Economics
The Open-Access, Open-Assessment E-Journal

Vol. 13, 2019-3 | January 08, 2019 | http://dx.doi.org/10.5018/economics-ejournal.ja.2019-3

Institutional convergence in Europe

Nina Schönfelder and Helmut Wagner

Abstract

This paper applies the statistical concepts of σ-convergence and unconditional β-convergence to institutional development within several country groups hierarchized to the degree of European integration (e.g., euro area). Two sets of indicators are employed to measure institutional development: first, the Worldwide Governance Indicators, and second, the product market regulation indicator of the OECD and the Doing Business distance to frontier indicator of the World Bank. The authors can clearly confirm institutional β-convergence within the EU and its aspirants, which is mainly driven by the new Member States and acceding, candidate, and potential candidate countries. However, euro-area countries converge only in the area of product market and business regulation—not in the area of governance. In fact, the authors show evidence for β-divergence in rule of law within the first twelve euro-area members. Concerning σ-convergence, the results are less clear. Only the EU including the EU-aspirants reduced the cross-country variance in all aspects of institutional development.

JEL E02 K20 L50

Keywords Institutional convergence; governance; product market regulation; business regulation; European integration

Authors

Nina Schönfelder, Bielefeld University, Bielefeld, Germany, nina.schoenfelder@uni-bielefeld.de

Helmut Wagner, University of Hagen, Hagen, Germany

Citation Nina Schönfelder and Helmut Wagner (2019). Institutional convergence in Europe. *Economics: The Open-Access, Open-Assessment E-Journal*, 13 (2019-3): 1–23. http://dx.doi.org/10.5018/economics-ejournal.ja.2019-3

Received June 18, 2018 **Published as Economics Discussion Paper** July 2, 2018
Revised November 28, 2018 **Accepted** December 11, 2018 **Published** January 8, 2019

1 Introduction

The enlargement of the European Union (EU) and its deepening in specific areas, for example, monetary policy is expected to promote convergence in economic rules, regulation, and policies especially through the acquis communautaire. Convergence of institutions is of economic interest because it is related to convergence in terms of income per capita (real or economic convergence). The literature on the determinants of economic growth identifies institutions "as a fundamental cause of long-run growth" (as summarized by Acemoglu et al. 2005). Good governance and efficient institutions are key variables for ensuring sustainable and inclusive growth, even after controlling for the level of income and thus catching-up potential (Masuch et al. 2018). High-quality institutions are a prerequisite for the effective implementation of reforms in other areas, e.g. product market regulation, and necessary to yield their full potential. Moreover, well-functioning institutions are essential to restrain rent-seeking and socially unfair privileges of interest groups (Masuch et al. 2018). Therefore, we need a better understanding of how institutional quality evolves in the euro area, the EU, and the EU's aspirant countries. Indeed, there is scope for economic growth and convergence through institutional development in the EU (Masuch et al. 2016). Moreover, institutional differences within the EU have become important from the competitiveness perspective. Huemer et al. (2013) disentangle market-induced and politics-induced changes in competitiveness arguing that governments can only adjust policy variables to improve their countries' competitiveness.

The literature on European integration has not focused on institutional convergence so far, although institutional convergence can be regarded as a prerequisite for real convergence. In the early notion of institutional convergence, institutions converge if they become more similar to each other (see, e.g., Pelkmans 2000 and Hall 2003). Focusing on the overall quality of institutions, rather than on their concrete type and structure, Savoia and Sen (2016) are the first who apply the concept of β-convergence to indicators for institutional quality. Alesina et al. (2017) do some exercise on σ-convergence in institutional development in the EU and Heckelman (2015) at the global level. Our paper brings both statistical concepts of institutional convergence together and relates them to the European integration process.

This paper's question is whether institutional convergence occurs during the European integration process. Institutional convergence is defined as convergence in terms of institutional development levels. Following the economic growth literature, we introduce the concepts of σ-convergence and unconditional β-convergence. Thereafter, we analyze by the means of descriptive statistical analysis whether institutional convergence has occurred in several country groups hierarchized to the degree of European integration, for example, within the EU Member States or the euro area. For this, we employ two sets of indicators for institutional development: one set refers to the area of governance; the second refers to the area of product market and business regulation. We can clearly confirm institutional β-convergence within the EU and its aspirants, which is mainly driven by the new Member States and acceding, candidate, and potential candidate countries. However, euro-area countries converge only in the area of product market and business regulation—not in the area of governance. In fact, we show evidence for β-divergence in rule of law within the first twelve euro-area members. Concerning σ-convergence, the results are less clear. Only the EU including the EU aspirants reduced the cross-country variance in all aspects of institutional development.

Neither do we calculate conditional β-convergence of institutional development, nor do we test the significance of other initial conditions beside from the initial institutional development level. Our aim is not to explain why do or do not countries develop further or even deteriorate institutionally. We assess whether countries involved on the European integration process, for example the euro-area members, institutionally converge. This is a starting point for future research to look at political and economic consequences.

This paper introduces European integration in Section 2. In the Section 3, we present the statistical concept of institutional β- and σ-convergence. Both concepts are applied to governance indicators in Section 4 and to indicators for product market and business regulation in Section 5. Section 6 concludes.

2 European integration: widening and deepening

In this section, we briefly overview the process of widening and deepening in the European integration—the enlargement of the EU and the euro area. The terms "widening" and "deepening" of the EU are not consistently defined within the literature. Most authors mean enlargement of the EU by "widening" and further integration by "deepening" (e.g., Berglöf et al. 2008: 133). Some authors distinguish between the pure enlargement of the EU and "widening" in the sense of extending European cooperation to new areas, whereas "deepening" means more European integration in the existing areas of cooperation (Centre for Economic Policy Research 1995: 51). In this paper, we follow the first concept. European integration consists of the widening and deepening of the EU. The widening of the EU means that new Member States become accepted, whereas the process of deepening refers to the creation and enlargement of the euro area within the EU Member States.

Indeed, European integration occurs already before accepting new Member States, and even before the process of formal application. To prepare European countries that express the desire to join the Union, the EU adopts partnerships and agreements, and provides technical assistance to those countries. In our notion, there are three criteria to identify this as European integration and distinguish it from other regional cooperation. First, the countries express the desire to join the EU someday. Second, the EU offers a prospect for membership to this country. Third, there are some agreements or cooperation, for example, a Europe agreement of the EU with this country. If these three criteria are satisfied, we call the process European integration as well. Currently, Western Balkans involved in the stabilization and association process are called potential candidates by the EU if they are not yet official candidate countries (European Commission 2012). A country that applies formally for EU membership can be granted candidate country status by the European Council and is called candidate country thereafter. When formal membership negotiations are concluded and the treaty of accession has been signed, it becomes an acceding country. Normally, accession countries become EU Member States within one or two years. As soon as the new Member States achieve a sufficient degree of nominal convergence, they qualify for introducing the euro.

The first and the greatest enlargement of the EU to the East was in 2004, when ten Central and East European transition countries plus Cyprus and Malta joined the EU at once. That posed a huge challenge on the functioning of the EU. In the following, an "enlargement fatigue" became noticeable. The admission of Bulgaria and Romania was postponed to 2007. For the time being, Croatia became the last new Member States in 2013. Although, there are some candidate and potential candidate countries for EU membership,[1] negotiations are ongoing only with Montenegro, Serbia, and Turkey. Up to date, it is open at what time and which country will join the EU next.

After the initial introduction of the euro in eleven Member States and 2001 in Greece, there was a prolonged period where no other Member State qualified for or took advantage of introducing the euro. United Kingdom and Denmark have been granted exemption from participating in the third stage of the EMU, and Sweden is de facto not willing to introduce the euro (see European Central Bank 2012: 64 and European Union 2012). The new Member States were preparing and accomplishing the accession to the EU. Slovenia was the first country of the new Member State that achieved a sufficient degree of convergence and was eligible for introducing the euro. After that, some new Member States subsequently joined the euro area, with the most recent being Lithuania in 2015 (see Table 1).

In the Sections 4 and 5, we will look at σ- and unconditional β-convergence in institutional development levels within several country groups (see Figure 1). The smallest country group consists of the first-round members of the euro area plus Greece, which are called EA12. Next, we add all the Member States that introduced the euro until 2012 and call them EA17. The third country group that we look at consists of the 27 Member States of the EU (EU27). Finally, we add all accession, candidate, and potential candidate countries to the EU by the end of 2012 and call this unit "EU+aspirants". These are in total 36 countries. However, there is a lack of data for Kosovo and Montenegro for the first years. Hence, we have to exclude them from the convergence analysis. Therefore, 34 countries remain in the "EU+aspirants" unit. We do not look at convergence within the geographical area *Europe* because many of the remaining countries (e.g., Belarus, Russia, Norway, and Switzerland) do not aspire to join the EU, although some of them are already well integrated with the EU by bilateral treaties.

