 2014).

With regard to money in circulation it should be noted that there were two serious bank failures in February 1932. This reduced the monetary circulation by 33% compared to the high of 1932 and also exacerbated the crisis. This liquidity crisis inevitably led to bank failures, also because the Fed did not take into account an increase in liquidity preference. Reflections on the adjustment of monetary policy were then decided after February 1932 when the central bank started extensive open market operations to facilitate monetary policy. This included the detachment from the gold standard in 1933 in order to expand the money supply, track price increases and end deflation. Regarding the first point, government bonds worth $ 1 billion were bought in the summer of 1932, which corresponded 15% of the monetary base (Davies, 2012).

Furthermore, inflation was driven by the Roosevelt government's overvalued gold request which led to the so-called “golden avalanche”. From the revaluation of gold in February 1934 to October 1941 the gold inventory rose steadily from $ 7 billion to $ 22 billion. The increased inflation after 1933 has to be interpreted in the common opinion of the economists as the engine of the upswing. While this went hand in hand with a renewed inflation of the asset price bubbles and nominal gross national product even after the Great Depression, the lack of investment failed to stimulate the real economy's desire enough (Herbener, 2014).

The next deflationary phenomena started in Mid-1937 to June 1938, accompanying the recession there. According to the prevailing opinion in the literature, the causes are to be found in fiscal spending cuts and further, the monetary contraction of 1938, which stifled the recovery and contributed to still another downturn. Inflation reappears – as seen in figure 4 - as the World War II era nears and the arms industry also got a share in economic growth (Waiwood, 2013; Irwin, 2011).

As an exemplary comparison of Europe's largest economy today, the following graphic shows the development of price changes in former Germany (Deutsche Reich) from 1929 to 1933. Even if the effects were not as bad as in the USA, the course affects at least the same years.

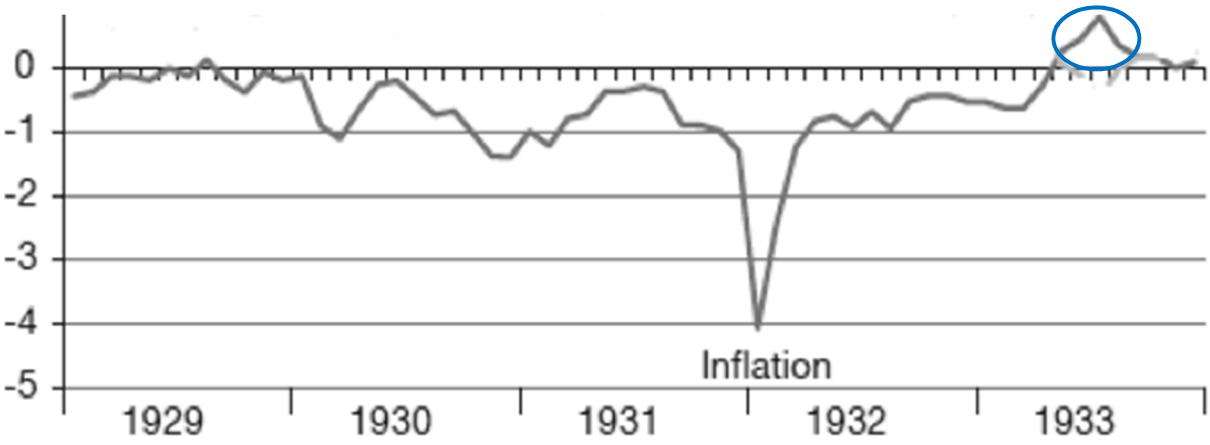


Figure 5: Development of price changes in Germany (in %)
Source: Fratzscher/Kriwoluzky (2020:14); Daniel/ter Steege (2019).

The figure shows the negative trend in prices in Germany. It was not until 1933 that deflationary developments were left, which confirms a pattern comparable to that in the United States. And in Great Britain, the first inflationary tendencies also did not appear until after 1933, as can be illustrated graphically.

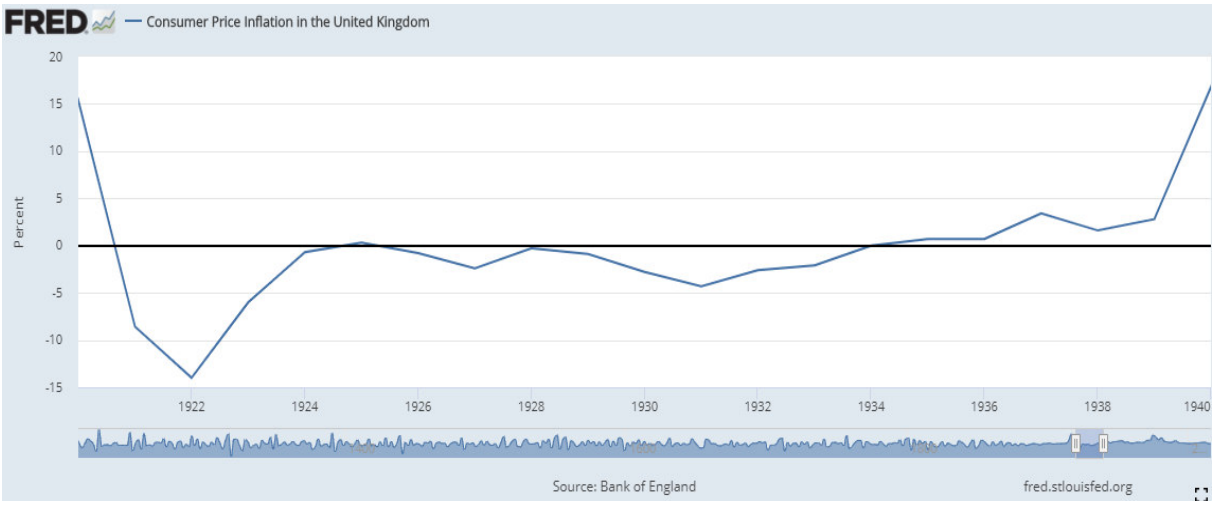


Figure 6: Consumer price inflation in the UK 1920-1940 (in %)

Source: Bank of England, FRED (2020)

2.4.3 GDP development

The following subsection begins with the GDP development in the US during the Great Depression, with the following graph impressively illustrating the slump that GDP had to endure at that time.

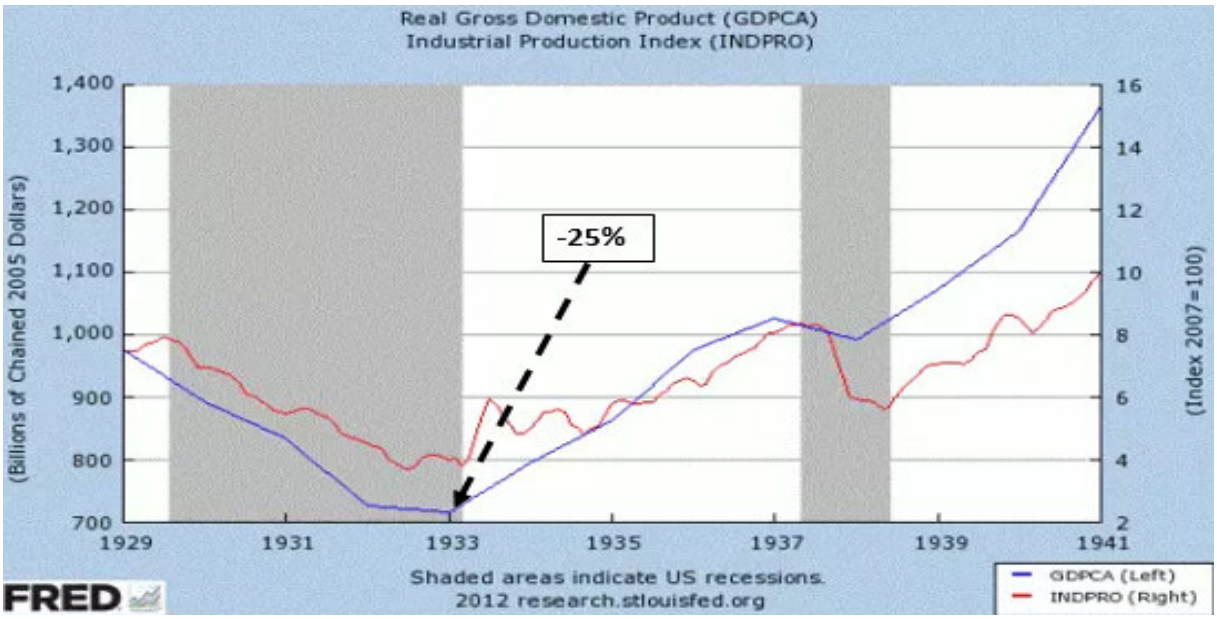


Figure 7: Real Gross Domestic Product/Industrial Production Index 1929-1941 (in %)

Source: Federal Reserve Bank of St. Louis (2012)

Real GDP fell by a significant 25% between 1929 and 1933, which already indicated in numbers that the extent of the decline in real GDP was considerably more burdensome than during the Great Recession. Davies cites various factors that contributed to the poor GDP development. For one thing, the economic conditions in early 1932 were worse than ever in the history of the United States. Both real GDP and industrial production had not only stabilized, but were on the way to a decline from the 1929 peak of 27% (GDP) and 52% (industrial production). To make matters worse, deflation raged at an annual rate of -10% in 1932, which increased the real burden of outstanding debts at an alarming rate and also had a negative impact on GDP. In addition, there were two major bank failures before 1932, limiting the money supply by 33% from its 1929 high (Davies, 2012).

For comparison with Germany - as the largest European economy - the following graphic shows the development of the gross national product in the German Reich from 1926 to 1939. Although it did not show 100% the same development as in the USA in the respective years, a tendency to be compared exists.

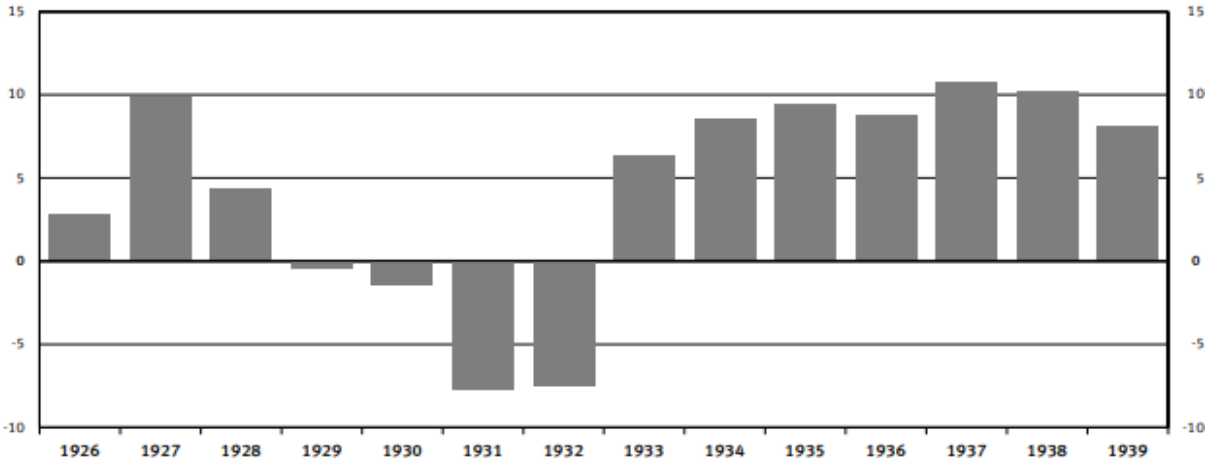


Figure 8: Gross national product (GNP) in Deutsche Reich 1926-1939 (in %)
Source: Räth (2009: 206)

The graphic does not include GDP, but GNP values, however, the differences between the two key figures are not particularly significant at this time, so that comparability is not essentially restricted. The results initially show an economic upswing from 1925 to 1928 after the end of hyperinflation in 1923 and the subsequent currency reform. In the period between 1929 and 1933, traces of the Great Depression can be seen. In the recession period from 1929 to 1932, the gross national product decreased in real terms by a total of 16%, the equivalent of 4.3% on

an annual average. The results are also accompanied by deflation in prices. As is well known, the economic upturn after 1933 was influenced by strong state interventionism and armament activities after the Nazis seized power (Räth, 2009).

And in the UK the economic upward trend began - as graphically evident - also in 1933.

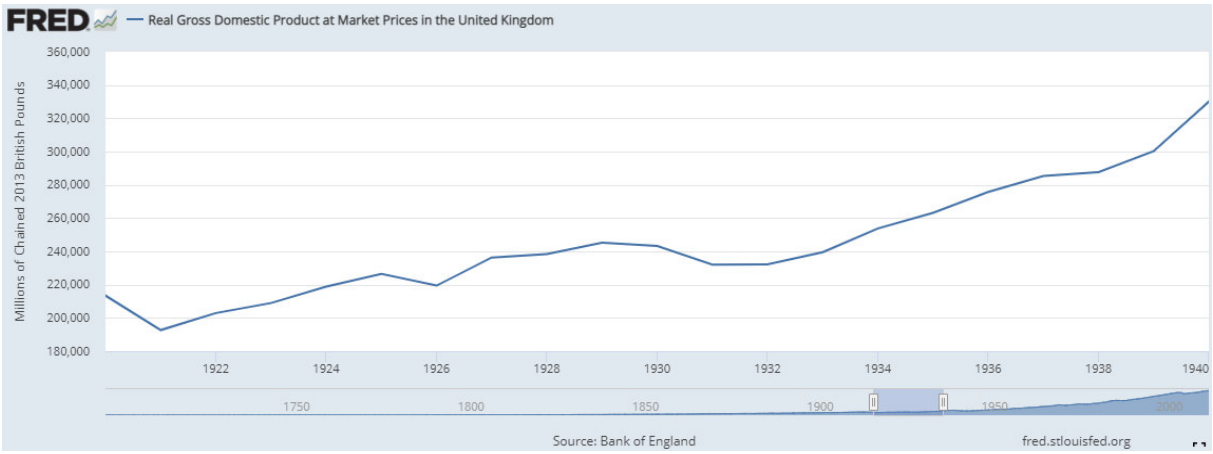


Figure 9: Real GDP at Market Prices in the UK 1920-1940

Source: Bank of England, FRED (2020)

2.4.4 Public and private debt developments

Looking at a 100-year period between 1900 and 2000 in U.S. history it is striking that the public debt level within the Great Depression period is not comparable to that of the post-war period of World War II and its special circumstances, even if a marked rise in the crisis phase is visible.

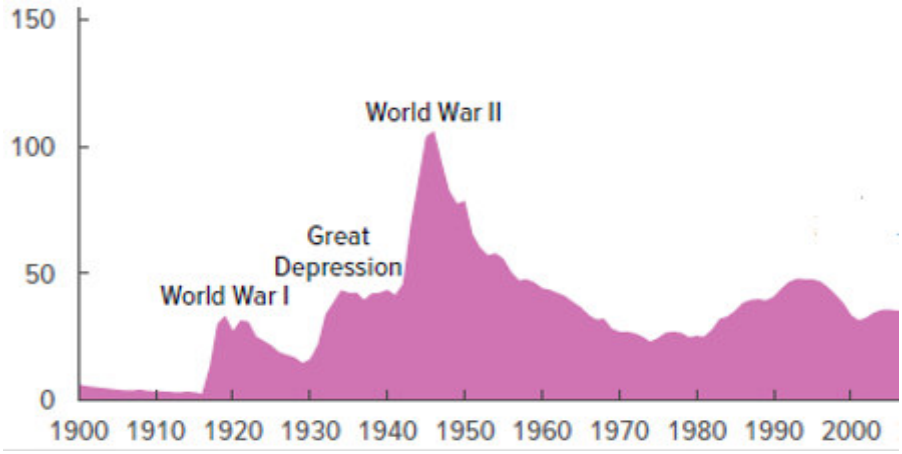


Figure 10: Federal debt held by the public (100 years view in % of GDP)

Source: Congressional Budget Office of the United States (2020: 1)

The magnitude of just over 40% of GDP shows the apparently divergent political trend at the time of the Great Depression towards savings-oriented monetary policy (e.g. Münchau, 2008: 6f.).

The issue of austerity policy has only recently returned to the public debate after the troika around the ECB, the IMF and the European Commission imposed various austerity measures on the problem child Greece in 2015 to clean up its balance sheets in order to keep the country's economic crisis in check. Without going into the different assessment patterns, it must be noted in the overall context that thinking patterns in the context of austerity have a long history. In this respect, the argumentative statements of the economic historian Schui shows that "the belief in austerity ... has a long tradition" and "the ideology of saving ... already existed in the 18th century". Such old thought traditions have in common that they warn against excessive growth and against excessive consumption expansion. These include religious traditions and ecological thinkers, such as the British economist Thomas Malthus in the late 18th century. The primary goal is a reduction of the state ratio, which is based on the assumption that a lower state share in overall economic activity - in the form of a lean state - allows more room for private initiative, revitalizes economic growth and thus restructures public finances. The accompanying history of ideas reveals various components, on the one hand the connection to many intellectual traditions that are paired with characteristic features of neoliberalism. Schui adds in this context that neoliberal thinkers argue in the way that "individual freedom can only be secured if the state apparatus and state expenditures are kept as small as possible. This should be guaranteed by long-term rules - for example in the form of constitutional provisions - which are as far as possible removed from democratic control". These comments are supported by the example of Greece within the EU, as shown above, which uses the Maastricht criteria, which the advocates of austerity insist on observing. Another important component of austerity policy is always the deregulation of the labour market, in the form of labour protection regulations such as protection against dismissal, which is intended to ensure lower wage levels. The declared aim here is to lower costs for companies so that the country concerned becomes more competitive and growth increases again. In order not to leave the theory presented as finally, Schui makes use of the historical example of the era of the interwar period, in which savings-oriented economic policy was generally labeled as failed (Schui, 2015).

A comparison with three other world powers until the year 2007 shows similar curves in a historical long-term comparison, but with different levels. The war phases mentioned stand out and are obvious.

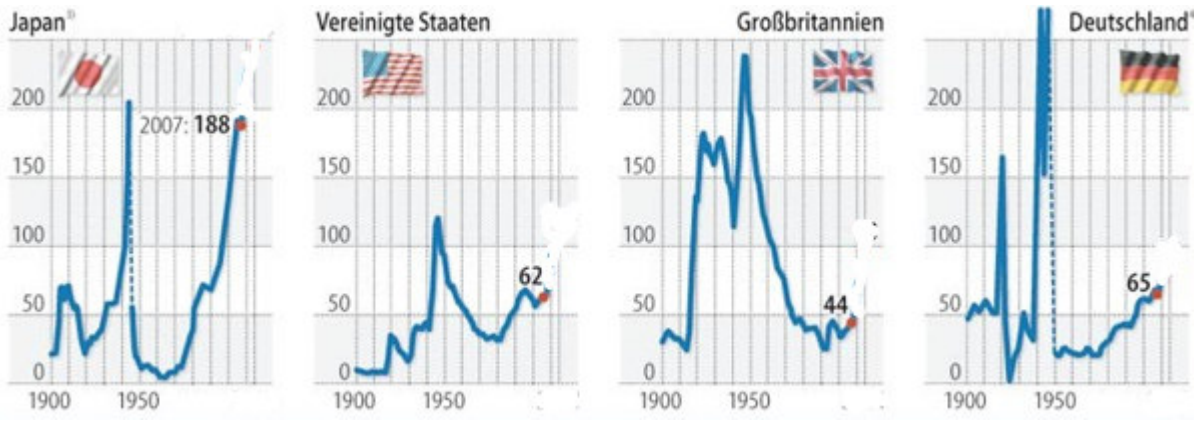


Figure 11: Historical government debt of four World Powers (1900-2007, in % of GDP)
Source: Göbel (2010), based on IMF, Eurostat, Deutsche Bundesbank/Federal Bank of Germany, interim estimates.

The heterogeneous picture shows a more or less surge in the debt ratios in the industrialized countries shown (Göbel, 2010). The dashed line related to German history shows the then currency reform in 1948 after the war, which erased the debt and eliminated the excess of money. For this purpose, the banknote press was used beforehand to finance the National Socialist. So there was more money in circulation, but suffered from currency devaluation. With the currency reform in 1948 to the "Deutsche Mark", Germany had no more debts and the creditors lost their claim against the state. Additionally, the graph shows that the debt ratio after the reunification of East and West Germany rose from 40 to 60% (Plickert, 2013).

To round off this subsection, we also look at the development of private debt ratios with a focus on the period of the Great Depression. Furthermore, the aim is to identify similar developments between the two perspectives in this subsection. For this, a look at the following historical course is indispensable, in which six important nations are examined over the long term.

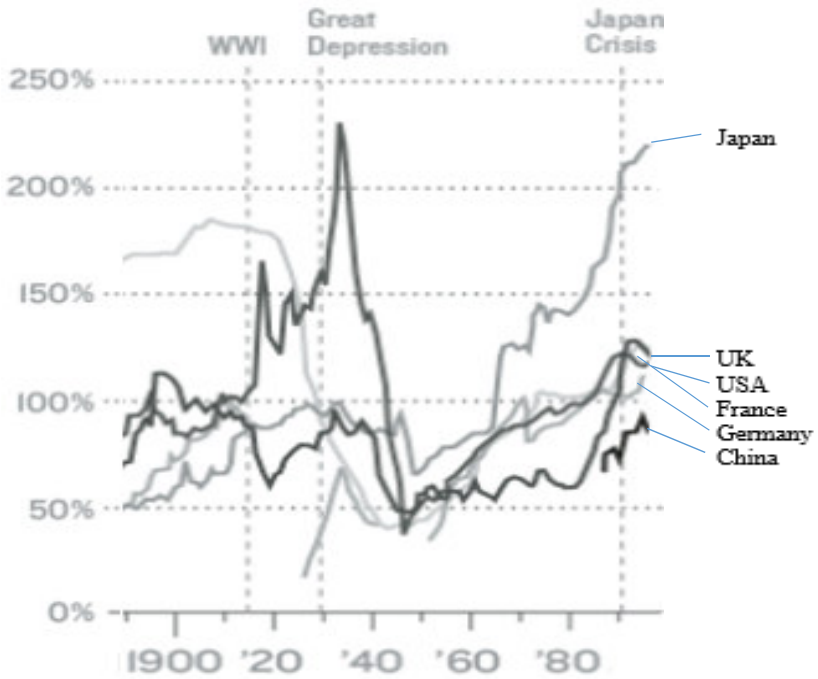


Figure 12: Private Debt to GDP 1890-1990; *Source:* Vague (2016)

The graph shows the private debt development of Japan, UK, USA, France, Germany and China over a period of 100 years, in which the decisive moments of major crises stand out. While at the beginning of the graph the corridor of the private debt ratio to GDP is still between 50 and 100% and the curves rise through the First World War, a clear jump in the level can be seen in the middle of the graph. This can be explained at the highest level of over 200% in the USA in line with the Great Depression, the level of which is then reached again in the early 1990s during the Japanese crisis. These peaks have one thing in common. These brief bursts of out-of-control private debt growth have verifiably led to a fundamental crisis, as happened in the United States in 1929 and Japan in 1991, to name just two. This is because so many loans are being granted that there is overcapacity. There is far too much of something or being produced or built and too many bad loans being made (Vague, 2016).

2.4.5 Stock markets and real estate developments

It is self-explanatory that the data relating to share price developments during the Great Depression is more limited than for newer crises. A historical review of the 1930s, however, allows at least a look at the Dow Jones stock index at that time which in contrast to the S&P 500 already existed back then.

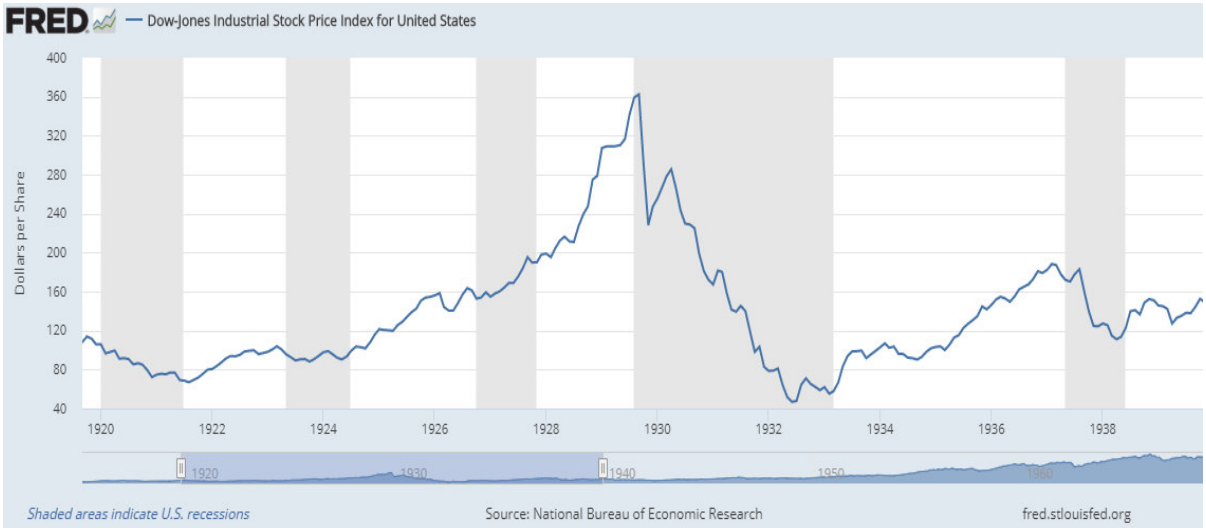


Figure 13: Dow-Jones Industrial Stock Price Index for United States development 10 years before and after the Great Depression;

Source: National Bureau of Economic Research (2020)

Figure 14: Share Index of Statistisches Reichsamt (Statistical Reich Office)

Source: Seidl/Brandt (2018)

It becomes clear that it is a stock market index that is significantly more volatile than the Dow Jones. But a parallel just looks out. The effects of the ridge depression on the stock index were felt for more than ten years. In both charts, five years of price decline dominate, and the number of listed companies also falls. There are parallels in both charts in that the positive consequences of the so-called Golden Twenties are graphically reflected. Thanks to new branches of the economy and revolutionary inventions such as radio, sound film and assembly line production the economy at that time was experiencing a real boom with new companies regularly entering the market and later going public. The economic boom stimulated the stock market, both in the

USA and in Germany, and attracted many speculators. Due to the industrialization after the First World War stock exchange trading increased by leaps and bounds.

Still there is a difference. While the stock market crash on Wall Street took place on 'Black Thursday' in October 1929 and only arrived on Friday due to the time difference in Europe, Germany had its own 'Black Friday' two and a half years earlier. Because on May 13, 1927, prices on the Berlin stock exchange of the 300 companies listed there already started to drop when the speculative bubble reached its limit and endangered the stability of the financial system. The Reichsbank then cut back on securities loans in order to curb speculation on the stock market, with fatal consequences. The average price on the Berlin stock exchange then plummeted from 204 to 139 on May 13, 1927, but recovered to an average high of 170 at least until 1928. A final crash and further bursting of the bubble finally became a reality then in October 1929 when the Black Thursday shook the New York Stock Exchange. At the same time, there was a definite crash for both stock exchange barometers, with the consequence that the USA subsequently canceled the loans granted to Germany on a large scale in order to solve the suddenly arising liquidity problems. As a result, various companies filed for bankruptcy and banks got into trouble, with the result that Germany experienced its first banking crisis (Seidl/Brandt, 2018). A connection between both stock exchange barometers is therefore not to be dismissed out of hand.

As expected, the UK stock indices didn't look much different either. The instant downhill movement after 1929 immediately catches the eye:

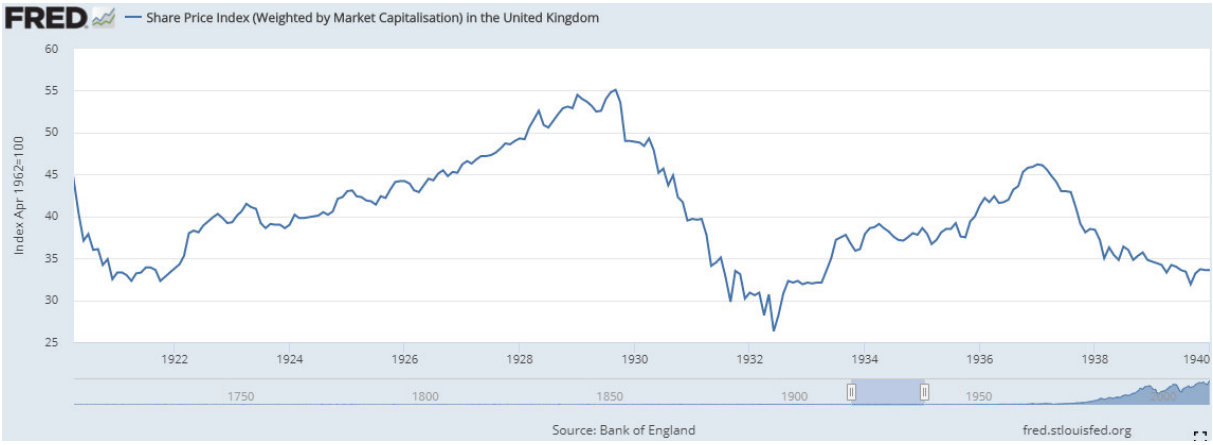


Figure 15: Share Price Index (Weighted by Market Capitalisation) in the UK 1920-1940
Source: Bank of England, FRED (2020)

2.5. First crisis results including economic theories

The experiences from the Great Depression shaped John Maynard Keynes' views - as one of the most known economists - and reinforced his skepticism towards classical economic theory (Rothermund, 1993: 11f.). The economic historian Fritz Blaich called Keynes theory a "business cycle theory" (Blaich, 1990: 144), while Galbraith even declared it a "revolution" (Galbraith, 1994: 118). No matter what attribute you give it, it is still one of the most influential theories in economics today. His work "General Theory Of Employment Interest And Money" (Keynes, 1936) created the basis with which Keynes wanted to convince other economists of the necessity of a fundamentally new macroeconomic economic theory and questioned the prevailing "market optimism", which almost ignored the problem of unemployment (Rothermund, 1993: 11). The global effects of the Great Depression called for a theory that explained why the economic development was so devastating and from which state action could be convincingly argued. This was the impetus why Keynes began to work on such a theory in 1930 and his "General Theory" resulted from several years of research and discussion. It no longer focuses on price relations and adjustments, but on the overall demand for goods. In addition, he explained why a regaining of full employment can only be achieved by increasing the overall demand mentioned and not by flexible prices and wages (Rothermund, 1993: 159ff.).

Until the era of the Great Depression, the way of thinking of the so-called "liberal theology" (Galbraith, 1994: 107) or also called the "laissez-faire model" (Matis/Stiefel, 1991: 171) existed primarily since the 19th century, in which, according to Galbraith, the view was held "that more competition serves the common good and not less competition" (Galbraith, 1994: 107). Matis and Stiefel add contextually that in this type of "economic control" state interventions were rejected as contrary to the system and that rather trusts "the work of the invisible hand, the forces and the self-regulation ability of the market" were incumbent on supply and demand, "according to which everyone who pursues his self-interest also contributes to the common good at the same time." Connected with this, "private ownership of the means of production and trust in the market mechanism" are also seen as central characteristics under capitalism. In summary, the model of liberalism provides that an economic policy can be dispensed with according to the following principle: "The best economic policy is not to make an economic policy" (Matis/Stiefel, 1991: 171f.).

The events of the Great Depression did not leave the economists unaffected (James, 1986: 316). In addition to the influential school of thought of the Keynesians already mentioned, the monetarists also emerged, both of whom still have a decisive influence on economic science today. While Keynesians define the stabilization of macroeconomic development and the balancing of cyclical fluctuations as tasks of the state in times of crisis, monetarists hold the view that an unnecessary shortage of money (deflation) triggered the crisis (Rothermund, 1993: 11). Among the most important monetarists are Irving Fisher and Milton Friedman in particular, who are regarded as two of the creators of modern monetary theory (Matis/Stiefel, 1991: 173). In the case of Fisher, it should be emphasized that he was affected by the direct effects of the Great Depression and had speculated on almost his entire fortune during this period. As a lecturer in economics, he became discredited when he publicly misjudged the financial markets and suggested that the stock markets had suffered only a temporary setback. Influenced by his own experience, he made a change in his view of economics, for which he was subsequently ennobled by none other than Milton Friedman as "the greatest economist America has ever produced." Titled in various literature as the "ideological father of monetarism," he also went down in history as America's first neo-classicist who pursued the theory of equilibrium, in which supply and demand at a given price level are in a state of equilibrium (Dittli, 2013).

According to both Fisher's and Friedman's recommendations, an independent central bank should steer a monetary policy in the interests of price stability, which ensures that the money supply and economic activity are in harmony with one another. Price stability is therefore a central prerequisite for the smooth functioning of the economy. State intervention would jeopardize stability and distort the market. Contrasting the positive and negative points antithetically, it can be stated that one of the positive achievements in monetarism is the emphasis on monetary policy. Admittedly a policy to which politicians should not have direct access and which even more secures the neutral role of money. On the negative side, it should be mentioned that this theory dismisses all other doctrines as heretical, namely Keynesianism (Rothermund, 1993: 11).

A further consideration of the differences between the two main theories reveals additional dissent. While Keynesianism as a macroeconomic imbalance theory assumes that markets can get out of balance in the long term, especially in times of crisis, equilibrium-oriented macro theories such as neoclassics or monetarism, on the other hand, assume that markets are not unbalanced or at least find their way back to equilibrium very quickly. Keynes' criticism is also

oriented against the classic assumption that money functions as a pure medium of exchange (Rothermund, 1993: 12). In times of crisis, in particular, there is also the need to hoard money in the bank or to sit on cash instead of spending it. Viewed negatively, this "liquidity preference" promotes the shortage of money, depresses prices and curbs production (Galbraith, 1995: 121). An interventionist countermeasure is required (Rothermund, 1993: 12).

Classical monetary theory, in which money acts purely as a medium of exchange, was not the only economic theory that Keynes argued against. Say's theorem, named after the French economist Jean-Baptiste Say (1767-1832), was considered to pave the way for a supply theory in which weak demand in the economy was denied. Shaped by the ideas of Adam Smith, the motto for this theory (Galbraith, 1995: 93) was that every production also generates its sales (Matis/Stiefel, 1991: 127). Galbraith described the structure of this theory as "wonderfully simple": "The money to buy them on the market comes from the sale of any commodity. The price absolutely inevitably includes wages and interest costs, rents and profits (or losses), all of which add up exactly to the amount that is required to purchase the goods. The return flow of income from the price represents exactly the purchasing power that is required to buy the product. According to the rules of arithmetic, there could be no gap in demand" (Galbraith, 1995: 93). Overproduction, therefore, is only caused by a temporary misdirection of capital, which in the sense of this theory is caused by "state interventionism, trade union policies, cartels, and tariff protection," which would never have existed under pure market conditions. If the market functions, technical advances and rationalization are not seen as a problem either, since the labor force thus reduced is taken over again by new areas of production (Matis/Stiefel, 1991: 127). So far so good.

The sobering realization finally came at a time outside the norm, like that of the Great Depression in the 1930s, when the above theory became debatable (Galbraith, 1995: 93). Keynes' rejection of Say's law was gradually strengthened in the point that specifically addressed the connection between savings and investments and its effects on employment. He assumed that not all of the savings flow into the economic cycle via the financial market. This interrupts the cycle between saving and investing and means that total demand is less than supply (Galbraith, 1995: 121). To clarify the situation of the Great Depression, there was a marked slump in sales of durable consumer goods such as radios and cars from October 1929 as a reaction to the outbreak of the crisis. Income therefore does not necessarily have to be spent or invested. In uncertain times or doubts about the future, it is not uncommon for money to be

hoarded in cash or at banks. In addition, banks may react overcautiously out of concern or because of bad loans and not lend money. This leads to the fact that money has been withheld from the economic cycle. In addition, there could be a lack of solvent borrowers, especially in times of crisis. And prices are only elastic to a limited extent, and the same applies to wages. As demand falls, production falls and leads to layoffs. Lack of or less income leads to an intensification of the depressive effect. The 1930s were decades of evidence of an under-employment equilibrium in which the economy settled down to a permanently low level in which only those who were less affected by the crisis or who had reserves could regularly make expenditures. This entire process chain resulted in an irrevocably bad mood at the end of the twenties and caused a rethink among various economists. Dormant factories and permanent unemployment were not selective, but became everyday economic life. The sad but inevitable realization of the thirties had prevailed that there could be continuous unemployment and general depression. Galbraith's conclusion on this is: “Say's theorem is not unassailable” (Galbraith, 1995: 92ff.).

Finally, in this section of the interim conclusion including the economic theories, it should be noted that the background of Keynesianism was the Great Depression. The voice of Keynes received public recognition in the course of the criticism of the Versailles Treaty as well as when the British returned to the gold standard in 1925, but a decisive influence on the world of economics did not take place until the era immediately following the crisis. He had no problem with launching a justified verbal attack against Winston Churchill (Galbraith, 1995: 119) when he returned to the gold standard, which corresponded to the ideology of the “laissez-faire” and the economic interests of the British “middle class” (Gilpin, 1987: 126). Keynes revealed new principles that increasing a government deficit can be economically beneficial and provide a path to recovery. Shocked by this development, the followers of the conventional doctrine had to notice that Keynes even wrote an open letter to the US President Roosevelt on December 31, 1933, which was published in the New York Times and contained the following message: Special attention must be paid to the increase in overall economic demand resulting from government and credit-financed expenditures. Keynes has arrived across the pond at the latest since this event (Galbraith, 1995: 119f.).

Despite all the praise, it is important to maintain neutrality in the sense of independent research and science and also to mention the points of criticism that have primarily produced opponents of Keynesianism. It is true that Keynes was also considered as an expert in the analysis of a

state of imbalance from the neoclassical doctrine. But since for mentioned representatives of the equilibrium orthodoxy such a state can be only a temporary state of emergency, Keynes' teaching must not be “General Theory”. The events surrounding the global economic crisis are classified as an “unfortunate industrial accident” rather than a fundamental structural break. The monetarist interpretation also follows this reduced view, which says that if the Fed had pursued a sensible - and not convulsively deflationary - monetary policy, such a global economic crisis would not have occurred in the first place (Rothermund, 1993: 13). The meaning and effect of the New Deal, which, according to Keynes' theory, boosted the economy through extensive government contracts, also garnered differing views. Opinions exist that attribute the program more to a new attitude of the state towards the economy than to its effect on overcoming the crisis, as it were as a transition from laissez-faire capitalism to the modern intervention state (Matis/Stiefel, 1991: 141). The literary scholar and expert on American studies, Gert Raithel, wrote in the context of the New Deal that “the war saved the New Deal from history” (Raeithel, 1989: 34). And indeed, economic recovery was increasingly driven by the armament policy in the run-up to World War II (Matis/Stiefel, 1991: 141).

While the popularity of Keynes and his theories for coming to terms with the Great Depression and in the post-war period and reconstruction continued for a longer period of time, the monetarist revival took place in the 1970s. The reasons for this were complex. On the one hand, the neoclassical adherents managed to dilute the originality of his teachings, and on the other hand his practical recipes for fiscal control during the period of “stagflation” were called into question (Rothermund, 1993: 13). In the 1950s and 1960s, resentment arose for the first time when important markets such as financial and labor markets could not develop freely due to strict regulation; the foreign exchange market was even closed. In addition, the neoliberal counteroffensive began to gain momentum in the late 1960s, curiously promoted by the successful combination of full employment and the expansion of the welfare state. Because with full employment there was an increase in strikes, the wage share rose massively in western countries and the offensive of the trade unions was now perceived as disruptive by the economy and its functionaries. Especially the demand for more co-determination, which increasingly followed a left-wing orientation. In addition, social democracy gained momentum and an environmental movement was launched that questioned capitalism from an ecological point of view. All these points disturbed the companies and their representatives, who then again became reachable for demands by neoliberal economists to consistently weaken the trade unions and the welfare state. After the financial markets were also gradually deregulated later

in the year, global corporations in particular shifted their profit-seeking activities increasingly from the real economy to the financial sector. These processes can thus be seen as upstream steps in the development of the Great Recession (Schulmeister, 2013: 115ff.).

3. GREAT RECESSION

The second main chapter contains a comprehensive description of the Great Recession – the former financial crisis - consisting of its background and consequences, followed by the applied crisis management and effects on the economic indicators, which are also closely related to the economic theories. The available data also made it possible to go historically into parts of other crises by way of a digression.

3.1. Definition and background

3.1.1 The term „Subprime Crisis"

The term "subprime" goes back to the classification of the loan recipient. A subprime debtor is usually a private borrower with a reduced credit rating. In spite of unfavorable financial conditions, many financially weaker families were offered loans to buy property, but they encountered payment difficulties over the course of the loan (Schäfer, 2009: 152).

3.1.2 Background and causes

The causes of the Great Recession are manifold. There are a number of those which provoke this crisis through their interactions. To capture the full background, a monocausal view will not suffice (Elschen/Lieven, 2009: V). In terms of an accompanying framework and developmental conditions, it has to be considered that the concept of optimism is an essential part of American culture and way of thinking. This contains not only a positive belief but also certain hopes (Gerbert, 2009), which, in addition to the classic "American Dream", are also reflected in the current President Barack Obama's campaign slogan "Yes, we can!" (Mieder, 2009: 119). As a result, worries about the future and existential fears are far less frequent in the USA than in other countries, as illustrated, among other, by more permissive consumer behaviour (Czaykowski et al., 2009: 43). The savings activities of American households have shown a significant decline since the 1980s, the concentration was devoted to consumption, which often also resulted in debt (Rickens, 2005: 135f.).

The concrete origins of the Great Recession can be traced almost a decade back, to March 2000, when the bubble forming around "new economy" companies bursted. Advanced investor interests in the said segment developed into dependent variables in the process of company start-ups and led to the emergence of more initial public offerings. The expectations of these investors in technology-oriented companies often were unrealistic and fictitious. Accompanied by commercializing circumstances, they provided an opportunity for exaggerated valuations of

the companies, which came to a provisional end with the bursting of the “dotcom” bubble (Chorafas, 2009: 89; Zandi: 2009: 5; Bischoff, 2008: 61; Jahnke, 2008: 5; Glebe, 2008: 104).

The terrorist attack in New York on September 11, 2001 also had a negative influence, as aircrafts hijacked by terrorists caused the towers of the World Trade Center to collapse. This event favored the downward trend on the world's stock markets (Henkel, 2009: 70). Consequently, global financial markets were considerably impacted and the economic circle reacted nervously. In order to prevent a prolonged decline on the American stock exchange, including the consequential effects for a weakening US economy, the Fed led by Alan Greenspan used the instrument of low interest rate policy as a countermeasure (Jahnke, 2008: 5). They cut interest rates from 6.5% to 1% in 2003 (Münchau, 2008: 6f.). In a situation with an interest rate constellation below the inflation rate, it was more rational for every American to borrow money than to save it. So they reacted quite logically to the incentives they had been given. The interest rate cut enabled the banks to offer loans at cheap prices, which was met with an extremely positive response and resulted for the first time in a negative savings rate in US history. An economist would sum up the situation from an economic perspective in the following way: “Economists say real interest rates are negative, that is, interest rates taking into account inflation expectations. That is, anyone who had money in the bank and saved every year lost value. Anyone who lends money, however, made a profit every year, because the interest payable is less than the loss of value” (Russell, 2018; Münchau, 2008: 6f.). The often already indebted American citizens were therefore motivated to take on new debt at these conditions (Rickens, 2005: 138). The inviting circumstances tended to be initiated by terse credit checks that did not require debtors to show equity obligatory (Schäfer, 2009: 155).

As the U.S. economy began to show signs of recovery and the terrorist attacks have been processed step by step, the key interest rate was gradually raised from 1% to 5.25% from 2004 onwards in order to avert an inflationary threat. This step also had an impact on the mortgage rates (Bloss et al., 2009: 155f.) resulting in an increased real estate demand. With regard to increased property prices, homeowners felt safe and were not averse to further consumer loan offers. Finance distributors focused on low-income “subprime” citizens due to higher interest rate gains in this expanding segment and sold them as special investments. These “second-class” loans are less secured than “normal” real estate loans with the effect that their interest rate is higher. Not only borrowers wanted to benefit from favourable interest rates. Banks and other investors invested in the booming U.S. real estate market, specifically in financial

instruments such as mortgage / asset-backed securities. These mortgage bonds secured with subprime loans offer higher interest rates but also significantly higher price risks (Stroisch et al., 2009: 1). Some economists have criticized this area as further part in the crisis' emergence. In the run-up to the crisis, this trend-like development took place on this scale, contrary to the expectations and ideas of all those involved. Many finance economists associate the starting point in 2002, after Alan Greenspan explicitly welcomed the introduction of these financial instruments like securitizations or Collateralized Debt Obligations (Krassin et al., 2009: 69ff.): "These instruments have been used to disperse risk to those willing, and presumably able, to bear it. Indeed, credit decisions as a result are often made contingent on the ability to lay off significant parts of the risk. Such dispersal of risk has contributed greatly to the ability of banks - indeed of the financial system - to weather recent stresses. More generally, the development of these instruments and techniques have led to greater credit availability, to a more efficient allocation of risk and resources, and to stronger financial markets" (Greenspan, 2002).

Securitisations such as asset-backed securities are generally understood to be securities in which original claims from bank loans, leasing and credit card contracts, mortgages or high-risk bonds are converted into tradable securities with the aim of selling them to interested investors. Here also, financing companies can be interposed and thereby in addition to the investors to a spreading of the credit risk (Braunberger/Fehr, 2008: 200ff.). It should be noted that under these newer forms of financing, lending processes have been eased in practice (Huth, 2009: 49ff.). The original concept of securitization was to better manage and diversify the risks combined with lending by outsourcing loan receivables to special purpose vehicles. The result was visible after 2007 (Krassin et al., 2009: 69ff.): "an innovation genie was first let out of the bottle and eventually devoured the system, to the horror of its creators." More terms such as "the mortgage time bomb" (Tett, 2009), financial hydrogen bombs built on computers by 26-year-old MBA graduates (Krassin et al., 2009: 69ff.) were the order of the day.

Low interest rates combined with profligate lending practices paved the way for real estate sales to soar since the turn of the millennium, reaching their climax in 2006 and decreasing again thereafter (National Association of Realtors, 2014). The borrowers were now exposed to very high repayments and interest rates, as the initially favorable interest rates from the credit relationship, oriented to the capital market development at that time, only lasted in the initial phase. These had long been overtaken by the current interest rates of the Fed. The variable and therefore unpredictable interest rates are now proving to be high and acting as a risk factor.

Citizens who took out a real estate loan and left the property with the bank as security were particularly problematic. After the loan installments were not paid, the banks used the deposited as pledges and initiated, among other things, forced sales which over time became dramatic and led to a decline of real estate prices. The decline in house prices was so dramatic that the proceeds were unable to pay off the loan. The indebted borrower now not only had to deal with the situation of losing his house, but still retained his debtor status, as part of his real estate loan had not been settled. The high default rate of the so-called subprime loans led to an oversupply in the real estate sector and, correspondingly, further price collapses (Bartmann et al., 2009: 15).

Shortly before the crash in 2007, the dramatic events rolled over when borrower defaults led directly to the crisis. The resulting consequences ranged from high write-downs to insolvency filings, especially American real estate banks proclaimed (Bischoff, 2008: 11ff.). Some German banks also had to grapple with these consequences in 2007, brought about by speculation on the financial market and write-offs on their balance sheets amounting to billions (Strotz, 2007). Investors all over the world lost within an extremely short time billions (Salzman, 2018). The citizens, who were heavily indebted as a result of real estate loans, now also had to accept the restriction of other consumer activities. The resulting general reduction in demand for all types of products was most pronounced in the automotive sector. The purchase of an automobile on installment credit should decline sharply in the course of this (Berndt, 2009: 8; Hierschel, 2009: 91). In addition to the tense financing situation on the part of customers, the so far risen oil price also had a noticeable dampening effect in the demand situation of automobile manufacturers (Dill/Lieven, 2009: 205). Global carmakers such as Toyota, Chrysler or General Motors suddenly fell into a crisis situation. In a subsequent step, the market for accessories also became vulnerable (Henkel, 2009: 150).

In summary, it can be illustrated that the determinants of the Great Recession from the US mortgage market present themselves as detectable. As the real estate market in the USA emerged as a lucrative investment for a decade and promised high returns through investments in financial instruments as a result of the “real estate boom”, German as well as other European banks also sought out this market for themselves. Despite known and potential risks, many bank advisors encouraged their clients and small investors to invest their capital in the US mortgage market. As a result, the crisis, initialized as a Great Recession in the USA, was able to expand to the international capital markets (Huth, 2009: 49ff.).

3.2. Economic consequences

The economic consequences of the Great Recession can be described as wide-ranging and affected the whole world. At the latest with the insolvency announcement of the formerly powerful investment bank Lehman Brothers on 15 September 2008 in the USA, the crisis took on more than a purely commercialized position. Just one day later, the rescue of the world's largest insurance company American International Group (AIG) through state bridging loans amounting to $ 85 billion took center stage in the economy. Other financial institutions escaped such a doom only with great difficulty or, alternatively, got caught up in acquisition processes of competing companies (Brunner, 2009: 48). The business journalist Ulrich Schäfer certified the situation a degenerate drama in an openly critical and capitalist context: “The bosses of America's leading banks hit the 'Mother of All Slaughterers' tonight. They're trying to save Wall Street this Sunday. The heart of capitalism. It's about the fate of Lehman Brothers, one of the five big investment houses. And it's about the fate of all the big banks, the future of the world financial system. For almost a year and a half, everyone believes the financial crisis is an American problem. And the USA would have to solve this. But when the American investment bank Lehman Brothers goes bankrupt on September 15, 2008, a huge hurricane breaks out, which affects the entire globe within a few weeks.” A summary and conclusion of his statements allows speculation space for a crisis repeat after almost 80 years at the Wall Street, as the centerpiece of global capitalism. At the beginning of 2007, the bankruptcy of numerous homeowners in the US real estate market finally shook the financial markets and degenerated into a crisis there, closely followed by a banking crisis (Schäfer, 2009: 178ff., 187f.).

The economic effects accompanying the Great Recession were impressively visualized in the news of October 15, 2008: the USA brought up the largest budget deficit in its history at $ 455 billion. The economic situation, expenditures on the labor market and support on the financial market have left their mark (dpa/Reuters, 2008). The crisis ultimately prospered into a global affair, regardless whether the affected states conformed to a classification as industrialized, emerging or developing countries (Sinn, 2009: 52f.).

At the beginning of the crisis, there was still a certain degree of optimism in Germany to be able to withstand the crisis. In his government statement of September 25, 2009, Peer Steinbrück, then Federal Minister of Finance, was still inclined to downplay the situation in Germany: “Overall, it shows that the German 3-pillar system is relatively robust in international

comparison. The German supervisory authority, BaFin, is convinced that the increased risk-bearing capacity of German institutions in recent years is sufficient to offset the losses and to ensure the safety of private savings. ... What the US is now doing on a massive scale with the $ 700 billion rescue program is something that we did in Germany quite deliberately for affected banks such as IKB, Sachsen LB, Bayern LB and West LB months before to have. Therefore, and because the conditions are different for us, a similar program in Germany or Europe is neither necessary nor useful. It is still true that the financial market crisis is above all an American problem!" (Steinbrück, 2008). Schäfer took a falsifying position in response to these encouraging statements by Steinbrück: "If only it were so. That same evening Steinbrück squats with Germany's most important bankers. A small circle that knows how to report something disturbing. ... They warn that a major German bank is in danger: Hypo Real Estate, a powerful real estate financier and one of the key players in a boring market, namely mortgage bonds. For days, Hypo Real Estate has been struggling to get money from other banks - without much success. ... Steinbrück and his followers quickly realize that there is not just a small problem here, but a very big one. The Minister of Finance informed Federal Chancellor Angela Merkel. ‚Hypo Real Estate threatened to literally dry out,' he says later. Stay 48 hours to get fresh money. Otherwise, BaFin's financial supervision would have to close down the bank ... if ... HRE could no longer service its business." The reaction and intervention of the federal government then proceeded on September 29, 2008 in the form of guarantees and transfer payments in the tens of billions (Schäfer, 2009: 203ff.). The greater perception of the crisis among the citizens - in particular due to the intensity of the media coverage - led to increased savings behaviour as well as a lack of consumption and had a suboptimal effect on the economy (Brunner, 2009: 51). The search for adequate solutions to overcome the crisis and its consequences went hand in hand with increasingly intense discussions between technical experts (Krugman, 2009: 212).

The course of the crisis paid its tribute on the one hand by increased number of personal bankruptcies (Schüddemage, 2011; Elschen/Lieven, 2009: VIII) and on the other hand by billions in write-offs of the major banks, which also resulted in a considerable burden on their balance sheets. In the fall of 2007, the British building society Northern Rock initially served a victim role of the crisis and subsequently had to be nationalized. Numerous major US banks, such as Bear Stearns and Morgan Stanley, were also unable to cope with the crisis, in particular triggered by previous existence-threating write-downs (Otte, 2009: 218f.). Bear Stearns' rescue in March 2008 was provided by the acquisition of investment bank JP Morgan Chase,

accompanied by the active support of the Fed in the form of a $ 30 billion guarantee. State interventions made it possible to relax the financial market for a short time and left the impression that the American government would not abandon any bank (Münchau, 2008: 40f.).

However, from the second quarter of 2008, worrying signals became apparent through the development of the unemployment rate in the USA, as it gradually rose from 5% at the beginning to almost 10% within just one year (Dill/Lieven, 2009: 213). This development has also been preceded by a general turbulence on the stock markets. Since the terrorist attacks in 2001 there has not been such a drop in prices as at the beginning of 2008. Although the subsequent $ 150 billion first-quarter US economic stimulus package served as a temporary reassurance, it was not powerful enough in preventing the incidents after the second quarter. The two largest US mortgage banks, Freddie Mac and Fannie Mae, could not escape the nationalization umbrella, as their viability was not assured without capital support, and their share prices registered a near -50% decline. The bankruptcy filing of the fourth largest US investment bank in September 2008, Lehman Brothers, unveil global stock market concerns, mistrust among banks, and strengthen the crisis globally. Even the German stock index (DAX) was not without consequences by his loss of points to less than 6,000. A punctual overshadowing of the events ensured the breakdown transfer of the German Kreditanstalt für Wiederaufbau on September 15, 2008, whose monetary transfer despite the above-described insolvency notification amounted to more than € 300 million and thus formed the basis for further losses. On the same day, the so-called “Black Monday” (Hellerforth, 2009: 142ff.), another takeover in the American banking industry was formed through the acquisition of Merrill Lynch by Bank of America for $ 50 billion (Elschen/Lieven, 2009: 368). The year 2008 may go down in history as the year of the great bank dying, as no less than 83 banks worldwide have disappeared or been nationalized by bankruptcies and takeovers this year. Despite a collective cut in key interest rates by the six leading central banks in October 2008 (Fed, ECB, Swiss, British, Swedish and Canadian central banks), the DAX and Dow Jones Index suffered from a sustained downturn on the international financial markets this month alone a loss of double-digit percentage points (Sinn, 2009: 65f., 335ff.). Another bad news was provoked by the AIG, which in the meantime was saved from illiquidity by a $ 100 billion government loan (Hässig, 2009: 186). The beginning of 2009 figuratively marked the immense impact of the recession, illustrated by the key figures of the US labor market, which recorded the highest level of unemployment for 15 years. This negative side effect could also be observed in German

territory and generated an increase in the number of unemployed again in this country over the three million mark (Hellerforth, 2009: 155).

November 13, 2008 sealed the official announcement day when the public received the news that Germany was in recession for the first time in five years. The Federal Statistical Office confirmed this statement through the available data that the German economy attested a decline in economic output for two quarters in a row (Jackisch, 2008). Even in Germany, the banking landscape was endangered by the financial difficulties of numerous credit institutions, in which the state-owned regional banks especially participated in the preliminary stages of the crisis by investing in sub-prime securities from various US mortgage lenders (Hader et al., 2009: 148ff.).

As the first German institute, the Bank for medium-sized companies IKB had succumbed to the maelstrom of the US real estate crisis and found itself in an existential emergency that affected the crisis with an expansion towards Europe. Only three weeks later, Sachsen LB met a comparable fate due to bad investments in the American real estate market, which could only be obstructed by a guarantee loan of more than € 17 billion from the Free State of Saxony. Subsequently, the bank was sold to Landesbank Baden-Württemberg. Bayern LB and West LB also suffered billions in losses due to speculative credit derivatives (Schäfer, 2009: 170f., 181), while Deutsche Bank recorded the first quarterly loss in five years in 2008 with a loss of € 141 million (Kazim, 2008). The state-owned KfW banking group also reported a loss of almost € 1.8 billion for the first three quarters, while Citigroup proclaimed savings measures in the form of 53,000 job cuts. Not only the banking sector was exposed to such after-effects, but also the automotive industry, and especially for Opel a request for state aid was ascertained at the end of 2008 (tagesschau.de, 2008). This distress was preceded by industry-specific export and production declines of 20 %, which were made public when German automakers announced their 2008 year-end figures. In addition, the ordering of short-time work became significant for this industry and affected tens of thousands of employees. Coming along a declining of incoming orders and exports were also noticeable in other German companies at the beginning of 2009 (tagesschau.de, 2009). From the very beginning of June 2009, Opel parent company General Motors and the retail group Arcandor were two other major companies to be mentioned. The first one announced its insolvency on June 1, 2009 and the second on June 9, 2009 (Handelsblatt, 2009).

