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THESES OF THE DOCTORAL (PhD) DISSERTATION

RESPONSES TO THE IMPACTS OF THE GLOBAL
FINANCIAL CRISIS
CHALLENGES TO THE CENTRAL BANKS

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The choice of the topic

As a lecturer at the University of Hertfordshire- Szamalk School of Economic Studies, I taught International Financial Management from 2001 to 2007, then I joined Dennis Gabor College, where my subjects and research field included economic integration in the EU and international finance. At present, I teach finance at the Budapest University of Technology and Economics. Previously, I did research in international banking and institutions. My doctoral dissertation (1986) deals with World Bank projects in Hungary.

In 2006, I studied the issue of the euro- adoption in Hungary with regard of the Convergence Programme including the goals to be achieved in order to fulfill the Maastricht criteria. My research focused on the impacts of the global financial crisis the sovereign debt crisis and the escalation of Greece's fiscal problems in 2010. I dealt with the institutions set up to rescue ailing euro area member countries, the German proposal for establishing a rescue fund: the European Monetary Fund (EMF), the European Financial Stability Facility (EFSF) and the European Stability Mechanism. Questions addressed were efficacy, feasibility and moral hazard.

The global financial and the subsequent economic crisis raised the issue of responsibility from many aspects. In 2013, my research work focused on the lessons that can be learned to prevent such a big shock in the future. It implies answering whether financial regulations are needed, and how the global financial system can be reformed to become more resilient to shocks through implementing financial sector reform steps.

Critical discussions on the design of EMU have been going on ever since the Maastricht Treaty was signed. The financial and subsequent sovereign debt crisis have had a deep impact on the level and pace of economic growth and macrofinancial stability in Europe. The euro area's exposure to the global and

sovereign crises exacerbated by faulty concepts on synchronization of EMU member states' business cycles and on macroeconomic stability, motivated me to research the topic and examine how to enhance the stability and prosperity of the European monetary integration.

The crisis has posed new challenges to fiscal and monetary policies in all the countries, including the euro area. Numerous and creative monetary and fiscal policy or financial interventions have been deployed either in the European Union or in the US, China and Japan to limit the damage and mitigate the crisis. In my dissertation I intend to give a broad overview and assessment of the responses of monetary, and to some extent fiscal policies to the crisis giving comparisons of the reactions in different economies. Previously, I studied the specific features of the Chinese and the Japanese economies, and compiled some teaching material for my students in International Economics. Dealing with the monetary policy responses to the crisis, my attention turned to the central banks, and I began to study the leading central banks from various aspects. I formulated my theses, and I have summarized the results of my research in my dissertation.

1. THE STRUCTURE OF THE DISSERTATION

It should be noted that this crisis, although it demonstrates features that are similar to those in the past, was much greater in its severeness and intensity. The dissertation focuses on the monetary and partly on the fiscal responses to the global financial crisis in the Economic and Monetary Union. To obtain a thorough assessment and conclusion, the reactions of policies in the US, UK, China and Japan are compared with that of the Economic and Monetary Union.

The dissertation consists of nine parts. Part 1 introduces my motivations and the selection of the topic. It includes my research questions, as well as the methodology, and my hypotheses that I formulated during the process of my research work. Part 2 introduces the theoretical framework, in which I have collected and examined the main theories that deal with the European monetary integration, the business cycles and financial instability. My analysis will start in Part 3 with the assessment of the cyclical and structural components of the crises, introducing various approaches used for measuring the real impacts. In this part I examine the euro area's greater exposure to the global and sovereign crises with special regard of its structural and operational weaknesses, and the roots of the recent global financial crisis.

Part 4 provides an overview of the monetary policy responses and crisis management of the European Central Bank (ECB), the Bank of England (BoE) and the Fed. The epicentre of the crisis was located in the US during the period of 2007 and 2009. It moved to the euro area at the end of 2009 and at the beginning of 2010. Therefore monetary policy responses to the crisis of Fed, BoE and ECB were done at different times. The nature of the crisis was financial and it was triggered by a drop in financial asset prices. While in the case of the Fed and the BoE it was mainly centered around subprime assets, in the case of the ECB it was mainly centered around sovereign debt regarded

as the risk-free asset, mostly used by banks as collateral. When responding to the crisis as severe and long as the recent one, central banks in the US and in Europe took „non conventional” or „non standard” monetary policy measures. The end of this part is a brief summary of the key conclusions I have drawn when I have studied monetary policy measures of the ECB, the BoE and the Fed.