The country groups constructed for the analysis of convergence in product market and business regulation are as far as possible coincident with the country groups for the governance-convergence analysis. However, the product market regulation indicator is collected predominantly for OECD countries. Therefore, we analyze convergence for the "old" EU Member States (EUold) and the Member States that introduced the euro in 1999 and 2001 (EA12) (see Figure 1).

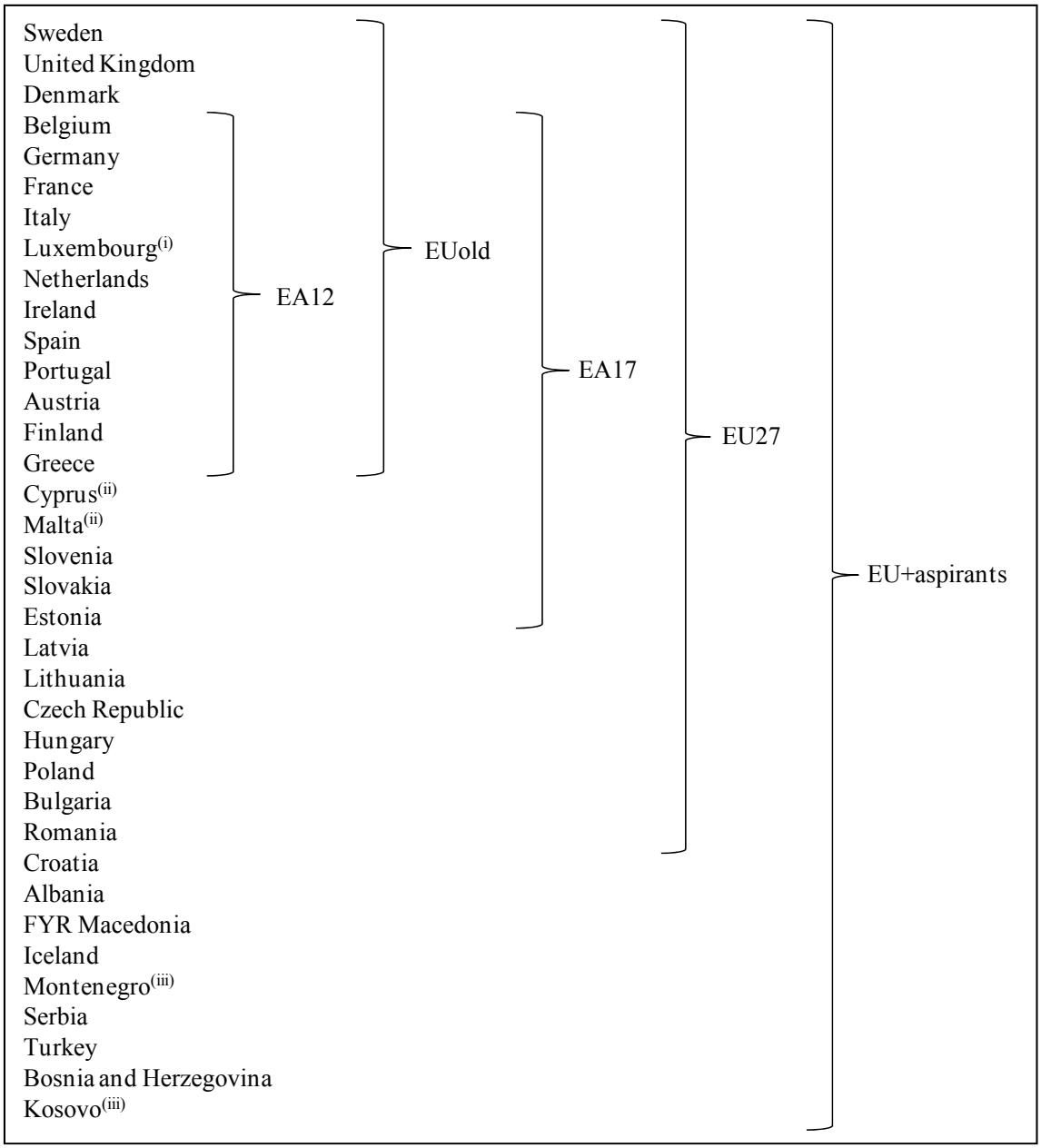
[1] The candidate countries are Albania, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey. Bosnia and Herzegovina, and the Kosovo are currently potential candidate countries. Iceland put the accession negotiations on hold in 2013. In 2015, Iceland's government requested that Iceland should not be regarded as a candidate country for EU membership.

Table 1: Foundation and enlargement rounds of the EU and the euro area

Country	Accession to EU	Introduction of the euro
Belgium	25 March 1957 (founding countries)	1999
Germany		1999
France		1999
Italy		1999
Luxembourg		1999
Netherlands		1999
Denmark	1 January 1973	–
Ireland		1999
United Kingdom		–
Greece	1 January 1981	2001
Spain	1 January 1986	1999
Portugal		1999
Austria	1 January1995	1999
Finland		1999
Sweden		–
Cyprus	1 May 2004	2008
Malta		2008
Slovenia		2007
Slovakia		2009
Estonia		2011
Latvia		2014
Lithuania		2015
Czech Republic		–
Hungary		–
Poland		–
Bulgaria	1 January 2007	–
Romania		–
Croatia	1 July 2013	–

Source: European Commission 2015a: 4 and European Commission 2015b.

Figure 1: European country groups (by the end of 2012)



Notes:

(i) Excluded from EA12 and EUold because of data availability.

(ii) Excluded from EA17 and EU27 because of data availability.

(iii) Excluded from EU+aspirants because of data availability.

3 Definition of institutional convergence

Before defining "institutional convergence", we need to clarify what is meant by "institutional". This could either mean that there is convergence in institutions so that the types and structure of institutions become more and more similar. Alternatively, institutional convergence implies convergence in terms of institutional development levels (or institutional quality, as it is sometimes called). The former meaning does not imply desirable or "good" institutions. The latter does not necessarily mean that the institutions are of the same structure, but that they are conducive to a commonly agreed objective, for example, economic growth. However, both meanings rely on the word "institution" so that we first have to clarify what institutions are. Several widely accepted definitions of the term "institution" exist. We follow the prominent approach of Douglass C. North who stated that "[i]nstitutions are the rules of the game in a society" (North 1990: 3). He distinguishes between formal and informal institutions and recognizes that enforcement is essential for their functioning.

Within the field of growth and development economics, there is no overall accepted definition of institutions. Some base their analysis on the narrow definition of Douglass C. North, whereas others choose a wider definition that includes organizations, and yet others, do not explain their conception of institutions at all. In sum, this makes it difficult to compare the results of the studies (Jütting 2003: 9). Many growth economists are less interested in the concrete type of an institution, and more on how institutions are conducive to economic growth. Usually, this is called institutional quality, institutional development level or governance. Based on their definition of governance, Kaufmann et al. (2010) develop the Worldwide Governance Indicators (WGI) that are widely used within the growth and development literature.

The term "convergence" is derived from the verb "to converge" and describes "[a] movement directed toward or terminating in the same point" (OED Online 2015) in the general language. In economics, the term "convergence" refers to the general question of whether there is a tendency that differences between countries disappear over time. In the history of economic thought, the notion of convergence has changed. In the 1950s and early 1960s, the question was whether capitalist and socialist economies would converge from an institutional perspective. Nowadays the term refers to the economic growth theory, specifically to the question of diminishing per capita output differences across countries (Durlauf and Johnson 2008).

There are several definitions of convergence (the presentation is following Durlauf and Johnson 2008):

- unconditional β-convergence,
- conditional β-convergence and
- σ-convergence.

Although these are general concept, we illustrate the three types of convergence by their use in the economic growth literature, which, we suppose, most economists are familiar with. The β-convergence models the relationship between initial per-capita income and subsequent growth. Two countries experience convergence if the country with lower initial income grows faster than the other, regardless of other factors that could influence growth (unconditional β-convergence) or controlling for other possible determinants of the growth rate (conditional β-convergence). σ-convergence measures whether the variance of per-capita income across

countries is shrinking or not. A reduction in the variance is defined as σ-convergence. Both concepts of convergence are purely statistical. Moreover, there is no necessary relationship between them. β-convergence is compatible with a constant cross-sectional variance of per-capita income over time, and the presence of σ-convergence does not necessarily indicate catching-up in a country's per-capita income.

