

Warsaw School of Economics
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**Evolution of the Economic and Monetary Union functioning
in the light of optimum currency area theory and
consequences of its decomposition.**

Summary.

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Warsaw, 31.01.2020

1. Objective

The subject of this thesis is an evolution of the Economic and Monetary Union¹ (EMU) functioning and its impact on the Member States as well as stability of the community. The assessment of consequences of the EMU membership and potential effects of its decomposition requires a comprehensive analysis of its functioning. The topic is very broad and multithreaded but for the purpose of this thesis we need to narrow it down. Therefore, in this thesis we verify the concept of faster convergence after common currency adoption, based on the optimum currency area theory. Moreover, the crisis period is analysed from the perspective of Member States with diverse degrees of nominal and real convergence. The case of Greece has shown that dissimilarity of economic structures or business cycles only boosted the effects of financial market turbulences under the common monetary policy regime. Finally, we present the model-based effects of the EMU decomposition focused on two aspects. First, trade exchange under two alternative monetary regimes, i.e. from the perspective of a country belonging to the currency union or using its own currency. Second, implications for the decision-making process stemming from the new voting power distribution in the Council of the European Union (the Council).

The aim of this thesis is to assess the functioning of a monetary and economic union in the context of nominal and real convergence as well as consequences of its decomposition, by the example of the European Union (EU). The main objective of the thesis is achieved through meeting the following specific aims:

1. *Assessment of nominal and real convergence in the European Union.*
2. *Indication of the effects of the EU decomposition based on an oligopoly model (in two options: the leaving country belongs the euro area or it has its own currency).*
3. *Assessment of the impact of the EU decomposition on the voting power distribution in the Council.*

An in-depth analysis of the EU functioning, in particular of the euro area, is key for the future economic development of the Member States. The euro area membership, amongst numerous benefits, brings also some threats, especially in the context of no sovereign monetary policy. The insufficient degree of real convergence, defined as *inter alia* business

¹ EMU is composed of all euro area (EA) Member States and countries with derogation (SE, PL, HU, CZ, RO, BU, HR). UK and DK negotiated an opt-out, thanks to which they are not obliged to adopt euro. DK however belongs to the ERM II. For the simplicity, we will use terms EU and EA to describe respectively all the EU Member States or euro area countries only.

cycles synchronisation, in the case of an asymmetric shock may boost the level of a mismatch of the common monetary policy for selected economies. Therefore, it is of utmost importance to verify if the convergence rate improved after euro adoption. This diagnosis plays a key role in the process of preparations for euro adoption by countries with derogation as it indicates the areas requiring necessary structural reforms that need to be implemented prior to the euro area accession. This approach aims to maximize the benefits and minimize the costs of common currency adoption. Whereas the analysis of potential consequences of the EU decomposition allows to restrain the extent of their severity.

2. Literature review

The European Union was established in 1993 based on the Maastricht Treaty signed in 1992. It stood for a culmination of the multiannual process of political, economic and social integration in Europe which started in 1952 within the framework of the European Coal and Steel Community. Introduction of the common currency, as the final stage of integration, has been an opportunity to improve the convergence level within the EU as well as its economic potential.

The theory of optimum currency areas (OCA) (Mundell, 1961) assumes that benefits from a currency union membership are greater in case of open economies with intensive trade exchange and synchronized business cycles, as well as diverse but similar structure of production, demand and exports (Kenen, 1969) as well as intense trade exchange with each other (McKinnon, 1963). Fulfillment of those criteria decreases the risk of asymmetric shocks and increases the benefits from limited transaction costs and the exchange rate risk.

However, the traditional approach has been criticised. Krugman pointed out that an increase in trade exchange between countries might lead to the country's specialization in particular branches of industry (Krugman, 1991) which in turn might result in gaining the comparative advantage, i.e. **the specialization hypothesis** (Mundell, 1961) (Kenen, 1969). In case of asymmetric shock that may appear in a given industry, its consequences may be more noticeable for the particular economy and not for the currency area as a whole. The business cycles of the common currency area members would have become then asynchronous.

