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INTERDISCIPLINARY ANALYSIS OF LUHMANN'S SOCIOLOGICAL THEORY ON THE EURO-CRISIS

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ABSTRACT. This paper establishes a unique linkage between economic and sociological theories. I study the root causes of the euro crisis from both perspectives. I find that resolving the euro crisis requires economic and sociological insights, particularly in respect to the design of European institutions, rules, and regulations. I develop a new paradigm in attempt to tackle the euro crisis. This paper demonstrates the importance of an interdisciplinary dialogue and how this may safeguard the future of the Economic and Monetary Union.

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Introduction

The ongoing 'euro crisis' is often seen as an economic issue and referred to as the European sovereign debt crisis. Admittedly, a comprehensive economic analysis demonstrates that the euro crisis has several origins and is not just a simple debt crisis (Lane, 2012). There are multiple root causes and vulnerabilities, particularly the flawed European economic and fiscal governance (Herzog, 2013). However, as I establish in this paper, the euro crisis has a firm sociological underpinning at the same time. According to Luhmann's 'Social Systems Theory', there is a fundamental problem in functional systems, such as in the Economic and Monetary Union (EMU). In other words, Europe is facing a social-systems problem rather than just an economic crisis. This insight is intuitive under the recognition that the euro crisis is not merely a macroeconomic and monetary issue, and thus, as I will show, relates also to flawed functional systems as studied in sociology.

The fundamental dynamics of states, institutions, and humans is predisposed to both group interactions and incentives. Sociological theory studies those group patterns and behaviours and thus do have an impact to resolve the euro crisis in the real world. Economic theory on the other hand lacks a rigorous discussion of group interactions because this is too sophisticated to be subsumed under the assumption of the methodological individualism à la Max Weber (1929).

I find that Luhmann's approach precisely reveals this insight, especially in respect to the systemic effects of the macro-economy. The constructivist idea demonstrates – the repeatedly unconnected – linkages between the institutional (legal), economic, and political system. Thus, this interdisciplinary study of the economic and sociological origins of the European sovereign debt crisis appears promising. Indeed any policy recommendation, which tackles the existing flaws in fiscal and economic governance in Europe, requires a thorough understanding of both spheres.

Section 2 starts with the economic analysis of the root causes and implications. In section 3, I utilize Luhmann's social systems theory to obtain a new perspective on the euro crisis. Finally, I compare insights and implications of both scientific perspectives, and summarize the policy recommendations in section 4. Section 5 concludes the paper.

1. Economic Perspective

To make this paper comprehensible to an interdisciplinary community, I shall briefly explain the necessary economic theory and mainstream arguments about the root causes of the euro crisis in this section. There are already excellent overview articles on the economic root causes by Lane (2012), Arghyrou and Kontonikas (2012), Sachverständigenrat (2012), De Grauwe and Ji (2013) and Geithner (2014).

There is no doubt that the Economic and Monetary Union (EMU) has been in an economic and political crisis since 2010. The first fundamental problem is the current account imbalance across the macro-economy of the euro area member states (Herzog, 2012).

Secondly the European institutional structure is unsuitable to tackle this issue. There is a consensus that fiscal and economic governance is a prerequisite for a successful and effective monetary union (Escolano *et al.*, 2012) and this has been identified in economic literature long ago (Beetsma and Bovernberg, 1999; Beetsma and Uhlig, 1999). However, the European integration process follows path dependence, and thus fails to resolve both sudden and long-run economic challenges. Consequently, the current contagious economic issues put the EMU at risk.

The third problem lies in the fact that a monetary union must entail rules that are driven by market forces. This is because only market forces are sufficiently effective to enhance the competitiveness of European governance and economies. Unfortunately, policymakers have switched off almost all existing market forces in the euro area, and they failed in building sufficient institutions (rules) that imitate the forces of markets. But this is essential in a supranational monetary union due to additional conflicts such as moral hazard and limited effectiveness of fiscal and monetary policy. Provided that policymakers are both unable and unwilling to establish either a political union or sufficient market forces in the near future, the EMU is doomed to fail. This demonstrates that the EMU is at a crossroads (Herzog, 2013).