In the cross-section regression

$$g_i = k + \log y_{i,0}\beta + \varepsilon_i \,, \tag{1}$$

where g_i is the real per-capita growth of country i and $y_{i,0}$ is the initial per-capita income of that country, unconditional β-convergence is said to hold if $\beta < 0$. Estimations of β-convergence effectively assume a constant rate of convergence over the sample period. σ-convergence takes place when the variance across i of $\log y_{i,t}$, i.e., $\sigma^2_{\log y,t}$, is shrinking between t and $t+T$:

$$\sigma^2_{\log y,t} - \sigma^2_{\log y,t+T} > 0 \,. \tag{2}$$

We translate both statistical concepts of convergence to institutional development so that the coefficient β captures unconditional β-convergence of an institutional development indicator D in the following equation

$$D_{i,T} - D_{i,0} = k + \beta D_{i,0} + \varepsilon_i \,. \tag{3}$$

σ-convergence is said to hold if

$$\sigma^2_{D,t} - \sigma^2_{D,t+T} > 0 \,.^2 \tag{4}$$

In the next section, we will look at σ-convergence and unconditional β-convergence in institutional development levels within several country groups (the euro area, the EU, and its aspirants). The primary interest is on institutional convergence as catching-up in institutional development. However, we will also analyze whether there has occurred a reduction in the variance of institutional development level within these country groups. In this paper, the term "institutions" is broadly defined, and we do not explore specific policy measures or institutional arrangements. To measure institutional convergence, we first employ the six Worldwide Governance Indicators (WGIs): voice and accountability (VaA), control of corruption (CoC), government effectiveness (GE), political stability and absence of violence (PSNV), rule of law (RoL), and regulatory quality (RQ). Second, we focus on institutional convergence with respect to economic institutions. For this purpose, we employ the product market regulation indicator of the Organisation for Economic Co-operation and Development (OECD) and the Doing Business distance to frontier indicator of the World Bank. These are indicators for the regulation of the business environment. The former measures the degree to which policies promote or inhibit competition. The latter complements this by measuring the strength of legal institutions relevant to business regulation and the complexity and cost of regulatory process. The convergence

2 It is not necessary to take the logarithm of the WGIs for the calculation of the variance as frequently done with per capita income in the growth literature.

analysis will be in most parts graphical and descriptive. Hence, we cannot derive any inference on the causes for institutional convergence or divergence. Nevertheless, the detection of institutional convergence is interesting on its own part.

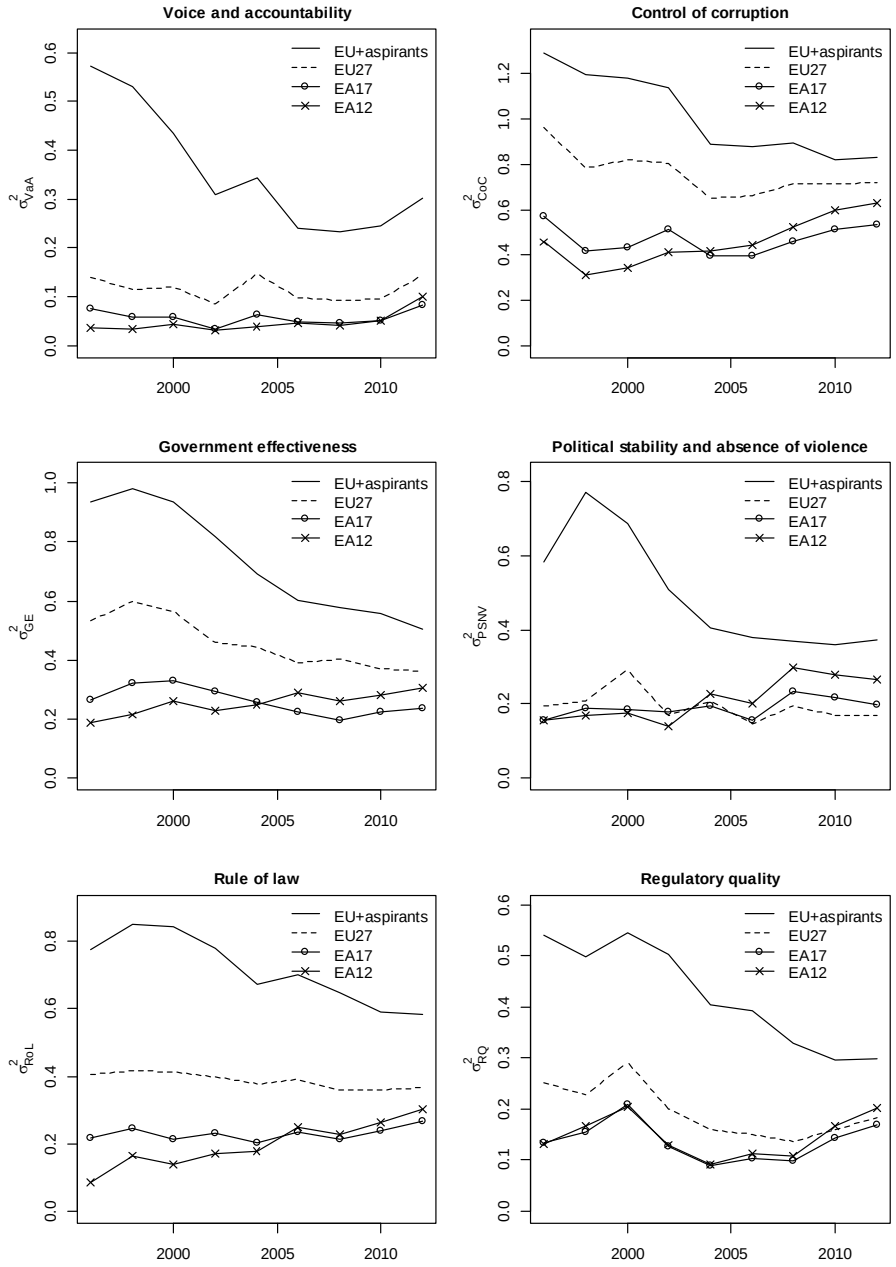
4 Convergence in Europe: the area of governance

4.1 σ-convergence in governance

In this section, we calculate the cross-country variances of the institutional development levels for the even numbered years between 1996 and 2012. To measure the level of institutional development, we employ the six WGIs. Figure 2 displays cross-country variances for each of the six WGIs and for each of the country groups as defined above. σ-convergence occurs when the cross-country variance is shrinking between two periods. Not surprisingly, the cross-country variance is the highest for the widest country group and decreases subsequently to the smallest country group, the twelve euro-area countries. However, the variance is higher within the twelve euro-area countries than within the seventeen euro-area countries in 2012. For the EU and its aspirants, one can see a huge reduction in cross-country variance of institutional development over 1996 to 2012. However, there is a slight increase in the variance of voice and accountability during the last years. Within the 27 EU Member States, there is either a small reduction in variance or none at all, dependent on the dimension of governance. Economic indicators as control of corruption, government effectiveness, and regulatory quality show some σ-convergence within the 27 EU Member States. The indicators that rather reflect the development of legal or political institutions, i.e., voice and accountability, political stability and absence of violence, and rule of law show no σ-convergence. Very sobering is the view on the cross-country variances within the euro-area members. There is no clear-cut evidence for σ-convergence or divergence within the 17 euro-area countries, except for control of corruption and regulatory quality, where we see a widening since 2006 and 2007, respectively. The picture is even worse for the first twelve members of the euro area. There is clear-cut σ-divergence for the indicators control of corruption and rule of law for the whole period, and some divergence for political stability and absence of violence, government effectiveness, and regulatory quality during the last decade. To conclude, New Members States and those that aspire membership drive most of the σ-convergence in the euro area, the EU and its aspirants. The "old" Member States do not converge anymore, or even diverge over some aspects of institutional development, especially in control of corruption and rule of law.

Our findings are in line with the scarce existing literature on institutional convergence. Examining σ-convergence in the old EU Member States, Alesina et al. (2017) show that the quality of the public administrations and of the legal system did not converge. Indeed, Southern Europe's institutions are falling further behind relative to one's of the Northern Europe. In a related analysis, Jurlin and Čučković (2010) note that the institutional difference between the new and old EU Member States has remained rather high and has not diminished since 2005. On the contrary, candidate and potential candidate transition countries have made strong progress in the quality of institutions.

Figure 2: WGIs' σ-convergence in Europe



Data source: Kaufmann et al. 2013. Notes: No data is available for the first years for Kosovo and Montenegro. They are excluded from the "EU+aspirants" group. VaA: voice and accountability; CoC: control of corruption; GE: government effectiveness; PSNV: political stability and absence of violence; RoL: rule of law; RQ: regulatory quality; EA12: the first-round euro-area countries and Greece; EA17: the 17 euro-area countries in 2012; EU27: the 27 EU Member States in 2012; EU+aspirants: the 27 EU Member States and accession, candidate, and potential candidate countries by the end of 2012.

