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THESIS SUMMARY

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Optimum currency area theories and the functioning of the Economic and Monetary Union

Ph.D. thesis

Supervisor:

Benczes István, Ph.D

Professor

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Institute of World Economy

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1. Introduction and hypothesis description

1.1. Research background and reasons for topic selection

The European Union has survived several crises since its formation including the collapse of the Bretton Woods system, the first and the second oil crisis in 1973 and 1979-80 and the crisis of the European exchange rate mechanism in 1992-93. None of these crises was an obstacle to the deepening of the integration, what is more, according to the reactive narrative we can regard the progress and the deepening of the European Union as a sum of the responses given to these crises. Jean Monnet's ("The Father of Europe") famous saying was: '*Europe will be forged in crises, and will be the sum of the solutions adopted for those crises'* (Monnet [1976]).[1] At the time of the sovereign debt crisis of the Eurozone in 2012, Peter Praet, Member of the Executive Board of the European Central Bank made the following statement: '*as on other occasions in European history, this crisis offers a chance to progress; we must be ready to act on it. Let us not waste this opportunity to advance European integration.'*[2] On the other hand, Matthijs – Parsons [2015] emphasize that the first fifty years of European integration was a politically coherent, proactive (and sometimes aggressive) project which current decision-makers of the European Union have already forgotten (or they have tried to revive too late this method).

Unlike the crises of the emerging markets in the 1990s, the crisis, evolved in 2008-09, affected developed countries like the United States and the member states of the European Union rather than developing or emerging economies. After a short, decade-long lifetime of the Economic and Monetary Union predictions reappeared that the European monetary union would collapse because of the first crisis, thus the global financial crisis became a test of strength and milestone of economic integration (Wyplosz [1997] and Bini Smaghi [2013]). 2008 was the year of economic slowdown and by 2009 the European Union sank into a recession which has not been seen in a long time. The average GDP of the European Union decreased by 4.4% while the average GDP of the Eurozone dropped by 4.5%. At first, member states of the European Union reacted differently and individually to the crisis which caused several coordination problems.

In 2010 European economies hoped to forget the crisis and enjoy a relatively fast recovery. In the majority of EU countries this is what happened, however Greece was sinking into an even bigger recession than in 2009. Fears seemed justified; with the Greek crisis the Eurozone

[1] Jean Monnet's memoirs in the original language, French were published in 1976, while the English-language version was published in 1978.

[2] Peter Praet's speech at the annual general meeting of the International Capital Market Association in Milan, (25 May 2012) https://www.ecb.europa.eu/press/key/date/2012/html/sp120525.en.html

sovereign debt crisis (the „euro crisis”) began which spilled over into the periphery countries. After Greece, Ireland and Portugal applied for external financial assistance to recover their economy, however these countries are considered to be small states in economic terms. The real and far more severe problem of the European debt risis, namely the potential disintegration of the monetary community could have been caused by a Spanish or Italian bankruptcy (Lane [2012]). The increased burden of financing public debt caused serious difficulties in both countries, therefore they were also considering the possibility of applying for external help for months in 2012 (Aizenman et al. [2013] and Battistini et al. [2013]), until the European Central Bank – after the application of several unconventional measures – announced the Outright Monetary Transactions (OMT) program with which it succeeded in calming down the financial markets.

Fears deriving from the crisis can also be a chance, when we think back to Jean Monnet's and Peter Praet's words. Sentences of Romano Prodi, former president of the European Commission, gave us guidelines on what can or has to be done: *'I am sure the euro will oblige us to introduce a new set of economic policy instruments. It is politically impossible to propose that now. But some day there will be a crisis and new instruments will be created.'*[3]

On the one hand, the global financial crisis and the Euro crisis have revealed the institutional weaknesses and the structural problems of the Economic and Monetary Union, and, on the other hand they have defined the directions of crisis management. Responses to the euro crisis can be split into four macroeconomic areas. The first one, the European Central Bank deployed the extraordinary, unconventional toolbox of monetary policy: covered bond purchase program, securities markets program, long-term refinancing operations, outright monetary transactions and finally the initiation of the quantitative easing (Cour-Thimann – Winkler [2013]). The second one was the community or institutional responses of the EU concentrating on the framework of fiscal policy (creation of temporary and permanent crisis management facilities, 'six-pack', 'fiscal compact' and 'two-pack'). The third one was the creation of the community-level financial supervisory and regulatory system, which first gave rise to the macroprudential supervision (European Systemic Risk Board), which was followed by the creation of the microprudential supervisory system, namely the Banking Union (with elements of single rulebook, single supervisory mechanism and single resolution mechanism).[4] The fourth,

