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# Decentralisation, quality of government and economic growth in the regions of the EU

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**Abstract:** The effect of decentralisation on regional economic growth is a hotly debated topic. In theory, decentralisation should entail welfare benefits by bringing government closer to the people. In practice, the benefits of decentralisation have been hard to prove. A problem is that the quality of regional governments is often lacking, or at least varies widely across different regions. Hence, regional governments may not be capable of delivering public goods in an efficient and accountable manner. Previous analyses have, however, neglected how the benefits of decentralisation may depend on the quality of the regional government whose authority is strengthened by such reforms. This paper considers these two dimensions in conjunction, highlighting that the effect of decentralisation on economic performance is highly mediated by the quality of the devolved government. Using panel data for 223 regions in the EU, the results show that the quality of regional government is a better predictor of economic development than decentralisation. Regional government quality also conditions the economic returns to decentralisation, meaning decentralisation works best in regions with a higher quality of government. Accordingly, decentralisation reforms must consider the quality of the regional government to which they would devolve authority.

**Keywords:** political institutions, regions, quality of government, regional authority, economic growth, Europe.

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## **1. Introduction**

Decentralisation of political power from national to regional governments is a global trend. From Asia to Latin America, from Africa to Europe, national governments have implemented reforms to devolve power to regions. From 1950 to 2007, 21 of 27 EU member states executed decentralisation reforms, increasing the number of countries with elected regional assemblies from 8 to 20 and adding 20 new levels of regional government (Schakel et al., 2015). Pressures from regions for more political power, or even full independence, continued in the following years, from the 2014 referendum in Scotland to the illegal referendum in Catalonia in 2017. Regionalist parties are part of governing coalitions in Belgium and Italy, continuing to renegotiate the balance of power between the central government and the regions. Even in less conflictual settings, the trend towards decentralisation continues. For instance, the Norwegian government announced a regional reform in September 2018 which, according to its minister for local government, represents the largest devolution of power in Norway since the establishment of elected regional assemblies in 1975.

An important motivation for these reforms is that, following the Tiebout (1956) principle, subnational governments can provide a better public policy delivery to match the heterogeneous needs and preferences of individuals living in different cities and regions within a country, thus fostering economic growth at the regional level by giving regions greater control over their own development. Indeed, regions often mobilise for decentralisation at least partly for economic reasons (Rodríguez-Pose and Sandall, 2008; Fitjar, 2009). Theoretical works on fiscal federalism (Oates, 1972; 1999) posit that there are welfare gains from decentralisation, as smaller electorates can agree on policies that are closer to their preferences. However, these must be balanced against the economies of scale arising from more aggregated units (Bolton & Roland, 1997; Alesina et al., 2000; Persson & Tabellini, 2005). Current approaches to regional development build on the idea of new

regionalism, which puts regions in charge of their own development (Keating, 1998). Consequently, regions need to possess sufficient authority to implement appropriate policies. European policy agendas, such as smart specialisation, also presuppose a regional government active in creating a shared vision for the region and implementing policies to realize that vision (Foray 2014; McCann & Ortega-Argilés, 2014).

However, there is still much debate about the effects of such reforms on economic growth (Treisman, 2002, 2007; Rodríguez-Pose & Gill, 2005; Rodríguez-Pose & Ezcurra, 2011; Hooghe et al., 2016; Kuhlmann & Wayenberg, 2016). Critics have argued that decentralisation rarely delivers the economic returns that its proponents had hoped for (Rodríguez-Pose & Gill, 2005). A reason for this might be that regional governments are not always capable of providing public goods in an effective, accountable and non-corrupt manner. There is large variation across regional governments in the quality of government (Charron, Dijkstra, and Lapuente 2014) and, hence, in their ability to reflect public opinion and to carry out sound policies. This is arguably more important than its level of autonomy in shaping development outcomes (Rodríguez-Pose & Di Cataldo, 2015).

It can be very different to decentralise power to a regional government that is functioning well and is capable of delivering good governance, than to decentralise power to a dysfunctional regional government. Yet, no previous studies have looked at whether the returns to decentralisation depend on the quality of the regional government which receives more power. Our contribution is that we do exactly that, analysing how the effects of decentralisation on regional economic development vary across regions with different quality of government. Accordingly, we seek to address this research question: to what extent are the economic returns of decentralisation affected by differences in government quality?

This paper has implications for theory and policy on regional development. First, at a theoretical level, it provides new knowledge on the conditions through which decentralisation may affect regional economic development. Second, at a policy level, specifically in the context of the EU, the findings can inform future decentralisation reforms, as regions are at the core of its principle of subsidiarity (Rodríguez- Pose, 1999, 2013; McCann & Ortega-Argilés, 2014; Wanzenböck & Frenken, 2018), cohesion policy (Farole et al., 2011; Rodríguez-Pose & Garcilazo, 2015; Crescenzi et al., 2016; Bachtler & Begg, 2017), and the EU2020 strategy (Dijkstra et al., 2013).

Accordingly, we develop an empirical model using panel data that allows us to investigate how the degree of decentralisation and the quality of regional government affect regional economic development. We examine the level of regional authority along two dimensions: the region's power to rule itself (self-rule) and its power to shape national policy (shared rule) (Hooghe et al., 2016: 19). For quality of government, we inspect the extent to which the regional government is perceived by its citizens to deliver public goods in an impartial, efficient and non-corrupt manner (Charron et al., 2014). We evaluate how these two dimensions, individually and jointly, affect growth in regional GDP per capita.

The results show that quality of government is a better predictor of regional economic development than decentralisation. They also show that the economic returns to decentralisation are conditioned by differences in government quality. Thus, decentralization works best in regions with a better quality of government. These results provide implications for regional policy, suggesting that decentralisation reforms must take quality of government into account.

The rest of the paper follows this structure: section 2 introduces the relevant literature on how decentralisation and quality of regional government may affect regional economic

development. Section 3 describes the empirical model and provides details on the variables and data. Section 4 presents the results. Section 5 concludes with a summary discussion including policy implications.

