Economic Systems 45 (2021) 100838

Contents lists available at ScienceDirect

Economic Systems

journal homepage: www.elsevier.com/locate/ecosys

# Benchmarking institutional variety in the eurozone: An empirical investigation

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ARTICLE INFO

*JEL classification:*
C43
F15
O11
O12
O17
O52

*Keywords:*
Distance to frontier
Economic development
European benchmark
European economic integration
Eurozone
Institutional variety

ABSTRACT

The European debt crisis has shown that the future of the European Union (EU) depends on the willingness of each member country to implement responsible policies, avoid moral hazard and uncooperative attitudes, and ensure stability and soundness. However, the European institutional variety means that each member country reacts differently to shocks and policies, follows a different path of recovery, and adapts to common institutions, including the common currency, in different ways. Helping countries to converge toward a situation that guarantees well-being, stability, and development at the national and community level is the goal of the European benchmark. This benchmark is a framework inspired by European treaties that, through the distance-to-frontier score methodology, aims to measure member countries' performance and identify inefficiencies and negative externalities within the economic, social, and political institutions of each member country. The paper presents an empirical investigation of the European benchmark. Based on the results obtained, all countries can improve their performance, and none of them can be considered a model for the others. However, the Mediterranean and post-communist countries have more challenges to face and therefore need to make greater efforts.

## 1. Introduction

The European debt crisis showed that the future of the European Union (EU) depends on the willingness of each member country to implement responsible policies, avoid moral hazard and uncooperative attitudes, and ensure stability and robustness. However, it has become clear that the variety of European institutions means that each member country reacts differently to shocks and policies and adapt to common institutions, recovers stability, and achieves growth in own time and in its own way.

The European benchmark is intended to help countries guarantee well-being, stability, and development at the national and EU level. Casagrande and Dallago (2019) define it as a theoretical framework, inspired by European treaties, whose goal is to make European Monetary Union (EMU) effective and efficient by helping member countries overcome their own inefficiencies in adapting to and working well with common institutions and pursuing effective yet reliable policies with respect to the variety of institutions.

The goal of this article is to empirically investigate this European benchmark, in order to assess the amount of adaptation required of each country by measuring how far it is from the European benchmark. To do so, we use the distance-to-frontier score methodology.

Section 2 presents the indexes most used for measuring economic and institutional variety in the eurozone and discusses the type of convergence needed in the EU based on European treaties and agreements. Section 3 introduces and summarizes the European benchmark. In section 4, the methodology used in the empirical investigation of the European benchmark is explained. In section 5, the

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https://doi.org/10.1016/j.ecosys.2020.100838
Received 22 August 2019; Received in revised form 1 May 2020; Accepted 16 July 2020
Available online 1 January 2021

results are presented and commented. Section 6 concludes.

## 2. European integration and institutional variety

### 2.1. Measuring economic and institutional variety among European countries

The idea that the quality of public and private institutions plays a distinctive role in supporting economic development is widely acknowledged (e.g., Acemoglu et al., 2005; Barro, 1997; North, 1990). In recent years, various authors have measured economic and institutional differences among European countries, with different goals and methods.

König and Ohr (2013) design an Index of Economic Integration of the EU. They use a composite indicator to measure the economic integration of each member country and rank countries based on their level of integration. The novelty is that, instead of considering specific fields of integration (e.g., trade, monetary, institutional, or labor or capital markets integration), they offer a "composite indicator measuring the extent of European economic integration in the individual EU Member States" (König and Ohr, 2013, 1075). The benchmark is the general speed of integration in the eurozone. Compared to other globalization indices, the EU Index can capture specific European dimensions, such as openness, importance, homogeneity, symmetry, and institutional conformity. Their results show large heterogeneity between the member states, in which Belgium has the most European integration and Greece has the least (König and Ohr, 2013, 1081).

Huemer et al. (2013) develop an Index of Institutional Competitiveness. This index measures the effects that governments can have on competitiveness. They consider output, public input goods, capital, labor, technology, and components of institutional competitiveness. The dynamics of the index for groups of countries in the EU and the Organization for Economic Cooperation and Development (OECD) are considered without presenting a ranking for individual countries. According to the results, the institutional competitiveness of EMU countries increased most since the mid-1990s, but a gap persists between northern and southern EMU countries in terms of factor price competitiveness (Huemer et al., 2013, 606).

Alvarez Orviz and Savelin (2017) focus on the institutional and structural challenges facing countries that are preparing for EU membership. The average institutional quality of EU member countries makes up the benchmark. The dimensions considered are the business environment, access to finance, the judicial system, trade and competitiveness, the labor market, education, and institutional governance. These dimensions are proxies for the Copenhagen political and economic criteria that countries preparing for EU membership must satisfy. Using different databases, Alvarez Orviz and Savelin do not propose a new index for ranking countries but highlight the institutional and structural challenges for countries that are candidates for EU membership.

In presenting the European Integration Index for Eastern Partnership Countries, Solonenko et al. (2011) have a goal similar to that of Alvarez Orviz and Savelin (2017): measuring the progress of Eastern partnership countries in European integration. However, the two indexes differ in their structure and methodology. Solonenko et al. interpret progress in European integration as a combination of two interdependent processes: increased linkages between each of the Eastern partnership countries and the EU (*linkage*) and the convergence of countries' institutions, laws, and practices with EU standards and requirements (*approximation*) (2011, 4). Finally, they consider the evolution of management structures for European integration in Eastern partnership countries (*management*). This index combines indicators from existing databases with first-hand empirical information gathered through surveys by local country experts. The index ranks the Eastern partnership countries according to the three dimensions with a mix of empirical and theoretical benchmarks and considers the best- and worst-performing countries.

Dorrucci et al. (2015) focus on the measurement of European institutional integration. They present the European Index of Regional Institutional Integration (EURII), which maps developments in European integration from 1958 to 2014 according to the Balassa framework of institutional integration. EURII measures the degree of completion of various steps in European regional institutional integration, that is, the depth of integration and its geographic scope, by assigning scores to each relevant integration event. This index is consistent with the first-generation Index of Regional Institutional Economic Integration presented in Dorrucci et al., (2002; 2004) and Mongelli et al. (2005).

The EU Regional Competitiveness Index (RCI), presented in Dijkstra et al. (2011), was developed considering and modifying the approach of the Global Competitiveness Index (GCI) of the World Economic Forum for the eurozone. The purpose of the index is to analyze the economic/institutional sources of competitiveness. The RCI is based on eleven pillars subdivided into three groups (as in GCI): basic, efficiency, and innovation. Dijkstra et al. believe that a region that can innovate is probably efficient, and these qualities are instrumental in improving competitiveness. According to the results obtained, the RCI is closely correlated with the gross domestic product (GDP), and European regions are classified based on this index. They find that northern European regions rank among the top ten.

The analysis of the empirical literature on economic and institutional variety among EU member countries reveals that several attempts have been made to measure the level of economic and institutional integration at the European level. However, the benchmark is not the same for everyone (Halmai, 2019). Authors use the best-performing country, the general speed of integration, the average institutional quality, Copenhagen political and economic criteria, or EU standards and requirements as benchmarks. It is not clear whether, in what sense, and to what extent European countries should converge. The European benchmark (Eb) proposed in this paper aims to define which variables should be considered in defining which tasks are fundamental in pursuing the EU goals of guaranteeing stability, development, and well-being. Because the institutions in member countries are different, the Eb is then used as the reference value against which to measure the distance that each country has to travel to have fully effective and efficient idiosyncratic institutions that comply with these EU goals.

### 2.2. Which convergence for the eurozone?

At the beginning of the European integration process, most scholars were convinced that, despite the strong heterogeneity of European countries and the predictions of optimal currency area (OCA) theory (Mundell, 1961), member countries would be able to implement a monetary union without a fiscal union. These types of statements were based on strictly economic criteria and supported by the literature on globalization and the endogenous OCA theory. This theory argues that "a country is more likely to satisfy the criteria for entry into a currency union ex post than ex ante" (Frankel and Rose, 1998, 1024) through a process of progressive institutional adaptation. The fundamental idea was that, by promoting European institutions supportive of convergence toward freer and more flexible markets, European countries would converge toward the most efficient market structure.