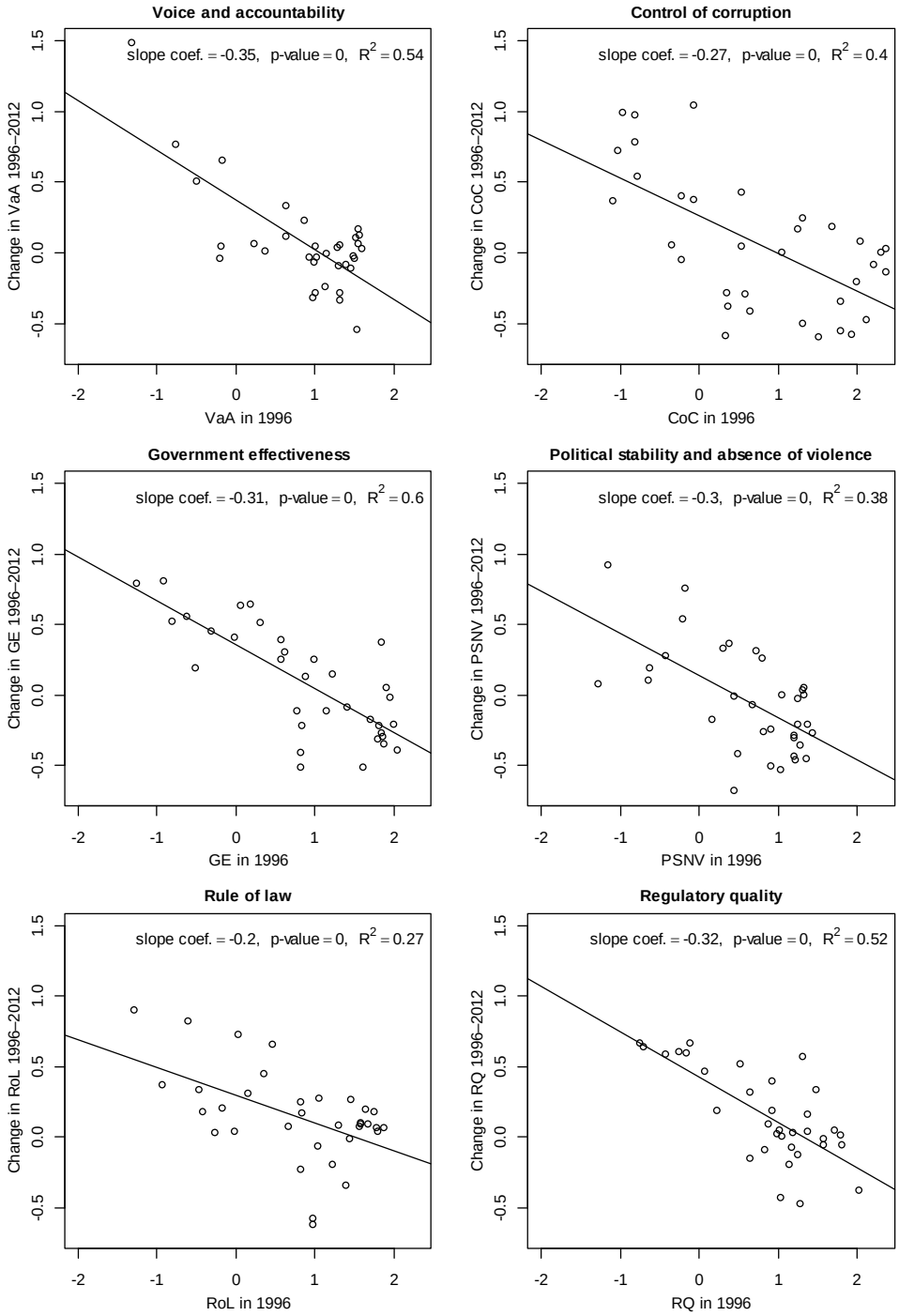
4.2 β-convergence in governance

In this section, we plot the initial value of each WGI against the change between the initial value and the end-of-period value. Moreover, we fit a straight line in the resulting scatterplot, calculate its slope, the corresponding p-value of significance, and finally the R^2. A significant and negative slope coefficient is evidence for unconditional β-convergence in institutional development levels. The R^2 indicates which part of the total variance of the changes in the WGIs is explained by their initial values. Moreover, the R^2 is the square of the sample correlation coefficient of this simple regression.

Figure *3* displays the relationship between the initial value of each WGI in 1996 and its subsequent change between 1996 and 2012 for the EU Member States and the EU aspirants. There is strong evidence for β-convergence in each dimension of governance. The slope coefficients are all negative and highly significant. Moreover, the R^2 are high, which means that a great part of the variances is explained by the initial values. To conclude, institutional laggards are catching-up with well-developed countries. In Figure 4, we see β-convergence for most of the governance indicators within the 27 Member States of the EU. The negative slope coefficients are still significant at the 5%-level and the R^2 are moderately large. There are only two exceptions. No β-convergence can be stated for the indicators voice and accountability and rule of law (the slope coefficient of the latter is significant only at the 10%-level). A distinctly different picture emerges from Figure 5. Although the slope coefficients are still negative, we cannot state significant β-convergence for any dimension of governance within the 17 members of the euro area. The evidence is even more alarming for the first twelve members of the euro area (see Figure 6). All indicators show at least a tendency of divergence. The slope coefficients are all positive, and for rule of law the slope coefficient is even highly significant with an R^2 of 0.61. The first-round members of the euro area plus Greece clearly have diverged in rule of law since 1996. A detailed view on the data reveals that Greece, Italy, and Portugal experienced a huge deterioration (change is lower than −0.4) in three to four indicators.[3] Sporadically, also other countries show a strong deterioration in one governance indicator. However, such an accumulation of deteriorations in Greece, Italy and Portugal is striking. On the other side, a huge improvement in institutional development is visible for only one country in one indicator: Finland in government effectiveness. All other countries show a disappointing development; no other country improves on government effectiveness.

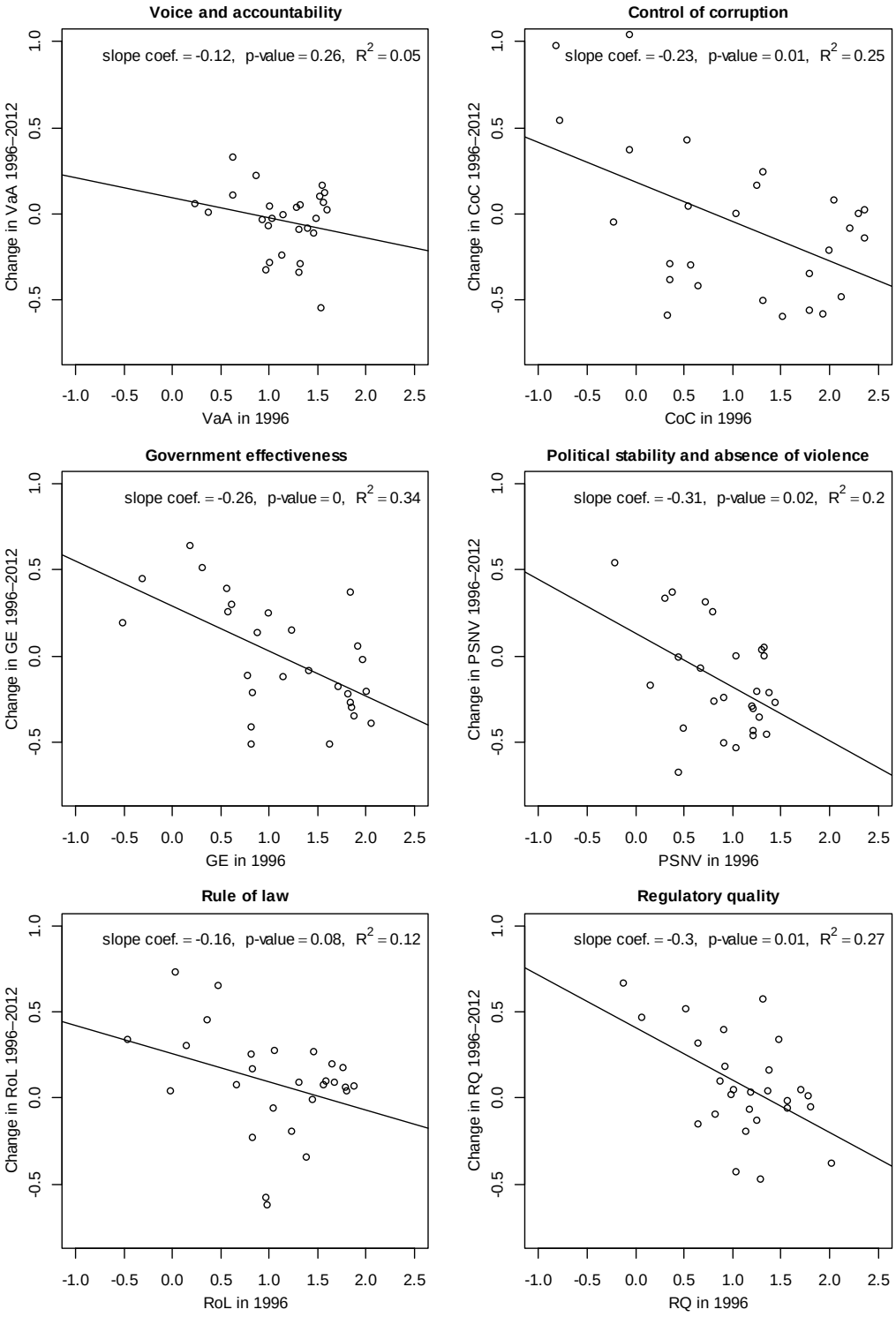
[3] In Portugal, there has been a huge deterioration of voice and accountability, control of corruption, political stability and absence of violence, and regulatory quality. Greece deteriorated much in control of corruption, government effectiveness, political stability and absence of violence, and rule of law. The change in government effectiveness, political stability and absence of violence, and rule of law was lower than −0.4 in Italy.