## **2. Decentralisation, quality of government and regional economic development**

Hooghe et al. (2016) propose a post-functionalist perspective on multi-level governance in which government is not only what it does (its function) but also what it means. They argue that communities wish “to retain their independence” but also “want the benefits of scale” (Hooghe et al., 2016: 18). We extend this, to look not only at what a government does (its function) but also how it does it (the procedures) or its quality. We adopt the definition that the quality of government is the extent to which a government delivers public goods in an impartial, efficient and non-corrupt manner (Charron et al., 2010: 2014). This approach is relevant as institutions have emerged as a central explanatory factor in understanding uneven regional economic development (Boschma & Martin, 2010). Institutions can be defined as the formal and informal rules of the game, that facilitate and constrain human interaction (North, 1990; Nelson, 2002). Formal institutions are universal, transferable and codified rules. This includes political institutions, such as governments with the power to set and modify those rules (Rodríguez-Pose, 2013; Tomaney, 2014). The capacity of a regional government to shape formal institutions in a way that promotes regional development depends both on its formal authority within the political system (i.e. the level of decentralisation) and on its capacity for good governance (i.e. the quality of government).

In the follow sections, we address the challenges of conceptualisation and operationalisation of decentralisation and quality of government (Treisman, 2002; Ezcurra & Rodríguez-Pose, 2013a; Rothstein et al., 2013; Kuhlmann & Wayenberg, 2016). We elaborate on decentralisation and quality of government, specifically focusing on how both phenomena

affect regional economic development. We conclude with a summary and synthesis of both literatures to derive four hypotheses.

## ***2.1 Decentralisation***

The trend towards decentralisation of power from national to regional governments is driven by a combination of demands from the bottom and top-down transfers of authority (Rodríguez-Pose & Gill, 2003; Manor, 2006; Fitjar, 2010; Hooghe et al., 2016). The idea of anchoring political power at the level of the region is associated with economic geography theories about regions as the natural units for economic competition in the global economy (Storper, 1997; Amin, 1999; Gertler, 2010; Hooghe et al., 2016). Associated with this, the ideology of new regionalism gives regions responsibility for their own development outcomes (Keating, 1998; MacLeod, 2001). Top-down regional policies for supporting lagging regions are replaced with bottom-up regional development strategies involving regional governments and coalitions of regional actors. To be sure, early accounts proclaiming “the end of the nation-state” (Ohmae, 1995) have so far proven hyperbolic, as national governments retain their dominant role in the world political system and continue to have the largest say over the rules and laws by which societies are governed. Nonetheless, the last 50 years have seen a sea change in the power of regional governments across the world (Hooghe et al., 2016). Ever more countries have a regional level of government exercising significant political authority. For instance, regional governments have been introduced across the formerly communist Central and Eastern European countries, which were mostly heavily centralised throughout the Cold War. In countries with long traditions of such governments, they have been given more power through a series of reforms. For instance, Spain and Belgium have been transformed from unitary states into quasi- or full-fledged federations, and the United Kingdom – long among the most centralised countries in Western Europe – has set up devolved regional governments.



This provides an institutional framework for the implementation of place-based policies to promote innovation and economic growth (Barca et al., 2012; Iammarino et al., 2018). Yet, while the political rationale of decentralisation has shifted to incorporate ambitions for economic and social change (Rodríguez-Pose & Gill, 2005), the ability of regional governments to deliver on these ambitions has not always lived up to expectations (Díaz-Serrano & Rodríguez-Pose, 2012).

Decentralisation can take various forms. Rodden (2004) notes that it can involve the transfer of fiscal, policy and political responsibilities. Ebinger and Richter (2016) and Kuhlmann and Wayenberg (2016) distinguish between political and administrative decentralisation, as well as deconcentration. Ezcurra and Rodríguez-Pose (2013a) highlight the power, management and resource dimensions. These forms of decentralisation do not contradict each other. Rather, they are complementary. Hooghe et al. (2016) add the dimension of federalism as an aspect of decentralisation, therefore including the notion of shared rule, or regions' capacity to influence national policy-making, alongside their capacity to form and implement their own policies (self-rule).

There is heated debate on whether decentralisation is beneficial or not in terms of economic outputs, as well as which forms of decentralisation may make a greater difference for economic outcomes (Treisman, 2002; Rodríguez-Pose & Ezcurra, 2010, 2011; Hooghe et al., 2016). On the one hand, decentralisation can improve the delivery of public goods and bring public officials closer to the people. This may facilitate matching and sorting as well as reduce information asymmetries (Tiebout, 1956; Treisman, 2002, 2007; Rodríguez-Pose & Gill, 2003; Manor, 2004; Rodríguez-Pose et al., 2009; Kuhlmann & Wayenberg, 2016). It also facilitates the use of local knowledge to satisfy local tastes and enhances competition between regional authorities. The results are potentially less corrupt, more effective and accountable governments with increased participation of citizens, delivering better economic outcomes.

However, there is scepticism about whether decentralisation can actually deliver these perceived benefits. Treisman (2002) warns of duplicity, waste of resources, coordination problems and obstacles. He further cautions that close relationships between public officials and the local population might result in corrupt practices. Rodríguez- Pose and Storper (2006) and Ezcurra and Rodríguez-Pose (2013a) add the dangers of strong interest groups and pervasive rent seeking behaviour. Rodríguez- Pose and Gill (2005) warn of the introduction and reproduction of central state tendencies, depending on whether the source of legitimacy is coming from the top or the bottom. Instead of fostering sound competition between regional governments, this might result in a zero sum game or, in the worst cases, to pure waste competition.

Empirical studies have focused more on fiscal decentralisation than other forms of self-government (Rodden, 2004). As such, both policy decentralisation (Rodden, 2004) and political decentralisation (Ezcurra & Rodríguez-Pose, 2013a) have been given less attention and appear more difficult to measure. However, fiscal decentralisation fails to adequately capture the full phenomenon of decentralisation (Rodden, 2004; Schakel, 2008; Ezcurra & Rodríguez-Pose, 2013b; Hooghe et al., 2016). There is therefore a need for studies of decentralisation which consider more of its complexity and multidimensionality (Hooghe et al., 2016) and take into account the factors that may impinge on how decentralisation affects local economic outcomes.

Most of the empirical studies that have delved into the complex relationship between decentralisation and economic growth have shown mixed and/or inconclusive results, both concerning whether decentralisation is beneficial or not, and which forms matter (Treisman, 2002, 2007; Ezcurra & Rodríguez-Pose, 2013a; Kuhlmann & Wayenberg, 2016). The history and process of decentralisation can influence its economic outcomes (Rodríguez-Pose et al., 2009). Furthermore, some regional authorities seem to be more effective than others (Putnam,

1993), and regional authorities may be effective in some areas of policy but not in others (Borghetto & Franchino, 2010).