This structure was thought to promote the flow of resources to countries with less developed institutions and less balanced economies, which offer opportunity for more profitable investment. This point of view was shared by the group of European policy makers that Maes (2002) identifies as monetarists, and this perspective was quite widespread, especially in France and Italy. They were convinced that monetary integration would induce economic and political convergence. A different group, called the economists, emphasized the role of heterogeneity among countries and the necessity of ensuring political and economic convergence before undertaking monetary integration through fiscal discipline, flexible markets, and labor mobility. This vision was widespread mostly in Germany. According to Maes (2002), the European architecture was the result of historical circumstances and various compromises between these two schools of thought.

The evolution of European integration seems to demonstrate that economic convergence does not imply political or cultural convergence. Institutional convergence within the EU is far more problematic and less desirable than economic convergence (Schönfelder and Wagner, 2019). Indeed, as evidenced by Alesina et al. (2017), better results were achieved in terms of convergence from an economic perspective than at the institutional and cultural level. They identify national identity as the factor that hinders deeper integration most. Other authors, such as Guiso et al. (2016), say that overcoming resistance from national idiosyncrasies by promoting institutional integration is desirable because "a political union, with a common enforcement agency, is the more beneficial the greater is cultural diversity in an economic union" (p. 97), because multiple authorities may be subject to a clash of cultures.

Difficulty in economic, political, social, and cultural convergence has several explanations. The position taken by Alesina et al. (2017), in which national identity is a fundamental obstacle to political convergence, should make us reflect on the democratic legitimacy of European integration. Some scholars hold that the European integration process was based on an economic consensus, which was mistaken for democratic legitimacy (Cerutti, 2008; Weiler, 2001) and that a European identity, which should support each project of political convergence, still needs to be defined (Hayward and Wurzel, 2012; Majone, 2009).

Various scholars doubt the very possibility and desirability of deeper economic convergence, disregarding any consideration of the potential to form an ex-post European identity, so as to foster convergence to a democratically legitimate political union. As noted by the varieties of capitalism (VoC) theory, proponents of economic convergence have underestimated the potential for advanced capitalist economies not to converge toward a single liberal market because of the comparative institutional advantage of different socioeconomic models (Hall and Soskice, 2001). According to the VoC theory, the role of institutional variety is downplayed by European institutions, and the pressure for a certain type of structural reforms almost seems to conflate institutional variety with inefficiency. The VoC theory interprets the eurozone crisis as the results of the asymmetric EMU architecture and the coexistence of different types of capitalist models (Hancké, 2012; Hassel, 2014). Indeed, the institutional infrastructure of coordinated market economies (CMEs) in northern Europe (e.g., Austria, Belgium, Germany) are compatible with an export-led growth model that tends to have low inflation (Johnston and Regan, 2016) in which firms are protected by a bank-based financial system (Deeg, 2009) and the state promotes coordination and compensates in some way for coordination deficits (Molina and Rhodes, 2007). By contrast, the mixed market (or Mediterranean) economies (MMEs) in southern Europe (e.g., Spain, Portugal, Greece, and Italy) are characterized by a domestic demand-led growth model that is prone to high inflation (Johnston and Regan, 2016), with many high-tech small and medium-size businesses that are not very innovative (Dilli et al., 2018), a strong legacy of high state intervention in the economy, and weak strategic coordination in labor relations (Hall, 2018).

The coexistence of different growth models following from the VoC within a monetary union is not trivial. National adjustments after a shock vary, and diverse "groups of countries are assumed to be on diverging trajectories of institutional and policy adjustment in the eurozone. The effects of monetary union amplify the two trajectories, even though they would not have been fundamentally different without a shared currency" (Hassel, 2014, 10). The pressure for southern countries to converge to liberal market economies (LMEs) is considered "the blueprint of the Troika reforms" (Nölke, 2016, 152). Beyond the questionable feasibility of a similar project, which would require institutional complementarity that is extremely difficult to achieve (Nölke, 2016), some scholars consider it a dangerous economic experiment that might end up with "growth models without growth, which will ultimately threaten the very existence of the monetary union" (Hall, 2018, 19). As noted by Regan (2017, 969), "European policymakers assume that all member states can converge on an export-led model of growth. This vision of convergence is exacerbating rather than resolving the imbalance of capitalisms at the heart of the eurozone." According to Johnston and Regan (2016), the eurozone troubles and imbalances cannot be overcome without addressing the deflationary bias produced by the different inflationary growth regimes in the EMU.

The VoC theory seems to conclude that economic convergence based on institutional convergence is undesirable or simply impossible for the eurozone. However, there are no reasons to believe that a similar type of convergence is necessary for the success of the eurozone. As highlighted in the EU motto "united in diversity," institutional variety is a source of richness in the EU, not a threat to prosperity. Indeed, "there is increasing recognition in the economics literature that high-quality institutions can take a multitude of forms and that economic convergence need not necessarily entail convergence in institutional forms" (Rodrik, 2007, 52). The solidity of the eurozone depends on "high-quality institutions," that is, the ability of the member countries to enable their institutional

frameworks to coexist. The Eb aims to demonstrate that this coexistence is possible and that each member country can reach similar sustainable, efficient, and stable outcomes, although in idiosyncratic ways. Institutional variety is not an obstacle; rather, it is the tool that enables understanding of how to calibrate the various national policies so that each country converges toward a situation capable of guaranteeing economic stability and development. This view seems consistent with Hall (2018, 19), who suggests that "there is more than one route to economic prosperity, and finding a successful national path requires adapting social and economic policies to the institutional conditions specific to each type of political economy." In the EU, the only limit to this flexible approach is avoiding negative spillovers that harm other member countries.

One might argue that European institutions have already improved the coordination of economic and fiscal policies and overcome the "one size fits all approach." This was done, for example, by introducing the European Semester, with country-specific recommendations based on detailed country reports and with a "growing emphasis on social objectives" (Zeitlin and Vanhercke, 2018, 167). However, the introduction of a new tool and the recognition of the role of institutional variety does not mean that the objectives have changed. As admitted by D'Erman et al. (2019, 196), the European Semester "builds on the economic rules that had been in place since the start of EMU and have been further developed in EMU's first decade. These include the so-called Stability and Growth Pact (SGP) that was already developed early on but also the Macro-Economic Imbalance Procedure (MIP) introduced in 2011." Finally, they conclude that:

the recommendations that the different Euro Area members have received over time vary according to country, year, and economic model. Different types of market economies (Hall and Soskice, 2001) among Euro Area members tend to obtain recommendations focused on different policy areas. However, the policy areas affected by a recommendation are mostly a proxy for the EU's reform priorities; in and by themselves they do not tell us much about how exactly the EU is trying to alter the policies of a member state within a given policy area. For example, in its recommendation focused on labor markets and wages, does the EU promote reducing or strengthening workers' rights? Future research could usefully shed light on these questions of the "policy direction" of the EU's recommendations. (D'Erman et al., 2019, 206)

In addition to the ambiguity of this "policy direction," we should consider that "the slippage of Europe 2020 into the European Semester since 2011–12 has meant the further absorption of social policy into macroeconomic policy, and the political focus has clearly been placed on budgetary oversight and deficit reduction" (Crespy and Menz, 2015, 762). Based on these considerations, we cannot deny that European institutions have only adapted their instruments to cope with eurozone heterogeneity without changing the initial theoretical postulates.

In conclusion, it is not clear what kind of convergence European institutions aim to achieve. Consequently, for member countries it is not clear what the benchmark is. Even today, it seems difficult to reconcile the stated goal in many European treaties on promoting growth, equity, social development, and justice with the commitment to ensure economic stability through structural reforms and fiscal discipline. Yet both are necessary. This goal requires the active support of member countries.