Part 5 focuses on the impact of the global financial crisis on the largest developing economy. China was one of the first major economies to recover from the spillover effects of the crisis. Thus its economic policy responses, particularly those of the People’s Bank of China (PBC), are assumed to have been effective.

Japan had experienced massive economic and political dynamics before the global financial crisis including a boom-bust cycle. Having renewed its policy tools to offer liquidity, the Bank of Japan (BoJ) promoted better risk management of financial institutions. The crisis management solutions selected by the BoJ during two periods, in the domestic crisis between 2001 and 2006, and during the global financial crisis, have been examined from different aspects in Part 6.

Part 7 provides a comparative analysis of the five selected central banks in managing the global financial crisis from the aspect of policy responses, financial regulation and supervision and central bank independence. This part identifies the signs of convergence or divergence and the multiple pathways in the character and conduct of these central banks’ approaches to facilitating systemic stability. Taking into account the comments of my opponents and the remarks discussed on the public debate, I extended my research to examining the exit strategies from unconventional monetary policies. Part 8 introduces the implications of the expanded central bank balance sheets and presents the different aspects of these strategies. Part 9 includes the research I

conducted based on statistical data to examine and show the impacts of unconventional monetary policies on the economies of the selected countries. In addition, the research focuses on the new commitment of central banks in ensuring financial stability. I did statistical research and analyzed financial statement information of systemically important financial institutions to examine the effectiveness of capital adequacy rules through financial statement data. I provide the results of the research and the assessment of the hypotheses in a separate chapter.

The summary includes my thoughts and ideas that I formulated after I have done my research and answered the research questions. This part also includes the conclusions I have drawn and the results of my research work. Then I outlined further avenues of the research work.

2. THE GOALS OF THE RESEARCH

a.) *The overall aim* of my research is to examine and analyze the monetary policy responses given to the challenges of the recent global financial crisis. Lessons drawn from the pre-crisis flaws and failures may create a basis for shaping the next stage of operating the single currency system. The examination is based on the comparison of monetary policy responses to the challenges of the global financial crisis including unconventional policy tools and central bank responsibilities in the light of the new objectives.

b.). I extended my comparative analysis to the two main Asian central economies: China and Japan. Due to the specific features of the Asian economies, I analyzed this region separately, before I made my comparative analysis of the five selected central banks. *My research aims at* examining and comparing central bank responses including the People's Bank of China

and the Bank of Japan, with special regard of their independence and their responsibility for maintaining financial system stability.

c.) The past two decades have seen a significant growth in financial liabilities in advanced economies. The financial deepening increased the fragility of the euro area leading to concentration of risks, which remarkably increased the euro area's vulnerability to shocks and cross-border contagion. Fiscal policy errors in certain member states contributed to escalating the crisis and prevented these countries from pursuing countercyclical stabilization policies. *My research aims to* analyze the response of monetary policies to the global crisis within EMU and in other major economies including the US, the UK, China and Japan. Focusing on the European monetary integration, comparison of responses with those of other economies will contribute to better understanding of alternatives under certain conditions.

d.) The framework of monetary policy shows differences in individual central banks' main goals regarding price stability. *The research aims to find out* whether and to what extent monetary policy should take into consideration financial market developments *before* a crisis occurs. As a result of that, monetary policy could better contribute to financial stability. It can be asked if price stability takes any specific form owing to the crisis. Macroprudential policy is about strengthening the resilience of the global financial system so that the procyclicality and interconnectedness of financial institutions can be managed appropriately. Should monetary policy be overburdened with other objectives? Would not that mean exaggerated expectations about the effectiveness of monetary policy tools without going against credibility? Is common fiscal and monetary policy resulted in success to better contribute to financial stability?