1.1. Economic Explanation of the Euro Crisis

Herzog and Hengestermann (2013) demonstrate that the flawed macroeconomic structures and incentives are root causes of the euro crisis. In order to explain these issues, I shall distinguish between a macroeconomic and an institutional economic approach.

From the institutional point of view, the EMU lacks an effective enforcement of the rules. Many rules have the one-size-fits-all problem and hence too many loopholes. Some rules are also unmeasurable or have the problem of inconclusiveness, as criteria point in opposite directions. Since the onset of EMU in 1999 and the subsequent coordination procedures, such as the Lisbon Strategy in 2002, the European Union has endorsed several processes to mitigate the existing malfunctions in economic and fiscal governance. However, concrete progress was always blocked by national reservations of member states. For example, southern euro area member states attained attractive credit conditions provided by negative real interest rates due to the membership in the EMU. However, they were both unwilling to pay back or use this subsidy to build up cushions for economically bad times.

Thus, public and private borrowing was too cheap and hence in vogue among these countries. In the end, this eroded the competitiveness and contributed to the current account imbalances of the Eurozone (Herzog, 2012). This is still the main macroeconomic problem of today.

Another force behind the divergence of competitiveness is more apparent: the flawed macroeconomic incentives. For instance, in Ireland and Spain, public debt was rather low before the crisis. The problem in Spain and Ireland was the excessive private borrowing especially in the housing market. The flawed macroeconomic incentives in the euro area, created by negative real interest rates, led to the build-up of an asset/housing bubble in both countries. Therefore, it can be concluded that the sovereign debt crisis is not only the consequence of insolvent banks, high public debts, or the burst of a bubble; but rather reflects flawed design of rules and political ignorance to enforce the existing ones.

In addition to this problem, there is a substantial divergence in unit-labour costs, i.e. wages in south-European states grew faster than productivity, meaning that their unit-labour costs – relative to their major rivals – were around 20 per cent higher than those in 2000 (Herzog, 2012). This development improved the competitiveness of the core European states, such as Germany, and exacerbated the situation in the periphery (*Table 1*). Again this illustrates that economic governance has failed due to flawed incentives and the absence of essential market forces.

Table 1. Level of productivity and labour costs

Countries	Annual average between 2000 and 2010 in per cent	
	Productivity	Unit Labour Costs
Germany	0.7	1.4
Spain	1.1	3.7
Greece	1.9	5.0
Ireland	1.7	3.8
Portugal	0.6	3.3

Source: Herzog (2013) based on Eurostat data.

However, the flawed incentives are even worse in the domain of public finances. Despite existing rules, such as the Stability and Growth Pact (SGP), public policy was unable to protect excessive debt accumulation, such as in Greece, Portugal, and Italy. The Stability and Growth Pact was implemented in 1997 to rule-out unsound fiscal policies and subsequently sovereign defaults. However, the SGP and related rules such as the no-bailout clause are neither credible nor enforceable. This is due to flawed political voting procedures and consequently the lack of enforcement of the existing rules. The existing rules to enhance sound public finances on a continuous level are vital in a supranational monetary union because of the greater free-riding and moral hazard dilemma (Beetsma and Uhlig, 1999; Hellwig, 2011).

The experience of rule enforcement in the Eurozone for more than ten years reveals that the existing procedures do not internalise the costs and benefits of domestic policy. Indeed, it could be sometimes detrimental for countries to encourage the rule enforcement, if you could be the next violating the same rule. Naturally, the architect of the stability pact, the former German finance minister, Theo Waigel, argued in favour of an automatic enforcement. But there was no political agreement on this proposal in 1995. Consequently, the current European governance rewards cheating rather than compliance. In addition, the European institutions, including the EU-Commission, have limited willingness and no power to implement or enforce the rules at a national level.