In response to Krugman's view Frankel and Rose (Frankel & Rose, 1996; Frankel & Rose, 1997; Frankel & Rose, 2000) formulated, based on empirical analysis (panel of 20 industrialized countries covering 30 years), a hypothesis indicating that an increase in intensity of trade exchange between countries might lead to synchronization of business

cycles (**the endogeneity hypothesis**). The EMU entry *per se* may accelerate trade expansion and an increased integration may result in lower risk of asymmetric demand shocks which, in turn, should imply higher degree of business cycles correlation. As a result, this led to the formulation of the hypothesis that the criteria of optimal common currency areas were endogenous and countries which did not fulfill them before the common currency adoption, should have experienced an acceleration of real convergence process after the common currency area accession. The experience from the first decade of the EA functioning is not sufficient to confirm the hypothesis of endogeneity of the common currency areas. In case of hypothetical reassessment, most EA Member States would have not fulfilled the Maastricht criteria after euro adoption. Moreover, they are also not highly converged with each other in real terms.

According to **the convergence hypothesis** (Gerschenkron, 1962) there is a tendency to equalize the level of economic development and living standard between countries. The lower developed countries reach higher rates of return which enables to narrow the distance to the high developed countries – catch-up effect (Czarny, 2000). The differences in the structure of GDP between the developed and catching-up countries are absolutely natural and do not have to necessarily imply negative consequences. The catching-up countries are characterised by the higher share of agriculture and industry as well as lower share of services in GDP than the developed countries. Those two groups differ also in the structure of private consumption – the structure of catching-up countries' private consumption is dominated by expenses on inferior goods. The structure of investment is not too similar either (Ministerstwo Finansów, 2016). In catching-up countries there are lower shares of capital expenditures on dwellings but simultaneously higher investment outlays on other buildings and infrastructure which will most probably result in greater competitiveness of those economies in the future. Due to the state of development of catching-up countries, they differ from the developed countries but it should lead in long term to higher level of real convergence between those two groups of countries.

The real convergence of the EA Member States was also assumed to be important from the perspective of prevention from the country-specific macroeconomic imbalances (Szczypińska, 2015). To decrease the risk of macroeconomic imbalances occurrence or improve the absorption of asymmetric shocks, it is necessary to develop the alternative mechanisms of shock adjustments i.e. maintain high level of competitiveness, especially in terms of labour and product market elasticity as well as adequate fiscal and macroprudential policy.

The common currency adoption was perceived as a chance to bring the European Union (EU) Member States more converged *inter alia* in terms of economic structure and business cycles synchronization. Sustainable nominal and real convergence are crucial in the process of monetary integration, especially from the perspective of effective monetary policy for all euro area (EA) members. Due to fixed nominal exchange rate within the currency area and resignation from the sovereign monetary policy, adjustments to asymmetric shocks take place in the real sector if the alternative adjustment mechanisms are not effective enough. The crisis has shown that high and sustainable degree of real convergence with euro area plays crucial role in monetary integration. However, the countries' experiences from the crisis time clearly indicate that even significant degree of GDP structure similarity and business cycles synchronization with the euro area does not guarantee the proper functioning in the common currency area. Diverse macro-fiscal condition of Member States generates severe turbulences which may only boost the effects of an economic slowdown if not addressed properly with the efficient and effective alternative adjustment mechanisms.

The crisis has also revealed the institutional incompleteness of the EMU (Juncker, Tusk, Dijsselbloem, Draghi, & Schulz, 2015) which could have strengthened the negative effects in some Member States. The common anti-crisis mechanisms or banking sector supervision were the missing elements in the EMU architecture. As a result we could observe disintegration in the financial markets and higher perceived risk in the EU Member States (Draghi, 2018). The institutional reforms in the euro area have aimed at reintegration of the banking sector under common supervision and an implementation of the risk sharing both in the financial markets and through the macrostabilising mechanisms. The objectives have been achieved through the ongoing works on a banking union and a capital markets union as well as the ongoing institutional reforms concerns the fiscal policy.

However, the attempts to introduce new measures aiming at protection from or minimizing the effects of future crises were not taken with an enthusiasm by all Member States. Torój points out that the joint compliance with the EU procedures, e.g. Macroeconomic Imbalances Procedure (MIP) and Excessive Deficit Procedure (EDP), may significantly decrease the effectiveness of macroeconomic policy, especially in reaction to the economic shocks (Torój, 2017). Therefore, the institutional reform of the EU is a persistent process and generates numerous tensions which may even lead to a (non-)controlled decomposition with regard to the number of its members.