The answer to this questions implies examining the tools for adjusting monetary and macroprudential policies.

e.) The particular challenges for monetary policy arise from the sovereign debt crisis within the economic and monetary union, which make the conduct of the common monetary policy more difficult. The debt-curbing policies designed to resolve the sovereign debt crisis threatened Europe's social welfare model. *The research aims to find out* to what extent were austerity policies justified, and whether there was any alternative.

f.) The dissertation refines the analysis of EMU's design flaws from the aspect of EMU's fiscal and monetary policy maneuvering, asking whether it was constrained by its structural and operational weaknesses. *The research focuses on the question* whether EMU will be able to pass the serious challenges it has been confronted and what options are available to policymakers.

g.) *My central research question* addressed the five selected central banks challenged by the financial crisis. Central banks were given special attention, as they had to maintain financial stability under unprecedented circumstances and took particular responsibility when dealing with financial stability issues. The goal of the research is to answer whether the global financial crisis has widened the existing divergences, as well as the gaps between the respective legal frameworks and prevailing two-tier relationships of the central banks.

h.) *To examine the impact of unconventional monetary policy tools* on the economy, I collected GDP and unemployment data and presented the changes in the data of the economies subject to my dissertation during the

financial crisis and in the subsequent years. I made graphs to display my results.

i.) Central banks are increasingly responsible for meeting both „traditional” monetary objectives and macroprudential objectives aimed at ensuring financial stability. My research focuses on central banks’ macroprudential tools in ensuring financial stability through examining the relevant data of financial statements of nine systemically important banks with headquarters in Hungary. *The aim is to display* the impact of prudential regulation, meaning how central bank performs its new task of ensuring financial stability.

One objective of the research was to demonstrate to what extent the ratios indicate the changes of the past five years concerning capital adequacy rules and reducing risks of the banks. Based on balance sheet and profit and loss statement data, my research aims to find out whether there is significant divergence in the stability and risk-taking of the examined banks.

j.) The exit strategy from extraordinary monetary policies raises the questions whether flexible inflation targeting will remain the preferred strategy for central banks and how they will remain independent in a world, where their responsibilities concern areas that are inevitably political. *One main objective of the research* is to examine the potential pathways of the exit strategies of central banks including the role of their balance sheets in conducting the future monetary policy.

3. THE METHODOLOGY OF THE RESEARCH

The research proceeds along three main logical lines. One is the financial vulnerabilities of the incomplete design of the Economic and Monetary Union, which resulted in the turmoil in the period after the outburst of the crisis.

The second is the comparison of monetary policy responses to the challenges of the global financial crisis including unconventional policy tools. This line extends the scope to the UK and the US and provides an assessment and comparison of monetary policy responses.

The third line embraces two main Asian economies and their central banks, the People's Bank of China (PBC) and the Bank of Japan (BoJ).

The bridge to connect the three lines has been built by the analysis and comparison of the five central banks from the aspect of their reforming financial regulation and supervision, objectives and independence.

Due to China's apparent speedy resilience, I gave special attention to the PBC. I applied critical assessment concerning the strengths and weaknesses of its regulation.

My research is based on analyzing qualitative and quantitative data. I have collected data from diverse sources, including books, journals, newspapers, conference papers, reports from international organizations, government policy records and websites to test my hypotheses. I gained quantitative data from financial data sources, databases, graphs and charts.

It is not a simple presentation of such materials, rather I have integrated different arguments systematically and have developed critical assessments of their meanings and value. My study comprises logical, explanatory, exploratory and evaluative methods of analysis. The complexity of the topic required interdisciplinary comparative research in regard to the selected

economies. The study of central banks is inevitably interdisciplinary, as it covers the field of economics, finance, mathematics, management, law and statistics.

The study focused on employing data to gain insights into the policy responses and performances of the five central banks subsequent upon the global financial crisis. My work aimed to analyze the effects of the factors, policies and measures on the economy to reveal deep context.

To support my conclusions on the impact of unconventional monetary policy tools on the economy, I examined and presented the changes in GDP and unemployment data of the economies subject to my dissertation during the financial crisis and in the subsequent years. I made graphs to display my results.

To measure the impact of central bank macroprudential tools, I did statistical research and analyzed data of financial statements of systemically important financial institutions to display to what extent the ratios indicate the changes of the past five years and to examine the effectiveness of capital adequacy rules. Limited access to accounting databases of central banks made the research difficult. Nevertheless, I managed to get access to financial statement data to nine systemically important financial institutions with headquarters in Hungary, which enabled me to analyze the annual changes in the relevant ratios in each of the selected banks. I examined 11 ratios, out of which I dealt with two profitability indicator ratios: the Return on Net Assets (ROA) and the Return on Equity (ROE) in detail. As a macroprudential authority, the Hungarian Central Bank (MNB) applies its mandate to manage financial systemic risks at the national level proactively and in line with the regulatory framework of the European Union. The commitment of the MNB, the economic environment of the country as well

as the findings underpin the extension of the conclusions of research to other economies.