The willingness of each member country to implement responsible policies and avoid moral hazard and uncooperative attitudes in order to converge toward stability and robustness is an essential precondition for ensuring the long-term survival of the eurozone, the effectiveness of European monetary policy, and the well-being of European citizens. However, this is not enough. To solve the puzzle, in the next section we present the European benchmark as a tool to help member countries link this type of convergence consistently with their institutional idiosyncrasies.

## 3. The European benchmark

VoC studies tend to conclude that the monetary union is not viable. Our goal is not to show the validity of the VoC theory but to assess the viability of an EU without common government over the economy. The present EU architecture is based on the idea that institutionally different countries need to converge primarily in their fiscal behavior to make the common currency viable. In general and considering the financial and economic effects of the common currency, it is implicitly believed that institutionally different countries can obtain similar results even in a monetary union without fiscal transfers. We start with this view and assess whether a monetary union without institutional convergence is viable. Our hypothesis is that, to achieve this goal, member countries must use their own idiosyncratic institutions in the best possible way, within the new institutional, organizational, and policy framework of the monetary union. For this reason, we introduce the Eb.

The purpose of the European benchmark is to define a new shared and measurable common vision on the objectives, strategies, and assessment criteria to adopt in the EU. The Eb (described in detail in Casagrande and Dallago (2019)) aims to help member countries move toward stability, growth, and robustness by removing inefficiencies and market failures from economic, political, and social institutions. The Eb enables the measurement of institutional efforts required of each country—based on its own institutions but making them function better and, if necessary, reforming them—to make the operations of its idiosyncratic institutions compatible with the EMU, in order to achieve comparable outcomes (approaching the frontier).

Accordingly, European institutions and policies should be more flexible in their approach and concentrate on national outcomes and less on procedures. Convergence among member countries should center on the mutual compatibility and positive spillovers of outcomes, while avoiding negative spillovers of national procedures. This approach does not consider a particular economic model as the benchmark. Each country should be free to pursue shared outcomes in the most effective way under the constraint of avoiding negative spillovers, however difficult this may be, to define operatively. Because national institutions differ, effective approaches might and perhaps should differ as well. A clear consequence of this approach is that national policies should be more transparent and better coordinated at the EU level. In consequence, no structural reforms aimed at changing the institutional framework of a country can be drawn based on the Eb.

The Eb is what the EU considers desirable or necessary for a club of partially sovereign countries to stay together. As such, the benchmark can only be a "common" benchmark derived from a political-technical agreement with no necessary correspondence in any country and taken from EU treaties. Indeed, the Eb draws on its legitimacy in the European treaties' principles, which are the result of democratic and voluntary approval by the member countries and thus bind their decisions. Although EU treaties have a disproportionate focus on fiscal discipline and cost-saving (competitiveness fostering) structural reforms, Eb is compatible with the stated purposes of EU treaties, which aim to promote, among other things, equity and social justice.

The Maastricht Treaty (MT) is intended to induce member countries to converge toward similar economic behavior and performance through sound public finances and price stability, with careful policies and structural reforms in order to avoid moral hazard. Sound public finances and price stability are the necessary conditions for driving economic growth. The MT is compatible with these objectives and aims to create full employment and balanced and sustainable economic and social progress. The so-called social chapter of the MT prescribes the conditions of workers while the Lisbon Treaty (LT), Article 3, explicitly states that the EU "shall combat social exclusion and discrimination, and shall promote social justice and protection." The LT, Article 9, states: "the Union shall observe the principle of the equality of its citizens, who shall receive equal attention from its institutions, bodies, offices and agencies." In Article 21, it cites the principle of solidarity among the principles underlying the EU. Chapter 19 of the *acquis communautaire* on social issues sets minimum standards for labor law, equality, health and safety at work, and the prevention of discrimination. Especially since the crisis, it has been difficult for the EU to make the objective of economic soundness and stability, let alone growth, coexist with the promotion of solidarity, equity, development, and social justice. The Eb provides a framework for considering these factors and reconciling the various objectives.

The Eb is based on the identification of pillars that enable evaluation of the economic, political, and social performance of each member country and its distance from the benchmark. The benchmark can be defined as the conditions in which the institutions of a member country work best, so as to guarantee stability, solidity, and development under EU integration.

The identification of the pillars is partly inspired by the influential Padoa-Schioppa (1987) report, developed by a study group appointed by the Commission of the European Communities in 1987. This report is relevant because it clearly identified the economic conditions that would permit the future monetary union to survive in the long run, even before the creation of the EMU. According to the report, these conditions can be identified with the following criteria: efficiency, stability, equity, and growth.

Starting with this contribution, other criteria have been added, because the Eb has not only the economic but also the political and social dimensions. In consequence, the Eb was conceived as a framework in which the following seven criteria are present: efficiency and effectiveness, stability, equity and equality, growth, and development.

These criteria were chosen for various theoretical reasons. Efficiency, that is, the measurable maximum result obtained from the use of a given amount of resources at the minimum possible cost, is increasingly considered insufficient for assessing the performance of markets and institutions. Effectiveness is defined as the ability to pursue and implement an intended or expected result, such as the desired output. Effectiveness enables assessment of the quality of the results and their consistency with the objectives (see, e.g., Mandl et al. (2008), in which both concepts are considered with reference to public spending). Equity relates to the need for fairness in resource distribution and business based on equality in rights and opportunities. Development is a dimension that broadens the perspective of growth by considering structural change and political and social implications, a more "normative concept" that can

**Table 1**
Fifteen Pillars of the European Benchmark.

1. *Economic efficiency*: resources in the goods, labor and financial markets are used and allocated in an optimal way and output is produced and traded at the lowest cost.
2. *Economic effectiveness*: capacity of goods, labor and financial markets to promote and facilitate the achievement of the economic agents' objectives to social advantage.
3. *Economic stability*: economic soundness through stable financial markets and solid banking system, limited economic vulnerability and credible economic policies.
4. *Economic equity*: equity in the distribution of income, of economic opportunities and fairness in business.
5. *Economic growth*: the increase in the amount and quality of goods and services produced also through technical progress.
6. *Political efficiency*: ability of the political institutions of the state (the trias politica: legislative, executive and judicial system) to create, approve and enforce only the necessary laws and solve conflicts promptly, with rapid and fair procedures, minimizing social, economic and bureaucratic costs.
7. *Political effectiveness*: ability of political institutions to effectively influence the behavior of agents by announcing, creating, approving and enforcing laws and procedures resulting from shared decisions that meet the economic and social needs of the country.
8. *Political stability*: stability of the political system as a result of the trust of the electorate, the political class and the other institutions in the political regime and in the mechanisms and laws that regulate the management of power.
9. *Political equality*: citizens are equals before the law and all the political institutions of the state. It implies the absence of corruption, favoritism, cronyism and discrimination and implies also the independence and impartiality of the institutions.
10. *Political development*: continuous process of rationalization and qualitative improvement of the structures, procedures and outputs of the political institutions of the state.
11. *Social efficiency*: ability of the institutions to pursue social utility by offering quality services and structures at the lowest economic, bureaucratic and social transaction cost.
12. *Social effectiveness*: the capability to pursue social goals, the capacity of solving negative externalities produced by market inefficiencies, and the ability to produce public goods and promote quality improvements to meet the needs of the citizen.
13. *Social stability*: effectively pursuing social cohesion and properly managing and solving social conflicts by means of governmentally formalized, regulated and enforced laws, rules, and norms for social relations (Gubin et al., 1993).
14. *Social equity*: impartiality, fairness and justice in the social and labor relations.
15. *Social development*: process of planned or spontaneous social change designed to promote the well-being of the population (Midgley, 1995, 25) and its human and cultural development.

accommodate qualitative perspectives (Carruthers and Babb, 2000, 145). For this reason, growth is associated only with the economic dimension, but development with the political and sociological dimensions.