For example, since five years there is a debate about the lag of reforms in Greece, under the current European Stability Mechanism (ESM). Indeed national policy-makers are frequently unwilling to act and the EU-Commission is unable to enforce. Henceforth, euro area member countries reject cooperation within the existing rules and get away with it. Of course, this is a renowned problem in the literature of public finance. Indeed, there are inherent incentives, on a state level, to overspend and delay reforms due to the electoral business cycle (Nordhaus, 1975; Alesina and Tabellini, 1987). Furthermore, these incentives are amplified in a monetary union due to free-riding and moral hazard (Beetsma and Bovernberg, 1999, 2000; Dixit and Lambertini, 2003). In addition, the stability pact overemphasises public deficits rather than both public and private debts. The reasons for this shortcoming are obvious political-economy arguments: a) a deficit is easier to observe and monitor and b) measuring sustainable debt levels require tough value judgements.

Moreover, Herzog and Hengstermann (2013) demonstrate that the current governance is neither sufficient nor well designed for a long lasting monetary union. Therefore the challenge in the coming years is the redesign of European governance across independent and sovereign member states within a supranational context. The core principles of efficient governance are permanent incentives that resemble market forces and an independent or automatic enforcement of rules especially at supranational institutions.

This insight is of critical importance in a further issue. Since the onset of the euro crisis economists identified the flawed financial market incentives as a further vulnerability in the euro area. The financial markets have not sufficiently differentiated the creditworthiness of euro area countries from 1999 to 2010. Though, since the beginning of the crisis in 2010, spreads of government bonds widened significantly. Remarkably, the surge in spreads is significantly larger than the change in the fundamentals (De Grauwe and Ji, 2012). Although the existing supranational rules have the mission to unfold market forces, it is not surprising that they have not disciplined euro area member countries in normal times due to flawed fiscal and economic governance. Instead, markets overacted during turmoil due to faulty rules and incentives. The overreaction has also to do with animal spirits in financial markets (Herzog, 2013). The abrupt reversal during the euro crisis has produced a situation similar to a bank-run in the sovereign bond-markets. These self-reinforcing forces are highly contagious and thus a temporary liquidity problem evolves into enduring solvency crises.

The rationale for the flawed incentives in the EMU becomes evident in the unique separation of domestic fiscal and supranational monetary policy. A stand-alone country, such as the UK or the US, has full control over their own currency, and thus can always guarantee the pay-out of bondholders. This guarantee does not exist in the EMU. Of course, the currency for all member countries is the Euro, and the European Central Bank (ECB) is responsible for price-stability according to article 105 TFEU[1]. However, the national euro-debts cannot be paid back with the printing press of the ECB in case of emergency because the central bank will not act for demands of single euro area member countries. Consequently, supranational monetary policy eliminates the market forces in normal times, and leads to overreaction during turmoil. This literally unique interplay characterises the final root cause and vulnerability in the euro area. On the contrary, stand-alone countries, such as the UK or the US, continuously face market pressures and incentives in the run-up to a crisis, and have domestic policy instruments to tackle those problems immediately.

[1] TFEU = Treaty of the Functioning of the European Union.

2. Sociological Perspective

Social systems theory provides innovative insights to this economic crisis because it is an opposing approach to the mainstream economic setup in the previous section. Therefore, economists ought to study this perspective with an open mind. This approach does not describe reality as it is, but rather as what it has become. In addition, the social systems theory is beyond the assumption of the methodological individualism that is dominant in economics.

2.1. Social Systems Theory à la Luhmann

In order to make the paper comprehensible to an interdisciplinary group of scholars, I briefly explain the necessary components of Luhmann's model. Of course, this subsection is not conclusive and contains only the crucial elements.

The social systems theory describes society on the basis of events, and focuses on what actually happens or what it has become rather than its individual members. For instance, when one buys a car, this is understood as an economic event or, in the terminology of Luhmann, an 'economic communication' (Luhmann, 1976, 1995). The meaning of the word communication, however, is different from the day by day meaning. It is not just an individual thing even if you may see it as this in my simple example. In fact, communication has a very abstract interpretation in social systems theory and it is entirely different in any other system, e.g. politics, science, law, religion, etc. Thus, each social system and the communication within the system respectively are unique and singular.