Figure 3: WGIs' β-convergence in the European Union including its aspirants



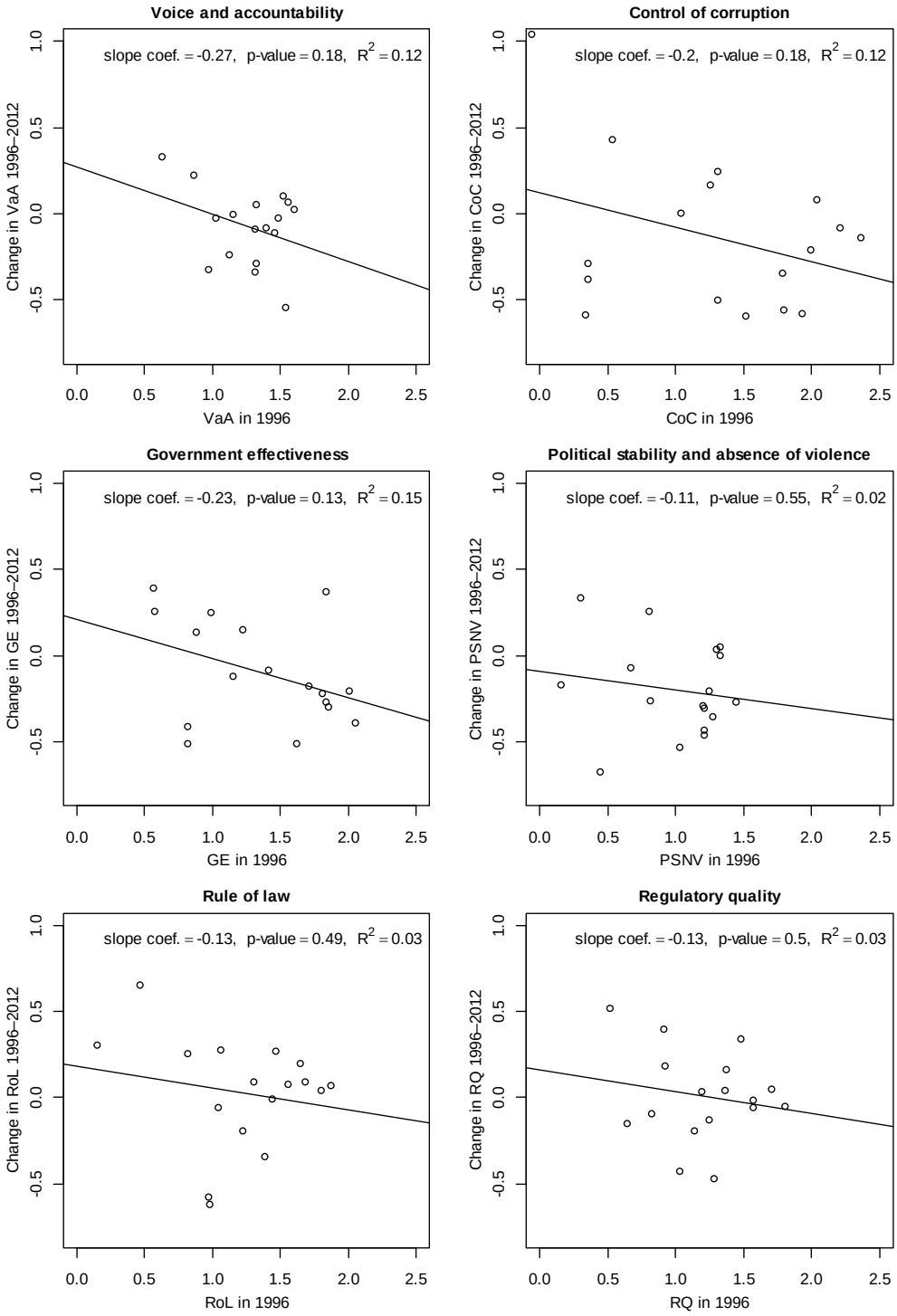
Data source: Kaufmann et al. 2013. Notes: The country group comprises the 27 EU Member States and accession, candidate, and potential candidate countries by the end of 2012. Kosovo and Montenegro are excluded from the country group because of data availability. VaA: voice and accountability; CoC: control of corruption; GE: government effectiveness; PSNV: political stability and absence of violence; RoL: rule of law; RQ: regulatory quality.

Figure 4: WGIs' β-convergence in the European Union



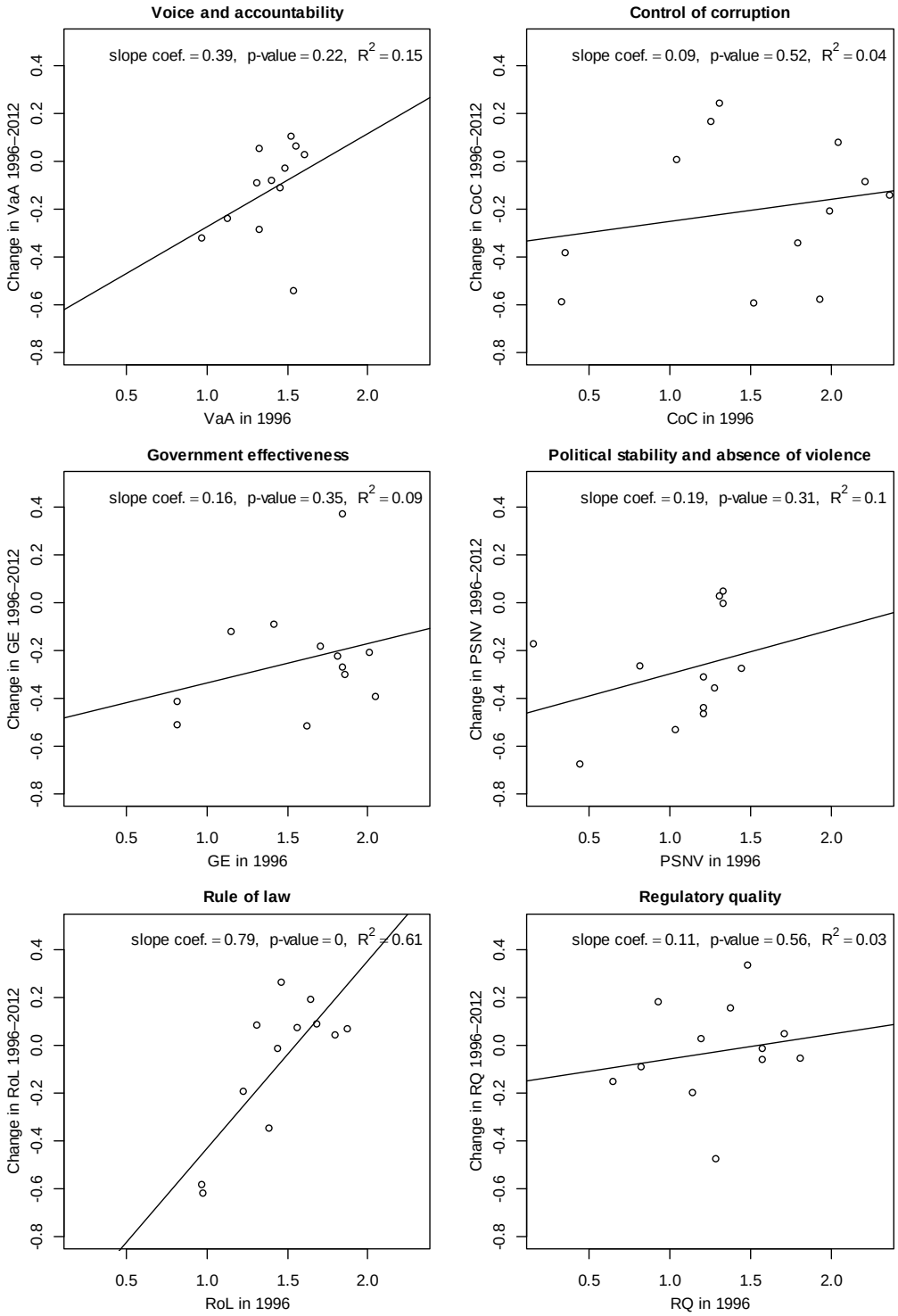
Data source: Kaufmann et al. 2013. Notes: The country group comprises the 27 EU Member States in 2012. VaA: voice and accountability; CoC: control of corruption; GE: government effectiveness; PSNV: political stability and absence of violence; RoL: rule of law; RQ: regulatory quality.