I used R statistical software and adapted panel regression to make my analysis. Analyzing panel data enabled to reveal the cause-effect relation in financial statement data of the selected banks. As a particularity of the method, it makes possible to divide the dependent and independent variables relation i.e. to examine idiosyncratic effect. Both fixed effects and random effects panel regressions were run with calculating their unidirectional and two-directional versions. R includes different variance estimation methods for random effect panel regression. I employed Swar and Amemiya methods. I used the Hausman test to select the panel model best corresponding to data in the examination.

My research is based on studying a great amount of relevant literature, the majority in English, due to the wide range of professional work including publications of Hungarian authors in the topic, a smaller part in Hungarian, or in Swedish.

When developing the topic, I aimed to reveal the context and the impacts of the different factors and processes in system approach and to synthesize the partial conclusions.

4. RESEARCH QUESTIONS AND HYPOTHESES

4.1. RESEARCH QUESTIONS

The past two decades have seen a significant growth in financial liabilities in advanced economies. The financial deepening increased the fragility of the euro area leading to concentration of risks, which remarkably increased the euro area's vulnerability to shocks and cross-border contagion. Fiscal policy errors in certain member states contributed to escalating the crisis and prevented these countries from pursuing countercyclical stabilization policies. My research aims to analyze the response of monetary policies to the global crisis within EMU and in other major economies including the US, the UK, China and Japan. Focusing on the European monetary integration, comparison of responses with those of other economies will contribute to better understanding of alternatives under certain conditions.

My research addressed the five selected central banks challenged by the financial crisis. Central banks were given special attention as they had to maintain financial stability under unprecedented circumstances and took particular responsibility when dealing with financial stability issues. My research questions concern the European monetary integration as well as central banks' approaches to facilitating systemic stability.

- How did the EMU deal with the effects of the global financial crisis?
- Was EMU's fiscal and monetary policy maneuvering constrained by its structural and operational weaknesses?
- Did common fiscal and monetary policy result in success to better contribute to financial stability?
- To what extent can central banks be burdened?
- How do central banks support financial sector development in developing countries?

- Whether convergence or divergence pathways characterize the conduct of the selected central banks' approaches to facilitating systemic stability?
- How to exit from unconventional monetary policies?
- How did the global financial crisis affect the central bank independence?

4.2. THE HYPOTHESES AND THE ASSESSMENT OF THE HYPOTHESES

With regard of the research questions I aimed to analyze and test the hypotheses as follows.

The 1st Hypothesis:

The global financial crisis has widened the existing divergences, as well as the gaps between the respective legal frameworks and prevailing two-tier relationships of the central banks. The prevailing two-tier relationship is changed by the financial crisis: the central bank moves closer to government while increases its direct control over the markets.

My first hypothesis has been testified by comparing the selected five central banks. The two-tier relationship has changed due to the crisis as follows.

- i.) Before the global financial crisis the five central banks operated within similar legal frameworks but in fact with different levels of independence and at varying distances from the financial markets.
- ii.) During the crisis, crisis management solutions, including monetary policy adjustments and LOLR facilities, simultaneously moved the central banks towards the governments and the financial markets.
- iii.) Following the crisis, reforms have intended to rebuild their two-tier relationships I have concluded that the two-tier relationship is relatively dynamic. The global financial crisis made it evident that in terms of convergent crisis management solutions, the five central banks had different focuses and approaches.

In summary, within similar legal frameworks, the five central banks operated during the global financial crisis in different relationships with their governments and the markets; they relied on different approaches and focuses to restore financial stability; and accordingly, their two-tier relationships have been affected by the crisis in different ways.