The proclaimed benefits of decentralisation in bringing government closer to the people and building on local knowledge pertain mainly to the dimension of self-rule. This involves handing over power to the regional government to sort out its own affairs. The idea of self-rule follows from the principle of subsidiarity, in bringing political decision-making down to the level of government closest to those affected by those decisions. The shared rule dimension is conceptually different, being more related to the discussion over federal versus unitary forms of government. Shared rule involves regions participating in national policy-making through e.g. parliament chambers representing regions rather than citizens directly. This is not related to the subsidiarity principle, but rather aims for a more equal representation of regions in national decision-making (i.e. one region one vote, rather than one citizen one vote).

Decentralisation can also affect the quality of government (Treisman, 2002). Smaller local jurisdictions are associated with higher corruption and can be less effective at providing services. While Treisman (2002) is interested in the quality of government as the dependent variable, in this paper, we assess it as a mediating variable. More specifically, we ask how quality of government conditions the effects of decentralisation on regional development. Consequently, we now turn our attention to this phenomenon, discussing how the quality of regional governments might affect development outcomes.

## ***2.2 Quality of government***

Quality of government is the extent to which a government delivers public goods in an impartial, efficient and non-corrupt manner (Charron et al., 2010, 2014). According to Putnam (1993: 9), “the quality of government matters to the people’s lives: Scholarships are awarded,

roads paved, children inoculated – or (if government fails) they are not.” As such, “[g]overnments differ dramatically in quality, however one defines it” (Treisman, 2002: 1). Some governments are extremely corrupt, wasteful and ineffective, while others are honest, efficient and responsive (Treisman, 2002).

A number of empirical studies have examined how quality of government differs between regions. The best known case possibly concerns the gap between Northern and Southern Italian regions (e.g. Putnam, 1993). Despite having the same formal authority, Italian regions differ widely in their capacity to produce favourable socio-economic outcomes. However, most studies covering this question have been limited to one country context, arguably characterised by extreme regional disparities. More recent studies (e.g. Charron et al., 2010; Charron et al., 2014) have generalised this discussion to a cross-national framework involving a large number of countries. Such research has used population surveys (Charron et al., 2014) and, in some cases, leveraged the World Bank’s Governance Indicators (Kaufmann, Kraay, & Mastruzzi, 2009), to develop a measure of quality of government for both the national and regional levels across European regions: the quality of government index (QoG). The QoG index adopts four of the six World Bank good governance indicators used by Kaufmann, Kraay, & Mastruzzi (2009) – control of corruption, rule of law, government effectiveness, and voice and accountability – and created a composite index for every single European region. A number of ensuing empirical studies find a link between quality of government and a raft of regional economic outcomes, such as entrepreneurship, innovation or economic growth (e.g. Nistotskaya et al., 2015; Rodríguez-Pose and Di Cataldo, 2015; Rodríguez-Pose and Garcilazo, 2015). Overall, regions with a higher quality of government tend to be more effective at implementing policies and programmes, resulting in better economic outcomes.

Quality of government has various dimensions, each of which is expected to affect regional economic development. First, corruption takes away the incentives for innovation and

productive economic activities, leading economic agents to put their resources into rent-seeking behaviour (Rodríguez- Pose & Storper, 2006; Rothstein & Teorell, 2008; Ezcurra & Rodríguez-Pose, 2013a; Rodríguez-Pose, 2013; Crescenzi et al., 2016). Second, the rule of law affects the investment propensity in a region (Rodríguez-Pose & Di Cataldo, 2015). It lowers transaction costs through ensuring enforcement of contracts and market exchanges (North, 1990; Acemoglu et al., 2002, 2005). Third, government effectiveness stimulates economic activities by the appropriate design and implementation of policies and programmes. Effective governments are capable of carrying out the policies that they set out to do (Charron et al., 2014). However, there is a limit to what regional government can do (Putnam, 1993; MacKinnon et al., 2009; Borghetto & Franchino, 2010; Tomaney et al., 2010). Fourth, voice and accountability are important to allow citizens to influence public policy and ensure politicians and civil servants do what they are supposed to (Rodríguez-Pose, 2013).

Empirical studies have established a link between these components of quality of government and regional economic development. Del Monte and Papagni (2001) found a significant and direct negative effect of corruption on the growth rate. Rodríguez-Pose and Di Cataldo (2015) found that corruption affects innovative performance. It takes away the incentives for innovation and economic activities (Rodríguez- Pose & Storper, 2006). Government effectiveness has also been found to have an effect on innovativeness (Rodríguez-Pose & Di Cataldo, 2015) and regional economic development (Ketterer & Rodríguez- Pose, 2018). In general, the components of quality of government are highly correlated with each other as well as with other socio-economic activities (Ascani et al., 2012; Charron et al., 2010, 2014; Rothstein & Holmberg, 2014).

Some studies on quality of government have touched on the issue of decentralisation, such as Charron et al. (2010, 2014). However, they have only looked at the association between the two phenomena. There are no studies that have investigated how the quality of government

conditions decentralisation and its effect on regional economic development. In the following section, we discuss this relationship and develop hypotheses for the relationships between quality of government, decentralisation, and regional economic development.

### ***2.3 Putting the two together: Regional authority, quality of government and regional economic development***

Despite a few empirical studies looking at the association or correlation between decentralisation and quality of government (e.g. Treisman, 2002; Charron et al., 2010, 2014), there are no empirical studies that have investigated how the combination of these phenomena affects regional economic development. Institutional quality, and more specifically quality of government, have been consistent predictors of economic development (Rodrik et al. 2004). Empirical studies on Italian regions and recent studies involving a larger cross section of EU regions support this (Ascani et al., 2012; Charron et al., 2010, 2014; Rodríguez-Pose & Di Cataldo, 2015). Furthermore, regions that do well continue to do so and those that do badly likewise, reinforcing the core-periphery divide. These findings have also established a link between regional economic development and the four components of quality of government. On the other hand, studies on decentralisation and economic development remain inconclusive (Treisman, 2002; 2007; Rodríguez-Pose and Ezcurra, 2011; Hooghe et al., 2016; Kuhlmann and Wayenberg, 2016). We propose the following hypotheses:

H<sub>1</sub>: Regional government quality is positively associated with regional economic growth.

H<sub>2</sub>: Regional government authority is positively associated with regional economic growth.