[3] Romano Prodi's interview for the Financial Times. The interview was published in print on 4 December 2001.
[4] The institutional structure of the Banking Union is not yet final; the last element of the Banking Union, the European deposit insurance scheme has not been created at the time of the preparation of the thesis.

perhaps least pronounced area were the community reforms promoting competitiveness (structural similarity): Euro Plus Pact and certain measures of the 'six-pack' referring to macroeconomic imbalances. It is worth emphasizing that the crisis management between 2010 and 2012 was basically a series of ad hoc steps which aimed to manage the actual crisis situations in Greece, Ireland, and Portugal. Then, since the end of 2012 it has been transformed into a much more conscious series of measures aiming to reconstruct the institutional system of the euro area, which intends to contemplate or finalize the institutional conditions for the Economic and Monetary Union.

The transformation of the global financial crisis into a Euro crisis and the responses of the common monetary policy and the EU institutions to it raise a number of questions some of which are easier while others are more difficult to answer. They are as follows in a logical order: What were the institutional and structural failures of the Economic and Monetary Union before the crises? What macroeconomic processes took place and what macroeconomic imbalances were emerged, that is what structural problems arose in the decade before the crisis? Why did the euro crisis arise after the global financial crisis? Why was the European integration unable to provide fast and efficient responses to the crises? What responses did the EU decision-makers give during the crisis management? What institutions were created during (and after) the crisis management? And finally, probably the most important question **whether these new institutions and regulations can really correct the failures of the Eurozone's institutional set-up and mechanisms, or further actions are necessary for this?**

The topic of the present doctoral research – with special emphasis on certain points – is to give answers to the above-mentioned questions. During the dissertation we strive to create a new framework by which we can explain and understand the Euro crisis and the complex institutional responses given to it. During the period since the crisis of 2008-2009 research programs related to the European Monetary Union, the Euro crisis and the crisis management measures have spread to almost every social science discipline and generated a huge literature.

1.2. Hypothesis of the dissertation

The eurozone is currently a heterogeneous economic community consisting of 19 member states. The economic, social, and political characteristics of the member states differ significantly from each other, and these differences can only be mitigated in the long term or cannot be reduced at all. Therefore, it is worth examining what impacts the institutional structure of the eurozone has on member states.[5] The pre-crisis period of the Economic and Monetary Union can be considered to be ambiguous in terms of success; the analysis made by the European Commission [2008] evaluating the first ten years of the Eurozone draws attention to a number of risks and problems (low growth, inflation differentials and current account imbalances) besides the successes (anchoring of inflation expectations, and macroeconomic stability). The asymmetric institutional set-up of the monetary union – monetary policy delegated to community level and rule-based fiscal policy at national level – contributed to the pre-crisis successes of the eurozone, as well as to the increase of the risks and problems. Furthermore, on the one hand, no financial supervisory or regulatory systems have been created at Community level, thus the vicious circle between the banking system and the sovereigns has not been dissolved and, on the other hand, 'soft' governance elements have not had any substantial effect on member states in promoting similar economic characteristics. The falsehood of the positive economic developments prior to the global financial crisis is that it made EU decision-makers believe that the Economic and Monetary Union has a well-functioning institutional framework. All this was true until the first economic crisis reached the European continent. Thus, the rigid institutional structure of the EU and together with the lack of certain institutional building blocks also aggravated the effects of the crisis. It can be assumed that the institutional structure of the Eurozone would have required modifications and supplements in time even if the global financial crisis had not resulted in a European sovereign debt crisis. The Euro crisis 'created' this opportunity. Therefore, we have formulated a single hypothesis:

Hypothesis: The functioning of the Economic and Monetary Union can be improved by the transformation of its former institutional framework

First of all, it is necessary to clarify our system of thought behind the hypothesis and to properly narrow the interpretability of the hypothesis. The Economic and Monetary Union cannot be regarded as an optimal currency area; such a heterogeneous economic community is not able to work jointly in a proper way. This was well demonstrated by the pre-crisis period; the economic, institutional, social, or even political characteristics of the member states causing heterogeneity did not converge in practice. Not even the endogeneity of the theory of optimum currency area did operate, although Frankel and Rose's [1997, 1998 and 2002] approach

[5] It is worth highlighting that the first decade of the European Monetary Union coincided with the last period of the 'Great Moderation' when an ample liquidity-based, favourable world economy boom developed, while the centres of gravity of global economy avoided serious recessions.

suggested that despite the preliminary non-compliance with the criteria of the theory of optimum currency area, countries using the single currency would have similar economic characteristics in time.