The combination of the seven criteria with the three dimensions produces fifteen pillars (see Table 1). This is because some criteria can be combined with some dimensions. For example, and as previously explained, equality is a criterion that can be combined with the political dimension, whereas equity fits in the social and the economic dimensions. Development enables investigation of the social and political dimensions, while growth focuses on the economic dimension.

## 4. An empirical analysis of the European benchmark

In this section, we illustrate how the Eb can be defined and used for an empirical investigation of the economic and institutional variety within the eurozone, which can form the basis for a new EU approach. It is possible to measure the distance of each EU member country from the Eb, expressed in terms of the pillars, using the distance-to-frontier (DTF) score methodology. The strengths and weaknesses of each member country can be identified with respect to each pillar, in reference to their political, economic, and social institutions.

### *4.1. Methodology: issues, approaches, and strategies*

Conducting the empirical analysis requires us to address two methodological issues. The first issue concerns the measurement of institutions, whereas the second concerns the choice of indicators for the empirical investigation. A well-known topic in economic literature is the question of how to measure institutions. The literature offers many suggestions about how to measure institutions empirically. As noted by Voigt (2013, 3), it is important not to use aggregate indicators with definitions that are too broad (e.g., rule of law), to prefer objective measurements over subjective ones, and to consider both *de jure* and *de facto* institutions. In the present analysis, aggregate indicators with too broad definitions are not considered whereas the presence both of objective and subjective indicators is considered carefully to explain the impact of a type of indicator on the final results. Ultimately, both *de jure* and *de facto* institutions are considered.

The way in which these indicators are used for the calculation of the DTF scores introduces issues related to the methodological approaches and strategies. If the objective is to measure strengths and weaknesses of each EU member country with respect to the pillars, the indicators should be aggregated to calculate composite indicators. Composite indicators are generally viewed with skepticism because of their lack of transparency. This issue can be addressed by resorting to the guidelines in the *Handbook on Constructing Composite Indicators* (OECD and JRC, 2008), which summarizes the most important sources and indicates the fundamental steps in the development of composite indicators. These steps are related to properly choosing and defining the theoretical framework, data selection, imputation of missing data, normalization, weighting, and aggregation, up to presentation and visualization.

The careful definition of each pillar and the identification of the subpillars facilitate the creation of indices that are relevant, following a fitness-for-purpose principle. Each of the 15 pillars has three quantifiable subpillars, and the choice of the number of subpillars for each pillar was determined by the pillar definitions. Each of the 45 subpillars is related to particular indices, which are constructed based on indicators collected from different databases (the indicators are listed in Table G in the appendix (in Supplementary Material)). The number of indicators used in the generation of 93 indices is 503. The indicators are selected according to their analytical soundness, measurability, country coverage, and relevance. The number of indicators varies depending on the index because the indices are not equally complex, and therefore some require a larger number of indicators for the analysis to be satisfactory. We considered all 28 European member countries for the period 2007–2017. Although the period considered is not particularly long, it is significant because it includes the period of the crisis, which severely tested national and European institutions. Choosing the period is thus useful for examining the Eb's ability to identify the weaknesses in the economic, political, and social institutions and assess how they evolved. The indicators were collected from different databases.[1] Each indicator, index, subpillar, and pillar has the same weight as the others, because EU treaties do not distinguish among them.

In addition, weighting different pillars requires a value judgment of each pillar by the researcher, the member countries, or the EU. Because our aim is the viability of the EU, the first of these is irrelevant. Taking the second approach would introduce into the exercise what we want to exclude: an ex-ante value judgment of different varieties of capitalism. Not using the third—EU-based—weighting reflects our criticism of the present construction of the EU: concentration on fiscal parameters that disregard real (growth and employment) and social parameters. We believe that it is better to employ a more limited, but fairer weighting system. The aggregation of partial scores gives a rough measure of the overall effort required of each country.

Given the strong heterogeneity of the indicators, the problem of missing data is particularly important. Economic, political, and social indicators have different levels of data coverage and come from different sources. Considering that similar issues are addressed in the empirical literature, the following methodology, suggested in the Asia-Pacific Trade and Investment Report of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), is adopted:

[1] The databases used are from the World Bank, World Economic Forum, World Trade Organization, International Monetary Fund, UNESCO, OECD, Eurostat, European Commission, Council of Europe European Commission for the Efficiency of Justice (CEPEJ), Institutional Profiles Database (IPD), Eurofound, AMECO, Freedom House, Global Financial Development Database, International Institute for Democracy and Electoral Assistance (International IDEA), International Labour Organization (ILO), Quality of Government (QoG) Institute, Sustainable Governance Indicators (SGI), and other sources.

if values are available for both an earlier and a later year than the year for which the aggregate is calculated, the missing value has been imputed using linear interpolation. A missing country value for a year preceding the earliest year for which a value is available has been imputed using the value from the earliest year. Similarly, a missing country value for a year following the latest year for which a value is available has been imputed by using the value of the latest year. For countries with only one data point for the whole period, this value has been used for all missing years. No information is used from other countries for imputing the missing values. (Mikic, 2009, 182)

Normalization is a process that makes the indicators compatible, and the weighting and aggregation procedure is the final step in calculating the indices. Normalization, weighting, and aggregation are developed using the DTF score methodology developed by the World Bank.

#### *4.1.1. The distance-to-frontier (DTF) score methodology*

The DTF score methodology was adopted after a preliminary analysis of data. DTF is an absolute score that compares a country's performance against the best and worst performance for each indicator. DTF overcomes the limitations of the ranking system, which fails to reflect improvement in a country's score when all other countries also improve. DTF measures a country's relative position and compares index scores over time. The variables that emerge from the DTF calculation can be based on many different units of measurement (e.g., years, percentages, quantities, billions), which need to be normalized to enable meaningful comparisons between different variables and countries. In particular, calculating the DTF score for each country involves three main steps (WB, 2018):

1 Indicators are normalized to a common unit of measurement, and each component indicator y is rescaled using linear transformation (worst – y)/(worst – frontier).
2 The scores obtained for individual indicators for each country are aggregated through simple averaging into one DTF score.
3 The DTF score is indicated on a scale from 0 to 100, where 0 represents the worst performance and 100 the best performance, the frontier.

For each indicator, the best performance (100) and the worst performance (0) do not necessarily correspond to the performance of a particular country. For many indicators, the best and the worst performance correspond to values that were set a priori and might not be achieved by any country. For example, an indicator could be represented by the responses of inhabitants or experts to questionnaires, with the minimum to a maximum score set by the interviewer. The answers could range between the minimum and maximum score. In other cases, the value might come from a technical assessment of the government's policy implementation. Considering that the pillars are based on the combination of many indicators, the frontier does not correspond to the performance of a specific country.

If one country is closer to the frontier than another, this does not mean that it represents an example for other countries or that its institutional framework is the best. It simply means that that country has optimized its economic, political, and social performance given its institutional framework. It is possible to calculate a DTF score for each index, subpillar, and pillar in order to identify the strengths and weaknesses of the economic, political, and social institutions in each country. In the next section, DTF scores are calculated and analyzed for each country.