While decentralisation can have negative or positive economic implications, its effect is contingent on the governments involved (Rodríguez- Pose & Gill, 2005) and, notably, their quality (Rodríguez-Pose & Garcilazo, 2015). Our interest is to test how quality of government mediates the effects of decentralisation on regional economic development. While in the past, this could have been difficult to investigate due to the lack of data on these concepts, the availability of data across EU regions from the QoG index (Charron et al., 2010, 2014) and the regional authority index (Hooghe et al., 2016; Hooghe, Marks, & Schakel, 2010) now makes this possible. We propose the following hypothesis:

H<sub>3</sub>: The association between regional government authority and regional economic growth depends on regional government quality.

Finally, we explore how this relationship may differ across various dimensions of regional authority. Specifically, the region's authority to govern itself (self-rule) is more closely related to theories of fiscal federalism and ideas of bringing government closer to the people than its authority to shape national policy. Furthermore, self-rule gives power to a regional administration and is hence more dependent on the quality of that administration, while shared rule is mainly exercised through the executive power of a national government. We thus propose the following hypothesis:

H<sub>4</sub>: The association between regional self-rule and regional economic growth depends on regional government quality.

### **3. Methods and research design**

#### ***3.1 The model***

This paper employs panel data covering the period 2002 to 2015 for 223 subnational regions across 21 EU countries. A region is defined as an administrative area at a subnational level

making an intermediate level of government between the nation-state and local government (Hooghe *et al.* 2016).

The effect of political institutions on economic development is analysed through multivariate regression analyses using fixed-effect panel regression models. The empirical equation of the basic model adopts the following form: for region  $r = 1, \dots, 223$  in country  $c = 1, \dots, 21$  at time  $t = 2002, \dots, 2015$ :

$$\ln GDP_{pc,r,t} = \alpha + \beta_1 decentralization_{r,t-1} + \beta_2 QoG_{r,t-1} + \gamma_1 decentralization * QoG_{r,t-1} + \bar{\chi}_{r,t-1} + \mu_t + \varepsilon_{r,t}$$

$\ln GDP_{pc,r,t}$  represents the annual GDP per capita in region  $r$  at time  $t$ .  $Decentralization_{r,t}$  denotes the degree of decentralization, measured by the regional authority index (RAI) including its two dimensions: self-rule and shared rule.  $QoG_{r,t-1}$  is the quality of government (Charron *et al.*, 2010, 2014), including its four components: (i) Control for corruption, (ii) rule of law, (iii) government effectiveness (iv) voice and accountability.  $\bar{\chi}_{r,t-1}$  denotes a vector of control variables.  $\mu_t$  captures time-specific fixed effects; and  $\varepsilon_{r,t}$  denotes the error term.

The data for the variables is merged from four datasets: 1) the European Quality of Government Institute (Charron *et al.*, 2014); 2) the World Bank Governance Indicators (Kaufmann *et al.*, 2009); 3) the Regional Authority Index (Hooghe *et al.*, 2016); and 4) Eurostat data on regional economies (Eurostat, 2018). The variables are explained in more detail in the subsequent section.

### **3.2 Variables and data**

The dependent variable, economic development, is measured using the level of GDP as a proxy for economic growth in fixed effects panel data analysis. The data for regional GDP are



collected from the Eurostat database (Eurostat 2018) for the years 2002 to 2015. The data are log transformed, due to skewness in the distribution of regional GDP.

There are two main explanatory variables: decentralisation and quality of government. Decentralisation is measured using the regional authority index (RAI), which has two dimensions, self-rule and the shared rule (Hooghe et al., 2016; Hooghe et al., 2010). Self-rule is the authority exercised by the subnational government in its own territory with respect to five components: 1) policy scope, 2) autonomy, 3) executive control, 4) fiscal control, and 5) borrowing control. Shared rule is the authority that a subnational government co-exercises in the country as a whole with respect to five components: 1) law making, 2) executive control, 3) fiscal control, 4) borrowing control, and 5) constitutional change. The RAI is the most comprehensive measure of decentralisation, based on a consolidation of the literature on decentralisation and federalism. It measures the degree of decentralisation as an aggregate or composite index of different forms of decentralisation. Using a composite measure has clear advantages over studying individual types of decentralisation (e.g. fiscal or policy decentralisation) or focusing on particular policy areas. For a detailed description of the individual measures, see Hooghe et al. (2016: 3-30). The data for these variables are taken from the RAI index (Hooghe et al., 2016). However, the RAI index data currently end in 2010. As there have been no major changes in regional authority in Europe over the period from 2010 to 2015, we extend the 2010 data to 2015 in order to create a full panel from 2002 to 2015. Some countries have several regional levels of government. In this case, we use the level with the highest RAI score. This gives a measure of the level of regional authority in each region, proxied by the powers of the most important regional government.

The quality of government index measures regional citizens' perception of how well their regional government performs its function, along four dimensions: (i) control of corruption; (ii) rule of law; (iii) government effectiveness; and (iv) voice and accountability (Charron et

al., 2010, 2014). We use data from three consecutive surveys, conducted in 2010, 2013, and 2017 (Charron et al., 2010, 2014; Charron & Lapuente, 2018).

The quality of government index aggregates data at the NUTS1 level for all countries and at the NUTS2 level for some countries. The NUTS regions are somewhat arbitrary statistical units which do not always correspond to actual levels of government. Furthermore, there are cross-country differences in whether the regional level of government in a country is defined at the NUTS1, NUTS2 or NUTS3 level. In order to match the quality of government data to the regional authority index, which provides a measurement of the powers of actual regional governments, we use QoG data for the NUTS level closest to that of the strongest regional government. Hence, we resort to, for instance, the NUTS1 level for Germany, where the NUTS1 regions (*Länder*) are the main regional level of government. Meanwhile, we use the NUTS2 level for Spain, where the NUTS2 regions (*comunidades autónomas*) perform the same function. In some cases (e.g. Sweden), regional governments are at the NUTS3 level. In this case, we use QoG data for the lowest available level as a proxy for the quality of the regional governments within each region.

The quality of the regional government is calculated using the method developed in Charron et al. (2010) and (Rodríguez-Pose & Di Cataldo, 2015). The calculation considers country characteristics based on the World Bank Governance indicators as follows:

$$QoG_{r,c} = WGI_c + (Rqog_{r,c} - \overline{Rqog_c})$$

$QoG_{r,c}$  is the final QoG index for region r in country c. It is obtained as the distance from the regional QoG country mean ( $\overline{Rqog_c}$ ) of the regional score ( $Rqog_{r,c}$ ), added to WGI score for country c ( $WGI_c$ ) (Rodríguez-Pose & Di Cataldo, 2015: 681; Rothstein et al., 2015: 99). The four components of quality of government have been checked for validity and reliability. The

results show a high correlation between the components. Since we only have data for three waves, we use the World Bank Governance indicators to extrapolate from these, as done in Charron et al. (2010) and (Rodríguez-Pose & Di Cataldo, 2015), to create a full panel from 2002 to 2015. The World Bank Governance indicators survey started in 1996 and was conducted every two years until 2002 and every year thereafter.