Instead of an optimally operating monetary union, it is more worthwhile to put emphasis on its sufficient or sustainable operation. By Begg et al. [2015], **sustainable integration is described with the following attributes: durable, resilient, and politically acceptable**. Among these factors, our study concentrates on resilience. **The concept of "resilience" can be divided into two parts: better protection against recessions, i.e. risk reduction, and less costs related to crises, i.e. risk-sharing**. In both cases we are interested in with what kind of tools can the reduce the risks of crises, and if the recession is inevitable, with what kind of tools can its effects be attenuated, and how the recovery can be fostered at the same time (regarding the literature see: Furceri – Zdzienicka [2013], Balassone et al. [2016], Ferrari – Picco [2016], Poghosyan et al. [2016], Sondermann [2016] és Eyraud [2017]). Decision-makers of the European Union have to concentrate on these two areas during the transformation of the Eurozone's institutional structure.

The concept of institutional framework applied in the hypothesis should be defined, too. Basically, such institutions and rules of the Economic and Monetary Union are meant under this term that can be covered by the four macroeconomic areas: monetary policy, fiscal policy, financial supervisory and regulatory system, and the community reforms promoting competitiveness and structural policy. In all the four areas we analyze the processes take place at community-level, from the aspect of the institutional structure of the union, these certainly represent different levels (policies delegated to community-level, or rule-based policies). As a reason of the strong interconnection of the four areas, the sum of the covered institutions and rules can be called **macroeconomic governance**.

2. Presentation of the applied method

2.1. Optimum currency area theories

Two frameworks can analyze the formation and operation of the monetary union: the traditional cost-benefit analysis and the optimum currency area theory. If we want to answer the question whether it is worth for countries to create or join a monetary union, it the identification of costs and benefits is necessary. Cost-benefit analysis is meant to accomplish that. On the side of costs, the most important item is generated at the side of monetary policy: a country loses the autonomy of monetary policy and exchange rate policy as adjustment tool. And on the side of benefits, the disappearance of transaction costs, transparency of prices, exchange rate stability, and credibility occur. During cost-benefit analysis, two crucial problems must be pointed out: first, most of the costs and benefits cannot be quantified, and second, the differences between static and dynamic comparison. These two problems are mostly caused by the fact that costs occur at a macro level (macroeconomic stability), while benefits appear in a micro level (microeconomic effectiveness) for an economy.

Optimum currency area theory enables more complex and comprehensive analysis, although this theory consists of diverse generations and approaches. Optimal currency area theory dates back to the 1960s and seeks answer for the following question: with what tools the loss of nominal exchange rate adjustment as balancing mechanism can be substituted. Mundell [1961] considered the mobility of factors of production, McKinnon [1963] regarded the high level of economic openness, while Kenen [1969] believed that diversified production and consumption, and supranational fiscal transfers are the solutions. Besides, numerous other criteria occurred that are necessary for satisfying ‘optimality’: flexibility of prices and wages, financial market integration, similar inflation rates among the member states, and finally, political willingness.

The new approach of optimum currency area theory – evidently building on the monetarist school of economics – questions the efficiency of monetary policy tools (so monetary policy can be delegated to community level), and it expects much more benefit from the formation of the monetary union than earlier, traditional theories. The debate of paradigms – specialization and endogeneity – puts the functioning of a currency area into research interest (Krugram – Venables [1996] and Frankel – Rose [1997, 1998 and 2002]). According to the specialization paradigm, the increasing trade relationship among member states can turn a formerly optimally operating monetary union backwards. On the contrary, endogeneity (and endogeneities) presumes that if a country previously cannot accomplish the conditions of optimum currency area, after joining the monetary union, it will subsequently satisfy these conditions. A key difference between the two approaches is that while specialization paradigm emphasizes the potential negative integrational effects of external trade, endogeneity counts on the positive ones. The most recent strand of the optimum currency area theory is the is the ‘exogenous’ approach. This is based on the presumption that if the conditions of the traditional, new, and dynamic theories of optimum currency area are not fulfilled, then such institutional structure has to be established that solves this problem (Dorrucci et al. [2002 and 2015] and Agur et al. [2007]). Empirical papers regarding the exogeneity of optimum currency areas examines the different integrational levels of the European Union with composite indicators and the relationship between trade integration and institutional integration instead of deep and comprehensive institutional analysis. Dorrucci et al. [2015] recalibrated model incorporates the post-crisis reform steps, at the same time it is worth noting that according to the new model the Eurozone is still far from complete economic integration.

2.2. New institutional economics and the institutional theories of political science

With regard to institutions, our scope is to investigate the processes of institutional change and understand why institutions change at all During the analysis of this, we do not insist exclusively on the institutional theory applied in economics, but – based on that – we are planning to involve wide-range of institutional approaches. The fundamental argument of the new institutional economics is that the institutions matter, but the institution itself does not possess any general definition (Ostrom [2005], Hodgson [2006] and Greif – Kingston [2011]). In brief, “institutions are the rules of the society”, as North [1990, pp. 3.] states. According to the framework of Williamson [2000], from the aspect of hierarchy among institutions, our analysis is confined to the third (governmental institutions, which ensure the general operation of economy) and forth (institutions that ensure short-term, daily-base resource-allocation process) levels of institutions.