In general, Luhmann's meaning of communication is not restricted to language, and even more importantly, agents do not and cannot communicate; only communication can. According to social systems theory, the traditional economic notion of an individual agent is a simplification of the actual sophistication of human existence. Put it in other words, economics studies the behaviour of agents within a superficial model, that is, according to Max Weber, the 'homo oeconomicus'. However, from the point of view of sociological theory, frankly this is not new, Immanuel Kant (1787) already asserted that, a human being can never see the 'true object', rather the subjective appearance of the object. Thus, according to Kant, our two eyes cannot see most of what is out there. Even more importantly, everyone eyes see things differently with their own internal (brain) structure. In fact, to each human being, the world would look slightly different, and therefore each human being constructs the world oneself. The last insight is also true for the overall functional systems we study, including the economy.

From a sociological point of view, an economic system is unique and singular, and thus the output of the system is a product of its own production. This idea was developed by Humberto Maturana (1981), and is called the concept of autopoiesis. Autopoiesis is 'something that produces something external to itself, namely a product (…) [or] …a system that is its own product' (Luhmann, 2002, pp. 110-11). Consequently, in social systems theory the idea of input is replaced by the notion of self-construction. Therefore, there is no common world in reality according to Luhmann (1988). Instead, everyone constructs their own world. This is labelled as the constructivist view or network. Within this world, reality is not just an effort of individuals but rather a group autopoiesis. Henceforth every system produces itself and thereby its own reality.

Let me introduce a further differentiation and special terminology. According to the social systems theory, function systems can be identified via system specific codes. The legal system operates on the basis of the legal/illegal code. The science system has the code of true/false, and the economic system operates under the code of payment/non-payment. Thus every system has another code and thus another medium to facilitate this code. For instance, the medium for this code in the economic system is money. But what is the function of the medium money in the sociological model? Well, the function is as an economist would define analogously the elimination of trade-offs between unlimited wishes under scarce resources. In fact, the science of economics tries to solve this trade-off in the most efficient way. *Table 2* summarises the key terminology and structure of the social systems theory in respect to the economic, political, scientific, and media system.

Table 2. Overview Luhmann's Terminology

System	Function	Code	Medium
Economy	Mitigation of economic trade-offs, defined by unlimited wishes and scarce resources.	Payment / Non-payment	Money
Politics	Setting up binding legal rules	Government / Opposition	Power
Science	Production of knowledge	True / False	Truth
Media	Production of news	Info / Non-Info	Communication

Source: own. Modification of Moeller (2006), Luhmann Explained, p. 29.

Back to my example: Why is money a special medium? Money, as the medium of the economic system, makes transactions much easier feasible. Otherwise, it would be almost impossible to match buyers and sellers in decentralised markets, as in the history of a barter economy. Furthermore money is more effective than goodwill or trust. Therefore, systems with rather unconventional mediums, such as faith, can hardly compete with the economic system. Even the medium of power in the political system or legislation in the judicial system is less effective and slower than the medium money in the economic system.

Luhmann (1997, pp. 391-92) states that 'The different capabilities for (…) communication media distinctively characterise the features of modern society. They lead to an unequal growth of the function systems. (…) a modern society rather increases the complexity of some systems (…).' Henceforth over the long-run, Luhmann (1977) claims more and more functional differentiation across and within the economic system because it is more powerful and effective than other systems[2]. Functional differentiation within the economic system are typically organisations, however, this is a relatively new phenomenon that evolved along all different functional systems. Furthermore, the emergence of autopoiesis in the economic system facilitates the development of companies that build better relationships within countries and trading blocks, such as the European Union (EU). Thus social systems theory would label organisations as a facilitating 'system of decision-making'. Noteworthy, only the members of organisations are part of the system of decision-making. This explains the fact, why organisations automatically include or exclude certain agents at the same time. The latter matter is called 'operational closure' in sociology.