[Relevant literature: Han, M. (2014); Mikitani, R., Kuwayama, P.H. (1998) Poole, W. (2010); Shen et al.(2010); Shirakawa, M. (2009)]

The 2nd Hypothesis:

The incomplete design and the structural weaknesses of EMU constrained its fiscal and monetary policy maneuvering.
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My second hypothesis has been testified. The euro was designed in response to the „old” trilemma of the impossible maintenance of free capital flows, stable exchange rates and independent monetary policies at the same time. Countries with their own currencies can in principle turn to money creation to support their financial systems in times of stress. Countries without independent currencies, in the same way as countries that borrow in foreign currency, are more prone to default. At the core of EMU’s vulnerability stands the impossible trinity of strict no-monetary financing, bank-sovereign interdependence and no co-responsibility for public debt.

[Relevant literature: DeGrauwe, P. (2011); DeGrauwe, P. (2013); Eichengreen & Wyplosz, (1993); Losoncz, M. (2013); Obstfeld, M. et al, (2005); Obstfeld, M. (2013), Pisani-Ferry, J. (2012); Schoenmaker, D. (2009)]

The 3rd Hypothesis:

With the global financial crisis in general and its impact on financial stability in particular, the independence of central banks was weakened by their respective governments. Reduced independence can mitigate the central banks' market-oriented principles.

My third hypothesis has been testified. The relationship between the central bank and the government is more complicated than the principal legal provision alone. Similar operational independence was granted by law, but the actual levels of autonomy distinguished market-oriented from government-controlled central banks. My research revealed that the global financial crisis expanded certain divergences between the five selected economies including EMU. Between the US Fed and the BoE, more differences in independency and financial regulatory regimes became evident, while further gaps emerged between market-oriented and government-controlled central banks, the BoJ and the PBC. For the market-oriented central banks, independence was still desirable, with an increasing focus on systemic stability, but the BoJ and the PBC faced domestic challenges, rather than the crisis-driven changes in the US, the UK and the European Monetary Union. The crisis enhanced the triangular relationship, i.e. the government and the central bank worked more closely towards controlling financial markets, and the changed two-tier relationship became characterized by reduced central bank independence and increased government intervention in the markets.

[Relevant literature: Cargill et al.(1997); Chow, (1999); Darvas, Zs. & Merler, S. (2013); Evanoff et al, (2015); Han, M. (2014); Lardy, N. (2010); Reinhart & Rogoff (2009.)

The 4th Hypothesis:

One leading goal for central banks in developing countries is to support financial sector development. This has been further confirmed as a reform principle for developing countries in the post-crisis era.

Within the scope of my dissertation, the fourth hypothesis has been testified. This crisis has brought

central banks closer to the broader policies of their governments, and also to the financial markets. In my dissertation, I focused on two Asian economies with some specific features in common: Both had state-led economic growth: they had progressed from underdeveloped financial markets, weak legal systems, dysfunctional governance and unbalanced industry policies, and their governments played an active role in their rise. The recent crisis has forced changes that have reshaped the role of central banks, challenging the ways in which they continue to commit to their orientations.

[Relevant literature: BoJ (2012); Han, M. (2014); Li, J.(2004); Ma, G (2007); Ma, G. & McCauley, R. (2011); Yu, Y. (2007); Zhang, M. (2009)]

The 5th Hypothesis:

Central bank balance sheets have got a special emphasis in their role as the new tool of monetary policy instead of interest rates.

The fifth hypothesis has been *partly* supported by the examination of the exit strategies and the role of the central bank balance sheet in this part, as there is a trade- off between holding on to the balance sheet portfolio and increasing short-term rates. Monetary policy has come to a new stage, which is characterized by the special role of balance sheets with diversification of the

assets held on them. It does not mean giving up tightening by hiking short-term rates even if it has special implications due to the post crisis economic environment. In addition, it is the central bank's option whether to sell longer-term securities and affect the term structure of rates or to raise short-term rates.

[Relevant literature: Yardeni Research, Inc. Global Economic Briefing: Central Bank Balance Sheets, July 13, 2018; BIS Statistics; Bloomberg]

5. THE NEW SCIENTIFIC RESULTS OF THE DISSERTATION

The new scientific statements and conclusions of the dissertation are as follows.