To understand institutional change, Ostrom [1986] suggests the analysis of the three separate features, which determine the outcomes: structure of action situation, action arena, and existing rules. The most frequently applied interpretation of institutional change is given by the school of historical institutional economics (North [1990, 1993, 1994 and 2005], Aoki [2001], and Acemoglu – Johnson – Robinson [2004]). When investigating it is worth taking into account that the general purpose of creating organizations is to maximize the wealth, income, or any other objectives of the founders, under the opportunities ensured by the institutional structure (North [1990]). Institutions play the intermediate or mediator role between activities and outcomes, and their selection is the consequence of social choice (Bednar [2016]). Institutional change usually occurs in line with punctuated equilibrium, when a new institution becomes accepted and used by the relevant actors, it will be functioning until another (or even new) institution becomes more effective as a result of an exogenous shock. Institutional change is a slow and gradual process, a chain of incremental steps but there are extreme situations – wars, revolutions, natural disasters and economic crises – when the speed of change is accelerating.

Interpretations of political science are also diverse to understand institutional change. Thelen – Steinmo [1992] stresses that the historical institutionalist approach is ambiguous, since its framework simultaneously deals with historical coincidence and path dependence but the two processes point in the opposite direction. Based on the definition of this approach, institutions are formal and informal processes that are embedded into the organizational structure of the political sphere or the political-economic system (Hall – Taylor [1996]). The explanation of institutional change is closely connected to "institutional permanence", i.e. theories organized around path dependence. Institutions are capable of learning, so by the change of their external environment, institutions are continuously renewed and complemented, so can maintain permanent equilibrium (Pierson [1994]). The rational choice institutionalist school concentrates on the individuals' benefit-maximalization behavior (Hall – Taylor [1996] and Peters [1999]). The central question of the rational choice institutionalist approach is how individuals can solve collective action dilemmas (Hall – Taylor [1996]), so, during the attainment of political outcomes, strategic interaction among strategic actors has a vital role.

2.3. Presentation of the applied method

The method (conceptual framework) applied in the thesis can be perceived as entirely new. Our framework is divided into theoretical and analytical parts. During the formation of the theoretical part, we remain in the mindset implied by the optimum currency area theories, and we reinterpret the exogenous optimum currency area theory. The approach that is present in the literature incorporates institutions into its analysis: properly elaborated institutional structure enhance trade among the member states of the monetary union, thus differences among member states decrease by that. Contrary, we interpret institutions in a unique way, the purpose of their creation or mutation is to give response to some already existing or potential risk (crisis). The newly established institutions thus decrease these risks, in that case if these risks do not disappear, then institutions ease their harmful effects. In brief, the reason behind the establishment of these institutes is risk reduction and risk-sharing to create a sustainable and more resilient monetary union. The intended consequence of the newly established institutions is the forced convergence among the diverse economic structure of the member states, i.e. the enforcement of homogeneity.

In the analytical framework, we rely on institutional economics and on institutional approaches of political sciences. In both cases we apply theories related to institutional change. Interpretation of institutional change is not coherent either in economics, either in political science, so in our study, we apply fundamental and common aspects by a synthetic and integrated approach. The purpose of our analytical framework is to be able to examine the process of institutional change, i.e. the differences between the old and new institutional structure of the Eurozone. The analysis covers that who (which member states), inspired by what kind of interests, and how can they solve collective action dilemmas (country-specific crisis situations during the Euro crisis). Existing institutional constraints and sets of rules also influence the mode of action.

In sum, the theoretical part of our conceptual framework describes why certain institutional structures change inside monetary unions; on the one hand, it emphasizes the process itself, and on the other hand, it determines the specific area where the change occurs (identification of risks or action situation). Institutional changes may also occur in areas where outcomes were previously not institutionalized, regulated, and controlled by decision-makers. The analytical part can help us to analyze changes and answers those questions why institutions change, or new institutions are formed in certain forms, and under which circumstances (arena) are these institutions are established. If we investigate complex economic governance systems, wide-range of institutions may change, or several new institutions may be established parallelly. The analytical framework can help examine the transformation between the former and new institutional structures.