In order to explain this with the economic system, we study a simple economic transaction. Due to autopoiesis, we can only continue a first economic transaction with further economic transactions and with its medium (money), but never with other media, such as the medium of power in politics for instance. This is due to the operational closure of the functional system. The economy always functions economically, and politics always functions politically because both codes are different and closed, and neither can they control

[2] This aspect is not considered enough in national and supranational politics in Europe and the World. In particular, in European politics, especially during the euro crisis, policy-makers have not recognized that the economic functional system and thus the Euro-currency (euro area) are already dictating the agenda to the political system and not the other way around.

nor communicate. You can witness this feature in Greece, in particular the ineffectiveness of the political rescue measures (communication) because the Greek economy faces mainly a structural economic challenge. But the best example to see this is the failure of the communist approach, in which politics attempted to steer the economy to the benefit of the society. Of course, the communist model has failed in economic history due to several reasons, however, there is no doubt that in communism the economy was continuously forced to communicate politically rather than economically. In the end, that does not work and has failed.

Even the recent financial crisis of 2007 to 2009 demonstrates this point of operational closure. Obviously, the crisis can be analysed from two different perspectives, namely as a financial system (i.e. banks, rating agencies, financial products,…) or, on the one hand a legal system (regulations for leverage ratios, core capital ratios, regulatory arbitrage,…). Luhmann claims that operationally closed systems cannot be controlled by other functional systems, and the financial as well as legal system cannot control each other respectively. From a sociological point of view, this insight might be a trivial understanding as to why capitalism has failed in the recent financial crisis. In other words, each system is controlled solely by itself. But this does not mean that closed systems do not influence each other. Politics certainly influences the economy and vice versa.

The idea of influence across functional systems is referred to as ‘structural coupling’. Put simply, it is defined as a mechanism in which different functional systems continuously resonate or interact with each other. For example, a new tax enforced by the political system interacts and resonates within the economic system in form of higher sales prices and the concomitant behavioural consequences. In the end, this affects supply and demand and eventually the medium (money). In the next subsection, I utilise the ideas of the social systems theory in order to study and analyse the euro crisis from a sociological point of view.

2.2. Sociological Explanation of the Euro Crisis

First I study the external origins of the euro crisis. On the one hand the macroeconomic imbalances which are driven by trade globalisation and on the other hand the spill-overs from the US-subprime crisis from 2007 to 2009 to the European sovereign debt crisis. Obviously citizens often use the abstract threat of globalization as an explanation for severe crises, and also for the euro area troubles. Economically, however, as discussed previously, these are not the only root causes.

The characteristic of functional differentiation implies that countries and societies are no longer divided by regional borders. The term ‘globalisation’ points out the fact that function systems, especially the economic system, go beyond the geographical and cultural borders. Other subsystems, such as science and politics, spread over the globe as well: for example, the development of G6, G8, and G20 in politics and a similar cooperation dynamic exist in higher education. Consequently territorial boundaries have less meaning today than in the past. Thus, it no longer makes sense to speak of economies or politics in plural from this point of view.

But there is an evident problem within the globalisation and European integration dynamics: political authority and sovereignty – even in the highly integrated euro area – are limited within their borders. In fact, this issue has mainly contributed to the US-subprime crisis and the euro crisis. As previously mentioned in the economic discussion, the euro area member states cannot guarantee that their bondholders will be paid back, because they are subject to a supranational monetary policy. Hence, the euro area is unlike stand-alone countries with one currency, with one central bank and easy to use national policies. Another example of this problem is ‘regulatory arbitrage’. In this case, financial institutions cleverly bypass strict local regulations with lax international regulations. Therefore, I firstly conclude that economic communication is global communication, whereas binding political communication is still (all over the globe) local communication. This mismatch is well-known, however, not tackled in politics over the past nor will it be in the near future. Even in the past decade in the euro area – per definition a monetary union of highly integrated countries – you can observe how almost all political reforms conserve the national sovereignty instead of adapting it to a European or global communication system, especially in the fields of finance or public policy (Herzog, 2013).