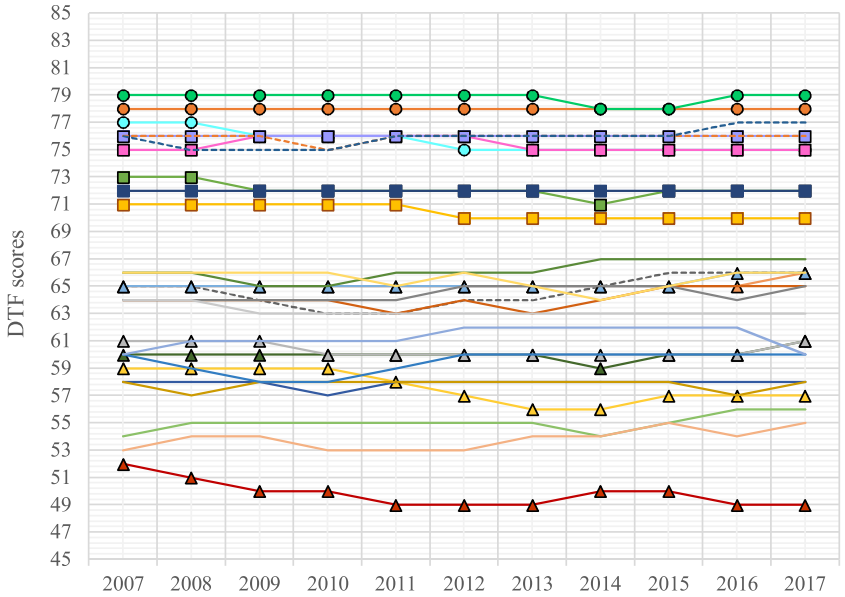



**Fig. 1.** DTF scores (average all pillars).

## 5. An analysis of the results

### 5.1. Identifying and classifying institutional variety

As a starting point, the overall DTF scores, considering the average of all pillars for each EU member country for the period considered (from 2007 to 2017), are reported and ranked in Figs. 1 and 2.

Our results can be interpreted in light of the classifications of capitalist systems in VoC theory. Although we use VoC classifications, our results represent an exercise in institutional possibility, unlike the prevailing institutional impossibility that is typical of VoC. The goal of our empirical analysis is to reveal the strengths and weaknesses of each country, in each pillar. The country classifications are used only to help in interpreting the results. The scores do not have to be consistent with the model, although they can be used to verify the VoC classifications.

The traditional classification by Hall and Soskice (2001) identifies two capitalist economies: LMEs and CMEs. As noted by many authors (e.g., Amable, 2003), this classification centered on the coordination dimension and the role of the firm is reductive. As stated by Dilli et al. (2018, 296), "researchers pointed out that more varieties of capitalism can be observed than CMEs and LMEs. Among the most researched economies, at least two more institutional models have been recognized, namely Mediterranean Market Economies (MMEs) and Eastern European Market Economies (EMEs)."

Fig. 1 seems to confirm this view. Indeed, for the full period, southern and eastern European countries have markedly different DTF scores than northern countries, with the exception of Ireland. So, it is appropriate to consider MMEs and EMEs, represented by the post-communist countries, also called developmental or cocktail capitalism economies. According to the results, Scandinavian countries stand out among the best-performing countries and make up a separate capitalist system group. This view is supported in the literature that identifies Scandinavian countries as social democratic market economies (see, e.g., Vallejo-Peña and Giachi, 2018). The presence of the Scandinavian social democratic market economies group enables us to consider the differences between the Nordic and continental models. The Nordic countries are mostly constitutional parliamentary monarchies with a high degree of protection of freedom, an efficient welfare state, efficient markets, labor protection, and high-quality health care and education. Compared to the continental model, the Nordic model is seen as capitalism with socialist values. In summary, the results can be interpreted in light of this classification as follows:

- *Scandinavian social democratic market economies*: Denmark, Finland, and Sweden.
- *Continental/coordinated market economies:* Austria, Belgium, France, Germany, and Luxembourg.
- *Liberal market economies*: Ireland, the Netherlands, and the United Kingdom.
- *Mixed Mediterranean market economies*: Cyprus, Greece, Italy, Malta, Portugal, and Spain.

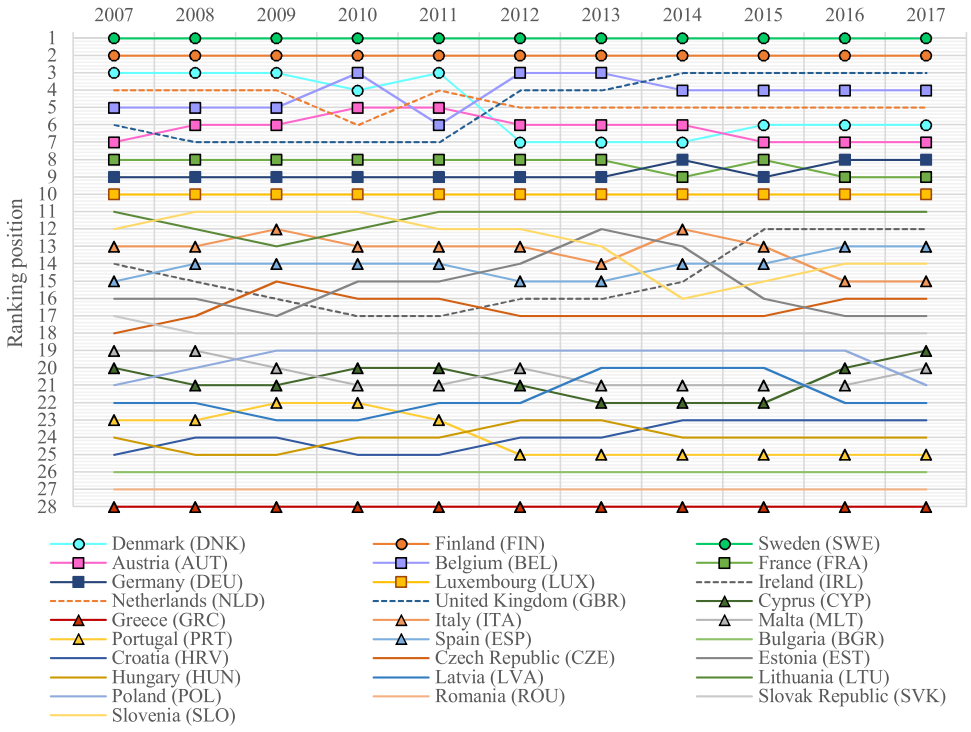



**Fig. 2.** Ranking positions (average DTF scores all pillars).

- *Developmental/cocktail capitalism economies*: post-communist countries (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia).

Cyprus and Malta are considered mixed MMEs, and Luxembourg is a continental/coordinated market economy, even though "their institutional model is not clearly positioned according to the literature" (Vallejo-Peña and Giachi, 2018, 26). Although geographically Finland is not part of Scandinavia, it is usually included among Scandinavian social democratic market economies.

### 5.2. DTF scores and ranking: a first overview

According to our results in Figs. 1 and 2, Scandinavian, continental, and LME countries (excluding Ireland) have better DTF scores than the other countries. Indeed, these countries rank among the top ten from 2007 to 2017, with average DTF scores above 69. It is easy to check that this ranking is not influenced by whether a country is in the eurozone. The particularly positive performance of the Scandinavian countries is not surprising and is consistent with previous studies that highlight that "the Nordic model does not escape economic crisis, but it is resilient" (Andersen et al., 2015, 2). Some developmental/cocktail capitalism countries have better DTF scores than some Mediterranean countries. The fact that no country reached the benchmark suggests that there is room for improvement by all European countries, despite their differences.

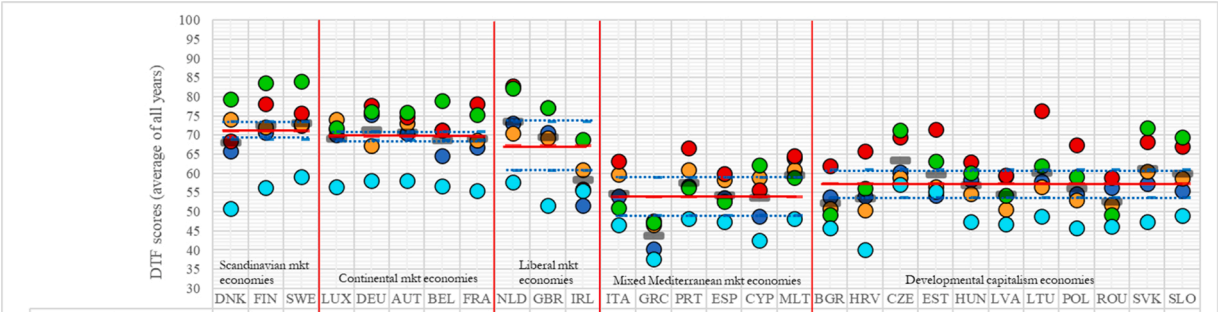
In general, our data generate a ranking that seems stable over time but with some interesting results. For example, although Sweden ranks first for the full period, the United Kingdom moves up from sixth to third place, to the detriment of Denmark, which slips from third to sixth place. Greece is in a critical situation: in addition to remaining in last place for the full period, it has a DTF score that decreased from 2007 to 2017. The European sovereign debt crisis may have affected the performance of some member countries, mostly by accentuating existing problems. An analysis of the single economic, political, and social pillars enables us to understand the determinants of these DTF scores.