3. Results of the thesis

3.1. Empirical application of our conceptual framework on the Economic and Monetary Union

In the empirical part of our dissertation, we examine the transformation of the institutional structure (macroeconomic governance) of the Economic and Monetary Union. The global financial crisis provides a rupture in the covered period. Thus, we can analyze separately the pre-crisis institutional structure and the post-crisis one of the Eurozone. Nevertheless, neither the institutional structure of the pre-crisis period nor the institutional structure of the post-crisis period can be considered as static. The pre-crisis institutional framework altered several times during a decade, for instance the reform of the Stability and Growth Pact changed fiscal rules in the European Union. The post-crisis macroeconomic governance framework, despite a vast number of introduced new institutional elements, is not yet come to completion (Juncker et al. [2015] and European Commission [2017]).

The empirical application of our method can be considered as a chain of several steps. The first step is to identify risks, these risks are associated with the pre-crisis institutional deficiencies and with difficulties and challenges of the crisis management in the early 2010s. The spread of the Euro crisis through countries and its prolonged recession in the periphery have eventuated in many action situations (Greek crisis, Irish crisis, Portuguese crisis, Second Greek crisis, Spanish crisis, Cypriot crisis and finally Third Greek crisis). During the crisis period new institutional elements continuously appeared under the management of specific crisis situations so decision-makers had unceasingly growing institutional toolkit to solve later crisis situations. The third step is to define the circumstances of the action arenas (preferences of member states and decision-makers) and then present it in a series of collective action dilemmas (crisis situations). The fourth, technical step concerns the way in which new institution has been added to the institutional framework, the question here is whether the decision-makers exceed the existing institutional and legal constraints or not? The fifth, and final step is to circumscribe the relationship between the new institutional structure (covered areas by new institutional elements) and the former risks, and our question is whether the risks (institutional flaws) were corrected or not?

In the late 2000s, the Economic and Monetary Union (and the European Union) faced the most substantial challenge so far; the global financial crisis and the subsequent Euro crisis have revealed a huge number of problems: the asymmetrical institutional structure of the monetary union (namely the delegation of the monetary policy to Community level and rule-based but discretionary fiscal policy), poor or inadequate economic governance and powerless regulatory systems (weak enforcement of the Stability and Growth Pact, the adverse rules of the common monetary policy and the missing regulation of the financial and banking system), strong core-periphery dichotomy in terms of market economy, welfare and social structures, large and probably unmanageable heterogeneity among member states and huge number of other problems.

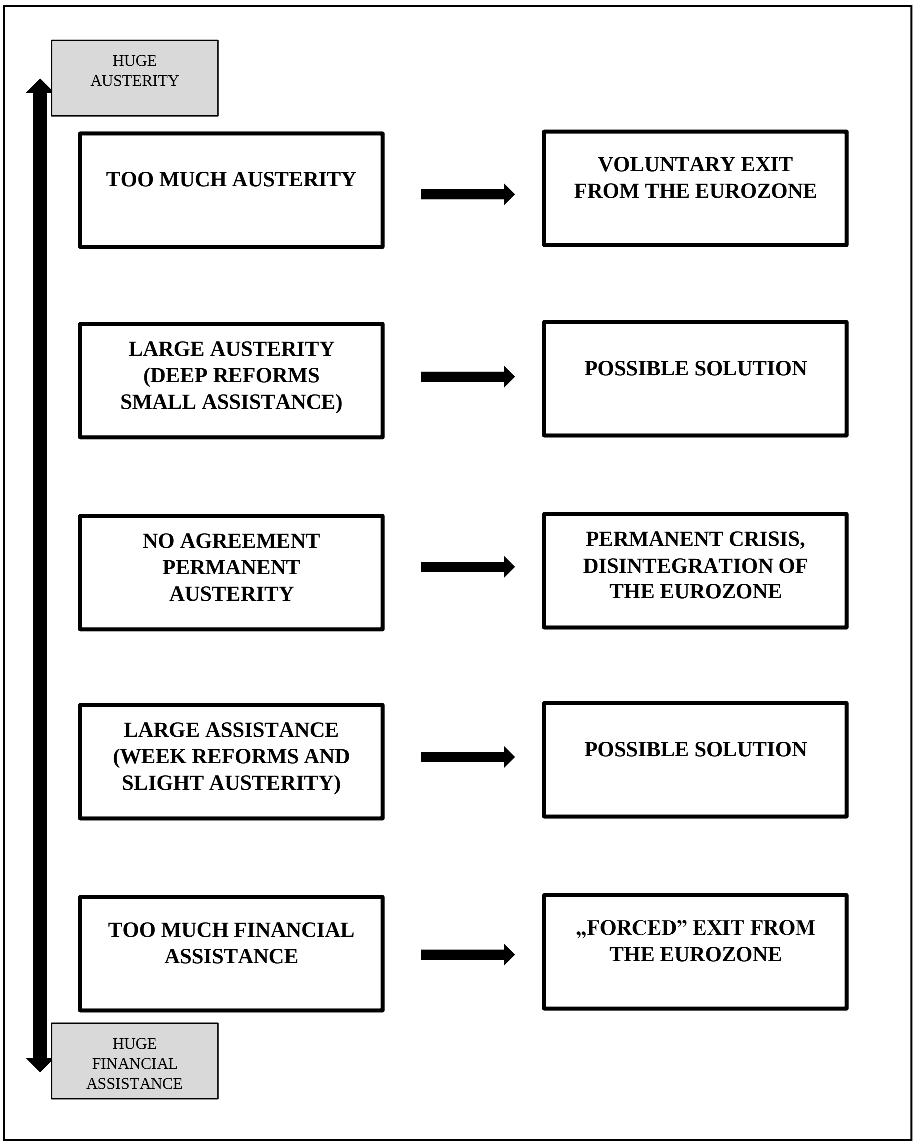
Deficiencies and flaws can be identified in the entire institutional structure of the euro area, and not to mention that some areas have intentionally been uncoordinated at Community level. In the case of monetary policy, it is worth pointing out that the European Central Bank's mandate is limited, providing price stability is primordial, while the promotion of member states' general economic policies has only appeared as a secondary objective. Because of the prohibition of monetary financing, the European Central Bank cannot fulfil the role of lender of last resort de jure, so it cannot provide active insurance against crises for member states. In addition, another problem is that EU decision-makers did not create an exit strategy for member states to leave the fixed exchange rate regime (this became a crucial issue during the Greek crisis). And finally, membership in the Eurozone eventuated in a significantly larger credibility, measured by credit rating agencies and the financial market, but cheaper loans in the Southern periphery resulted in a rapid growth in lending.