But this does not imply that there are no similarities in the global economic system. On the contrary, poor regions operate in the same system as rich regions. The same applies within the euro area itself. Cheap labour in Portugal and the overall low price level in Germany constitute one system. Therefore, social homogeneity, trade relationships and the currency union are not fair in its essence. The economic dynamics generates functional equality (‘structural coupling’) and inequality (‘operational closure’) at the same time, because states with structural differences are governed under the same code.

This sociological insight explains also a variety of recent regional separatist movements within the European Union, e.g. the Scotland vote, the United Kingdom and Catalonia wish of secession, and the suggestion of an exit of the Greek economy a so-called ‘Grexit’. The regional resistance is derived from the functional differentiation in Europe and the distinctive regional, religious, and cultural identities. Hence, the survival of the Greek, Portuguese or German society can be understood as a ‘process of insulation’ according to Luhmann (1997, p. 796). The separatist motion attempts to build perceived certainty even if it is incongruent with the functional systems and their codes. Consequently, the separatist movements are neither sustainable nor effective in a European Union and in a globalised market in general.

With this in mind, it is important to recognize that the economic function systems of the euro area, is all-inclusive and exclusive at the same time. It sounds like an economic paradox, however, it is exemplified to be true from the insight of social systems theory. For example, a lack of money easily leads to the exclusion from other (sub-)systems even within an all-inclusive economic and monetary union. The case of the Greek economy inside the euro area is the best example of today. The fast dynamics of further functional differentiation within the EMU has produced in particular economic and social exclusion. This type of inequalities cannot be properly analysed or explained within the state-of-the-art science of economics. Unfortunately, neither persons nor politics can easily steer a society of autopoietic function systems – only systems themselves can. With this in mind you immediately see the widespread limits of the European parliament, the EU-Commission, the European Council and the Troika in general. Only if we impose the, almost switched-off, market forces in the euro area again, we would get a chance to stabilize the EMU.

The existence of austerity to tackle the euro crisis affects first of all the overall political communication and perhaps finally results in changes in the economy. According to Luhmann (1998), there is no direct relation between political austerity in the economic system and its social and political effects, such as mass unemployment or a voting out. These effects are socially constructed and there will be no direct feedback on the economy in return. Consequently, there is no operational causality between society and its economy. However, national policy-makers always blame Europe for the bad things in their own country and thus ease the public impression that these things are closely connected. In fact, this behaviour is observable in particular in euro area countries under the European Stability Mechanism (ESM) that provides emergency liquidity to states under certain conditionality’s.

Nevertheless, it is almost impossible to compute the economic resonance of irritations from the other systems. The sociological theory, however, does not claim that all political or economic communications are useless and should be disposed. It only argues that a political initiative – such as austerity towards sound public finances – has first and foremost effects on politics, and not on the economy. We simple hope that the policy creates a spill-over and results in resonance within the economic system boundaries. Consequently, the political impulse towards austerity in the EMU is rather a political success than an economic. It is doubtful – as Greece demonstrates – that public finances would result in any difference without the political pressure from countries such as Netherlands, Finland or Germany. But for sure politics and public finances in the donor countries would be affected. In summary, a society can react to domestic economic problems only with domestic economic communication, i.e. domestic structural reforms. Communications, i.e. possible solution mechanisms, cannot exist across the functional systems, e.g. supranational politics cannot solve domestic economic problems and political austerity cannot solve economically uncompetitive and indebted countries in general.

The main concern with purely political reform motions, such as austerity in public finances, is in its arrogance because it lacks the solution of the economic root causes, but claims to know exactly what is wrong and what should be done. The problem with this approach is that it creates a lot of social iteration without being able to directly connect this communication with the issues that must be addressed soon. Hence supranational political initiatives – such as the Troika – and like any other kind of crisis activism, e.g. new rescue facilities such as the ESM, produce both too little and too much resonance at the same time. This political communication is hardly able to effectively change the (home) economy and its uncompetitive structures.