After the far-reaching consequences have been explained using the example of Germany as the EU's heavyweight, it must not be forgotten that the financial crisis has caused the EU as a whole construct to find a kind of continuation in the so-called “Euro Crisis”. Here, the cause can’t be traced back to the developments and consequences of the American subprime sector. Rather, they are to be found in the so-called “PIGS” countries (Portugal, Italy/Ireland, Greece and Spain) (Otte, 2010), whose governments, comparable to the small home builders in the USA, have lived beyond their means for years. The most prominent component here is the Greek crisis, whose national debt grew dramatically through the imposition of several government bonds. In February 2010 these totaled around € 283 billion, which is more than three times the annual government revenue. The country's budget deficit of € 30 billion was equivalent to 12.2% of GDP, which was more than four times the allowed deficit (3%) according to the European Community's regulations. Based on such a level of public debt, it is obvious that the required 3% criterion will not be achievable in the near future. Interest and compound interest effects already ensure this, even if the country does not continue to live beyond its means. If Greece or another over-indebted EU country is downgraded by a rating agency, its government bonds will no longer be eligible for central bank refinancing, which means that it will have to borrow money on the open capital market at noticeably higher interest rates to refinance its budget (Paulus/Schwintowski, 2010: 30f.).

Considering the above circumstances, a Greek sovereign default could no longer be ruled out, which would inevitably be associated with an exit from the monetary union. However, this would also have the potential to ignite contagion effects on already stricken countries as well as a systemic crisis in the form of a disorderly breakup of the European Monetary Union. To prevent this, a financial aid program for Greece was launched in May 2010 and a protective shield for the euro area was agreed. The latter made it possible to support member countries in financial difficulties in return for economic policy conditions. In addition, to maintain monetary policy transmission, the ECB began purchasing Greek, Italian, Portuguese and Spanish government bonds in spring 2010 through the newly introduced Securities Market Program (SMP). When the crisis in the euro area escalated again in 2012, the SMP was replaced by the Outright Monetary Transactions program (OMT). This enables the ECB to purchase government bonds from so-called “program countries” that are under the European bailout umbrella. As of December 31, 2012, the stock of government bonds purchased under the SMP amounted to € 218 billion; under the OMTs, the ECB had not purchased any bonds until November 2018 (Neyer, 2018: 847).

In addition to the described bond purchases of euro states by the ECB, the affected “PIGS” countries had already previously been imposed intensive domestic austerity measures, which were characterized, among other things, by job and salary cuts in the public sector, reductions in state investments, sales of state property and tax increases (Neubäumer, 2015: 31f.).

When the macroeconomic environment in the euro area deteriorated noticeably at the beginning of 2015 due to persistently low inflation rates, low economic growth, high unemployment and weak lending, the ECB finally started another form of expansionary monetary policy, as key interest rates had already reached their lower limit. The so-called quantitative easying was carried out to a considerable extent in the form of a monthly program to buy government and corporate bonds from the euro countries through the Expanded Asset Purchase Program (EAPP) in order to counter the crisis. This should stimulate overall economic demand, consisting of private consumption and investment as well as government spending, and increase the inflation rate (Neyer, 2018: 848f.).

3.3. Policy measures

3.3.1 The USA

The crisis management against the Great Recession in the US took place in the form of opulent rescue packages. First in the form of the so-called Emergency Economic Stabilization Act (EESA) of 2008 for which the US-government was authorized to borrow up to $ 700 billion in bad loans and other assets from financial institutions in crisis. The resulting Troubled Asset Relief Program (TARP) was a program used by the United States government to buy stakes in financial institutions to prevent the demise of the financial system. These included amongst other things the following components:

- Companies receiving more than $ 300 million from the bailout program are not allowed to pay top executives more than $ 500,000 per year.
- A control committee is established. A Special Inspector General is deployed to watch the program. In addition, regular government hearings are planned.
- Should there be losses for the treasury, the US President will have to present a plan in five years' time as to how these can be offset again.

- The payout is divided into three phases: $ 250 billion are immediately available for the purchase of toxic assets. A further $ 100 billion can flow at the request of the president. The remaining $ 350 billion had to be approved by Congress.
- The plan also includes guarantees for savings accounts. In addition, tax cuts for the middle class and reductions in energy costs for companies were also resolved.
- It is also envisaged that the state will be involved in possible future profits after the rescue of a bank (Emergency Economic Stabilization Act of 2008, 2008).

Already at the end of 2008, the main direction was adjusted. Henry Paulson, the former treasury secretary, announced on November 12, 2008 that the focus of the rescue packages would no longer be on the purchase of toxic papers, but to use the bail-out fund for further injections of capital into banks and non-financial institutions in return for equity. Originally, the Bush administration opposed any form of nationalization. However, picking off assets of battered banks, has proven to be very challenging, largely because of the difficulty of achieving adequate value for bombed-out financial instruments without a market (Clark, 2008). Around $ 250 billion has already been invested in banks (including insurance giant AIG, Fannie Mae and Freddie Mac). As a result, they again had fresh money and could give each other loans again. Confidence returned, even if the issue of "bad" loans had not yet been resolved. This was the work of the private banks, but also the now state-owned banks Fannie Mae and Freddie Mac. Under certain conditions, mortgage rates for debtors are reduced and the reimbursement periods extended. This will save the foreclosure auction from hundreds of thousands of homeowners in trouble. Here it becomes clear for the first time that the change in the rescue package should become more consumer-oriented. After the purchase of banks or bank participations Paulson also planned more with help for credit card companies, so as not to jeopardize the already sluggish consumption (Paulert, 2009).

In the following year, the American Recovery and Reinvestment Act as the first government stimulus package was passed, which was intended as a further economic program to combat the prevailing Great Recession. It was launched by then-new President Barack Obama immediately after his inauguration in mid-January 2009. The draft law, which had a total volume of around $ 787 billion, was signed by Obama on February 17, 2009. A dedicated description of all contents in detail would go beyond the scope of this study, so the presentation of this package is only given at a rough level. First of all, tax cuts totalling $ 275 billion should be mentioned here, which provided for a $ 500 tax refund for individuals and $ 1,000 for married couples for

income tax purposes. Students received a tax credit of $ 2,500 and builders received $ 7,500 for building their homes. The second largest component of the economic stimulus package concerned educational investments, which were mainly used to modernize schools ($ 141.6 billion). The next issue was infrastructure investments with a total volume of $ 90 billion, which were primarily intended for the modernization of public infrastructure for the purpose of energy efficiency and for the expansion of the road network. In addition, shares were also allocated to the water sector and the railroad network. The health sector also benefited from $ 111.1 billion, which was primarily allocated to the "Medicaid" health care program for the needy. In addition, funds were earmarked for the development of a medical information system and the introduction of electronic health cards, as well as for health prevention. Another important part concerned the issue of unemployment and job creation, where $ 102 billion was earmarked for a food program for the needy in addition to unemployment insurance and training support. Finally, the topic of energy rehabilitation was taken into account by investing $ 58 billion in the energy sector, particularly in exploiting the savings potential (for smart grids, tax breaks for renewable energies and modernization of housing) (Gravelle et al., 2009: 1ff.).

Parallel to the rescue packages described began the so-called conventional monetary policy. In this respect, as a reaction to the financial crisis after 2007-2008, the key interest rate was lowered step by step to nearly zero percent both by the Fed and by other leading global central banks. The Fed was the first of the four central banks mentioned in the later figure 19, which initiated a turnaround in December 2015. The background was the robust development of the US economy with growth and many new jobs with comparatively low inflation. Low key interest rates in this context are or were one instrument with which the central bank wished to contribute to the normalization of economic activity. It became clear that the current path adopted by many central banks does not mean a paradigm shift, but that it is in the tradition of a stability-oriented monetary policy: its purpose is to enforce price stability (Illing, 2015: 127).

However, conventional monetary policy has narrow limits because interest rates can hardly be negative. That is why, after weighing the opportunities and risks of all policy options, central banks have decided to resort to unconventional monetary measures. Accordingly, since the end of 2008, additional monetary policy measures have been implemented in the US in the form of quantitative easing (QE) programs in order to stimulate nominal aggregate demand in line with the medium-term inflation target of 2%. The Fed has massively extended its monetary base (the provision of liquidity), also by purchasing securities, which has extended its balance sheets

accordingly. It enabled banks with this "base money" to confer new loans in the economic cycle and it should encourage companies to borrow and invest (Illing, 2015: 130).

Here are three major QE-programs from November 2008 to October 2014. For the first program - from November 2008 to August 2010 - the Fed first began to purchase $ 600 billion of mortgage-backed securities (MBS). At the end of the first quarter of 2009 they led to a rise in the Fed balance sheet to $ 1.75 trillion through purchases on holdings of bank debt, MBS and treasury bills. It should be noted that prior to the recession, the Fed had "only" treasury bills worth $ 700 to $ 800 billion on its balance sheet. The expansive trend continued until June 2010, peaking at $ 2.1 trillion. The second QE program covered the period from November 2010 to June 2011, when the Fed continued to expand its holdings by buying longer-term Treasury bills of $ 600 billion. The third QE program, starting in September 2012, provided for the Fed to launch a new $ 40 billion per month, open-ended bond purchasing program of MBS. From January 2013, open-ended purchases were raised from $ 40 billion to $ 85 billion monthly by purchasing longer-term Treasury securities at a pace of $ 45 billion per month. Finally, in December 2013, the Fed announced a reduction in the purchase of additional mortgage backet securities and longer-term treasury securities to reduce assets at a leisurely pace. But only on the condition that a sustained improvement in labor market conditions and inflation towards the longer-term goal of the Federal Open Market Committee (FOMC) of 2% is visible. Accordingly, in the following months, the purchase of assets by the FOMC was further decreased in measured steps and purchases were completed in October 2014 (Fed, August 13, 2019). The intensive expansion of the money supply through the extensive monetary policy is impressively reflected in the peak between late 2014 and early 2015 in the chart below.

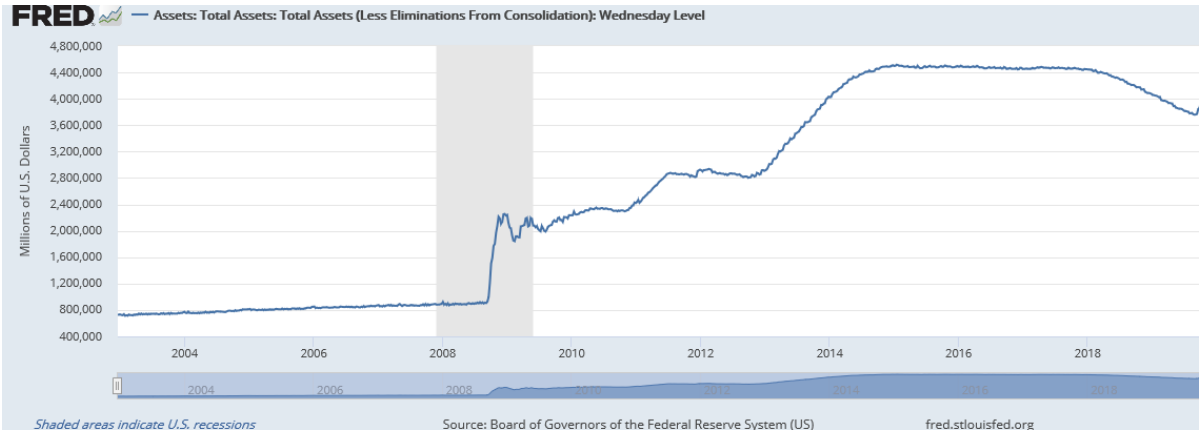


Figure 16: All Federal Reserve Banks: Total Assets of the Fed

Source: Board of Governors of the Fed (2020)

As described, as the signs of a recovering US economy hardened more and more and the inflation barometer and unemployment rate became satisfactory, a gradual increase in key interest rates and a pause in monetary policy measures became effective. However, it was a matter of time before the economic sentiment barometer fluctuated. On December 19, 2018, Powell announced at a press conference that there is enough confidence in the economy - despite concerns about the financial markets and political pressures - to raise the current interest rate and announce further rate hikes for 2019 as well as quantitative tightening: "The projections of Committee participants released today show growth continuing at healthy levels, the unemployment rate falling a bit further next year, and inflation remaining near 2 percent. ... As the economy struggled to recover from the financial crisis and the subsequent recession, the Committee held our policy rate near zero for seven years to give the economy the best chance to recover. And the economy did recover steadily, if slowly at times. Three years ago the Committee came to the view that the best way to achieve our mandate was to gradually move interest rates back to levels that are more normal in a healthy economy. Today we raised our target range for the short-term interest rates by another ¼ percentage point. As I've mentioned, most of my colleagues expect the economy to continue to perform well in the coming year. ... We ... think it is more likely that the economy will grow in a way that will call for two interest rate increases over the course of next year" (Powell/FOMC, 2018).

After the stock markets reacted extremely nervous in response to the rate hike and the announcement of two more in 2019, the Fed responded very quickly. On the one hand, the Fed suspended a first rate hike first on January 30, 2019, to take a patient and cautious approach: "patient, wait-and-see approach … In addition, the case for raising rates has weakened somewhat. The traditional case for rate increases is to protect the economy from risks that arise when rates are too low for too long, particularly the risk of too-high inflation" (FOMC/Powell, 2019). The same cautious approach was also announced on March 20, 2019 by Powell: "We don't see data coming in that suggest that we should move in either direction. They suggest that we should remain patient and let the situation clarify itself over time" (FOMC/Powell, 2019). Incidentally, these reassuring words were also well received in the stock indices and triggered a positive reversal in the trend, as the charts in section 3.4.5 will show.

The further course of the year in 2019 is - due to a slowing economy - characterized by three key rate cuts and in the second half of the year by a renewed extension of the monetary policy.

Starting with the first cut on July 31, 2019 Powell argued the following: “We decided today to lower the target for the federal funds rate by ¼ percentage point to a range of 2 percent to 2¼ percent. The outlook for the U.S. economy remains favorable, and this action is designed to support that outlook. It is intended to insure against downside risks from weak global growth and trade policy uncertainty, to help offset the effects these factors are currently having on the economy, and to promote a faster return of inflation to our symmetric 2 percent objective” (FOMC/Powell, 2019). The second rate cut followed on September 18, 2019, following a similar line of argument: “My colleagues at the Federal Reserve and I are dedicated to serving the American people. We do this by steadfastly pursuing the goals Congress has given us: maximum employment and stable prices. We are committed to making the best decisions we can based on facts and objective analysis. Today we decided to lower interest rates. As I will explain shortly, we took this step to help keep the U.S. economy strong in the face of some notable developments and to provide insurance against ongoing risks” (FOMC/Powell, 2019). The third rate cut followed on October 30, 2019 and, in addition to a similar line of argument, coincided with a renewed monetary policy expansion at that time: “Today we decided to lower the interest rates for the third time this year. We took this step to help keep the U.S. economy strong in the face of global developments and to provide some insurance against ongoing risks. As I will explain shortly, the policy adjustments we have made since last year are providing - and will continue to provide - meaningful support to the economy. We believe that monetary policy is in a good place” (FOMC/Powell, 2019).

As if the three-time rate cuts in 2019 were not enough, an expansion of monetary policy was also implemented to stabilize the economic situation. Here, the numbers speak a clear language, which is reflected in the colloquial term of “money printing”. Thus, according to press release of October 11, 2019 (“Statement Regarding Monetary Policy Implementation”), in which further purchases - including treasury bills until the second quarter of 2020 - were announced, the Fed balance between August 26, 2019 and December 2, 2019 showed, that more than $ 300 billion were pumped into the markets. While at the time of the FOMC's balance sheet normalization program from October 2017 to August 2019, the balance sheet total fell below $ 3.8 trillion, the measures just described led to a further increase in total assets of the Fed from September to the beginning of December 2019 to the height of $ 4.1 trillion (Board of Governors of the Fed, December 08, 2019). This trend is also visible in the previous graph of this subsection.

Finally, instruments such as the gradual reduction of central bank interest rates, fiscal policy instruments such as government guarantee transfers and extended credit facilities were used to resist the crisis.

3.3.2 The European Union

The first parallel to the Fed, which can be also derived graphically below in the figure 19, is a direct interest rate cut - as a conventional monetary policy - immediately after the outbreak of the Great Recession which has remained at the zero percent level.

As far as the part of the unconventional monetary policy is concerned, significant monetary policy measures have only been implemented by the European Central Bank (ECB) from 2015 onwards. These were closely following the Fed's broad-based QE-measures, with the intention of transferring the successes achieved there to the euro area (Illing, 2015: 130). However, these extensive measures and programs were preceded by the three famous words “Whatever it takes” by the then ECB president Mario Draghi: “Within our mandate, the ECB is ready to do whatever it takes to preserve the Euro. And believe me, it will be enough.” These words were expressed by him at an investor conference on July 26, 2012 in London with particular significance (Draghi, 2012). The Euro was in an unprecedented crisis at the time. Monetary union was on the brink, the sovereign debt crisis in Greece put an intense strain on the international community and, among other things, led to disagreement between the countries. Draghi‘s words have contributed to a calming of the (capital) markets (also shown in figure 35 of subsection 3.4.5) and to calm down the Euro Crisis. At that time widespread speculation that even Italy in great difficulties could arise and the monetary union might disintegrate ebbed more or less abruptly. The interest rate gap between Italian and Spanish government bonds and the German government bonds, which are considered to be to be fully resilient, declined, and the “markets” calmed down. This immediately showed the credibility of the Euro bank and its boss in the financial world three simple words without concrete measures, such as interest rate changes, were enough to reverse a worrying price development on a market worth billions of Euros. Through these words, the central bank quasi returned back as an economic policy actor. This was after other major central banks, most notably the American, had already taken the most extensive measures, with the result that the American economy was at a significantly more advanced stage than the European one in terms of crisis management. A few years later, in spring 2015, the ECB started to make extensive monthly purchases of securities - essentially government bonds. These measures were accompanied by a reduction in the key interest rate,

even in the negative range. This parallel intervention, as many indicators subsequently showed, made the economic recovery of the monetary union wider. Economic output rose again in almost all member countries (Armbruster, 2017).

Even though the term “quantitative easing” is largely dispensed with in the ECB's correspondence, experts nevertheless use this term due to the corresponding measures (Illing, 2015: 127). The above asset purchases by the ECB looked as follows. It began by expanding purchases of bonds from central governments, agencies and European institutions in the eurozone in the amount of € 60 billion per month for the period from March 2015 to March 2016. In an environment where key ECB interest rates have reached their lower limit, asset purchases create monetary incentives for the economy. They are further easing monetary and financial conditions so that businesses and households can borrow more cheaply. This tends to support investment and consumption, which ultimately helps bring inflation rates closer to the 2% level. This program included the asset-backed securities purchase program and the covered bond purchase program (ECB, 2015).

The above program was then revised upwards to € 80 billion a month from April 2016 to March 2017. The background to this was that this updated package would better support the momentum of the euro area economic recovery and better promote the return of inflation to a level below but close to 2%. In the fourth quarter of 2016, the Governing Council confirmed (with regard to non-standardized monetary policy measures) “that the monthly asset purchases of € 80 billion are intended to run until the end of March 2017, or beyond, if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation consistent with its inflation aim.” The purchases were such that the Eurosystem made purchases as part of the “Corporate Sector Purchase Program” (CSPP) on June 8, 2016 and the first operation of the ECB’s “Targeted Longer-Term Refinancing Operations” (TLTRO) on June 22, 2016 (ECB, 2016: 2ff.).

From April 2017, net asset purchases were reduced again to a monthly rate of € 60 billion by the end of December 2017. Should further purchases then become necessary, the continuation will only take place until the Governing Council determines a sustainable adjustment of the inflation path in line with its inflation target. However, this depends on interim prospects. If these deteriorate or if the financial conditions do not agree with further progress towards a sustainable adjustment of the inflation path, the Governing Council intends to increase the size

and / or duration of the program. The net purchases are made along with reinvestments of the principal payments from maturing securities purchased under the asset purchase programme (ECB, press release December 08, 2016).

In addition to the unchanged low key interest rate, the ECB's press release of October 26, 2017 also announced updates to the purchase program. It has back then been announced that net asset purchases will be halved to monthly volume of € 30 billion until at least the end of September 2018. It is also pointed out here that the term is always linked to the development of inflation: "… if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation consistent with its inflation aim. If the outlook becomes less favourable, or if financial conditions become inconsistent with further progress towards a sustained adjustment in the path of inflation, the Governing Council stands ready to increase the asset purchase program in terms of size and/or duration" (ECB, 2017).

The final installment of the QE program took place from October to December 2018 and was announced in the press release in terms of "Monetary policy decisions" from October 25, 2018. The monthly amount was dropped to € 15 billion and planned to be ended in December 2018 due to "incoming data confirming the medium-term inflation outlook" (ECB, 2018).

In summary the ECB bought assets (debt securities) from March 2015 until December 2018 in sum of € 2.6 trillion which were pumped into the markets. It has inflated its total assets to 40% of the gross domestic product of the entire eurozone, in fact more than € 4.4 trillion. Accordingly, the balance looks bloated in figure 17 below. A large part of the former purchases focused on government bonds from various euro countries, which are based on the capital key, i.e. the share of capital that the euro countries hold in the central bank. For this reason, as of December 2018, the ECB had bought German government bonds worth more than € 515 billion. This marked the largest position in their portfolio. The French government bonds then came to the custody account at around € 420 billion, and Italian government bonds were acquired in third place for € 360 billion. With regard to the described asset purchases, it can be stated that these were set up in order to support economic growth in the euro area and help to bring inflation back below, but close to, 2%. To this end, the ECB also wanted to ensure that refinancing costs for states and companies are reduced (Cünnen, 2018).

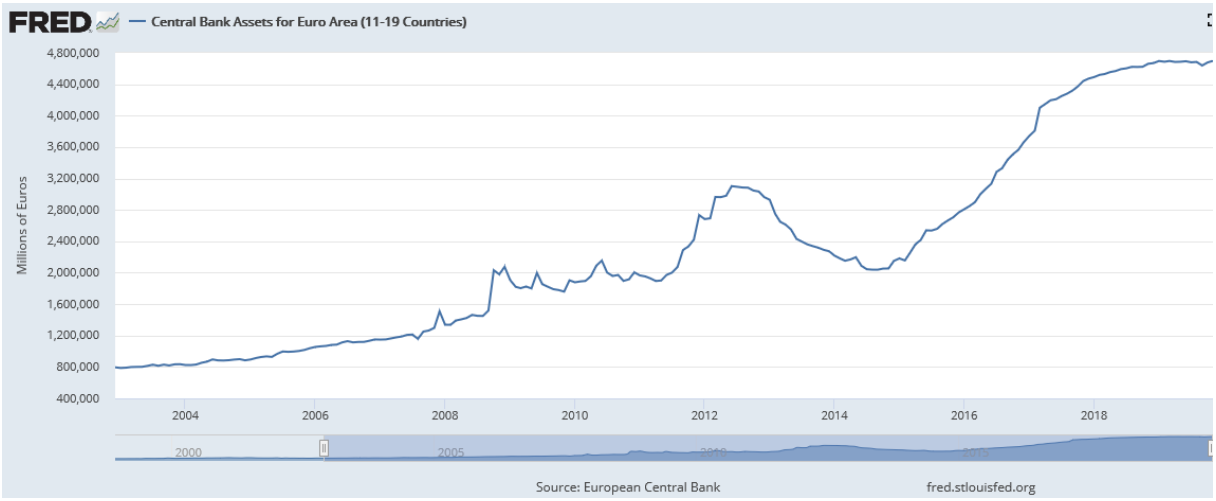


Figure 17: Central Bank Assets for Euro Area

Source: Board of Governors of the Fed (US) on the base of ECB data (2020)

The year 2019 continued to be characterized by the key interest rates on the zero percent line. Additionally, after an almost nine-month break in terms of QE-measures, the Governing Council decided again on September 12, 2019 to set up a monetary policy program: "Second, the Governing Council decided to restart net purchases under its asset purchase programme (APP) at a monthly pace of € 20 billion as from 1 November. We expect them to run for as long as necessary to reinforce the accommodative impact of our policy rates, and to end shortly before we start raising the key ECB interest rates". A number of measures have been taken to stimulate the markets. These include keeping the key rate at 0% and increasing the interest rate on the deposit facility slightly to -0.50%. The latter concerns the interest rate that banks have to pay for their deposits in the central bank accounts. Other measures were also applied, such as the introduction of a two-stage exemption from the negative deposit facility. Draghi's words at the end of his tenure and at the decision announcement sounded very confident and sovereign: "At the same time, robust employment growth and increasing wages continue to underpin the resilience of the euro area economy. With today's comprehensive package of monetary policy decisions, we are providing substantial monetary stimulus to ensure that financial conditions remain very favourable and support the euro area expansion, the ongoing build-up of domestic price pressures and, thus, the sustained convergence of inflation to our medium-term inflation aim" (ECB, 2019).

In addition to the transnational measures at EU level, it should not be forgotten that each member state has also drawn up economic stimulus packages for itself within a national

framework. An explanation of each EU country would overload the subject matter of the investigation, so that the EU heavyweight Germany is initially used in more detail as an example. There are three essential economic stimulus packages and a rescue package specifically for the banks with which the federal government responded to the international financial crisis. The Federal Government defined its claim as follows: “In view of the global economic slowdown as a result of the serious crisis on the global financial markets, the Federal Government sees it as a priority task to continue to secure growth and employment” (Federal Ministry for Economics and Technology Germany, 2008: 12).

The first economic stimulus package was a conglomerate of the “package of measures to reduce tax burdens, stabilize social insurance expenditure and invest in families”, which was adopted on October 7, 2008, and the “package of measures to secure jobs through strengthening growth” on November 5, 2008. It comprised a total volume of funds made available by the public budget for the years 2009 and 2010 amounting to € 32 billion (Federal Ministry for Economics and Technology Germany, 2008: 12; additionally: press release November 5, 2018). The economic stimulus package II - dubbed the “Pact for employment and stability in Germany to secure jobs, strengthen the growth forces and modernize the country” - was passed by the German government on January 14, 2009 and codified on March 2, 2009. This package also provided for numerous measures for the German domestic economy in 2009 and 2010 and had a cost volume of € 50 billion for the public budget (Federal Ministry of Finance, 2009). The “Growth Acceleration Act” was generally characterized as another stimulus package and passed on December 18, 2009. Above all, it included family and tax policy advantages for citizens and companies, which were supported under the guiding principle of “lower taxes for growth”. The relief volume for citizens and companies was initially € 6.1 billion for 2010 and € 8.5 billion per year for the following years (German Federal Government, 2009). In the course of this program, the so-called “Citizens Relief Act” also came into force on January 1, 2010, which also provided for tax relief (Bohsem, 2010). On October 13, 2008, a rescue package amounting to € 500 billion was resolved for the banks (German Federal Government, 2009: 5f.), of which € 400 billion were accounted for the financial market stabilization fund on guarantees and the remaining € 100 billion were allocated to direct capital aid (German Federal Government, 2008).

In a reconciliation of all EU countries, total bank aid up to May 8, 2009, amounted to € 3.7 trillion, of which Germany alone accounted for over half a trillion. Taking Ireland as an

example, € 400 billion was provided. That is more than twice the amount of the GDP at that time in 2007 (€ 191 billion). Other bank rescue packages were launched in France with € 360 billion, the Netherlands with € 220 billion, Sweden with € 150 billion, Spain and Austria with € 100 billion each. In the case of Great Britain, the figure was GBP 571 billion, or the equivalent of around € 850 billion (Kamp, 2009: 204f.). In the same period between autumn 2008 and the beginning of 2009, government economic stimulus packages were also passed in all major countries, practically all over the world. As already described, these totaled almost € 100 billion in Germany, followed at EU level by the UK with € 33 billion and France with € 28 billion (Kamp, 2009: 245f.). This chapter does not provide a specific presentation of the respective components of the latter packages. The aim was rather to provide a reliable impression of the situation at the time.

3.4. Economic indicators

3.4.1 Key interest rates

3.4.1.1 Look at the history of US-crises (digression)

The following graphic - as a continuation of subsection 2.4.1 - shows the historical development of the Fed's key interest rate from 1955 to 2019, followed by a description of other crises that are taken into account in the graph.

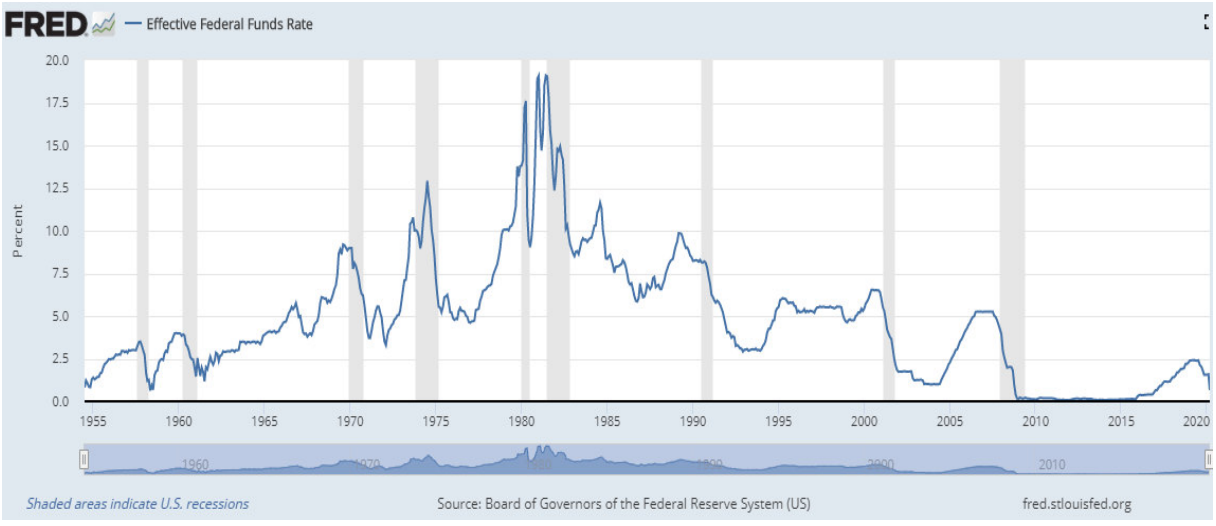


Figure 18: Effective federal funds rate (historical, in %)

Source: Board of Governors of the Fed (2020)

According to the Board of Governors of the Fed "the federal funds rate is the central interest rate in the U.S. financial market. It influences other interest rates such as the prime rate, which is the rate banks charge their customers with higher credit ratings. Additionally, the federal funds rate indirectly influences longer- term interest rates such as mortgages, loans, and savings, all of which are very important to consumer wealth and confidence."

The following key findings can be filtered out at first glance:

1. If you look at the time intervals between the officially declared recessions in the graph, we were relatively free of recessions until the outbreak of the Corona Crisis (over 12 years). We had relatively long “rest”. It seems that an external cause such as the current corona virus was only a matter of time before another recession or crisis occurs.
2. The last recession (accompanied by the Great Recession) shows the longest course, measured by the width of the grey-shaded vertical.
3. Another important finding is that we are currently in the longest period of low interest rates in history. A comparable level, like that of the last 12 years, is not visible in the entire chart.
4. The highest interest rate level from 1980 to 1981 is at first sight attributable to a short-term special effect, as this level lasted only slightly longer than one year.

The following comments focus on brief descriptions of the recessions shown above in conjunction with the respective interest rate developments. Beginning with the recession in 1958 - known as the Eisenhower recession from August 1957 to April 1958 -, which was a severe global economic downturn and produced a 3.3% drop in GDP. In addition, unemployment rose by 6.2%. Monetary policy prior to the recession was tightened or rather interests rates were increased by the Fed to confront inflation but prices continued to rise. Another problem was global recession combined with a strong US dollar that created a foreign trade deficit because of its limited ability to increase trade through exports (Roncal, 2009). As can be seen from the graph above, a phase began after 1959 in which the Fed gradually raised interest rates. The subsequent recession lasted from April 1960 to February 1961 and resulted primarily from shifts in the US industry, particularly in the automotive sector. The Americans started to buy cheaper cars that were often manufactured abroad, and the industry also reduced its stocks. GDP and product demand fell noticeably. High inflation and the unemployment rate also weighed on the economic situation and favored the recession. The economic stimulus measures at the time were initiated by John F. Kennedy and provided for increased government spending, for example through tax cuts, increased funding for education, increased minimum wages and unemployment benefits, and emergency aid for grain farmers. After Kennedy's measures took effect, the second longest period of economic growth in American history began (Lambert, 2013).

The recession from December 1969 to November 1970 was preceded by a period of longer upswing, which resulted in increasing inflation. This led the government to pursue a rather restrictive monetary policy. In addition, there was increased expenditure in the wake of the Vietnam War, which led to a budget deficit, as well as interest rate increases by the Fed, which led to a substantial tightening of the money. Both points contributed to a decline in economic activity in terms of government spending (Rosenberg, 2018). A much longer period of recession followed from November 1973 to March 1975 after the oil prices were quadrupled by the OPEC countries as well as embargoing oil exports to the US. This was accompanied by the stock market crash from 1973 to 1974 on the Wall Street and, together with further government spending for the Vietnam War, led to a longer-lasting recession including stagflation and high unemployment (Koba, 2011; Amadeo, 2020).

The next recession period(s) began first with the duration of six months from January to July 1980 and was closely followed by a short period of growth and then a sustained recession from July 1981 until November 1982. A major problem was the persistent unemployment rate, which gradually rose to 8% from summer 1980 to autumn 1981 (Auxier, 2010). An external shock to the economy was caused in particular by the revolution in Iran, which devastated oil prices and led to an energy crisis. Another charging factor was tight monetary policy by a series of sharp interest rate hikes of the Fed, which were intended to help curb inflation (Leonhardt, 2009). Economists refer to both periods as so-called “double-dip” or “W-shaped” recessions, as they followed each other immediately and the intermediate phase was characterized by short growth, but among other things, strong interest rate hikes by the Fed plunged the country into the next recession. This is why we speak of a double recession (Koba, 2011).

After a relatively long period of stable economic development, July 1990 marked the beginning of the next recession, which lasted until March 1991. Compared with previous recessions, which took place in the early 1980s and were associated with policies aimed primarily at containing inflation from double-digit levels, the causes of the 1990-1991 recession were less obvious. Key factors were consumer pessimism, an accumulation of debt still resulting from the previous decade, the abrupt rise in oil prices due to the Iraqi invasion of Kuwait, and more regulatory banking supervisory authorities causing a credit crunch. In addition, there were efforts by the Fed to reduce the inflation rate (Walsh, 1993: 33).

The earliest recession before the Great Recession goes back to the bursting of the so-called "dotcom" bubble (respective recession was March 2001 until November 2001), as mentioned in the study before.

3.4.1.2 Period around the Great Recession

The chart below shows a comparison of the development of key interest rates in four of the world's largest economic powers and currency zones within the period before and after the Great Recession.

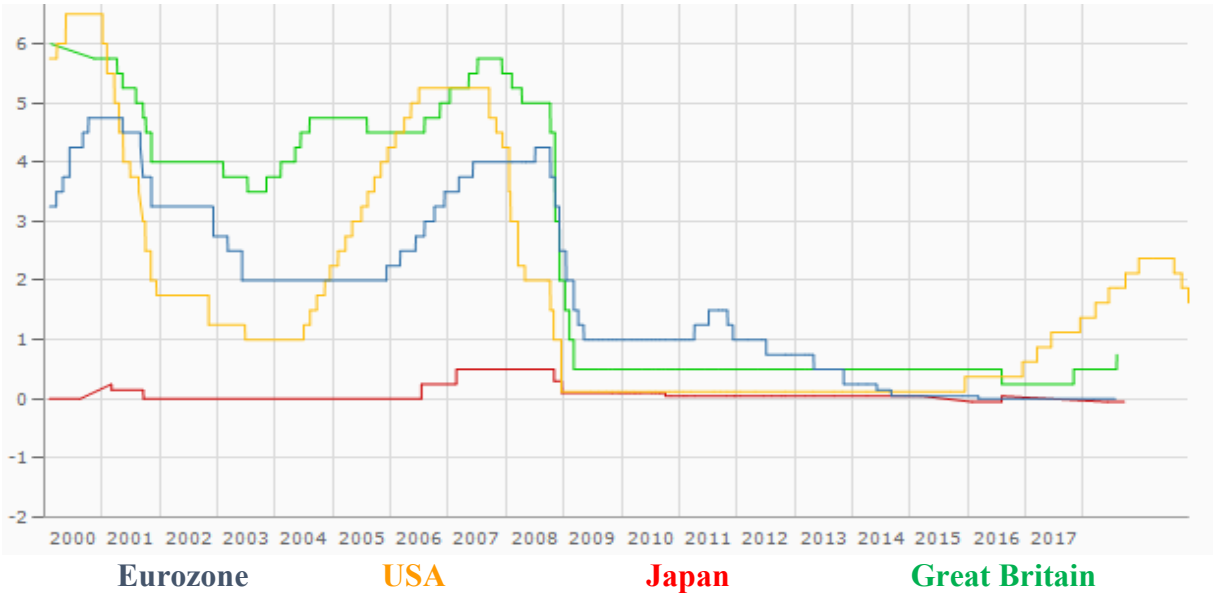


Figure 19: Key interest rate development in four of the largest currency zones
Source: Financial portal "finanzen.net" (2019, based on central banks data)

The figure shows an almost congruent picture between the eurozone, the US and Great Britain. An exception is the unvolatile base rate development of the Japanese yen. Prior to the Great Recession, the level of the latter was between 4 and almost 6% and then abruptly reduced to almost 0% when the crisis broke out. Here you can see the interest curve of the Fed was raising irresistable for three years (2016-2018) and then lowered again recently. The other currency zones quickly give the impression of a preliminary stage of the so-called "helicopter money", in which central banks first decide to keep interest rates as low as possible. If that is not enough, the direct monetary spiral will be even more exhausted. As a brief digression, it should be noted that they inject money directly into the economy in order to promote the economic cycle in the form of increased consumer spending in the real economy (Zschäpitz, 2019). These

considerations can even go as far as a “going direct” or “going direxT”, where the central bank finds ways of distributing self-created money directly to public and private hands (for example € 5,000 for each citizen). It finances the economic expansion itself. Such an approach would also fuel inflation. When the desired inflation is achieved, the project must be ended (Oswald, 2019).

The timing of the chart also goes back to the previous recession which is associated with events of the internet- or “dotcom”-bubble and former terror attacks in the USA (as explained in subsection 3.1.2), which in turn resulted in quick key interest rate cuts as a monetary policy measure by the Fed. After the economic situation in the USA began to recover, the key interest rate from 2004 was raised gradually from 1% to 5.25% in June 2006 in order to prevent an inflationary threat (Bloss et al., 2009: 155f.).

3.4.2 Inflation

3.4.2.1 Look at the history of US-crises (digression)

In the period before and after the Great Recession, the volatility of inflation rates was rounded to 0 to 4% (as visible), but this is not representative over the past 50 years in the USA, as the following graphic shows.

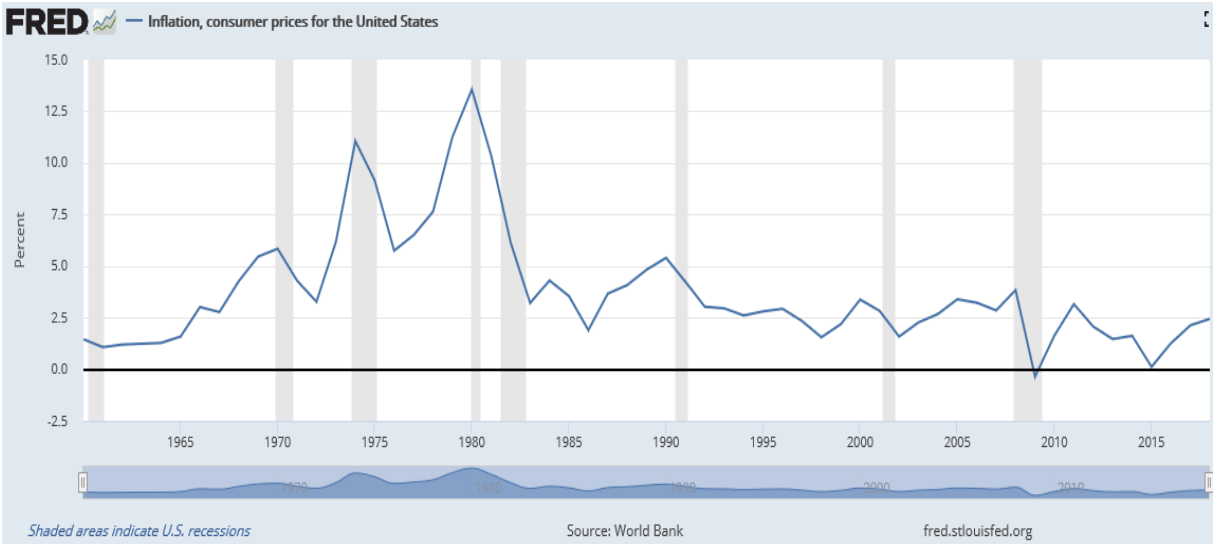


Figure 20: Inflation, consumer prices for the US (in %)

Source: World Bank (2020; frequency: annual)

During a first inspection of the historical development of US inflation rates in the upper graph, the period from 1965 to 1982 is particularly important. In various literature titled as “The Great

Inflation Period" it became one of the defining phases in the history of US-inflation, on the one hand, because four economic recessions were officially gone through during this phase, and on the other hand, two energy crises burdened the global economy. While the inflation rate was moderate 1% until 1964 and in the medium-term period before, it rose from 1965 to 1970 initially to over 6%, then from 1972 to 1974 to over 10% and finally the mark neared from 1976 to 1980 in the direction of 15%. After 1980, it settled to 2.5 to 5%. The causes of the degenerated inflation levels mentioned cannot be regarded as isolated phenomena in terms of their origin, but also result from monetary policy measures that were made possible by the Fed in the context of excessive growth in money supply. Big drivers were, on the one hand, growing fiscal imbalances between the late 1960s and early 1970s, when President Johnson's Great Society legislation led to increased spending on social programs, even though the US budget was already biased by the Vietnam War. Secondly, there were drivers that had an even greater effect on inflation formation. We are talking about external shocks, namely the repeated energy crises that increased oil costs significantly and slowed growth in the United States. The first crisis was an Arab oil embargo that started in October 1973 and lasted about five months. During this phase, crude oil prices quadrupled to a level that triggered a second energy crisis until the Iranian revolution in 1979. The second crisis tripled oil costs (Bryan, 2013).

3.4.2.2 Period around the Great Recession

The subsection begins with the inflation chart focused on the Great Recession.

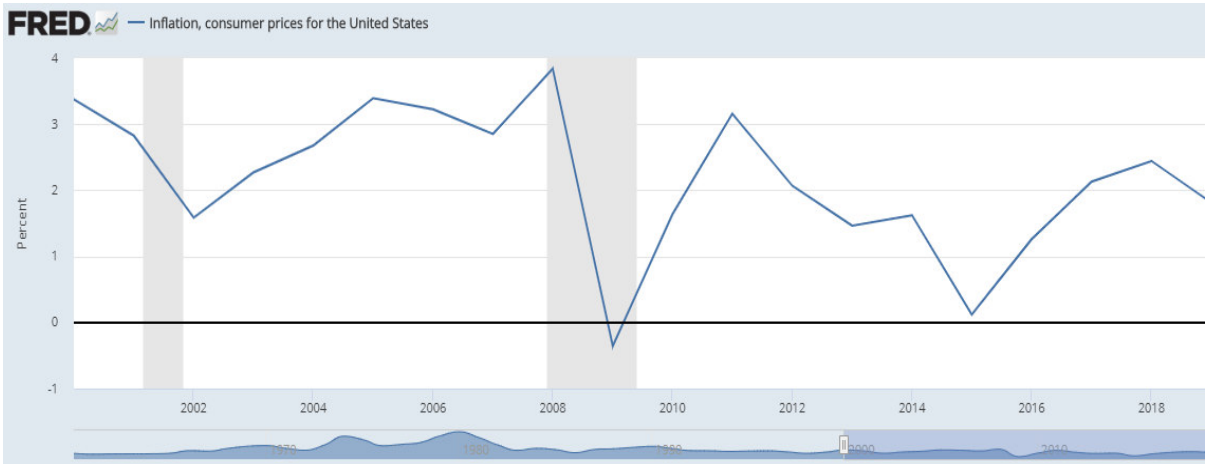


Figure 21: Inflation, consumer prices for the US (in %) before and after the Great Recession

Source: World Bank (2020; frequency: annual)

According to the World Bank "Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly."

At first sight the graphic shows volatile effects in the context of inflation developments over the past 20 years. On closer inspection it only moves in a corridor of rounded 0 to 4% currency devaluation or price increases. However, two periods are more striking here. Firstly, the enormous drop from 2008 to 2009 and back as well as the decline from 2014 to 2015. The highest level of inflation in this chart was shortly before the outbreak of the Great Recession, in particular caused by an extremely sharp rise in energy costs (household oil, gasoline prices) and by rising food prices (such as prices for grain and baked goods as well as fruit and vegetables). The weak dollar was also part of the increase in the consumer price index, as this means that imports of goods are based on higher prices. Inflation ended when the signs of the Great Recession began and consumers withdrew their purchases and consumer spending. A slight drop in prices also affected new vehicles, computers and computer equipment. In this context the thesis “recession kills inflation” is appropriate, which researchers in the field of economic cycles put forward (Smith, 2008).

With the first end of the crisis and the US economy picking up again soon, inflation quickly started to recover. In 2011, the US inflation rate rose to a three-year high. The main drivers were price increases for petrol, diesel and heating oil, which rose by up to 20%, while food prices rose by almost 5%. The rise in prices in 2011 was also a logical consequence of the increase in social security benefits in 2012. That would be the first increase for this group of recipients since 2009. The marginal to no inflation after the financial crisis meant that the seniors received no cost-of-living increases in 2010 and 2011. In addition, high unemployment and a lower recruitment rate meant that the average hourly wage did not grow as expected. Despite rising wages, purchasing power dwindled as consumer prices rose almost twice as fast. And falling wages are not just a result of this recession (Isidore, 2011).

The further graphic low point concerns the year 2015, in which one was again at the 0% level after five years. The reasons lie in particular in the sharp drop in oil prices and the lower energy costs, which has accelerated the negative price trend considerably and even pushed the inflation rate on the monthly disc down to below 0%. In this context, there were also voices that, based on this negative price development, anticipated a shift in the key rate hike promised by the Fed (Handelsblatt, 2015).

The original target for annual inflation is 2% and is based on the alignment of the Fed specification which says that "stable inflation helps the economy operate efficiently" and "that an annual increase in inflation of 2 percent is most consistent over the longer run with the Fed's mandate for price stability and maximum employment." Low and stable inflation gives households and businesses a certain degree of financial planning certainty regarding borrowing and lending, saving and investment decisions, without having to worry that high inflation could undermine their purchasing power. If inflation remains too low, the risk of deflation would not be unlikely, which would result in falling prices and wages. The inflation rate is measured on the basis of the annual change in the price index for personal consumption expenditures, an important price measure in relation to consumption spending for goods and services (Board of Governors of the Fed, 2020).

The next graphic shows the development of inflation in the EU in a 20-year period.

Figure 22: Inflation, consumer prices EU 1999 - 2019 (in %)

Source: World Bank (2020; frequency: annual)

A closer look at the main components of the HICP based on the explanations provided by the Statistical Office of the EU shows that education, alcoholic beverages and tobacco prices rose fastest in the EU from 2006 to 2016 (by 49.0% and 48.6% respectively), followed by the price of the aggregated index for housing, water and fuels (27.2%). The prices of accommodation and restaurant services, food and soft drinks and other goods and services also rose faster than the average for the overall HICP. In contrast, the overall price of communications decreased by 11.3% in 2006-2016, while clothing and footwear (1.4%) and leisure and culture (4.1%)

remained virtually unchanged (Eurostat, 2017). Here too, the sharp decline in times of the Great Recession can be clearly seen. Oil and food, which became significantly cheaper due to the economic crisis, were primarily responsible for the price decline. While rising energy prices caused inflation to swell in 2008, the global recession caused demand for oil to fall, resulting in a sharp drop in the price of petroleum products like petrol, diesel and heating oil. In terms of food, it covered the entire range from dairy products to meat and eggs (Zeit Online, 2009). Comparable to the Fed, the maxim applies in the EU that inflation is ideally at a value level of 2%: "The primary objective of the ECB's monetary policy is to maintain price stability. The ECB aims at inflation rates of below, but close to, 2% over the medium term" (ECB, 2020). Since the economic and inflationary recovery in the period after the Great Recession, the annual price increase has remained at a very low level and has thus been well below the target for some time. In part, this may be due to the drop in raw material and crude oil prices in the period mentioned. But price increases also stalled in the other consumer sectors (Diermeier/Goecke, 2016: 4).

The following graphic compares countries and currency zones:

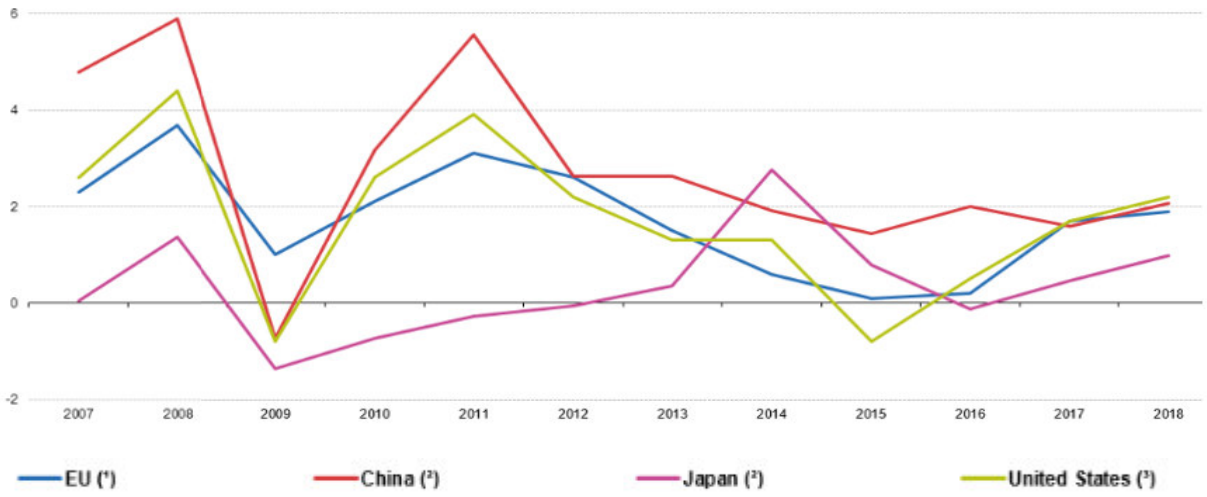


Figure 23: Development and comparison of the annual average inflation rates in% (2007-2018)
Source: European Commission Eurostat (2019; frequency: annual)

This graph shows in particular a very congruent curve between the EU and the USA, while the graphic or external outliers are more likely to be found in the two Far East countries. Overall, the change in the HICP in the EU in the period 2006-2016 was 18.4% and thus an average of 1.7% per year. Price changes in the United States were largely comparable, with an overall

increase of 18.1% over the same period and a development very similar to that in the EU (European Commission Eurostat, 2017).

3.4.3 GDP development

3.4.3.1 Look at the history of US-crises (digression)

For visual clarification, here is the historical presentation of GDP development with the special outlier in 2009:

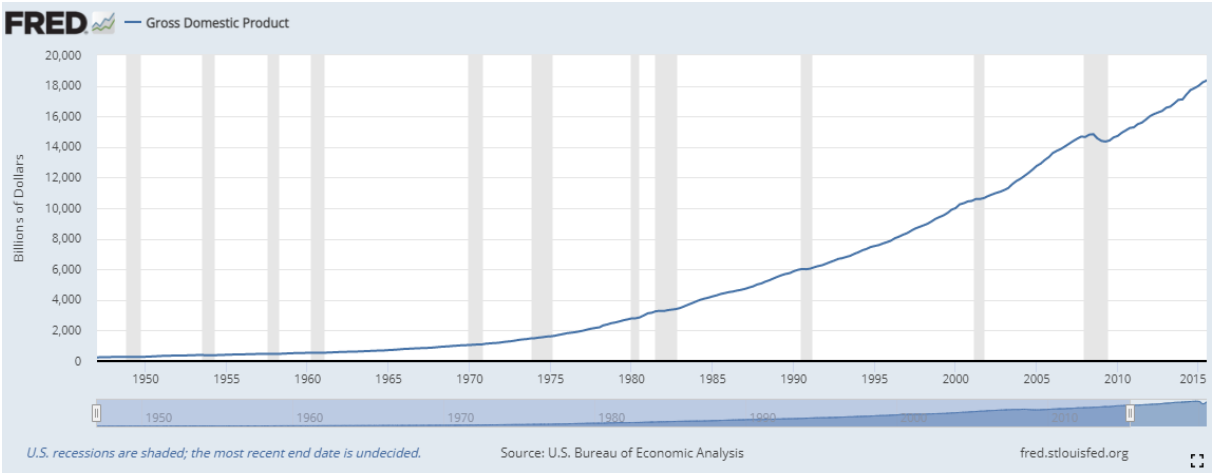


Figure 24: US GDP 1947-2015 (in $ billions)
Source: U.S. Bureau of Economic Analysis (2020)

The chart reveals the impressive finding that gross domestic product fell significantly more from 2008 to 2009 than in the previous ten recessions after the Second World War. It can be seen that GDP has been rising steadily since 1970, with the exception of the sharp slump in 2009, which outlines a very short phase and then rises steadily and unstoppably.

3.4.3.2 Period around the Great Recession

The following subsection is devoted to the Great Recession effects on the GDP of the USA and the EU in comparison with the World's course as well as China, Japan and the euro area.

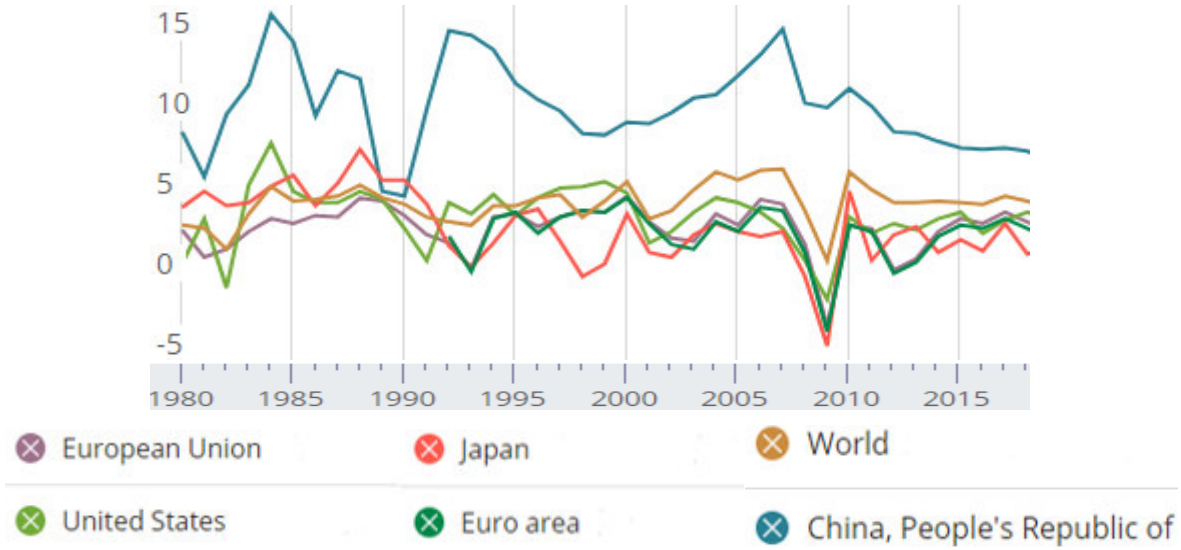


Figure 25: Real GDP growth of the four world powers 1980-2018 (in %)
Source: IMF (2020; Annual percent change)

The graph shows the huge and similar decline in economic output that the United States and the EU 2009 had to deal with.

To grasp the subject in more detail, the financial crisis originated in the USA and led to a dramatic and uniquely synchronous slump in production and trade worldwide - especially in the winter half of 2008-09. The overlap with the European, and especially with the German economy, has been particularly afflicted by this due to its high export share and its export structure with a focus on capital goods and intermediate goods. The economic connection with the US economy has become obvious and has become much closer, and the intensity of transmission of shocks has increased significantly compared to previous crises. It is therefore not to be dismissed from the hand that slumps in EU-GDP are largely due to the recession forces in the USA (Schmitz et al., 2010: 35). While in the USA, Japan, Great Britain and Spain, one of the main reasons for the economic decline was the waning desire to buy, other countries such as Germany, which is strong in exports, were more likely to experience major problems due to slump in production. Incidentally, these were stronger than in the two oil crises 1974-1975 and 1980-1982 and when the IT bubble bursted. But the USA also had to struggle with declining corporate investments, which was also clearly noticeable in the GDP figures (Schmitz et al., 2010: 9). The fact that GDP did not plummet worse and recovered relatively quickly in the following year was primarily due to government intervention or the expansion of government spending including expansionary monetary policy of the central banks. In this period the key interest rates have been reduced to 0% to 1% for the purpose of more favorable loan expansion.