The regulatory framework regarding fiscal policy has also suffered from several mistakes. On the one hand, member states – with more or less success – focused on to satisfy the Maastricht criteria deficit target, instead of following the underlying objective of the Pact to reach close-to-balance budgetary position or even budgetary surplus. On the other hand, the Pact was not induced strong (or at least weak) convergence among member states' fiscal policies. Even if member countries satisfied the obligatory deficit target, the they had different fiscal stances, national characteristics of the fiscal policies were maintained such as different structure of expenditure and revenue side, social welfare systems, tax systems, efficient taxation, etc. And thirdly, the Stability and Growth Pact did not stipulate strict rules on the reduction of government debt levels.

There are two further aspects of member states' public finances were flaws can be identified: the public finances and structural reform nexus and the poisonous relationship between sovereign member states and the financial system (namely the vicious circle). In the former case, although the revised version of the Stability and Growth Pact took into consideration the situations of structural reforms and counts with the negative impacts on budgetary positions, but the application of exceptional situations took place in a differentiated manner. Moreover, compliance with criteria for implementation of structural reforms is subjectively carried out. Decision-makers missed to initiate bold measures or efficient institutions for the promotion of structural reforms among member states, and ‘soft’ governance initiatives have failed to accomplish this task. Regarding the latter, in the relationship between the sovereigns and the banking system, the separation of sovereign debt crises and banking crises has not been institutionalized at Community level. There were no institutional and legal base providing financial assistance to member states, the no-bail-out clause unambiguously prohibited this, and there were no institutional elements for rescuing banks. The launch of the Economic and Monetary Union created a monetary pillar and a half-built economic pillar based on the single market for the Eurozone but the fiscal pillar (fiscal union) and/or financial pillar (financial or banking union) have not been established.

The identified risks ‘enforce’ two types of activity from the decision-makers of the European Union. The first one is the creation of firewall tools (risk-sharing), the second one is the steps that ensure fiscal rigor and coordination and harmonization at Community level (risk reduction). These two activities went hand in hand in the time of crisis management. Due to the protracted crisis, a permanent firewall was created on the basis of the two temporary facilities, and to provide credibility to the financial markets, fiscal regulation of the Eurozone member states has become more and more stringent (and complex), and other institutions also appeared to handle various macroeconomic risks. Figure 1. depicts a schematic illustration of the circumstances of crisis management.

Figure 1. Schematic illustration of the crisis management



Source: Own compilation

Member state preferences are illustrated on a vertical axis on Figure 1. The upper endpoint of Figure 1 is the 'huge austerity', and its lower endpoint is the 'huge bailout'. Attaining more and more austerity is the preference of the Eurozone core (lead by Germany), because they wish to ensure fiscal discipline that can prevent from further financial contagion. The enforcement of a huge bailout package is the preference of countries in crisis, because it makes the background of reforms. On the other hand, having huge financial assistance results in a kind of interdependence, the national insolvency in case of a too high bailout, or an exit from the Eurozone may cause significant costs for the other member states including the core. If the core expects too massive austerity measures from a member state applied for financial help, then it may voluntarily leave the Eurozone. On the one hand, leaving the Eurozone causes technical problems – lack of legal basis and precedent – and difficulties regarding the exchange rate system and currency. On the other hand, a single exit from the Eurozone may eventuate in a series of exits. If a periphery member state asks for too much financial help, then the core (and other) member states can deny that, and by that, they force out the periphery member state from the Eurozone, or they can “kick out” the renitent country form the Eurozone.