1. The crisis brought about important changes and reforms to the central banks and beyond. Demanding reinforced central bank regulation in order to achieve system-wide stability, the financial crisis changed their pre-existing two tier relationships, and also modified the ways in which the five selected main central banks converged with and diverged from each other.
2. The crisis has changed the government–market relationship in the West, while raised the level of direct government intervention in Japan and China, which requires a re-examination of the market or government orientation for these central banks.
3. Central bank orientation can be affected by domestic vulnerabilities or external shocks; in the example of China it is rather domestic vulnerabilities that continue to affect the PBC’s orientation. As for the ECB, the central bank of the euro area member states, it is fundamentally different from those of the other four selected central banks. Consequently, its legal governance as a supranational central bank for Europe’s single currency places outside the same framework of the two-tier relationship.
4. Central banks are first and foremost institutions responsible for designing and implementing monetary policies. Further developing their organizational structures and replacing the strict hierarchy through functional reorganization, they can be more diverse towards flatter management to deal with financial stability.

5. The crisis has confirmed the importance of transparency with regard of the financial markets; most central banks have been required to improve their communications and transparency, the optimal level of which is difficult to determine due to the discretion granted by law.
6. In my dissertation, I have revealed the factors lying at the core of the vulnerability of the euro area and aimed to find options ensuring its sustainability. I have concluded that EMU's fiscal and monetary policy maneuvering was constrained by its structural and operational weaknesses

The Fed and the BoE had implemented QE long before the ECB did; it has one primary objective, price stability and the others are subordinated to the first, while the Fed and the BoE have more than one, monetary stability and financial stability. This difference may provide an explanation to ECB's hesitant reaction.

7. The new governance instruments for the euro area comprise the EU's fiscal response to the crisis. The instruments addressed a wide range of fiscal and macroeconomic issues, which could threaten the sustainability of the Economic and Monetary Union. Within this framework, fiscal instruments and the coordination of economic policies will contribute to the sustainability of the monetary integration and the financial stability. Further coordination of the macroeconomic policies of the member states is necessary to promote the convergences of these economies. Owing to the specific status, the ECB can only be successful in conducting its monetary policy, which is burdened with additional responsibilities stemming from the crisis, if it relies on the fiscal policy to a greater extent in order to achieve the goals mentioned above.

8. Related to the macroprudential responsibility, the independence of central banks was weakened by their respective governments. Reduced independence can mitigate the central banks' market-oriented principles.
9. Relationships between output and unemployment had been more homogeneous across countries since the 1970s. The global financial crisis, however, turned the cross-country convergence of the Okun relationship backwards. It reflects the different pathways countries responded to the crisis.
10. Prices and market expectations are rather driven by central bank actions than on fundamentals of the real economy.
11. Central bank balance sheets have got a special emphasis in their role as the new tool of monetary policy instead of interest rates. Due to the limits of central bank balance sheet expansion, qualitative easing is likely to replace quantitative easing in forming the monetary policy.

6. FURTHER RESEARCH WORK

The assessment of the responses of the monetary policies conducted by the five central banks examined in this study opens new avenues for further research work from many aspects.

With respect of interest rates, I presume that there is a connection between the ECB and the Fed in terms of their interest rate decisions. I would use statistical analysis to demonstrate this relation. Further research is necessary to reveal whether the ECB interest rate decisions could be explained by the influence of the Fed's interest rate decisions or vice versa. I would go beyond statistical analysis in explaining the reasons.

My further research work will address the role of the common inflation target in a monetary union added to the various costs and benefits of forming a monetary union. Data collection will precede quantifying the ECB's optimal inflation target. Country-specific data on price adjustment and estimates of members' optimal stand-alone inflation targets are necessary to obtain. The global financial crisis has questioned the optimal model for central banking regarding the requisite institutional environment and design with good governance and institutional structures.

The essential relationship between central bank regulation and financial stability would require more comprehensive interdisciplinary study to analyze central bank regulation with special attention of maintaining financial stability.

One outcome from the post-crisis reforms confirms that central banks have taken up a reinforced macro-prudential regulation role with enhanced focus upon systemic stability. Further research questions may address the „twin-peak” model of market regulation.