Accompanying exogenous factors such as a comparatively low oil price and the recovering willingness to take risks of entrepreneurs and investors rounded off the regeneration phase (Schmitz et al., 2010: 15).

To round off this subsection content-related, it can be seen that - with the exception of the People's Republic of China - the global impact was similar to the development described above.

3.4.4 Public and private debt developments

3.4.4.1 Look at the long-term history (digression)

This subsection deals with a long historical development first of public and then private debt ratios, the development of which will as well be examined in the context of the crisis. To begin with, the long-term US history up to the outbreak of the Great Recession is illustrated and strongly visible in the following graphic.

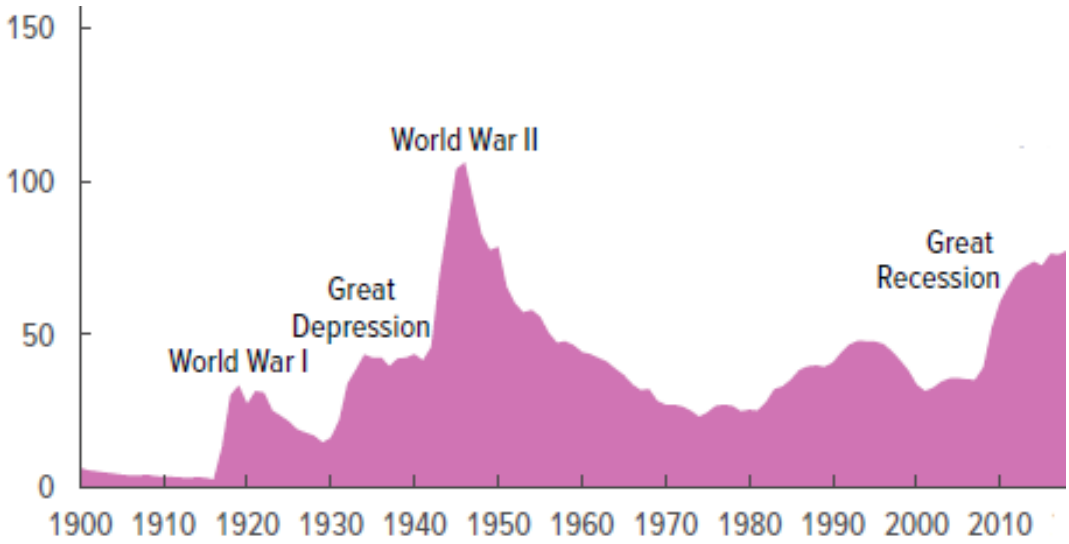


Figure 26: Federal debt held by the public from 1900 until 2019 (in % of GDP)
Source: Congressional Budget Office of the United States (2020: 1)

And, with regard to the government debt ratio, there is a significant difference to the Great Depression which gives a special attribute to the respective crisis. The magnitude of just over 40% of GDP shows the apparently divergent political trend at the time of the Great Depression towards savings-oriented monetary policy while the Great Recession and its history can confidently be credited with a special role in relation to private and public (here: >80%) debt ratios. The double amount of the aforementioned rate illustrates the origin, already described in the course of the investigation, of not having been reluctant to incur more debt due to low (key)

interest rates (e.g. Münchau, 2008: 6f.). What stands out immediately is the extreme debt surge resulting from the Great Recession also in comparison to the history in the last 50 years which raises questions how this extraordinary trend came about. In no other crisis shown in the long-term graph such sharp increase can be seen historically. A similar historical trend is also visible in the five largest EU-economies.

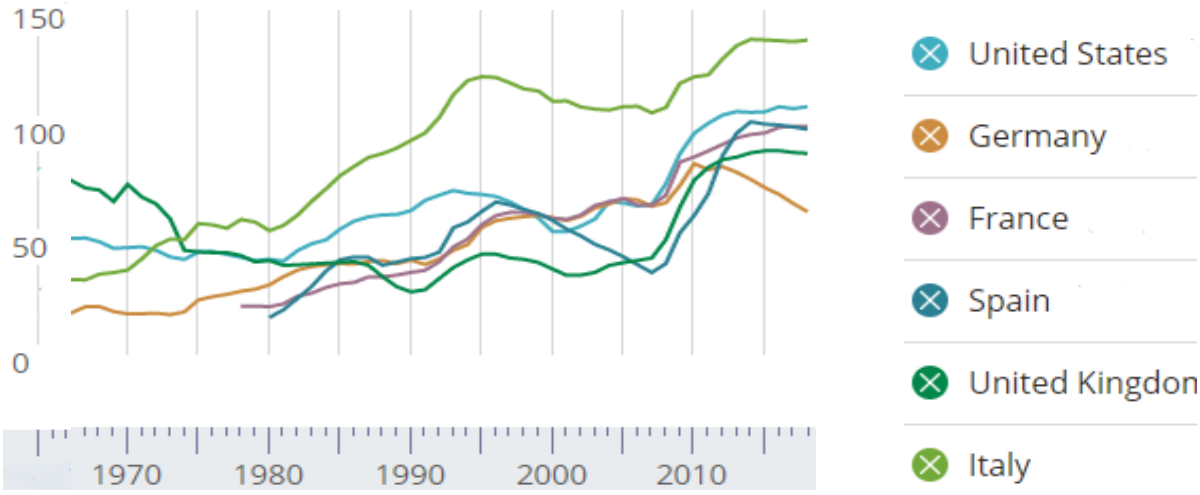


Figure 27: General government debt in % of GDP 1966-2018;
Source: IMF (2020)

Certainly there is also a special outlier in the representation such as for Italy or, recently, with a positive trend for Germany. But in the grand scheme of things, the collective rise in the public debt ratio is unmistakable.

And the more the view is directed into the past and accessible or reliable sources are considered, it shows that the debt ratio was at a significantly lower level than in the recent years. Accordingly, the Great Recession and its history can be confidently certified as having a special role in relation to private and government debt ratios. This can also be seen in the graph below, which covers the period 1900 to 2014 and focuses in particular on the effect from 2007 to 2014.

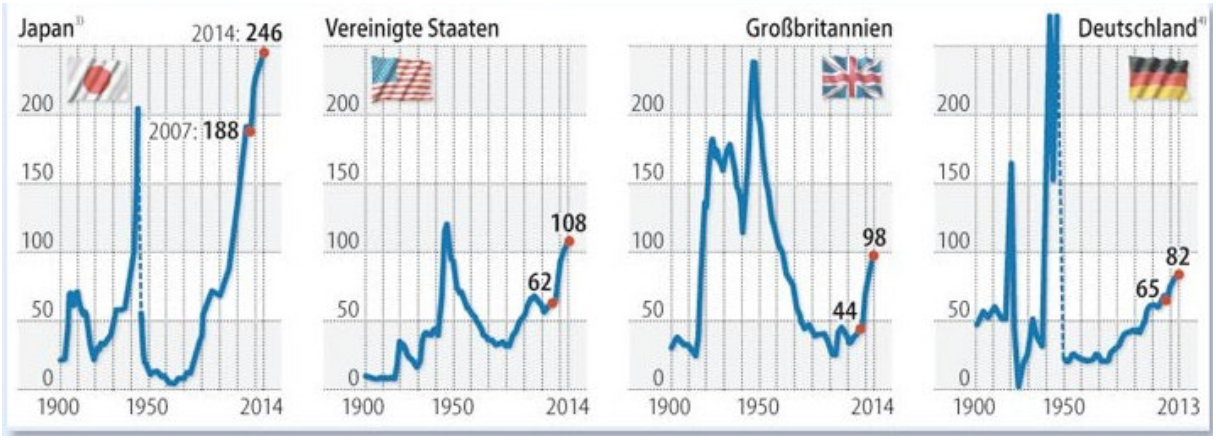


Figure 28: Historical government debt of four World Powers (1900-2014, in % of GDP)
Source: Göbel (2010), based on IMF, Eurostat, Deutsche Bundesbank/Federal Bank of Germany, interim estimates.

As a continuation of figure 11 of subsection 2.4.4 it is obvious, that the Great Recession has catapulted the debt ratios to the highest level since the Second World War due to public aid. Governments felt the need to incur large debts in order to stabilize consumption and investment and to avoid a credit crunch (Göbel, 2010). The graph again shows that the debt ratio after the start of the Great Recession is higher than ever in peacetime, despite the reunification of East and West Germany, when debt rose from 40 to 60%. A remarkable finding (Plickert, 2013). In reconciliation to private debt ratios, they follow a similar course as the figure below speaks a clear language.

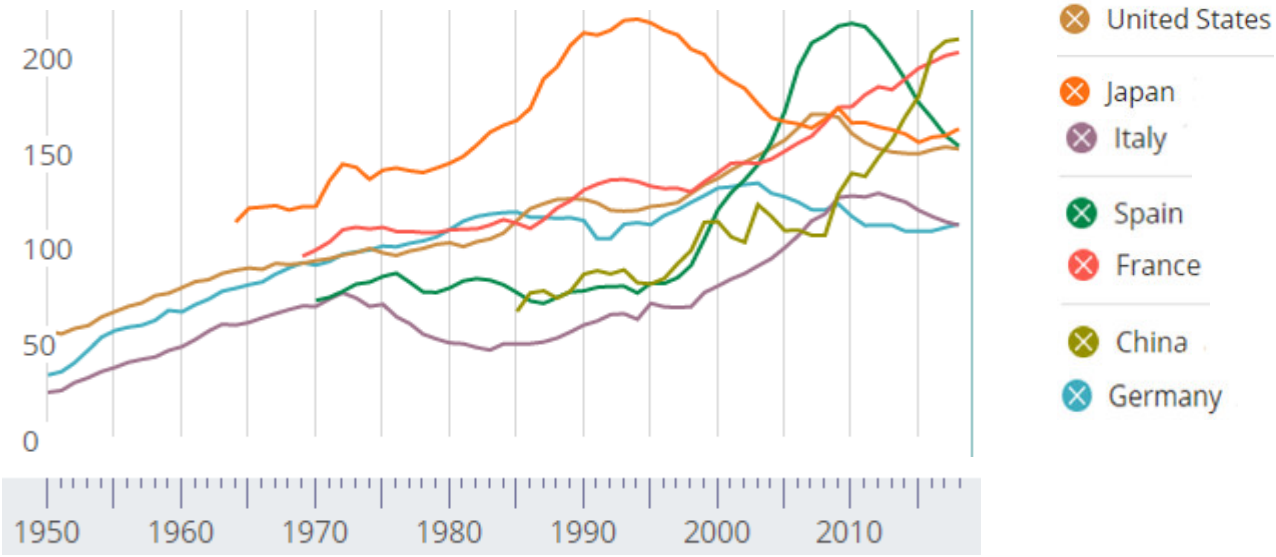


Figure 29: Private sector debt in international comparison 1950-2018 (in % of GDP)
Source: IMF (2020)

Compared to subsection 2.4.4 and based on the results of the graphic, it made sense to take a look at the past, in which financial instruments such as those in the Great Recession and the increasing influences of the real estate industry played a subordinate role. Accordingly, the development of private debt ratios after 1950 follows a pattern similar to that of public debt ratios with extremely rising courses.

3.4.4.2 Period around the Great Recession

This subsection focuses on the development of debt ratios during the Great Recession and provides detailed insights into the respective developments. Starting with the US public debt ratio there is an obvious curve visible.

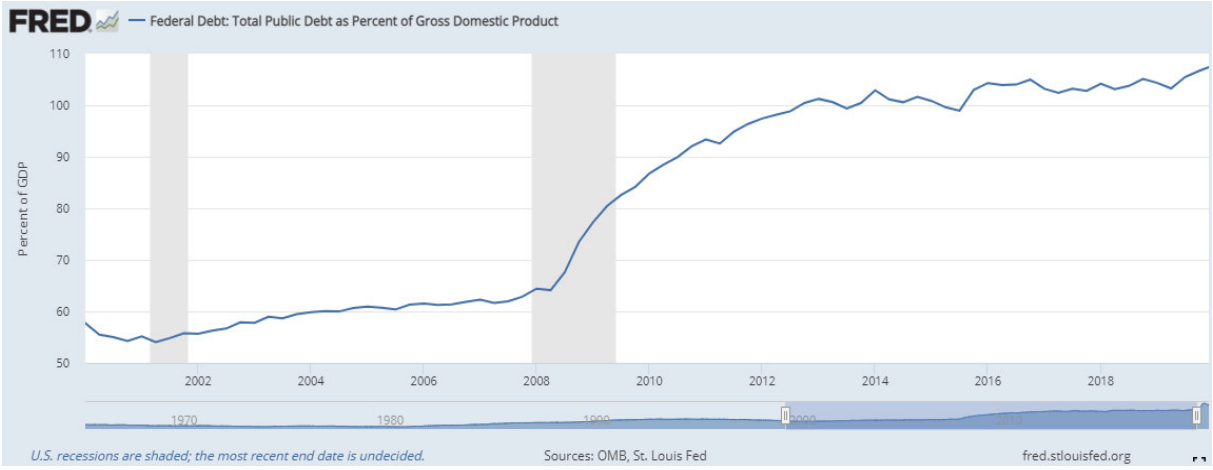


Figure 30: Federal debt: total public debt as percent of GDP 2000-2019

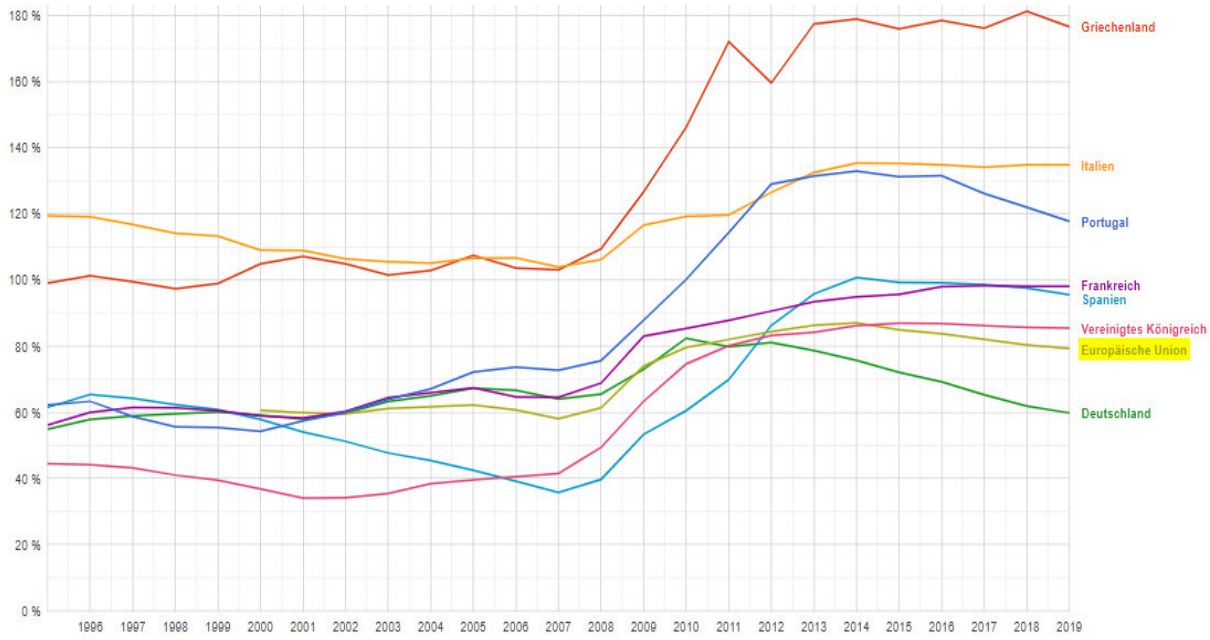
Source: U.S. Office of Management and Budget; Federal Reserve Bank of St. Louis (2020)

The huge rise in debt ratios is an immediate consequence of a particularly serious slump in the global economy after the Great Recession. It should be emphasized that this was initially triggered by over-indebtedness in the private sector and then resulted in a sustained slump in private demand. A failure which could only be partially replaced by the creation of additional government demand (Illing, 2014: 18).

As of March 2020, the two largest foreign creditors of the USA by far were Japan and China. They alone held $ 1,272 billion and $ 1,082 billion in US Treasury Securitites, respectively, representing nearly remarkable 10% of the US total debt ($ 23,687 billion), of which almost 30% are held by foreign investors. Great Britain ($ 395 billion), Ireland ($ 272 billion) and

Brazil ($ 264 billion) follow by far (U.S. Department of the Treasury, 2020). The rest of the mountain of debt is roughly categorized into the following creditors: on the one hand the Intragovernmental Holdings related to the U.S. government of rounded $ 6,000 billion (such as the Social Security Trust Fund and Federal Disability Insurance Trust Fund in the amount of almost $ 3,000 billion, Office of Personnel Management Retirement rounded up to $ 1,000 billion, Military Retirement Fund rounded up to $ 1,000 billion and all other funds together e.g. Medicare also $ 1,000 billion). On the other hand the Public Debt, which consists of approximately 80% of the National Debt (meanwhile over $ 20,000 billion). As already described above, around a third of this is accounted for by foreign governments and the rest in particular by U.S. Banks and investors. Of the remaining two thirds, the Fed holds the bear portion (approximately $ 8,000 billion). The rest is split into investors and mutual funds (totaling over $ 5,000 billion) and other funds worth $ 2,000 billion, e.g. pension funds (Amadeo/Anderson, 2020).

The graphic illustration and development of private debt ratios is extensively outlined in the figure 32 and takes into account both the global trend and the development of the world powers. Since the reduction of the debt surplus of households and companies goes hand in hand with a persistent dampening of growth, the debt ratio of the government rose in the course of the financial crisis. It is evident that in this context traditional monetary policy has reached its limits as a stabilization instrument in the former Great Recession and that active fiscal policy had to be used more to prevent a fatal downward spiral. It was one of the main points why a massive slump like the Great Depression of the 1930s could be prevented in many emerging countries and in most industrialized countries, including all advantages and disadvantages. In order to justify this multi-dimensional point of view, it must be noted in line with Illing that the sharpest worldwide rise in government debt ratios since the Second World War is a reflection of the high costs of the financial crisis. Contributing factors include both direct costs, such as the support of the financial sector through bank bailouts, and indirect costs, such as high losses of tax revenues resulting from the collapse of economic activity (Illing, 2014: 18ff.). This is not only obvious in the previous graphic about the USA, but also due to the public debt ratios in the EU, which show a synonymous behavior pattern like the previous US-figure:



Greece **Italy** **Portugal** **France** **Spain** **United Kingdom** **European Union** **Germany**

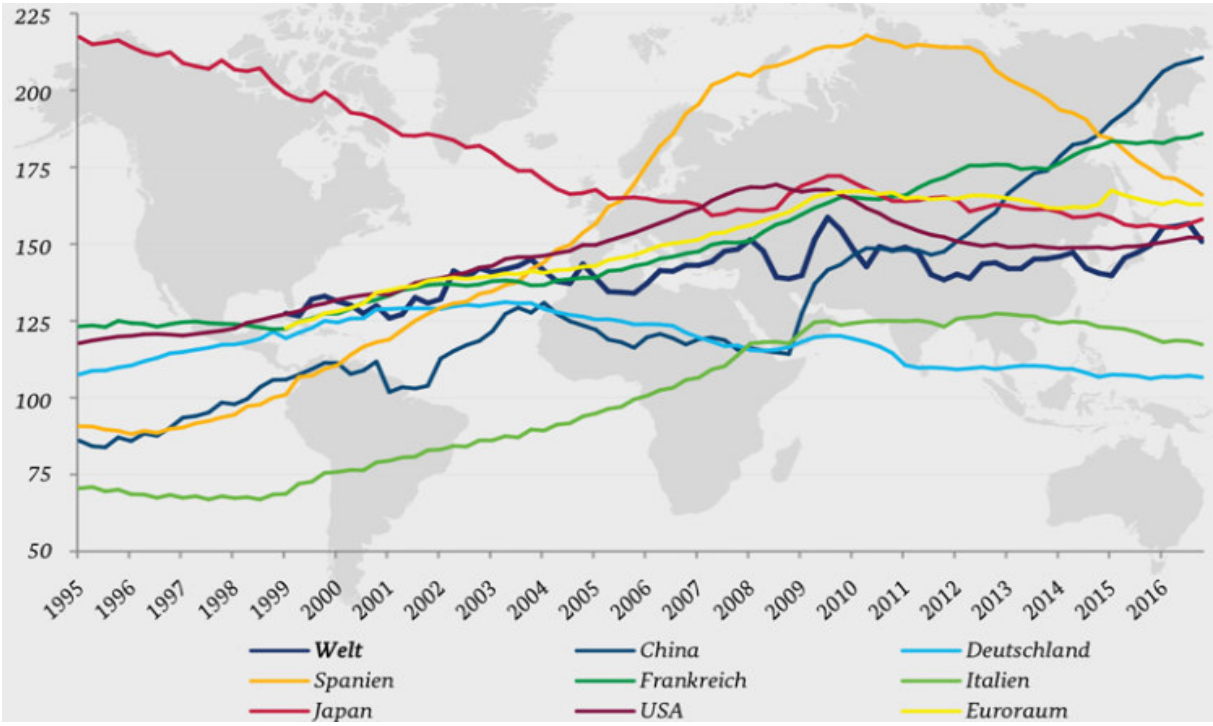
Figure 31: Government debt in % of GDP, member states of the EU 1995-2019

Source: European Commission Eurostat (2020; government-finance-statistics)

In all of the countries shown, it is striking that the state economic stimulus measures accompanied by the EU and ECB have only given the level of debt its lively expansion and have become the hallmark of recent crisis management. By the way, four of the five largest EU countries are above the EU average in terms of their debt ratio (Italy, United Kingdom, France, Spain). Only Germany was just below 60% (59.8%) by December 31, 2019. The top 3 debtors include Greece, Italy and Portugal. In the EU, the creditor structure differs considerably between the member countries, which the European statistics agency Eurostat refers to as sectoral transaction partners. It diversifies according to three categories, firstly foreign creditors, secondly domestic financial companies (including banks, insurance companies, funds and pension funds) and thirdly all domestic companies outside the financial sector. It draws a concise preliminary conclusion: “In half of the Member States, non-residents hold the largest share of government debt”. Moreover, the long-term maturities of the debt relationships predominate. A balanced creditor ratio can be seen in Germany, for example, which is in the middle of the EU average. This is because 47.7% of German government debt is held by foreign or non-resident creditors, 50.4% by financial resident corporations and 1.9% by domestic non-financial sectors. Bonds are thereby the main financing instrument (>80%) in almost all Member States (European Commission Eurostat press release, 2019). What elementary insights can also be seen from the previous graphic is the high level of debt that has remained after the

Great Recession. The late consequences of this development from the financial crisis culminated in the so-called "Euro Crisis", which since 2009 has combined aspects of a sovereign debt crisis, banking crisis and financial crisis. Individual EU countries such as Greece, Portugal, Italy, Spain and Ireland became problematic children of the EU because their increased borrowing led to a sovereign debt crisis and at the same time to a stress test for the EU after rating agencies devalued their government bonds enormously. Their national fiscal policy reached its limits and was dependent on the help of the community, which led to a rescue package in the form of billions in loans and austerity measures for Greece (Kalb, 2012: 3ff.).

To round off this subsection, it is worthwhile to take a look at the development of private sector debt in the recent past of the Great Recession. For, as already indicated, it shows similar trends.



World **China** **Germany** **Spain** **France** **Italy** **Japan** **USA** **Euro area**

Figure 32: Private debt in % of GDP (global view 1995-2017)

Source: Federal Ministry of Finance Germany (2017: 19; based on IMF-data)

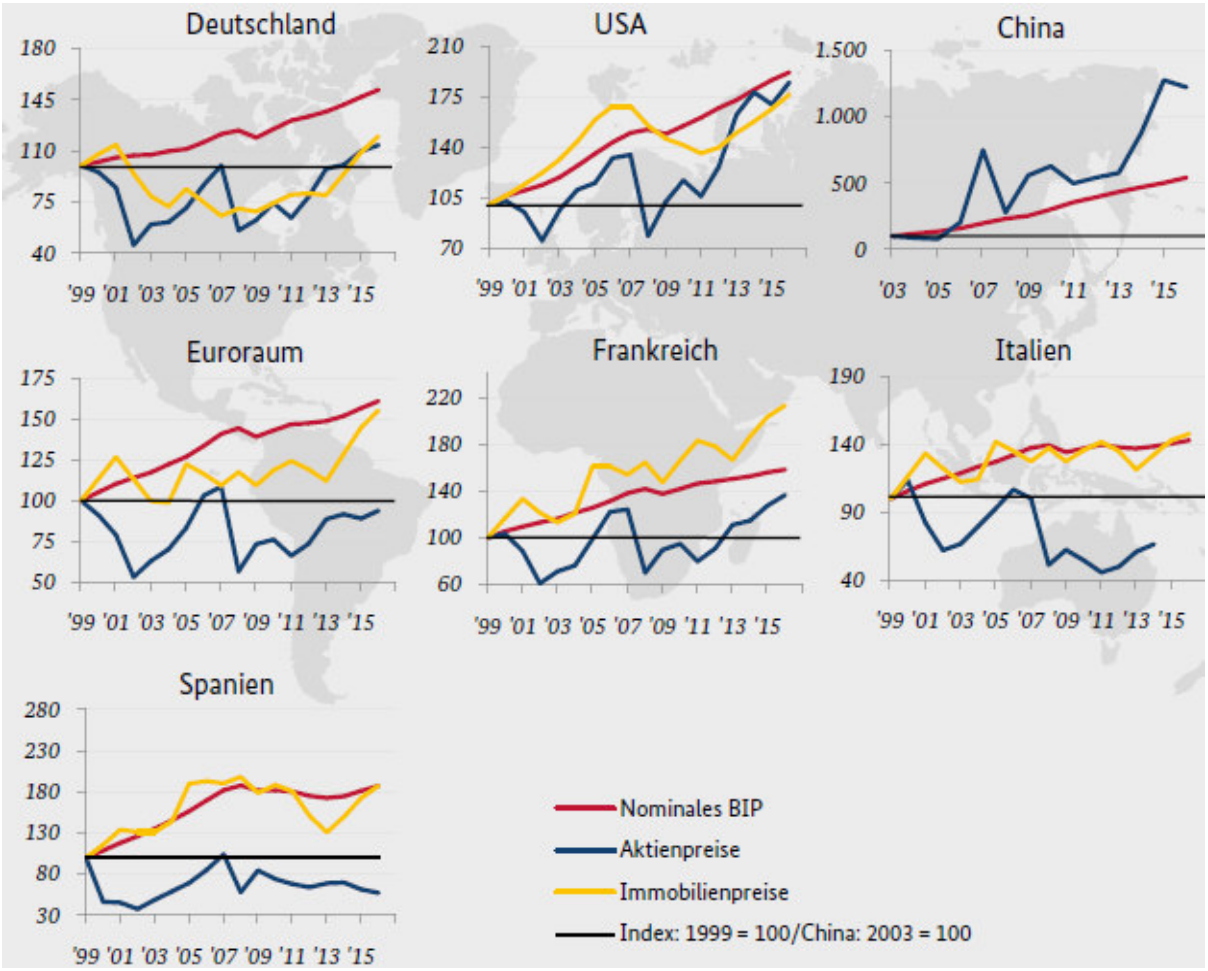
The IMF definition takes into account the "total stock of loans and debt securities issued by households and non financial corporations as a share of GDP".

The fact that the Great Recession also has a visible effect on the private debt ratio has already been indicated in this chapter. This preliminary assessment gets sufficient breeding ground with the present graphic and shows with the exception of Japan - who contested the path of debt

restructuring - that in the run-up to the financial crisis all curves (mostly strong) move upwards. An analysis of the course of the first decade of the new century shows an almost explosive development in private debt. Two factors of origin are to be used in particular. Firstly, the result of the Fed's gradual cut in key interest rates in response to the terrorist attacks of September 2001, in order to support the weakening economy and prevent a long-lasting slide in prices on the US stock exchange (Jahnke, 2008: 5). And secondly as a result of falling real interest rates after the introduction of the euro. For example, in Spain - chosen here as the graphic leader - there was a huge credit-financed real estate boom, as well as in Italy, France, the Netherlands and some smaller countries. After the decline in property prices, which began largely in 2007, large parts of the population and the corporate sector of the eurozone got financially under water - their debts were greater than the lower market value of their houses and apartments. Thrift was therefore the order of the day for those affected. Such reactions then meant a counterproductive process chain for the economy as a whole, as this significantly weakened the demand for goods and services. This was tantamount to a blow to the economy, which in turn led to a steep rise in unemployment and falling inflation rates, which was exactly the opposite of what debtors could use. Debt cannot be eliminated simply if the world just wants to save. The effect on the government side and its indebtedness was only a matter of time after various bailouts for banks and systemically important other companies were launched and public debt increased far beyond what actually happened when the monetary union was founded. The aggregate government debt of the eurozone is well above what should be the maximum limit of 60%. Economical business is already in order from the contract side, which, however, seeks an adequate balance so that there are no lasting recessive impulses on the economy (Wermuth, 2015). A challenge that has a long-term character.

3.4.5 Stock markets and real estate developments

This subsection starts with an excellent comparison overview of major EU countries as well as the world powers USA and China with regard to their developments in GDP, the stock markets and property prices. Since the topic “GDP” was already dealt with in one of the previous subsections, the focus is on the last two. The timeline is limited to the horizon between 1999 and 2015 and is therefore to be assigned to the Great Recession in this subsection.



Nominal GDP **Share prices** **Real estate prices**

Figure 33: Share and property price development of selected countries

Source: Federal Ministry of Finance Germany (2017: 24; based on data of Worldbank, OECD)

The collective view of the individual curves shows what has already become a topic in the previous sections. The United States experienced a real housing bubble between 1999 and 2007 which came to an abrupt end with the Great Recession. A comparable development largely failed to materialize in the rest of the world, including the euro area (with the exception of Spain). Again, almost all curves show especially in 2008 the slump on the stock markets even if the intensity is not the same everywhere. Why this development was mainly observed in the USA? In addition to the successive cuts in key interest rates already described, three other factors played a role in favor of the rise in property prices: first, psychological reasons due to the widespread belief that due to limited resources on land there is no better investment than this and that an increase in real estate prices can be expected. Second, political causes are highlighted when at the turn of the millennium the Clinton administration saw itself forced to tackle inequality in the United States and to give every American the right to own his or her

home. Clinton's then housing minister Andrew Cuomo reacted to this and instructed the two state-sponsored mortgage banks Fannie Mae and Freddie Mac to loosen their lending standards and thereby facilitate home loans. The boom was therefore wanted by the state, especially by credit customers with poor credit ratings ("Ninja: No income, no job, no assets"). And the third point is about the buzzword 'securitization' at that time which had to do only with the banks, cemented the belief in the power of new financial instruments and infected the entire financial industry. Because the securitization of home loans in the form of securities became known under the name 'Mortgage backed securities' and was manufactured on a large scale by large investment banks such as Lehman Brothers. They bought mortgage loans from other banks, bundled them in a package and sold them back to other investors as a security secured by mortgages (ultimately by houses). This type of financial transaction seemed to be every banker's dream come true. They seemed like the perfect way to eliminate business risks once and for all. The end result is known (Kremer, 2017).

Under the conditions of a globally operating banking industry the described risks from the subprime lending business had an impact worldwide, not only on the real estate markets but increasingly on the stock markets. Because in a world of open financial markets banks could now buy these securitizations from anywhere. So the risk was spread all over the world. A supposedly ideal situation in which the consequences of the collapse on the American real estate market not only affected it itself but also the global capital markets (Kremer, 2017). It is advisable to take a close look at the then S&P 500:

Figure 34: S&P 500 10 years before and after the Great Recession

Source: Financial portal "finanzen.net" (2020)

The curve begins in a phase of rising share prices favored by the dotcom bubble at the time which flattens off again after 2000. After that period the rising trend to the Great Recession in early 2008 followed by another with only a few or very short drops until 2018. The first slump can be observed in December 2018 after the Fed raised its key interest rate from 2.25% to 2.5% on December 19, and announced two more in 2019 as well as quantitative tightening. Another look at Europe is worthwhile.

Figure 35: EURO STOXX development 10 years before and after the Great Recession
Source: Financial portal "finanzen.net" (2020)

At first glance, the optical curve of the leading European index Eurostoxx 50 (50 largest listed companies from the euro area) actually looks different from that of the S&P 500, but has a closer look at similar outliers and a predominantly increasing path since the Great Recession. The all-time high of over 5.400 points in March 2000 is followed by the already mentioned bursting of the dotcom speculation bubble in the technology sector, a low of around 1.850 points in March 2003. After a catch-up marathon between March 2003 and July 2007, a further burst of a speculative bubble - related to the US real estate crisis and Great Recession - caused the index to plunge again to 1.800 points. The turning point was not initiated until the Great Recession slowly subsided and the recovery, and the index rose again inexorably until the 1st quarter of 2011 before the Euro Crisis caused the price to plummet again. Special circumstances and force majeure were required to get the course back on track. In particular through the three famous words "whatever it takes" by former ECB chief Mario Draghi in advance of the

announcement of new ECB bond purchase programs to an unspecified extent (Draghi, 2012), but also by the Fed, the leading European index strengthened again. It was three words that stabilized the financial markets and ensured that the Euro Crisis calmed down. The successive increase until 2020 was only disturbed by short-term faults in the meantime, although one can certainly attribute great weight to these globally. These include the Ukraine crisis starting in 2014 (Thompson, 2017), Argentina's sovereign debt crisis from the second half of 2014 (Fink, 2014), the culmination of Greece's sovereign debt crisis from June 2015 (Tooze, 2018), disappointing economic data in the USA in October 2015 (Wearden, 2015), bad economic data in China (Tooze, 2018) and oil price decline (fear for the world economy) in January 2016 (ECB, 2016: 5ff.) and followed by the Fed announcement of key rate hikes and QT in December 2018 (as described earlier in this chapter).

If you look at the development of the stock index of the EU‘s heavyweight, the German DAX, this path is based much more on that of the S&P 500.

Figure 36: DAX development 10 years before and after the Great Recession
Source: Financial portal “finanzen.net” (2020)

All in all, this trend was increasing and could not be stopped by various short-term drops between 2015 and 2017 as described before. The period between December 2016 and February 2018 was marked by renewed announcements from the ECB to flood the financial markets even longer with cheap money (QE). According to reports bond purchases had to be continued at least until the end of 2017 and have given stock markets a boost (ECB, press release December

8, 2016). Almost overcompensated during this period and context are the political risks that have arisen from the verbal skirmishes between a via twitter ruling US President Trump and megalomaniac dictator Kim Jong-un in North Korea. After all, we are talking about missile tests and a threatened nuclear war which were the topic of various overtures of both (Volkert, 2018).

After a short-term downward trend in March 2018 due to the consequences of the worsening of the trade dispute between the USA and China (Hecking, 2019) the leading index rose again in line with the Fed's monetary policy decisions. The Fed cut rates three times in a row to boost the slowing economy. As of 2019, it was between 1.5 and 1.75% (Powell Press Conference October 30, 2019/FOMC). In addition to the key interest rate strategy, the visible rise in the major indices is due to renewed monetary expansion. Between August 26, 2019 and December 2, 2019 alone, more than $ 300 billion was pumped into the markets (Board of Governors of the Fed, 2019). This is also reflected in the following chart of the MSCI World, which shows the development of more than 1,600 stocks from 23 industrialized countries.

Figure 37: MSCI WORLD development 10 years before and after the Great Recession
Source: Financial portal “finanzen.net” (2020)

The big difference between the course in the graphics above and the course from the Great Depression is becoming clearer than ever. While it took about five years after the Great Recession to reach a comparable pre-crisis level of the S&P 500, the pre-crisis level after the Great Depression was far from being reached even after 10 years.

3.5. First crisis results including economic theories

This interim conclusion deals with the summary of the character traits of the Great Recession combined with the assignment to economic theories. As an introduction, it should be noted that the public crisis discussion was often critical of the supervision of the financial markets at the time. The dialogue had developed more "in the direction of stronger regulation of the financial markets" and thus the maturing process of the financial market architecture. Here the hope was to find traces that could assist in future prevention. This question cannot be answered with either a „yes" or „no", because there are no limits to the theoretical frame of reference. Plumpe corroborates such a crisis extrapolation with the margin "that there are in fact no actual crisis theories, but all the more ideas of imbalance, be they necessary or avoidable. The impression is gained, in particular, that for numerous economists of monetarist or Keynesian origin, crises are avoidable phenomena" (Plumpe, 2011: 25f.). In this context, Piketty cites the tendency to increase social inequality in capitalist societies (Piketty, 2014: 13f.), which are associated with vulnerability to crises (Galbraith, 2009: 13).

From the above perspectives, numerous threads of discussion arose questioning the economic theories that form the substructure of the modern financial system. Above all, the "efficiency market hypothesis" of the Chicago finance professor and Nobel Prize Winner in economics, Eugene Fama, whose theory was able to interpret at least parts of the crisis' outbreak. It has been considered as one of the most influential theories in the field of capital market theories since 1970 and pursues, among other things, his thesis that "the price or rate of a share at the moment of its determination contains everything that was predictable at that time." This is his definition of "efficiency" of free markets (Fama, 2009). As a supporter of free markets, he decidedly investigated how prices work in the markets and came to the conclusion that the Great Recession was not triggered by the curious stock market developments. Rather, according to his interpretation, it was the surplus of credit in the USA that made the markets develop inefficiently. With the recession at the time, the American homeowners went bankrupt and that was not the fault of the markets, but that of the politicians.

It was only through laws and semi-state banks that politicians specifically ensured that even economically weak citizens were given a loan to buy real estate. He considers such interventions as well as the rescue of banks and real estate financiers to be very questionable and prefers the market to weed out weak participants. Likewise he considers bubbles at the (financial) markets a myth, which are quasi neither predictable nor existent for him. They rather

reflect the usual exaggerations that can occur (Fama, 2014). He is also critical of the fact that when people pin bubbles on the markets to explain a stock market crash (Fama, 2013): “Bubbles mean that prices go up and that you can predict when they will go down again. But people have tried to predict when prices will go down again. And there is no evidence that they can.” So the core of his thesis is that price movements in the stock market are inexplicable and unpredictable. After all, current stock market prices and prices include all available information, even that which few investors have. The guiding principle behind it is as follows: as soon as investors have certain information, they can react and act accordingly. Those who know that prices are too low buy and thus contribute to price increases. If, however, on the basis of this mechanism all available information is already included in the prices, then no one can have any information about how prices will develop in the future. The development of the prices is thus dependent on the basis of the next information, which at this point in time is not yet available to anyone. This also makes the stock exchange prices unpredictable. How it continues, works completely coincidentally (Fama/Bernau, 2014).

In addition to the efficiency of the markets, Fama's position was outweighed by skepticism about state intervention in the economy, where he would have preferred to let the companies concerned go bankrupt in order to clean up the market (Fama, 2009). In view of the new economy bubble and the Great Recession at the time, however, this view was met with initial reservations. After all, hardly anyone found the world of banks and stock exchanges to be efficient (Bernau, 2014). Instead, with the roll-out of comprehensive economic stimulus packages to contain the financial crisis, the schools of thought of John Maynard Keynes and Hyman Minsky regained relevance, even if Fama was rather critical of these interventions (institutional money/Fama, 2009). None other than Paul Krugman spoke in the New York Times on November 29, 2008 of the “Keynesian moment” in global economic policy, heralding an elementary reorientation within economic thinking. Here, the call for government measures became ever louder: “If you were going to turn to only one economist to understand the problems facing the economy, there is little doubt that the economist would be John Maynard Keynes. Although Keynes died more than a half-century ago, his diagnosis of recessions and depressions remains the foundation of modern macroeconomics. His insights go a long way toward explaining the challenges we now confront” (Krugman, 2008).

The neoliberal ideology, which was represented by important economists like Milton Friedman or politicians like Margaret Thatcher and which dominated economic activity from the 1980s

onwards, was about to be replaced by the state rescue measures during the Great Recession. In essence, before the crisis broke out, the market was left to its self-regulatory powers and was subject to the assumption that it could best develop its productive powers if it acted free of state interference. Based on these theoretical economic considerations and based on the requirement for more efficiency, the privatization of state-owned companies from the postal, rail and telecommunications sectors began in practice since the 1990s. The historian Philipp Ther concretizes these traits in contrast to state-oriented theoretical structures: “The reduced state should no longer strengthen demand as in Keynesianism, instead independent central banks and monetary policy should indirectly direct the economy. Other fixed points were the external and internal liberalization and the deregulation of the national and international financial markets” (Ther, 2017: 125f.). This economic theoretical conviction provided the template for lobbying efforts by global financial actors, most notably Alan Greenspan, who agreed with the rampant activity in the financial markets. This gave rise to complex and in some cases opaque financial products which, due to their explosive mix, ultimately played a part in the outbreak of the crisis (cf. subsection 3.1.2).

In relation to the crisis outbreak discussed, the theories of the renowned economist Hyman P. Minsky on the financial markets also received a revival. His theories in the form of the so-called “Minsky moment” remained unnoticed for a long time and gained their greatest reputation after the death of their creator. As a post-Keynesian, he did not believe in the self-healing powers of the market as propagated by the liberals, but rather in the indispensability of state intervention in crisis situations when markets previously tended towards instability or imbalance (Braunberger, 2007). In essence, Minsky's theory states that long periods of stability tend to provoke wild swings in the financial markets when market participants such as banks, companies or consumers wake up from their lethargy and are willing to take on more risks in terms of financing in order to make more profit. This development is also accompanied by intensive competition between banks, which in such a phase give free rein to their creativity with regard to new financial products. In the following, the crisis theory contains three cycles with which the behavior of investors can be characterized. In the first cycle, investors initially engage in conservative financing (“hedge”), in which most of the economic units - households, investors and firms - are able to finance all their payment obligations with their cash flows. If this approach proves stable, this leads to the second cycle of “speculative”. In this cycle the borrower can only pay (increased) interests. If the economy continues to develop, the last stadium in the cycle is the “Ponzi” scheme. Borrower can not even make the interest payments,

must borrow again to pay them. The economy becomes more and more unstable and crisis-prone until a financial crisis actually occurs. In summary, it can be said that for Minsky the capitalist system is not stable enough and stability leads to instability. In such extraordinary phases of imbalance, there was only one solution for Minsky. The state had to step in (Minsky, 2008: 220ff.).

When considering the above contradicting theory strands (neoliberalism vs. Keynesianism) in the overall context, it becomes clear that positions that prefer a combination of the two do exist. If, after the financial crisis, additional government spending (including promotion of private demand, facilitation of credit and direct government investment) led to an increase in demand-oriented economic policy, this temporarily weakened the supply-oriented logic (orientation toward the production of companies). Here Christoph Schmidt, one of Germany's Wise men in the Economy, has a clear opinion: “A good macroeconomist can never be only supply-oriented or only demand-oriented. I wouldn't want to do without either of them - neither Keynes nor Friedman (Schmidt, 2009)”.

Finally, the chapter was able to show which economic theories were called upon in the context of the Great Recession and a clear reorientation could be seen. Of course, this does not mean that the Keynesian concept should be permanently applied, but rather that it must make a reasonable leap when periods of crisis come to an end.

4. CORONA CRISIS

The third main chapter contains a comprehensive description of the Corona Crisis, which is far from over but the knowledge gained through the crisis events was mandatory for the investigation. Also the chapter consists of the crisis' background and consequences, followed by the applied crisis management and effects on the economic indicators, which are also closely related to the economic theories.

4.1. Background and causes

The origins of the Corona Crisis and the associated pandemic go back to November 2019 and locally to Wuhan, the capital of the central Chinese province of Hubei. Even if scientists disagree as to how a virus with the initial name "2019nCoV" and since February 2020 with the name "SARS-CoV-2" was transmitted to humans, at least reliable suspicions exist. The obvious chain of infection begins with bats via the detour of other animals to humans, which ultimately causes Severe Acute Respiratory Syndrome ("SARS") and is listed as the official virus disease COVID-19 ("Corona Virus Disease 2019"). The main focus of this influenza-like illness is the attack on the lungs and respiratory tract, which can even be fatal, especially pre-treated and elderly people. As a source of virus transmission to the population, the media increasingly report on the fish market in Wuhan, where a variety of exotic animals are offered for consumption and where humans and animals meet in a very confined space. There is also speculation about an accident in a Wuhan research laboratory through which the virus could be transmitted to humans. The actual origin, however, remains unclear (Fuest, 2020: 17f.).

The topic gained more momentum from December 20, 2019, after virologists and doctors increasingly reported on patients who are treated with pneumonia in intensive care units. Laboratory tests on December 27, 2019 showed that a virus from the group of coronaviruses caused the disease. Although the health effects on the individual are not as dangerous as with the SARS virus of 2003, which caused the death of about 10% of infected persons, the disease is still not as severe as it was in 2003. However, the "SARS-CoV2" virus is highly contagious and therefore easier to transmit. As early as December 31, 2019, the World Health Organization (WHO) received extensive information from the Wuhan City Health Department about the outbreak of a previously unfamiliar lung disease, which was spreading rapidly as the coronavirus at the time. The sharp rise in January 2020 forced the Chinese government to take quarantine measures on January 23, 2020, which first largely sealed off the city and then expanded to most of Hubei province. Despite numerous travel restrictions imposed on China,

the infection rate was rapidly shifting to other countries, initially increasingly to South Korea, Japan, Thailand and other countries in East Asia (Fuest, 2020: 18f.).

The events became more dramatic when the virus was first registered across continents. In Europe, Italy is the first country to be affected, due to a close economic exchange between the north of the country and China. Mutual visits by business delegations and business relations are commonplace and offered enough potential to import the virus. Reports of the first virus infections lead to the country suspending all flights to and from China. After the country has been hit by numerous infections in the meantime and the virus breaks out simultaneously on an Italian cruise ship with 6,000 passengers, Italy imposes a state of emergency on January 31, 2020. Germany, too, feels affected by the treacherous virus at an early stage through business relations, after Chinese representatives visited a company in the automotive supply industry near Munich. In February 2020, the epidemic came ever closer to its peak, before China reported 80,000 infected persons on March 1, 2020, of which 2,870 were fatally affected. Severe travel restrictions and curfews are also being used as opportune measures to limit the spread of the virus. Meanwhile, the spread of the disease continued in Europe. While Italy continues to lead the way, France, Spain and Germany are also experiencing increasing numbers of infections shortly thereafter (Fuest, 2020: 19f.). And the USA should also become a hardship case in terms of infection rates in a relatively short time. At the beginning, however, the government did not give the impression that the pandemic was taken with the necessary seriousness. Although Donald Trump imposed 15-day initial restrictions from mid-March 2020, he intended to withdraw them again soon in view of the damaging effects on the domestic economy. These considerations led to a certain astonishment when in the same period of time the number of cases in the USA was already in a very advanced stage and initiated scon at that time a first discussion of principles. It was a matter of weighing up in principle the protection of the health of each individual and the protection of society from another severe recession, on which no uniform opinion could be formed to this day (Münchrath/Rickens, 2020).

4.2. Economic consequences

When looking at the economic impact, it was initially noticeable that companies and the financial markets reacted relatively slowly to the pandemic. Although the spread of the virus was still considered a risk factor by market players up to and including February 2020, it was initially not perceived as a potential crisis. The background is the association with the SARS virus of 2003, which was then spread only on Chinese soil. Important stock markets were still

speaking a clear language in mid-February 2020 (Fuest, 2020: 20). The Dow Jones 30 Industrial reached its all-time high of 29,551 points on February 12, 2020 (Dow Jones Industrial Average, 2020), although on the same day the USA recorded 14 confirmed corona cases (Fuest, 2020: 20). Just one week later on February 19, 2020, the Euro Stoxx rose to 3,866 points, the highest level since the Great Recession in 2008 (Euro Stoxx 50, finanzen.net, 2020), while the German DAX climbed to an all-time high of 13,789 points (DAX 30, finanzen.net, 2020). Immediately afterwards, however, the picture crumbles as nervousness on the stock markets gradually increases towards the end of the same week. On the one hand, there were signs of a slump in the Chinese economy in the 1st quarter of 2020, with January and February already registering an 11% year-on-year decline in foreign trade and industrial production of 13.5% (Beer, 2020). On the other hand, an increasing number of countries are reporting a rise in the number of cases of infection, which raises concerns about the spread of the virus (Fuest, 2020: 20f.).

At the G20 summit in Riyadh, Saudi Arabia, OECD Secretary General José Ángel Gurría pointed out the threat of the virus from China, where appropriate containment and policy measures must be implemented to protect the global economy. But this announcement came too late, as the virus has already arrived in many countries around the world and the global pandemic became reality. Monday, February 24, marks the day when this insight also spilled over into the global financial markets (Fuest, 2020: 21). The Japanese Nikkei Index fell by 3% on this day (Nikkei Stock Average, 2020), while the Euro Stoxx 50 even lost 4% (Euro Stoxx 50, Finanzen.net, 2020). The Dow Jones recorded a loss of 3% at that time and, among other important stock markets, started a rapid decline thereafter, which ended at 25,409 points by the end of the week. On March 12, the decline reached 21,200 points and on March 23, it bottomed out at 18,592 points, which ultimately equated to a loss of 36% within a few weeks (Dow Jones Industrial Average, 2020). The Euro Stoxx 50 suffered a similar low of 37% on March 18, 2020 (Euro Stoxx 50, finanzen.net, 2020), the DAX even suffered a loss of 38% until its low in March 2020 (DAX 30, finanzen.net, 2020). It quickly becomes apparent that the dramatic decline in the financial markets is accompanied by the increased spread of the virus. More and more countries are being forced to take measures to slow down the spread of the virus. This includes the painful option of shutting down parts of the economy. At this point it becomes clear that the world is not only facing a frightening pandemic, but also a severe economic crisis (Fuest, 2020: 21f.).

The picture reflected on the financial markets also confirms the impression made by companies. As early as March 2020, surveyed companies reported that their situation had deteriorated considerably over a very short period of time (Fuest, 2020: 22). More frightening, however, are the bare figures relating to the issue of unemployment. For example, the unemployment rate in the USA outside of agricultural employment skyrocketed between March 2020 from below 4% to almost 15% in April 2020 (U.S. Department of Labor, 2020). The number of initial claims for unemployment insurance formally exploded from under one million in January and February 2020 to over 10 million in March and even over 20 million in April 2020 (U.S. Department of Labor, 2020). In comparison, the wave of layoffs in the Great Recession, which saw eight million initial claims for unemployment insurance at peak times in the first quarter of 2009, looks harmless. In Europe, a divergent labor market development can be observed. Many countries are using the instrument of short-time work, which enables companies to retain their employees during the crisis even if the company has to close down. Nevertheless, the slump in Europe can also be classified as massive (Fuest, 2020:43f.). The figures for the EU heavyweight Germany will be used as an example here. While there were no significant numbers of applications in January and February 2020 (approx. 0.1 million), the number of applications rose to 2.6 million in March 2020 and to a considerable 7.5 million in April 2020. These figures are not comparable to the number of applications during the Great Recession, which peaked in February 2009 at one-tenth of that figure, or 0.7 million (Federal Employment Agency Germany, 2020).

To round off this section, it is necessary to look at the sectors primarily affected by the Corona Crisis. It should also be noted that the extent of an economic crisis often depends on how deep the slump in economic growth is or how many workers lose their jobs. Behind this, however, there can be quite different developments. Because from all crises emerge those who are more or less severely affected. In addition to these losers, there are also a few winners who make it through the crisis with success. This can apply to countries, regions, industries or groups within the population of a country. While the Great Recession primarily resulted in the banks being the losers of the financial crisis, in the Corona Crisis the hospitality and travel industry are the most severely damaged. In addition, traditional industrial sectors such as mechanical engineering, chemicals or cultural institutions also suffer. Incidentally, more highly qualified employees whose work can be performed from the home office are less affected by the crisis (Fuest, 2020: 45f.).

In order not to go beyond the scope of this study, the following section outlines only the direct effects of the Corona Crisis on the aviation industry, even though other sectors such as the entertainment industry, hospitality, travel companies, retail sector and other industries also suffered from severe cutbacks. Immediately after the outbreak of the crisis, there were already numerous large airlines that were on high alert due to restrictions on travel and air traffic, some of which called for state aid and were also dependent on fee reductions by airport operators. These primarily included the three aviation alliances Star Alliance, Skyteam and Oneworld, to which 60% of all airlines worldwide belong. The German airline Lufthansa, for example, applied for government aid, and in a first step massively reduced its flight schedule from originally 26,000 flights per week for a period of several weeks, leaving only every tenth planned long-haul flight and every fifth short- and medium-haul connection. Other companies, such as its subsidiary Austrian Airlines, have temporarily suspended their flight operations completely. Europe's largest low-cost carrier, Ryanair, cut back its flight program by up to 80% by May 2020, but said it wanted to use cash reserves to survive this difficult time. The vacation airline Condor was forced to cancel numerous flights to frequented vacation destinations, as German citizens were no longer allowed to enter these areas. This concerned with different periods among other things the USA, the Dominican Republic, Turkey and Morocco. Other airlines, such as British Airways' parent company International Airlines Group, announced that they would reduce their capacities in April and May 2020 by at least 75% year-on-year and, despite sound finances, would refrain from making a profit forecast for the current year. American Airlines was exposed to the situation that a ban on entry of Europeans into the USA was imposed, which resulted in a 75% reduction in international flights. The same fate befell its competitors Delta and Southwest. As a result, the US airlines applied for state aid with a volume of over $ 50 billion, the first time since the terrorist attacks of September 11, 2001. Planning job cuts in this industry was therefore only a matter of time (Tagesschau, 2020).

4.3. Policy measures

4.3.1 The USA

This subsection concentrates on the political measures of the USA in the context of the Corona Crisis, after a general introduction has taken place. It is unanimous in modern opinion that political intervention is expected in deep economic crises in order to support the economy. The usual measures such as tax cuts and increasing government spending to support aggregate demand are only of secondary importance in a pandemic or health crisis like the Corona Crisis, in which shutting down the economy to protect against infection acts as a crisis control tool.

This became even clearer when masks, protective clothing and disinfectants suddenly generated a worldwide boom in demand. In those countries in which the industry was able to raise the necessary production capacities, the borders were closed for the purpose of partitioning off and medical equipment was no longer exported. Countries without their own production found themselves in a very precarious position and, despite the financial means available, were unable to obtain masks or protective clothing. However, the limits of solving problems through monetary means go far beyond healthcare. The political measures immediately after the outbreak of the crisis took the form of increasingly closing borders, factories, shops, restaurants and cinemas in order to counter the further spread of the virus. Such closures cause enormous losses in the economic value chain and can therefore hardly be compensated with economic stimulus packages. Nevertheless, it is essential that the state acts and tailors its policy to the crisis. Fuest distinguishes between three phases in which interventionist measures are presented as a reaction to the Corona Crisis. The first phase depicts the economic shock at the start of the crisis, which must be absorbed by protecting the financial system. The second phase stands for the shutdown of the economy, in which the affected companies become dependent on government aid. The third phase marks a period in which an easing of the shutdown is sought when the economy shows signs of recovery and this phase is accompanied by subsidies from the respective state (Fuest, 2020: 47ff.).

Before the chapter is embedded in Fuest's vivid phase model, two initial forms of aid packages had already been adopted in the USA on a relatively small scale, even before the Corona Crisis had its greatest negative effects on the real and financial economy. In the first step, the "Coronavirus Preparedness and Response Supplemental Appropriations Act" was passed on March 3, 2020, which released USD 8.3 billion in funds for the development and production of a suitable vaccine and support for the health authorities (U.S. Congress, 2020). In the second step, when the disaster of the crisis more and more reached reality and public perception, the "Paid-Leave Bill" came into force on March 18, consisting of the "Families First Coronavirus Response Act". This enabled employers to apply for tax refunds of up to $ 100 billion for continued wage payments in the event of illness. This included in particular personnel costs for employees who stayed away from work after schools and kindergartens were closed (U.S. Congress, 2020). Due to their size, both initial measures are not an essential part of the analysis of this chapter, but should not be left unmentioned due to the general topic they belong to.

After the financial markets reacted with extreme nervousness and dangerous drama in the course of the outbreak of the crisis (see previous section), monetary policy interventions would become mandatory in the first phase. In situations like these, institutional and private investors are inclined to ditch risky securities and look for safe investments. In particular, stocks are being sold, which causes prices to fall on the stock exchanges. Investments such as American, Swiss or German government bonds, on the other hand, are viewed as safer investments, as well as gold (Fuest, 2020: 49ff.). This is also the background why the Fed announced in its press release of March 23, 2020, among other things, that it would buy up large volumes of corporate bonds ("Establishment of two facilities to support credit to large employers - the Primary Market Corporate Credit Facility (PMCCF)" for new bond and loan issuance and the Secondary Market Corporate Credit Facility (SMCCF) to provide liquidity for outstanding corporate bonds"). Another part of this announcement contained the special message, to acquire now unlimited treasury securities and agency mortgage-backed securities, insofar as this is necessary for the proper functioning of financial markets and monetary policy: "in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions and the economy." In addition, several loan programs with a dimension of up to $ 300 billion have been set up, with which above all companies and households not listed on the stock exchange are supposed to get the best possible credit. An instrument was also used that was already part of the measures taken during the Great Recession, the so-called "Term Asset-backed Loan Facility" (TALF). This instrument is used to purchase securities where securities are secured by consumer and corporate loans. And shortly before the measures presented above, a crisis package was already announced, which included the purchase of government bonds with a volume of at least $ 500 billion and mortgage securities with a volume of at least $ 200 billion (Board of Governors of the Fed, press release March 23, 2020).