So far we have dealt with two cases when the probability of a withdrawal (or an expulsion) from the EU was relatively high. First of them took place in result of the euro area

sovereign debt crisis when due to an excessive debt level Greece was considered to leave the euro area and the EU consequently, the so called Grexit. The second one was a result of the referendum in Great Britain carried out in June 2016 – the ongoing negotiations of Brexit. Each of those cases is different both because of the causes and consequences. In legal terms, leaving the EMU is tantamount to a withdrawal from the EU (The Treaty on European Union, 2009). The exit clause (Art. 50) provided in The Lisbon Treaty (2007) for negotiating a leaving Member State's continued membership in the EMU after the EU exit is questionable. EMU is a sub-set of the EU and for this reason a Member State's withdrawal from the EU would automatically mean its withdrawal from the EMU (Athanasios, 2009). However, returning to the old currency or adopting a new one would generate additional formal difficulties as well as economic consequences, e.g. possible devaluation of the new currency or refunding the leaving national central banks' contribution to the ECB.

It is worth stressing that legal analyses of withdrawals take into account non-negotiated withdrawals only as the negotiated withdrawals are always possible (Article 54 of the Vienna Convention on the Law of Treaties) and their procedures may differ. Moreover, exit rules provided in Lisbon Treaty seem appropriate if only one or two Member States are about to withdraw, not in the case of a massive exit from the EU. More importantly, the exit clause does not include any particular requirements for the withdrawal of a Member State belonging to the euro area. Besides, a distinction should be made between a voluntary withdrawal and a forcible expulsion. The latter would pose numerous legal challenges and could be in conflict with the requirement for unanimity for decisions resulting in an amendment of the treaties (Article 48 of the Treaty on European Union).

Effects of the EU decomposition are difficult to assess due to their complexity and multithreading. First, this phenomenon is theoretical as it is hard to find an example in the economic history that would be comparable with the current circumstances. Second, consequences for the departing country are different from those for the countries staying in the EU. In addition, the effects might differ in the euro or non-euro country. Third, the potential consequences depend also on the scenario of a withdrawal from the EU. As it has never happened before, it remains a challenge to indicate all possible solutions. In the literature we can identify three main streams of quantitative analyses of the EU decomposition.

First of them is focused on the empirical forecasts of the withdrawal's effects of Brexit expressed as e.g. cumulative change in GDP growth in short or medium term equal to maximum -2.21% in 2030 (Open Europe, 2018) or change in consumption amounting to from

-0.93% to -2.76% (Felbermayr & et al., 2018, Dhingra & et al., 2017). The results differ depending on the analysed exit scenario which leads so a wide ranges of estimated implications. According to those studies, Brexit may occur under three alternative scenarios:

1. *The United Kingdom will still belong to the European Economic Area (EEA),*
2. *The United Kingdom and the European Union will formulate a preferential trade agreement,*
3. *Trade between the United Kingdom and the European Union will be regulated by the World Trade Organisation's regulations.*

The latest publications include also political changes in the UK and present alternative results for particular Prime Ministers, i.e. Theresa May and Boris Johnson, indicating greater losses under the leadership of the latter one (Dhingra & Sampson, 2019).

Second stream presents the theoretical approach to modelling the effects of withdrawals from the trade or currency unions. In this case, game theory is commonly used which allows to incorporate the interdependencies between economies that constitute such a cooperation. Those models are usually simplified and concern only selected areas of economic activity. As an example, the article by Fahrholz and Wójcik (Fahrholz & Wójcik, 2012) can be mentioned, in which the authors analyse the effects of a withdrawal from the currency union in the case of defined exit rules and without them. The exit rules may lead to a higher level of the euro area stability in the turbulent times and restrain the contagion of negative consequences stemming from fiscal difficulties of the leaving country.

The last set of publications addresses the impact of the EU decomposition on procedures and law-making, i.e. voting procedures in the EU institutions under various scenarios, including the ability to build a blocking minority. The number of the EU members influences the voting power of single countries as well as potential coalitions (Kóczy, 2012; Kóczy, 2016; Szczypińska, 2018). Small countries do not have much power in voting, but could be decisive in some coalitions. If a large country, like the UK, leaves the EU, the number of such opportunities diminishes and thus they may relatively lose power.