The problem of too little and too much resonance is a typical characteristic of crisis response or activism in general. It attempts to address ‘trans-communicational’ issues, but it functions merely within its own structure. Again the latter is due to the functional differentiation within modern economies. European rescue facilities or austerity measures do not lead per se to a more stable economy within and across euro area member states. Thus, according to social systems theory, there is no empirical or theoretical reason to believe that this rescue approach is likely to be effective, even if it is carefully considered and designed by economists.

Once the information is released (and constructed) that the Greek economy is indebted, the questions is: how much, and then followed by why, and who is holding the debt. This illustrates a vicious cycle of information in the media system which communicates to the economic system. All existing information must be replaced by new information; again autopoiesis. The system is continuously feeding its own output, with knowledge of certain facts, back into the system. Once something is known to be known, more knowledge is asked for, or the opposite of it. The code of information/non-information, payment/non-payment, or government/opposition needs concrete fields, such as the indebtness of an economy. Even the word “bailout” is a misnomer and requires specification. ‘Creditor bailout’ would be more appropriate because they are about the only group that would be harmed once an economic ‘run’ has started. Unfortunately, by bailing out Greek creditors today, this would imply that Italian, Portuguese, Spanish creditors are bailout as well (or it is at least less likely that they will fail) because these countries are economically and financially bigger and thus even more systemic to the overall euro area. Hence, almost all other euro area member countries are considered as domino-like contagious.

Undoubtedly there is a structural coupling of the economic system with the political, media, and judicial system in Europe. Interestingly, there is a kind of dominance of the economic and media system in Europe of today. The primacy of the political system, which has its legitimation by democratic elections, seems to become increasingly weaker in the EMU. Both the economy and the media system pressures the policymakers to act without any legitimation and, even more importantly, across the functional system boundaries. But, in consequence, this is rather ineffective.

The interdependence of national public debt-brakes and the European Stability and Growth Pact (SGP) is a good example. These two debt-rules illustrate what happens to social systems under structural coupling. They cannot do without each other. They inevitably irritate one another in a constant manner. However, both interdependent and autonomous issues have their autopoiesis. The national debt-brake (and the political behaviour respectively) does not change the SGP any more than the SGP change the national debt-brake. Both the political concept of change or, in sociological theory, manipulation is much too simple to explain the institutional complexity in the euro area. But social systems theory enlightens the fact that wanting to see everything "as it is" will result in seeing nothing. Even the institutional economic approach that studies any detail and the overall incentive structure is constraint for its own sack. Therefore the economic reality, which is to be identified, is of course not the entire reality. This is an old and unambiguous insight by Immanuel Kant again. Reality is neither one-dimensional nor subject to consensus. It is probably more of a dynamic and stochastic process defined by diversity and self-constructed meaning at the same time.

3. A New Paradigm for the Euro Area

The policymakers responded to the euro crisis mainly with new rescue facilities, such as the European Stability Mechanism or a further reform of the Stability and Growth Pact. Indeed these measures stopped the sudden turmoil and severe economic consequences in euro area and finally mitigated the likelihood of sovereign defaults. Even the European Central Bank (ECB) followed a similar policy response. The ECB president Mario Draghi announced in a famous London-speech in 2012 that 'ECB is ready to do whatever it takes. And believe me, it will be enough.' This message significantly lowered the default probability, too. And for the long-run, policymakers designed austerity and growth initiatives in attempt to mitigate a future crisis.

However, searching for an overall and sustainable solution for the euro crisis requires a far more accurate diagnosis. Regrettably all politically designed rescue facilities and monetary policy measures give rise to moral hazard. Instantaneously after the introduction of the new rules, countries game their way around. Economically we already see that euro area member states currently play with the rescue facilities. This observation demonstrates already today a source of future crises. Although austerity measures, debt rules, and the fiscal compact seem to be a logical necessity, it basically follows the philosophy of self-enforcing systems, path dependency, or autopoiesis in sociological terminology. But the existing systems (i.e. the EMU) cannot be cleaned up, reformed, or made more rule-based easily – that will not work for the reason of sociological constraints identified above. Even if most of the 'new' rules and regulations serve good purpose.