### 5.3. Analysis of the pillars

#### 5.3.1. Economic dimension and country profiles

The average values of the DTF scores for each economic pillar of each member country are reported in Fig. 3. Scandinavian, liberal, and continental countries tend to perform better across most economic pillars than the other countries, with average DTF scores between 68 and 74. Ireland is an exception, with an average DTF score of 58. In particular, Scandinavian and continental countries have similar average DTF scores within their groups, as confirmed by the low standard deviation. The dispersion within LMEs and MMEs is greatly affected by the poor performance of Ireland and Greece, respectively. Economic equity and stability are the best-performing pillars whereas the DTF scores of the economic growth pillar are definitely lower. Table B in the appendix (in Supplementary Material) suggests that most northern countries rely on effective support from the government and on the stability, fairness, and soundness of their markets. In this group, Ireland is an exception. Mediterranean countries have lower average DTF scores, with Greece the worst-performing among them. Economic growth is the most problematic pillar, but economic efficiency and economic effectiveness also have low DTF scores. On average, Mediterranean countries seem to perform better than post-communist countries only in terms of economic effectiveness. In general, all countries are quite far from the frontier. This suggests that all countries can improve in their economic dimension.

Table E in the appendix (in Supplementary Material) suggests that the economic dimension also deteriorated in many northern




| | DNK | FIN | SWE | LUX | DEU | AUT | BEL | FRA | NLD | GBR | IRL | ITA | GRC | PRT | ESP | CYP | MLT | BGR | HRV | CZE | EST | HUN | LVA | LTU | POL | ROU | SVK | SLO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| economic efficiency | 66 | 71 | 72 | 70 | 75 | 71 | 65 | 67 | 73 | 71 | 52 | 54 | 40 | 57 | 54 | 49 | 64 | 54 | 54 | 60 | 54 | 58 | 59 | 58 | 55 | 56 | 57 | 56 |
| economic effectiveness | 74 | 72 | 73 | 74 | 67 | 73 | 71 | 69 | 70 | 69 | 61 | 60 | 47 | 61 | 58 | 59 | 61 | 51 | 50 | 59 | 56 | 55 | 51 | 56 | 53 | 52 | 60 | 59 |
| economic stability | 68 | 78 | 76 | 71 | 78 | 75 | 71 | 78 | 83 | 77 | 56 | 63 | 48 | 67 | 60 | 56 | 65 | 62 | 66 | 69 | 71 | 63 | 60 | 76 | 67 | 59 | 68 | 67 |
| economic equity | 79 | 84 | 84 | 72 | 76 | 76 | 79 | 75 | 82 | 77 | 69 | 51 | 47 | 56 | 53 | 62 | 59 | 49 | 56 | 71 | 63 | 60 | 54 | 62 | 59 | 49 | 72 | 69 |
| economic growth | 51 | 56 | 59 | 56 | 58 | 58 | 57 | 55 | 58 | 52 | 55 | 47 | 38 | 48 | 47 | 43 | 48 | 46 | 40 | 57 | 55 | 47 | 47 | 49 | 46 | 46 | 47 | 49 |
| average all economic pillars | 68 | 72 | 73 | 69 | 71 | 71 | 69 | 69 | 74 | 70 | 58 | 55 | 44 | 58 | 54 | 54 | 60 | 52 | 53 | 63 | 60 | 57 | 54 | 60 | 56 | 53 | 61 | 60 |
| group average | 71 | 71 | 71 | 70 | 70 | 70 | 70 | 70 | 67 | 67 | 67 | 54 | 54 | 54 | 54 | 54 | 54 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 |
| st. dev. group (+) | 73 | 73 | 73 | 71 | 71 | 71 | 71 | 71 | 74 | 74 | 74 | 59 | 59 | 59 | 59 | 59 | 59 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |
| st. dev. group (-) | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 61 | 61 | 61 | 49 | 49 | 49 | 49 | 49 | 49 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |

**Fig. 3.** DTF scores economic pillars.

countries since 2007 (in particular, the economic effectiveness pillar in the Scandinavian countries), whereas the post-communist countries improved, particularly in terms of economic efficiency and effectiveness. The low scores for the growth pillar do not seem to be a consequence of the crisis but, rather, have much deeper roots. They seem to confirm the pessimistic prospects reported, for example, by Halmai and Vásáry (2010, 239), who projected that "a permanent and significant decline in the potential growth rate is to be expected" within the union because "the unfavorable investment environment promotes a higher level of capital outflow and a notable increase in the share of imported products and services." This seems to be confirmed by the low performance of the subpillars related to investment and international trade. Well before the crisis, Carone et al. (2006, 56) stressed the "negative effects from ageing on EU potential growth rates," an observation confirmed by our results.

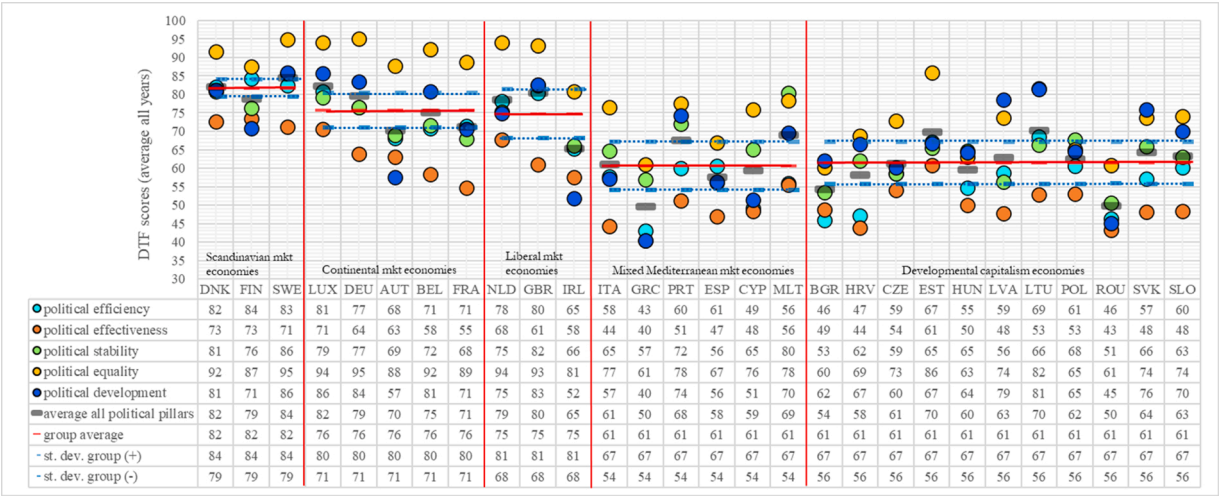
The DTF scores reported in Table B in the appendix (in Supplementary Material) show that Mediterranean and post-communist countries can improve their efficiency in the use of resources and the efficiency and effectiveness of their financial system. The efficiency and effectiveness of the financial system in most post-communist systems has not yet reached the level of other European countries. In particular, poor financial depth emerges, an aspect also noted by Caporale et al. (2015), who believe that this aspect makes these financial systems underdeveloped and prevents them from contributing to growth in these countries. Another result of our investigation, namely, the low ability of financial systems to meet the needs of households and businesses, seems to be confirmed by Caporale et al. (2015), who claim that this could also be caused by the poor development of the financial infrastructure and the low functioning of the legal system, which prevents financial resources from being devoted to productive sectors. The low financial depth and the scarce ability of financial systems to meet the needs of households and businesses seem to be, however, issues for many member countries.