This thesis contributes to the existing literature in the three abovementioned streams, especially when it comes to the extension of convergence analysis in the EU, whose unfulfillment may boost the effects of asymmetric shocks or, in extreme cases, lead to a decomposition of the community. The analysis of voting power distribution in the Council will be supplemented by potential coalitions representing common interests regarding e.g. the

EU budget of enforcement of the EU rules as well forecasted voting power indices based on the Ageing Report 2018 (European Commission, 2018). Moreover, the case of a withdrawal from the EU will be analysed with the use of oligopoly models which have not been satisfactorily applied in this research area so far.

The literature indicates that the stability of international trade or currency agreements can be analysed in the context of oligopoly models. This type of models has constituted an important stream of the trade literature since the 80. (Head & Spencer, 2017). They help explain why countries tend to create common trade policy, why they sign free trade agreements and what determines the range of trade liberalisation. After many years of the dominance of monopolistic competition models in the international trade theory, the economists paid more attention back to the oligopoly models which reflect better the role of large firms, their interactions and entry barriers which allows to describe the market competition in the globalisation times more precisely (Neary, 2010). The current market structures seem to be rather a hybrid form of an oligopoly and monopolistic competition (Hottman & et al., 2016). The use of oligopoly models in the international trade, due to the possibility of heterogenic firms incorporation in the quantitative general equilibrium models, allows to extend the scope of analysis way beyond the traditional approach focusing mainly on tariffs and subsidies. It became feasible to analyse also zero trade flows and pass through along with their impact on the overall trade gains.

Among the oligopoly models we can distinguish models of agreements between firms, i.e. cartels. The agreements between countries can be analysed in a similar way, both in terms of trade exchange or common currency. Joining such a coalition or leaving it has an impact on the departing country as well as those remaining in the cooperation framework. Oligopoly models, thanks to the use of game theory tools, allow to analyse effects for all the players and formulate conditions of the external and internal stability of the agreement. Not all aspects of the trade policy have been comprehensively studied in the literature, like e.g. consequences of a withdrawal of the United States from NAFTA or the EU decomposition.

The oligopoly models also help to compare alternative forms of trade exchange, including those applied within the EU as well as potential scenarios of the cooperation between the EU and a departing country after a withdrawal, e.g. customs union, preferential trade agreement or global free trade option. This approach also allows to verify the stability of each scenario (Soegaard, 2014). Similarly, the oligopoly models can be used in the case of markets with different currencies when the exchange rate fluctuations influence the gains from trade exchange (Kirman & Phlips, 1996). Therefore, the oligopoly models can be used to

analyse the effects of a withdrawal from the EU of a country that belongs to the euro area and will have to adopt its own currency back.

The experiences from 25 years of the EU functioning, including creation of the common currency, overcoming the global financial crisis, implementation of the institutional reforms and initiatives aiming to reduce the number of Member States, which so far have focused on its increase, constitute a very interesting research area. Its aspects can be analysed with the use of quantitative methods, both empirical and theoretical ones. The literature does not provide many multithreaded analyses of causes and consequences of the EU evolution, especially covering the most up-to-date events. This thesis, due to inclusion of various aspects and quantitative methods, aims to fill the research gap.

3. Hypotheses and methods of their verification

In the thesis three main hypotheses are formulated:

1. *The euro area membership did not lead to a higher degree of nominal and real convergence in all Member States.*
2. *Withdrawal of a Member State from the European Union causes negative effects for the departing country.*
3. *Withdrawal of a large Member State from the European Union, e.g. the United Kingdom, improves the voting power of large Member States and deteriorates the voting power of the small ones.*

The first main hypothesis is complemented by the following auxiliary hypotheses:

- 1a. *Not every Member State fulfils the nominal convergence criteria after euro adoption.*
- 1b. *The euro area accession has not accelerated the process of real convergence in the case of all Member States.*

Verification of the first hypothesis is based on an analysis of statistical data from Eurostat in order to assess if the nominal convergence criteria have been fulfilled by the Member States since the common currency creation. The analysed criteria concern the long-term interest rates, price stability and fiscal stance. Besides, the analysis of real convergence has been carried out based on the correlation analysis of cyclical components of gross domestic product (GDP), value added in investment and private consumption for the EU

economies, based on the quarterly data since 2004. The similarity of economic structure is measured by the Krugman Index and compared across the EU Member States for the period 2004-2018. In addition, the income convergence is analysed using the income per capita in the EU members also in the period 2004-2018.

