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Regional Autonomy with regard to
Innovation Policy:

A Differentiated Illustration of the
European Status Quo

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1 Introduction

The degree of regional autonomy varies notably between European countries and in part even between regions of the same country depending on the role that the respective national constitution assigns to regions as well as differences with regard to the sense of regional consciousness (Flanagan et al. 2009; Giordano/Roller 2004; Lyall 2007; Uyarra et al. 2007). Hence, regional autonomy is one of the most important context factors to be taken into account in all comparative analyses of regional policies in general as well as regional innovation policies in particular. Above all, it deserves attention as it is a necessary condition for the development of meaningful place-based innovation strategies. Undoubtedly, all regions' innovation policies and, indirectly, their trajectories of development are influenced by supra-national and national framework conditions and on decisions taken in higher level policy arenas.

While, in broad terms, multi-level governance has become a prominent subject of both academic discussions and practical policy debates (Barca 2009; Kaiser/Prange 2004; Kaiser/Prange 2005; Uyarra et al. 2007) more concrete implications of differences in regional autonomy are often still neglected in cross-country comparisons of regional innovation policy. At a time when the regions of the European Union are faced with increasingly demanding requirements as to their strategic contribution towards the common goals of the Europe 2020 strategy, this becomes increasingly problematic as a certain degree of regional autonomy is required to empower regions to tailor and implement the required policies, above all with regard to strategic specialisation. As an easy-to-use framework of reference remains missing, academics and regional policy makers alike continue to take part in inter-regional exchanges of experience without necessarily being aware whether the presenting regions are at all well positioned to learn from each other and each other's strategic approaches.

So far, few approaches have been made to establish an indicator system that enables us to illustrate a region's degree of autonomy with regard to regional innovation policy in a meaningful way. In this paper, we will therefore propose a set of indicators suitable to capture the differing degrees of regional autonomy between nation states but also between specific regions in certain countries. While the paper aims to focus on aspects relevant to regional innovation policy, it seeks to avoid a myopic focus on those policy fields which are officially labelled as regional innovation policies. Evidence shows that, very often, competences in other, related, policy fields can in fact be more relevant to regional innovation policy than dedicated R&D support programmes. Consequently, it is necessary to integrate information on regional autonomy in a comprehensive way to provide a sufficiently general illustration that can serve as a more general framework of reference for future studies.

This paper is organised as follows: At first we highlight recent developments in regional innovation policy and summarise the current discussion of regional autonomy. Next, we present selected indicators suitable to characterise regional autonomy and document the process of data gathering as well as its sources. Subsequently, we present results and illustrate the distribution of autonomy across European regions. Additionally, we present different examples to allow for a more detailed understanding of the variety of possible approaches to the national governance of regional autonomy. Finally, we summarise our findings and their implications for innovation policy as well as to point out prospective areas of use for our framework of reference.

2 Regional autonomy and innovation policy making

The degree of regional autonomy impacts on regional innovation governance and is thus of importance for regional innovation policy making. If the degree of regional autonomy is high, regional policy-makers can tailor policies specifically to the regional context, refer to small-scale conditions in "innovation places" and enhance innovation processes. Specific policy measures may be directed towards eliminating regionally characteristic types of hampering factors or towards supporting the most promising areas of present or future comparative advantage. Policies on the national level cannot provide such a small-scale support, since they aim at the more general development of innovation activities in order to support the whole economy. Recent debates on the future orientation of cohesion policy speak of a "place-based strategy" and argue for a development policy, oriented towards very specific characteristics given in the territory in question.¹ In a very similar way, the more and more prominently discussed "smart specialization concept" promotes place-based approaches as *the* main rationale for future policy-making. In particular, it emphasizes

- policy support and investment on key priorities;
- strengths, competitive advantages and excellence potentials in the territory;
- application-oriented innovation relevant for the territory;
- the scouting of potential sources of private sector investment from the territory;
- the involvement of regional stakeholders; and
- evidence-based policy making enabling the above aspects.²

1 These arguments are also discussed in the context of European Cohesion Policy (cf. for instance Barca 2009; Walendowski 2011).