In terms of economic equity and, in particular, fair distribution, some post-communist and Mediterranean countries have rather low scores. The Mediterranean countries also have low efficiency in the labor market, and many are economically unstable and vulnerable particularly because of foreign dependence, which is also seen in many other countries. This is not surprising, as noted by Gutiérrez (2014): unemployment, income inequality, and poverty risk levels increased after the crisis. As confirmed by Bonasia et al. (2020, 330), "very strict fiscal policy adjustments may cause more harm to individuals on lower tails of income and wealth distribution." Indeed, in Table E in the appendix (in Supplementary Material), the economic equity pillar has deteriorated in most countries. But Gutiérrez (2014) stresses that in Mediterranean countries, some issues were present long before the crisis, such as labor market dualism, low labor participation by young people, and equity problems, which were not completely solved by Europeanization, especially in Greece. Our results are consistent with the analysis by Gutiérrez (2014).

### 5.3.2. *Political dimension and country profiles*

The DTF scores for the political pillars for each member country are reported in Fig. 4. Again, across most political pillars, Scandinavian, liberal, and continental countries tend to perform better than other countries, with average DTF scores between 70 and 84. Ireland again is an exception, with an average DTF score of 65. In particular, within their group, Scandinavian countries have similar average DTF scores, as confirmed by the low standard deviation. The other groups show higher dispersion and lower average DTF scores. The average political performance of CMEs and LMEs is similar, whereas Mediterranean and post-communist countries perform similarly and have lower average DTF scores, with Greece and Romania as the worst-performing countries. Most countries perform best in political equality and worst in political effectiveness.

In general, the DTF seems lower for political pillars than for economic pillars. The analysis of the subpillars and indices in Table C in the appendix (in Supplementary Material) reveals that, despite moderate government stability, low trust in institutions and general dissatisfaction with the bureaucracy and the legal and judicial system (which determine the low DTF scores for the political effectiveness pillar), European political systems are stable and based on solid and shared democratic values. These values are probably the




| | DNK | FIN | SWE | LUX | DEU | AUT | BEL | FRA | NLD | GBR | IRL | ITA | GRC | PRT | ESP | CYP | MLT | BGR | HRV | CZE | EST | HUN | LVA | LTU | POL | ROU | SVK | SLO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| political efficiency | 82 | 84 | 83 | 81 | 77 | 68 | 71 | 71 | 78 | 80 | 65 | 58 | 43 | 60 | 61 | 49 | 56 | 46 | 47 | 59 | 67 | 55 | 59 | 69 | 61 | 46 | 57 | 60 |
| political effectiveness | 73 | 73 | 71 | 71 | 64 | 63 | 58 | 55 | 68 | 61 | 58 | 44 | 40 | 51 | 47 | 48 | 56 | 49 | 44 | 54 | 61 | 50 | 48 | 53 | 53 | 43 | 48 | 48 |
| political stability | 81 | 76 | 86 | 79 | 77 | 69 | 72 | 68 | 75 | 82 | 66 | 65 | 57 | 72 | 56 | 65 | 80 | 53 | 62 | 59 | 65 | 65 | 56 | 66 | 68 | 51 | 66 | 63 |
| political equality | 92 | 87 | 95 | 94 | 95 | 88 | 92 | 89 | 94 | 93 | 81 | 77 | 61 | 78 | 67 | 76 | 78 | 60 | 69 | 73 | 86 | 63 | 74 | 82 | 65 | 61 | 74 | 74 |
| political development | 81 | 71 | 86 | 86 | 84 | 57 | 81 | 71 | 75 | 83 | 52 | 57 | 40 | 74 | 56 | 51 | 70 | 62 | 67 | 60 | 67 | 64 | 79 | 81 | 65 | 45 | 76 | 70 |
| average all political pillars | 82 | 79 | 84 | 82 | 79 | 70 | 75 | 71 | 79 | 80 | 65 | 61 | 50 | 68 | 58 | 59 | 69 | 54 | 58 | 61 | 70 | 60 | 63 | 70 | 62 | 50 | 64 | 63 |
| group average | 82 | 82 | 82 | 76 | 76 | 76 | 76 | 76 | 75 | 75 | 75 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |
| st. dev. group (+) | 84 | 84 | 84 | 80 | 80 | 80 | 80 | 80 | 81 | 81 | 81 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| st. dev. group (-) | 79 | 79 | 79 | 71 | 71 | 71 | 71 | 71 | 68 | 68 | 68 | 54 | 54 | 54 | 54 | 54 | 54 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |

**Fig. 4.** DTF scores political pillars.

basis of the high level of the political equality pillar, though it is threatened by corruption and favoritism, especially in the Mediterranean and post-communist countries. In these countries, the efficiency and effectiveness of the political system is lower, and this might be the basis of low participation and trust in the political system. The political development pillar shows that the Mediterranean and post-communist countries have greater difficulty in developing a long-term strategic vision and implementing reforms.

According to some scholars, such as Djankov and Hauck (2016), in some post-communist countries the transition to a market economy was more rapid than the transition to democracy, and the economic results were better than the political ones. Our results confirm these observations, in particular in countries such as Romania and Bulgaria, which, as confirmed by Djankov and Hauck (2016, 3), failed to address corruption and the rise of oligarchies through reforms. As noted by Grozdanić and Martinović (2012), corruption is a widespread problem in transition economies. According to our results, some post-communist countries— such as Estonia and Lithuania—seem to perform better than the others in political pillars. This can be explained by the observation of Roland (2017, 13–14), who states:

Countries like Poland, Czechoslovakia and Baltic countries had higher level and stronger maturity of dissident activity, which affected initial political institutions. … Those who had fought for democracy for a very long time made sure to shape institutions in the right way: lower concentration of power in the hands of the executive, more separation of powers and more inclusive institutions.

In Mediterranean countries, the problem of having a judicial system with low efficiency, effectiveness, and development also seems to be fairly widespread. Most member countries should pay more attention to improving public administration and the legal and judicial system.

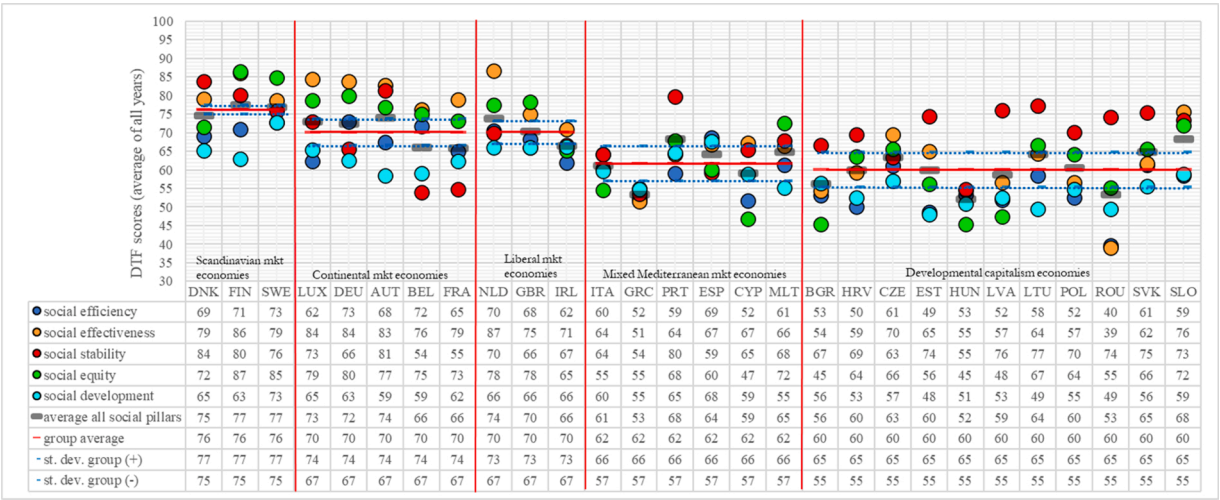
### *5.3.3. Social dimension and country profiles*

The DTF scores of the social pillars for each country are reported in Fig. 5. Northern countries (i.e., Scandinavian, liberal, and continental countries) perform better than other countries across social pillars, with average DTF scores between 66 and 77. Hungary is the worst-performing country, with an average DTF score of 52. Some particularly surprising results concern the low average scores of some pillars: social development and social efficiency.