As extensive as the package of so-called QE-measures just presented is, it should not be hidden that already on March 12, 2020, the New York branch of the Federal Reserve Bank disclosed far-reaching liquidity injections for banks in a total amount of $ 1.5 trillion. It provided banks with loans of $ 500 billion in the form of a three-month repo transaction, followed by two other similar transactions in the same volume. In addition, it will purchase a wide range of treasury securities as part of its monthly securities purchases. These steps signal that the Fed began its crisis management at a very early stage (Federal Reserve Bank of New York, 2020).

Just announcing such numerous measures can regain confidence in investors and thus strengthen the markets again (Fuest, 2020: 52). According to their announcement, the Dow Jones Index gained over 2,000 points a day later and ended at 20,705 points (Dow Jones Industrial Average, 2020). The S&P 500 also rose by almost 10% and subsequently began a price rally (S&P Dow Jones Indices LLC, 2020).

In addition to the unconventional monetary policy measures taken by the Fed in March 2020, which are forcing an expansion of the money supply, the accompanying lowering of the key interest rate should not go unmentioned. This is discussed in section 4.4.1, but in this context it is clear that the Fed wants to keep banks and companies liquid by opening these money-locks (Fuest, 2020: 47). And the following April also saw a continuation of monetary policy easing after the Fed wanted to relax the debt rules for major US banks for a year. According to this, US government bonds are no longer among the assets that major banks must back with capital. This will allow them to leave their holdings of government bonds out of the calculation for the key indicator of the debt ratio, the so-called "leverage ratio". The measure aims to eliminate bottlenecks in the US government bond market and facilitate lending to private households and companies (Board of Governors of the Fed, press release April 01, 2020). Immediately following this announcement, just one week later it was revealed that the Fed intends to provide a further $ 2.3 trillion in loans to support the economy and small and medium-sized enterprises, while at the same time updating the secondary market facility to allow this vehicle to buy very low-rated bonds and ETF bonds ("exchange-traded funds") at BBB-/Baa3 (Board of Governors of the Fed, press releases April 09, 2020).

In order to take account of the chronological structure in this subsection, the second phase according to Fuest followed in the period at the end of March and the beginning of April, which preceded the so-called "bridging allowances". This is a financial support for affected companies and self-employed who have lost part of their sales during the shutdown or whose income has even fallen towards zero. In the United States, companies responded to this very difficult circumstance with mass layoffs, which - as already described - resulted in initial claims for unemployment benefit of more than 40 million in just two months. This makes it clearer than ever that it is not about normal fluctuations in turnover or income that correspond to a normal risk of entrepreneurial activity. In the Corona Crisis, entire sectors suffer from mostly dramatic drops in sales, which can be traced back to the shutdown of their activities for several weeks. In addition to the monetary policy instruments listed so far from phase 1 (Fuest, 2020: 53ff.),

all these precarious framework conditions also lead to a need for an inevitable federal rescue package that is intended to help people and companies in this emergency. This followed with the designation "Coronavirus Aid, Relief and Economic Security Act (CARES)" and turned out to be the largest in the US history. It was first passed by Congress and legally signed by President Trump on March 27, 2020. Its over $ 2 trillion economic aid package fulfills the "Trump administration's commitment to protecting the American people from public health and the economic impacts of COVID-19" and includes quick and direct economic support for American workers, families, and small businesses, particularly designed to help maintain jobs for American industry (U.S. Department of Treasury, 2020). The following overview concisely lists the components, sources and addressees of this package:

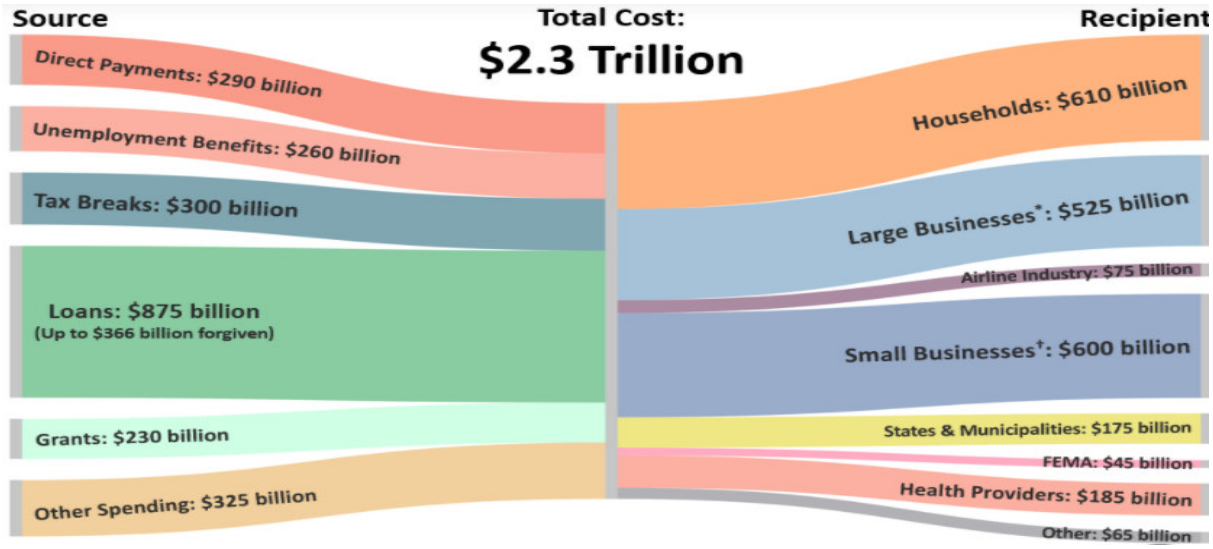


Figure 38: Cares Act overview; *Source*: Committee for a Responsible Federal Budget (2020)

While the type of economic support can be seen on the left, the respective addressees are listed on the right. A deep content analysis of all components would go beyond the scope of the investigation due to the abundance, so that "only" the main components and instruments of the above volumes are listed below:

- One-time direct payments to the US residents of $ 1,200 per person or $ 2,400 for married couples and $ 500 per eligible child. The one-time payment is modified depending on the level of income (U.S. Department of the Treasury, 2020).
- Various supports and (new) regulations in the event of unemployment due to Covid-19. On the one hand, unemployment benefits will be made available until December 31, 2020 for groups who have not yet been eligible (e.g. self-employed or people with limited

professional experience). Secondly, benefits for recipients of regular unemployment benefit will be increased by up to $ 600 per week for four months. An additional 13 weeks of unemployment assistance will be provided to those who are still unemployed after the expiration of the federal unemployment assistance program, through the end of 2020 (U.S. Department of the Treasury, 2020). In addition, the federal government will provide funds to support short-time work programs for the same period (U.S. Department of Labor, 2020).

- Large companies (including airlines) benefit from aid worth billions, especially in the form of tax breaks. These include refundable wage tax credits amounting to 50% of certain wage payments between March 13 and December 31, 2020, deferral of payment of the employer's social security contribution, permission for a five-year carryback for taxable operating losses incurred or to be incurred between 2018 and 2020, and other tax benefits such as depreciation relief.
- For smaller companies with 500 or fewer employees, loans and rescue operations in the form of the so-called “Paycheck Protection Program” (volume:> $ 600 billion) have been set up, which provides for emergency purposes loans for salary payments. These “additional tax credits” can also be used to cover health insurance contributions for the continuation of benefits during paid sick leave, or family leave, commissions or similar remuneration for employees, interest on mortgage obligations, rents, pension benefits and other interest.
- Small business owners can apply for a loan advance called “Economic Injury Disaster Loan” of up to $ 10,000 if they experience a temporary loss of revenue. This does not have to be repaid.
- The Coronavirus Relief Fund allows hospitals and other healthcare providers to claim reimbursement for expenses incurred between March 1, and December 31, 2020 in connection with coronavirus and the treatment of uninsured patients (U.S. Department of the Treasury, 2020).

After parts of the “Cares Act”, in particular funds from the credit program for employers, had already been used up in mid-April, the adoption of the next economic stimulus package, the “Coronavirus Relief Package” on April 24, 2020, added $ 484 billion. On the one hand, the successful credit program for small and medium-sized enterprises was increased by around $ 320 billion to limit the rise in unemployment. On the other hand, a further credit program of around $ 60 billion was made available, additional $ 75 billion for the health care system and another $ 25 billion for coronavirus tests and further research on the topic (Hayes, 2020).

The very extensive portfolio of measures described so far - excluding those of the Fed - already showed considerable dimensions up to and including April 2020, amounting to a rounded $ 3 trillion, which is more than 10% of the annual gross domestic product of the USA. In the further course of this chapter, further monetary policy instruments from May 2020 onwards will be presented. However, a complete list of all measures and instruments exceeds the scope of the study, so that the author only refers to the most relevant ones. The course of time continues to show that the Fed is buying securities such as government bonds on an unprecedented scale and offering numerous credit programs for financial institutions and companies. The latter area of measures, as exemplified here by the "Main Street Lending Facility" credit program for small and medium-sized enterprises, has seen its requirements eased in some cases in order to give the relevant group faster access to capital. While an expansion of the group of beneficiaries and the lowering of the minimum loan size for certain loans to $ 500,000 was announced on April 30, 2020 (Board of Governors of the Fed, press release April 30, 2020), the minimum loan size officially fell to $ 250,000 on June 8, 2020. In addition, the payment terms were also extended. The affected group of companies provides for a maximum of 15,000 employees or $ 5 billion in sales (Board of Governors of the Fed, press release June 8, 2020).

Equally important was the SMCCF emergency program for the purchase of corporate bonds announced at the end of March and launched in mid-May, which initially began with the purchase of exchange fund shares on the secondary market (Federal Reserve Bank of New York, press release May 11, 2020). Just one month later, an additional structure was added to the program, in which a portfolio based on a broad-based market index of US corporate bonds was put together. The Fed also bought individual corporate bonds and exchange-traded funds with a value of up to $ 750 billion, which are linked to a certain minimum rating and maximum maturities (Board of Governors of the Fed, press release June 15, 2020).

As 2020 progressed, it became more and more clear that the recovery of the economy would be largely determined by the further progress of the corona virus and its crisis. The continuation of the loose monetary policy was confirmed at the meetings of the Fed on July 28 and 29 with regard to securities purchases and credit programs, including the very low level of key interest rates. All credit facilities that were due to expire on or around September 30 were extended until December 31, 2020 and March 31, 2021 respectively (Board of Governors of the Fed, press releases July 28 and July 29, 2020). However, the extensive provision of the broad

financial range within this subsection was not without consequences. In his speech of August 27, 2020, Jerome H. Powell accordingly abandoned the Fed's rigid inflation target of 2% in favor of the continued supply of cheap money (Powell, speech August 27, 2020). In this context, it should also be noted that due to a renewed rise in the number of infections and the US economy still weakened by the pandemic, another major economic stimulus package - as a further continuation of the Cares Act - is desired and expected by the government in the 4th quarter of 2020. This would also take into account the fact that various funds have either been used up or expired (Wimalasena, 2020).

The topic of concluding contracts with pharmaceutical companies in connection with vaccine approvals is included in the following subsection and is dealt together with the EU.

4.3.2 The European Union

The elaboration of this subsection begins with a striking overview of the isolation measures and contact restrictions implemented in major European countries at the beginning of the pandemic in March 2020.

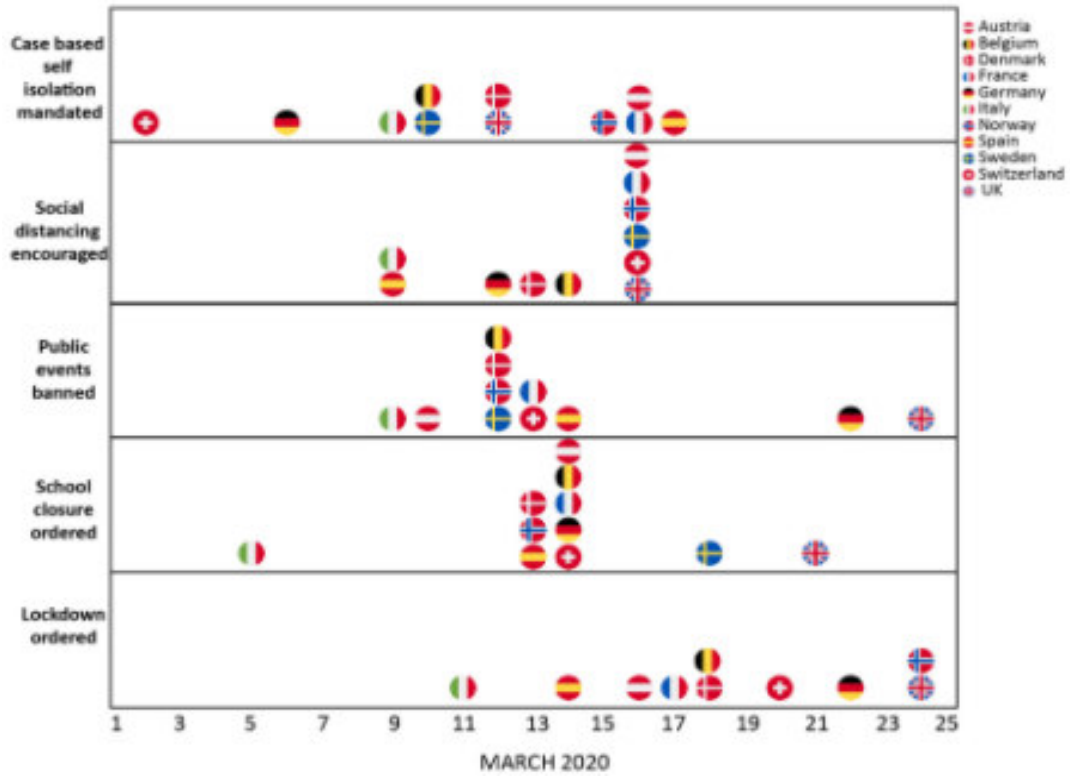


Figure 39: Coronavirus interventions in March 2020 in Europe

Source: O'Hare/van Elsland / Imperial College London (2020)

It becomes clear that the large EU states as well as Switzerland and Norway took far-reaching measures in mid-March. It is obvious that isolation measures and distanced activities have an influential effect on daily and working life, especially with regard to the economic activity of a country. On April 15, the Commission and the President of the European Council presented a roadmap for the successive lifting and easing of the above-mentioned containment measures in order to tackle a return to normality. Containing the spread of the virus has always been a top priority for the European Commission, with the common goal of both supporting the health systems of the member states and cushioning the socio-economic impact of the pandemic. This requires action at both national and European level, on which the current chapter focuses. Further steps, such as the provision of funds for return flights of EU citizens, simplification of bureaucracy or the gradual lifting of travel restrictions, are not the subject of this chapter, the focus is on the financial and aid packages (European Commission, 2020).

The start of the important programs was first recorded on April 9, 2020, when the finance ministers agreed on the EU solidarity package with a volume of € 540 billion, consisting of three pillars, which was finally approved by the heads of state and government on April 23, 2020. It served as an initial corona shield for Europe and, as the first pillar, included precautionary credit lines from the European Stability Mechanism, which as state aid benefited the member states to the tune of € 240 billion for healthcare costs ("Pandemic Crisis Support"). The second pillar concerns the Guarantee Fund at the European Investment Bank EIB, which the member states are also to provide with € 25 billion in guarantees. The financial institution thus intends to mobilize a total of € 200 billion in liquid funds on the financial markets, which are intended as liquidity and financial support for small and medium-sized enterprises. The third pillar concerns the "Sure"-program ("Support Mitigating Unemployment Risks in Emergency") of the European Commission, which is intended to support employees and companies in the sense of promoting short-time working throughout the EU to the amount of € 100 billion (Federal Ministry of Finance Germany, 2020).

Moving on in the chronological line, the EU finance ministers immediately agreed to work on a fund for reconstruction, which should give the European economy new impetus after the coronavirus epidemic. This was presented for the first time on May 27, by the President of the European Commission, Ursula von der Leyen, under the name "Next Generation EU", "embedded within a powerful, modern and revamped long-term EU budget" (European

Commission press relase May 27, 2020). The following graphic shows the three-pronged strategy of the European Commission:

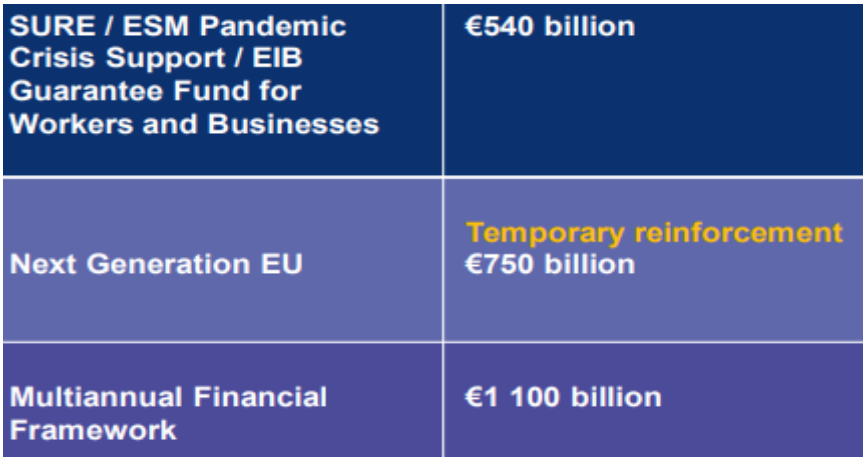


Figure 40: Recovery Plan for Europe; *Source*: European Commission (2020)

The voluminous components make it clear that the potential of the EU budget must be fully exploited "to protect lives and livelihoods, repair the Single Market, as well as to build a lasting and prosperous recovery." The € 750 billion "Next Generation EU" line represents an economic stimulus and investment program to counter the consequences of the pandemic crisis and at the same time a pact between the generations, which must be financed on credit over the long term and paid off by 2028 at the earliest and 2058 at the latest. Together with the three safety nets for workers, companies and states (€ 540 billion) described above, extraordinary measures taken at EU level would cost more than € 1.29 trillion. The associated funds are to be raised on the financial markets and, in addition to targeted reinforcements of the long-term EU budget 2021-2027 (raising in the financial framework), "will bring the total financial firepower of the EU budget to € 1.85 trillion" (European Commission, press release May 27, 2020).

With regard to the contents of the "Next Generation EU" program, it is advisable to take a look at the diversity of the program, which is given in the following overview:

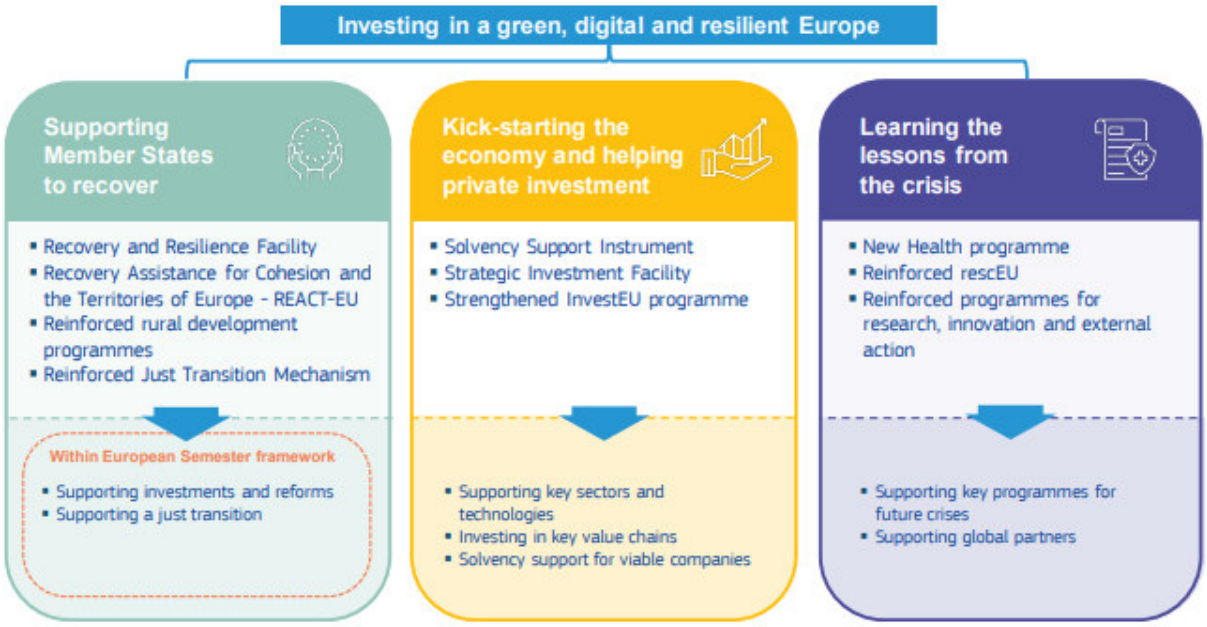


Figure 41: Three pillars of the "Next Generation EU" *Source*: European Commission (2020)

In summary, the three pillars aim to firstly support the member states in building up and managing the crisis so that they can emerge stronger from the crisis. The second aim is to stimulate the economy and mobilize private investment and, as a third, to draw lessons from the crisis and to tackle Europe's strategic challenges. The temporal focus is on the first crucial years of the crisis recovery. With regard to the financing, it should also be added that this is made possible by the so-called "Own Resources Decision", "which will allow the Commission to exceptionally borrow up to € 750 billion on behalf of the Union, through the issuance of bonds, for measures over the period 2021- 2024 (European Commission, 2020)."

In addition to explaining the comprehensive aid and financial packages, it is essential to also refer to the contracts with pharmaceutical companies in 2020 that the EU and the US entered into due to the urgency of the vaccines. Starting with the EU, five contracts for potential vaccines were approved by the Commission in the 2020 timeline - based on the crisis measures - up to the status of the investigation in mid / end of November. First of all, August 27, when the Commission signed the first contract with the British-Swedish pharmaceutical company AstraZeneca. This stipulates that all EU member states can purchase a Covid-19 vaccine, namely 300 million doses with an option for a further 100 million units, the distribution of which is to be proportional to the population. Shortly afterwards, on September 18, the second contract was signed, this time with the two French and British pharmaceutical companies Sanofi and GlaxoSmithKline, which also enables up to 300 million doses of the vaccine. On October

8, the Commission approved a third contract with a pharmaceutical company, this time with Janssen Pharmaceutica NV. It belongs to the pharmaceutical division of the American company Johnson & Johnson and is supposed to deliver vaccines for 200 million people to EU countries as soon as its tolerance and effectiveness against Covid-19 has been proven. An option for another 200 million is contractually built in. The most recent contracts were signed on November 11 and 17, after the German pharmaceutical company BioNTech and its US partner Pfizer agreed on an initial purchase of 200 million vaccine doses on behalf of all EU member states and a further order option for 100 million doses was guaranteed. The delivery requirement also stipulates that a safe and effective vaccine is available. Only six days later the next agreement was signed, this time with the Dutch biopharmaceutical company Curevac. Here even the production of 405 million doses of vaccine has been arranged. At the same time, the first exploratory talks with the US biotechnology company Moderna have already been concluded with the aim of signing a sixth contract (European Commission, 2020).

In the USA, far-reaching contracts were concluded with some of the above pharmaceutical groups, but at an earlier point in time. In Europe, there was then a certain pressure to top it up promptly in order not to end up empty-handed. In April it became known that the US government had signed a preliminary agreement with Sanofi, the largest pharmaceutical manufacturer in the EU, through which the US has the right to the largest pre-order of the vaccine. CEO Paul Hudson summed it up: “The United States government has the largest pre-order because it has invested to share the risk.” The next major US vaccine order was announced on May 21, when AstraZeneca announced in its press release that it had secured the US as a major customer. Washington has invested a billion dollars in development in order to speed up the process (Plickert, 2020). This was followed in mid-July with a deal with the US biotech company Novavax worth $ 1.6 billion for 100 million vaccine units. These dimensions show that the global race for vaccine supplies was well underway in the summer of 2020. Because just a few days later on July 22, an agreement was signed with BioNTech and Pfizer, under which the US government secured 100 million units of the corona vaccine for almost two billion dollars. In addition, the option was granted to acquire up to 500 million additional units. For the year 2021, 300 million units would be available if the effectiveness and tolerability were proven (Hofmann, 2020). In summary, it can be seen that the USA took money in hand early on in order to have an advantage over “competitors” when participating in development.

Against the background of the rapidly increasing number of infections around the world, a milestone then occurred on November 20, 2020 when BioNTech and Pfizer cleared a decisive hurdle for the possible approval of their corona vaccine in the USA. From the final analysis of the relevance study, the vaccine was shown to have 95% protection against Covid-19, which has the potential to become the first available vaccine against Covid-19 in the USA. Because if the upcoming application to the US Food and Drug Adminsitration is positive, the vaccine could be delivered within hours (Banner, 2020). And as of November 25, promising test data had also been announced by Moderna and AstraZeneca in the past few days, for which only the examination by the European Medicines Agency is pending (Förster, 2020). If the outcome to the American health authority is positive, some manufacturers report that the first patients in the USA could receive the vaccine in December. Despite all the joy of such news, it should not be forgotten that the above-mentioned manufacturers in particular wanted to outdo each other with their success reports. From 90% effectiveness to 94.5% to 95% there is a lot involved and the eager observer can guess exactly where the intention is. The pharmaceutical companies have their share prices in view and want to lure the financial markets. The fact that one or the other overshoots the target is not really surprising (Salz/Rauffmann, 2020).

With the thematic transition to the monetary policy measures of the ECB, it should first be noted that the first monetary policy decisions were announced on March 12, 2020 immediately after the outbreak of the crisis. In addition to the expansion of bond purchases, these included in particular the receipt of emergency loans for the banks. As part of the increase in bond purchases, an additional volume of € 120 billion is to be generated by the end of the year, which primarily affects the private sector and thus corporate bonds (ECB, press release March 12, 2020). This advance is a quick reminder of the instruments that were also used in the period following the financial crisis in the fight against a weak economy and that were also used to ensure adequate inflation. The second main instrument was to provide the banks with additional "Long-term refinancing operations" (LTRO) with liquidity injections at a comparatively favorable interest rate ("can be as low as 25 basis points below the average interest rate") to support the financial system. The primary goal of these deals is to boost bank lending and to support those most affected by the spread of the coronavirus, especially small and medium-sized companies. Incidentally, the key interest rate remained unchanged at a 0% level (ECB, press release March 12, 2020).

As an outstanding measure, however, is the "Pandemic Emergency Purchase Programme" (PEPP) adopted on March 18, 2020, provided for a volume of € 750 billion for bond purchases in the private and public sector by the end of 2020. This should keep all Covid-19-related risks associated to the monetary policy transmission mechanism and that of the euro area at bay. Among other things, the ECB is purchasing government bonds from countries in the eurozone, which is particularly beneficial in countries such as Italy, which have been badly affected by the pandemic. Although it was mentioned in the same press release that the Governing Council will stop net asset purchases under the PEPP if it believes that the crisis phase is over (ECB, press release March 18, 2020), the ECB has not yet issued a statement to this effect. However, this initial assessment was then reconsidered on June 4, after the Governing Council of the ECB had increased the volume by 600 billion euros to 1.350 trillion euros. This temporary measure was then extended from the end of 2020 to at least the end of June 2021. It should be noted here that national central banks and the ECB can also carry out the purchases together. Purchases under the PEPP are made in addition to and separate from purchases under the Asset Purchase Programme (APP), which existed prior to the Corona Crisis. It has now been resumed and was increased on March 12, 2020 by EUR 120 billion until the end of 2020 (ECB, press release June 04, 2020).

Due to the urgency of the crisis, even the not uncritically seen CSPP-programm was expanded in March 2020 (ECB, press release March 18, 2020), under which selected Eurosystem central banks purchase eligible corporate bonds on the primary and secondary markets. Bonds from credit institutions or companies whose parent company belongs to a banking group are not included (Deutsche Bundesbank/Federal Bank of Germany, 2019). In addition, the prerequisite was that the default risk or credit rating had to be BBB- or better (ECB, April 08, 2020). Another point, which was first announced by the ECB on March 18, 2020, concerned the relaxed requirements for the collateral that banks have to deposit with the central bank for loans. The most important risk parameters were adjusted here, in particular the framework for additional credit claims (ACC) that are related to corporate financing was expanded. This should benefit business partners in refinancing transactions (ECB, press release March 18, 2020). On April 7, the relaxation of the security rules was specified in another press release in order to counteract any tightening of the financing conditions in the crisis phase. The items there include an expansion of the pool of repo-eligible securities, including credit claims and Greek securities, and a reduction in valuation discounts. In addition, the ECB is prepared to temporarily take on more risks in order to support lending to the economy. Overall, the measures are intended to

ensure that credit institutions are more likely to obtain liquidity through refinancing operations via LTRO as well as TLTRO and that the ECB can acquire more securities under the PEPP (ECB, press release April 07, 2020).

The preceding statements in this chapter have shown, especially with regard to the ECB measures, that a particular amount of money is pumped into the markets. The measures presented were also valid until November 2020, because in her council meeting of October 29, 2020 Christine Legarde did not announce any new decisions in this respect. Rather, a review of the use of monetary policy resources will take place in December 2020. The further decisions of the ECB will therefore depend to a large extent on the development of the Corona pandemic and which risks are derived from the expected economic development. In December, depending on the seriousness of the situation, the Governing Council will "recalibrate its instruments, as appropriate, to respond to the unfolding situation and to ensure that financing conditions remain favourable to support the economic recovery and counteract the negative impact of the pandemic on the projected inflation path." In addition to decisive action in December, the inflation and deflation situation were also examined. The ECB expects negative inflation to continue into the first months of 2021, and the wording on deflation was deliberately eliminated. With regard to the instruments, however, it was made clear that the outstanding position of the PEPP program would not be shaken (ECB, press release October 29, 2020), especially as 567 billion of the originally planned 1.35 trillion euros had already been realized by the end of September. An increase in the original plan does not appear to be out of the question due to the economic development in the final quarter of 2020 (Mallien/Wiebe, 2020).

In order to address the issue of national aid packages, the EU heavyweight Germany is examined as an example. At the beginning, it should be noted that the "fight against Corona", according to the statements of the Federal Ministry of Finance on March 13, brought with it the "largest aid package in the history of Germany". Characterized as a protective shield, it contains specific measures mainly for employees, self-employed and companies. The budget measures amount to a total of € 353.3 billion and the amount of guarantees as much as € 819.7 billion. Listing every single measure would make this chapter get out of hand, so that only elementary fields of action are presented selectively in the following. Just for the sake of completeness, it should not go unmentioned that in order to finance the aid package, the federal government must take on new debts amounting to € 156 billion.

The first area concerns health care security, for which € 3.5 billion is earmarked for protective equipment, the development of a vaccine and other treatment measures. A further € 55 billion will be made available for the purpose of short-term and flexible responsiveness for the direct fight against pandemics. This applies, among other things, to a protective shield for hospitals and resident doctors to cushion their loss of income and higher costs. Corona-related loss of earnings is compensated for families, as well as for self-employed and freelancers. Corona-related short-time work has easier access to child allowance. For small companies, the self-employed and freelancers, there is total support of € 50 billion, which grants three months of unbureaucratic grants for operating costs and does not require repayment. Even more existential, however, are the emergency aid in the form of direct transfers for the self-employed and companies with up to 5 employees in the amount of up to 9,000 euros and for 10 employees up to 15,000 euros. Those who are more severely affected also have easier access to the basic income, where the means-testing is suspended for six months, benefits are paid out more quickly and they can remain in their own home. € 7.5 billion are earmarked for social security for the latter. The economic stabilization fund is to serve as a protective shield for companies, through which troubled companies are supplied with liquidity with € 100 billion in capital measures and € 400 billion in guarantees. The fund can also refinance KfW programs that have been approved by up to € 100 billion. Tax deferrals and reliefs round off the package for self-employed, freelancers and companies until the end of 2020, while short-time workers benefit from simplified special regulations that are valid until the end of 2021, among other things, only 10% of employees must be affected by the loss. This includes an increase in the short-time work allowance, which is based on the duration of short-time work, as well as an extension of the reference period to 24 months (Federal Ministry of Finance Germany, March 13, 2020).

Due to the difficult situation caused by the crisis, an additional economic stimulus program with a total volume of € 130 billion was decided at the beginning of June. It primarily focuses on future investments in artificial intelligence, hydrogen and high-performance networks (€ 50 billion), temporary VAT reductions (€ 20 billion) and bridging aid (€ 25 billion) for the worst hit sectors, such as the hotel and restaurant industry, clubs and bars and the travel industry. Family allowances such as one-off payments per child amounting to € 200 (total amount € 4.3 billion), doubling of purchase premiums for electric vehicles and the promotion of the expansion of the associated charging network (€ 2.5 billion) form a further package of measures. In addition, there is compensatory support for local public transport due to reduced fare income (€ 7.5 billion) and for losses from municipal business tax (€ 6 billion). In addition,

electricity customers are relieved by a subsidy to lower the surcharge for renewable energies in 2021 and 2022 (€ 11 billion) and companies can benefit from more generous depreciation rules and offsetting current losses against profits from previous years (€ 6 billion) (Federal Ministry of Finance Germany, June 03, 2020).

The necessity of the support described has not changed in the further course of the year, after the predominantly battered industries longed for further support. For example, on October 28, 2020, extraordinary economic aid with a financial volume of € 10 billion was decided upon, to which companies, businesses, self-employed persons, associations and institutions are eligible to apply if they have been prohibited from doing business due to the state order (Federal Ministry of Finance Germany, press release October 29, 2020). The above-mentioned bridging aid was then once again concretized, extended and expanded from mid-November on the basis of various measures ("November Aid"). In addition to the expansion of the group of those affected to include accommodation providers and event venues, self-employed individuals and the cultural industry are now among the most needy recipients of the bridging aid (Federal Ministry of Finance, November 16, 2020). With the "December aid" decided shortly thereafter, the above-mentioned measures were increased again to up to € 4.5 billion per week after various closures of companies, businesses, self-employed, associations and institutions were extended until December 20, 2020 (Federal Ministry of Finance Germany, press release November 27, 2020).

The chapter concludes with a comparative study by the Brussels Bruegel Institute, one of the best-known international think tanks in the field of economics. This institute published an excellent comparison overview that is very up-to-date for the ongoing investigation, in which the national corona fiscal measures of the largest EU countries are compared on the basis of percentage proportions with those of the USA. These are measured proportionally to the 2019 GDP and allow very interesting impressions of the intensity with which the respective countries have taken money into their hands:

	fiscal impulse	Deferral	liquidity /guarantee	Last update	Σ %	GDP 2019 in billion €	Fiscal measures (~ billion €)
Belgium	1.4%	4.8%	21.9%	22/10/2020	28,1	473.09	132,94
Denmark	5.5%	7.2%	4.1%	01/07/2020	16,8	312.75	52,54
France	5.1%	8.7%	14.2%	05/11/2020	28,0	2 425.71	679,20
Germany	8.3%	7.3%	24.3%	04/08/2020	39,9	3 449.05	1 376,17
Greece	3.1%	1.2%	2.1%	05/06/2020	6,4	183.41	11,74
Hungary	0.4%	8.3%	0.0%	25/03/2020	8,7	146.06	12,71
Italy	3.4%	13.2%	32.1%	22/06/2020	48,7	1 787.66	870,59
Netherlands	3.7%	7.9%	3.4%	27/05/2020	15,0	810.25	121,54
Portugal	2.5%	11.1%	5.5%	04/05/2020	19,1	213.30	40,74
Spain	4.3%	0.4%	12.2%	18/11/2020	16,9	1 245.33	210,46
UK	8.3%	2.0%	15.4%	18/11/2020	25,7	2 525. 09	648,95
United States	9.1%	2.6%	2.6%	27/04/2020	14,3	21 427.70 $	3 064,16 $

Figure 42: Discretionary 2020 fiscal measures adopted in response to the coronavirus (by November 18, 2020; as % of 2019 GDP)

Source: Anderson et al. (2020) and own creation (last 3 columns)

The first column, "fiscal impulse", contains the percentage of additional government expenditure (e.g. medical resources, employment, subsidies for SMEs or public investments) and lost revenue (essentially the reduction or cancellation of certain taxes and social security contributions) in 2019 GDP, which is the budget balance without any direct compensation being made later. The second column, "Deferral", relates to the postponement of certain payment obligations including taxes and social security contributions, for which a later repayment obligation generally remains despite a short-term improvement in liquidity. If it concerns deferrals that expire in 2021 or later, they will burden the current financial year, but improve the next one (e.g. loan payments, tax deferrals or later payment of electricity bills). The third column deals with other liquidity regulations and guarantees, which include export guarantees, liquidity assistance and credit lines from national development banks. Primary addresses relate to the corporate sector. Lines of credit and guarantees might not weaken the budget balance in 2020, but generate contingent liabilities that could become actual expenditures either in 2020 or later (Anderson et al., 2020). If you add up the percentages per line, there are only a few countries in the list where the total is not two-digit. Rather, it shows that the measures are extensive almost everywhere, but specific priorities are visible between the countries. If Italy is included, the majority of its economic stimulus package flows into liquidity and guarantee measures, which tends to be a short-term relief and not a restructuring measure. In Germany, too, the contribution to financial injections is comparably high, while in the USA the proportion

suggests transformative programs whose effectiveness should benefit the economy in the long term. France offers a balanced ratio, with a good half of the liquidity and guarantee measures (Anderson et al., 2020).

The pandemic situation remained very difficult until the end of the year. Rising numbers of infections across Europe, the USA and the rest of the world - especially at the beginning of the 4th quarter - again led to closures, curfews, various lockdowns, border closings and restrictions in everyday life as well as essential mask requirements. Hope for improvement is largely due to the advanced development of vaccines.

4.4. Economic indicators

4.4.1 Key interest rates

This chart shows a comparison of the development of key interest rates in four of the world's largest economic powers and currency zones in a twenty year period until the current Corona Crisis.

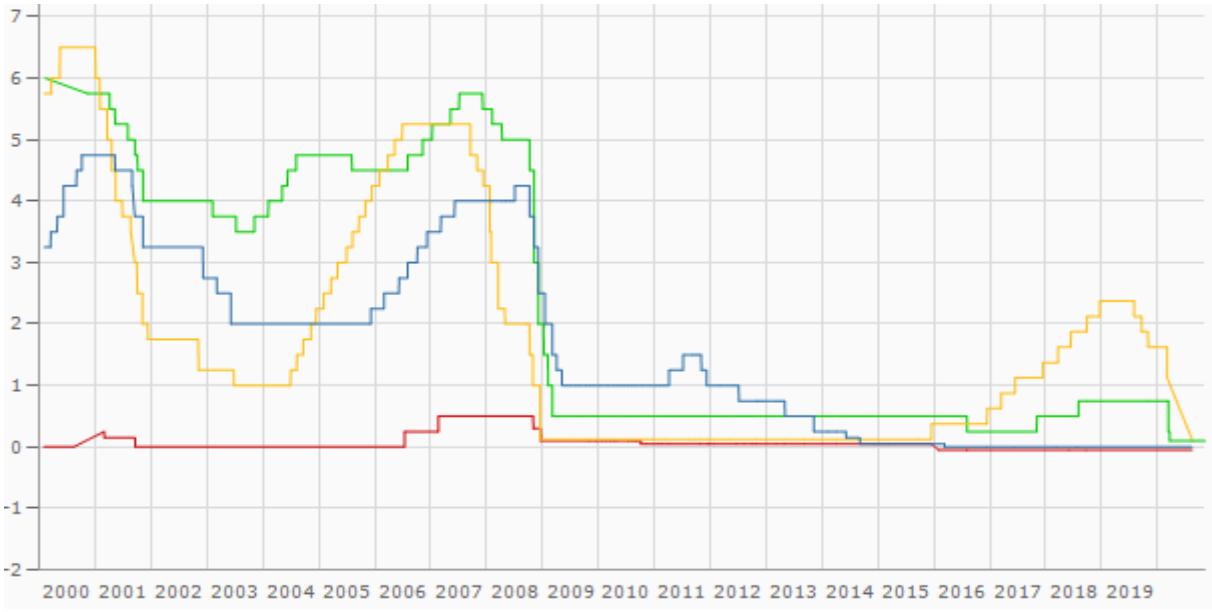


Figure 43: Key interest rates until Corona Crisis period (2000 – 2020)

Source: Financial portal "finanzen.net" (2020, based on central banks data)

With the exception of the United States, instrumental interest margin is no longer possible, since the other three currency zones are practically on the zero percent line. The following

figure shows in more detail that the United States due to the crisis was also forced to aim at this level again.

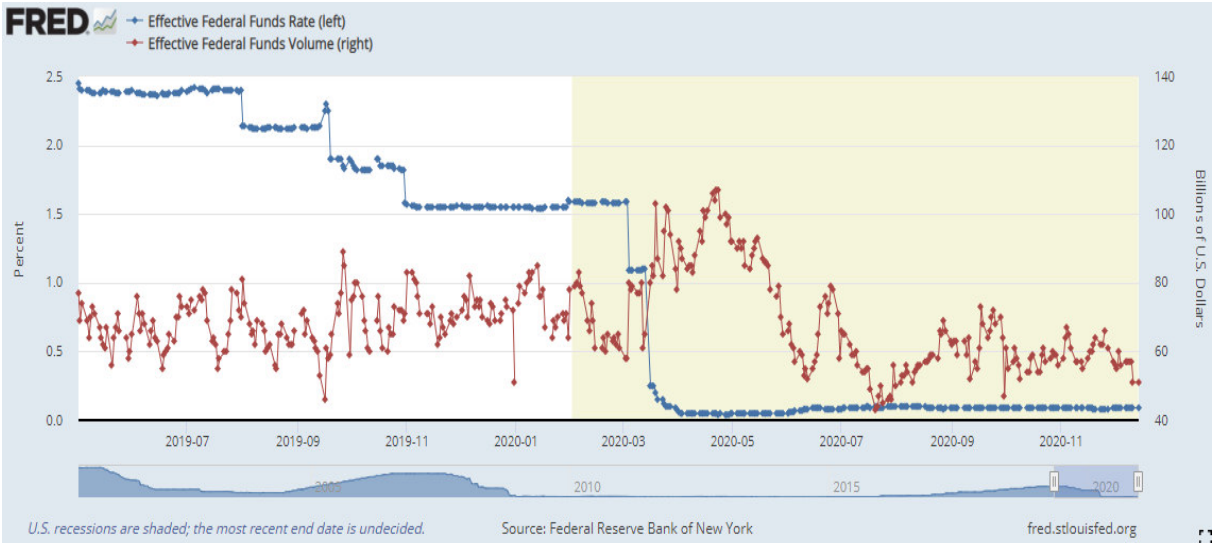


Figure 44: Key interest rates shortly before and after the Corona Crisis outbreak

Source: Federal Reserve Bank of New York (2020)

According to the Federal Reserve Bank of New York "the federal funds market consists of domestic unsecured borrowings in U.S. dollars by depository institutions from other depository institutions and certain other entities, primarily government-sponsored enterprises."

In addition to the implemented low interest rate policy the next graphic shows impressively that the Fed contributed to the expansion of the money supply even before the pandemic broke out. After the earliest outbreak they almost doubled the monthly level which is then reflected in the balance sheet of the subsequent graphic:

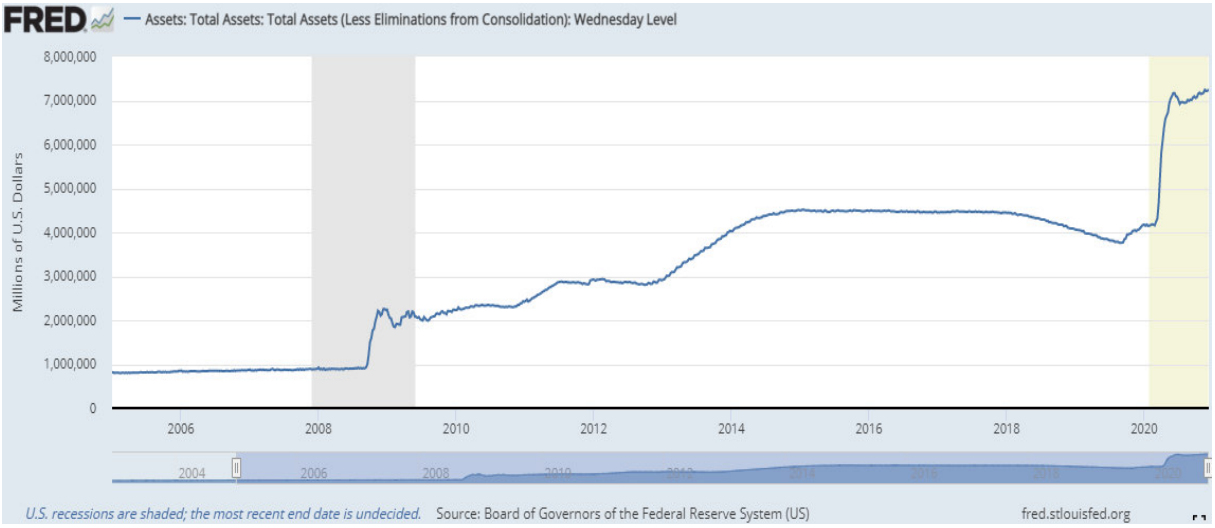


Figure 45: Assets: Total Assets of the Fed; *Source*: Board of Governors of the Fed (2020)

As described in 3.3.1 the already high level since the massive quantitative easing programs between 2008 and 2014 caused asset inflation and peaked at the end of 2014. Finally, in December 2013, this curve was largely stabilized after the Fed announced a reduction in the purchase of additional mortgage backed securities and longer-term treasury securities in order to reduce assets at a leisurely pace. This was given under the condition that a sustainable improvement in labor market conditions and inflation towards the FOMC‘s longer-term goal of 2% is visible. With the outbreak of the Corona Crisis this former assumption is now out of date and justified by the increase in volumes, as you can see the development of the Effective Federal Funds Volume in figure 44.

4.4.2 Inflation

The following overview contains an outlook on the expected inflation rates at the end of 2020 based on the October 2020 forecast from the IMF.

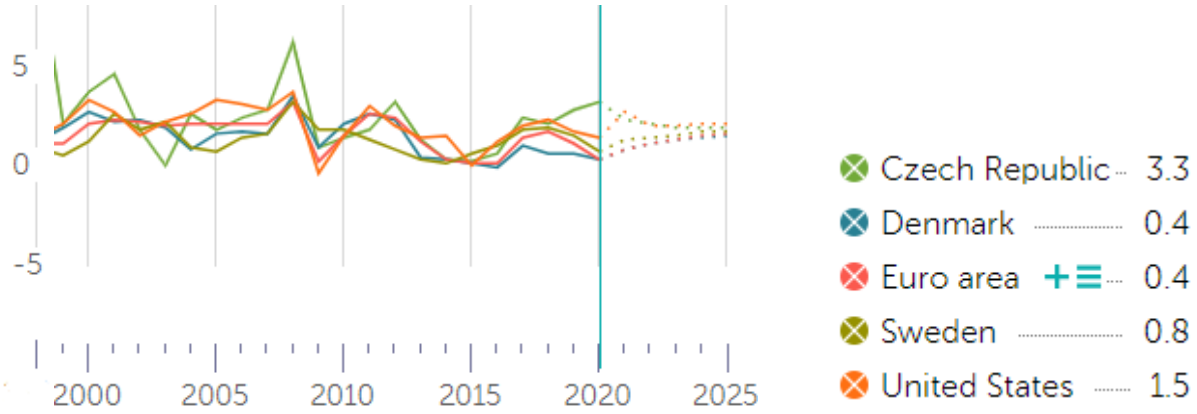


Figure 46: Inflation rate, average consumer prices of US and EU majority

Source: IMF (Annual percent change), October Outlook 2020

In addition to the main comparison objects of the USA and the euro area, the graphic also includes other EU members who, with the exception of the Czech Republic, are following a (very) low inflationary trend of tending towards zero in the crisis. The IMF forecast 2020 for the entire EU is 0.8% and thus slightly higher than the euro area (0.4%) (IMF, 2020). According to a press release from the European Commission, the current inflation as of October 2020 (actual status) for the euro area is in turn -0.3% and thus shows a deflationary status. The main driver was the 8.2% decrease in energy costs (also due to the restrictions in air traffic), while other food, tobacco and alcohol increased by 2.0%. By contrast, industrial goods without energy

remained at an inflation rate of just 0.1% and services at 0.4% (European Commission Eurostat, press release December 01, 2020). Similar price developments like the IMF forecast in the graphic (in the amount of 1.5%), the U.S. Bureau of Labor Statistics announced on December 10, 2020, an increase in consumer prices in the USA of 1.2 percentage points compared to the previous year. That means, inflation is still on the rise because it was just 0.3% for April and suffered then the biggest drop since December 2008, at the time of the former Great Recession. While total energy prices as of April were still -17.7% compared to the previous year's level, this price decline was reduced to -9.4% as of November. This development is mainly due to a slump in crude oil prices and due to the restrictions in air traffic. On the other hand, food prices rose significantly (as of April 3.5% and as of as of November 3.7%) which can be seen as a direct effect of the Corona Crisis (U.S. Bureau of Labor Statistics, 2020).

4.4.3 GDP development

This subsection is devoted to the development of GDP of the past 15 years, including the influenced GDP by the corona epidemic. It includes the comparison of the four world powers on the one hand and the global development of the past 15 years on the other.

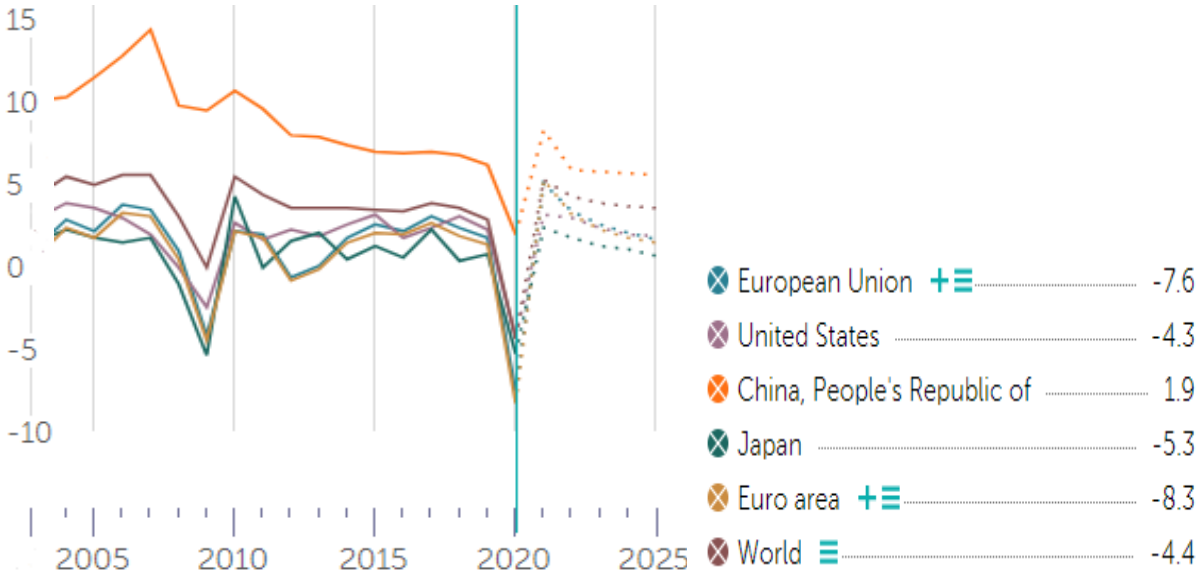


Figure 47: Real GDP growth of the four world powers 2005 - 2020 (in %)
Source: IMF, October Outlook 2020 (Annual percent change)

Two effects catch the eye very quickly. Firstly, the dramatic decline caused by the epidemic and its associated lockdown measures. On the other hand, the IMF's forecast that a very short-

term recovery will occur next year. And that is one of the striking differences to the Great Recession. A more drastic decline in GDP leads to an equally rapid recovery.

Against the background of current headlines and increased news frequency, it becomes clear what economic researchers appreciated early on. The (global) economy is suffering massively from the effects of the Corona Crisis which is reflected in particular in the following figures. As early as the1st quarter of 2020, in which the pandemic only brought restrictions from March onwards, the US economy (GDP) already declined by -4.8%. The second quarter experienced a downright horror scenario due to a partial standstill of the economy with a decline of -31.4% and was finally able to generate a considerable increase of 33.1% in the third quarter, as efforts continued to reopen businesses and resume activities that were postponed or restricted due to COVID-19 (U.S. Bureau of Economic Analysis, 2020). A similar trend was observed for the unemployment rate. The rise in unemployment from the end of February (3.5%) to the end of April (14.7%) was very dramatic, but stabilized until November to 6.7% (U.S. Bureau of Labor Statistics, 2020). A similar image, if not in the same drama, is visible in Germany as the largest economy in Europe. The GDP shrank by -1.7% in the first quarter compared to the same period in the previous year, in the second quarter by -11.3% and in the third quarter by -4,1% (German Federal Statistical Office Germany, press release October 30, 2020). Should the forecast full-year decline in German GDP of -6.3% (in the Great Recession GDP fell by -5.7% in 2009) occur, this would be the worst recession in post-war history. As if that wasn't a big blow for the EU due to the Corona Crisis, France’s economic performance as the second largest economy in the eurozone fell by -5.8% in the first quarter of 2020, in the second by -18,9% and in the third by -4,3%. Italy as the third largest EU-economy had to suffer in a similar way. The GDP compared to the previous year fell by -5.6% in the first quarter, in the second by -17.9% and in the third quarter by -4.7% (European Commission Eurostat, press release October 30, 2020).

What remains is a glimmer of hope that the pandemic will be contained in the same short time as it broke out. The economic recovery will be dependent on a fast vaccination process and the further success off the costly and extraordinary economic stimulus programs as well as the reopening business activities.

4.4.4 Public and private debt developments

This subsection related to the latest events of the Corona Crisis takes into account all the circumstances that occurred during the period of the present investigation. The Treasury of the

US government expresses the most elementary finding in bare figures. Since March 31, 2020, the end of the month in which the pandemic broke out worldwide, the US government's debt has soared from $ 23,687 billion in less than two and a half months to an incredible $ 26,063 billion (June 11, 2020). This shows an increase of over 10% (U.S. Department of the Treasury, 2020).

First calculations by the US organizations dealing with this, paint a dramatic picture which is not only emerging, but has become reality:

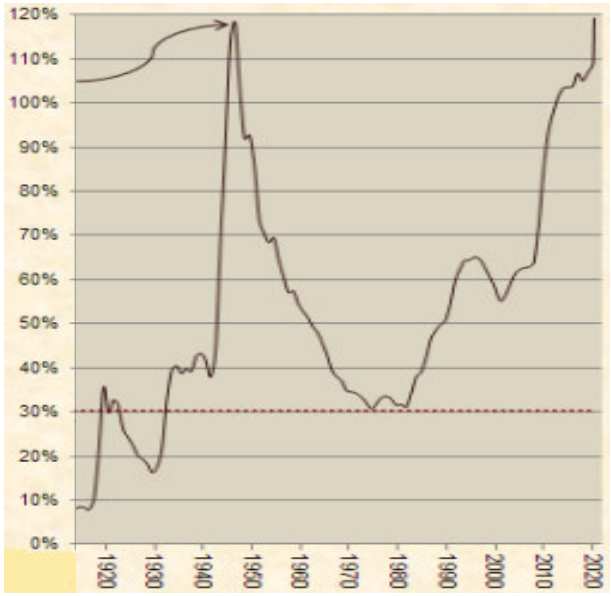


Figure 48: National debt as a portion of US economy (in % of GDP)
Source: Agresti (2020), based on data of United States Department of the Treasury, Congressional Budget Office, U.S. Bureau of Economic Analysis and U.S. Government Accountability Office.

The government stimulus measures and the economic impact of the Covid-19 pandemic are therefore taking their toll and are largely responsible for ensuring that the debt has reached the level outlined (Jones, 2020). The graphic proves that the US government debt as of June 2020 reached 120% of the annual economic output and broke the 1946 record for the highest debt in the more than 230-year history of the United States. The previous record of 118.4% resulted from the very stressful times of the Second World War. The current level is four times the average in the country's history, visually indicated by the dashed line (Agresti, 2020).

The reconciliation at the EU level also shows the obvious consequences of the Corona pandemic, which has developed into a serious crisis in the community and has intensified the financial and debt situation again. The slump in economic output caused by lockdowns, restricted trade and production activities (Wagner, 2020) and the resulting enormous increase in unemployment made national and EU-wide corona relief measures inevitable (Sinn, 2020a). These in turn drove government debt upwards and hit the EU countries in particular very hard, which already had the highest levels of debt in relation to economic output before the Corona pandemic. The most striking here is the country of Italy, whose population - predominantly the part in the north of the country - was most affected by the virus. The European Parliament made a forecast in November 2020 for each country in the euro area of what previous events - due to the corona pandemic - are likely to have on economic indicators.