We include control variables that are usually considered to affect economic growth at a regional level, including education (percentage of 25- to 60-year-olds with tertiary education), R&D expenditure, population density and employment in manufacturing. The data for the control variables are drawn from Eurostat (2018). Year dummies are included to control for time related effects. We do not include country dummies for two reasons: First, the calculation of the final QoG index for a region  $r$  in country  $c$  already includes a country dimension based on the WGI score for country  $c$  ( $WGI_c$ ). This is important for ensuring comparability across countries. Second, with few exceptions, the RAI also has little variation within countries. Ideally, we could control for the quality of the central government by including country dummies. However, even if one would argue that the quality of government at national level matters, “there are numerous empirical indications and anecdotal evidence pointing out that the provision and quality of public services controlled by a powerful central government can nonetheless vary largely across different regions (Charron, 2013, 72). Hence, country dummies would not necessarily be able to account for this. Table A1 in Appendix includes an overview of the variables included in the analysis.

#### **4. Regression results**

In order to test  $H_1$  and  $H_2$ , we first estimate a model using regional authority and quality of government as independent variables, before assessing the potential interaction between them. Table 1 shows the results of this analysis.

**Table 1: Fixed-effects panel regression results, main effects of RAI and QoG**

| VARIABLES                   | (1)                   | (2)                    |
|-----------------------------|-----------------------|------------------------|
| Regional authority          | 0.00138<br>(0.002)    | 0.00135<br>(0.002)     |
| Regional government quality | 0.00702***<br>(0.001) | 0.00731***<br>(0.001)  |
| Education, %                |                       | 0.00167*<br>(0.001)    |
| R&D expenditure             |                       | 0.00743*<br>(0.004)    |
| Population density          |                       | -0.00016***<br>(0.000) |
| Manufacturing employment, % |                       | 0.00643***<br>(0.001)  |
| Observations                | 3,122                 | 3,104                  |
| R <sup>2</sup>              | 0.55812               | 0.56470                |
| Number of regions           | 223                   | 223                    |
| Time FE                     | YES                   | YES                    |
| Region FE                   | YES                   | YES                    |
| R <sup>2</sup> within       | 0.55812               | 0.56470                |
| R <sup>2</sup> between      | 0.39760               | 0.07731                |
| R <sup>2</sup> overall      | 0.09419               | 0.01067                |
| F test                      | 242.84174             | 195.41259              |
| P-value of F                | 0.00000               | 0.00000                |

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The quality of the regional government has a positive and significant association with regional GDP, supporting H<sub>1</sub>. The authority of the regional government does not have a significant link to regional GDP. Hence, we do not find evidence to support H<sub>2</sub>. The results are consistent when controlling for education, R&D expenditure, population density and employment in manufacturing. The control variables are positive and significant, as expected, except for population density, which is negative and significant.

**Table 2: Fixed-effects panel regression results, components of QoG**

| VARIABLES                   | (1)                    | (2)                    | (3)                    | (4)                    |
|-----------------------------|------------------------|------------------------|------------------------|------------------------|
| Regional authority          | 0.00215<br>(0.002)     | 0.00191<br>(0.002)     | 0.00164<br>(0.002)     | 0.00107<br>(0.002)     |
| Control of corruption       | 0.01347***<br>(0.002)  |                        |                        |                        |
| Rule of law                 |                        | 0.00642***<br>(0.002)  |                        |                        |
| Government effectiveness    |                        |                        | 0.00134<br>(0.001)     |                        |
| Voice and accountability    |                        |                        |                        | 0.00758***<br>(0.002)  |
| Education, %                | 0.00180**<br>(0.001)   | 0.00178**<br>(0.001)   | 0.00191**<br>(0.001)   | 0.00194**<br>(0.001)   |
| R&D expenditure             | 0.00874**<br>(0.004)   | 0.00778**<br>(0.004)   | 0.00769*<br>(0.004)    | 0.00728*<br>(0.004)    |
| Population density          | -0.00016***<br>(0.000) | -0.00015***<br>(0.000) | -0.00015***<br>(0.000) | -0.00016***<br>(0.000) |
| Manufacturing employment, % | 0.00659***<br>(0.001)  | 0.00644***<br>(0.001)  | 0.00624***<br>(0.001)  | 0.00583***<br>(0.001)  |
| Observations                | 3,104                  | 3,104                  | 3,104                  | 3,104                  |
| R <sup>2</sup>              | 0.56793                | 0.56288                | 0.56133                | 0.56399                |
| Number of regions           | 223                    | 223                    | 223                    | 223                    |
| Time FE                     | YES                    | YES                    | YES                    | YES                    |
| Region FE                   | YES                    | YES                    | YES                    | YES                    |
| R <sup>2</sup> within       | 0.56793                | 0.56288                | 0.56133                | 0.56399                |
| R <sup>2</sup> between      | 0.09255                | 0.08889                | 0.08724                | 0.09107                |
| R <sup>2</sup> overall      | 0.01471                | 0.01383                | 0.01309                | 0.01462                |
| F test                      | 197.99785              | 193.96570              | 192.75093              | 194.84616              |
| P-value of F                | 0.00000                | 0.00000                | 0.00000                | 0.00000                |

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 2 decomposes the quality of government index into its individual components. Most components of government quality have a positive and significant connection with regional GDP. The only exception is government effectiveness which is insignificant. The regional authority index remains insignificant – as was the case in Table 1 – in all regressions.

Table 3 does the same for the regional authority index, decomposing it into the dimensions of self-rule and shared rule. Neither of the two dimensions has a significant correlation with regional GDP, reinforcing the idea that, in general, political decentralisation is unrelated to

economic performance (Ezcurra and Rodríguez-Pose, 2013a).