2 http://s3platform.jrc.ec.europa.eu/documents/10157/28950/frontpage_guide_2012.jpeg?t=1342689003355.

Both the general concept of regional innovation systems and practitioner discourses about regional innovation governance are well established and duly reflected in the theoretical discussion (Heidenreich/Koschatzky 2011; Uyarra/Flanagan 2010). Since regional governance determines the possibility of regional self regulation vis-à-vis regulation deficits (Fürst 2004), regional innovation policy is a constitutive element of regional innovation systems (Edquist 2011). Accordingly, next to all innovation system approaches that emphasize the importance of knowledge, knowledge exchange and learning as an interactive process across public and private sectors (Freeman 1995; Lundvall 1992; Nelson/Winter 1977) assign a considerable significance to governance structures (Braczyk/Heidenreich 1998).

From a theoretical perspective, the term regional governance can be contextualised from different disciplinary perspectives: From a geographical perspective, it implies a territorial component including territorial hierarchy; from an economics perspective it can be related to an understanding of market mechanisms including market failures; while from a political science perspective it can be related to debates on the balancing of and bargaining about political power. Stating this is important as it illustrates that regional governance is a broad concept depending on a number of different factors, ranging from specific physical infrastructures, institutional framework conditions, differing social practices to direct and dynamic responses from within the logic of the political system itself (Scott 1998). Whichever perspective is taken, however, regional governance and the degrees of freedom of those responsible for it remain embedded into the respective national context. Accordingly, the regional system of innovation approach acknowledges the influence from superior policy levels. For example, most regional innovation promotion activities are (or at least should be) embedded in national and supranational science, technology and innovation policy frameworks, a fact which gave rise to a broad multi-level governance discourse in regional innovation policy research (Flanagan et al. 2009; Uyarra et al. 2007).

Evidently, most European Member States have different institutional structures on the sub-national level, rooted in nation-specific traditions and history and being influenced by administrative and bureaucratic cultures (Bullmann 1996: 4). Accordingly, different levels of power and governance within the European Union create a complex set of relationships at and across the European, the national, and the sub-national level (cf. Loughlin 2007: 386). As a tendency, European Member States have modified their self-perception in a way that has prompted a restructuring of their governance system, more precisely the devolution of state functions to sub-national levels (cf. Loughlin 2007: 391-393). As this process is by no means complete, the linkages between different government levels, including their institutional, financial, and informational aspects

are still in flux and create a volatile diversity of sub-national solutions and approaches, opening up new opportunities for regions to compete in terms of policy.

Good examples of the process of delegating formerly centralised competences to the regions are the diverse tendencies observed in the 1980s and 1990s, which have led to diverse forms and to a greater variety of governance models within the Member States. This process was supported by the idea of the "Europe of Regions", promoted by the Council of Europe and the European Union not least by upgrading European Regional Policy into Structural Action and Cohesion Policy. In parallel, devolution was fuelled by national policy makers' bottom-up regional movements, or accepted as a necessary step to obtain access to the European Union and its regional funds.

In more detail, the general trend can be differentiated in one of 'regionalism' and one of 'regionalisation'. 'Regionalism' denotes the targeted articulation of political demands from the regional or municipal political levels, as in Italy, Spain or the UK (Harvie 1994), while 'regionalisation' describes the delineation of new regions by national authorities, as has happened in many of the acceding countries of Eastern Europe but also in Scandinavian nations (Hadjimichalis 1986). Other than regionalism, regionalisation can thus occur for statistical purposes and does not always reflect increased autonomy.