Figure 5: WGIs' β-convergence in the euro area



Data source: Kaufmann et al. 2013. Notes: The country group comprises the 17 euro-area countries in 2012. VaA: voice and accountability; CoC: control of corruption; GE: government effectiveness; PSNV: political stability and absence of violence; RoL: rule of law; RQ: regulatory quality.

Figure 6: WGIs' β-convergence in the euro area of the first twelve members



Data source: Kaufmann et al. 2013. Notes: The country group comprises the first-round euro-area members and Greece (12 euro-area countries). VaA: voice and accountability; CoC: control of corruption; GE: government effectiveness; PSNV: political stability and absence of violence; RoL: rule of law; RQ: regulatory quality.

4.3 Why does the EU converge in governance, but not the euro area?

To sum up the results of the previous two sub-sections, institutional convergence in Europe is driven mainly by institutional development in the new Member States and acceding, candidate, and potential candidate countries. This applies to both statistical concepts of convergence: unconditional β-convergence and σ-convergence. These countries have made great progress in developing their institutions further. The "old" Member States that introduced the euro, on the contrary, tend to diverge. The β-divergence is mainly driven by the bad performance of Greece, Italy, and Portugal, whose institutions were already not the best ones in 1996. In addition, the institutional development of the other first-round euro-area members is not praiseworthy. In case there are improvements, they are quite moderate. The only noteworthy exception is Finland that improved much on government effectiveness and regulatory quality.

There is a growing literature on the determinants of institutional development. One possible driver is the European integration itself. The EU can serve as an external or outside anchor for transition countries that wish to join the EU. Roland and Verdier (2003) develop a model to analyze law-enforcement problems in transition economies. They show that accession to the EU provides a mechanism to overcome a bad equilibrium. Mattli and Plümper (2004) provide a model that explains how prospective EU membership drives regulation in applicant countries beyond their equilibrium level of regulatory quality. They provide evidence that exogenous changes in the perceived likelihood of EU accession impact the pace of reforms. Brücker et al. (2005) model the Soft Budget Constraint (SBC) problem in transition economies as a war of attrition between the applicant countries' governments and firms. They show that outside conditionality, as imposed by the EU, can foster SBC hardening. Several other empirical studies show evidence that there exists a positive link between prospective EU membership and institutional development in the transition countries of Central and Eastern Europe (Beck and Laeven 2006; Di Tommaso et al. 2007; Schweickert et al. 2011). Schönfelder and Wagner (2016) confirm a positive effect arising from prospective EU membership, although being an EU member state does not influence the institutional development path. For members of the euro area, there is robust evidence for institutional deterioration in one particular area, namely control of corruption.

Fernández-Villaverde et al. (2013) show in a case study that economic reforms were abandoned and institutions deteriorated after introduction of the euro in Spain, Ireland, Greece, and Portugal. First, capital flows relaxed the economic constraints under which agents (e.g., a government, a bank manager) were acting, which reduced pressure for reforms. Second, these capital inflows hindered the principal (e.g., voters, shareholders, investors) in extracting signals about the agent's performance. Germany did not experience a loosening of its financing conditions because of the introduction of the euro, and it faced a stagnant economy. Hence, Germany implemented far-reaching structural reforms so that the divergence in institutions between Germany and the other peripheral countries increased after the introduction of the euro (Fernández-Villaverde et al. 2013). Also Challe et al. (2018) confirm that large capital inflows played major role in the significant decline of institutional quality in the Southern euro-area members (Spain, Portugal, Italy, and Greece). To explain this phenomenon, they develop an open-economy model of the "soft budget constraint" syndrome.

5 Convergence in Europe: the area of product market and business regulation

5.1 σ-convergence in product market and business regulation

In this section, we calculate the cross-country variances of the institutional development level as measured by the economy-wide OECD product market regulation (PMR) indicator and the distance to frontier (DTF) indicator of the World Bank capturing ease of doing business. Hence, we focus on economic institutions in a narrow sense. The PMR indicator measures the degree to which policies promote or inhibit competition. The DTF indicator complements this by measuring the strength of legal institutions relevant to business regulation and the complexity and cost of regulatory process. Figure 7 shows the cross-country variances of the product market regulation indicator on the left-hand side, and the ones of the distance to frontier indicator on the right-hand side. One can see that σ-convergence occurred in all country groups and for both indicators.[4] However, there is one qualification. The first-round euro-area members and Greece converged in product market regulation only from 2008 to 2013. Before, they show no convergence. Strong convergence occurred in the ease of doing business within the EU including its aspirants. Interestingly, the cross-section variance is of similar magnitude in the EU, the euro area, and the group of the first twelve euro-area countries. In contrast, the EU including its aspirants shows much more variance. From this, one can conclude that the spreading stems from the accession, candidate, and potential candidate countries.

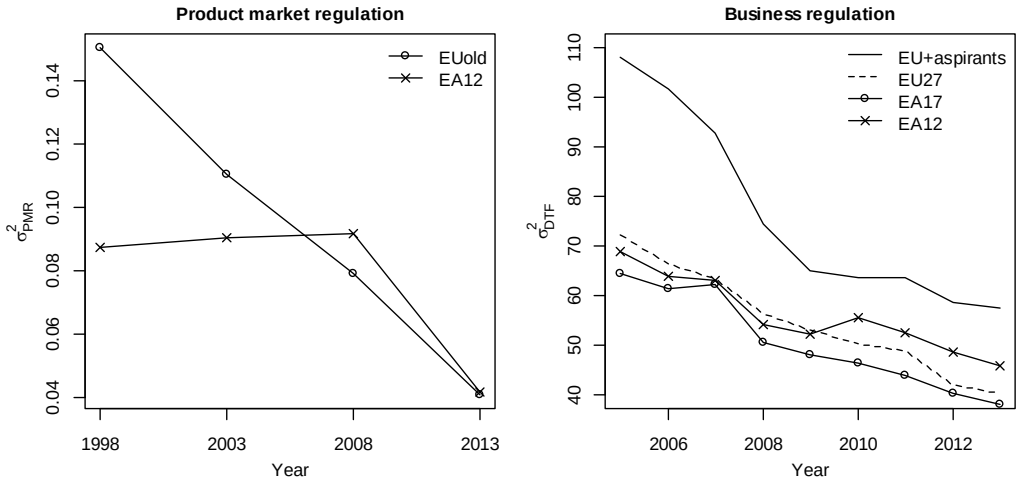
5.2 β-convergence in product market and business regulation

Figure 8 displays the relationship between the initial value of the product market regulation index in 1998 and its change between 1998 and 2013 for the "old" EU Member States and the Member States that introduced the euro in 1999 and 2001. The negative and highly significant slope of the regression line is evidence for unconditional β-convergence in product market regulation for both country groups. Countries that had restrictive product market regulation provisions in 1998 deregulated more until 2013 than countries with product market regulation that leaves room for competition. The only difference between the two scatter plots are the three upper-left points that represent Denmark, Sweden, and United Kingdom. These three countries had very liberal product market regulations already in 1998.

Figure 9 shows β-convergence in business regulation. Again, the slope coefficients are negative and highly significant. However, the highest slope coefficient, the highest p-value and the lowest R^2 are calculated for the first twelve euro-area members.

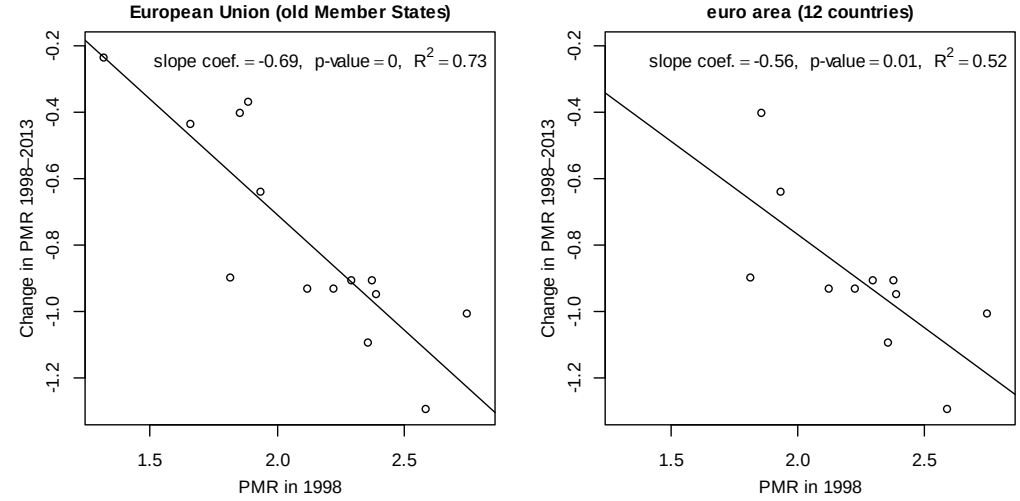
[4] Alesina et al. (2017) show similar evidence for product market regulation in the old EU Member States. However, σ-convergence is not evident anymore, when conditioning on income per capita. Hence, the observed convergence in product market regulation could "just reflect underlying economic trends" (Alesina et al. 2017: 21).