Member State	Government Debt % GDP[1]		Government Budget balance % GDP[1]		GDP Growth (y-o-y) [1]
	2019	2020	2019	2020	2020
BE	98.1	117.7	-1.9	-11.2	-8.4
DE	59.6	71.2	1.5	-6.0	-5.6
EE	8.4	17.2	0.1	-5.9	-4.6
IE	57.4	63.1	0.5	-6.8	-2.3
EL	180.5	207.1	1.5	-6.9	-9.0
ES	95.5	120.3	-2.9	-12.2	-12.4
FR	98.1	115.9	-3.0	-10.5	-9.4
IT	134.7	159.6	-1.6	-10.8	-9.9
CY	94.0	112.6	1.5	-6.1	-6.2
LV	36.9	47.5	-0.6	-7.4	-5.6
LT	35.9	47.2	0.3	-8.4	-2.2
LU	22.0	25.4	2.4	-5.1	-4.5
MT	42.6	55.2	0.5	-9.4	-7.3
NL	48.7	60.0	1.7	-7.2	-5.3
AT	70.5	84.2	0.7	-9.6	-7.1
PT	117.2	135.1	0.1	-7.3	-9.3
SI	65.6	82.2	0.5	-8.7	-7.1
SK	48.5	63.4	-1.4	-9.6	-7.5
FI	59.3	69.8	-1.0	-7.6	-4.3
EA-19	84.0	101.7	-0.6	-8.8	-7.8

Figure 49: Public finances in euro area member states: Selected indicators November 2020
Source: European Parliament (2020)

Here it is strikingly evident, and also as the short text summary of the key findings by the European Parliament suggests, that Greece will probably have a government debt ratio of 207.1% by the end of 2020 (180.5% before the crisis) and that Italy will probably be the country with the highest budget deficit of 10.8% (before the crisis: -1.6%). It is of course not surprising

that the public debt ratio is forecast to grow by 17.7% across all 19 countries (European Parliament, 2020).

As a summary and conclusion-related sentence it can be stated that with such debt developments it is difficult to filter out positive aspects. One aspect is the fact that this money has the intention of being used for a good purpose, namely to support those affected by the crisis and to boost the economy. And secondly, that the current interest rate environment is making debt very cheap (Naumer, 2020).

To round off the debt section, the development of private debt ratios in the period around the Corona Crisis should not be disregarded. The previous explanations of the study have drawn a transparent picture of this, in which sharply increased private debt ratios have shown as harbingers of crises. This insight should now also be pursued in the context of the Corona Crisis, starting with a long-term view graphic.

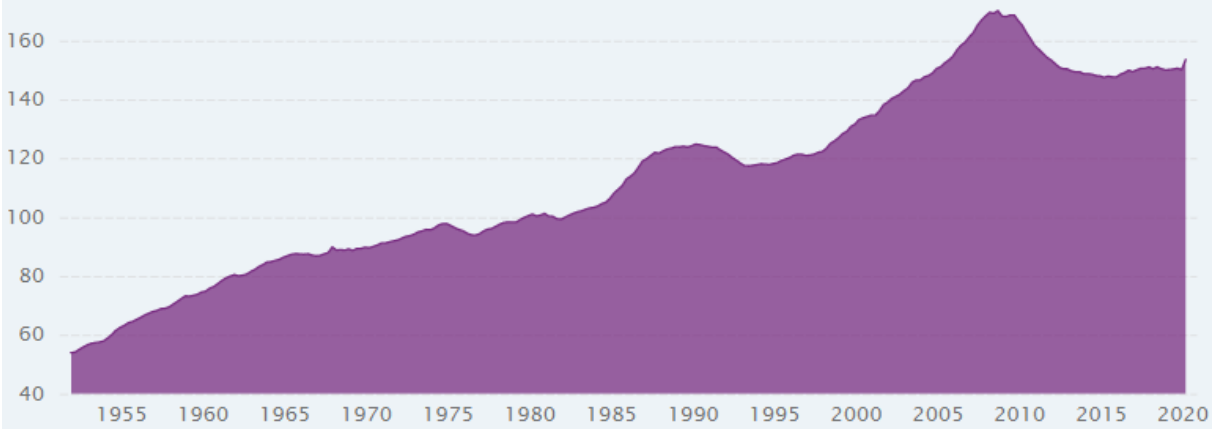


Figure 50: United States's Private Debt: % of Nominal GDP from Dec 1951 to Sep 2020
Source: CEIC data (ISI Emerging Markets Group) (2021)

In this first graphic, based on the USA, a small corner can be seen towards the end, which is specified in the following graphic.

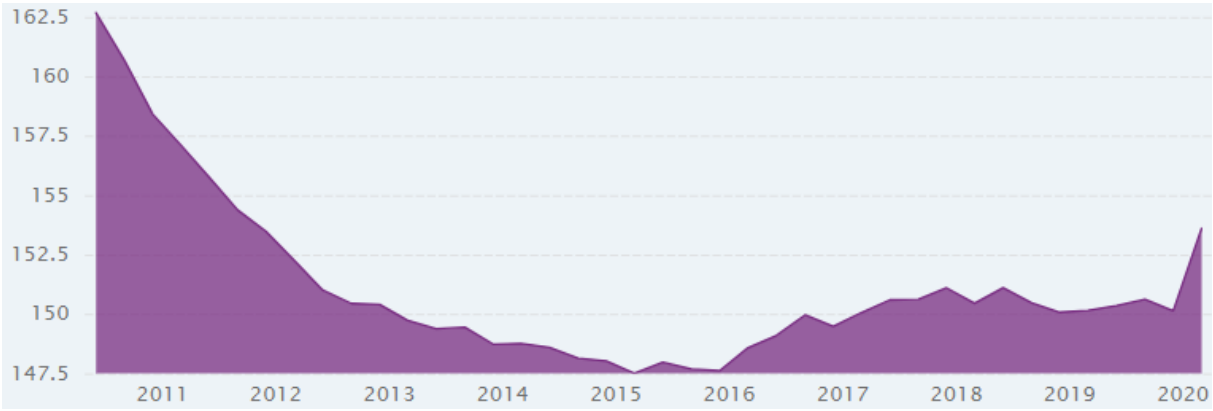


Figure 51: United States's Private Debt: % of Nominal GDP from Sep 2010 to Sep 2020
Source: CEIC data (ISI Emerging Markets Group) (2021)

In the 10-year period shown, it can be seen that there was no increase in private debt ratios until the beginning of the Corona Crisis and that the development is therefore not comparable to the Great Depression or Great Recession. It was the outbreak of the Corona Crisis which led to a conspicuous increase, with many companies and private households becoming dependent on borrowing for existential reasons. The wide range of credit options (presented in subsection 4.3) has certainly contributed to this development. And a similar leap in the European Union cannot be overlooked in the next graphic.

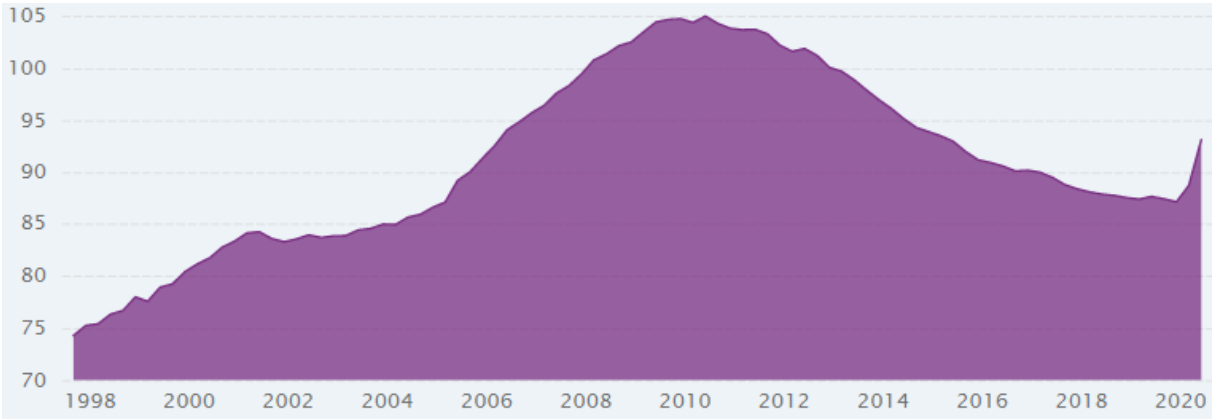


Figure 52: European Union's Private Debt: % of Nominal GDP from Sep 1997 to Sep 2020
Source: CEIC data (ISI Emerging Markets Group) (2021)

4.4.5 Stock markets and real estate developments

Even if the real estate market has caused initial uncertainties due to the corona pandemic, which was particularly evident in the high-priced segment (e.g. luxury real estate in New York), the effects are by no means comparable to the slump in the stock markets, as the following graphics

will show. Figure 33 already showed that the rising line has kept demand for real estate going on for years, particularly due to the extremely low interest rate environment. In addition, the experience was that the real estate and the stock market are mutually dependent. This means that if the Corona pandemic shows major falls in the large stock indices, investors will want to invest capital in more solid or stable projects in the medium term, for example in real estate. After the bubble adjusted real estate prices in the Great Recession, this segment is now the means of choice for various investors. Experts from Deutsche Bank, among others, predict that the Corona pandemic will only temporarily dampen real estate prices. The flight to safer investments - compared to the more volatile stock market - will "tend to have a price-increasing effect on apartments and houses" (Dittmer, 2020). A closer look at the largest stock index in the world will show the latest effects.

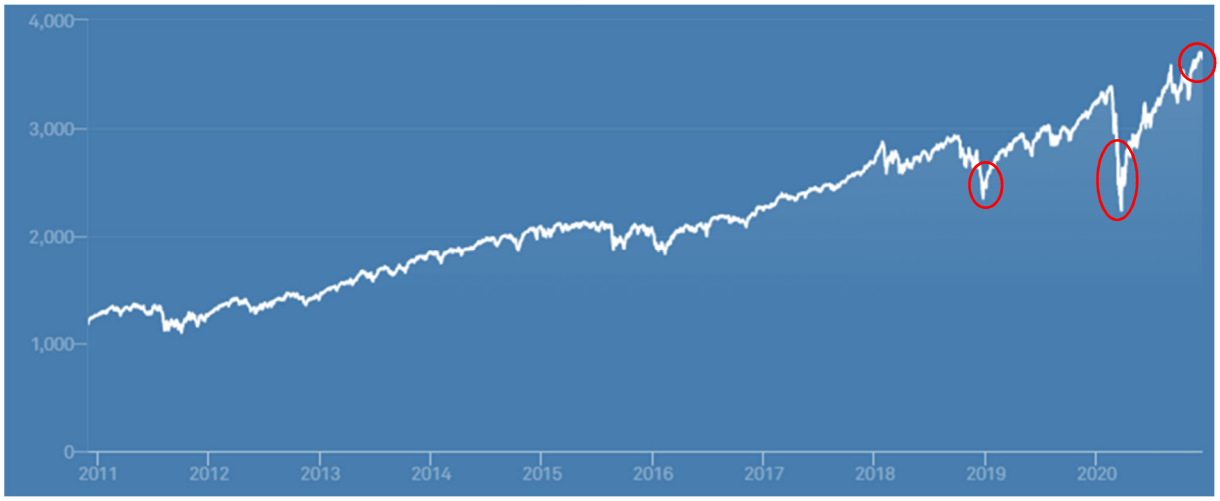


Figure 53: S&P 500 ten years before and until the Corona Crisis
Source: S&P Dow Jones Indices LLC (as of December 15, 2020)

The second downturn circled in red shows impressively which stock exchange effects happened due to the Corona pandemic. This may not astonish the general public with the bitter news of the past few months. The background of the first downturn circled in red may be more surprising. It is astonishing that the announcement of a rate hike in December 2018 almost brought the index down (December 21, 2018= 2,416.62) and the index level after a global epidemic broke out reached almost the same level (March 20, 2020 = 2,304.92). In the detailed analysis it is imperative to take into account that the price drop from the end of November (November 30, 2018 = 2,760.17) to the end of December 2018 (December 21, 2018 = 2,416.62) does not represent a loss as high as from mid-February 2020 (February 14, 2020 = 3,380.16)

until mid-March 2020 (March 20, 2020 = 2,304.92). The crash is consequently more drastic and unexpected, but the recovery effect after December 2018 was visibly longer than that after the Corona outbreak (S&P Dow Jones Indices LLC).

At the end of the graphic illustration the now recovering trend becomes visual and shows on the one hand that the belief in an economy that is picking up is present again associated with trust in the stimulus measures combating the crisis. On the other hand, this may be due to Corona-easing measures (Holz, 2020) and the continued efforts to reopen companies and resume activities that have been postponed or restricted due to COVID-19. Finally, the third red circle shows the positive chart effect due to the announcement by various pharmaceutical companies about the expected vaccination periods.

A look at the leading European index also shows that the stock market barometer turned back to positive relatively quickly, but in comparison to the S&P 500 has not reached the pre-crisis level (yet).

Figure 54: Euro Stoxx ten years before and until the Corona Crisis
Source: Financial portal "finanzen.net" (as of December 16, 2020)

A similar "resurgence" can also be seen in the EU heavyweight Germany. The trend in the leading German DAX clearly points upwards again and has almost reached the pre-crisis level in the middle of December, also due to the announcement of the imminent vaccination sessions.

Figure 55: DAX ten years before and until the Corona Crisis

Source: Financial portal "finanzen.net" (as of December 16, 2020)

In the meantime, the MSCI-World is also being driven by the general easing of the corona conditions as well as the comprehensive monetary policy measures of the Fed and the ECB and last because of the vaccination announcements, as the following graphic shows.

Figure 56: MSCI World ten years before and until the Corona Crisis

Source: Financial portal "comdirect.de" (as of December 16, 2020)

4.5. First crisis results including economic theories

It would be too easy to interpret the fact that the interaction between the state and the economy experiences a dejavu in a crisis phase due to the current rescue measures. The Corona Crisis

shows elementary differences to the Great Recession, because fiscal policy can only provide impetus to a limited extent compared to the Great Recession and help out of the pandemic when the economy comes to a standstill (Fuest, 2020: 47f.). While the economic stimulus and aid packages in the Great Recession were still attributed as voluminous and costly, the first comparative results of the investigation show that they were even more extensive and faster to implement during the Corona Crisis. Looking at the development of the public debt ratios in subsection 4.4.4, it is obvious that this did not happen at the special price. The views of the economists and business ethicists Jörg Althammer and Elmar Nass, whose terms are presented in a close context, also qualify for this. In the current crisis, they refer to a double-edged inclination of society. What was regularly called for in the debates surrounding the climate crisis has become reality in the Covid 19 pandemic. Society largely follows the advice of science in its decisions. Because in the past few months hardly a day has passed without a virologist taking a position on the infection process and pointing out measures that should help contain the pandemic. Epidemiological terms such as “herd immunity”, “doubling time” and “reproductive rate” are used generously, their high frequency has now become part of everyday language and determines politics and social life. Political advice is not only provided by virologists and epidemiologists, the opinions of medical ethicists, educators, lawyers and sociologists are also sought. But what ultimately falls short in the scientific public discourse and is also evident from insights gained in the current study is the voice of economics (Althammer/Naß, 2020: 35). To this end, the following section illustrates the neglect of elementary cornerstones of economic principles and theories.

Starting with the extensive bond purchases as part of monetary policy measures, it is noticeable that both the Fed and the ECB are departing from certain principles with regard to their buying commitment. In the case of the Fed, the issue of corporate bonds, which threatens the market economy, is particularly important. If after the outbreak of the Great Recession, the Fed's buying behavior was still more towards mortgage-backed and government bonds, it is now actively deciding which companies can raise capital on the bond market and under which conditions. This is a departure from neutral monetary policy ground, especially since the central bank thus exerts a direct influence on the financing costs of private companies. If this type of central bank intervention continues to increase in the future, critics see the danger that it could even impair economic freedom in the USA (Delko, 2020). And such bond purchases have not been uncritically examined at the ECB either. The difference, however, is that the purchase of securities under the CSPP has been used in the EU since 2016 as part of quantitative easing

with a double-digit monthly amount in the billions to boost the economy. It was already viewed critically when it was introduced in 2016, because observers believe that the program - similar to that of the Fed - is disrupting the economic order in the EU and that the ECB is intervening directly in the real economy by purchasing corporate bonds, in cases of doubt bypassing the credit institutions. This makes the central bank one of the largest investors on the European corporate bond market, where the decline in debt can cause enormous distortions. And it does not fail to damage the banks' business, as the ECB is substituting credit institutions as financial lenders to the economy by purchasing corporate bonds (Ettel/Zschäpitz, 2020). And what can happen if a banking system is destabilized was shown by the financial crisis of the time. It is simply significant that a critically viewed program, which was even subject to constitutional complaints at the German Federal Constitutional Court in 2020 (Federal Constitutional Court Germany, 2020), can now also enjoy its continuation. This is how much demand has been triggered by the current crisis.

And the rebuke towards the lavish bond programs continued. The criticism that government bond purchases are on the borderline of forbidden state financing is not new, but will get new breeding ground in 2020 (Bücker, 2020). Sentences of ECB President Christine Lagarde like “Extraordinary times require extraordinary action. There are no limits to our commitment to the euro. We are determined to use the full potential of our tools, within our mandate” or “as much as necessary and for as long as needed” signal determination (ECB, March 18, 2020), but they also leave a certain economic rationality threshold, which was also confirmed by the neglect of specifically imposed restrictions. For example, if Greek bonds were previously excluded due to their weak credit rating before the Corona Crisis, the rating rules for bonds have been temporarily relaxed as part of the new programs. In the jargon of the financial markets, this type of interest-bearing paper is referred to as “junk bonds” because of its low valuation, which the ECB nevertheless accepts in terms of collateral, all in order not to make lending more difficult during the crisis (Wiebe, 2020). The Fed stepped into the same breach after it broke all borders in the fight against the coronavirus and the record amount of quantitative easing was not enough for it. Their information about buying unlimited bonds at the early stage to combat market disruptions (“in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions and the economy”, Board of Governors of the Fed, press release, March 23, 2020) this speaks volumes about the perceived need.

And the next announcement also contradicts the basic order of classic economic principles and theories. It is about giving up an inflation target, which Fed chairman Powell revealed on August 27, 2020 and which can be interpreted as a historical change in strategy (Powell's speech August 27, 2020). In economic theory, an optimal inflation rate could be calculated theoretically, but in practice an exact quantification is only possible to a limited extent. Even according to Keynesian theories, it is difficult to derive an optimal inflation rate; rather, according to Kulessa, "demand-theoretical models suggest a kind of context-dependent optimal inflation corridor". This theory hides the premise that expansive macro-policy (as it has been pursued in the EU and the USA in recent years) can be accompanied by an increase in employment and that is desirable even if it causes the inflation rate to rise noticeably above 2%. Economic policy has its duty to carry out a qualitative analysis of the the inflation's pros and cons and to derive an optimal target inflation rate based on that (Kulessa, 2018: 194). Until the outbreak of the latest crisis this was historically and usually around 2% at the Fed and ECB and is now being abandoned by the Fed. The end of a long monetary policy tradition apparently means that the Fed is accepting another concession and leaning on the term "flexibility" in terms of price stability (Zydra, 2020). Strictly speaking, the "optimal" attribute mentioned in this section must now be placed in quotation marks in practice (Kulessa, 2018: 194).

When looking at other specifics of the current crisis combined with a look at economic theories, there is one peculiarity that cannot be found in comparison to the Great Depression and Great Recession. In both of the crises mentioned, the state rescue measures through austerity measures or taxpayers' money caused a lot of bitterness, because in the eyes of the population the greed and irresponsible behaviour of speculators and bank managers was discovered as a major cause, and in the aftermath even bonuses were paid out to them (Fuest, 2020: 35). In contrast, questions about economic costs of the shutdown and the lavish aid packages are considered cold-hearted in the Corona Crisis and the attempt by some economists to assign a monetary value to health and human life as immoral (German Ethics Council, 2020: 4). The fact that the population naturally prefers human life to future economic problems is largely suppressing the economic consequences of the corona policy from public discourse. Regardless of this, the question from a business ethical point of view is entitled whether the protection of health can justify the considerable costs of the shutdown with its economic and social consequences. Because the longer the economic standstill lasts, the more urgently the question arises as to whether the medicine is more harmful than disease itself. Against the background of the enormous economic consequences, this question must be allowed, ideally discussed in public and the answers must

be found. In this context, Althammer and Nass note that “economic science is not at all able to solve this balancing problem because of its theoryimmanent normative premises. This also applies to economic ethics. In the Covid 19 pandemic, the limits of economic ethics are becoming apparent; it should therefore also be an occasion to clarify the normative limits and to distinguish economic efficiency considerations from utilitarian-oriented policy recommendations” (Althammer/Naß, 2020: 35f.).

As part of the elaboration of further differences between the crises, the study also showed that an imbalance had built up on the real estate markets over the years during the Great Recession, which had considerable negative effects on the financial system. The intensification of the crisis was underpinned by the banks' loss of trust among themselves. In the current recession, the governments used economic policy theories to stimulate demand, which was implemented through countercyclical fiscal policy. With regard to the Corona Crisis, the investigation found that the situation is more complex. There is a simultaneous supply and demand shock, in which the collapse in demand was also caused by a massive disruption of the supply chains. For medical reasons, supply failures can and could only with great difficulty be compensated for by the state demand support. Nonetheless, government measures are trying to counteract the disruptions on the supply side. Renowned economists such as Bofinger, Dullien, Felbermayr, Fuest, Hüther, Südekum and Weder di Mauro give hope that an economic recovery has a chance of success if normal operations start quickly after the epidemic and positive catch-up effects result. In addition, the epidemic must be brought under control and negative effects such as bankruptcies and, above all, large waves of layoffs must be dealt with (Bofinger et al., 2020: 259).

Whatever the effect of the rescue measures in the final accounts, there is no doubt about their very voluminous dimensions. The development gives the impression that we are in the phase of so-called “helicopter money”. This economic theory goes back to the famous scientist Milton Friedman, whose remarks describe this special effect of an unconventional measure in order to create a money-financed fiscal incentive. Examples such as direct payments, the Paychek Protection Program, emergency aid in the form of direct transfers, bridging aid or not repayable loan advances are evidence of this fact. His so called “Bonanza from heaven” from 1969 starts as follows: “Let us suppose that one day a helicopter flies over this community and drops an additional $ 1,000 in bills from the sky which is, of course, hastily collected by members of this community. Let us suppose further that everyone is convinced that this is a unique event which

will never be repeated. To begin with, suppose further that each individual happens to pick up an amount of money equal to the amount he held before, so that each individual finds himself with twice the cash balances he held before. If every individual simply decided to hold on to the extra cash, nothing else would happen. … But this is not the way people behave. … We know only that each individual will seek to reduce his cash balances at some rate. He will do so by trying to spend more than he receives. … It is easy to see what the final position will be. People's attempts to spend more than they receive will be frustrated, but in the process these attempts will bid up the nominal value of services. … It is much harder to say anything about the transition. To begin with, some producers may be slow to adjust their prices and may let themselves be induced to produce more for the market at the expense of non-market uses of resources" (Friedman, 1969: 4ff.). In summary, it can be said that the basic idea behind it is that the citizens spend the money immediately, thus stimulating the economy and inflation. This puts us in a whole new category of economic policy, as it simply gives money away.

As joyful as the situation looks at first glance, that the state is providing a whole bundle of aid measures, the reciprocal consequences can not be ignored. Economic observers will be interested in following the months and years ahead as it becomes clear how the respective countries intend to approach their mountains of debt. An increase in national debt by 20 to 25%, which was observed in various countries at an early stage, means a reduction in the scope for political decision-makers (Kuhlwein, 2020). In addition, the shutdowns of the economy cause(d) exorbitant losses in value added, which deprives the state of revenue. Tax cuts or consumption incentives from the economic stimulus programs cannot compensate for the lack of added value. It is therefore inevitable that the taxpayer will at some point be asked to pay when the rescue packages are finally settled. This also includes side effects such as misguided aid or the default of corporate bonds purchased by the central bank (Fuest, 2020: 29, 47ff.). And as good as the approaches to the aid packages initially looked, realistic assessments can be found, for example from Gitzel, who classifies state aid and support from the central banks as pain-relieving, "but they do not heal the economic wound in the short term." Rescuing all the affected companies would simply be unrealistic (Gindel, 2020).

In summary, various parallels to the Great Recession can be found in the economic and rescue measures of the current crisis, which primarily concern the application of Keynesian economic policy. What differs, however, is the extent to which even long-standing economic rationality principles are neglected.

5. COMPARATIVE DISCUSSION OF THE CRISES RESULTS

This chapter is considered the last component of the IMRaD structure and discusses, in addition to the knowledge gained in the previous chapters in a comparative context, the question of whether it is even possible to speak of an end to the crisis in a crisis context. Furthermore, the three crises examined are classified in a historical context and the hypotheses made at the beginning of the study are verified.

5.1. Discussion on crises endings

5.1.1 Reflection on past crises

The previous elaborations on the comparatistics of the three crises have truly led to the presentation of a plenty of opinions with multi-faceted analysis options to give a character to the features of them. It must be possible to channel these insights, also against the background that crises must, or at least should, come to a conclusion sooner or later. This is exactly where the current section annexes. With regard to the end of the crises, this subsection comprehensibly focuses more on the first two crises examined, since the Corona Crisis is far from over.

Accordingly, the focus of the investigation lies both in the exploration of the respective crisis end phase and the inspection of comparability criteria of both, combined with the question of whether the term “crisis end” is at all entitled to its terminology. The determination parameters can follow various sub-questions or discussions. The question especially in relation to Germany may be discussed, whether in the Great Depression it is possible to speak of postponing a political crisis caused by Hitler's dictatorship, or whether it is a relocation process in the Second World War. An initial nod to the newer or latest crisis reflects the current research situation and presents itself as highly questionable as to whether it is over. The turnaround by the short-term responsiveness of politicians manifested itself as promising and promoted a successful course, but the events surrounding the Euro Crisis led a shadowy existence, so that the question nominated itself as presentable, whether the crisis had only been postponed and overflowed into a common currency crisis. It is not negligible to categorize the phase after the Great Recession up to the Corona Crisis as a debt crisis if you rely solely on the findings from the previous chapters. The comparison of the two ends of the Great Depression and Great Recession ultimately also allows access to the philosophical discussion according to which the above questions are also explored in the same way.

In the context of the Great Recession a first ubiquitous thesis was that a “ruthless gang” of crooks has the financial world in their hands and that “they would rather get caught up in a severe economic crisis than to forego a chance to win”. Additionally without their activities, the “recent upheaval” on the capital market would have spared us. For the economic historian Werner Plumpe, these statements bear more doubt than certainty and condense into a kind of fallacy. This finds particularly good breeding ground when taking the past into widespread remembrance, in which social turbulence has rocked to economic crises and relaxed again. Because economic crises are, as Plumpe convincingly states, “among to the recurring, formative events of history; their significance has been and is often so great that they radiate far beyond the economic sphere and cause serious political and social problems.” Conversely, this means that economic crises do not present themselves as a new experience (Plumpe, 2011: 7f.).

Looking back to earlier eras, comparable events were even handed down in the Old Testament with the Joseph story of the seven lean and the seven fat years, in which the biblical formula “seven good episodes always seven bad years” possessed a cyclical character. The “fat” years were accompanied in a regular sequence by subsidiary climatic properties that had a beneficial effect on the harvest, while in the “lean” years these were absent and flanked by hunger and hardship (Kulke, 2011). Harvest fluctuations also subsequently acted as an initiator of crisis states for the history of ancient Europe, undermined by economic and social hardship. Despite overcoming and increasing agricultural productivity since the 19th century, these crises did not end, as the economy's development has since been subject to rolling economic disruption. However, it is advisable not to suppress reality and to dismantle and polarize fluctuations of harvests and the economy as well- known plagues of society. Additionally, there are speculation crises, which are also not a new phenomenon, but at least enable new research approaches (Plumpe, 2011: 7ff.). Be it the then “tulip scam” in the Netherlands in the 1630s, where, according to Weber, to lighten up this “fraud” tulips as luxury and speculation junk “fantasy prices” achieved (Weber, 2011: 258f.), the Mississippi speculation about John Law (Rothengatter/Schaffer, 2006: 204) or the same time “South Sea Soap Bubbles” in England from 1718-1720 (Born, 1982: 131f.).

Alongside another stacking of speculative bubbles of the 19th, 20th and 21st centuries - e.g. the Australian banking crisis of 1893 or the Scandinavian Crises 1984-1992 (Schnabel/Brunnermeier, 2014: 23ff.) - they mark an almost unquenchable plethora of crisis-ridden downturns that more or less repeat to this day. On the one hand, this admiration requires

that such crisis processes repeatedly manage to iterate as “obviously a normal part of the economic process” (Plumpe, 2011: 8). For others, its dimensions represent an indicator of political apathy, whether and to what extent reactions of the respective governments have developed (Schnabel/Brunnermeier, 2014: 23ff.).

In addition to the actual economic crises, it should be permissible to set up a series of thoughts in which, due to the topical nature of the subject, state bankruptcies also profile themselves as normative crisis agents, even if these are not necessarily cataloged among the economic crises in the narrower sense (Plumpe, 2011: 8). Considering the results of the investigations of the American economists Carmen M. Reinhart and Kenneth S. Rogoff, de facto long-term financial difficulties and over-indebtedness of states as well as resulting difficulties qualify as multiple crisis producers of the last centuries (Reinhart/Rogoff, 2009: xxvi-xxx). However, the above enumeration of the history of sovereign debt crises should not give the impression that these events are to be regarded as the norm in national history. With “Australia and New Zealand, Canada, Denmark, Thailand and the USA”, Reinhart and Rogoff cite states that have so far been able to prevent foreign debt crises in their history (Reinhart/Rogoff, 2009: xxx).

In summary, based on the previous century's reflections on crises, it can be postulated that these can be roughly sequenced over time. The crises of the “pre-modern” world can characteristically be interpreted as agricultural and food crises, while at the beginning of the 19th century, with the infiltration of modern capitalism, state bankruptcies and the emergence and bursting of speculative bubbles had severe consequences for the economy as a whole. The transition from climate and weather as crisis-deciding factors of the “pre-modern” era to rhythmic economic cycles, which have not infrequently caused crises by speculative bubbles on the capital markets, reveals the rough historical division of antiquarian and novel crisis events (Plumpe, 2011: 9ff.).

5.1.2 Classification of the three investigated crises

The previous subsection was therefore able to prove that crisis incidents are no longer phenomena, but have a continuous character and come back regularly. In the case of the crises examined, the question arises as to what separates them from the others. Beginning with the first two crises, the Great Depression as a global economic crisis and the Great Recession as a financial crisis, there are almost 80 years between them and yet there are more parallels than expected at first sight (cf. section 1.2).

Past research and investigations have often come to a conceptual cohesion that the Great Recession and the crisis of the 1930s reached dimensions that set them apart from other crises. According to various authors, such an interpretation is also evident and legitimate, for example the Great Recession according to Sarkar had matured into an exceptional phenomenon: “On the surface, there have been several similar, albeit not equally severe, crises in the past decades . There were stock market crashes, bank failures, financial market crises, credit crunches, severe recessions, bankruptcies … . The order of magnitude, i.e. the depth and breadth of the current crisis, however, is so great that everyone involved temporarily panicked.” After the outbreak of the Great Recession, capitalism found itself in a struggle for its right to exist and, according to Sarkar, allowed the question to be asked in the context of the crisis “whether it is just another crisis in capitalism or rather the crisis of capitalism for which Marxists, communists, socialists and other critics of capitalism have long been waiting” (Sarkar, 2012: 5).

As obvious as the crisis picture of many observers is that capitalism will “never be as ... as it was before the crisis” and its “unbridled, globalized, neoliberal” quality could be tamed to a certain extent in the future by a regulated exercise (Sarkar, 2012: 5), undecided impressions linger on. From a sociological point of view, a growing aversion to argue about an end of the crisis had even developed in some quarters. Thus, sociological observers such as Demirović, Dueck, Becker and Bader saw the “deepest economic crisis since 1929” four years after the outbreak of the Great Recession, especially from a societal point of view, by no means subsiding, since causative characters such as financial market players and asset owners were still pursuing their “high profit targets with the same mechanisms as before the crisis”. Messages of recurring growth and falling unemployment figures awakened confidence, but closed the radius to new crisis areas: “But none of the social problems indicated by the deepest economic crisis since 1929 has been solved. The financial market players and asset owners ... have been able to hold their own despite the crisis and criticism. Their profits are secured by the indebtedness of public budgets. The consequences will be borne and endured by the majority of the population.” A transfer of this problem could, in conclusion, also have an impact on new areas such as food, climate or democracy crises, which are associated with a threat to civil society. These theoretical, but also practical considerations, show us that enough spectators remain who are not familiar with the language of the crisis abatement (Demirović et al., 2011: 7f.).

And the critics quoted from the previous section should be right by looking at the current crisis situation. On the one hand, the effects of the corona pandemic are accompanied by a severe economic downturn. On the other hand, crisis management will again have to face considerable financial expenses, which will be financed by new debts and central bank money. The economic problems of the presence, which can already be traced back to the phase after the Great Recession, are becoming obvious alongside the problems of lower productivity and the lack of competitiveness of individual economies. Plump misses the lack of corrective function in this context that a crisis would bring with it. In his opinion, a debt-financed anti-crisis policy has the disadvantage of keeping uncompetitive actors in the game and helping to dampen production development. This "creates a chronification of crisis constellations due to low productivity and high debt levels, which build up each other without a way out of this." However, to return to the actual character of the Corona Crisis, it must be noted that today's pandemic is not comparable to earlier pandemic waves, especially in North America and Europe. The lockdowns, which were unprecedented to limit the spread of the virus, inevitably cause considerable economic losses, but have nothing to do with situations of existential scarcity in earlier times. For Plumpe they are rather "a sign of the abundance of goods that cannot currently be marketed" (Plumpe, 2020: 7).

Moving on to the capitalist fundamental discussion on the occasion of the corona pandemic, it must be noted that the new crisis does have considerable effects on today's economic order. After all, the pandemic is determining political, economic and social reality worldwide. The Swiss economist Matthias Binswanger substantiates this insight by explaining that we are currently experiencing "how old certainties are being shaken, also with regard to our economic system. The dogma of eternal growth and profit maximization is in question." This fundamental question, that everything must now be completely different, arises anew with every crisis that occurs. The last time was the Great Recession to a considerable extent, but it still hasn't gone crazy on the fundamental pillars. Today we live more or less in the same economy. According to Binswanger, the differences are more evident in the fact that in 2008 the crisis was caused by the economy itself, specifically by exaggerations in the banking system. His deeper perspective allows rather the statement that the Corona Crisis is "actually not a crisis of capitalism, but rather a crisis caused by an external shock, that is, actually similar to a war, the economy is paralyzed by something. And of course you try to get it back up again afterwards." In his opinion, a rethinking will rather take place on the globalization track, at least the corresponding euphoria has been slightly dampened. Because we are becoming more aware

than ever of the great dependence on foreign countries for many products, and that if a major problem arises, the supply of food or medical raw materials can suddenly become scarce (Binswanger, 2020).

The investigation still owes one comment as to the possible political consequences of such major crises. Certainly there are dangers that economic dilemmas resulting from the effects of the crisis can also move into political territory and are based on a localization that leads to a wide distribution among the population. The events at the end of the Weimar Republic and its consequences should not be taken as a representative standard, but they demonstrate the dangers that can arise despite economic recovery tendencies. Instead of using this for a reasonable period of change from 1932 onwards, "the reality of the National Socialist armaments industry" already nipped potential hope in the bud. The hope for better times had to give way to armament and the "war of annihilation" and in the end it carried "Europe to rubble and ashes". Even if Plumpe stamps the entire period of the two World Wars from 1914 to 1949 as "a history of exceptional situations", the global economic crisis remains in the overall track as the sub-area that is most likely to create a special position in consciousness. And because of the political explosiveness, it also qualifies as an exceptional crisis: "The global economic crisis dwarfed all previous experience of the crisis and made previous knowledge of dealing with disruptions in economic development obsolete overnight. The causes of the deep crises in the interwar period are in all probability not to be found in individual wrong political decisions, even if these mistakes exacerbated the crises and shaped their faces in detail" (Plumpe, 2011: 90f.).

Against the background of the above statement, it should be noted that precisely because of the occurrence of well-known regular economic fluctuations in the 19th century, the crisis of 1929 and its subsequent years occupies a special place. The well-known cycle of temporary ups and downs had to give way to the war events until 1949 and thus documents more than ever that an originally economic crisis has shifted into a crisis of political ingredients, the effects of which are unique in the history of a country classify (Plumpe, 2011: 119ff.). The effects of the current corona pandemic, which have heated up against political decisions, are now also unique in large parts of the population. Protests and demonstrations shape the meanwhile regular mood against the state decisions on distance regulations, corona requirements and planned vaccinations (tagesschau.de, 2020). If the governments fail to get the virus under control despite the drastic measures felt by the population, far-reaching political consequences will arise. The health systems would collapse and, at the same time, great economic and social damage would result,

which in turn would lead to an increase in perceived and real injustices. In the end, the authoritarian nationalists would benefit from this, which hides a great deal of risk potential, as history has already shown. The German political scientist Dirk Messner therefore considers the "show of strength to contain the Corona Crisis" to be "politically urgently necessary", which, however, requires a functioning strategy and demands an attitude. Should the fight against the Corona Crisis go unfortunate, "it weakens the economy, social cohesion and democracy" (Messner, 2020).

5.2. Comparison of economic indicators

5.2.1 Key interest rates

Starting with a sober look, an initial result for the key interest rate can be determined. It is not surprising that some people talk about a wrong world and for outsiders the current situation is confusing. Because we are in a low-interest phase - if the phase concept still fits - with a long-term character. The usual credit procedure always followed the form that interests will be paid in return for a loan. In return, the one who pays debts pays interest. In addition, there was always the principle that with a long-term and firm investment the highest interest rates could be obtained. These economic pillars seem outdated today. Making debts is associated with almost no cost, and anyone who repatriates money makes losses in the long run. Credit institutions and large companies currently even have to pay negative interest for their reserves. How could this happen? The decisions of the central banks play a role as well as the processing of the consequences of the former Great Recession (compared in particular section 3.3. and 4.3.).

The key messages in figures 18 and 19 appear to be accompanied by strengthened monetary policy instruments that have led to a monetary flooding of the capital markets. They show us that the greatest innovations and added value were created by 1980 since then, neoliberal policies have been introduced and the financial sector has taken a leading role in the economy. Since then we have mostly financial innovations and less real sector innovations and of course this means less added value. The financial sector needs free money for speculation - less interest (Sinković, 2020). Another scientific finding is the follow-up effect in the context of historical financial market analyzes, which is associated with cycles of rate hikes. Figure 57 shows the historical key interest rate development in the USA and the respective crises in column form and confirm in almost all cases that interest rate increases have led to recessions (Stoeferle/Valek, 2018: 59).

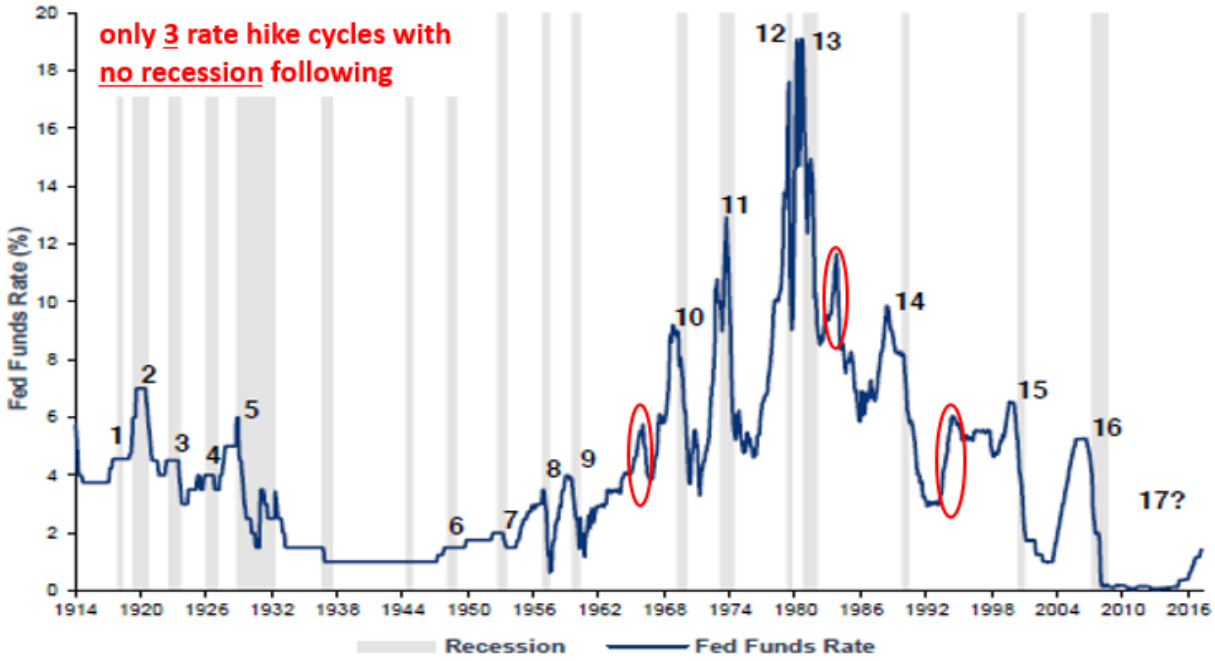


Figure 57: US Recessions and Effective Federal Funds (1914 - 2018)
Source: Fed, Stoeferle & Valek (2017: 32)

First, from a historical long-term perspective of over a century, 16 of the last 19 rate hike cycles ended in recession. Second, every financial crisis was preceded by rate hikes. Only three cases proved to be exceptions to the rule (Stoeferle/Valek, 2018: 59). This finding is not entirely negligible in the financial science context. For outsiders, this is a gain in knowledge that you have to let melt on the tongue. For experienced or historically interested financial market observers it is a more explainable than inexplicable connection. In summary, it can be said that interest rate decisions alone have the power to control or at least arrest global risks. The last fear of such a follow-up effect was in late December 2018 or early 2019, in which the contraction of central bank balance sheets was closely related to the rising interest rates. Over the course of 2018, the Fed started to withdraw liquidity from the financial markets for the first time since the End of the Great Recession. The ECB, Bank of Japan and Bank of England were also facing this decision (Stoeferle/Valek, 2018: 59). After the Fed raised its key interest rate from 2.25 to 2.5% on December 19, and announced two more for 2019 plus a quantitative tighting (FOMC, 2018), this decision and phase almost led to a collapse of the stock markets in the United States and Europe (finanzen.net, 2019). For this reason, this consideration was largely refrained from in the course of 2019 through multiple key rate cuts (FOMC, October 30, 2019). In this context, the theoretical and sentimental train of thought is also interesting if you follow the saying of the economist Lacy Hunt: “Monetary policy has become asymmetric

due to over-indebtedness. This means that an easing of policy produces little stimulus while a modest tightening is very powerful in restraining economic activity." A little tightening means and leads to a severe restriction of economic activity, while an easying of monetary policy does not give impulses in the same correlation (Hunt, 2018: 59).

The German-British economist and crisis expert Richard Werner, revealed an aspect that is more scientifically founded than perceived by everyone in practice. In his view, it does not correspond to today's reality that a negative correlation between interest rates and growth means that low interest rates lead to increasing economic growth. With regard to this myth, he believes that the opposite is the case. The correlation between interest rates and growth is positive. Here he sees the path of statistical causality from growth to interest, and not vice versa. In concrete terms this means that high growth leads to high interest rates and low growth to low interest rates (Werner, 2012: 7). A thesis that has the potential to open up extensive lines of discussion in relation to central monetary policy. Reciprocally, this means that the elementary instrument of central banks - interest rates - "cannot explain GDP growth or the behaviour of stock markets or exchange rates" and thus directly addresses Werner's critical stance on central banks. Already in 2002, he accused the central banks of "manipulating financial markets", being intent on "generating and intensifying economic cycles" and driven by pure "quantity quotas for bank credit creation of all countries." In combating the crisis, he attaches far greater importance to the factor money supply than to interest rates themselves: "What really moves the markets, however, is not the price of money, i.e. interest rates, but their quantity - if only measured correctly" (Werner, 2002).

Even more than 15 years later, at an investors' event, Werner held on to this viewpoint more than ever before: "Officially, central banks manipulate interest rates as the price of money in order to achieve equilibrium. The determination of rationed markets is still tied to quantities and not prices, in this case by the quantity of supply and demand. Economic theory, which uses "alleged market forces", is undermined by "bureaucratic allocation decisions", "which dominate the economy" (Werner, 2017). Both passages show that there are quite different perspectives in the context of central bank policy. Werner's further and more profound findings in the above context are discussed again in the subsection "Public and private debt development."

5.2.2 Inflation

When drawing an interim conclusion in this subsection, it is as in the previous chapter obvious that the predominant inflation or deflationary developments are directly or indirectly related to signs of a crisis. The following graphic shows in a 60-year view with red circles that inflationary and deflationary movements follow a certain pattern before and after the outbreak of crises, including four economic recessions and two energy crises (here using the example of official US recessions; Bryan, 2013).

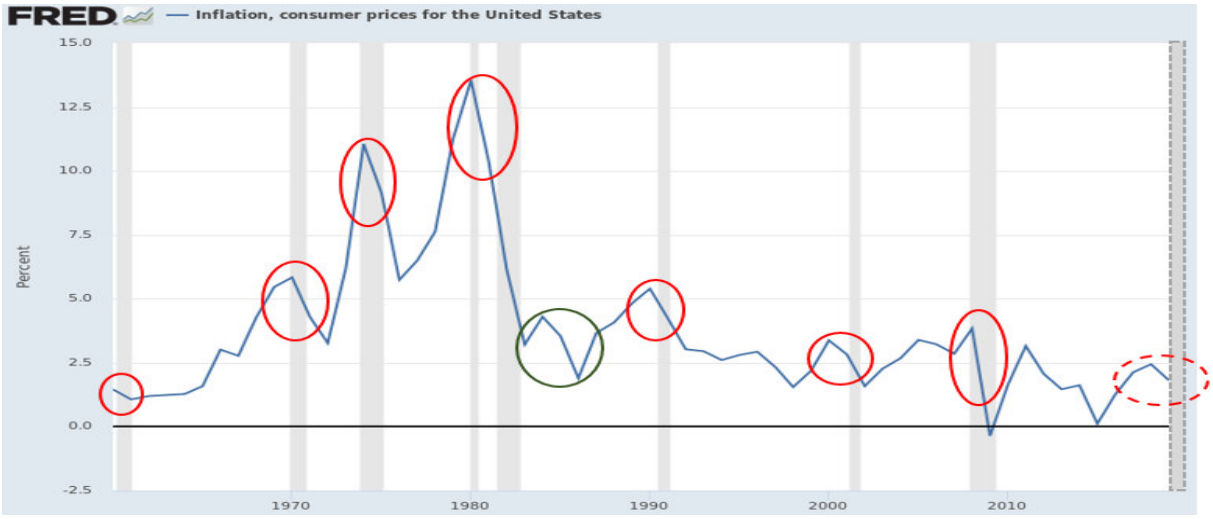


Figure 58: Inflation, consumer prices for the US (in %) with own markings
Source: World Bank (frequency: annual)

The graphics combined with the elaborations in this chapter have truly shown that striking price increases often accompany crises (e.g. price speculation in section 3.4.) and that the inflation rate is largely high before the outbreak of a crisis. Conversely, deflationary developments are compatible with the immediate consequences of the crisis. The latter can also be observed very recently in the wake of the Corona Crisis.

The most advanced deflationary developments can be observed in the Great Depression (see figure 4), this was also responded to with clear criticism of the fiscal policy measures. With regard to the classic history of American monetary policy, there is a major point of criticism here from well-known economists such as Milton Friedman or Anna Jacobson Schwartz (Friedman/Jacobson Schwartz, 1963). They blamed the Fed for not having contained a large part of the crisis by failing to prevent the decline in the money supply after 1929. Such moves would have resulted in more intense free market government bond purchases, where banks and

other companies would have had sufficient liquidity to meet their growing demand for cash. The Friedman/Schwartz chain of ideas paints a picture of what could have happened after 2008 without the Fed measures if the markets had not been served with sufficient money (Davies, 2012). And inflation can also be controlled through fiscal measures. Deflation often leads to an increase in credit defaults and bankruptcies, which in turn goes hand in hand with a number of bank defaults and results in a further decline in income, production and employment. The Fed generally push price stability as a primary objective of monetary policy, as fluctuations in price levels (whether deflation or inflation) can lead to financial instability and can slow economic growth (Wheelock, 2007: xiv).

As negatively as diverse economists encounter the side effects of deflation, their relativization must also be considered. Deflation critics see a particular risk in relation to consumers that they could postpone purchases in the hope of lower prices. The criticism in regard to companies is that they could cut production and postpone investments. The latter, in turn, could trigger layoffs and lower wages, which would slow demand and further contribute to lower prices. From this process chain a vicious circle of falling prices, wages, expenses and investments could develop. However, this worst case scenario also has weakenings. The fact that consumers are really holding back on their purchases can be seen in the respective situation. If consumption continues, the economy also benefits. It can only become dangerous when the so-called second-round effects are introduced, this affects the point in time when wages fall (Zeit online, 2009).

Overall, it should be noted that compared to previous trends, consumer prices in the EU and the USA have increased only relatively moderately in the past two decades (European Commission Eurostat, 2017). This is also due to the more recent monetary policy measures implemented by the ECB and Fed. To achieve the defined price level stability or its target level, the ECB essentially exercises three far-reaching monetary policy instruments: interest rate setting, money supply management and influencing inflation expectations via its communication (Diermeier/Goecke, 2016: 5). This shows that they attach this concern to the upper priority and the Fed also shows characteristic parallels in these principles.

5.2.3 GDP development

For the comparative analysis of this chapter and as already elaborated in the previous two chapters it turns out relatively quickly that different economic theory threads were drawn between the two periods. Based on the respective parameters and the associated economic

measures it becomes clear for the 1930s that characteristic elements of a restrictive monetary policy are evident. Fricke's overall impression of the 1930s is unambiguously condensed into the following critical dogma that the economy was insufficiently supplied with money and credit with negative effects for production and consumption: “Back then, governments and central bankers had watched for a long time, bankrupted banks and relied on letting the supposedly purifying crisis run until it became independent and ended in deflation and depression. Back then, the monetary authorities kept interest rates relatively high for years and the money supply shrank. As a result, companies and households had a quarter less funds available in 1933 than in 1929.” This explains the reason why the then Fed chief and economics professor Ben Bernanke after years of research of the Great Depression took a different route after the crash in 2008. He quickly put a lot of money into circulation and lowered interest rates to zero to prevent the money supply from falling. It also explains why Obama's advisers opted for similar interventions, including restructuring state aid banks, increasing spending and bringing money to the people. Even if it dramatically increased government deficits (Fricke, 2016). In the context of GDP and its effects the thematic focus of the economists Jordà, Schularick and Taylor is that the “correlation of production, consumption and investment growth with credit has increased significantly over time”. In their view, loans even more than money are now more closely associated with changes in GDP than in earlier, less indebted periods of modern economic development. According to their knowledge the same thesis also applies to the correlation with investments and consumption (Jordà et al., 2016: 25f.). When applying this thesis it becomes obvious that offering loans in times of crises through government programs and with the support of the central bank to cut interest rates has a positive effect on GDP.

Based on figure 7 and Fricke's explanatory statements it can be seen that the US economy was only able to reach the pre-crisis level after 1937 due to the restrained monetary policy. Here, the numbers of economic performance after the outbreak of the Great Recession speak a divergent language. The downturn in the US economy after the crash in 2008 lasted just one year, followed by three years of the economic crisis instead of almost a decade of depression after 1929. If you compare the unemployment rate in the wake of the Great Depression (25%) it becomes clear that the resulting slowdown in consumption also contributed to the economic collapse and companies were also forced to reduce their investments. At the time of the Great Recession the United States remained far from comparable mass unemployment. And eight years after the outbreak of the crisis the official unemployment rate was even below 5%. In

addition, per capita consumption in 2011 was again at the pre-crisis level. As a result of all this development and including recurring economic growth, it was also possible from 2010 to generate tax income that is necessary to reorganize the state budget due to the costly economic programs (Fricke, 2016). It is therefore not surprising that in the current Corona Crisis extensive stimulus packages to contain the effects of the crisis have been adopted.

The following finding does not appear to be revolutionary, but it does reveal an interesting aspect. John Maynard Keynes' theses were very well known internationally in the 1930s, that's why various economists criticized their failure to observe them. For example, Keynes key reputation at the time was an occasion for Büttner to question why his methods were not used: "The methods that Keynes mainly propagated were suitable. The English economist's proposals were… well known to theoretically secure a change of course. In scientific discussions, the reception of his ideas was taken for granted; the advocates of a conscious anti-deflation policy were particularly influenced by his book 'A Treatise on Money', published in 1930. But Keynes' books, articles, lectures and memoranda also received a lot of attention for the English government in magazines and daily newspapers, even in the newsletters of minor local professional organizations" (Büttner, 1989: 222f.).

5.2.4 Public and private debt developments

The complex processing of the debt subsections has produced various insights, some of which have also been used for an antithetical discussion. Categorizing the development of public debt ratios as a scientific emergency area in the context of a crisis would nevertheless go too far in the opinion of the authors. Rather, a different opinion is to be put forward, in which the analytical analysis of the debt problem leads to an antithetic that has opened up extensive dius discussions in the professional world. Starting with the argumentation example of the influmental German economist Hans-Werner Sinn, two crucial points come to light. On the one hand, his endorsement of costly economic stimulus measures by the state in times of crisis which are based on Keynes' interventionist economic policy in order to save primarily affected companies and jobs and thus support the economic cycle. On the other hand, there is the requirement of debt discipline, which is counteracted by central bank policy and meanwhile is turning away from the character of sustainability due to long-term and increasing debt paths and a tripling of the central bank money supply (Sinn, 2020b). Finding the right consensus here is like a scientific sparring match. In order to classify long-term debt constellations you must bear in mind that the two top economists Reinhart and Rogoff already classified them as

essential indicators in the context of crises. The results of their investigations show that de facto persistent payment difficulties and overindebtedness of states as well as the resulting difficulties qualify as multiple crisis generators of the past centuries (Reinhart/Rogoff, 2009: xxvi-xxx). It was and is therefore all the more important to consider the circumstances to which governments are directly or indirectly exposed.

The thesis that debt per se should be regarded as a purely negative factor would therefore be too simple and would not stand up to a body of scientific research. The view of Werner whose terms present themselves in context and even ensure a transition to the previous subsection, also qualifies for this. When it comes to debt he recalls (like Sinn) in particular what the money is used for. The effect of a bank loan therefore depends largely on its use and can be diversified into two types, the unproductive and productive added value. A bridge to the previous subsection can now be seen, namely that the taking up of debt is acceptable if it generates a positive contribution to GDP, for example through investment loans. This so-called productive added value according to Werner serves to create new goods or services and leads to productivity gains that simultaneously generate inflation-adjusted growth and an increase in employment. In turn, unproductive credit creation is aimed at financial loans that do not contribute to GDP, because they are not originally linked to performance-related processes. The further judgment regarding financial loans is devastating which Werner even criticizes in such a way that it leads to "banking crises, asset inflation and financial bubbles". According to Werner's definition the latter arises as a preliminary step to banking crises whenever "bank money creation grows significantly faster than the economy for a long time" (Werner, 2012: 22). In this context Werner does not miss the opportunity to comment on the issue of money creation and distribution. In his eyes and contrary to the opinion of the general public neither the government nor the central banks should be regarded as creators of money, but rather the banks as the actual creators and distributors and thus the heart of the economy (Werner, 2012: 16).

Looking at the overall picture of the current crisis situation it must be noted that the debt issue has picked up considerably again. Paul Krugman took a constructive stance on the high levels of debt worldwide and especially in the USA even before the outbreak of the corona pandemic which was rich in argumentative statements. In his eyes austerity efforts must be seen as a negative scenario if they prevent future investments especially in new infrastructure. Even though he views the debt situation in the US with relatively little panic, he sees the origin of the

debt mountain as anything but uncritical. Tax relief for large corporations and tax cuts for the rich are two things that re not permitted in the context of debt accumulation. His historical consensus is that government debt may well increase but for a sustainable purpose, such as investment in education or infrastructure (Krugman, 2019). Otherwise, worst-case scenarios could develop that would be compatible with the austerity policy and the situation as in the Great Depression of the 1930s and could slow down the economy (Krugman, 2012). The described relativizing argumentation by Krugman should not hide the fact that a clear picture emerges from a broad view of the debt development in the USA. An interim conclusion can therefore be summarized as an example in three graphics. The first graphic summarizes a trend that does justice to the explanations in this subsection.