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8. AUTHOR'S PUBLICATIONS RELEVANT TO THE PRINCIPAL RESULTS

- i.) „Managing Financial Crises: Responses, Lessons, Prevention” In: Katarina Holla, Michal Titko, Jozef Ristvej (editors) *Crisis Management-Theory and Practice InTechOpen Books, London, UK, 2018* Print ISBN 978-1-78923-234-9, Online ISBN 978-1-78923-235-6 doi: 10.5772/intechopen.71641 pp. 135-156
- ii.) „Risk Management at Global Level: Strengthening the Resilience of the Global Financial System” 25th Annual EUROMA *Conference Proceedings* 2018 June 24-26, Budapest
- iii.) <http://euroma2018.org/euroma-2018-proceedings/>.
- iv.) „Monetary Policy Responses to the Global Financial Crisis. Shaping the Next Stage for the European Monetary Integration.” In: Tomas Kliestik (ed): *Globalization and its Socio-Economic Consequences, Conference Proceedings*, pp. 2043-2051, 2016 December ISBN:978-80-8154-191-9.
- v.) „The Quest for the Stability of the Global Financial System”, *Procedia Economics and Finance* 2015 Vol 34 485-492, doi: 10.1016/S2212-5671.
- vi.) „Is it the Crisis to Blame?”, *Periodica Politechnica*, Vol 22 No1 (2014) pp. 37-45, Online published: 16-05-2014 DOI: 10.3311/PPso 7427.
- vii.) „Responsibility and the Global Financial System. Quest for Stability”, In: Székely Csaba (ed.): *Publications of the International Scientific Conference „Social Responsibility, Sustainable Economy” NYME November13 2013, Sopron*, pp.100-109, ISBN: 978-963-334-144-5
- viii.) „Will a „European Monetary Fund” be Capable of Maintaining the Stability of the Eurozone?”, *Regional and Business Studies*, vol 3 suppl 2, ISSN 2061-2311, University of Kaposvár, Kaposvár, 2011.

- ix.) „The Financial Crisis and its Impact on Government Debt: Where is Hungary?”, In: Andrásy Adél (ed.): Publications of the International Scientific Conference "Credit, World, Stage" NYME November 03 2010, Sopron p.1, ISBN: 978-963-9883-73-4.
- x.) „The Criteria and the Date of the Euro-adoption in Hungary, and its Impacts on the Economy”, In: Palkovics Miklós, Weisz Miklós (eds): XLVIII. Georgikon Napok, 48th Georgikon Scientific Conference, 211 pp., Keszthely, September 21-22, 2006, Paper SE1. 5 p., ISBN:963-963-911-7; 963-96-3912-5; 978-963-9639-126 2.

9. AUTHOR'S CONFERENCE PRESENTATIONS IN THE TOPIC

i.

Time: June 24-26, 2018

Place: Budapest

The title of the conference: International EUROMA Conference

The title of the presentation: Risk Management at Global Level: Strengthening the Resilience of the Global Financial System” 25th Annual EUROMA Conference Proceedings 2018 June 24-26, Budapest,(ppt).
<http://euroma2018.org/euroma-2018-proceedings/>

ii.

Time: October 5-6, 2016

Place: Rajecke Teplice, Slovakia

The title of the conference: Globalization and its Socio-Economic Consequences

The title of the presentation: „Monetary Policy Responses to the Global Financial Crisis. Shaping the Next Stage for the European Monetary Integration”, (ppt).

iii.

Time: October 15-16, 2015

Place: Zvolen, Slovakia

The title of the conference: Business Economics and Management

The title of the presentation: „The Quest for the Stability of the Global Financial System”, (ppt).

iv.

Time: November 13, 2013

Place: Sopron

The title of the conference: International Scientific Conference "Social Responsibility, Sustainable Economy"

The title of the presentation: „Responsibility and the Global Financial System: The Quest for Stability”, (ppt).

v.

Time: September 25-29, 2010

Place: Technological Educational Institute of Crete, Greece

The title of the conference: International Research Seminar

The title of the presentation: „The Sovereign Debt and the European Monetary Integration”, (ppt).

vi.

Time: November 03, 2010

Place: Sopron

The title of the conference: „Credit, World, Stage” International Scientific Conference
The title of the presentation: „The Financial Crisis and its Impact on Government Debt: Where is Hungary?”, (ppt).

vii.

Time: September 21-22, 2006

Place: Keszthely

The title of the conference: 48th Georgikon Scientific Conference

The title of the presentation: „The Criteria and the Date of Euro-adoption in Hungary and its Impacts on the Economy”, (ppt).