Figure 7: σ-convergence in product market and business regulation



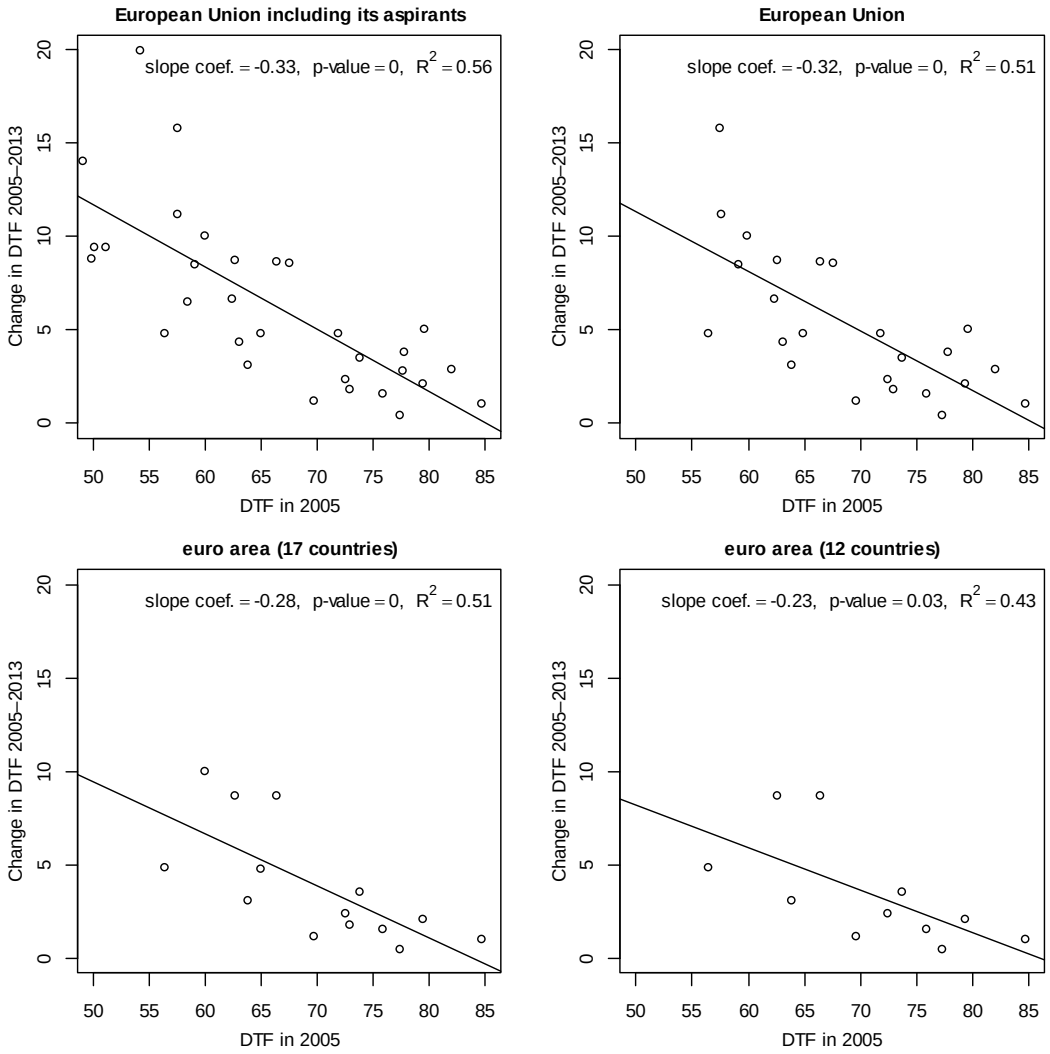
Data sources: OECD 2013 and World Bank 2014. Notes: The old EU Member States (EUold) are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and United Kingdom. The euro-area group comprises the first-round euro-area countries and Greece (EA12). Luxembourg is excluded from both country groups because of data availability. The 17 euro-area countries group (EA17) and the 27 EU Member States group (EU27) do not comprise Cyprus and Malta for the same reason. EU+aspirants: the 27 EU Member States and accession, candidate, and potential candidate countries as at the end of 2012. There is also not enough data to include Montenegro and Kosovo in the "EU+aspirants" country group. PMR: economy-wide OECD product market regulation indicator. DTF: distance to frontier indicator of the Doing Business report.

Figure 8: β-convergence in product market regulation



Data source: OECD 2013. Notes: The old Member States of the first country group are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and United Kingdom. The euro-area group comprises the first-round euro-area countries and Greece. Luxembourg is excluded from both country groups because of data availability. PMR: economy-wide OECD product market regulation indicator.

Figure 9: β-convergence in business regulation



Data source: World Bank 2014. Notes: The euro-area group comprises the first-round euro-area countries and Greece (EA12) excluding Luxembourg because of data availability. Additionally, the 17 euro-area countries group and the EU (27 Member States) group do not comprise Cyprus and Malta for the same reason. There is also not enough data to include Montenegro and Kosovo in the "EU+aspirants" group, i.e., the 27 EU Member States and accession, candidate, and potential candidate countries as at the end of 2012. DTF: distance to frontier indicator of the Doing Business report.

5.3 What drives the convergence in product market and business regulation?

To sum up the results of the previous two sub-sections, there is overall unconditional β- and σ-convergence within European country groups in the area of product market and business regulation. However, from this descriptive analysis, we cannot infer what the driving factors behind this convergence are. The structural-reforms literature discusses the European monetary integration itself as a driver for reforms in labor-market, product-market and business regulation. Alesina et al. (2011) describe two channels by which euro-area membership could accelerate deregulation and liberalization in product and labor markets: the competition channel and the adjustment channel. Their arguments are related to the There is No Alternative (TiNA) argument: by introducing the euro, member countries lose the ability to use monetary policy to accommodate asymmetric shocks. Instead, adjustment has to come via a boom or recession. The more flexible the labor market is, the less painful this adjustment will be in terms of unemployment (Bean 1998, Alesina et al. 2011). Alesina et al. (2011) contribute evidence that the euro accelerated reforms in product markets, accompanied probably by wage moderation in the labor market. Supporting evidence is also provided by Duval and Elmeskov (2005), Belke et al. (2007), and Schönfelder (2018).

6 Summary and conclusion

In this paper, we analyzed whether σ-convergence and unconditional β-convergence occurred in institutional development levels within the euro area, the EU, and its aspirants. The primary interest is on institutional convergence as catching-up in institutional development, which we can clearly confirm within the EU and its aspirants. However, euro-area countries converge only in product market and business regulation but not in their general institutional development level. Actually, there is evidence for β-divergence in rule of law within the first twelve euro-area members.

We also analyzed whether there has occurred a reduction in the variance of institutional development level within the country groups. The results for the euro area depend on the area of institutional development under examination. There is evidence for σ-divergence in the area of governance within the first twelve euro-area members but evidence for σ-convergence in the area of product market and business regulation. Within the EU, we found a reduction in cross-country variances for economic institutions. Only the widest country group, the EU Member States plus the accession, candidate, and potential candidate countries experienced σ-convergence in all aspects of institutional development.

Our analysis raises the awareness of potentially failed convergence or even divergence in institutional terms within the advanced EU integration process. We alert that institutional convergence is not a matter of course, especially within the old EU Member States and the euro area. Some studies discuss reasons for diverging forces in the euro area within the broad institutional development (Fernández-Villaverde et al. 2013; Schönfelder 2016; Challe et al. 2018), where the introduction of the euro in conjunction with falling interest rates and massive capital inflows are regarded as the source for institutional deterioration. On the other hand, the

structural-reforms literature confirms the euro to be a driver for reforms in the product-market and business regulation (Bean 1998, Duval and Elmeskov 2005, Alesina et al. 2011; Belke et al. 2007; Schönfelder 2018). This dichotomy is the starting point for discussing political and economic consequences surrounding the sustainability of the Economic and Monetary Union.