To test the other two hypotheses we concentrate on two main aspects: trade and voting power distribution. First, an oligopoly model is analysed under three scenarios:

1. *Trade within the customs union*
2. *Trade under the preferential trade agreement*
3. *Trade based on the World Trade Organisation's rules*

In addition, the analysis is extended by the exchange rate module to address the case when the leaving country belongs to the euro area.

Second, the voting power of each Member State in the Council was calculated based on the Banzhaf Index (Banzhaf, 1965) and compared with the results after the EU decomposition. Besides, the voting power distribution is analysed also from the perspective of potential coalitions representing common interests in particular votings, e.g. EU budget or EU rules enforcement. Moreover, the population forecasts prepared by the Ageing Working Group (AWG) (European Commission, 2018) allow to calculate the voting power of countries in 2030.

The analyses of real convergence and voting power distribution were published separately in economic journals. The results are updated based on the most recent data, while theoretical background and literature reviews are incorporated to the thesis.

4. Results and conclusions

The multi-stage analysis provided evidence to adopt the hypotheses. The nominal convergence criteria agreed in Maastricht were supposed to lead to real convergence in the euro area. Sustainable nominal and real convergence play crucial role in the process of monetary integration, especially from the perspective of effective monetary policy for particular EA members. However, the expectations have not materialized.

On one hand, the business cycles synchronization has been observed and the correlation of cyclical components is continuously increasing which is undoubtedly advantageous in terms of adequacy of the common monetary policy. On the other hand, the first 20 years of

the EA functioning and the financial crisis showed that there is a real (in terms of economic structure) and nominal divergence between members of the common currency area. The EA countries have not been monitored in terms of the Maastricht criteria fulfillment since they adopted euro and are still diverse in terms of economic structure. The hypothesis of the common currency area endogeneity, assuming that countries which faced challenges with fulfilling the nominal convergence criteria even before euro adoption would converge in real terms much faster after the currency union accession, did not come true.

The analysis indicates that the high rate of convergence, the catching-up countries aim at, does not seem to be sufficient to ensure the macroeconomic stability. Even highly converged countries reported occurrence of macroeconomic imbalances.

Since the Member States should comply with the EU procedures, there are not too many tools left they can use to adjust to the economic shocks which may decrease their macroeconomic stability in result. Therefore, it should be considered to analyse the procedures jointly because their requirements may be contradictory and to lead to unfavourable consequences, e.g. macroeconomic imbalances.

It is worth stressing that taking advantage of the opportunities, the EA members face, depends also on proper functioning of the domestic economy, especially in terms of labour and product market, competitiveness and macroprudential policy. The implementation of structural reforms and their results were noticeable especially in times of financial turbulences in Europe. Thus, countries with derogation should draw conclusions from the EA members' experience and take into account, while their preparations for the common currency adoption, that not only sustainable nominal and real convergence is sufficient to fully benefit from the EA membership.

The challenge of the EU decomposition stands for a revolutionary movement based on doubts in values of the European integration and benefits from the EU membership. The cost-benefit analysis of a withdrawal should be very complex as it concerns basically every aspect of the countries' and their citizens' functioning. In this thesis we took into account the welfare function and voting power distributions as they can be quantified but there are also other areas that are difficult to measure but affected to a large extent, e.g. regulations ensuring safety of food, drugs or identical quality of the same products across Member States or security.

When it comes to the welfare change resulting from a withdrawal from the EU, the departing country ends up with a lower total welfare in both scenarios, i.e. a hard exit or a soft exit (under the oligopoly scenario). A free trade agreement with the rest of the world (RoW) instead of the EU might be beneficial for the withdrawing country if the market of the RoW is

larger than the one in the EU, if the tariff in the RoW is greater than the EU one and if the costs of the firms in the RoW are higher than those in the EU. In addition, the transport cost between the exitor and the RoW should be equal to zero (or at least lower than the transport cost of the EU firms) to bring benefits for the departing country. The latter condition is not feasible as the EU is closer to any potentially departing country than the RoW. Most importantly, free trade agreement with the EU and the RoW would be the most beneficial solution for the departing country but, having in mind the size of the EU market and the number of countries that signed free trade agreements with the EU, the alternative seems to look by and large as the EU concept.

From the EU perspective, a hard exit might bring ambiguous results but due to a relatively large domestic market and exports, it may end up with an increase in total welfare. A soft exit also contributes to a greater total welfare of the EU. These results change the perception of the EU's bargaining power in the withdrawal negotiations.