In general terms, decentralisation is understood as the transfer of competences from the central government to lower-level entities with the objective to bring decision-making closer to the people. In the course of decentralisation administrative functions, political powers, and budgetary competences are transferred from the central to lower-level government authorities (or to local authorities that report to central government). On the one hand, decentralisation can thus be limited to a mere shifting of administrative or fiscal tasks within the existing hierarchy of governance. On the other, it can relate to political decentralisation, i.e. the process of transferring authority to lower-level representatives such as elected local governments – a process that is central for the issue of regional autonomy and often also referred to as devolution.

Since the mid-1990s devolution tendencies have become more and more common across Europe (e.g. Wales, Scotland, France, Poland, Czech Republic, Spain, Italy). Devolution is understood as the granting of powers from a central government (in the case of Europe even triggered by a supra-national government) to independent governments at sub-national levels. It comprises the transfer of governance responsibilities for specific functions to sub-national entities which are not fully controlled by the central government and thus characterised by a certain degree of autonomy. Devolution differs from federalism in that the devolved powers may be transferred only temporarily and in that the central government continues to reserve the ultimate right of decision.

Devolution processes are by no means homogenous across Europe and often depend on national idiosyncrasies that have their roots in the constitutional and administrative history of the countries. Thus, European countries are on different trajectories determined by historical backgrounds and path-dependency, institutional transformation and consolidation of regional autonomy (Rodríguez-Pose/Bwire 2003). As a result, different types of regionalisation continue to co-exist in Europe (Yoder 2007) with regard not only to the degree of decentralization as such but also with regard to the functions and competences that are devolved to the sub-national level in general and in innovation policy making in particular. Additionally, there are asymmetries between the degree of devolution to different regions within one nation and the degree of interaction of the regions with the European level.

In brief, processes of devolution in the last two to three decades and, more generally, decentralisation have transformed the European policy landscape and the degree of regional autonomy that today varies between different European countries and partially also between regions of the same country, gives rise to multi-level-governance issues. Against this background, increased complexity and overlapping competences are seen as a major hampering factor in the process of regional policy making that continues to be analysed and discussed vividly (Rodríguez-Pose/Bwire 2003; Yoder 2007). Since regional autonomy and political decentralisation are but two sides of the same coin (AER 2009a: 5) this so far insufficient documentation of a key hampering factor is a key motivating factor for the present study.

Beyond constitutional autonomy, Cooke et al. (1997) have underlined the importance of budgetary resources in the development of a region's innovative potential. In detail, they argue that without a notable regional budget no region can continue to allocate sufficient funding to autonomously developed place-based innovation policies that help to unfold the regional innovation potential. In this respect, they distinguish three different ways regional governments can obtain control of budgetary means for programmes related to regional innovation policy:

1. through *decentralised spending*, i.e. the administrative decentralisation of allocations in centrally developed support programmes, a situation that gives the region little autonomy to develop place-based policies;
2. through *autonomous spending*, meaning that the region has been allocated a certain budget to spend at its own discretion, a situation which leaves local policy makers with more liberty to engage in innovation policy; and
3. through the *right to levy its own regional taxes*, that puts the regional government in a position to define the scope of its own budget, leaving great possibilities to shape regional innovation policies in a manner suited to the region.

In the authors' view, this list should be completed by "European spending" subsuming the allocation of financial means through the channels of European structural funding which in many peripheral and less developed regions constitutes the almost only source of finance for innovation related regional policy programmes. In particular, this holds true for the so called "Convergence" areas in which EU funding does not have to be significantly co-financed from any of the above-mentioned "genuinely regional" sources – thus in fact constitutes a more or less supplementary and independent source of funding.

In summary, it has been argued from several perspectives that regional policy can only design regionally specific innovation policies for a given territorial entity if

- it has the general political competence to take independent decisions,
- its regional autonomy either explicitly extends to innovation policy or does at least not conflict with national competences in innovation policy, and
- it has a relevant influence on the budgetary decisions that turn legal autonomy into factual room for action.