References

Acemoglu, Daron; Johnson, Simon; Robinson, James A. (2005): Chapter 6 Institutions as a Fundamental Cause of Long-Run Growth. In Philippe Aghion and Steven N. Durlauf (Eds.): *Handbook of Economic Growth, vol. 1*. Elsevier, 385–472. https://doi.org/10.1016/S1574-0684(05)01006-3

Alesina, Alberto; Ardagna, Silvia; Galasso, Vincenzo (2011): The Euro and Structural Reforms. *Review of Economics and Institutions* 2(1), 1–37. http://dx.doi.org/10.5202/rei.v2i1.24

Alesina, Alberto; Tabellini, Guido; Trebbi, Francesco (2017): Is Europe an Optimal Political Area? *Brookings Papers on Economic Activity* (Spring 2017), 169–213. http://www.jstor.org/stable/90013171

Bean, Charles R. (1998): The Interaction of Aggregate-demand Policies and Labour Market Reform. *Swedish Economic Policy Review* 5 (2), 353–382. https://www.government.se/49b742/contentassets/f5bdf7b34eb646acab5bbb9f2a9e914c/charles-r.-bean-the-interaction-of-aggregate-demand-policies-and-labour-market-reform

Beck, Thorsten; Laeven, Luc (2006): Institution Building and Growth in Transition Economies. *Journal of Economic Growth* 11(2), 157–186. https://doi.org/10.1007/s10887-006-9000-0

Belke, Ansgar; Herz, Bernhard; Vogel, Lukas (2007): Reforms, Exchange Rates and Monetary Commitment: A Panel Analysis for OECD Countries. *Open Economies Review* 18(3), 369–388. https://doi.org/10.1007/s11079-007-9042-8

Berglöf, Erik; Burkart, Mike; Friebel, Guido; Paltseva, Elena (2008): Widening and Deepening: Reforming the European Union. *American Economic Review* 98(2), 133–137. http://www.jstor.org/stable/29730009

Brücker, Herbert; Schröder, Philipp J. H.; Weise, Christian (2005): Can EU Conditionality Remedy Soft Budget Constraints in Transition Countries? *Journal of Comparative Economics* 33(2), 371–386. https://doi.org/10.1016/j.jce.2005.03.002

Centre for Economic Policy Research (1995): Flexible Integration. Towards a more Effective and Democratic Europe. London (Monitoring European Integration, 6). https://voxeu.org/content/monitoring-european-integration-6-flexible-integration

Challe, Edouard; Lopez, Jose Ignacio; Mengus, Eric (2018): Institutional Quality and Capital Inflows. Evidence and Theory (HEC Paris Research Paper, ECO/SCD-2018-1247). http://dx.doi.org/10.2139/ssrn.3105296

Di Tommaso, Maria L.; Raiser, Martin; Weeks, Melvyn (2007): Home Grown or Imported? Initial Conditions, External Anchors and the Determinants of Institutional Reform in the Transition Economies. *Economic Journal* 117(520), 858–881. https://doi.org/10.1111/j.1468-0297.2007.02053.x

Durlauf, Stephen N.; Johnson, Paul A. (2008): Convergence. In Steven N. Durlauf, Lawrence E. Blume (Eds.): *The New Palgrave Dictionary of Economics. 2nd ed.* Basingstoke: Palgrave Macmillan (The New Palgrave Dictionary of Economics Online). https://doi.org/10.1057/978-1-349-95121-5_2376-1

Duval, Romain; Elmeskov, Jørgen (2005): The Effects of EMU on Structural Reforms in Labour and Product Markets. Organisation for Economic Co-operation and Development (OECD Economics Department Working Papers, 438). http://dx.doi.org/10.1787/830757326248

European Central Bank (2012): Convergence Report. Frankfurt am Main. http://www.ecb.int/pub/pdf/conrep/cr201205en.pdf

European Commission (2012): Enlargement. European Commission, Directorate General for Enlargement. Available online at: http://ec.europa.eu/enlargement/index_en.htm, checked on 12/4/2012.

European Commission (2015a): Enlargement. Extending European Values and Standards to more Countries. Luxembourg: Publications Office of the European Union (The European Union explained). https://dx.doi.org/10.2775/809205

European Commission (2015b): The Euro Area. Directorate-General for Economic and Financial Affairs. https://dx.doi.org/10.2765/94337

European Union (2012): EUROPA - European Union Website, the Official EU Website. How the EU Works, Countries. Edited by Communication Department of the European Commission. Available online at http://europa.eu/about-eu/countries/index_en.htm, checked on 12/4/2012.

Fernández-Villaverde, Jesús; Garicano, Luis; Santos, Tano (2013): Political Credit Cycles: The Case of the Eurozone. *Journal of Economic Perspectives* 27(3), 145–166. https://dx.doi.org/10.1257/jep.27.3.145

Hall, Peter V. (2003): Regional Institutional Convergence? Reflections from the Baltimore Waterfront. *Economic Geography* 79(4), 347–363. http://www.jstor.org/stable/30032943

Heckelman, Jac C. (2015): Economic freedom convergence clubs. In Richard J. Cebula, Joschua Hall, Franklin G. Mixon, JR., James E. Payne (Eds.): *Economic Behavior, Economic Freedom, and Entrepreneurship*. Cheltenham: Edward Elgar Publishing, 102–114.

Huemer, Stefan; Scheubel, Beatrice; Walch, Florian (2013): Measuring Institutional Competitiveness in Europe. *CESifo Economic Studies* 59(3), 576–608. https://dx.doi.org/10.1093/cesifo/ift002

Jurlin, Krešimir; Čučković, Nevenka (2010): Comparative Analysis of the Quality of European Institutions 2003–2009. Convergence or Divergence? *Financial Theory and Practice* 34(1), 71–98. http://www.fintp.hr/upload/files/ftp/2010/1/jurlin-cuckovic.pdf

Jütting, Johannes P. (2003): Institutions and Development. A Critical Review (OECD Development Centre Working Papers, 210). https://dx.doi.org/10.1787/341346131416

Kaufmann, Daniel; Kraay, Aart; Mastruzzi, Massimo (2010): The Worldwide Governance Indicators. Methodology and Analytical Issues. World Bank. Washington, DC (Policy Research Working Paper, 5430). http://documents.worldbank.org/curated/en/630421468336563314/The-worldwide-governance-indicators-methodology-and-analytical-issues

Kaufmann, Daniel; Kraay, Aart; Mastruzzi, Massimo (2013): The Worldwide Governance Indicators (WGI) project. World Bank. Available online at: http://info.worldbank.org/governance/wgi/index.aspx#home, updated on 9/20/2013, checked on 10/22/2013.

Masuch, Klaus; Moshammer, Edmund; Pierluigi, Beatrice (2016): Institutions, Public Debt and Growth in Europe. European Central Bank. Frankfurt am Main (ECB Working Paper Series, 1963). https://dx.doi.org/10.2866/633291

Masuch, Klaus; Anderton, Bob; Setzer, Ralph; Benalal, Nicholai (2018): Structural Policies in the Euro Area. European Central Bank. Frankfurt am Main, Germany (Occasional paper series, 210). http://www.ecb.europa.eu/pub/pdf/scpops/ecb.op210.en.pdf

Mattli, Walter; Plümper, Thomas (2004): The Internal Value of External Options. How the EU Shapes the Scope of Regulatory Reforms in Transition Countries. *European Union Politics* 5(3), 307–330. https://doi.org/10.1177/1465116504045155

North, Douglass C. (1990): *Institutions, Institutional Change and Economic Performance. 28th ed*. Cambridge: Cambridge University Press.

OECD (2013): Product Market Regulation Database. Available online at: www.oecd.org/economy/pmr, checked on 10/28/2014.

OED Online (2015): "Convergence, n.". Oxford University Press, September 2015. http://www.oed.com/view/Entry/40732?redirectedFrom=convergence

Pelkmans, Jacques (2000): European Integration, Economic and Institutional Convergence. In Paolo Guerrieri, Hans-Eckard Scharrer (Eds.): *Global Governance, Regionalism and the International Economy*. Conference. Institute of International Affairs. Rome, 1999.02.08-09. Istituto Affari Internazionali, Rome; Hamburgisches Welt-Wirtschafts-Archiv. 1st ed. Baden-Baden: Nomos-Verl.-Ges (HWWA studies of the Hamburg Institute of International Economics, 58), 37–71.

Roland, Gérard; Verdier, Thierry (2003): Law Enforcement and Transition. *European Economic Review* 47(4), 669–685. https://doi.org/10.1016/S0014-2921(02)00309-4

Savoia, Antonio; Sen, Kunal (2016): Do We See Convergence in Institutions? A Cross-Country Analysis. *Journal of Development Studies* 52(2), 166–185. https://doi.org/10.1080/00220388.2015.1060315

Schönfelder, Nina (2018): Impact of Euro-area Membership on Structural Reforms in Product Market and Business Regulation. *CESifo Economic Studies.* In press. https://doi.org/10.1093/cesifo/ify018

Schönfelder, Nina; Wagner, Helmut (2016): Impact of European Integration on Institutional Development. *Journal of Economic Integration* 31(3), 472–530. https://doi.org/10.11130/jei.2016.31.3.472

Schweickert, Rainer; Melnykovska, Inna; Belke, Ansgar; Bordon, Ingo (2011): Prospective NATO or EU membership and institutional change in transition countries. *Economics of Transition* 19(4), 667–692. https://doi.org/10.1111/j.1468-0351.2011.00415.x

World Bank (2014): Doing Business 2014. Distance to the Frontier. Available online at: http://www.doingbusiness.org/data/distance-to-frontier, checked on 10/7/2014.