**Table 3: Fixed-effects panel regression results, components of RAI**

| VARIABLES                   | (1)                   | (2)                    | (3)                   | (4)                    |
|-----------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Regional authority          | 0.00138<br>(0.002)    | 0.00135<br>(0.002)     |                       |                        |
| Self-rule                   |                       |                        | 0.00253<br>(0.004)    | 0.00457<br>(0.004)     |
| Shared rule                 |                       |                        | -0.00166<br>(0.008)   | -0.00614<br>(0.008)    |
| Regional government quality | 0.00702***<br>(0.001) | 0.00731***<br>(0.001)  | 0.00708***<br>(0.002) | 0.00748***<br>(0.002)  |
| Education, %                |                       | 0.00167*<br>(0.001)    |                       | 0.00148<br>(0.001)     |
| R&D expenditure             |                       | 0.00743*<br>(0.004)    |                       | 0.00766*<br>(0.004)    |
| Population density          |                       | -0.00016***<br>(0.000) |                       | -0.00016***<br>(0.000) |
| Manufacturing employment, % |                       | 0.00643***<br>(0.001)  |                       | 0.00644***<br>(0.001)  |
| Observations                | 3,122                 | 3,104                  | 3,122                 | 3,104                  |
| R <sup>2</sup>              | 0.55812               | 0.56470                | 0.55814               | 0.56485                |
| Number of regions           | 223                   | 223                    | 223                   | 223                    |
| Time FE                     | YES                   | YES                    | YES                   | YES                    |
| Region FE                   | YES                   | YES                    | YES                   | YES                    |
| R <sup>2</sup> within       | 0.55812               | 0.56470                | 0.55814               | 0.56485                |
| R <sup>2</sup> between      | 0.39760               | 0.07731                | 0.34572               | 0.10621                |
| R <sup>2</sup> overall      | 0.09419               | 0.01067                | 0.07732               | 0.02121                |
| F test                      | 242.84174             | 195.41259              | 227.60936             | 185.68406              |
| P-value of F                | 0.00000               | 0.00000                | 0.00000               | 0.00000                |

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The results from Tables 1 to 3 indicate that quality of government is a better predictor of regional economic growth than differences in decentralisation. They emphasise and reinforce previous findings on the relationships between these phenomena (Rodríguez-Pose & Garcilazo, 2015). These results further corroborate previous empirical studies looking at the association between quality of government and socio-economic outcomes (Charron et al., 2010, 2014). Further, they stress the importance of each of the components of quality of government. Control of corruption, rule of law and accountability facilitate regional economic

development. These results are consistent with previous studies, such as Rodríguez-Pose & Di Cataldo (2015) or Rodríguez-Pose & Garcilazo (2015).

Our main contribution, however, is related to H<sub>3</sub>, namely estimating the extent to which the quality of subnational tiers of government mediates the economic returns of decentralisation. This is assessed by including an interaction between regional government authority and quality in the regression model. Table 4 shows the results of this analysis. The results indicate that there is a positive and significant interaction between RAI and QoG. This provides support for H<sub>3</sub>: the potential influence of decentralisation on economic growth greatly depends on the quality of the regional government. Decentralisation is much more beneficial when regions have good government quality than in those cases where transfers of powers and resources are made to areas of the country where the government quality is more deficient.

To test H<sub>4</sub>, we further include interactions between self-rule and QoG, and between shared rule and QoG. Table 4 also shows the results of these analyses. The interaction between self-rule and QoG is positive and significant at the 10% level. The interaction between shared rule and QoG is positive and significant at the 5% level. However, the significance of the interaction between shared rule and QoG disappears when control variables are included.

The results for hypotheses 3 and 4 highlight that decentralization works best in those areas with better quality of government. Furthermore, the results show that this is specifically the case for decentralisation in the form of enhanced self-rule.

**Table 4: Fixed-effects panel regression results, including interaction terms**

| VARIABLES                   | (1)                  | (2)                    | (3)                 | (4)                    | (5)                  | (6)                    |
|-----------------------------|----------------------|------------------------|---------------------|------------------------|----------------------|------------------------|
| Regional authority          | 0.00081<br>(0.002)   | 0.00093<br>(0.002)     |                     |                        |                      |                        |
| Regional government quality | -0.00137<br>(0.004)  | 0.00052<br>(0.004)     | -0.00108<br>(0.005) | 0.00039<br>(0.004)     | 0.00466**<br>(0.002) | 0.00550***<br>(0.002)  |
| RAI*QoG                     | 0.00063**<br>(0.000) | 0.00051**<br>(0.000)   |                     |                        |                      |                        |
| Self-rule                   |                      |                        | 0.00125<br>(0.003)  | 0.00203<br>(0.003)     |                      |                        |
| Self-rule*QoG               |                      |                        | 0.00078*<br>(0.000) | 0.00067*<br>(0.000)    |                      |                        |
| Shared rule                 |                      |                        |                     |                        | 0.00028<br>(0.006)   | -0.00124<br>(0.006)    |
| Shared rule*QoG             |                      |                        |                     |                        | 0.00082**<br>(0.000) | 0.00064<br>(0.000)     |
| Education, %                |                      | 0.00163*<br>(0.001)    |                     | 0.00153*<br>(0.001)    |                      | 0.00170*<br>(0.001)    |
| R&D expenditure             |                      | 0.00690*<br>(0.004)    |                     | 0.00732*<br>(0.004)    |                      | 0.00697*<br>(0.004)    |
| Population density          |                      | -0.00015***<br>(0.000) |                     | -0.00016***<br>(0.000) |                      | -0.00016***<br>(0.000) |
| Manufacturing employment, % |                      | 0.00637***<br>(0.001)  |                     | 0.00639***<br>(0.001)  |                      | 0.00640***<br>(0.001)  |
| Observations                | 3,122                | 3,104                  | 3,122               | 3,104                  | 3,122                | 3,104                  |
| R <sup>2</sup>              | 0.55909              | 0.56534                | 0.55870             | 0.56517                | 0.55873              | 0.56505                |
| Number of regions           | 223                  | 223                    | 223                 | 223                    | 223                  | 223                    |
| Time FE                     | YES                  | YES                    | YES                 | YES                    | YES                  | YES                    |
| Region FE                   | YES                  | YES                    | YES                 | YES                    | YES                  | YES                    |
| R <sup>2</sup> within       | 0.55909              | 0.56534                | 0.55870             | 0.56517                | 0.55873              | 0.56505                |
| R <sup>2</sup> between      | 0.24786              | 0.08716                | 0.30361             | 0.08691                | 0.24976              | 0.10475                |
| R <sup>2</sup> overall      | 0.07772              | 0.01300                | 0.07525             | 0.01332                | 0.07006              | 0.01930                |
| F test                      | 228.47983            | 186.05735              | 228.11859           | 185.92909              | 228.15187            | 185.83915              |
| P-value of F                | 0.00000              | 0.00000                | 0.00000             | 0.00000                | 0.00000              | 0.00000                |

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



To illustrate what these results mean in substantive terms, Figure 1 shows the marginal effects of regional government authority for regions with different quality of government, across the full range of the quality of government index. Figure 2 does the same for the self-rule dimension of regional authority. In both cases, the results show that the effect of regional authority on economic development is close to zero for regions with the lowest levels of regional government quality. Only when the quality of the regional government has an index score of 8 or above does regional authority start to have a significant effect (at the 10% level) on regional development.