The current crisis instruments – even they intend it – no longer enforce sustainable public finances ex ante because the enhanced backing of the overall system entails greater moral hazard. Furthermore, some crisis mechanisms even amplify moral hazard in the euro area. Actually, the incentives for sovereign bond investors to monitor the quality of public debts or care about excessive public and private deficit levels has weakened massively due to the new rescue facilities. Therefore, euro area policymakers accompanied all rescue facilities with conditionality's in attempt to offset moral hazard. However, the unintended consequences of both the old and newly designed and discretionary rules led into the mess of today. Admittedly, the consequences of the new rules despite conditionality's probably make the euro area even more vulnerable and fragile. Hence, the whole euro area is becoming even more dependent on further political and legal interventions. Correspondingly, we can scientifically observe that the array of firefighting tools invites people to hold fewer fire extinguishers and finally makes a huge fire more likely and not less.

The economic and sociological study of the root causes of the EMU crisis demonstrate that rescue measures, regulations and current institutions are poor substitutes for continuous market discipline in different functional systems, such as prevalent in stand-alone countries. Market forces cannot be substituted just by institutions. On the contrary, some of the new European rules and rescue mechanisms even undermine the market forces. Moreover, the European rules and rescue measures are too complex and overlapping. Even the supranational guarding of the rules, the EU-Commission, is unable or unwilling to protect its own rules, as the following observation demonstrates: In 2014, the EU-Commission proposed further flexibility within the SGP '…while making the best possible use of the flexibility that is built into the existing rules of the Pact, as reformed in 2005 and 2011.' (EU-Commission, 2014). But at the same time, the EU-Commission finds that '… seven countries [out of 16] run a risk of non-compliance with the SGP'[3]. This indicates how contradictory and schizophrenic the EU-Commission has become, an institution that has the responsibility to protect the existing rules of the EMU according to the Treaty.

Moreover the existing European governance fail to link the different functional systems, even so, the sociological study in this paper demonstrates the importance. But surprisingly euro area politics do not appreciated this finding. How much more vulnerable and fragile the euro area will be as a result of a decade of path-dependent crisis management is unknown. But moral hazard is the key driving force of long-run trends and systemic failures, as the financial crisis and the flawed bank regulation has demonstrated in 2008 (Cochrane, 2014). Hence, a new and effective rule-based system for the euro area institutions would be hard to design. Herzog and Hengstermann (2013) proposed a feasible alternative, based on a vote- and reputation function as well as automatic or independent rule enforcement mechanisms (Herzog, 2013). However, the main lessons are simple: A) rules and regulations have to imitate market forces. B) rules and regulations must be dynamic and never static – these are the main construction fault in Europe of today.

Conclusion

This paper provides an innovative and interdisciplinary insight to the root causes of the euro crisis. To develop and finally see the scientific breakthrough, one must leave the comfort zone and finally make sense of the things which are not within the common horizon of possibilities and scientific disciplines. Social systems theory is a sociological interpretation of the world, and it merely interprets the world without any influence. Therefore, it sheds light on cognitive and scientific limitations which are not studied in mainstream economics and political science. I demonstrate that this interdisciplinary approach enlightens our research object.

The combination of both economic and sociological theory provides new insight: reforming the economic and monetary union needs a new paradigm with rather less political discretion and more automatic or independent enforcement mechanisms. Yes, this is slightly contrary to the democratic principle, but given the existing European governance it is the only feasible and – probably under the usual European culture of compromise – the only acceptable political solution in the near future. I still do think that the economic problems, in particular the current account imbalances and the flawed institutional setup, can be resolved and reformed in this direction. The design of a 'new' rule-based framework for the euro area

[3] European commission's review published on 28 November http://ec.europa.eu/economy_finance/economic_governance/documents/com(2014)905_en.pdf).

helps to sustain the stability of the monetary union in the long-run and it would have benefits for countries and citizens alike.

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