There also is a third ‘bad equilibrium’ in our model. In this case it is presumed that the meetings among creditor and potential debtor member state officials significantly drag on, and counterparties do not reach an agreement on time. Due to rising uncertainty and deteriorating credibility, financial contagion is intensifying, and a permanent crisis emerges which may finally culminate in the disintegration of the Eurozone (and probably disintegration of the European Union). This is again a kind of solution that member states and Eurozone decision-makers should avoid. So, the two possible situations for appropriate solution are the relatively high austerity for a smaller amount of external loans, and the relatively low austerity for a large financial assistance package. The former is evidently the interest of the core or creditor states, and the latter is the preference of periphery or debtor states.

Institutional constraints affect institutional outcomes. However, the characteristics of the action situation and/or the interaction among decision-makers aiming to solve the problem (crisis) can be resulted in outcomes where the former institutional constraints have been reconsidered. Decision-makers of the European Union and Eurozone have repeatedly re-interpreted institutional constraints, several institutional elements were adopted by using the community method and by constituting intergovernmental agreements, to establish those institutions that are necessary to solve the Euro crisis. The creation of the European Stability Mechanism required the amendment of Article 136 of the Treaty on the Functioning of the European Union, which provided, under strict conditions, legal option for rescuing Eurozone member states. It is worth highlighting that institutions established through intergovernmental co-operation are binding for eurozone members, but these solutions are not part of the European Union’s primary law. In order to strengthen the legitimacy and increase democratic accountability of the new institutional framework it is inevitable to incorporate these measures into the EU legislation.

3.2. Evaluation of the institutional structure’s transformation

The first period of institutional change or the deepening of the macroeconomic governance framework was parallel with the spread of the Euro crisis. The comparison between the new institutional structure and the pre-crisis one is indispensable, since it is necessary to answer the question, whether the years of institutional developmental process has corrected the problems that European Union faced before and during the crises, or not.

The decision-makers of the Eurozone have significantly transformed the institutional set-up of the monetary union since the global financial crisis. The established risk-sharing tools (European Stability Mechanism and Single Resolution Mechanism) possess a sufficient function to deal with either sovereign debt crisis or banking crisis. These two institutions have successfully dissolved the vicious circle between the nation states and the banking system. Regarding the European Central Bank, the question is the following when will be the quantitative easing and the functioning of the Outright Monetary Transactions come to halt? The former will be materialized if the inflation reaches the central bank's target rate, while the latter has become redundant because of the creation of the European Stability Mechanism.

Future challenges of the Eurozone will continue to be fiscal policy imbalances (reaching close to budgetary equilibrium position) and structural imbalances (meant by lack of structural reforms, weak competitiveness and insolvable conflicts arising from different market economy models applied by Eurozone member states). Regarding risk reduction institutions, the fiscal framework ('six-pack', Fiscal Compact, 'two-pack and European Semester) and the financial supervisory and regulatory system (European Systemic Risk Board and some pillars of the Banking Union) have significantly been strengthened since the global financial crisis. The current and potential future problems basically relate to the member states' budgetary trajectories, some periphery countries need to introduce further reforms to reach fiscal sustainability. Moreover, immense public debt levels, several Eurozone member states have higher public debt compared to GDP ratio than the 60% threshold, need to be cut down in the medium term. The Eurozone's institutional capacity to promote structural convergence among member states continues to be weak and inappropriate, so the monetary union will remain a heterogenous community in the long run. We argue that differences between core and periphery market economy models will lead to potential crises in the future. Table 1. summarizes the pre-crisis and post-crisis institutional structure, the pre-crisis risks, and as well as the remaining/unsolved risks.