**Figure 1: Marginal effects of regional government authority at varying levels of government quality**

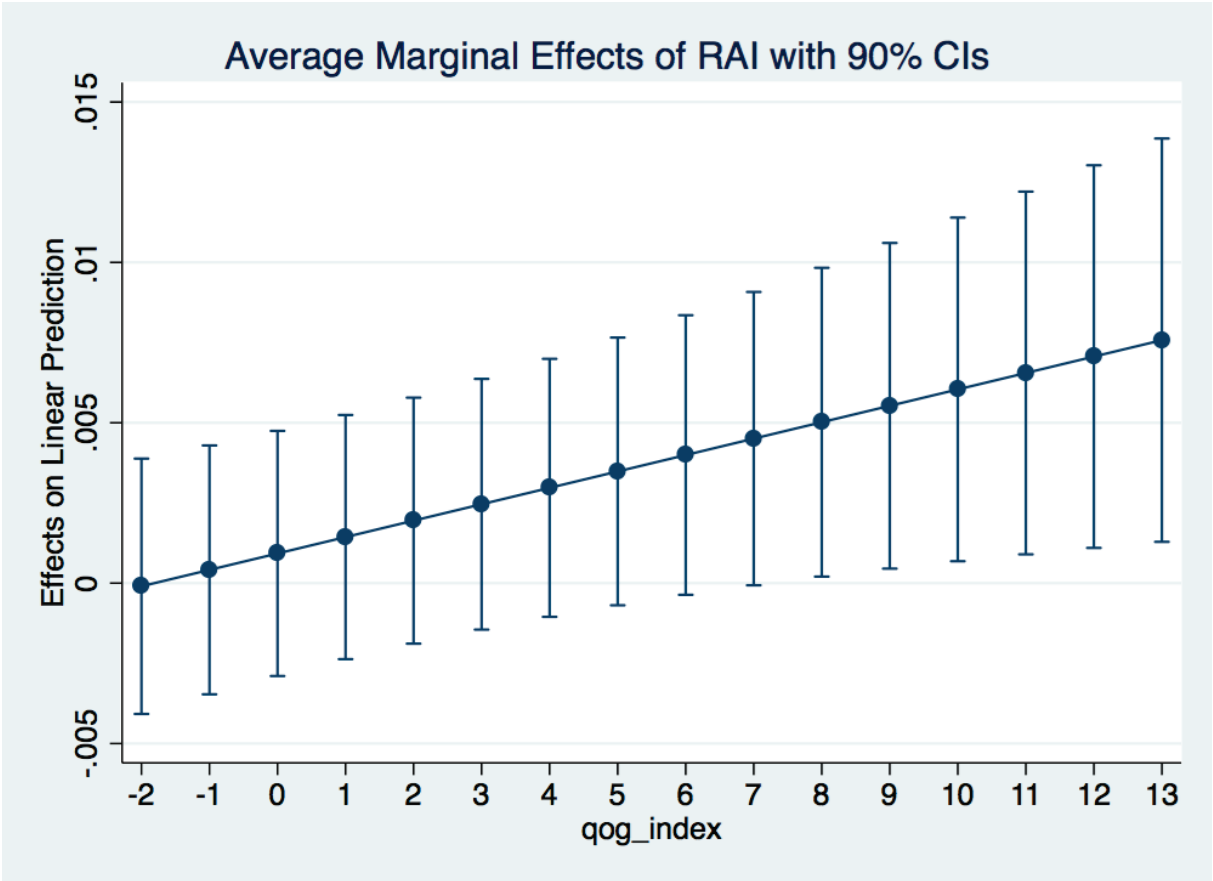
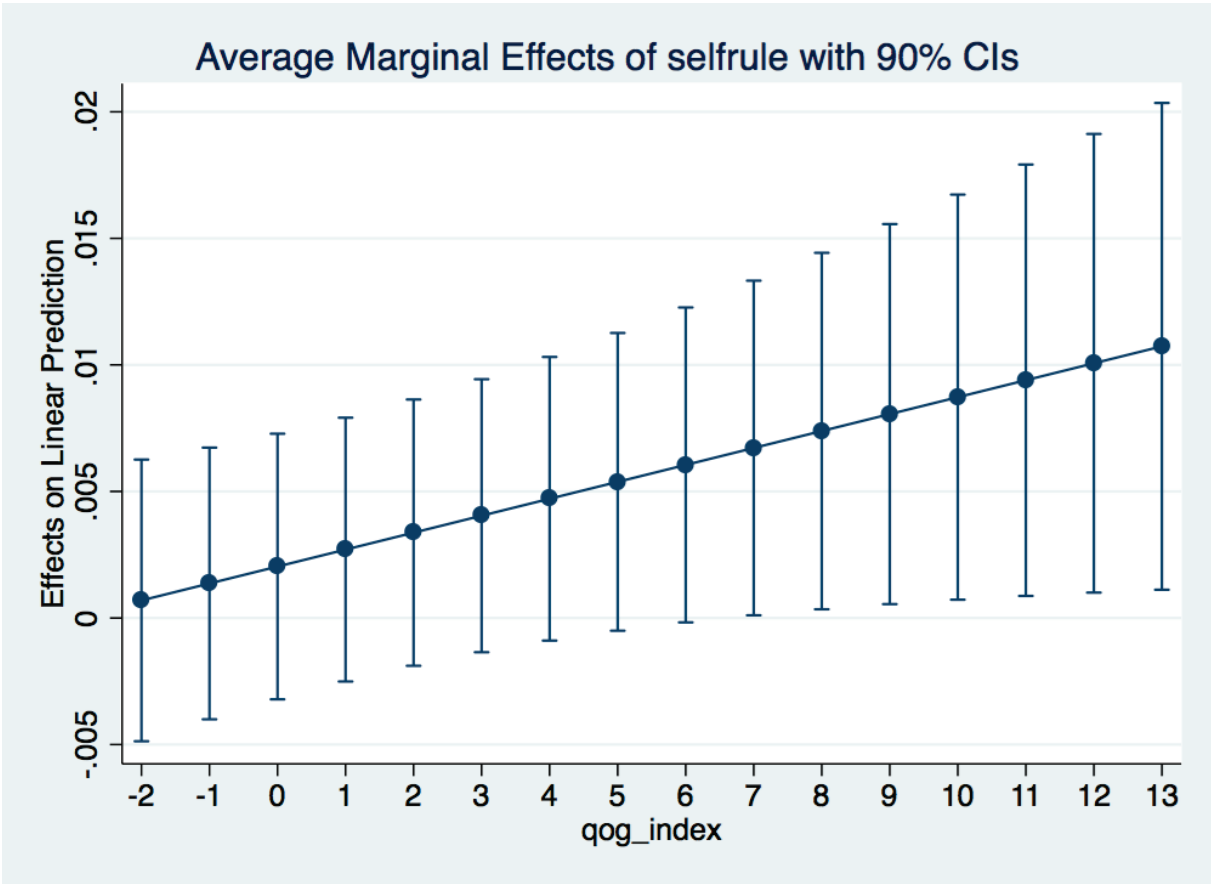