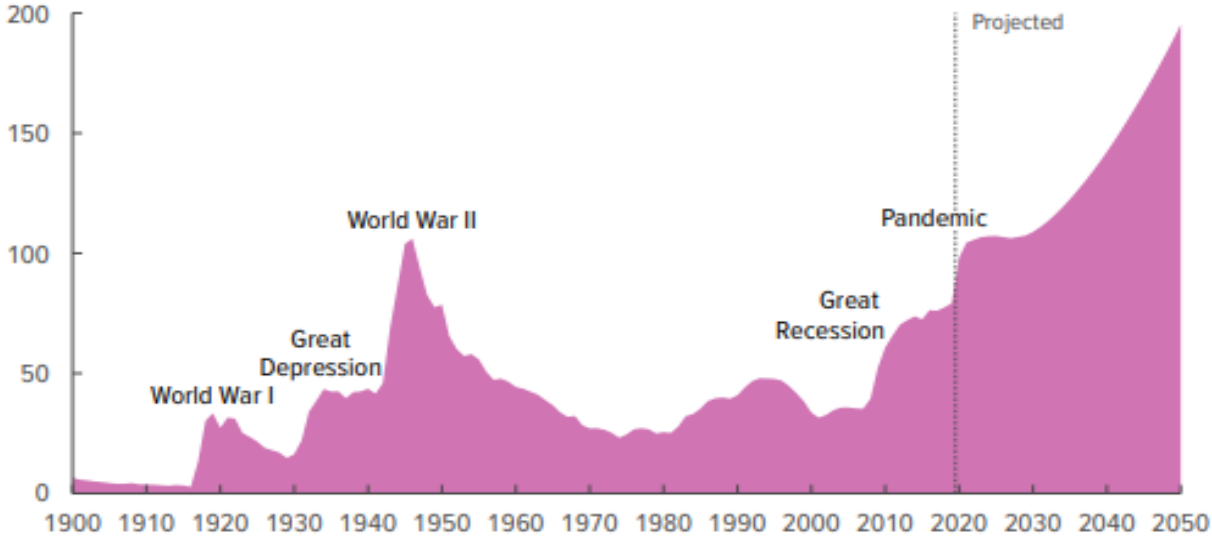


Figure 59: Federal debt held by the public since 1900 (in % of GDP)
Source: Congressional Budget Office of the United States (2020: 1)

The United States is well on the way to reaching post-World War II levels. The graphic shows that the debt trend resulting from the Great Recession is diametrically opposed to the situation in the Great Depression. Contrary monetary policy directions (money restriction versus money expansion) meet here strikingly based on the knowledge gained so far from the investigation. At first sight the graphic from the latest edition of the Congress of the United States Congressional Budget Office from January 2020 allows the viewer plenty of scope for attack, in which the publishers were not stingy with criticism: “High and rising federal debt would reduce national saving and income, boost the government’s interest payments, limit policymakers’ ability to respond to unforeseen events, and increase the likelihood of a fiscal crisis.” This means that even before the outbreak of the latest crisis the situation was to be seen

as sobering (Congressional Budget Office of the United States, 2020). The corona pandemic will not have made the current situation easier with the extensive current economic stimulus packages.

A further illustration of the economic development is clear from the two-axis view in the graphic below. Here, the growing US debt curve (measured in $) is juxtaposed with the development of GDP.

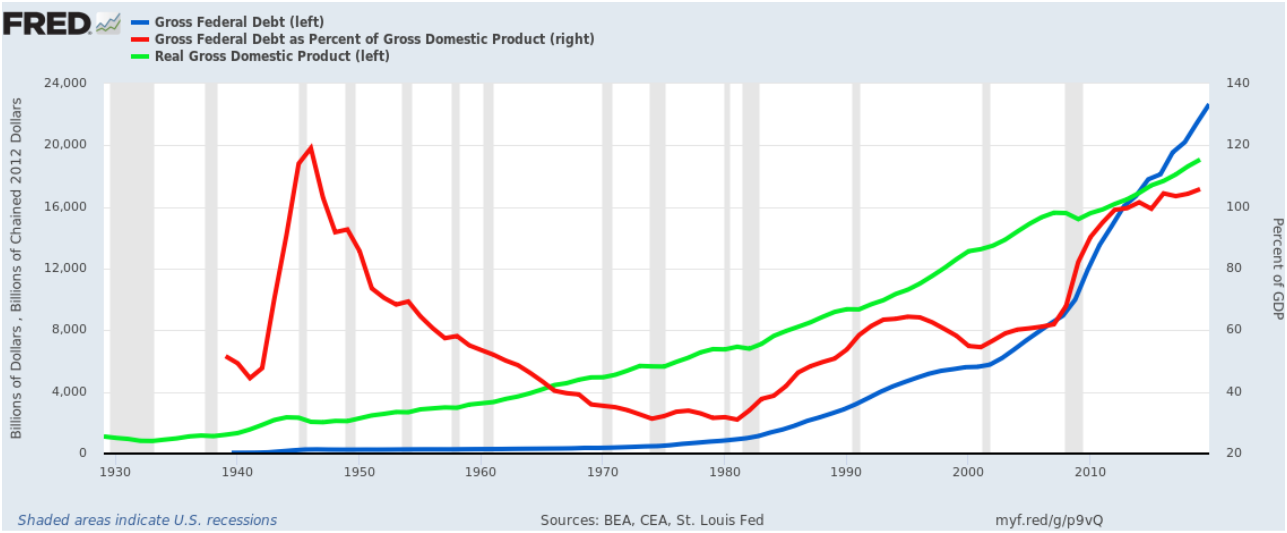


Figure 60: US gross federal debt versus GDP since 1940

Source: Bureau of Economic Analysis, Council of Economic Advisers, Federal Reserve Bank of St. Louis (2012)

Graphically it is visible that absolute debt broke the GDP mark for the first time in 2015 and consequently exceeded 100% in terms of percentage. It should therefore come as no surprise that Christine Lagarde, the then IMF chief, expressed concern last year about the level of debt in the United States, which she considered to be “on an unsustainable path” (Lagarde, 2019). There may be divided opinions about the background and reasons, but not about the obvious trend. Additionally, it can be seen graphically that the rising trend in terms of public debt has not only been observed intensively in the USA for decades, but also applies to the G20 countries.

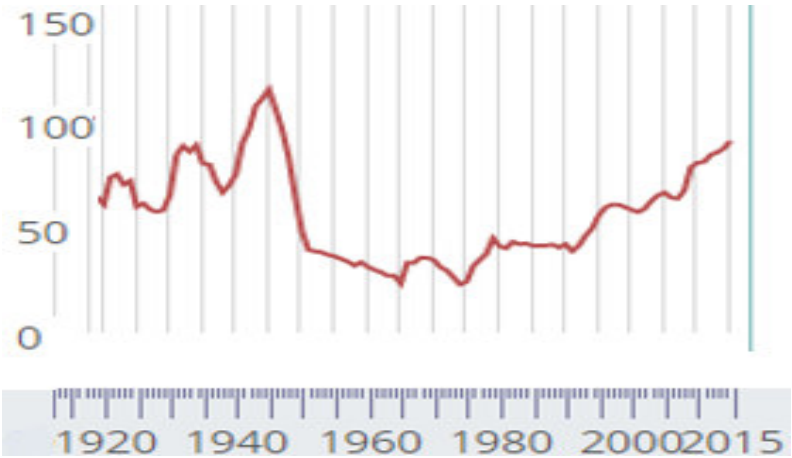


Figure 61: Historical public debt G-20 states (in % of GDP)

Source: IMF (2020)

Summarizing the findings of the private debt ratios with regard to the three crises, it should first be noted that these, like the public debt ratios, can cause major problems. The private debt ratios were the harbinger of the Great Depression and Great Recession, and in turn the aftermath in the Corona Crisis. A comparable increase in private debt ratios as in the first two crises can also be found in the Japan Crisis (subsection 2.4.4). In the immediate aftermath, public debt ratios rise at a similar pace, as shown in subsection 3.4.4. This is one of the key findings of the study. Likewise, that private debt ratios shot up after the outbreak of the Corona crisis in the face of rising borrowing. Thus, in the latter crisis - in contrast to the Great Depression and Great Recession - the rise in private debt ratios cannot be classified as a cause or driver, but rather as a knock-on effect of a sudden virus (see subsection 4.4.4).

In the final analysis, we are left with the question of how an economy can adequately survive with such high debt ratios. Looking at the example of Japan, where the country was already shown in subsection 3.4.4.1 to be the long-term leader in public and private debt ratios, the above question takes shape. The chart below shows the sum of both debt ratios, which tended toward 300% by 2010.

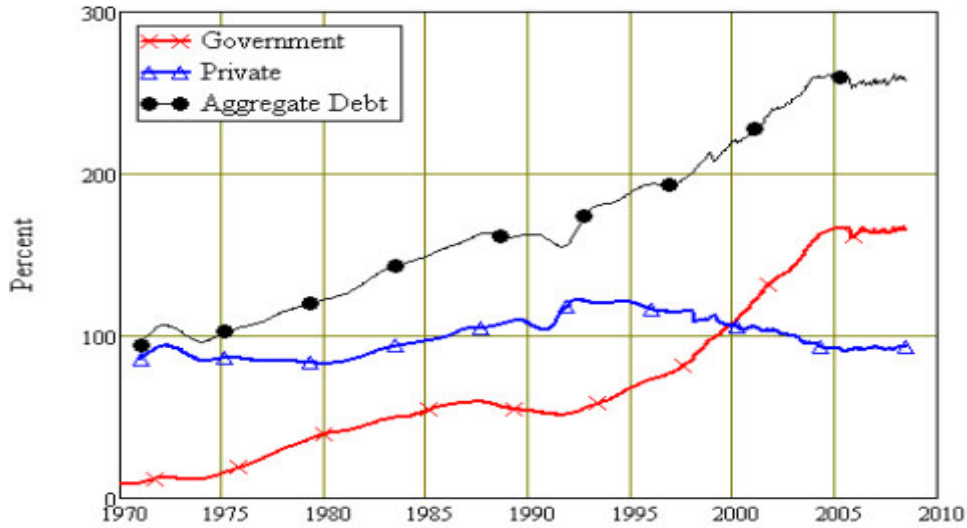


Figure 62: Japan Debt to GDP Ratios (in % of GDP)

Source: Keen (2008)

The reason why the country was able to continue to operate well despite high debts was due to the trade balance surplus it had generated over many years. Like the EU heavyweight Germany, Japan is characterized by a strongly export-oriented economy which, due to the geographic location of the country, benefits greatly from well-functioning sea transport (German Chamber of Commerce and Industry in Japan, 2020: 1ff.). Coupled with the obvious long-term interest rate restraint on the part of the Japanese central bank (see figure 19), which keeps the interest burden within limits, the situation is being dealt with. The condition is different in the USA, which is illustrated below.

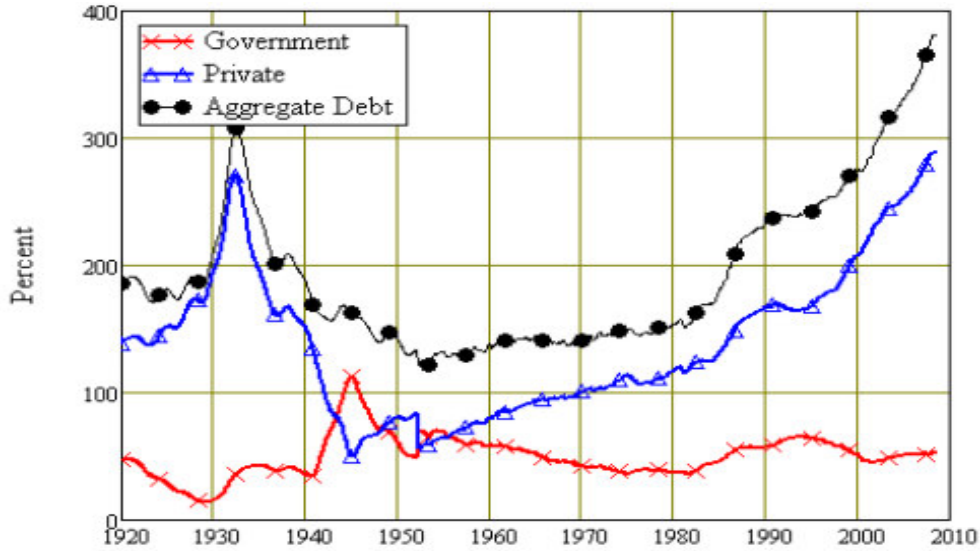


Figure 63: US Debt to GDP Ratios (in % of GDP)

Source: Keen (2008)

Public and private debt ratios each above 100% can have very damaging effects if they are accompanied by noticeable foreign trade deficits. And this is exactly what describes the situation in the USA. They imported far more than they exported. In 2017, for example, the USA had by far the largest foreign trade deficit in the world. In absolute terms, it amounted to $ 552 billion, the equivalent of 2.85% of GDP (Priewe, 2018). Against this backdrop, the omens are not good if the level of debt in the USA remains as it is.

5.2.5 Stock markets and real estate developments

In order to draw an interim conclusion on this subsection it was not so much necessary to observe and look at the technical developments chart of the respective indices in the respective period but rather to look more closely at the backgrounds that caused them. The crisis periods were initially evident in all of the charts shown whereby the intensity of the Great Depression stood out and marked the longest phase in which stock prices suffered. Nevertheless, the recovery trends which were mainly based on fiscal policy measures were characteristic of the two recent crises.

Despite political uncertainties and events (such as the ongoing trade disputes between the US and China), stock indices rose steadily. This means, in a reciprocal way, that such significant and long-lasting events have not the same impact on stock market developments as key interest decisions of the central banks. The following statements of the Fed-chief Jerome Powell from March 2019 supported this thesis: “We don’t see data coming in that suggest that we should move in either direction. They suggest that we should remain patient and let the situation clarify itself over time” (Powell, 2019). The yet announced end of 2018 interest rate increase was thus off the table and his statement should first provide reassurance. However, it was rather kept secret that the turnaround in interest rate policy also had other reasons. While the major stock indices on the Wall Street or big indices in Europe and Asia were aiming for record highs or hovering high, (key) interest rates are at a very low level for years. Obviously, there is a connection here whose correlation is sensitive. As the Wall Street’s economist Ed Hyman already stated before the third interest rate cut by the Fed in a row: “This will be the third rate cut and that’s been sort of the magic sauce in the 1990s to get growth to stop slowing. … They feel like they are in sort of a familiar territory if this works out, and the stock market rallying is a suggestion that it is working out” (Hyman, 2019).

The recovery periods in the key indices after the crises‘ outbreak were largely based on the far-reaching stimulus packages of the respective governments as well as the liquidity aid and key interest rate cuts by the ECB and the Fed which at first gave (stock-)investors hope for an economic recovery. In view of the inexorably increasing debt paths (as described in previous subsection) investors clearly only attach a peripheral importance to the perspective and sustainable view. In the context of the comparison between the Great Depression and the Great Recession the Swiss economic historian Tobias Straumann said that even in the 1930s (despite a characteristically restrictive monetary policy) the Fed “initially reacted correctly to the stock market crash by quickly reducing nominal interest rates and the banks with liquidity were taken care of.” Although it ensured that share prices stabilized in the medium term the economy was still going through a long dry spell as he added: “On the other hand, the Fed reacted too weakly to the subsequent banking crises and international capital movements, not least because the gold standard defied the limited scope. This turned the recession into a depression.” While he saw expansionary monetary policy in the first phase in 2008 and 2009 as an adequate and logical step to contain the crisis and calm down the capital markets, he questioned the effect of the subsequent quantitative easing (in particular the purchase of government bonds) because their effect “cannot be statistically proven beyond any doubt”. And this is exactly where it is transferred to the reprehensible. In the current Corona Crisis, the ECB no longer had any leeway as an option to cut interest rates, as this was already on the zero line. As a difficult circumstance the almost entirely expansionary monetary policy after 2008 did not really ease the general conditions, as this essentially increased the debt ratios (Straumann, 2019).

To follow the previous passage, it sounds almost too pathetic to read the current situation description of the Corona Crisis by the chief economist of the American investment company Invesco - John Greenwood. In his view, the current monetary policy measures of the states and central banks serve as a bridge to the phase that follows the pandemic. In addition the “ECB could increase its impact” if it included additional market participants in its purchase programs that are not primarily in the banking sector, such as the purchase of securities from insurance companies or pension funds. These considerations truly deserve to be thought through and discussed. However, the step he is already formulating will be much more challenging in a period of still stressful pandemic effects on states and their economies. He recommends that the central banks do not wait too long to gradually bring interest rates back to normal. This should happen before they start selling government bonds again (Greenwood, 2020). Considering the chaos on the stock markets caused by the Fed's announcement of rate hikes in December 2018,

such statements must be properly and carefully channeled at the moment and the implementation step must be considered very carefully.

5.3. Financial market and morality

5.3.1 The relationship between market and morality

The background for the further considerations in this subsection is that sustainability issues have formed large parts of the recent public debates and that the finance industry and the market should also be geared towards these debates. For this purpose, a brief overview of essential aspects of the relationship between the (financial) market and morality as well as some available positions on this discussed relationship between representatives of both sides is given.

Markets are increasingly losing their social reputation. The lack of confidence in the market is attributable in particular to the financial crisis of 2007/2008. In addition, however, there are a number of other problem zones or drivers that have caused a confidence downturn: fraud crises of manufacturers, climate-damaging greed for profit in the energy industry, debate about social inequalities and widening discrepancy between rich and poor (Schäfer, 2018: 42). In general, it can be stated that the moral capital of a society can suffer both from the erroneous design of framework conditions and from individual, immoral misconduct. The preservation of moral and social capital is not only an important location factor, but also ensures social peace, which ultimately benefits everyone. A lack of morality can therefore be seen as a risk factor for society as a whole. Improved communication about morality and the market economy can counteract any moral risks (Enste, 2015: 50f.).

In the further course, the market vs. moral discussion, which is characterized by different contrary basic positions, will be taken up and provide different viewpoints. At the centre of this discussion is the question how do market and morality fit together and to what extent the market as a system of order influences the moral order of a society. This value debate on entrepreneurial action takes on an additional dimension through raising the question what role can be attributed to the state: does the system need a regulatory framework that does not leave the competition to itself and/or how much regulation is needed.

5.3.2 Viewpoints

The initial question of market and morality polarizes, as it turns out. Relevant contributions to the discussion are outlined below.

Alan Greenspan, the former chairman of the Fed, assumes in his “mea culpa”-statement that financial markets would always “self-correct”. In his “mea-culpa statement“ in 2008 he admitted that he overestimated the ability of free financial markets to correct themselves. At the same time, he underestimated that deregulation could have such destructive forces on the economy: “this crisis, however, has turned out to be much broader than anything I could have imagined. … Those of us who have looked to the self-interest of lending institutions to protect shareholder’s equity (myself especially) are in a state of shocked disbelief” (Felsenthal, 2008).

George Soros, billionaire/investor, questions the prevailed view that markets correct themselves and sees it as a fallacy. There is no single state that can oppose the power of global financial markets. Furthermore, no institution has the power to issue rules at a global level. Soros assesses an self-contradiction in the relationship between business and ethics and argues in regulation debates: “Profit maximizing behavior follows the dictates of expediency and ignores the demands of morality. Financial markets are not immoral; they are amoral” (Soros, 1998: 208).

According to Friedman, Nobel Memorial Prize winner in Economic Sciences 1976, dogmatically or only partially, the only social responsibility of the companies would be to make profit (Friedman, 1970); an approach that is no longer up to date in the current times of crises, scandals and violations. Socially responsible management is becoming an indispensable criterion, since entrepreneurial action and decisions are no longer free from ecological and social perspectives (Gogoll/Wenke, 2017: 14).

Against the thematic background, the standpoint of a national panel discussion between representatives from business and science can be used as an example in the present context (Chamber of Industry and Commerce/IHK Nürnberg, 2007). Ludwig Georg Braun, German entrepreneur and honorary president of the German Chamber of Industry and Commerce, pointed out: “Market and morality belong together, because without moral values a reliable economy is not possible.” Doing business sustainably benefits not only society, but the company itself if it treats its partners correctly in order to remain in a long-term business relationship. Wolfgang Gerke, German financial market economist, expressed it in more radical terms: “The financial markets have long taken over the direction. The battle is over. Politics, society is disempowered by the financial markets.” Germany, characterized by social market economy, has to come to terms with this and can at best try to set moral goals for society.

The tension between profits and jobs was also discussed. According to Braun, it is morally correct if a company cuts jobs despite high profits, instead of “closing eyes on reality” and acting too late. Friedhelm Hengsbach, German economist and social ethicist, countered: “If the profit is increased, this is usually at the expense of the wages.” Politicians should set rules and laws for morally correct behavior. Dagmar Wöhrl, Parliamentary State Secretary in the German Federal Ministry of Economics, sees the interests of the financial markets and the employees as compatible. On the one hand, employees often have shares themselves that benefit from price increases. On the other hand, making profits also has a moral dimension: “Because whoever makes a profit can also invest and thus create jobs.”

5.3.3 Interim conclusion and final considerations in view of the current developments

Given the consequences of the economic and financial crisis in 2008, it is not surprising that it has left its mark. The consequences for morale and confidence in the financial markets are particularly noticeable. In Germany, for example, its economic system is being recalled once again. As the German economist Schäfer puts it: “The market economy needs more reputation and acceptance in society. This requires a broad institutional landscape of moral education” (Schäfer, 2018: 46). This was also the case for German Federal President Joachim Gauck at the opening of the 20th German Banking Day on April 9, 2014 in Berlin, who hereby also appeals to the consciences of bankers: “The turning away from the virtues of the social market economy has shaken citizens' confidence in the banks” (Gauck, 2014: 6).

Schäfer's intention is twofold. On the one hand, he makes it clear that the financial crisis caused an important aspect - namely a loss of trust - at the level of the relationships between the market and participants. On the other hand, he underlines a postulated function of a current guiding principle, not only in society but also in the economy: “The advantage that market morality creates is stability, the reliability of mutual behavioral expectations. Morality thus becomes an investment good: it is worthwhile to act morally in the order-economic sense” (Schäfer, 2018: 46). The sustainability aspect is inevitably linked to this. Market participants should be stimulated for long-term prudence considerations, not just in the short term. Sustainability aims at operational continuation, durability and stability of structures. Trust is the key prerequisite. Trust has developed into an important research subject in recent years. It is accentuated in different contexts: from the fundamental importance of trust for interpersonal relationships to an extended view as a central entrepreneurial resource. If trust is discussed, it is usually an

indication that it has been lost. The financial and economic crisis of 2008 provides this development with ample material (Beckert, 2009: 37).

Confidence and sustainability also fell short of their expectations in the context of the recent crisis in the corona pandemic. Sinn, for example, argued that the multi-year expansionary phase before the outbreak of the Covid 19 crisis played a key role in the current situation. The long-lasting policy of "easy money" - especially through zero interest rates and quantitative easing - led to the world floating in liquidity and boosting the stock markets. An expansion in the form of liquidity aid for affected companies and the population, which is inevitable for the current crisis, will intensify this effect. The central banks have - according to meaning - and that is the big shortcoming, they already used up their powder before the Corona Crisis. They have used up their funds at the wrong time and are primarily "responsible for the bubble that Corona has now burst" (Sinn, 2020a). Leading over in the context of business ethics and moral economics, the question arises whether the political decision-makers have acted morally in the interests of everyone in recent years. Because morality increasingly takes on the character of an asset. In this context, the building of mutual trust between the parties should be emphasized. Investing in trust, which usually accumulates after years of good experience in working together, leads to so-called trust capital. The term already indicates that the successful process of building trust is an asset (Gogoll/Wenke, 2017: 85f.).

5.4. Hypothesis testing

5.4.1 Economic indicators follow (certain) patterns within crises

In this first subsection of the hypothesis evaluation, the research results are tested with a focus on repetitive patterns of economic indicators in a crisis context. The core message of the comprehensive elaborations on this has shown that they follow certain patterns before, during and after the crisis, so that the first hypothesis can be verified. The term "determined" must be defined or specified. With regard to the key interest rates it could be sketched that an increase in this over a period of a century ended in 16 out of 19 cases in a recession und every financial crisis was preceded by a rate hike cycle. With regard to the economic indicator of inflation, it could also be illustrated that inflationary and deflationary movements follow a certain pattern before and after crises. It became clear that striking price increases often accompany crises (e.g. price speculation) and that in the same context the slogan "recession kills inflation" proves true again and again.

In the case of the other economic indicators, debt ratios, GDP and stock markets, a repetitive pattern was to be expected in a crisis context, but they should not be disregarded in the context of the hypothesis analysis. The fact that crises lead to rising debt ratios can certainly be seen as evident in the eyes of economists and certainly flow into it as a recurring pattern. Such a pattern was evident in all three crises, but to varying degrees. What is more remarkable is the partial link between the indicators, such as GDP and debt ratios, the development of which is mutually dependent.

5.4.2 Crisis management, economic theories and crisis periods are interdependent

The second hypothesis was to test the link between political measures and economic theories during the crisis periods. The measures derived for crisis management showed that different economic theories were primarily found in the application of measures, but also in the perception of the crisis. This also includes the fact that - irrespective of the different portfolios of measures applied - the cyclical boundary conditions of the more recent crises were not found to be as sharp as those of the 1930s crisis. The different terms “Great Depression” and “Great Recession” also suggest this. Bischoff had already made an announcement of this kind at the beginning of the Great Recession: “The world economy is certainly still a long way from a depression at present and will probably remain so despite the dimensions of the current crisis. ... But depression symptoms - problems of the type that characterized a large part of the world economy in the 1930s, but have never reappeared since - are again alarmingly topical. ... Whether capitalist societies slip into a deflationary, depressive development for a longer period of time depends not least on the extent and nature of state intervention” (Bischoff, 2009: 7ff.). This quote directs very well to the next linkage. With the roll-out of comprehensive stimulus packages to contain the Great Recession, the schools of thought of Keynes and Minsky regained relevance, which Krugman also called a “Keynesian moment” in global economic policy in late 2008, underscoring an elementary reorientation within economic thought. Until the era of the Great Depression, primarily since the 19th century the way of thinking of the so-called “liberal theology” (Galbraith, 1994: 107) or also called “laissez-faire model” (Matis/Stiefel, 1991: 171) existed, in which according to Galbraith the view was held “that more competition serves the common good, not less competition (Galbraith, 1994: 107).” In conclusion, government crisis management during the Great Depression could be described as restrained and savings-oriented, since such interventions were rejected as contrary to the system.

Rounding out the events of the Corona Crisis, two distinctive features stand out in terms of crisis management and economic theories. First, the question of the economic costs of the shutdown and the lavish aid packages in the Corona crisis is dismissed as cold-hearted, and the attempt on the part of some economists to assign a monetary value to health and human life is classified as immoral. And second, unlike the Great Recession, in which governments relied on economic policy theories to stimulate demand, namely, there is a simultaneous supply and demand shock. The demand collapse was primarily caused by a massive supply chain disruption. Supply shortfalls can and could hardly be compensated by government demand support in the Corona Crisis for medical reasons. And this despite the fact that, economists even compare government intervention to "helicopter money." In summary, the stimulus and rescue measures of the Corona Crisis have several parallels to the Great Recession, primarily in terms of the application of Keynesian economic policy. What differs, however, is the extent to which long-standing principles of economic rationality were neglected.

5.4.3 Crises are avoidable phenomena

The comprehensive and historically far-reaching investigation was able to manifest - also through the illustration of economic indicators of the recessions in the last 100 years - that the avoidance of crises is visionary. Judging them in advance should also be done with a sense of proportion. Renowned economic historians such as Plumpe want to sensitize critical crisis' critics to the fact that such cycles "can also perform an important function in structural change under regular conditions, by promoting positive future expectations and correcting exaggerations." The public and political opinion is often oriented towards a "utopian idea of equilibrium", "according to which every fluctuation and every crisis is the result of a wrong, i.e. correctable or omitted, i.e. catch-up action" (Plumpe, 2011: 119ff.). Rather, the investigation has shown that crises are recurring, but not predictable. In the run-up to the Corona Crisis, economists predicted that a crisis was imminent, e.g.

- Otte in 2019 through: "increasing closing of the money locks by the central banks, ... threatened declining economic growth, ... national debt, ... falling sentiment indicators, ... escalating trade dispute".
- Verdun in 2019: "Is Europe ready for the next financial crisis? … Who helps countries that are in financial difficulty? How should we distribute refugees within Europe? … With Brexit looming, stronger economic governance of the European Union is more essential than ever."

- Sinn in 2018: “I can only advise everyone to be on their guard over the next few years. ... debt programs, ... to mess up the world.”

Nobody was prepared for the fact that it was ultimately triggered by an exogenous factor, and this surprised the world all the more and made it more than just shake. The more granular the current crisis processing is carried out and the more the crisis with its dynamics is understood as such, the more chances can be identified to eliminate previous sources of error in the future. This also means that the current crisis is not only a crisis triggered by an exogenous factor, but that its field of vision is also extended to the previous years. This makes it all the more important to be prepared for such situations by taking a sustainable approach. The following chapter is intended to provide assistance in this regard.

6. RECOMMANDATIONS FOR ACTION

The study is drawing to a close and comes to an elementary chapter which has an important part in the scientific contribution. The question that is now being dealt with extends to the field of crisis prevention and what precautions should or must be taken based on the findings of the study to prepare better for future crises. It goes without saying that the recommendations listed and the to-do's derived from them are not a sure-fire success and involve sometimes great and protracted efforts. The following crisis prevention catalogue results from the elaboration of the findings of the ongoing investigation and would-like-to-make recommendations, even if there are, or may be, differences in the professional world.

6.1. Return to a normal interest rate level

The first point concerns the (key) interest rate level of the central banks, which has been at a record low in the EU and the USA for more than a decade. The key interest rate is an elementary tool in monetary policy, and lowering it as a direct response to a crisis has now become a standard tool used by central banks. Of course, the economy and the capital markets have already got used to it. A low interest rate is inviting at first, but cheap money can also be expensive. The following section will get to the bottom of this reciprocity and explain why the current zero interest rate level in the EU and the USA should not remain permanent and why a gradual increase in order to normalize the interest rate level after the crisis has ended is economically correct (e.g. Otte, 2019). The last attempt by the Fed to approach normal interest rates occurred in the last quarter of 2018 and was reprimanded by the stock markets with a fall in prices. But in these moments the Fed acted sensibly, because a too low interest rate and too much money in circulation could do more harm than good to the economy in the long run (Sinković, 2020: 23). This is discussed in more detail below:

- First of all, there is the perceived punishment of conservative investors or savers, who have been exposed to zero or negative interest rates for a whole decade and their savings are literally burdened, since inflation is not even covered. The proposed step would put a stop to this punishment (Sinković, 2020). Because this fundamentally risk-averse investor segment, be it individual or institutional investors (e.g. pension or investment funds), was forced to enter markets that they had previously avoided. With no alternatives, they therefore invested in financial markets, some of which are subject to great volatility (Sinković, 2020: 23).

- A permanent zero interest rate level favors the formation of dangerous bubbles in the markets for real estate, raw materials and shares, which has already been pointed out in the analyses within the current investigation.
- Closely connected with the first point it comes to a redistribution of income at the expense of the savers and in favor of the debtors, which can release at the same time a generation conflict at the expense of the old and in favor of the young ones.
- If the returns on the bond markets are permanently oriented towards the zero mark, there is less and less incentive for investors to purchase long fixed-rate bonds, which increases the risk of price losses.
- A theoretically expected shrinkage of government budget deficits due to lower debt servicing is thwarted by the declining fiscal discipline, which is particularly evident in the development of government debt in recent years (Wermuth, 2014).

The return to normal interest rates must be implemented regardless of the reaction of the stock markets. There are certainly side effects associated with an interest rate hike. Using the example of the USA, a key interest rate hike could drive the dollar exchange rate up, which would then have an impact on international capital flows and, for example, would pose major problems for emerging countries with high dollar debts (Otte, 2019). However, that doesn't change the motto of preferring “an end with horror” rather than a “horror without end”. Because crises are recurring and the instrument of lowering the key interest rate will definitely be used again to contain the crisis. But this only works if there is a normal interest rate again.

6.2. Debt discipline

The next two points of the crisis prevention catalogue are closely related to key interest topic in terms of process and occur in a kind of interaction. If the ECB or Fed opens their money locks in the form of quantitative easing and lowering the key interest rate, the debt issue and inflation are automatically affected. Because, as Schubert defines it, “the higher the degree of political expansion, the greater the danger that the ECB will not react in time and not sufficiently to combat inflationary dangers.” The aforementioned degree of expansion also includes the QE programs described in detail, which have been diligently rolled out by both the ECB and the Fed in recent years. It does not matter whether they are government or corporate bonds. The Corona Crisis has shown that even critically viewed programs such as the CSPP as an instrument were not put to a stop. In order not to leave the context of the current section, the

next paragraph now focuses on the second recommendation point, the compliance of a certain debt discipline.

For sustainable crisis prevention, programs such as CSPP should be avoided as far as possible, because regardless of the emergence of distortions due to the approval of debt securities by the ECB, the vulnerability to debt is obvious. Unsurprisingly, since the announcement in 2016, bond issues by European companies have hit record levels. The purpose of the companies remains questionable, whether the fresh money is used in an economically sensible way, or the companies take on high debts more carelessly because of the cheap ECB money, pay excessive dividends or make questionable takeovers. In the event of danger, less solid corporate landscapes emerge in the eurozone, which are more prone to crises (Ettel/Zschäpitz, 2020), as we are currently experiencing. Nevertheless, in acute phases of a crisis it is important to prevent the countries and companies most affected by the crisis from being cut off from the supply of liquidity (Fuest, 2020: 29). Numerous companies are currently struggling to survive, but especially those that previously had debt-laden balance sheets. Werner's convincing theses and elaborations on the debt issue impressed the author in the point that borrowing can be accepted without hesitation if companies and jobs are saved through it, the money is used for investments and a contribution to GDP is secured (Werner, 2012: 25).

The last point described affects the national debt ratios in particular, which recently and based on subsection 4.4.4 have shown a striking development. The QE measures (bond purchases, etc.) and rescue packages are mandatory during a crisis period, but these must be scaled back immediately and gradually when a crisis subsides. The recommendation based on the investigation is - similar to the key interest topic - an accurate separation between the QE considerations and decisions of the central banks and their possible consequences on the stock markets. Central banks must act freely and independently in their monetary policy activities and must not worry about how the stock markets or political elites - e.g. during an election campaign - react to it (Sinković, 2020: 21). Taking the example of the still incumbent President Donald Trump, the features described cannot be overlooked. This is shown by his critical words to the Fed in September 2016 before the election campaign: “They’re keeping the rates down so that everything else doesn’t go down. … At some point the rates are going to have to change. … We have a very false economy. … The only thing that is strong is the artificial stock market” (Reuters, September 5, 2016). As the incumbent president, the tones were reversed in August 2019 when the Fed raised key interest rates to 2.5% and stopped QE measures: “So, the

economy is doing very, very well. We'll see what happens with the Federal Reserve, whether or not they finally get smart and reduce interest rates" (The White House, 2019). And this is exactly where the dichotomy is found. It is incomprehensible why, in a thriving economy, Trump brings in the proposal to lower interest rates again.

Finally, on the area of debt discipline, it should be noted that the balanced state budget demanded by Galbraith (Galbraith, 2009: 222f.) is difficult to implement in the current and subsequent period. A healthy and balanced national budget is the ideal basis to be prepared for a crisis. That must be the long-term goal of the respective states. Given the current level of debt ratios, however, it will take a lot of effort and reform over the next few years to get back to pre-Great Recession levels. If national debt remains so high in the long term, such a situation could arouse fears among investors and consumers that taxes will have to be raised and state benefits cut in the near future, especially public investments (Fuest, 2020: 242). Such a condition must be avoided without question.

6.3. Limiting inflation

Following recommendations 1 (normal interest rate level) and 2 (debt discipline), this section seamlessly connects to the inflation topic as the third point. The preceding statements confirm the expansive monetary policy of the central banks that has been applied for years, which was once again exceeded in the Corona Crisis. In this context, there is no question of discussing any inflation risks associated with a pecuniary flood. As the current study has elaborated, the ECB and the Fed have regularly set their usual inflation target at 2%, but have even given it up due to the course of the crisis. This "historical change of strategy", which has already been examined in section 4.5, must be put on a stable footing once the crisis has ended. Crises have noticeable consequences for monetary stability. Based on the study, the current situation shows deflationary tendencies due to increased unemployment or damaged value chains. However, this should not hide the fact that, due to the oversupply of the central banks, inflation risks are not absurd afterwards (Fuest, 2020: 28f.) And theoretically even the risk of stagflation cannot be ruled out. The latter is not only due to the very large amount of money that is currently in circulation. The more burdensome circumstance lies in the reduced supply due to the interruption of the supply chains, which were already discussed in section 4.5. The conglomerate of declining production phase, high unemployment and rising inflation would, in the worst case, lead us to the phenomenon of stagflation, which was observed in the 1970s in the course of the oil crisis (Sinković, 2020: 29f.).

No less burdensome than the described stagflation scenario is in theory a very high inflation as a result of the Corona Crisis. This is what economic logic provides if too much money flows into the system and debt overhangs exist simultaneously (Sinković, 2020: 23). If we look back in history, we can find examples that show that high inflation can occur in the years following pandemics. In Germany, for example, the flu pandemic led to hyperinflation, which reached its peak in 1923. Certainly, the causes were primarily to be found in the direct consequences of the First World War with its shattered state finances, but the current investigation has been able to show that the public debt ratios are currently at a similar level to that of the war period. This even contributed to the destruction of the German currency at the time (Fuest, 2020: 28f.). Current examples such as hyperinflation in Venezuela certainly have a special characteristic and their specifics at the origin, but they also show the enormous effects crises can have. The reasons for their momentous currency instability since 2013 include not only the drastic drop in the price of oil but also extreme supply bottlenecks (e.g. due to sanctions imposed by the US government and the EU), political instability and unrest and very high national debt (Piper, 2018). The severely crisis-ridden country then introduced a parallel currency in 2018, which the government itself describes as a state crypto currency and secured it with the country's oil reserves (Zschäpitz, 2018). The author waives to comment on the (external) effect and assessment of this “measure” as it is not the subject of the investigation. However, it was necessary to mention this exceptional circumstance in the context of inflation in order to briefly outline the unusual follow-up process. Because even in the Corona Crisis, various supply bottlenecks, sharply increased government debt ratios and unrest among the population were topics, albeit by far not as intense as in Venezuela. But imagine the situation when various countries follow China's example and sell American bonds, thus dumping the dollar, the risk of the emergence of hyperinflation is theoretically inconceivable (Sinković, 2020). The subject of cryptocurrencies such as Bitcoin will not be discussed further in the ongoing investigation, as more detailed explanations would go beyond the scope. Should countries decide to use this as an alternative currency, the line to the forfeiture of an existing legal system is very narrow.

The preceding remarks show that the pursuit of an adequate inflation target in the immediate post-crisis period is indispensable and that the corridor should be as high as 2 %. In this context, a gradual turning away from the flood of money is necessary to ensure price stability and to counter high monetary depreciation. Even if no signs of high inflation are currently apparent, special attention should nevertheless be paid to this. Strongly risen asset prices from the real

estate and stock markets, as the current investigation has been able to show, are currently proving to be the first warning signals, which even critics are attributing to an initial bubble formation.

6.4. Review of foreign trade dependencies

If the subject of the supply bottleneck is taken as a basis from the previous elaborations, the next point emerges from this, which the author identifies in the context of crisis prevention. It is about examining global dependencies that have arisen above all in the context of increased international interdependencies through globalization. The subject of globalization is so complex that it opens up extensive and endless threads of discussion. The prevention point selected here could easily fill an own dissertation in terms of potential and substance. Therefore, in this section it was only rudimentary and selectively possible to develop recommendation points in order not to go beyond the scope of the ongoing investigation. The Cultural or informational aspects of globalization should be left out here for the time being, because the focus is on the economic trade relations.

As an introduction, it should also be pointed out that the term globalization has recently been associated with no other country as strongly as with the Republic of China, the world's second largest national economy. The fact that the pandemic is breaking out in this country, which has transformed itself from a backward developing country into a world power within three decades, does not make international trade relations any less complicated and poses new challenges or even calls globalization into question in this respect (Müller, 2020). This is because China has meanwhile risen to become the largest exporter of industrial goods and the third-largest importer (World Trade Organization, 2020: 81f.).

With the outbreak of the Corona Crisis, the development described and the status quo with such a powerful trading partner will get the first cracks when entire supply and value chains are affected by production losses caused by the virus. Many observers judge the consequence of the current crisis to the effect that globalization is reaching its limits here and even express demands to gradually distance oneself from worldwide, complex and accordingly failure-prone value chains. This topic is well-argued as the fourth point in the crisis prevention catalogue. It is important to reduce the potential danger of global delivery dependencies without “throwing out the baby with the bath water” or by not decimating the positive aspects by extensively rejecting negative aspects. Because international economic exchange has proven to be the basis

of prosperity for Europe and other continents in the last few decades (Fuest, 2020: 29ff.). For example, the global automotive group Volkswagen sells almost every second car to China, while German consumers benefit from cheap imports of Chinese products. With a trading volume of more than € 200 billion, China was Germany's most important trading partner in 2019 (Dams/Kunz, 2020). The explanations in this section show that such an example must question globalization in various points and encourage rethinking. Alternative solutions capable of loosening the dependencies mentioned and showing possible solutions are required. The path to reducing the susceptibility to failure can actually also go through more globalization, through more international paths and trading partners. Now the governments also come into play and are asked to align global political cooperation in the context of globalization in such a way that susceptibility to disruption is reduced (Fuest, 2020: 227ff.). As Fuest has already said, the goal is to "improve globalization, not reverse it", abolish it or rely on hasty isolation (Fuest, 2020: 29ff.). The establishment of suitable institutions and political measures will therefore be indispensable not only to absorb the burden of adjustment but also to support previous globalization losers in their further development in the context of structural change (Fuest, 2020: 227ff.). These are the main challenges for an era after the Corona Crisis. And the Brexit vote showed that protectionist ideas are not unworldly these days.

Another recommendation for avoiding cross-border dependencies is reshoring or nearshoring, which is currently gaining popularity again as a direct consequence of a pandemic and the current crisis and thus aims to minimize interruptions in delivery flows (Best-Werbunat, 2020). State subsidies for the return of the production facilities to the domestic region could reinforce this trend and, for example, make economically weaker regions more competitive at the national level.

6.5. Strengthening of financial market regulation and stability

The following section deals with a topic that is certainly not new, but must also be considered in the future in terms of prevention. It is about the regulation and maintaining stability of the financial markets, which was implemented after the Great Recession due to the escalating financial transactions there. The current crisis phase, however, makes the issue topical again, as the new set of measures to contain the Corona Crisis has provided for a temporary relaxation of investment restrictions and capital requirements to facilitate lending to households and businesses. Essentially, this includes easing collateral requirements when commercial banks borrow from the central bank (described in 4.3.1 and 4.3.2). Even before the Corona Crisis,

Greek bonds did not meet the required rating for collateral, which has now been temporarily relaxed in the course of adjusted regulations for bond programs. The aim of giving banks greater leeway is to better cope with liquidity bottlenecks in the crisis. This approach is certainly necessary in times of escalation, but it also has limits, as the explanations in the next paragraph will show.

Overall, it should not go unmentioned that the Corona Crisis is not an original financial or banking crisis. During this time, national supervisory authorities have also called for measures designed to support the real economy. This puts the crisis in a new or old light, in which banks are again playing an important mediating role between capital providers and capital takers. Practical experts such as auditors see banking regulation in this context as a key role for the future, because flexibility in banking regulation is both an endurance test and an opportunity for well-established processes. The prerequisite, however, in the current environment is the required stability (Schriever, 2020). The above thesis enables a transition to a national example of the EU, in this case Germany. As part of the relaxation of monetary policy, the so-called obligation to file for insolvency was suspended for companies in distress which, despite being ready for insolvency, still have prospects of reorganizing themselves by taking advantage of government assistance or in other ways (German Federal Government, October 01, 2020). At first glance, this measure takes into account the currently very challenging situation, but means that thousands of so-called “zombie” companies could have sprung up in Germany. According to the economist Reint E. Gropp, they have long been insolvent in the worst case, but are still operating in the market because they have not filed for bankruptcy yet. They even have the potential to bring banks and other market participants into major difficulties as part of second-round effects, which is why Gropp warns that Germany could slide from a virus crisis into a financial crisis or a new banking crisis (Gropp, 2020). This premonition will have to be checked no later than next year when the time limit for suspending the obligation to file for insolvency expires. This concrete example clearly illustrates how fine the line is between a health crisis and a financial or banking crisis. For this reason, the financial market architecture must always be kept in mind and, as a recommendation from politicians, pressure must be put on the banks to increase their own capital and thereby make themselves more crisis-proof. This recommendation should also be seen as a balancing act for the banks. You need to hedge against loan defaults, but still serve the economy with liquidity.

It is important that the described easing is brought back to a normal legal level. At the latest when the crisis subsides. In addition, banks are also required to reorganize their business in such a way that the loss of confidence gained in the Great Recession is made up for. In addition to regulatory measures for banks, efforts to build general trust also play a role in crisis management and prevention from a holistic perspective, for example in the voluntary alignment of a business policy that is aligned with sustainable principles (see section 5.3).

6.6. Future investments with a focus on digitization

The last section covers the very important and at the same time future-oriented area of digitization, which plays an elementary role both as an instrument for containing crises and for prevention. Although the topic of digitization is not new, the Corona Crisis has acted as a driver in this investment area and demonstrated the need more than ever. The currently re-imposed contact restrictions make digital technologies such as the use of video conferencing more necessary than ever, especially in the world of work. This means that people can work from home as much as possible, transactions can be shifted to the digital economy and operations can still be maintained without complications. And this trend will continue even after the crisis, and accelerate structural change in which classic work models are being replaced by flexible ones, especially with regard to working hours and place of work. In addition, online shopping has seen another boost, at the expense of traditional retail. The latter example shows that there are definitely relativizations that dampen the positive impulses in some ways. The discrepancy in the income level between highly and less highly qualified work, which is already recognizable, could lead to a noticeable disadvantage and weakening in the lower occupational groups due to a lack of mobile work (Fuest, 2020: 29f.). Here it would be highly recommended, for example, to promote call center industries or customer services so that they are relocated more strongly to a digitized home office world thus making such jobs there more attractive in the future. The public administrations, perceived by the general public as rigid and gray in terms of their image, have proven in this regard that they can prepare for a crisis and withstand it (German Federal Ministry of the Interior, Building and Home Affairs, 2020). On the one hand, this should make the processes more flexible and steadfast, but it should also make a contribution to the economy and its added value.

In addition to digitization, which is now a common investment topic and once again supported by the pandemic, the push of other investments and innovations should also be promoted in order to maintain competitiveness and to set economic impulses. The economist Dean Sinković

criticised the recent developments, in which the real sector was given too little opportunity and financial investments were given preference instead: “Instead of investing and innovating in the real sector that would create wider social benefits, encouraging the development of dynamic and market-oriented SMEs, we created a system in which financial institutions and innovation took precedence and instead of creating value began to extract value from society.” In the same context it was observed that companies preferred to use their financial resources to buy back their own shares or to pay dividends rather than for capital investments, innovations or investments in human capital. The system was thus based on financial innovations that were mainly destructive to economies and to excessive debt-financed consumption (Sinković, 2020). In order to do justice to the recommendation for future crisis prevention, a rethink will have to take place in this area.

7. CONCLUSION

This study provides deep insights into key issues of general economics, economic policies, crisis management as well as comparison of economic indicators and future crisis prevention in particular. The object of investigation is focused on the theoretical background, policy response and economic indicators of three major crises, the Great Depression as the global economic crisis of the 1930s, the Great Recession as a financial crisis beginning in 2007/2008, and the current corona pandemic as a health crisis with its serious global economic impact. Looking back on the previous remarks and history, it can be summarized that there are various reasons which can cause recessions. Beginning with external shocks to the economic system such as wars, political upheavals, embargoes, banking crises or - very recently - the coronavirus. Followed by other causes like economic upheavals such as debt accumulation combined with misguided monetary policy. In addition, the investigation has questioned whether the causes of the current crisis can really be based only on an external shock or whether the reasons are not far-reaching.

The first crisis examined in this paper, the Great Depression, had its origins in the USA as well as the Great Recession, and was driven by a speculative bubble. However, this mainly affected the stock market, which caused private debt ratios to rise. Many citizens in the United States and Europe were overly motivated to take out loans and to fund their share purchases which eventually led to the bursting of this hype. Another elementary finding was that there were no significant growth curves in public debt, as no expansionary monetary policy was pursued as in newer crises.

The second crisis was driven by speculation on the US mortgage market, which was characterized by a marked increase in private debt ratios due to numerous real estate loans and later public debt ratios through extensive economic stimulus packages. This development was also preceded by an increase in key interest rates by the Fed in 2004 from 1% to 5.25% in 2006. Since the loan agreements of subprime borrowers, who already had poor credit ratings, usually had variable interest rate structures, they ran into considerable payment difficulties and the banks were forced into the situation of writing off their receivables. And now follows one of the first astonishing findings of the study. The crisis management against the Great Recession in the form of an immediate cut in key interest rates by the Fed and ECB (to 0% and 1%, respectively) and years of pumping money into the markets with the help of numerous Quantitative Easying fiscal policy programs virtually overlaps the crisis period up to the current

Corona Crisis. Because by spurring a veritable oversupply of financial options, the stock markets recovered quickly after the slump caused by the Great Recession. And so the indices literally started with a share rally until March 2020, during which, for example, the pre-crisis level of the S&P 500 was almost reached again in 2012. The recovery effect on GDP, which in the USA almost reached the pre-crisis level in 2010, became apparent even more quickly. However, Quantitative Easing initiated during Great Recession was anti-deflationary and not pro-inflationary policy so the consumer prices stayed relatively stable. It actually represented an offset for a deflationary spiral and bank collapse by recapitalizing the banking system with higher levels of solvency and liquidity, yet at the same time freshly created currencies did not end in broad economic system to spur consumer price inflation. There was not fiscal transfer mechanism such as during Corona Crisis and most of those funds stayed in bank reserves. At the same time, such policies (QE and zero interest rates) spurred asset price inflation which manifested in creation of another housing and stock market bubbles. In a period from March 2009 til Februrary 2020, the main global stock market index S&P 500 had increased five folds.

Furthermore, the study has shown that the response to the Great Depression was also here with a direct rate cut of up to 2%. But contrary to the Great Recession, this was then increased again after less than two years which caused another slide in the stock market. Compared to the monetary policy measures that were used in the context of crisis management to contain the two more recent crises, those of the Great Depression are to be assessed as restrictive, which consequently was not accompanied by direct increases in the stock indices. Unlike Great Recession, there were not monetary and fiscal tools to provide liquidity for the banking system which caused collapse of the banking system on massive scale. Furthermore, compared to the Great Recession and the Corona Crisis, the GDP curve only reached the pre-crisis level after a medium-term period, which shows the lack of comparable financial support from the population and companies from the two more recent crises.

The third crisis examined is the still ongoing Corona Crisis (also known as the Covid-19 Crisis), which has no imprint as a classic financial or economic crisis, but as a health crisis with pandemic effects it has brought considerable economic impacts. Even if, according to the initial view, a so-called “Black Swan” event triggered the crisis, comparable to how the attacks of September 11, 2001 sealed the Internet boom or the bankruptcy of the US bank Lehman Brothers in 2008 ushered in the global financial crisis (Friedrich, 2020). Various economists nevertheless spoke of a bubble forming on the capital markets, caused in particular by the

“easy” money of central banks, which caused Corona to burst (e.g. Sinn, 2020a). In contrast to the two previous crises, the Covid-19 virus was an unforeseen sudden shock that expanded into a global crisis, thus exceeding all expectations in a negative sense in its fast-moving form with its significant real economic effects. In this respect, the investigation has shown that the impact on economic indicators was at least as noticeable and intense as in the first two crises studied, but with a more short-term timing. Interestingly, after initial huge collapse in the GDP and stock indices in the first two quarters of 2020, few months later the evidence became clearer that while the GDP had partially recovered, most of the stock market and housing indexes have spiked above pre-pandemic level. Spike in housing prices occured because of higher demand, due to safety concerns (rural and suburban areas) and historicaly low mortage rates, as well as lower supply due to Covid-19 pandemic (people unwilling to relocate). This time policy response was strenghten by strong stimulus packages provided by fiscal authorities toward real non-banking sector (housholds, corporations). It was a much larger stimulus than the one from Great Recession. Besides reflating stock market indicies, this time the result could be higher consumer prices since “helicopter money” might actually end up in more money chasing fewer goods. Unlike response to Great Recession where QE policies were mostly used to recapitalize banks, Corona Crisis resulted in QE financed fiscal stimulus. Morover, it is happening while health crisis is far from over and, according to current events, is still affecting a number of countries around the world even more severely. It implies that we might expect even larger fiscal stimuluses in the following years which actually represent the only tool left to fight more severe economic downturn. In the last 20 years monetary authorites have used their full set of policy tools and more accomodative fiscal policy seems to be the only available option. However, this option is not readily available to many countries due to a large public debt burden (Sinković, 2020: 23ff.).

Furthermore this study points to some recurring patterns and trends that emerged from the comparative analysis of the above indicators in crisis events. To this end, the investigation has shown that certain patterns exist according to which crises (can) form. Starting with the first economic indicator, key interest rates, it was possible to outline that an increase of these in an observation period of a century ended in a recession in 16 out of 19 cases. With regard to financial crises, it was found that every financial crisis was preceded by a cycle of interest rate hikes (see subsection 5.2.1). However, this initial finding should not give the impression that an increase in key interest rates, the purpose of which is to achieve interest rate normalization, would be unacceptable in the future. With the start of the lowering of key interest rates to a now

longer-term 0 to 1% level, the so-called QE-programs launched. The resulting monetary flooding of the markets is the starting point for criticism by various economists, who even exaggerate it by saying that “the money ... is already coming out of your ears anyway” (Sinn, 2020b). And yet, the announcement of multiple interest rate hikes in December 2018 was received extremely sensitively by market participants, as the associated stock market performance at the time showed (see subsection 3.4.1 and 3.4.5).

As a transitional step to the inflation chapter, far-reaching findings have been elaborated here as well, which largely do justice to the thesis of a recurring pattern in the crisis context. Based on the findings and a historical review in the US, prevailing inflationary or deflationary developments are for the most part directly or indirectly related to signs and consequences of a crisis. Even though inflationary levels did not degenerate in the same way in past crises, including the three crises studied, deflationary tendencies after the onset of a crisis - in line with the slogan “recession kills inflation” - were all the more evident in all three crises (Smith, 2008). In view of preventive crisis work, attention should be paid to post-crisis deflationary developments in order to eradicate so-called second-round effects, especially in the form of falling wages. Reciprocally, with the money supply currently in circulation, despite currently deflationary developments, large-scale inflation is also theoretically not ruled out if supply bottlenecks crystallize as a result of the numerous lockdowns. Exceptional examples such as the one in Venezuela are certainly not representative, but they are not made up out of thin air either.

Like GDP, the further inflationary development after the crisis is closely linked to countercyclical fiscal policy - implemented or not - which, depending on the application, correlate with the measures behind them and are guided by the threads of economic theory. In their study, Fratzscher and Kriwoluzky refer to the lack of demand-stimulating monetary policy in the 1930s, in which, compared to the Great Recession, there was largely no “strong” reaction from the central banks. In both eras, GDP plummeted within a year, and government reactions to it varied. They take the view that “many have learned from a historical perspective, especially from the Great Depression in the years 1929 to 1933”, and therefore the relaxed monetary policy of the ECB is understandable in order to increase the demand for consumption and investment again. This is also the reason why the deflationary tendencies in the eurozone and another severe recession after the financial crisis could be prevented, “even if some German critics doubt this” (Fratzscher/Kriwoluzky, 2020: 13f). Not only on the basis of this contribution, it can be stated

as a first interim conclusion that no uniform understanding of crisis management strategies prevails, but that a pluralism of solution understandings can be found. On the other hand, it certainly appears in this context and the previous research results that Werner's thesis regarding the formation of bubbles in the financial markets must be taken into account, which always "end in a banking crisis", "when bank money creation grows significantly faster than the economy for a long time" (Werner, 2012: 22).

One of the key findings in this work is the steadily increasing private and public debt ratios for years, particularly influenced by the causes and consequences of the Great Recession. Categorizing this as a scientific emergency area would not be timely due to its increased explosiveness. Rather, the observation predominates that rising debt ratios were reported in all three crises, but in very different forms (see figure 59). The debt ratios, which have risen again due to the Corona Crisis, are a heavy burden for the next generation. However, it would be too easy to judge the current development, as the relevant background must first be considered. While private debt ratios have risen disproportionately due to the low interest rate level coupled with property purchases since the turn of the millennium, the extensive stimulus packages have resulted in a steady increase in public debt ratios. Finding the right consensus, the right arithmetic of rising debt and economic stimulus remains a scientific sparring. What is certain is that the opinion remains broad and predominant, that debt discipline has extremely waned and overstretched. This also means that a tripling of the money supply due to the extensive monetary policy instruments is difficult to reconcile with the idea of sustainability (see Sinn, 2020b). The danger and the risk, as Reinhart and Rogoff put it, remain (in) debatable. According to their complex study that overstretched debt ratios pose serious difficulties for states, care should be taken with caution ("Private debts surge immediately before banking crises" and "High external debt ratios often signal financial distress", Reinhart/Rogoff, 2009). The result is that their use is important. Here Werner differentiates according to different types, which underlines the guiding principle. Bank loans should always be answered in the affirmative if they generate "productive" added value, for example for investment loans (Werner: 2012, 25). If you look at the overall picture of the current crisis situation, you can see that even before the outbreak of the Covid-19 pandemic many economists classified the situation as dangerous ("avalanche of debts": Sinn, 2020b or "unsustainable" mountains of debt: Plickert, 2013) which has now clearly revived the discussion. Whether Corona should serve as a catalyst for system errors (Haselmann, 2020) opens up additional scope for interpretation. It means that central

bankers and states can now blame virus for bad economic performance, they have an excuse for their previous policy and enormous debt bubble.