The RoW gains a competitive advantage if the costs of trade between the departing country and the EU increase under both analysed scenarios which, in result, leads to a welfare increase. It suggests thus that the EU decomposition affects largely the RoW and might change the world distribution of trade powers.

If a withdrawal implies also a return to the country's own currency, the results above described get strengthened by the exchange rate effect on welfare. The exchange rate effect can be reflected in the price elasticity which, due to strategic substitutability and an incomplete exchange rate pass-through, can be simplified to a function of the relative number of firms in particular markets. For a country facing a depreciation, the price elasticity is between zero and one, whereas for the countries reporting an appreciation, the price elasticity is negative.

In the case of a depreciation of the exitor's own currency, when the country is a net importer, the welfare change is negative as the depreciation reduces both the domestic welfare and profits from exports. For a net exporter, a depreciation decreases the domestic welfare but might improve profits from exports. This depends however on the import intensity of exports, i.e. if it is high, the exports profits might not necessarily increase in result of the own currency depreciation. Therefore, the overall costs from a withdrawal from the EU might be higher if the departing country belonged to the common currency area, especially in the initial phase.

Appreciation of the country U's currency may lead to a drop of profits from exports but the overall effect on the U's welfare would be rather positive due to an improvement of domestic welfare. This scenario could be beneficial for the departing country if the economic

soundness of the EMU were below expectations. However, the need for negotiating trade agreements with the EU and the RoW to ensure all the potential benefits would still hold.

The analysis of power distribution after a withdrawal from the EU, based on Brexit example, points out that it will influence the European politics, economy as well as position and power of particular Member States within the EU.

Based on the calculation of Banzhaf Index we find that Brexit will lead to a change in power distribution among the Council members. Large countries will gain more power in both analysed years: 2018 and 2030. The greatest power shares will belong to Germany, France, Italy, Spain and Poland which will report the sharpest increase in the power share which would amount to approx. 29% if Great Britain had left the EU in 2018. After Brexit the number of coalitions which small countries could turn into the winning ones will decrease, therefore the smallest countries will relatively lose power.

Besides, Brexit will also influence the power distribution among coalitions the Member States could create. These changes may have an impact on the EU policy. Euro area Member States would adopt any proposal regardless of Brexit. However, Brexit will influence the ability of non-euro countries to build a blocking minority. Brexit significantly decreases the power share of this group and blocking any proposal seems to be challenging, because the coalition would have to attract much more other countries to join. It clearly indicates the negative impact of Brexit on the position and power of countries with derogation.

In the context of macroeconomic stability, Brexit leads to a decrease in power share for countries with no imbalances. The change may imply that countries suffering from macroeconomic imbalances might not be willing to vote in favour of any regulations imposing additional sanctions for lack of implementation of structural reforms aiming at maintaining the macroeconomic sustainability or decisions on imposing sanctions under the MIP.

Moreover, Brexit will lead to a change in power distribution among coalitions of net payers and net beneficiaries. Since the UK is a net payer, after Brexit the coalition of beneficiaries gain more power in terms of forming a blocking minority but the group of payers remains strong, therefore both coalitions can block any decision. This result may lead to a change in the decision process concerning the EU budget, especially the EU funds. Beneficiaries will be able block a proposal of the EU funds allocation which was previously not possible.

Finally, taking into account the coalitions formed on the basis of the approach to the enforcement of the EU procedures, the power distribution clearly shows that sceptics have

a dominating role but they cannot adopt any decision themselves and it does not change after Brexit. Since sceptics have the highest share of power, it may influence the decisions on the strictness of the EU rules, e.g. imposing sanctions on a country under the EDP. Brexit significantly influences the decision process in the EU so its consequences for the voting procedures should be included in the cost and benefit analysis of Brexit.

The multidimensional analysis presented in the thesis provide evidence that (i) *not every Member State fulfils the nominal convergence criteria after euro adoption*, (ii) *the euro area accession has not accelerated the process of real convergence in the case of all Member States*, (iii) *a withdrawal of a large Member State from the European Union, e.g. the United Kingdom, improves the voting power of large Member States and deteriorates the voting power of the small ones*. Those conclusions are food for thought on the future development of the European Union, its stability, efforts required to achieve its objectives and dealing with disintegration initiatives.

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