Figure 2: Marginal effects of regional self-rule at varying levels of government quality



**Conclusions**

This paper has examined how the economic returns to decentralisation are affected by differences in government quality. Previous empirical studies of decentralisation have tended to consider this topic in isolation, assessing its viability regardless of the quality of the government which actually gets more power through decentralisation reforms. However, previous studies have shown that quality of government is important for economic development (Rodríguez-Pose and Di Cataldo, 2015). It may also play an important role in conditioning the effects of decentralisation reforms. After all, one would rather want to give more power to good regional governments than to bad ones. In light of the dearth of empirical research on how differences in quality of government conditions the economic returns of decentralisation, this paper makes an important contribution to our understanding of how to

obtain the biggest economic returns from transferring powers and resources to subnational tiers of government.

The analysis shows that quality of government is a far more important factor for economic growth than differences in decentralization. This is the case regardless of the dimension of quality of government considered, except for government effectiveness, or of the dimension of decentralization analysed (self-rule and shared-rule). The results also show that differences in quality of government condition the economic effectiveness of decentralization. This applies to the RAI as a whole and, specifically, to its self-rule component.

These results have important policy implications. First, policy-makers and political actors need to understand that quality of government is a more consistent and better predictor for regional economic development than decentralisation. Therefore, mechanisms for improving government quality must be considered first, before other political solutions are sold. Second, the devolution of authority to regions with poor quality of government could result in unintended economic consequences (Treisman, 2002; Rodríguez- Pose & Gill, 2005; Rodríguez- Pose & Storper, 2006; Ezcurra & Rodríguez-Pose, 2013a). Despite its global appeal (Rodríguez- Pose & Gill, 2005; Ezcurra & Rodríguez-Pose, 2013b; Hooghe et al., 2016; Kuhlmann & Wayenberg, 2016), decentralisation must not be seen as a panacea for economic development. Neither should it be regarded as a one-size-fits-all solution, but should be responsive to place-specific conditions. The quality of government differs from region to region (Treisman, 2002; Boschma & Frenken, 2006; Boschma & Martin, 2010; Charron et al., 2010, 2014; Rodríguez-Pose, 2013; Charron & Lapuente, 2018). Hence, proponents of decentralisation reforms need to take into account the quality of the regional government to which they propose to devolve authority when assessing the economic viability of such reforms.

This paper has only looked at decentralisation as an aggregate or composite measure, and has not considered its sub-components nor their types beyond self-rule and shared rule. As such, it does not consider how different public goods and services being devolved might be exposed to a different extent to lack of institutional quality in devolved authorities with low government quality. Decentralisation may place higher demands on regional governments in some areas than in others. Therefore, future research could consider the extent to which the economic returns of individual types or forms of decentralisation are mediated by quality of the regional government and its components. This could help shed further light on which reform solutions are likely to be more effective than others, as well as their performance dimensions, for example, effectiveness, efficiency and coordination (Kuhlmann & Wayenberg, 2016).

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## APPENDIX

**Table A1: Overview of the variables**

| Variable                     | Description  | Source   |
|------------------------------|--|--|
| <b>Dependent variable</b>    |  |  |
| Annual growth rate of GDP    | Measured using level of GDP  | Eurostat (2018)  |
| <b>Explanatory variables</b> |  |  |
| Regional authority           | Degree of decentralisation as an aggregate of scores for self-rule and shared rule   | Hooghe et al. (2016)                                   |
| Self-rule                    | Authority a region has within its jurisdiction over five functions   | Hooghe et al. (2016)                                   |
| Shared rule                  | Authority a region shared with the country as a whole to co-determine five functions   | Hooghe et al. (2016)                                   |
| Regional government quality  | The extent to which a government delivers the public goods in an impartial, efficient and non-corrupt manner   | (Charron et al., 2010, 2014; Charron & Lapuente, 2018) |
| Control of corruption        | The extent to which a government delivers its services of public goods free of corruption  | (Charron et al., 2010, 2014; Charron & Lapuente, 2018) |
| Rule of law                  | The extent to which everyone is treated equally before the law as well as impartiality of courts to enforce contracts and markets exchanges, and guarantee of property rights. | (Charron et al., 2010, 2014; Charron & Lapuente, 2018) |
| Government effectiveness     | The extent to which a government delivers its services of public goods in a manner that is effective   | (Charron et al., 2010, 2014; Charron & Lapuente, 2018) |
| Voice and accountability     | The extent to which a citizen can influence government including mechanisms such as competitive, free and fair elections, freedom of press and civic participation.            | (Charron et al., 2010, 2014; Charron & Lapuente, 2018) |
| <b>Control variables</b>     |  |  |
| Education                    | Education as percentage of population with tertiary education from 25 to 60 years  | Eurostat (2018)  |
| R&D expenditure              | R&D expenditure as a percentage of GDP   | Eurostat (2018)  |
| Manufacturing employment     | Employment in manufacturing as a percentage of total employment in all sectors   | Eurostat (2018)  |
| Population density           | Population per square kilometre  | Eurostat (2018)  |
| <b>Authors' compilation</b>  |  |  |