In addition to the above four indicators, another finding was that the stock market slumps during the Corona Crisis were visibly shorter than during the Great Recession, and the latter slumps were in turn much shorter than during the Great Depression. Until the 1st quarter of 2020 - with the exception of the Fed's interest rate announcement in December 2018 - prices knew only the upward direction, then fell extremely due to the Corona Crisis and recovered again very quickly (see 5.2.5). It is unbelivable to what extent financial markets positively react on money printing and low interests, significantly more than on fundamentals or geopolitical tensions (Sinković, 2020). And for outsiders, it is strange that both in the Great Recession and in the Corona Crisis, cryptic acronyms announced by the Fed, such as SMCCF or TALF, triggered a noticeable reaction in the financial markets. They seem to have impregnated themselves against gloomy economic news anyway (Herger, 2020). The current crisis therefore continues to pose very great challenges for both politicians and central banks to find more sustainable solutions and win the trust of the population. Dealing with and curbing the Corona Crisis could serve as an opportunity.

In addition to the explanations given above, the study aimed to develop preventive measures to counteract the formation of a future crisis, which should be in line as a further scientific contribution. To this end, chapter 6 provided proposals elaborated in detail by the author, the first of which was a return of the normal interest rate level, which could be argued in economic terms. Going forward, we need to better position ourselves against crises and we should not partially shoot our powder in advance (particularly through unjustifiably prolonged low interest rates and excessive QE programs in normal cycles). Maintaining some debt discipline and limiting inflation have proven to be additional elementary crisis prevention drivers, followed by a review of global dependencies in foreign trade, especially in the context of increased international interdependencies due to globalization. The crisis prevention catalogue drawn up by the author is rounded off by strengthening financial market regulation, including banks, and promoting investments in the future, primarily in digitization. Being in a crisis phase with companies holding back their investments, the state must invest instead of the companies and accept a higher government deficit (e.g. Fuest: 2020, 99: “High government debt is the price of stabilization”) in order to secure jobs and boost consumer demand. In good economic times,

the state is then supposed to pull back and save, but this cannot be confirmed after the Great Recession based on the results of the study.

Regardless of the crisis prevention catalogue, the author increasingly gained the impression in the course of the study that in all three crises the power of the central banks and their decisions increased over time and had a greater influence on economic events. Its original function as an independent institution that is "committed to safeguarding monetary value" "in order to prevent the state from taking over monetary policy" (Deutsche Bundesbank/Federal Bank of Germany, 2012) has cracked in his eyes in this regard. This is borne out by the latest developments, in which the FED and the ECB are forming "rather the extended arm of governments" through very low interest rates, penalty interest and money printing based on extensive QE-programs through the acquisition of government bonds. The result is a worldwide debt bubble that has grown to a record high (Haidt, 2019), which has taken on further proportions due to the pandemic. An interaction between the central banks and the governments is difficult to dismiss when considering that at the beginning of the Corona Crisis the Fed continued its course of buying government bonds and the ECB has again imposed a QE program in which European government bonds are part of the purchase program. The current crisis poses huge challenges for the politically responsible as well as the central banks. For the central banks, their credibility is also at stake. This partly distracts from the fact that causes of crises such as a lack of competitiveness, high government deficits and debts as well as weak financial systems in some member states can only be remedied to a limited extent through monetary policy. This makes a deeper root canal treatment necessary, which requires comprehensive structural reforms and can only be initiated by governments and parliaments (Deutsche Bundesbank/Federal Bank of Germany, 2012).

A further conclusion allows the convincing thesis that due to the sweeping economic stimulus programs according to Straubhaar, Wohlgemuth and Zweynert "the spirit of Keynesianism has crept out of the bottle again". Based on the investigation into the two latest crises, the Great Recession and the Corona Crisis, it is hard to imagine the fact that state aid to combat crises is no longer part of common practice. The instruments of Keynesianism apply equally to the USA and Europe (Straubhaar et al., 2009: 20). Finding the ideal way here is a scientific challenge that has no equal. For example, if the rescue packages for banks in the fight against the Great Recession met with considerable criticism, there are other examples of instruments that deserve the attribute "as best measure". In particular, Sinn cites "the short-time work allowance, which

has long been tried and tested in Germany, with which underemployment of the workforce is compensated in a similar way to unemployment and which hardly costs anything because it avoids real unemployment. The countries of the world should copy that." Accordingly, debt-financed programs do not fail when they serve the direct rescue of companies and their employees. Rather, it is the question of the right jump, which the central bankers and rulers failed to make after the Great Recession. Sinn criticized the longer-term phase after which the ECB acquired the new and old debt securities of the states with the printing press and led to the central bank money supply tripling in 2019 compared to 2008. His forecast for 2020 envisages a quadrupling and suggests that the expansionary monetary policy has been pursued disproportionately too long and that the powder is almost shot (Sinn, 2020a). It should provide food for thought for the post-Corona Crisis period.

If two elementary indicators are graphically summarized in a two-axis view using the example of the USA, a transparent picture can be drawn of the different directions in which the graphs have moved over time. The US debt is growing immeasurably while key interest rates hit botoom. The hope dies last that a sustainable reversal of this journey is pending in the near future.

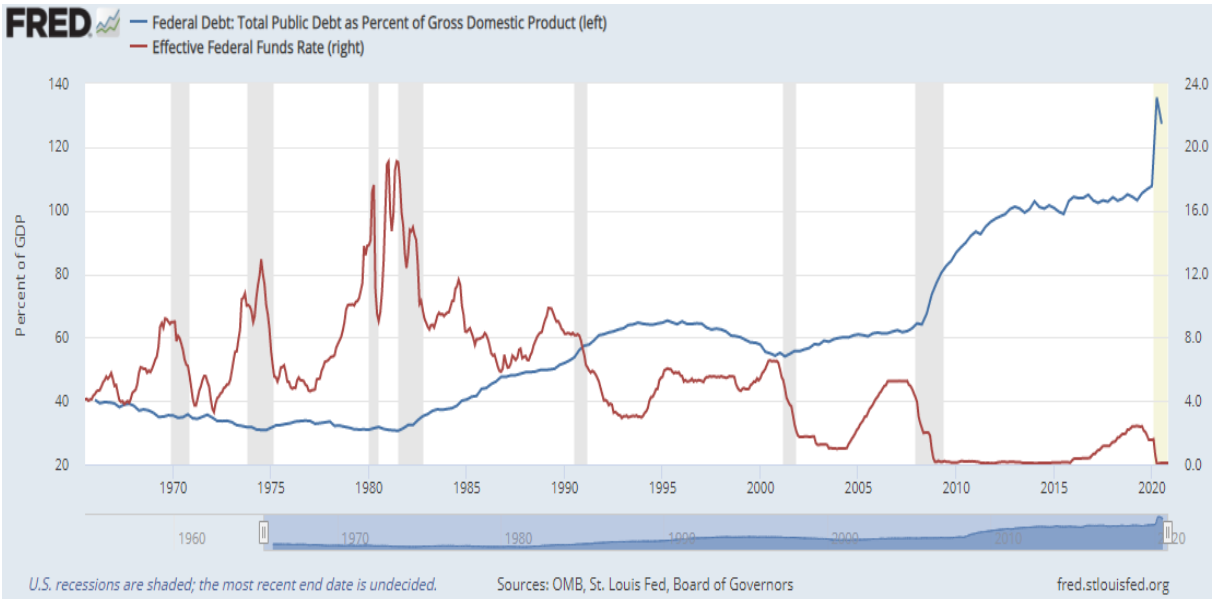


Figure 64: Federal Debt: Total Public Debt as % of Gross Domestic Product (left) and Effective Federal Funds Rate in % (right)
Source: The Office of Management and Budget, St. Louis Fed, Board of Governors, FRED (2020)

Lastly, a passage from Straumann should not go unmentioned here that “supposedly stable phases with rising prices”, as some would have classified the situation before the start of the Corona Crisis, “should never lead to the exclusion of extreme scenarios” (Straumann, 2019). This has already been demonstrated by the current situation and, in the overall context, then allows for a transition to John Maynard Keynes' punch line: “The Market Can Remain Irrational Longer Than You Can Remain Solvent.” And taking into account that some observers also attribute a short-time effect to various measures (e.g., Plumpe, 2020), the crisis story is consequently not over. Others are calling for the initiation of a shakeout phase in which companies that are still alive only because of the flood of money are taken off the market. There will also be suspense about Joe Biden and how he will tackle the Corona Crisis as the new U.S. president, especially since he put the issue first in his election campaign, among other things. What certainly appears from an all-round view of the entire study is that greater sensitivity on the financial markets can be expected in the coming years and that policymakers' sense of observation should be sharpened. Among other things, this should also be due to the viewpoint that with the issuance of the costly and extensive economic stimulus packages new debt has grown to a dimension whose numerology not only brings about dizzying character for the inclined reader, but also burdens successor generations with legacy burdens and challenging tasks in the future.

In conclusion, I hope that, despite the existing diversity of works and literature on financial and economic crises, my dissertation has led to more transparency in the subject matter and, from a comparative point of view, has provided the interested audience with views that others have not extracted or have extracted only to a limited extent. Admittedly, it would be appreciated if this work also provides a basis for further research in crisis comparative studies - such as with reference to other states or economies - and helps to look at financial and economic crises from a deeper perspective.

List of figures

Figure 1: US Recessions and Effective Federal Funds (1914 - 1958) 27
Figure 2: Comparison of discount rates between the Reichsbank and the Fed (in %) 30
Figure 3: Bank of England: Policy rates in the UK from 1925 - 1935 (in %) 31
Figure 4: US consumer price index (all items) in times of the Great Depression 31
Figure 5: Development of price changes in Germany (in %) 33
Figure 6: Consumer price inflation in the UK 1920-1940 (in %) 34
Figure 7: Real Gross Domestic Product/Industrial Production Index 1929-1941 (in %) 34
Figure 8: Gross national product in Deutsche Reich 1926-1939 (in %) 35
Figure 9: Real GDP at Market Prices in the UK 1920-1940 36
Figure 10: Federal debt held by the public (last 100 years view in % of GDP) 36
Figure 11: Historical government debt of four World Powers (1900-2007, in % of GDP) 38
Figure 12: Private Debt to GDP 1890-1990 39
Figure 13: Dow-Jones Stock Price Index 10 years before and after the Great Depression 40
Figure 14: Share Index of Statistisches Reichsamt (Statistical Reich Office) 40
Figure 15: Share Price Index (Weighted by Market Capitalisation) in the UK 1920-1940 41
Figure 16: All Federal Reserve Banks: Total Assets of the Fed 60
Figure 17: Central Bank Assets for euro area 66
Figure 18: Effective federal funds rate (historical, in %) 68
Figure 19: Key interest rate development in four of the largest currency zones 71
Figure 20: Inflation, consumer prices for the US (in %) 72
Figure 21: Inflation for the US (in %) before and after the Great Recession 73
Figure 22: Inflation, consumer prices EU 1999 - 2019 (in %) 75
Figure 23: Development/comparison of the annual average inflation in % (2007-2018) 76
Figure 24: US GDP 1947-2015 (in $ billions) 77
Figure 25: Real GDP growth of the four world powers 1980-2018 (in %) 78
Figure 26: Federal debt held by the public from 1900 until 2019 79
Figure 27: General government debt in % of GDP 1966-2018 80
Figure 28: Historical government debt of four World Powers (1900-2014, in % of GDP) 81
Figure 29: Private sector debt in international comparison 1950-2018 (in % of GDP) 81
Figure 30: Federal debt: total public debt as percent of GDP 2000-2019 82
Figure 31: Government debt in % of GDP, member states of the EU 1995-2019 84
Figure 32: Private debt in % of GDP (global view 1995-2017) 85

Figure 33: Share and property price development selected countries 87
Figure 34: S&P 500 10 years before and after the Great Recession 88
Figure 35: EURO STOXX development 10 years before and after the Great Recession 89
Figure 36: DAX development 10 years before and after the Great Recession 90
Figure 37: MSCI WORLD development 10 years before and after the Great Recession 91
Figure 38: Cares Act overview 104
Figure 39: Coronavirus interventions in March 2020 in Europe 107
Figure 40: Recovery Plan for Europe 109
Figure 41: Three pillars of the “Next Generation EU” 110
Figure 42: Discretionary 2020 fiscal measures in response to coronavirus (as % of GDP) 117
Figure 43: Key interest rates until Corona Crisis period (2000 - 2020) 118
Figure 44: Key interest rates shortly before and after the Corona Crisis outbreak 119
Figure 45: Assets: Total Assets of the Fed 119
Figure 46: Inflation rate, average consumer prices of US and EU majority 120
Figure 47: Real GDP growth of the four world powers 2005 - 2020 (in %) 121
Figure 48: National debt as a portion of US economy (in % of GDP) 123
Figure 49: Public finances in euro area member states: Selected indicators Nov. 2020 124
Figure 50: United States's Private Debt: % of Nominal GDP from Dec 1951 to Sep 2020 125
Figure 51: United States's Private Debt: % of Nominal GDP from Sep 2010 to Sep 2020 126
Figure 52: EU's Private Debt: % of Nominal GDP from Sep 1997 to Sep 2020 126
Figure 53: S&P 500 ten years before and until the Corona Crisis 127
Figure 54: Euro Stoxx ten years before and until the Corona Crisis 128
Figure 55: DAX ten years before and until the Corona Crisis 129
Figure 56: MSCI World ten years before and until the Corona Crisis 129
Figure 57: US Recessions and Effective Federal Funds (1914 - 2018) 142
Figure 58: Inflation, consumer prices for the US (in %) with own markings 144
Figure 59: Federal debt held by the public since 1900 (in % of GDP) 149
Figure 60: US gross federal debt versus GDP since 1940 150
Figure 61: Historical public debt G-20 states (in % of GDP) 151
Figure 62: Japan Debt to GDP Ratios (in % of GDP) 152
Figure 63: US Debt to GDP Ratios (in % of GDP) 152
Figure 64: Federal Debt: Total Public Debt as % of GDP (left) and
Figure 58: Effective Federal Funds Rate in % (right) 179

List of tables

Table 1: Structure and image of the investigation 13

Bibliography

- Abromeit, H./Stoiber, M. (2006). Demokratien im Vergleich - Einführung in die vergleichende Analyse politischer Systeme. Wiesbaden: Springer. DOI: 10.1007/978-3-531-90172-5.
- Agresti, J. D. (2020). National Debt Breaks All-Time Record for Highest Portion of U.S. Economy (June 10). In: Just Facts - Seize the data. Available at: https://www.justfacts.com/news_national_debt_breaks_record_highest_portion_economy [Accessed September 05, 2020].
- Althammer, J. (2009). Die Finanzmarktkrise im Licht der Sozialen Marktwirtschaft. In: Althammer, J./Altvater, E./Andersen, U./Breit, G./Kösters, W./Paul, S./Zimmermann, H. (Eds.). Weltwirtschaftskrise - eine Systemkrise?, 41-54. Schwalbach am Taunus: Wochenschau-Verlag.
- Althammer, J./Nass, E. (2020). Warum findet die Wirtschaftsethik in der Krise kaum Gehör? - Die normativen Grenzen der ökonomischen Theorie im Pandemie-Diskurs. In: Brink, A./Hollstein, B./Neuhäuser, C./Hübscher, M. C. (Eds.). Lehren aus Corona: Impulse aus der Wirtschafts- und Unternehmensethik - Zeitschrift für Wirtschafts- und Unternehmensethik / Sonderband), 35-43. Baden-Baden: Nomos. DOI: https://doi.org/10.5771/9783748909460.
- Amadeo, K. (2020). OPEC Oil Embargo, Its Causes, and the Effects of the Crisis (August 31). Available at: https://www.thebalance.com/opec-oil-embargo-causes-and-effects-of-the-crisis-3305806 [Accessed March 10, 2020].
- Amadeo, K./Anderson, S. G. (2010). Who Owns the US National Debt? (June 01). Available at: https://www.thebalance.com/who-owns-the-u-s-national-debt-3306124#citation-13 [Accessed June 08, 2020].
- Andersen, U. (2009). Einführung. In: Althammer, J./Altvater, E./Andersen, U./Breit, G./Kösters, W./Paul, S./Zimmermann, H.. Weltwirtschaftskrise - eine Systemkrise? (Eds.), 5-8. Schwalbach am Tauns: Wochenschau-Verlag.
- Anderson, J./Bergamini, E./Brekelmans, S./Cameron, A./Darvas, Z./Domínguez Jiménez, M./Lenaerts, K./Midões, C. (2020). The fiscal response to the economic fallout from the coronavirus. In: Bruegel Datasets November 24, 2020.
- Aoun, J. E. (2020). We Will Remain: A University, a Global Crisis, and the Lessons of Leadership. MIT Press.

- Armbruster, A. (2017). “Whatever it takes”. Available at: Frankfurter Allgemeine Zeitung (July 26) https://www.faz.net/aktuell/wirtschaft/konjunktur/euro-krise-2012-wie-mario-draghi-die-maerkte-beruhigte-15122755.html [Accessed December 06, 2019].
- Auxier, R. C. (2010). Reagan’s Recession (October 14). Available at: https://www.pewresearch.org/2010/12/14/reagans-recession/ [Accessed March 11, 2020].
- Bachmann, U. (1996). Reichskasse und öffentlicher Kredit in der Weimarer Republik 1924-1932. Frankfurt am Main: Peter Lang.
- Bank of England (2020). Policy Rate in the United Kingdom. In: FRED. Federal Reserve Bank of St. Louis. Available at: https://fred.stlouisfed.org/series/BOERUKQ [Accessed Ocober 13, 2020].
- Bank of England (2020). Consumer price inflation in the United Kingdom. In: FRED. Federal Reserve Bank of St. Louis. Available at: https://fred.stlouisfed.org/series/CPIIUKA [Accessed Ocober 13, 2020].
- Bank of England (2020). Real Gross Domestic Product at Market Prices in the United Kingdom. In: FRED. Federal Reserve Bank of St. Louis. Available at: https://fred.stlouisfed.org/series/RGDPMPUKA [Accessed October 13, 2020].
- Bank of England (2020). Share Price Index (Weighted by Market Capitalisation) in the United Kingdom. In: FRED. Reserve Bank of St. Louis. Available at: https://fred.stlouisfed.org/series/MSPIUKM [Accessed October 13, 2020].
- Banner, T. (2020). Corona-Impfstoff: Biontech und Pfizer beantragen Zulassung in den USA. Available at: Frankfurter Rundschau (November 20) [Accessed November 25, 2020].
- Bartmann, P./Buhl, H. U./Hertel, M. (2009). Ursachen und Auswirkungen der Subprimekrise. Discussion paper WI-233. Augsburg. DOI: https://doi.org/10.1007/s00287-009-0328-7.
- Beckert, J. (2009). Die Finanzkrise ist auch eine Vertrauenskrise, 35-40. Cologne: Max-Planck-Institut für Gesellschaftsforschung. DOI: http://www.mpifg.de/pu/ueber_mpifg/mpifg_jb/JB1112/MPIfG_11-12_06_Beckert_Vertrauen.pdf.
- Beer, S. (2020). Corona-Krise und die chinesische Wirtschaft: Dramatische Auswirkungen, Research Report IW-Kurzbericht. No. 27/2020. Cologne: Institut der deutschen Wirtschaft (IW).
- Bellers, J./Kipke, R. (2006). Einführung in die Politikwissenschaft. Munich. DOI: https://doi.org/10.1524/9783486599183.

- Berg, B. (2009). Finanzkrisen und Hedgefonds - Finanzmagier oder Krisenauslöser. Wiesbaden: Gabler.
- Berehns, P. (2019). Das Brexit-Referendum und seine Folgen. Stellungnahme für den Ausschuß für die Angelegenheiten der Europäischen Union (January 12). Available at: https://www.bundestag.de/resource/blob/587126/b04383f6c2d4c7c1cfb9fa6801b354ee/behrens-data.pdf [Accessed June 15, 2020].
- Berg-Schlosser, D./Müller-Rommel, F. (2003). Vergleichende Politikwissenschaft. Wiesbaden: Springer. DOI: https://doi.org/10.1007/978-3-322-86382-9.
- Berndt, E. (2009). Toyota in der Krise - Von den Widersprüchen und Grenzen des Status Quo. Leipzig: Leipziger Uni-Verlag.
- Bernoth, K./Dany-Knedlik, G./Gibert, A. (2020). Geldpolitische Maßnahmen der EZB und der Fed gegen die Corona-Krise wirken wenig (April 09) No. 31/2020. In: Deutsches Institut für Wirtschaftsforschung aktuell. Berlin.
- Best-Werbunat, K. (2020). Corona und andere Krisen: Lieferketten werden sich global dramatisch verändern. In: McKinsey press release August 6, 2020.
- Binswanger, M. (2020). "Wir müssen weiter wachsen, ob wir wollen oder nicht". Available at: Deutschlandfunk Kultur (April 28) https://www.deutschlandfunkkultur.de/oekonom-ueber-den-kapitalismus-nach-corona-wir-muessen.1008.de.html?dram:article_id=475592 [Accessed July 30, 2020].
- Bischoff, J. (2008). Globale Finanzkrise - Über Vermögensblasen, Realökonomie, und die "neue Fesselung" des Kapitals. Hamburg: VSA.
- Bischoff, J. (2009). Globale Wirtschaftskrise - Deutungsansätze und Bausteine zur theoretischen Einordnung. In: Altvater, E./Bischoff, J./ Hickel, R./Hirschel, D./Huffschmid, J./Zinn, K. G. (Eds.). Krisen Analysen. Hamburg.
- Bischoff, J. (2009): Jahrhundertkrise des Kapitalismus - Abstieg in die Depression oder Übergang in eine andere Ökonomie; Hamburg: VSA.
- Blaich, F. (1990). Der schwarze Freitag - Inflation und Wirtschaftskrise. Munich: Deutscher Taschenbuch Verlag.
- Bloch, M. (2000). Aus der Werkstatt des Historikers. Frankfurt am Main: Campus Verlag.
- Bloss, M./ Ernst, D./Häcker, J./Eil, N. (2009). Von der Subprime-Krise zur Finanzkrise - Immobilienblase: Ursachen, Auswirkungen, Handlungsempfehlungen. Munich: Oldenbourg. DOI: https://doi.org/10.1524/9783486592436.

- Board of Governors of the Federal Reserve System (2019). Credit and Liquidity Programs and the Balance Sheet (August 13). Available at: https://www.federalreserve.gov/monetarypolicy/bst_openmarketops.htm [Accessed April 22, 2020].
- Board of Governors of the Federal Reserve System (2019). Credit and Liquidity Programs and the Balance Sheet (as of December 8, 2019). Available at: https://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm [Accessed December 08, 2019].
- Board of Governors of the Federal Reserve System (2020). Effective Federal Funds Rate [FEDFUNDS]. FRED. Federal Reserve Bank of St. Louis. Available at: https://fred.stlouisfed.org/series/FEDFUNDS [Accessed April 22, 2020].
- Board of Governors of the Federal Reserve System (2020). Why does the Federal Reserve aim for 2 percent inflation over time?. Available at: https://www.federalreserve.gov/faqs/economy_14400.htm [Accessed August 27, 2020].
- Board of Governors of the Federal Reserve System (2020). Assets: Total Assets: Total Assets (Less Eliminations From Consolidation): Wednesday Level (WALCL). Available at: FRED, https://fred.stlouisfed.org/series/WALCL [Accessed December 15, 2020].
- Board of Governors of the Federal Reserve System (2020). Credit and Liquidity Programs and the Balance Sheet - Recent balance sheet trends. Available at: https://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm [Accessed December 15, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve announces extensive new measures to support the economy. Press release March 23, 2020. Available at: https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm [Accessed November 02, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve Board announces temporary change to its supplementary leverage ratio rule to ease strains in the Treasury market resulting from the coronavirus and increase banking organizations' ability to provide credit to households and businesses. Press release April 01, 2020. Available at: https://www.federalreserve.gov/newsevents/pressreleases/bcreg20200401a.htm [Accessed November 02, 2020].
- Board of Governors of the Federal Reserve System (2020). Secondary Market Corporate Credit Facility. Press release April 09, 2020. Available at:

https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200409a2.pdf [Accessed November 05, 2020].

- Board of Governors of the Federal Reserve System (2020). Federal Reserve takes additional actions to provide up to $ 2.3 trillion in loans to support the economy. Press release April 09, 2020. Available at: https://www.federalreserve.gov/newsevents/pressreleases/monetary20200409a.htm [Accessed November 05, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve Board announces it is expanding the scope and eligibility for the Main Street Lending Program. Press release April 30, 2020. Available at: https://www.federalreserve.gov/newsevents/pressreleases/monetary20200430a.htm [Accessed November 10, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve Board expands its Main Street Lending Program to allow more small and medium-sized businesses to be able to receive support. Press release June 08, 2020. Available at: https://www.federalreserve.gov/newsevents/pressreleases/monetary20200608a.htm [Accessed November 10, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve Board announces updates to Secondary Market Corporate Credit Facility (SMCCF), which will begin buying a broad and diversified portfolio of corporate bonds to support market liquidity and the availability of credit for large employers. Press release June 15, 2020. https://www.federalreserve.gov/newsevents/pressreleases/monetary20200615a.htm [Accessed November 11, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve Board announces an extension through December 31 of its lending facilities that were scheduled to expire on or around September 30. Press release July 28, 2020. Available at: https://www.federalreserve.gov/newsevents/pressreleases/monetary20200728a.htm [Accessed November 11, 2020].
- Board of Governors of the Federal Reserve System (2020). Federal Reserve Board announces the extensions of its temporary U.S. dollar liquidity swap lines and the temporary repurchase agreement facility for foreign and international monetary authorities (FIMA repo facility) through March 31, 2021. Press release July 29, 2020. Available at:

https://www.federalreserve.gov/newsevents/pressreleases/monetary20200729b.htm [Accessed November 11, 2020].

- Bofinger, P./Dullien, S./Felbermayr, G./Fuest, C./Hüther, M./Südekum, J./Weder di Mauro, B. (2020). Wirtschaftliche Implikationen der Corona-Krise und wirtschaftspolitische Maßnahmen. In: Wirtschaftsdienst 100, (4), 259-265. DOI: 10.1007/s10273-020-2628-0.
- Bohsem, G. (2010). Neues Konjunkturpaket - Dritter Schubser fürs Wachstum. In: Sueddeutsche.de (October 17). Available at: http://www.sueddeutsche.de/wirtschaft/neues-konjunkturpaket-dritter-schubser-fuers-wachstum-1.125686 [Accessed September 09, 2011].
- Born, K.-E. (1967). Die deutsche Bankenkrise 1931 - Finanzen und Politik. Munich: R. Piper und Co Verlag.
- Born, K.-E. (1982). Wirtschaftskrisen. In: Albers, Willi (Ed.). Handwörterbuch der Wirtschaftswissenschaft, Vol 9. Stuttgart/Tübingen/Göttingen: Vandenhoeck & Ruprecht.
- Braunberger, G./Fehr, B. (Eds.) (2008). Crash - Finanzkrisen gestern und heute. Frankfurt am Main: Frankfurter Allgemeine Buch.
- Brunner, J. (2009). Finanzkrise 2008 - Wie es dazu kam und mit welchen Folgen wir rechnen müssen!. Buchkirchen: IR-WORLD.com Finanzkommunikation GmbH.
- Bryan, M. (2013): The Great Inflation. Federal Reserve History (November 22). Available at: https://www.federalreservehistory.org/essays/great_inflation [Accessed April 29, 2020].
- Bücker, T. (2020). Der böse Verdacht der Staatsfinanzierung. In: Tagesschau (March 24). Available at: https://www.tagesschau.de/wirtschaft/boerse/ezb-anleihekaeufe-101.html [Accessed Dezember 02, 2020].
- Büttner, U. (1989): Politische Alternativen zum Brüningschen Deflationskurs. In: Vierteljahrshefte für Zeitgeschichte 37 (Issue 2), 209-251.
- Bureau of Economic Analysis, Council of Economic Advisers, Federal Reserve Bank of St. Louis (2020). US gross federal debt versus GDP since 1940. Available at: myf.red/g/p9vQ [Accessed August 16, 2020].
- CEIC Data/ISI Emerging Markets Group (2021). United States's Private Debt: % of Nominal GDP from Dec 1951 to Sep 2020. Available at: https://www.ceicdata.com/en/indicator/united-states/private-debt--of-nominal-gdp [Accessed April 15, 2021].
- CEIC Data/ISI Emerging Markets Group (2021). United States's Private Debt: % of Nominal GDP from Sep 2010 to Sep 2020. Available at:

https://www.ceicdata.com/en/indicator/united-states/private-debt--of-nominal-gdp [Accessed April 15, 2021].

- CEIC Data/ISI Emerging Markets Group (2021). European Union's Private Debt: % of Nominal GDP from Sep 1997 to Sep 2020. Available at: https://www.ceicdata.com/en/indicator/european-union/private-debt--of-nominal-gdp [Accessed April 15, 2021].
- Chamber of Industry and Commerce Nuremberg/IHK Nürnberg (2007). Markt und Moral - wie passt das zusammen?. IHK-Magazin WiM, 03-2007. Available at: https://www.ihk-nuernberg.de/de/IHK-Magazin-WiM/WiM-Archiv/WIM-Daten/2007-03/Berichte-und-Analysen/Markt-und-Moral-wie-passt-das-zusammen-.jsp [Accessed November 10, 2019].
- Chorafas, D. N. (2009). Financial Boom and Gloom - The Credit and Banking Crisis of 2007-2009 and Beyond. Houndmills, Basingstoke, Hampshire/New York.: Palgrave Macmillan UK. DOI: 10.1057/9780230235830.
- Clark, A. (2008). Paulson abandons plans to buy up America's toxic mortgage assets. In: The Guardian (November 13). Available at: https://www.theguardian.com/business/2008/nov/13/harry-paulson-banking-rescue-mortgage [Accessed December 16, 2019].
- Committee for a Responsible Federal Budget (2020). A Visualization of the CARES Act. (March 27). Available at: https://www.crfb.org/blogs/visualization-cares-act [Accessed November 08, 2020].
- Congressional Budget Office of the United States (2020). The Budget and Economic Outlook: 2020 to 2030. Washington.
- Congressional Budget Office of the United States (2020). The 2020 Long-Term Budget Outlook. Washington.
- Council of Economic Advisers, the Office of Management and Budget, Federal Reserve Bank of St. Louis, Bureau of Economic Analysis (2012). Gross Federal Debt and Real GDP. Available at: FRED, https://fred.stlouisfed.org/graph/fredgraph.png?g=p9vQ [Accessed May 19, 2020].
- Cox, J. (2019). Powell says the Fed will start expanding its balance sheet 'soon' in response to funding issues. In: CNBC (October 8). Available at: https://www.cnbc.com/2019/10/08/powell-says-the-fed-will-start-expanding-its-balance-sheet-soon.html [Accessed December 15, 2019].
- Cünnen, A. (2018). Welche Anleihen die EZB in ihrem Depot hat - eine Bilanz. In: Handelsblatt (December 14). Available at:

https://www.handelsblatt.com/finanzen/geldpolitik/wertpapierkaeufe-welche-anleihen-die-ezb-in-ihrem-depot-hat-eine-bilanz/23756978.html?ticket=ST-32235896-hNdTEfugp4ZLTYGgPd2E-ap6 [Accessed December 06, 2020].

- Czaykowski, M./Wink, K./Theiselmann, T./Gehring, H. (2009). Konsumverhalten und Hypothekenmarkt in den USA. In: Elschen, R./Lieven, Th. (Eds.). Der Werdegang der Krise - Von der Subprime- zur Systemkrise. Wiesbaden: Gabler. DOI: https://doi.org/10.1007/978-3-8349-8547-7_2.
- Däke, K.-H. (2009). In: Die Krise - Politik zu Lasten der Steuerzahler (Bund der Steuerzahler). Berlin.
- Dams, J./Kunz, A. (2020). Bruch mit China? So abhängig sind wir wirklich. In: Welt.de (June 12). Available at: https://www.welt.de/wirtschaft/article209346567/Globalisierung-So-abhaengig-sind-wir-wirklich-von-China.html [Accessed December 09, 2020].
- Daniel, V./ter Steege, L. (2019). Inflation expectations and the recovery from the Great Depression in Germany. Explorations in Economic History. DOI: https://doi.org/10.1016/J.EEH.2019.101305.
- Davies, G. (2012). Lessons from the Fed's Mistake of 1932. In: Financial Times (July 29). Available at: https://www.ft.com/content/d83ed76e-b2d0-3fa4-8cd2-e397c484f2d5 [Accessed May 04, 2020].
- Delko, K. (2020). Wie die US-Notenbank Fed die Marktwirtschaft gefährdet. In: Neue Zürcher Zeitung (August 08). Available at: https://www.nzz.ch/finanzen/anleihenkaeufe-wie-die-fed-die-marktwirtschaft-gefaehrdet-ld.1570205 [Accessed November 15, 2020].
- Demirović, A./Dück, J./Becker, F./Bader, P. (Eds.). Vorwort. In: VielfachKrise - Im finanzmarktdominierten Kapitalismus. Hamburg: VSA.
- Deutscher Aktienindex DAX (2020). In: finanzen.net database. Available at: https://www.finanzen.net/index/dax/charttool [Accessed December 16, 2020].
- Deutsche Bundesbank (Federal Bank of Germany) (2012). Inflation - Lehren aus der Geschichte (October 15). Available at: https://www.bundesbank.de/de/aufgaben/themen/inflation-lehren-aus-der-geschichte-614516 [Accessed July 16, 2020].
- Deutsche Bundesbank (Federal Bank of Germany) (2019). Aktive Programme (November 01). Available at: https://www.bundesbank.de/de/aufgaben/geldpolitik/geldpolitische-wertpapierankaeufe/aktive-programme-602324#tar-5 [Accessed November 26, 2020].

- Diermeier, M./Goecke, H. (2016). Geldmenge und Inflation in Europa: Ist der Zusammenhang verloren?. Institut der deutschen Wirtschaft (IW) / German Economic Institute policy paper 17/2016.
- Dill, A./Lieven, T. (2009). Folgen der Krise für die internationale Realwirtschaft. In: Elschen, R./Lieven, Th. (Eds.). Der Werdegang der Krise - Von der Subprime- zur Systemkrise. Wiesbaden: Gabler. DOI: https://doi.org/10.1007/978-3-8349-8547-7_9.
- Dittli, M. (2013). Der intime Kenner der Großen Depression. In: Finanz und Wirtschaft (November 04). Available at: https://www.fuw.ch/article/der-intime-kenner-der-grossen-depression/ [Accessed October 20, 2020].
- Dittmer, D. (2020). Corona-Bremsspuren am Immobilienmarkt. In: Capital.de (May 19). Available at: https://www.capital.de/immobilien/corona-bremsspuren-am-immobilienmarkt [Accessed July 08, 2020].
- Dow Jones Industrial Average Indices LLC (2020). Ticker SPX Chart Performance. Available at: https://www.spglobal.com/spdji/en/indices/equity/dow-jones-industrial-average/#overview [Accessed October 27, 2020].
- dpa/Reuters (2008). USA häufen Rekorddefizit an. In: stern.de (October 15). Available at: http://www.stern.de/wirtschaft/news/finanzkrise-usa-haeufen-rekorddefizit-an-642314.html [Accessed July 18, 2019].
- Draghi, M. (2012). Verbatim of the remarks made by Mario Draghi at the Global Investment Conference in London July 26, 2012. Available at: https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html [Accessed November 15, 2020].
- Elschen, R./Lieven, T. (Eds.). (2009). Der Werdegang der Krise - Von der Subprime- zur Systemkrise. Wiesbaden: Gabler. DOI: https://doi.org/10.1007/978-3-8349-8547-7.
- Emergency Economic Stabilization Act of 2008, Public Law 110-343, U.S. Statutes at Large 110 2008.
- Enste, D. (2015). Markt und Moral - Eine ordnungsethische Reflexion. Institut der deutschen Wirtschaft (IW) / German Economic Institute policy paper Position no. 69. Cologne. DOI: https://www.iwkoeln.de/fileadmin/publikationen/2015/205628/Markt_und_Moral_IW-Positionen.pdf.
- Ettel, A./Zschäpitz, H. (2016). Jetzt setzt die EZB Europas Wirtschaftsordnung aufs Spiel. In: Welt.de (June 03). Available at: https://www.welt.de/finanzen/article155918273/Jetzt-

setzt-die-EZB-Europas-Wirtschaftsordnung-aufs-Spiel.html [Accessed Dezember 02, 2020].

- European Central Bank (2015). EZB kündigt erweitertes Programm zum Ankauf von Vermögenswerten an. Frankfurt. Press release January 22, 2015.
- European Central Bank (2016). Economic Bulletin Issue No. 4/2016 (June 2016). Frankfurt.
- European Central Bank (2016). Monetary Policy Decisions. Press release December 8, 2016.
- European Central Bank (2017). Monetary Policy Decisions. Press release October 26, 2017.
- European Central Bank (2018). Monetary Policy Decisions. Press release October 25, 2018.
- European Central Bank (2019). Monetary Policy Decisions. Press release September 12, 2019.
- European Central Bank (2020). Monetary policy decisions. Press release March 12, 2020.
- European Central Bank (2020). ECB announces € 750 billion Pandemic Emergency Purchase Programme (PEPP). Press release March 18, 2020.
- European Central Bank (2020). Our response to the coronavirus pandemic (March 18). Available at: https://www.ecb.europa.eu/home/search/coronavirus/html/index.en.html [Accessed Dezember 03, 2020].
- European Central Bank (2020). ECB announces package of temporary collateral easing measure. Press release April 07, 2020.
- European Central Bank (2020). Corporate sector purchase programme (CSPP) - Questions & Answers (April 08). Available at: https://www.ecb.europa.eu/mopo/implement/app/html/cspp-qa.en.html [Accessed November 26, 2020].
- European Central Bank (2020). Monetary policy decisions. Press release June 04, 2020.
- European Central Bank (2020). Monetary Policy Decisions. Press release October 29, 2020.
- European Central Bank (2020). Monetary Policy. Available at: https://www.ecb.europa.eu/mopo/html/index.en.html [Accessed April 29, 2020].
- European Central Bank (2020). Pandemic emergency purchase programme (PEPP). Available at: https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html [Accessed July 11, 2020].
- European Commission (2020). The EU Budget powering the Recovery Plan for Europe (May 27). DOI: doi:10.2761/36172.

- European Commission (2020). Europe's moment: Repair and prepare for the next generation. Press release May 27, 2020. IP/20/940. Brussels.
- European Commission (2020). Timeline of EU Action. Available at: https://ec.europa.eu/info/timeline-eu-action_en [Accessed November 24, 2020].
- European Commission (2020). Die Krisenreaktion der Kommission im Überblick. Available at: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/overview-commissions-response_de [Accessed November 20, 2020].
- European Commission Eurostat (2017). Statistics Explained. Verbraucherpreisindizes - Inflation und vergleichende Preisniveaus (06/2017). Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Verbraucherpreisindizes_%E2%80%93_Inflation_und_vergleichende_Preisniveaus [Accessed April 22, 2020].
- European Commission Eurostat (2019). Struktur des öffentlichen Schuldenstandes 2018 - In der Hälfte der Mitgliedstaaten halten nicht Gebietsansässige den größten Anteil der Staatsverschuldung. Press Release June 21, 2019. 102/2019.
- European Commission Eurostat (2019). HICP all-items, development of the annual average inflation rates, 2008-2018. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:HICP_all-items,_development_of_the_annual_average_inflation_rates,_2008-2018_(%25)_FP18.png [Accessed April 25, 2020].
- European Commission Eurostat (2020). Government debt as a percentage of GDP - government-finance-statistics. Available at: http://ec.europa.eu/eurostat/de/web/government-finance-statistics/statistics-illustrated [Accessed May 13, 2020].
- European Commission Eurostat (2020). April 2020 - Jährliche Inflation im Euroraum auf 0,3% gesunken. Press Release May 20, 2020. 85/2020.
- European Commission Eurostat (2020). Vorläufige Schnellschätzung für das dritte Quartal 2020. Press Release 162/2020 (October 30, 2020).
- European Commission Eurostat (2020). GDP and main components (December, 01). Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_gdp&lang=en [Accessed December 01, 2020].

- European Parliament (2020). Public finances in Euro Area Member States: Selected indicators - November 2020. Available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/624406/IPOL_BRI(2018)624406_EN.pdf [Accessed June 12, 2020].
- European Parliament (2020). Public finances in Euro Area Member States: Selected indicators. November 2020.
- Euro Stoxx 50 (2020). In: finanzen.net database. Available at: https://www.finanzen.net/index/euro_stoxx_50/charttool [Accessed December 16, 2020].
- Fama, E. (2009). "Theorien, die funktionieren, überleben". In: institutional money (02/2009). Available at: https://www.institutional-money.com/drucken/magazin/theorie-praxis/artikel/eugene-fama-im-interview-theorien-die-funktionieren-ueberleben-7360/ [Accessed October 4, 2020].
- Fama, E. (2013). "Es gibt keine Blasen an den Märkten". In: FAZ.net (October 17). Available at: https://www.faz.net/aktuell/wirtschaft/wirtschaftspolitik/nobel-gedenkpreistraeger-fama-es-gibt-keine-blasen-an-den-maerkten-12620969.html#void [Accessed October 4, 2020].
- Fama, E. (2014). Der Markt weiß alles. Interview with Bernau, P.. In: FAZ.net (August 01). Available at: https://www.faz.net/aktuell/wirtschaft/wirtschaftswissen/die-weltverbesserer/eugene-fama-hat-die-hypothese-effizienter-maerkte-aufgestellt-13077461.html#void [Accessed October 4, 2020].
- Families First Coronavirus Response Act (2020). Public Law 116-127. March 18, 2020.
- Federal Constitutional Court Germany (Bundesverfassungsgericht) 2020. Decision of June 15, 2020 (2 BvR 71/20).
- Federal Employment Agency Germany (Bundesagentur für Arbeit) (2020). Press conference (April 30) - Der Arbeitsmarkt im April 2020.
- Federal Ministry for Economics and Technology Germany (Bundesministerium für Wirtschaft und Technologie) (2008). Beschäftigungssicherung durch Wachstumsstärkung. Available at: http://www.bmwi.de/BMWi/Redaktion/PDF/W/wachstumspaket-breg-november-08,property=pdf,bereich=bmwi,sprache=de,rwb=true.pdf mit dem Titel [Accessed September 08, 2011].
- Federal Ministry for Economics and Technology Germany (Bundesministerium für Wirtschaft und Technologie (2008). Bundeskabinett beschließt Maßnahmenpaket "Beschäftigungssicherung durch Wachstumsstärkung". Press Release November 5, 2008.

Available at: http://www.bmwi.de/BMWi/Navigation/Presse/pressemitteilungen,did=278022.html [Accessed September 08, 2011].

- Federal Ministry for Economics and Technology Germany (Bundesministeriums für Wirtschaft und Technologie) (2008). Schlaglichter der Wirtschaftspolitik - Sonderheft Finanzkrise. Berlin.
- Federal Ministry for Economics and Technology Germany (Bundesministerium für Wirtschaft und Technologie) (2010). Konjunktur- und wachstumspolitische Maßnahmen der Bundesregierung in der Wirtschafts- und Finanzkrise. Available at: http://www.bmwi.de/BMWi/Redaktion/PDF/J-L/konjunktur-und-wachstumspolitische-ma_C3_9Fnahmen-bundesregierung,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf [Accessed 08 November 2012].
- Federal Ministry of Finance Germany (Bundesfinanzministerium) (2009). Gesetz zur Sicherung von Beschäftigung und Stabilität in Deutschland. Available at: http://www.bundesfinanzministerium.de/nn_82/DE/BMF__Startseite/Aktuelles/Aktuelle__Gesetze/Gesetze__Verordnungen/031__Konjunkturpaket__2.html [Accessed September 08, 2011].
- Federal Ministry of Finance Germany (Bundesfinanzministerium) (2009). Stellschrauben des Konjunkturpakets 2. Available at: http://www.bundesfinanzministerium.de/DE/Buergerinnen__und__Buerger/Gesellschaft__und__Zukunft/themenschwerpunkt__konjunkturpakete/Stellschrauben-des-Konjunkturpakets-2/075__in__Bewegung__halten.html [Accessed September 08, 2011].
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2017). Monatsbericht des BMF Dezember 2017. Berlin.
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Kampf gegen Corona: Größtes Hilfspaket in der Geschichte Deutschlands (March, 13). Available at: https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Corona-Schutzschild/2020-03-13-Milliarden-Schutzschild-fuer-Deutschland.html# [Accessed November 19, 2020].
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Europäische Antwort auf Corona (March 27). Available at:

https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Corona-Schutzschild/2020-03-27-eurogruppe-rat.html# [Accessed November 20, 2020].

- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Kampf gegen Corona: Größtes Hilfspaket in der Geschichte Deutschlands (May 22). Available at: https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Corona-Schutzschild/2020-03-13-Millillion-Schutzschild-fuer-Deutschland.html [Accessed June 03, 2020].
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Das Konjunkturprogramm für alle in Deutschland (June, 03) https://www.bundesfinanzministerium.de/Web/DE/Themen/Schlaglichter/Konjunkturpaket/Konjunkturprogramm-fuer-alle/zusammen-durch-starten.html [Accessed November 29, 2020].
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Neue Corona-Hilfe: Stark durch die Krise. Press Release October 29, 2020.
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Umfangreiche Erweiterung der Corona-Hilfen (November, 16). Available at: https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Corona-Schutzschild/2020-10-29-neue-corona-hilfen.html [Accessed November 30, 2020].
- Federal Ministry of Finance Germany (Bundesministerium der Finanzen) (2020). Stark durch die Krise: Dezemberhilfe kommt, Überbrückungshilfe wird deutlich erweitert und verlängert (November 27). Available at: https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2020/11/2020-11-27-PM-dezemberhilfe-ueberbrueckungshilfe-III.html?cms_pk_kwd=27.11.2020_Stark+durch+die+Krise+Dezemberhilfe+kommt+%C3%9Cberbr%C3%BCckungshilfe+wird+deutlich+erweitert+und+verl%C3%A4ngert&cms_pk_campaign=Newsletter-27.11.2020# [Accessed November 30, 2020].
- Federal Open Market Committee/ Federal Reserve (2018). Chairman Powell's Press Conference December 19, 2018.
- Federal Open Market Committee/Federal Reserve (2019). January 29-30. Chairman Powell's Press Conference.

- Federal Open Market Committee/Federal Reserve (2019). March 20. Chairman Powell's Press Conference.
- Federal Open Market Committee/ Federal Reserve (2019). Chairman Powell's Press Conference July 31, 2019.
- Federal Open Market Committee/Federal Reserve (2019). Chairman Powell's Press Conference September 18, 2019.
- Federal Open Market Committee/Federal Reserve (2019). Chairman Powell's Press Conference October 30, 2019.
- Federal Reserve Bank of New York (2020). Effective Federal Funds Rate (EFFR). Available at: FRED, https://fred.stlouisfed.org/graph/?graph_id=346365 [Accessed December 15, 2020].
- Federal Reserve Bank of New York (2020). Statement Regarding Treasury Reserve Management Purchases and Repurchase Operations (March 12). Available at: https://www.newyorkfed.org/markets/opolicy/operating_policy_200312a [Accessed November 02, 2020].
- Federal Reserve Bank of New York (2020). New York Fed Announces Start of Certain Secondary Market Corporate Credit Facility Purchases on May 12. Press Release May 11, 2020. Available at: https://www.newyorkfed.org/newsevents/news/markets/2020/20200511 [Accessed November 10, 2020].
- Federal Reserve Bank of St. Louis (2012). Real Gross Domestic Product/Industrial Production Index. Available at: research.stlouisfed.org [Accessed July 10, 2020].
- Federal Reserve Bank of St. Louis (2020). Federal debt: total public debt as percent of Gross Domestic Product. In: FRED. Available at:
- Federal Statistical Office Germany (2008). "Die Finanzkrise meistern - Wachstumskräfte stärken". Wiesbaden: Bonifatius.
- Federal Statistical Office Germany (Statistisches Bundesamt) (2020). Bruttoinlandsprodukt im 1. Quartal 2020 um 2,2 % niedriger als im Vorquartal. Press release 169/20 (May 15).
- Federal Statistical Office Germany (Statistisches Bundesamt) (2020). Bruttoinlandsprodukt im 3. Quartal 2020 um 8,2% höher als im Vorquartal. Press release October 30, 2020.
- Felsenthal, M. (2008). Greenspan "shocked" at credit system breakdown. Available at: Reuters.com (October, 23) https://www.reuters.com/article/idINIndia-36122420081023 [Accessed December 17, 2019].

- Finanzen.net (2020). Aktueller Leitzins/Current key rate (December 15). Available at: https://www.finanzen.net/zinsen/leitzins [Accessed December 15, 2020].
- Fink, A. (2014). Argentiniens achte Staatspleite. In: Zeit online (July 31). Available at: https://www.zeit.de/wirtschaft/2014-07/argentinien-pleite-geierfonds-banken [Accessed July 19, 2020].
- Förster, M. (2020). Notfallzulassung für Corona-Impfstoff: Wie läuft der Prozess in Europa ab?. In: Redaktionsnetzwerk Deutschland (November 25). Available at: https://www.rnd.de/gesundheit/corona-impfstoff-was-bedeutet-notfallzulassung-wie-ist-der-ablauf-in-europa-TBFKU4NXP5AYVCHWFUXUPDW2OU.html [Accessed November 25, 2020].
- Fratzscher, M./ Kriwoluzky, A. (2020). Über die Ursachen und das mögliche Ende der niedrigen Zinsen in Deutschland. In: Wirtschaftsdienst 100, (1), 12-16. DOI: https://doi.org/10.1007/s10273-020-2553-2.
- Fricke, T. (2016). Amerika vor der Wahl - Obamas Wirtschaftswunder. In: Wirtschaftswunder (October 14). Available at: https://neuewirtschaftswunder.de/2016/10/14/thomas-fricke-amerika-vor-der-wahl-obamas-wirtschaftswunder/ [Accessed May 29, 2020].
- Friedman, M./Jacobson Schwartz, A. (1963). A Monetary History of the United States, 1867-1960. Princeton: University Press.
- Friedman, M. (1969). The Optimum Quantity of Money. In: Friedman, M. (Ed.). Introduction by Bordo, M. D.. New Brunswick, London: Aldine Transaction Publishers.
- Friedman, M. (1970). The Social Responsibility of Business is to increase its Profits. In: New York Times Magazine (September 13, 1970), 17.
- Friedrich, M. (2020). In: Heinemann, M. Wirtschaft in der Corona Krise - Mehr Staat wagen? Available at: https://www.deutschlandfunkkultur.de/wirtschaft-in-der-coronakrise-mehr-staat-wagen.976.de.print?dram:article_id=475594 [Accessed December 01, 2020].
- Fuest, C. (2020). Wie wir unsere Wirtschaft retten - Der Weg aus der Corona-Krise. Berlin: Aufbau-Verlag.
- Galbraith, J. K. (1995). Die Geschichte der Wirtschaft im 20. Jahrhundert: ein Augenzeuge berichtet (translated from the American by Sabine Wiermann). Hamburg: Hoffmann & Campe.
- Galbraith, J. K. (2009). Der große Crash 1929 - Ursachen, Verlauf, Folgen. Munich: FinanzBuch Verlag.

- Gauck, J. (2014). Speech by German Federal President Dr. Joachim Gauck at the opening of the 20th German Banking Day on April 9, 2014. Bulletin of Federal Government no. 45-1 (April 13, 2014). Available at: https://www.bundesregierung.de/resource/blob/975954/774010/770f5803265653e3686c60e5822bad34/45-1-bpr-data.pdf?download=1 [Accessed November 19, 2020].
- Gerbert, F. (2009). Pessimisten blicken besser durch. In: Focus Online (March 14). Available at: http://www.focus.de/wissen/wissenschaft/mensch/finanzkrise-pessimisten-blicken-besser-durch_aid_380239.html [Accessed July 25, 2019].
- German Chamber of Commerce and Industry in Japan (2020). Maritime Wirtschaft - Zielmarktanalyse Japan 2020. Tokio.
- German Ethics Council (Deutscher Ethikrat) (2020). Solidarität und Verantwortung in der Corona-Krise. Ad-hoc-Empfehlung (March 27). Available at: https://www.ethikrat.org/fileadmin/Publikationen/Ad-hocEmpfehlungen/deutsch/ad-hoc-empfehlung-corona-krise.pdf [Accessed December 03, 2020].
- German Federal Government (Bundesregierung) (2008). In: Federal Ministry of Finance Germany. Maßnahmenpaket "Stabilisierung der Finanzmärkte". Available at: http://www.bundesfinanzministerium.de/nn_54/DE/Wirtschaft__und__Verwaltung/Finanz__und__Wirtschaftspolitik/Finanzpolitik/122__Paket__Finanzmaerkte.html?__nnn=true [Accessed August 09, 2011].
- German Federal Government (Bundesregierung) (2009). Wachstumsbeschleunigungsgesetz (December 18). Available at: http://www.bundesregierung.de/Content/DE/Artikel/2009/12/2009-12-04-wachstumsbeschleunigungsgesetz-bundestag.html [Accessed 8 August 2012].
- German Federal Government (Bundesregierung) (2009). Deutschland gestärkt aus der Krise führen. Jahresbericht der Bundesregierung 2008/2009. Berlin.
- German Federal Government (Bundesregierung) (2009). Maßnahmenpaket zur Stabilisierung der Finanzmärkte. Available at: http://www.bundesfinanzministerium.de/nn_54/DE/Wirtschaft__und__Verwaltung/Finanz__und__Wirtschaftspolitik/Finanzpolitik/122__Paket__Finanzmaerkte.html?__nnn=true [Accessed August 09,2011].
- German Federal Government (Bundesregierung) (2020). Mehr Rechtssicherheit in Krisenzeiten (October 01). Available at: https://www.bundesregierung.de/breg-de/themen/coronavirus/insolvenzaussetzungsgesetz-1781394

- German Federal Ministry of the Interior, Building and Home Affairs (Bundesministerium des Innern, für Bau und Heimat) (2020). OZG-Umsetzung im Krisenmodus: Wie Corona die Digitalisierung der Verwaltung beschleunigt. Available at: https://www.oeffentliche-it.de/-/ozg-umsetzung-im-krisenmodus [Accessed December 14, 2020]. Berlin.
- Gilpin, R. (1987). The Political Economy of International Relations. Princeton: University Press.
- Gindel, T. (2020). Fed zündet nächste Stufe: neues Bündel an Maßnahmen. In: institutional money (June 23). Available at: https://www.institutional-money.com/news/regulierung/headline/fed-zuendet-naechste-stufe-neues-buendel-an-massnahmen-196287/newsseite/6/uebersichtseite/1/ [Accessed December 01, 2020].
- Glebe, D. (2008). Die globale Finanzkrise - Alle Informationen zur Wirtschaftskrise 2007-2009, dazu Geschichte und umfassendes Gesamtwissen zu den bisherigen Finanzkrisen dieser Welt. Ursachen, Auswirkungen, Reaktionen. Wuppertal.
- Göbel, H. (2010). Im Strudel der öffentlichen Defizite. In: Frankfurter Allgemeine Zeitung (March 10). Available at: https://www.faz.net/aktuell/wirtschaft/wirtschaftspolitik/die-schuldenbilanz-im-strudel-der-oeffentlichen-defizite-1582873.html [Accessed May 17, 2020].
- Gogoll, F./Wenke, M. (2017). Unternehmensethik, Nachhaltigkeit und Corporate Social Responsibility. Instrumente zur systematischen Einführung eines Verantwortungsmanagements in Unternehmen. Stuttgart: W. Kohlhammer Verlag.
- Gravelle, J. G./Hungerford, Th. I./Labonte, M. (2009). Economic Stimulus: Issues and Policies. Congressional Research Service (November 10). Washington, D.C.
- Greenspan, A. (2002). The Annual Convention (October 7) of the American Bankers Association. Phoenix, Arizona.
- Greenwood, J. (2020). In: Frühauf, M.. "Die EZB kann ihre Wirkung noch erhöhen". Frankfurter Allgemeine Zeitung (July 5). Available at: https://www.faz.net/aktuell/finanzen/finanzmarkt/john-greenwood-ueber-wirtschaft-und-die-corona-krise-16841802.html [Accessed July 13, 2020].
- Grömling, M. (2020). Corona-Krise und die deutsche Wirtschaft. In: Institut der deutschen Wirtschaft (IW) / German Economic Institute policy paper 15/2020 (February, 20).
- Grömling, M./ Hüther, M./Jäger, M./ Kroker, R. (2009). Deutschland nach der Krise: Aufbruch oder Depression? Wirtschaftshistorische Betrachtung und wirtschaftspolitische Leitlinien. Cologne.