Table 1. The comparison of the pre-crisis and post-crisis institutional structure

Fields	Fiscal Policy	Monetary Policy	Financial supervision and regulation	Other fields
Pre-crisis institutional structure	• Stability and Growth Pact; • Reformed Stability and Growth Pact	• conventional policies of the European Central Bank	• There is no effective tool • "Soft" institutions such as Lamfalussy Process; • External tool: Basel I. and Basel II.	• Lisbon Strategy; • „Soft” governance
Pre-crisis risks	• Fiscal imbalances; • Problems with public debt levels • No firewall for sovereigns	• Wrong growth models (real-estate bubble) • Inflation persistence	• Financial strains; • Vicious circle; • No firewall for banks	• Structural imbalances; • Lack of structural reforms • Competitiveness problems
New institutional structure	• European Semester; • Stability and Growth Pact's reform • Six-Pack (fiscal parts); • Fiscal Compact (Treaty on Stability, Coordination and Governance); • Two-Pack; • **European Stability Mechanism**	• non-conventional policies; • Accommodative monetary policy; • „whatever it takes”; • **De facto lender of last resort for sovereigns**	• European Systemic Risk Board; • Banking Union ○ Single Supervisory Mechanism ○ **Single Resolution Mechanism** ○ European Deposit Insurance Scheme*; • External tool: Basel III.	• Six Pack (supervision of macroeconomic imbalances): Macroeconomic Imbalance Procedure Excessive Imbalance Procedure • Euro Plus Pact • Europe 2020 Strategy
Remaining risks	• Fiscal imbalances • Austerity, depressed growth forecasts • Lack of fiscal redistribution mechanism • Negative welfare and distributional impacts of austerity	• The European Central Bank is not a de jure lender of last resort. • Weak monetary transmission	• Capitalization of the Single Resolution Fund is still in progress; • No European Deposit Insurance Scheme • Weak lending activity	• “Coordinated” structural imbalances; • Lack of deep structural reforms; • Heterogeneity; • Competitiveness problems

Source: Own compilation
** The European Deposit Insurance Scheme is not functioning now*
Risk-sharing institutions are with bold

The institutional framework or macroeconomic governance of the Eurozone is still evolving and becoming increasingly complex. Community level responses to the global financial crisis and the Euro crisis have eventuated in introducing huge number of new institutional elements Risk reduction institutions – fiscal regulations such as “six-pack”, Fiscal Compact, “two-pack”, supervision of macroeconomic imbalances, Euro Plus Pact, the macroprudential supervisory system (European Systemic Risk Board) and partially the microprudential supervision (the first pillar of the Banking Union, the Single Supervisory Mechanism) – are all aimed at to reduce the probability of future crises. If crises are inevitable, risk-sharing institutions (the European Stability Mechanism, the Single Resolution Mechanism and the European Central Bank as de facto lender of last resort) can be used to mitigate the negative impacts of the crises and to underpin rapid recovery. The 'final' institutional set-up the Eurozone is not yet known, the Five Presidents' Report and the Reflection Paper of the European Commission on the completion of the Eurozone contain some detailed information and radical ideas on it. Thus, the research topic of 'Eurozone institutional transformation' is going to provide an excellent and interesting field for economics and political science scholar in the future.

3.3. Conclusions and future research topics

Our dissertation aims to contribute to the domestic (and international) scientific community dealing with the Eurozone, the institutional transformation of the monetary union and the political economy of the Economic and Monetary Union. Our contribution has three main aspects to be considered. The first, and mostly important among the Hungarian scientific community, is to provide a systemic approach for investigating the optimum currency area theories. In the domestic economic literature few number of papers are written on the subject (for instance Békés [1998] and Artner – Róna [2012]). Instead of considering and applying the conceptual framework proposed by the optimum currency area theories, the Hungarian economists' starting point is the low empirical applicability of the theory's indicator system thus they neglect to use it. The second, is the interpretation of institutional change, this topic has also inspired very few contributions from Hungarian scholars. Finally, the dissertation created a new methodological framework merging the optimum currency area theories and diverse approaches for institutional change. Our framework was applied in an empirical research in which the institutional change of the Economic and Monetary Union was analyzed in detail.

The still transforming institutional structure of the Eurozone allows us to apply our methodology in the future. Completing the Economic and Monetary Union is of the most important topic of the European Union's agenda, and the Five Presidents' Report and the European Commission's Reflection Paper provide a good starting point for the future institutional set-up. Our conceptual framework will be able to compare future institutional structures with the current or previous ones and will be able to explain evolutionary processes between institutional structures and examine them based on member states' preferences.

The causes and consequences of structural differences among members states and the institutional elements aiming at reducing these divergences are essential issues and will also be relevant in the future. Easing the heterogeneity among member states or otherwise promoting homogeneity are key concepts of the sustainable functioning of the Economic and Monetary Union so the European Union decision-makers need to put more emphasis on this. Research programs on this topic can theoretically and empirically underpin the European Union or Eurozone decisions on new institutional elements to support structural convergence.

Lastly, new member states of the European Union are necessary to consider that the current (and future) Eurozone institutional framework is far more comprehensive than the pre-crisis one was and participating in the euro area is a more complex task than the simple Maastricht criteria suggest. New member states wishing to join the Eurozone will be part of a complex community, this must be kept in mind during the accession process.

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