The analysis of the subpillars and indices in Table D in the appendix (in Supplementary Material) reveals that in northern countries as well the efficiency can be improved in the health and education system and infrastructure. The incidence of crime, tension between ethnic/religious groups, and labor unrest have a negative impact on social stability in most northern countries, and in particular in Belgium and France.

In Table E in the appendix (in Supplementary Material), social stability deteriorated from 2007 to 2017 in countries such as Austria, Belgium, Denmark, Finland, France, Luxembourg, the Netherlands, and Sweden, but it improved or remained stable in most Mediterranean and post-communist countries; the social efficiency pillar deteriorated, particularly in Denmark, France, Greece, and United Kingdom. The situation in Belgium is particularly significant, as it has a DTF score for the social stability pillar of 54, equal to the score for Greece, though with a lower incidence of crime in Greece. According to Table D in the appendix (in Supplementary Material), despite having an average incidence of crime that is higher than in some post-communist countries, most northern countries have higher confidence in the state's ability to maintain public order than is the case in other countries. Some northern countries have effective social dialogue despite the social conflicts. Compared to Mediterranean countries, northern countries have a low level of solidarity and self-destructive tendencies. However, Mediterranean countries, like post-communist countries, have weak cultural development. These results have a negative impact on the social development pillar.

Nevertheless, in the northern countries, the public perception of the quality of life and future prospects is much higher than in other countries, which tend toward pessimistic perceptions of them. Some of our observations on the problems and contradictions of the Nordic countries seem to be shared by Simons and Manoilo (2019) and Neuding (2018), particularly regarding Sweden. Similar




| | DNK | FIN | SWE | LUX | DEU | AUT | BEL | FRA | NLD | GBR | IRL | ITA | GRC | PRT | ESP | CYP | MLT | BGR | HRV | CZE | EST | HUN | LVA | LTU | POL | ROU | SVK | SLO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| social efficiency | 69 | 71 | 73 | 62 | 73 | 68 | 72 | 65 | 70 | 68 | 62 | 60 | 52 | 59 | 69 | 52 | 61 | 53 | 50 | 61 | 49 | 53 | 52 | 58 | 52 | 40 | 61 | 59 |
| social effectiveness | 79 | 86 | 79 | 84 | 84 | 83 | 76 | 79 | 87 | 75 | 71 | 64 | 51 | 64 | 67 | 67 | 66 | 54 | 59 | 70 | 65 | 55 | 57 | 64 | 57 | 39 | 62 | 76 |
| social stability | 84 | 80 | 76 | 73 | 66 | 81 | 54 | 55 | 70 | 66 | 67 | 64 | 54 | 80 | 59 | 65 | 68 | 67 | 69 | 63 | 74 | 55 | 76 | 77 | 70 | 74 | 75 | 73 |
| social equity | 72 | 87 | 85 | 79 | 80 | 77 | 75 | 73 | 78 | 78 | 65 | 55 | 55 | 68 | 60 | 47 | 72 | 45 | 64 | 66 | 56 | 45 | 48 | 67 | 64 | 55 | 66 | 72 |
| social development | 65 | 63 | 73 | 65 | 63 | 59 | 59 | 62 | 66 | 66 | 66 | 60 | 55 | 65 | 68 | 59 | 55 | 56 | 53 | 57 | 48 | 51 | 53 | 49 | 55 | 49 | 56 | 59 |
| average all social pillars | 75 | 77 | 77 | 73 | 72 | 74 | 66 | 66 | 74 | 70 | 66 | 61 | 53 | 68 | 64 | 59 | 65 | 56 | 60 | 63 | 60 | 52 | 59 | 64 | 60 | 53 | 65 | 68 |
| group average | 76 | 76 | 76 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 62 | 62 | 62 | 62 | 62 | 62 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| st. dev. group (+) | 77 | 77 | 77 | 74 | 74 | 74 | 74 | 74 | 73 | 73 | 73 | 66 | 66 | 66 | 66 | 66 | 66 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| st. dev. group (-) | 75 | 75 | 75 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 57 | 57 | 57 | 57 | 57 | 57 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |

**Fig. 5.** DTF scores social pillars.

contradictions seem to stress the importance of considering both objective and subjective indicators. Indeed, public opinion about the economic, political, and social conditions in a country reported in a survey might (consciously or not) differ from the reality. This could be caused by sociocultural factors or by the delay with which public opinion adapts to changes in reality.

The economic crisis also affected social pillars, which seems clear from the situation in Greece in Table E in the appendix (in Supplementary Material). In Greece the DTF scores for the social development and efficiency pillars decreased beginning in 2007. The post-communist countries, which have low DTF scores for these pillars, are at a phase of development (confirmed by improvement in some countries beginning in 2007 reported in Table E in the appendix (in Supplementary Material)) that is accompanied by many social contradictions. These important topics certainly deserve further investigation.

## 6. Conclusion

In the present paper, the Eb is empirically investigated. The distance of each EU member country from the Eb is measured using the DTF score methodology. The strengths and weaknesses of each member country are identified.

Countries with a similar profile across pillars roughly correspond to the VoC findings, a result that we consider important with respect to both the strength of VoC theory, regarding permanent institutional differences among countries, and the constructive message that it sends to the EU. Our data confirm that no country can be a model for others because each has its own peculiarities and has to address its own problems; none is on the “common” frontier. The ability to measure the distance of each country from the benchmark highlights that maintaining the Union requires an effort by each country and that this effort might be different for different pillars.

In general, the economic crisis may have accentuated political, economic, and social features and dynamics, but it did not create them. Indeed, these idiosyncrasies seem to persist in many countries. Northern countries (i.e., Scandinavian, liberal, and continental economies) seem to perform better than Mediterranean and post-communist countries. Nevertheless, when we consider individual pillars, this conclusion is not trivial. Some economic, political, and social pillars also deteriorated after 2007 not only in Mediterranean countries but also in many northern countries, whereas some post-communist countries experienced major improvements after 2007. This dynamic might indicate that some European policies may have caused deterioration in some pillars and that complementarities and trade-offs between pillars exist. These issues are certainly worthy of further research.

This implies that encouraging countries to model themselves after the northern countries could be misdirected, first, because even the northern countries have critical issues, even if latent and perhaps not entirely recognized, and, second, because after considering the intertwining of political, social, and economic factors, we understand that countries are unique, and none of them can be viewed as a model for the others. After all, respect for institutional variety is embedded in the principles underlying the EU, which, not by chance, has as its motto “United in diversity.”

The main message of the paper is that coexistence of different institutional frameworks within the eurozone is possible, provided that each country improves the operation of its own institutions to make them compatible with the European common goal of monetary and fiscal stability and good national economic performance (growth, employment). The purpose of the paper is to offer a comparative tool that helps countries to understand their weaknesses and to improve the functioning of their institutions. This requires reforms, investment, social support, and political determination. Most of these factors are subject to national sovereignty, but there might be also room for some form of common support. This should persuade the eurozone to adopt a more complete, less formal, and differentiated approach to convergence that is more oriented toward outcomes.

The success of convergence to the frontier is important for coordinating business cycles, among other things, thus making common monetary policies more effective. The policies and reforms that each country should implement to shorten the DTF and what the EU should do to make policies more effective remain topics for future research.

## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.ecosys.2020.100838.

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