- Gropp, R. E. (2020). In: Gries, Lothar: Droht eine neue Bankenkrise?. In: Tagesschau.de (December 01). Available at: https://www.tagesschau.de/wirtschaft/boerse/banken-boerse-101.html [Accessed December 11, 2020].
- Gysi, G. (2008). Quoted from the stenographic report of the German Bundestag on the 143rd session in Berlin (plenary protocol 16/143) on February 15, 2008.
- Haase, H. (1962). Die Lombardpolitik der Zentralnotenbanken. Volkswirtschaftliche Schriften Vol 66. Berlin.
- Hader, J./Bryazgin, K./Lieven, T. (2009). Folgen der Krise für die internationale Finanzwirtschaft. In: Elschen, R./Lieven, Th (Eds.). Der Werdegang der Krise. Wiesbaden: Gabler. DOI: https//doi.org/10.1007/978-3-8349-8547-7_7.
- Hässig, L. (2009). Der UBS-Crash- Wie eine Großbank Milliarden verspielte. Hamburg: Hoffmann und Campe.
- Haidt, E. (2019). Trump gegen Fed: Die Unabhängigkeit der Notenbanken geht rapide zu Ende. In: Focus Online (July, 11). Available at: https://www.focus.de/finanzen/boerse/anhaltende-strafzinsen-und-qe-gelddrucken-drohen-trump-gegen-fed-angebliche-unabhaengigkeit-der-notenbanken-geht-rapide-zu-ende_id_10913336.html [Accessed July 17, 2020].
- Handelsblatt (2009). Arcandor insolvent Juni 2009 (December 1). Available at: http://www.handelsblatt.com/archiv/juni-2009/3316220.html [Accessed July 29, 2019].
- Handelsblatt (2015). Inflationsrate erstmals seit Oktober 2009 unter Null (February 26). Available at: https://www.handelsblatt.com/politik/konjunktur/nachrichten/usa-inflationsrate-erstmals-seit-oktober-2009-unter-null/11429702.html?ticket=ST-176317-ARDe5rAK2q7ikRLGEPI9-ap2 [Accessed April 27, 2020].
- Harrison, F. (2008). Wirtschaft Krise 2010 - Wie die Immobilienblase die Wirtschaft in die Krise stürzt. Weinheim: Springer.
- Haselmann, G. (2020). Coronavirus - The Catalyst For System Failure. In: ZeroHedge (March 08). Available at: https://www.zerohedge.com/markets/coronavirus-catalyst-system-failure [Accessed March 9, 2020].
- Hayes, C. (2020). House passes $ 484 billion coronavirus stimulus for small businesses and hospitals, sends bill to Trump. In: USA Today (April 23). Available at: https://eu.usatoday.com/story/news/politics/2020/04/23/coronavirus-house-take-up-stimulus-small-business-program/3008485001/ [Accessed November 09, 2020].

- Hecking, C. (2019). Wie gefährlich wären neue US-Strafzölle? In: Spiegel online (May 09). Available at: https://www.spiegel.de/wirtschaft/handelsstreit-usa-china-donald-trump-droht-mit-neuen-zoellen-faq-a-1266051.html [Accessed August 17, 2020].
- Hellerforth, M. (2009). Die globale Finanzmarktkrise - Ursachen und Auswirkungen auf die Immobilien- und Realwirtschaft. Hamburg: Hammonia.
- Henkel, H.-O. (2009). Die Abwracker - Wie Zocker und Politiker unsere Zukunft verspielen. Munich: Heyne.
- Herbener, J. (2014). Fed Policy Errors of the Great Depression. In: Howden, D./Salerno Joseph T. (Eds.). The Fed at One Hundred - A Critical View on the Federal Reserve System (7th edition) Cham, 43-55.
- Herger, P. (2020). Die US-Notenbank kauft Anleihen: Was sind die Folgen dieser Geldschwemme für Anleger?. In: Neue Zürcher Zeitung (May 05). Available at: https://www.nzz.ch/finanzen/coronavirus-zweifelhafte-manoever-der-us-zentralbank-fed-ld.1550112 [Accessed November 14, 2020].
- Herz, B. (2020). Expertenmeinung zu Globalisierung und wirtschaftlichen Auswirkungen der Corona-Pandemie. Press Release University of Bayreuth no. 42-2020 (March 23).
- Hierschel, D. (2009). Nach der Krise ist vor der Krise. In: Altvater, E./Bischoff, J./ Hickel, R./Hirschel, D./Huffschmid, J./ Zinn, K. G. (Eds.). Krisen Analysen. Hamburg.
- Hirsch, J. (2009): Die Krise des neoliberalen Kapitalismus: Welche Alternativen?. In: Altvater, E./Bischoff, J./ Hickel, R./Hirschel, D./Huffschmid, J./ Zinn, K. G. (Eds.). Krisen Analysen. Hamburg: VSA.
- Hoffmann, W. G. (1965). Das Wachstum der deutschen Wirtschaft seit der Mitte des 19. Jahrhunderts. Enzyklopädie der Rechts- und Staatswissenschaft. Berlin/ Heidelberg/New York: Springer. DOI: https://doi.org/10.1007/978-3-642-86088-1.
- Hofmann, S. (2020). Biontech und Pfizer schließen Milliarden-Deal mit den USA. In: Handelsblatt (July 22). Available at: https://www.handelsblatt.com/unternehmen/industrie/corona-impfstoff-biontech-und-pfizer-schliessen-milliarden-deal-mit-den-usa-/26027268.html?ticket=ST-379221-ODqbwCWsDTIY2T3yNxEJ-ap4 [Accessed November 25, 2020].
- Hollnagel, B. (2009). Der Markt hat immer Recht - Die Finanzkrisen und die Lehren daraus. Vienna: Signum.
- Holz, T. (2020): Rasche Erholung am Aktienmarkt nach Corona - Blase oder keine Blase?. In: finanzen.net (June, 29). Available at:

https://www.finanzen.net/nachricht/aktien/volatile-boerse-rasche-erholung-am-aktienmarkt-nach-corona-blase-oder-keine-blase-9008408 [Accessed July 10, 2020].

- Hüwe, J. (2007). Mit absurder Geldpolitik in die Deflation und zum Ende der Weimarer Demokratie. humane-wirtschaft.de - 03/2007, 46-48.
- Huffschmid, J. (2009). Europäische Perspektiven im Kampf gegen die Wirtschafts- und Finanzkrise. In: Altvater, E./Bischoff, J./ Hickel, R./Hirschel, D./Huffschmid, J./Zinn, K. G. (Eds.). Krisen Analysen. Hamburg: VSA.
- Hunt, L. (2018). In: Stoeferle, R.-P./Valek, M. J.. Gold and the Turning of the Monetary Tides. in gold we trust.report from Incrementum AG (May 29).
- Huth, T. (2009). Aggressives Marketing von Banken und Finanzvermittlern. In: Elschen, R./Lieven, Th. (Eds.). Der Werdegang der Krise. Wiesbaden: Gabler. DOI: https://doi.org/10.1007/978-3-8349-8547-7_3.
- Hyman, E. (2019). Stock market should surge to a new record in November, if history is any guide. In: CNBC (October 29). Available at: https://www.cnbc.com/2019/10/29/stocks-should-hit-new-record-in-november-if-history-is-any-guide.html [Accessed November 10, 2020].
- Illing, G. (2014). Staatsverschuldung und Finanzkrise - Wechselwirkungen und Krisenpotenziale. Marburg.
- Illing, G. (2015). Unkonventionelle Geldpolitik - kein Paradigmenwechsel. Perspektiven der Wirtschaftspolitik, 16 (2), 127-150. DOI 10.1515/pwp-2015-0010.
- International Monetary Fund (2020) - IMF DataMapper [online]. Available at: https://www.imf.org/external/datamapper/datasets/WEO [Accessed December 15, 2020].
- Irwin, D. (2011). What caused the recession of 1937-38? A new lesson for today's policymakers. In: VOX CEPR Policy Portal (September 11). Available at: https://voxeu.org/article/what-caused-recession-1937-38-new-lesson-today-s-policymakers [Accessed May 05, 2020].
- Isidore, C. (2011). Inflation: Biggest rise in CPI in 3 years. In: CNN Money Report (October 19). Available at: https://money.cnn.com/2011/10/19/news/economy/inflation_cpi/index.htm [Accessed April 27, 2020].
- Jackisch, K. R. (2008). Rezession in Deutschland ist amtlich. In: tagesschau.de (November 13). Available at: http://www.tagesschau.de/wirtschaft/bip104.html [Accessed July 20, 2019].

- Jäger, H. (1973). Geschichte der amerikanischen Wirtschaft im 20. Jahrhundert. Wiesbaden: Franz Steiner.
- Jahn, D. (2013). Einführung in die vergleichende Politikwissenschaft. Wiesbaden: Springer.
- Jahnke, J. (2008). Weltwirtschaftskrise II - Eine komplette Analyse von Entstehungsgründen und Ausmaß der globalen Krise. Aachen: Shaker Media.
- Jahnke, J. (2009). Die zweite Große Depression - Wo die Krise herkommt, Wo sie hinführt, Was tun? Aachen: Shaker Media.
- James, H. (1986). The German Slump. German edition: James, H. (1988). Deutschland in der Weltwirtschaftskrise 1924-1936. Stuttgart: Oxford University Press.
- James, H. (2001). The end of Globalization: Lessons from the Great Depression. Cambridge/Massachusetts: Harvard University Press.
- James, H. (2003). Der Rückfall - Die neue Weltwirtschaftskrise. Munich: Piper.
- James, H. (2008). Das amerikanische Trauma. In: Die Zeit (April 3). Available at: http://www.zeit.de/2008/15/Harold-James-1929 [Accessed July 15, 2019].
- Jones, C. (2020). Coronavirus, CARES and PPP will explode the Federal deficit and debt. In: Forbes (April 25). Available at: https://www.forbes.com/sites/chuckjones/2020/04/25/the-coronavirus-will-explode-the-federal-deficit-and-debt/#3de863ab7ef7 [Accessed June 15, 2020].
- Jordà, Ò./Schularick, M./Taylor/A. M. (2016). Macrofinancial history and the new business cycle facts. Working Paper 22743. Cambridge. DOI: 10.3386/w22743.
- Junker, D. (2004). Weltwirtschaftskrise, New Deal, Zweiter Weltkrieg, 1929-1945. In: Lösche, P./von Loeffelholz, H. D./Ostermann, A.: Länderbericht USA: Geschichte, Politik, Wirtschaft, Gesellschaft und Kultur, 129-152. Frankfurt a. M., New York: Campus Verlag.
- Kalb, J. (2012). Von der Staatsschuldenkrise zur politischen Krise in der Europäischen Union?. In: Frick, L./Kalb, J./Costantino, R.: Der Euro und die Schuldenkrise in Europa. Deutschland & Europa - issue 63-2012, 3-9.
- Kamp, L. (2009). Finanzkrise - Ursachen, Wirkungen, Rettungspakete und Regulierung. Hans-Böckler-Stiftung December 11, 2009. E-book available at: https://www.boeckler.de/pdf/bb_folien_finanzmarktkrise.pdf [Accessed November 18, 2020].
- Kazim, H. (2008). Immobilienkrise. Deutsche Bank meldet erstmals seit fünf Jahren Verlust. In: Spiegel Online (April 29). Available at:

http://www.spiegel.de/wirtschaft/immobilienkrise-deutsche-bank-meldet-erstmals-seit-fuenf-jahren-verlust-a-550298.html [Accessed July 28, 2019].

- Keen, S. (2008). Can the USA debt-spend its way out?. In: Steve Keen's Debtwatch (November 29). Available at: https://www.debtdeflation.com/blogs/2008/11/29/can-the-usa-debt-spend-its-way-out/ [Accessed April 16, 2021].
- Keynes, J. M. (1936). The General Theory of Employment, Interest and Money. London: Macmillan.
- Kindleberger, C. P. (1973). Die Weltwirtschaftskrise 1929-1939. Translated German edition. In: Fischer, W. (Ed.) Geschichte der Weltwirtschaft im 20. Jahrhundert. Vol 4. Munich.
- Kirchhof, P. (2009). Rückbesinnung auf ein Grundrecht - Eigentum als Schule von Freiheit und Risiko. In: Depenheuer, O. (Ed.). Eigentumsverfassung und Finanzkrise. Berlin/Heidelberg. DOI: https://doi.org/10.1007/978-3-642-00230-4_3.
- Koba, M. (2011). Recession. In: CNBC (July 21). Available at: https://www.cnbc.com/id/43563081 [Accessed March 10, 2020].
- Köhler, W. (2009). Der Crash 2009 - Die neue Weltwirtschaftskrise. Murnau.
- Kooths, S. (2020). Update Konjunkturbericht: Deutsches BIP dürfte 2020 zwischen 4,5 und 9 Prozent einbrechen. In: News, ifw Institut für Weltwirtschaft Kiel (March 19, 2020).
- Krassin, A./ Yen Tran, T. M./Lieven T. (2009). Asset Backed Securities (ABS) und ihr Einfluss auf die Entwicklung der Finanzkrise. In: Elschen, R./Lieven, Th. (Eds.). Der Werdegang der Krise. Wiesbaden: Gabler. DOI: https://doi.org/10.1007/978-3-8349-8547-7_4.
- Kremer, D. (2017). Häuser ohne Wert. In: Frankfurter Allgemeine Zeitung (June 05). Available at: https://www.faz.net/aktuell/finanzen/finanzkrise-haeuser-ohne-wert-groesste-immobilienkrise-15046364.html?printPagedArticle=true#void [Accessed July 07, 2020].
- Krugman, P. (2008). The Keynesian moment. In: New York Times (November 29). Available at: https://krugman.blogs.nytimes.com/2008/11/29/the-keynesian-moment/ [Accessed October 6, 2020].
- Krugman, P. (2009). The Return of Depression Economics and the Crisis of 2008. New York: Norton & Company.
- Krugman, P. (2009). Die neue Weltwirtschaftskrise. Frankfurt/New York: Campus Verlag (translated edition).

- Krugman, P. (2012). Anzeichen einer Krise à la 30er-Jahre?. In: Fondsprofessionell (October 08). Available at: https://www.fondsprofessionell.de/drucken/news/maerkte/headline/nobelpreistraeger-krugman-anzeichen-einer-krise-a-la-30er-jahre-105572/ [Accessed July 06, 2020].
- Krugman, P. (2019). Deutschland sollte Schulden machen. In: Tagesschau.de (December 21). Available at: https://www.tagesschau.de/ausland/krugman-interview-101.html [Accessed July 06, 2020].
- Kuhlwein, N. (2020). In: Kearney study: Hilfspakete im Vergleich: Deutschland besser als USA und Italien, aber schlechter als Japan und China. In: General-Anzeiger (November 23). Available at: https://ga.de/verlag/anzeigen/advertorials/presseportal/hilfspakete-im-vergleich-deutschland-besser-als-usa-und-italien-aber-schlechter-als-japan-und-china_aid-54767687 [Accessed December 03, 2020].
- Kulessa, M. (2020). Makroökonomie im Gleichgewicht: Praxis und Theorie. Konstanz/Munich: UTB GmbH.
- Kulke, U. (2011). Fette Jahre, magere Jahre. In: DIE WELT (August 7). Available at: http://www.welt.de/print/wams/vermischtes/article13530621/Fette-Jahre-magere-Jahre.html [Accessed August 02, 2019].
- Lagarde, C. (2019). Opening Remarks by IMF Managing Director Christine Lagarde At the United States 2019 Article IV Press Conference. In: International Monetary Fund (June 6). Available at: https://www.imf.org/en/News/Articles/2019/06/06/sp060619-lagarde-opening-remarks-us-2019-article-iv-press-conference [Accessed July 06, 2020].
- Lambert, E. (2013). Was the cause of the 1960 recession psychological? and now? In: Angry Bear (September 3). Available at: https://angrybearblog.com/2013/09/was-cause-of-1960-recession-psychological.html [Accessed March 10, 2020].
- Landau, M. (2020). Corona-Krise lässt Wirtschaft schrumpfen. In: DZ Bank Derivateportal (May 22). Avalable at: https://www.dzbank-derivate.de/Magazin/neues_auf_dzbank-derivate/corona-krise-laesst-wirtschaft-schrumpfen-news331ee746a38d085cbab45cf9a58fd5417a520970 [Accessed May 27, 2020].
- Lang, S. (2010). Empirische Forschungsmethoden. In: University of Trier https://www.uni-trier.de/fileadmin/fb1/prof/PAD/SP2/Allgemein/Lang_Skript_komplett.pdf [Accessed February 20, 2020].
- League of Nations (1934), Monthly Bulletin of Statistics. (February 1934).

- Leonhardt, D. (2009). The Economy is bad, but 1982 was worse. In: New York Times (January 21). Available at: https://www.nytimes.com/2009/01/21/business/economy/21leonhardt.html [Accessed March 11, 2020].
- Mallien, J./Wiebe, F. (2020). "Erhebliche Risiken für die Wirtschaft": Lagarde stellt Corona-Intervention der EZB in Aussicht. In: Handelsblatt (October 29). Available at: https://www.handelsblatt.com/finanzen/geldpolitik/geldpolitik-erhebliche-risiken-fuer-die-wirtschaft-lagarde-stellt-corona-intervention-der-ezb-in-aussicht/26571670.html?ticket=ST-2444094-iTi5LidS0tAxMxSLTm5o-ap4 [Accessed November 27, 2020].
- Massing, O. (1974). Vergleichende Politische Analyse (Comparative Government and Politics). In: Massing, O. (Ed.). Politische Soziologie - Paradigmata einer kritischen Politikwissenschaft, 37-75. Frankfurt: Suhrkamp.
- Matis, H./Stiefel, D. (1991). Die Weltwirtschaft - Struktur und Entwicklung im 20. Jahrhundert. Vienna: Carl Ueberreuter.
- Menzel, U. (2010). Imperium oder Hegemonie?. Part 14: USA 1898-1990: Die erste Hegemonialmacht mit globaler Reichweite. Research reports from the Institute for Social Sciences No. 98. Braunschweig.
- Messner, D. (2020). Risiken und Chancen im Umgang mit der Corona-Krise. In: Umweltbundesamt (April 02). Available at: https://www.umweltbundesamt.de/themen/risiken-chancen-im-umgang-der-corona-krise [Accessed August 03, 2020].
- Mieder, W. (2009). Yes We Can - Barack Obama's Proverbial Rhetoric. New York: Peter Lang.
- Minsky, H. P. (2008). Stabilizing an unstable Economy. New York: McGraw-Hill.
- Mitchell, B. R. (1978). European Historical Statistics 1750-1970. London: Palgrave Macmillan.
- MSCI World (2020). In: finanzen.net database. Available at: https://www.finanzen.net/index/msci-world [Accessed December 16, 2020].
- MSCI World (2020). comdirect.de database chart. Available at: https://www.comdirect.de/inf/indizes/detail/chart.html?timeSpan=5Y&ID_NOTATION=3193857 [Accessed December 16, 2020].

- Müller, H. (2020). Wie China die Globalisierung beenden könnte. In: Spiegel (July 26). Available at: https://www.spiegel.de/wirtschaft/unternehmen/weltwirtschaft-wie-china-die-globalisierung-beenden-koennte-kolumne-a-268e9116-21a3-43ef-8fdb-3b379e773cbf [Accessed December 09, 2020].
- Münchau, W. (2008). Kernschmelze im Finanzsystem. Munich: Carl Hanser. DOI: https://doi.org/10.3139/9783446419506.
- Münchrath, J./Rickens, C. (2020). "Heilmittel schlimmer als das Problem": Trump stößt Debatte um Corona-Maßnahmen an. In: Handelsblatt (March 25). Available at: https://www.handelsblatt.com/politik/international/pandemie-heilmittel-schlimmer-als-das-problem-trump-stoesst-debatte-um-corona-massnahmen-an/25676150.html?ticket=ST-3609170-9oeGjk5dnREnQ22mkIRd-ap3 [Accessed October 26, 2020].
- Murphy, R. P. (2009). The Depression You've never heard of: 1920-1921. In: Foundation for Economic Education (November 18). Available at: https://fee.org/articles/the-depression-youve-never-heard-of-1920-1921/ [Accessed March 11, 2020].
- Mußler, H. (2008). Der Börsenkrach von 1929 beendet abrupt die goldenen Zwanziger. In: FAZ.Net (March 27). Available at: http://www.faz.net/aktuell/finanzen/fonds-mehr/historische-finanzkrisen-amerika-1929-der-boersenkrach-von-1929-beendet-abrupt-die-goldenen-zwanziger-1283757.html [Accessed July 16, 2019].
- Mußler, H. (2008). Der Börsenkrach von 1929. Braunberger, G./Fehr, B. (Eds.). Crash - Finanzkrisen gestern und heute. Frankfurt am Main: Frankfurter Allgemeine Buch.
- National Association of Realtors (2014). Markt-Daten.de. Wirtschaftsindikatoren/Economic Indicators - Chart, especially: Immobilienmarkt/Real estate market. Available at: http://www.markt-daten.de/research/indikatoren/index.htm [Accessed August 28, 2014].
- National Bureau of Economic Research. (2020). Dow Jones Industrial Stock Price Index for United States. Available at: FRED, https://fred.stlouisfed.org/series/M1109BUSM293NNBR [Accessed May 22, 2020].
- Naumer, H.-J. (2020). Zinstief entlastet Deutschland beim Abtragen neuer Schulden. In: Handelsblatt (June 11). Available at: https://www.handelsblatt.com/finanzen/banken-versicherungen/coronakrise-allianz-zinstief-entlastet-deutschland-beim-abtragen-neuer-schulden/25907774.html?ticket=ST-3960080-xbwcmPef1SlirRGGNmsY-ap4 [Accessed June 13, 2020].

- Neubäumer, Renate (2015). Eurokrise: Sparpolitik zweitrangig für den Einbruch der Wirtschaftsleistung in Griechenland?. In: ifo Schnelldienst ifo Institut Munich. 68, (18), 25-34.
- Neyer, U. (2018). Der Ankauf von Staatsanleihen durch das Eurosystem - Lender of Last Resort und Quantitative Easing. In: Wirtschaftsdienst 98, (12), 846-851. DOI: 10.1007/s10273-018-2377-5.
- Nikkei 225 Stock Average (2020). Index List. Available at: https://indexes.nikkei.co.jp/en/nkave/index/profile?cid=5&idx=nk225 [Accessed October 27, 2020].
- Nohlen, D. (1994). Vergleichende Methode. In: Kriz, J./Nohlen, D./Schultze, R.-O. (Eds.). Lexikon der Politik, Vol 2, Politikwissenschaftliche Methoden, 507-517. Munich: C.H. Beck.
- O'Hare, R./van Elsland, S. (2020). Coronavirus measures may have already averted up to 120,000 deaths across Europe. In: Imperial College London (March 30). Available at: https://www.imperial.ac.uk/news/196556/coronavirus-measures-have-already-averted-120000/ [Accessed November 13, 2020].
- Oswald, A. (2019). "Helicopter Money". Soll die Notenbank Geld verschenken?. In: Der Tagesspiegel (September 04). Available at: https://www.tagesspiegel.de/politik/helicopter-money-soll-die-notenbank-geld-verschenken/24981568.html [Accessed July 17, 2019].
- Otte, M. (2009). Der Crash kommt - Die neue Weltwirtschaftskrise und was Sie jetzt tun können. Berlin: Ullstein.
- Otte, M. (2010). In: Neurer, Dietmar. "PIGS-Staaten aus Euro-Zone werfen". In: Handelsblatt (December 08). Available at: https://www.handelsblatt.com/politik/konjunktur/auswege-aus-der-krise-pigs-staaten-aus-euro-zone-werfen/3663626.html?ticket=ST-846177-zM2HcptlBEIBIwoul3DI-ap5 [Accessed April 13, 2021].
- Otte, M. (2019). Mega-Krise kommt! Crash-Prophet Otte warnt vor massiven Finanzturbulenzen. In: Focus.de (August 14). Available at: https://www.focus.de/finanzen/boerse/interview-mit-max-otte-festgeld-schuetzt-nicht-vor-dem-mega-crash_id_9254162.html [Accessed December 06, 2020].
- Padala, S. N. (2011). Recessions since Great Depression. In: International Business Times (February 11). Available at: https://www.ibtimes.com/recessions-great-depression-265903 [Accessed March 13, 2020].

- Paul, S./Kösters, W. (2009). Die Bankenkrise als Kern der weltweiten Finanz- und Wirtschaftskrise. In: Andersen, U. (Ed.). Weltwirtschaftskrise - eine Systemkrise?, 41-62. Schwalbach am Taunus: Wochenschau-Verlag.
- Paulert, R. (2009). US-Regierung ändert Rettungspaket. Mehr Kredite für mehr Konsum. In: Tagesschau.de (February 04). Available at: https://web.archive.org/web/20090204183115/ http://www.tagesschau.de/wirtschaft/konsumusa100.html [Accessed December 01, 2019].
- Peicuti, C. (2014). The Great Depression and the Great Recession: A Comparative Analysis of their Analogies. Available at: The European Journal of Comparative Economics. Vol 11, no. 1, 55-78.
- Pfister, U. (2019). Deutschland in der Weltwirtschaftskrise (1929-1932). Available at: University Muenster (November 19) https://www.wiwi.uni-muenster.de/wisoge/sites/wisoge/files/downloads/skripte/deutsche_wirtsch/s07_wwkrise_folien.pdf [Accessed May 27, 2020].
- Piketty, T. (2014). Das Kapital im 21. Jahrhundert. Munich: C.H. Beck.
- Piper, N. (2018). Krise in Venezuela - Wenn Banknoten nur noch gewogen werden. In: Sueddeutsche (July 26). Available at: https://www.sueddeutsche.de/wirtschaft/venezuela-krise-1.4068965 [Accessed December 09, 2020].
- Plickert, P. (2013). Der deutsche Schuldenberg ist auf Dauer untragbar. In: Frankfurter Allgemeine Zeitung (May 20). Available at: https://www.faz.net/aktuell/wirtschaft/staatsfinanzen-der-deutsche-schuldenberg-ist-auf-dauer-untragbar-12188759.html#void [Accessed June 1, 2020].
- Plumpe, G. (1984). Wirtschaftskrise, Wirtschaftspolitik und Nationalsozialismus. In: Malettke, Klaus (Ed.). Der Nationalsozialismus an die Macht, 53-84. Göttingen: Vandenhoeck & Ruprecht.
- Plumpe, W. (2011). Wirtschaftskrisen - Geschichte und Gegenwart. Munich, C.H. Beck.
- Plumpe, W. (2020). Die Stunde der Staatsintervention? Der Umgang mit Wirtschaftskrisen in der Geschichte. Orientierungen zur Wirtschafts- und Gesellschaftspolitik May 29, 2020. Ludwig Erhard Stiftung (Ed.). Bonn.
- Powell, J. H. (2019). Data-Dependent Monetary Policy in an Evolving Economy. Speech October 08. Available at: https://www.federalreserve.gov/newsevents/speech/powell20191008a.htm [Accessed December 03, 2019].

- Powell, J. H. (2020). 60 Minutes interview on economic recovery from the coronavirus pandemic with Scott Pelley. In: CBSNews (May 17). Available at: https://www.cbsnews.com/news/full-transcript-fed-chair-jerome-powell-60-minutes-interview-economic-recovery-from-coronavirus-pandemic/ [Accessed June 15, 2020].
- Powell, J. H. (2020). New Economic Challenges and the Fed's Monetary Policy Review (August 27). Available at https://www.federalreserve.gov/newsevents/speech/powell20200827a.htm [Accessed November 11, 2020].
- Pressler, F. (2013). Die erste Weltwirtschaftskrise: Eine kleine Geschichte der großen Depression. Munich (e-book).
- Priewe, J. (2018). Was ist am US-Außenhandelsdefizit eigentlich so schlimm?. In: Bundeszentrale für politische Bildung (December 10). Available at: https://www.bpb.de/politik/wirtschaft/freihandel/280881/was-ist-am-us-aussenhandelsdefizit-eigentlich-so-schlimm [Accessed April 13, 2021].
- Przeworski, A. (1987). Methods of Cross-National Research 1970-83. An Overview. In: Dierkes, M./Weiler, H. N./Berthion Antal, A. (Eds.). Comparative Policy Research: Learning from Experience, 31-49. Aldershot: Gower.
- Raeithel, G. (1989). Geschichte der nordamerikanischen Kultur. Vol 3. Vom New Deal bis zur Gegenwart 1930 - 1988. Weinheim: Parkland.
- Räth, N. (2009). Rezessionen in historischer Betrachtung. In: Statistisches Bundesamt/Federal Office of Statistics Germany. Wirtschaft und Statistik 3/2009, 203-208.
- Rattner, J./Danzer, G. (2007). Politik und Psychoanalyse - Plädoyer für ein Leben in Freiheit, Vernunft und Frieden. Würzburg: Königshausen u. Neumann.
- Reed, S. B. (2014). One hundred years of price change: the Consumer Price Index and the American inflation experience. Monthly Labor Review 04/2014 of Bureau of Labor Statistics. DOI: https://doi.org/10.21916/mlr.2014.14.
- Reinhart, C. M./Rogoff, K. S. (2009). This time is different - Eight Centuries of Financial Folly. Princeton. DOI: https://doi.org/10.2307/j.ctvcm4gqx.
- Rickens, C. (2005). Die unersättliche Nation. Manager Magazin, 35 (7), 134-142.
- Roncal, J. D. (2009). A Closer Look at Recession. In: Fast Company (January 29). Available at: https://www.fastcompany.com/1149490/closer-look-recessions [Accessed March 9, 2020].

- Rosenberg, J. (2018). The 1969 US downturn can tell a lot about a key recession signal that's been flashing yellow. In: Business Insider (June 6). Available at: https://www.businessinsider.com/recession-1969-downturn-can-tell-us-about-the-key-2018-6?r=DE&IR=T [Accessed March 10, 2020].
- Rosengarten, M. (2001). Die Internationale Handelskammer - wirtschaftspolitische Empfehlungen in der Zeit der Weltwirtschaftskrise 1929-1939. In: Schriften zur Wirtschafts- und Sozialgeschichte. Vol 65. Berlin.
- Rothengatter, W./Schaffer, A. (2006). Makro Kompakt - Grundzüge der Makroökonomik. Heidelberg: Physica-Verlag. DOI: 10.1007/3-7908-1674-4.
- Rothermund, D. (1993). Die Welt in der Weltwirtschaftskrise 1929-1929. Muenster – Hamburg: Lit-Verlag.
- Russell, K. (2018). Rates for the Seventh Time in Three Years. New York Times, June 13.
- S&P Dow Jones Indices LLC (2020). Ticker SPX Chart Performance. Available at: https://us.spindices.com/indices/equity/sp-500 [Accessed December 15, 2020].
- S&P 500 (2020). In: finanzen.net database. Available at: https://www.finanzen.net/index/s&p_500
- Salz, J./Rauffmann, T. (2020). Die PR-Schlacht um den besten Impfstoff ist eröffnet. In: Wirtschaftswoche (November 23). Available at: https://www.wiwo.de/unternehmen/industrie/biontech-moderna-astrazeneca-curevac-die-pr-schlacht-um-den-besten-impfstoff-ist-eroeffnet/26649554.html [Accessed November 25, 2020].
- Salzman, A. (2018). How the Financial Crisis Still Affects Investors. In: Barron’s Magazine (July 4). Available at: https://www.barrons.com/articles/how-the-financial-crisisstill-affects-investors-1536361852 [Accessed July 17, 2019].
- Sarkar, S. (2012). Der Kapitalismus untergräbt die Lebensgrundlage der Menschheit - Die aktuelle Wirtschaftskrise verstehen - Ein Ökosozialistischer Ansatz. In: Beiträge zur Umweltpolitik 1/2012 (Initiative Ökosozialismus). Cologne.
- Schäfer, U. (2009). Der Crash des Kapitalismus - Warum die entfesselte Marktwirtschaft scheiterte. Frankfurt am Main: Campus.
- Schäfer, W. (2018). Markt, Moral und Macron. Wirtschaftswissenschaftliches Studium, 5, 42-46.
- Scherhorn, G. (2009). Geld soll dienen, nicht herrschen - Die aufhaltsame Expansion des Finanzkapitals. Vienna: Picus.

- Schmidt, H. (2020). COVID-19 Rechtsfragen zur Corona-Krise. Munich: Beck.
- Schmidt, M. G. (1988). Einführung. In: Schmidt, M. G. (Ed.). Staatstätigkeit. International und historisch vergleichende Analysen, 1-35. Politische Vierteljahresschrift Special Edition, 19. DOI: https://doi.org/10.1007/978-3-322-83620-5_1.
- Schmidt, C. (2009). "2010 ist ein ganz langsamer Aufschwung möglich". Interview with Waldermann, A.. Available at: https://www.spiegel.de/wirtschaft/wirtschaftsweiser-schmidt-2010-ist-ein-ganz-langsamer-aufschwung-moeglich-a-611746.html [Accessed October 7, 2020].
- Schmitz, M. P./Kuhl, M./Maas, S./Ahmed, M. N./Hesse, J. W. (2010). Die Auswirkungen der Finanzkrise auf die deutsche Land- und Ernährungswirtschaft - eine makroökonometrische Analyse. Schriftenreihe der Rentenbank Vol 26 - Auswirkungen der Finanzkrise und volatiler Märkte auf die Agrarwirtschaft, 8-44.
- Schnabel, I./Brunnermeier, M. K. (2014). Spekulationsblasen und Zentralbankpolitik - Eine historische Perspektive. Frankfurt. Available at: https://www.ifk-cfs.de/fileadmin/downloads/Media_Lounge/News/Schnabel_presentation.pdf [Accessed August 13, 2019].
- Schriever, K. (2020). Bankenregulierung als strategischer Partner. In: KPMG News (April 30). Available at: https://home.kpmg/de/de/blogs/home/posts/2020/04/bankenregulierung-als-strategischer-partner.html [Accessed December 11, 2020].
- Schubert, C. (2020): Sanofi: Die Amerikaner bekommen den Impfstoff von uns zuerst. In: FAZ.net (May 13). Availabe at: https://www.faz.net/aktuell/wirtschaft/unternehmen/sanofi-usa-bekommen-impfstoff-gegen-coronavirus-zuerst-16768601.html#void [Accessed November 25, 2020].
- Schubert, M./Watzka, S./Hinze, J./Leschus, L./Schnabl, G. (2012). Leitzinssenkung auf historischem Allzeittief: Welche Folgen hat die Niedrigzinspolitik der EZB? ifo Institut - Leibniz-Institut für Wirtschaftsforschung at the University of Munich. Munich. Vol 65, Iss. 16, 3-19.
- Schüddemage, A. (2011). Finanzkrise kommt in deutschen Haushalten an. In: Frankfurter Rundschau online (October 31). Available at: http://www.fr-online.de/wirtschaft/finanzkrise-kommt-in-deutschen-haushalten-an/-/1472780/4692090/-/view/asFirstTeaser/-/index.html [Accessed December 01, 2012].

- Schui, F. (2015). Austerität: Eine Geschichte des Scheiterns. Interview with Salzer, A.. In: Science@ORF.at (July 31). Available at: https://sciencev2.orf.at/stories/1761231/index.html [Accessed June 11, 2020].
- Schulmeister, S. (2013). Realkapitalismus und Finanzkapitalismus - zwei "Spielanordnungen" und zwei Phasen des "langen Zyklus". In: Kromphardt, J. (Ed.). Weiterentwicklung der Keynes'schen Theorie und empirische Analysen. Schriften der Keynes-Gesellschaft Vol 7. Marburg, 115-169.
- Schumann, H./Grefe, C. (2008). Der globale Countdown - Gerechtigkeit oder Selbstzerstörung - die Zukunft der Globalisierung. Cologne: Kiepenheuer & Witsch.
- Seidl, B./Brandt, M. (2018). 90 Jahre Schwarzer Freitag an der Berliner Börse (ard.de). Available at: https://multimedia.boerse.ard.de/schwarzer-freitag-berliner-boerse#3653 [Accessed May 22, 2020].
- Sinković, D. (2020). Konačan slom - Korona Kriza Ekonomska Analiza. In: Glas Istre (March 30), 19-30.
- Sinković, D. (2020). Zdravlje, znanje i sigurnost temelj su uspješnih gospodarstava. In: Glas Slavonije (June 6). Available at: https://www.glas-slavonije.hr/434198/11/Dean-Sinkovic-Zdravlje-znanje-i-sigurnost-temelj-su-uspjesnih-gospodarstav [Accessed June 6, 2020].
- Sinn, H.-W. (2009). Kasino-Kapitalismus - Wie es zur Finanzkrise kam und was jetzt zu tun ist. Berlin: Econ.
- Sinn, H.-W. (2018). Ich kann nur jedem raten, die nächsten Jahre auf der Hut zu sein. In: Capital Online (April 30). Available at: https://www.hanswernersinn.de/de/Interview_Capital_02052018 [Accessed December 07, 2020].
- Sinn, H.-W. (2020a). Wie eine Corona-Ökonomie aussehen muss. In: Handelsblatt (March 15). Available at: https://www.handelsblatt.com/meinung/gastbeitraege/gastkommentar-wie-eine-corona-oekonomie-aussehen-muss/25642468.html?ticket=ST-373864-a6dL5hOpl4svrOGerNdJ-ap3 [Accessed May 21, 2020].
- Sinn, H.-W. (2020b). "Coronabonds führen zu einer Verschuldungslawine, die nichts als Hass und Streit übrig lassen wird". In: Börse am Sonntag - Interview conducted by Oliver Götz (April 03). Available at: https://www.boerse-am-sonntag.de/aktien/markt-im-fokus/artikel/hans-werner-sinn-warnt-vor-corona-bonds-und-verschuldungslawine.html [Accessed June 1, 2020].

- Smith, A. (2008). Inflation surges to 5.6%. Available at: Money Special Report Issue #1 America's Money (August 14). Available at: https://money.cnn.com/2008/08/14/news/economy/cpi/index.htm [Accessed April 26, 2020].
- Smith, J. S. (2014). A Concise History of the New Deal. Cambridge. DOI: https://doi.org/10.1017/CBO9781139021258.
- Soboczynski, A. (2005). Der New Deal. In: Der Tagesspiegel.de (January 17). Available at: http://www.tagesspiegel.de/zeitung/der-newdeal/v_default,577794.html [Accessed July 20, 2019].
- Soros, G. (1998). The Crisis of Global Capitalism: Open Society Endangered. New York: Public Affairs.
- Soros, G. (2009). Die Analyse der Finanzkrise … und was sie bedeutet - weltweit. Munich: FinanzBuch.
- State Council of the American Occupation Area Germany/Länderrat des Amerikanischen Besatzungsgebiets (Ed.) (1949). Statistisches Handbuch von Deutschland 1928-1944. Munich: Franz-Ehrenwirth.
- Steinbrück, P. (German Federal Ministry of Finance). Press Release and government statement of September 25, 2008 on the state of the financial markets.
- Stoeferle, R.-P./Valek, M. J. (2017). Gold and the Turning of the Monetary Tides. in gold we trust.report from Incrementum AG (June 1).
- Stoeferle, R.-P./Valek, M. J. (2018). Gold and the Turning of the Monetary Tides. in gold we trust.report from Incrementum AG (May 29).
- Storbeck, O. (2009). Die Jahrhundert-Krise - Über Finanzalchemisten, das Versagen der Notenbanken und John Maynard Keynes. Stuttgart: Schäffer-Poeschel.
- Straubhaar, T./Wohlgemuth, M./Zweynert, J. (2009). Rückkehr des Keynesianismus - Anmerkungen aus ordnungspolitischer Sicht (May 01). Aus Politik und Zeitgeschichte 20/2009, 19-26.
- Straumann, T. (2019). “Auch in den 1920er Jahren waren die Zinsen über eine längere Zeit zu tief”. Interview with Ferber, M.. In: Neue Zürcher Zeitung (October 24). Available at: https://www.nzz.ch/finanzen/boersen-crash-parallelen-zwischen-1929-und-heute-ld.1517224 [Accessed July 13, 2020].
- Stroisch, J./Jeimke-Karge, H./Brück, M./Detering, M. (2009). Chronik: Finanzkrise: Vom Immobilienboom zum Börsen-Crash. Available at:

http://www.wiwo.de/finanzen/finanzkrise-vom-immobilienboom-zum-boersen-crash-271063 [Accessed July 31, 2019].

- Strotz, P. (2007). Verkauf aus höchster Not. In: Zeit Online (August 26). Available at: http://www.zeit.de/online/2007/35/verkauf-sachsenlb-lbbw-perfekt?from=rss [Accessed July 29, 2019].
- Sturm, R. (2011). Weimarer Republik. In: Bundeszentrale für politische Bildung (bpb). Issue 261/2011. Bonn.
- Svennilson, I. (1954). Growth and Stagnation in the European Economy. Geneva: United Nations Economic Commission for Europe.
- Tagesschau (2008). Die Konjunktur kippt (November 28). Available at: http://www.tagesschau.de/wirtschaft/chronologiefinanzmarktkrise108.html [Accessed July 28, 2019].
- Tagesschau (2009). Der Staat steigt bei der Commerzbank ein (January 31). Available at: http://www.tagesschau.de/wirtschaft/chronologiefinanzmarktkrise112.html [Accessed July 28, 2019].
- Tagesschau (2020). Corona-Krise - Fluggesellschaften rufen nach Hilfe. Available at: (March 16) https://www.tagesschau.de/inland/corona-airlines-101.html [Accessed October 29, 2020].
- Tallman, E./White, E. N. (2017). Monetary Policy When One Size Does Not Fit All: Federal Reserve Banks and the Recession of 1920-1921. Workshop on Monetary and Financial History Federal Reserve Bank of Atlanta and Emory University (May 15-17).
- Temin, P./Voth, H.-J. (2001) Wirtschaftskrise - So fern und doch so möglich. In: Zeit Online (October 25). Available at: http://www.zeit.de/2001/44/200144_g-depression.neu.xml [Accessed July 10, 2019].
- Tett, G. (2009). Genesis of the debt disaster. In: Financial Times (May 01). Available at: https://www.ft.com/content/51f425ac-351e-11de-940a-00144feabdc0 [Accessed August 01, 2019].
- The Office of Management and Budget, St. Louis Fed, Board of Governors, FRED (2020). Federal Debt: Total Public Debt as Percent of Gross Domestic Product (left) and Effective Federal Funds Rate. Available at: https://fred.stlouisfed.org/graph/?g=onh5 [Accessed December 14, 2020].

- The White House (2019). Remarks by President Trump Before Marine One Departure (August 21). Available at: https://www.whitehouse.gov/briefings-statements/remarks-president-trump-marine-one-departure-60/ [Accessed December 08, 2020].
- The White House (2019). Infrastructure - Deliver 21st Century Infrastructure (03/2019). Available at: https://www.whitehouse.gov/wp-content/uploads/2019/03/FY20-Fact-Sheet_Infrastructure_FINAL.pdf [Accessed July 10, 2020].
- The White House (2020). EO on Accelerating the Nation's Economic Recovery from the COVID-19 Emergency by Expediting Infrastructure Investments and Other Activities (June 04). Available at: https://www.whitehouse.gov/presidential-actions/eo-accelerating-nations-economic-recovery-covid-19-emergency-expediting-infrastructure-investments-activities/ [Accessed July 10, 2020].
- Ther, P. (2017). Eine Einführung in die Geschichte des Neoliberalismus. In: Olteanu, T./Spöri, T./Jaitner, F./Asenbaum, H. (Eds.). Osteuropa transformiert - Sozialismus, Demokratie und Utopie, 125-153. Wiesbaden: Springer. DOI: https://doi.org/10.1007/978-3-658-17818-5_8.
- Thompson, N. (2017). Ukraine. Everything you need to know about how we got here. In: CNN (February 03). Available at: https://edition.cnn.com/2015/02/10/europe/ukraine-war-how-we-got-here/index.html [Accessed August 17, 2020].
- Tooze, A. (2018). Droht ein erneuter Absturz der Weltwirtschaft? In: Deutschlandfunk Kultur (September 08). Available at: https://www.deutschlandfunkkultur.de/zehn-jahre-nach-der-finanzmarkt-krise-droht-ein-erneuter.990.de.html?dram:article_id=427551 [Accessed August 10, 2020].
- Trump, D. (2016). Trump says U.S. has a 'false economy,' interest rates must change. In: Reuters (September 5, 2016). Available at: https://www.reuters.com/article/usa-election-trump-idINKCN11B24G [Accessed December 08, 2020].
- Ullmann, H. P. (2004). Kriegswirtschaft. In: Hirschfeld, G./Krumeich, G./Renz, I. (Eds.). Enzyklopädie Erster Weltkrieg, 220-232. Paderborn: Ferdinand Schöningh.
- Ulshöfer, G./Bonnet, G. (2009). Corporate Social Responsibility auf dem Finanzmarkt - Nachhaltiges Investment - politische Strategien - ethische Grundlagen. Wiesbaden: Springer.
- U.S. Bureau of Economic Analysis (2020). Gross Domestic Product, 1st Quarter 2020 (Advance Estimate). News Release April 29, 2020.

- U.S. Bureau of Economic Analysis (2020). Gross Domestic Product. Available at: FRED, https://fred.stlouisfed.org/series/GDP [Accessed May 25, 2020].
- U.S. Bureau of Economic Analysis (2020). Gross Domestic Product. Third Quarter 2020 (Second Estimate). Corporate Profits. Third Quarter 2020 (Preliminary Estimate). Available at: https://www.bea.gov/news/2020/gross-domestic-product-3rd-quarter-2020-second-estimate-corporate-profits-3rd-quarter#:~:text=Real%20gross%20domestic%20product%20(GDP,real%20GDP%20decreased%2031.4%20percent [Accessed November 25, 2020].
- U.S. Bureau of Economic Analysis (2020). Gross Domestic Product, 1st Quarter 2020 (Advance Estimate). News release. Available at: https://www.bea.gov/news/2020/gross-domestic-product-1st-quarter-2020-advance-estimate [Accessed April 29, 2020].
- U.S. Bureau of Labor Statistics (2020). Economic News Release - Consumer Price Index Summary April 2020. News Release May 12, 2020.
- U.S. Bureau of Labor Statistics (2020). The Employment Situation April 2020. News Release (May 08, 2020). USDL-20-0815).
- U.S. Bureau of Labor Statistics (2020): Economic News Release - Consumer Price Index Summary November 2020. News Release December 10, 2020.
- U.S. Congress (1953). Joint Committee on the Economic Report. Economic Indicators. Historical and Descriptive Supplement. Washington.
- U.S. Congress (2020). Coronavirus Preparedness and Response Supplemental Appropriations Act. Public Law 116-123. March 6, 2020.
- U.S. Department of Labor: Bureau of Labor Statistics (2014). Consumer Price Index for all urban consumers (all items). Available at: https://research.stlouisfed.org/
- U.S. Department of Labor (2020). News Release Unemployment Insurance Weekly Claims (September 10).
- U.S. Department of Labor (2020). The employment situation - September 2020 (October 02).
- U.S. Department of Labor (2020). Unemployment insurance program letter No. 21-20. Available at: https://wdr.doleta.gov/directives/corr_doc.cfm?DOCN=9622 [Accessed November 09, 2020].
- U.S. Department of Labor (2020). News Release - U.S. Department of Labor issues additional guidance about short-time compensation program provisions. Available at: https://www.dol.gov/newsroom/releases/eta/eta20200504 [Accessed November 9, 2020].

- U.S. Department of the Treasury Bureau of the Fiscal Service (2020). TreasuryDirect - Public Debt Reports as of March 31, 2020. Available at: https://treasurydirect.gov/govt/reports/pd/pd_debttothepenny.htm [Accessed June 05, 2020].
- U.S. Department of the Treasury Bureau of the Fiscal Service (2020). TreasuryDirect - Public Debt Reports as of June 11, 2020. Available at: https://treasurydirect.gov/govt/reports/pd/pd_debttothepenny.htm [Accessed June 15, 2020].
- U.S. Department of the Treasury (2020). Major Foreign Holders of Treasury Securities - as of March 31, 2020. Available at: https://ticdata.treasury.gov/Publish/mfh.txt [Accessed June 05, 2020].
- U.S. Department of the Treasury (2020). The CARES Act Works for All Americans. Available at: https://home.treasury.gov/policy-issues/cares [Accessed November 9, 2020].
- U.S. Office of Management and Budget and Federal Reserve Bank of St. Louis (2020). Federal Debt: Total Public Debt as Percent of Gross Domestic Product. Available at: FRED, https://fred.stlouisfed.org/series/GFDEGDQ188S [Accessed May 13, 2020].
- Vague, R. (2016). The Private Debt Crisis. In: Democracy - A Journal of ideas 42/2016.
- Verdun, A. (2019). Is Europe ready for the next financial crisis?. Available at: University Leiden (September 26) https://www.universiteitleiden.nl/en/news/2019/09/is-europe-ready-for-the-next-financial-crisis [Accessed December 07, 2020].
- Volkert, L. (2018). Feuer, Wut und überdimensionierte Briefumschläge. In: Süddeutsche Zeitung (June 11). Available at: https://www.sueddeutsche.de/politik/donald-trump-und-kim-jong-un-feuer-wut-und-ueberdimensionierte-briefumschlaege-1.3899255 [Accessed August 17, 2020].
- Wagemann, E. (Ed.) (1935). Konjunkturstatistisches Handbuch 1936. Berlin: Hanseatische Verlagsanstalt Hamburg.
- Wagner, A. (2020). Corona-Schulden - Geht der Welt das Geld aus?. In: mdr.de (June 02). Available at: https://www.mdr.de/wissen/corona-krise-schulden-100.html [Accessed June 12, 2020].
- Waiwood, P. (2013). Recession of 1937-38. Available at: Federal Reserve History (November 22) https://www.federalreservehistory.org/essays/recession_of_1937_38 [Accessed May 5, 2020].

- Walsh, C. E. (1993). What caused the 1990-1991 recession?. In: Economic Review - Federal Reserve Bank of San Francisco. 1993-No. 2, 33-48.
- Wearden, G. (2015). US economic growth slows sharply to 1.5% - as it happened. In: The Guardian (October 29). Available at: https://www.theguardian.com/business/live/2015/oct/29/us-economy-gdp-slowdown-rate-hike-business-live [Accessed August 17, 2020].
- Weber, M. (2011). Wirtschaftsgeschichte - Abriß der universalen Sozial- und Wirtschaftsgeschichte. Aus den nachgelassenen Vorlesungen hrsg. von Hellmann, S./Palyi, M. (Eds.). Berlin. DOI: https://doi.org/10.3790/978-3-428-53511-8.
- Welt.de (2015). Eurozone rutscht laut EU-Prognose 2015 in Deflation (February 05). Available at: https://www.welt.de/newsticker/news1/article137140806/Eurozone-rutscht-laut-EU-Prognose-2015-in-Deflation.html [Accessed May 06, 2020].
- Wermuth, D. (2014). Nullzinsen: situationsgerecht, aber auf Dauer gefährlich. In: Zeit online (March 19). Available at: https://blog.zeit.de/herdentrieb/2014/03/19/nullzinsen-situationsgerecht-aber-auf-dauer-gefahrlich_7177 [Accessed December 07, 2020].
- Wermuth, D. (2015). Zinsen werden lange niedrig bleiben - Schuldenüberhang verhindert Anstieg der Inflation. In: Zeit online (October 13). Available at: https://blog.zeit.de/herdentrieb/2015/10/13/zinsen-werden-lange-niedrig-bleiben-schuldenuberhang-verhindert-anstieg-der-inflation_8934?sort=asc&comments_page=2 [Accessed June 10, 2020].
- Werner, R. A. (2002). Das Zentralbanken-Komplott. In: Der Standard (June 27). Available at: https://www.derstandard.at/story/926535/das-zentralbanken-komplott [Accessed June 24, 2020].
- Werner, R. A. (2012). Geld- und Zinswirtschaft ohne volkswirtschaftliches Wachstum. Denkwerk Zukunft - Konferenz Leben ohne Zins und Wachstum. Berlin.
- Werner, R. A. (2017). In: Hartz, Marlene (November 30). Warum niedrige Zinsen nicht für steigendes Wachstum sorgen. Available at: https://citywire.de/news/richard-a-werner-warum-niedrige-zinsen-nicht-fur-steigendes-wachstum-sorgen/a1073667 [Accessed June 24, 2020].
- Wheelock, D. C. (2007). The Great Depression: An Overview (pp. 6-14). In: Federal Reserve Bank of St. Louis. Available at: https://www.stlouisfed.org/~/media/files/pdfs/great-depression/the-great-depression-wheelock-overview.pdf [Accessed May 6, 2020].

- Wiebe, F. (2020). Die EZB akzeptiert nun auch Schrottpapiere als Sicherheiten. In: Handelsblatt (April 22). Available at: https://www.handelsblatt.com/finanzen/geldpolitik/geldpolitik-die-ezb-akzeptiert-nun-auch-schrottpapiere-als-sicherheiten/25764664.html?ticket=ST-6133470-15UMtCzaO51D9rJpBKhf-ap5 [Accessed November 22, 2020].
- Wimalasena, J. (2020). Erpressung auf Kosten der Bevölkerung. In: Zeit online (October 21). Available at: https://www.zeit.de/politik/ausland/2020-10/usa-coronavirus-hilfspaket-streit-verhandlungen/komplettansicht [Accessed November 11, 2020].
- World Bank (2020). Inflation, consumer prices for the United States (FPCPITOTLZGUSA). Available at: FRED, Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/FPCPITOTLZGUSA [Accessed April 23, 2020].
- World Bank (2020). Inflation, consumer prices for the European Union (annual %). Available at: World Bank, https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=EU&start=1999 [Accessed April, 25, 2020].
- World Trade Organization (2020). Trade Profiles 2020. Geneva 2020.
- Woyke, W. (1985). Internationale Bank für Wiederaufbau und Entwicklung/Weltbank. In: Andersen, U. (Ed.). Handbuchwörterbuch Internationale Organisationen. Wiesbaden. DOI: 10.1007/978-3-531-91792-4.
- Woytinsky, W. (1932). Das Wirtschaftsprogramm der Reichsregierung. In: Die Arbeit - Zeitschrift für Gewerkschaftspolitik und Wirtschaftskunde 9 (Issue 10), 585-597.
- Zandi, M. (2009). Financial Shock: A 360 Degree Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis. New Jersey: Ft Press.
- Zeise, L. (2009). Das Ende der Party - Die Explosion im Finanzsektor und die Krise der Weltwirtschaft. Cologne: Papyrossa.
- Zeit online (2009). 2009 war das Jahr stabiler Preise (December 29). In: Available at: https://www.zeit.de/wirtschaft/2009-12/inflation-deutschland-tiefstand?print [Accessed April 29, 2020].
- Zschaber, M. C. (2010). Der Aufschwung kommt - Warum es mit der Wirtschaft jetzt aufwärts geht und wie Sie davon profitieren können. Frankfurt am Main: Campus.
- Zschäpitz, H. (2018). Mit dem Krypto-Trick wagt Venezuela ein Jahrhundert-Experiment. In: Welt.de (August 20). Available at:

https://www.welt.de/wirtschaft/article181238842/Venezuela-Nicolas-Maduro-koppelt-Bolivar-an-Kryptowaehrung-Petro.html [Accessed December 09, 2020].

- Zschäpitz, H. (2019). Zieht die EZB die extremste Waffe der Geldpolitik?. In: Welt.de (November 15). Available at: https://www.welt.de/finanzen/article188758349/ [Accessed July 17, 2019].
- Zürn, M. (2020). Globalisierung nach Corona: Zurück in die Zukunft?. Available at: Wissenschaftszentrum Berlin für Sozialforschung (April 03) https://wzb.eu/de/forschung/corona-und-die-folgen/globalisierung-nach-corona-zurueck-in-die-zukunft [Accessed August 17, 2020].
- Zydra, M. (2020). Historischer Strategiewechsel der US-Notenbank. In: Süddeutsche Zeitung (August 27). Available at: https://www.sueddeutsche.de/wirtschaft/inflation-usa-fed-1.5012075 [Accessed November 15, 2020].

Statutory Declaration

I, Sebastian ZEMLA (ID 1819001103), **PhD Candidate at International Joint Cross-Border PhD Programme in International Economic Relations and Management**, led by the Academic and Scientific Consortium in Collaboration with the University of Applied Sciences Burgenland (Austria), the Juraj Dobrila University of Pula (Croatia), the University of Economics in Bratislava (Slovakia), the University of Sopron (Hungary), the University North, Varaždin (Croatia), the University of Mostar (Bosnia and Herzegovina) and the Czech University of Life Sciences Prague (Czech Republic); hereby declare that I have completed and submitted PhD thesis to **Juraj Dobrila University of Pula, Faculty of Economics and Tourism "Dr. Mijo Mirković"** with the title **"*Financial and economic crises in comparative perspective - Crisis management and its phenomenon of repetition / return*"** as result of my own work, that is based on my research and relies on published literature, as used bibliography shows. I declare that no part of the thesis is written in an unauthorized manner violating copyright, without using any sources or resources other than those stated. I declare that I haven't submitted my PhD thesis to any other academic institution, beside Juraj Dobrila University of Pula, which will be shared with other Consortium members in accordance with copyright law, good academic practice, to promote access to scientific information.

Pula, 26th October 2021

Sebastian Zemla

(Signature)