Only when these conditions are fulfilled policies can be based on place-specific characteristics like resources, potentials and strengths. It is often discussed that this is needed to give them a superior degree of effectiveness (compare McCann/Ortega-Artiles 2011; Walendowski 2011) and meaningfully position the region with regard to general socio-economic trends and challenges (Barca 2009; Lund Declaration 2009).

Against this background, we will propose a set of indicators to account for aspects of regional autonomy in a comprehensive manner that allows to assess to which degree European regions are actually able to develop and shape RTDI policies to the extent required for the development of smart specialisation strategies.

The empirical assessment will address the following research-guiding questions:

- Is there a noteworthy and comprehensive general degree of regional autonomy (triggered by devolution, decentralisation or deconcentration)?
- If this is the case, is it explicitly extended to the area of RTDI policy, so that the region in question has a dedicated budget and competences in this field?
- Is there a regionally specific ERDF operational programme, which in many less developed regions defines both budget and scope of regional RTDI policy?

Based on these research-guiding questions, we will propose a set of indicators able to account for aspects of regional autonomy in a quantifiable manner in a way that can be used as a framework of reference for future comparative regional analyses.

3 Regional autonomy: A proposed set of indicators

The general motivating factor for the analysis presented in this paper is the acknowledgement of the fact that regional innovation policy cannot become relevant and succeed without autonomy. Also regional autonomy is determined by a variety of different rationales and philosophies at numerous governance levels – European, national, and regional. Following this logic, the authors argue that to contextualise the current vivid discussion about tailored innovation policies and smart specialisation (Barca 2009), it is indispensable to better understand the distribution of regional autonomy across European regions.

3.1 Review of existing approaches

From the perspective of governance and autonomy, various models of policy design and implementation on the regional level have been developed. Unanimously, different studies illustrate that the regional autonomy in research and innovation policy in Europe has generally increased (Stahlecker et al. 2010). Nonetheless, obvious variations in decision-making power and budgetary responsibility remain, partly resulting from the respective national contexts, but also from regionally-specific history, culture as well as political ambitions (Koschatzky/Kroll 2009: 46-48). Thus, notably different types of governance structures prevail among European regions, in particular when the statistical NUTS classification is taken as a point of reference for comparison. Generally, the distribution of decision-making power between the national state and the regional level result from "networking and bargaining between different societal actors, interest coalitions and systems" (Koschatzky/Kroll 2009:48), and may change over time.

In broad terms Wiehler/Stumm (1995, in Koschatzky/Kroll 2009: 48) distinguish four main types of regional governance in Europe: (1) regions with wide-ranging powers such as the German *Länder*, (2) regions with advanced powers such as autonomous communities in Spain, while (3) regions with limited powers such as for instance Dutch provinces, and (4) regions without power such as Portuguese planning regions.

Rarely, however, have attempts been made to classify these different levels – or rather types – of autonomy in a quantitative manner that allows the reader to instantly assess any selected regions' autonomy in the European context while accounting for at least some of the most relevant idiosyncrasies that set apart different national and regional contexts of autonomy across the European Union.

One very detailed indicator-based analysis of decentralisation was recently performed by BAK Basel Economics, commissioned by the Assembly of European Regions AER

(AER 2009a; AER 2009b). BAK Basel Economics conceived a decentralisation index for the European Member States on the basis of similar regions within a country and analyses the correlation between decentralisation and economic development. In the frame of a comprehensive and multi-level proceeding, BAK Basel Economics develops a decentralisation index through a successive merging procedure out of more than 200 qualitative and quantitative indicators. Separated into two main groups of decision and financial decentralisation indicators, the index illustrates the general degree of political powers devolved to the regional tier within this country (AER 2009a: 9ff.; AER 2009b:10/11). In cases where different region types, i.e. with diverging rights within one country were identified, BAK Basel Economics indicated this in their analyses (Sweden, Belgium, and Italy). As could be expected, the analyses documented the highest levels of autonomy for Switzerland, Germany, Belgium, Spain and Austria.

Wherever such decentralisation indicators have been developed, however, be it by BAK Basel Economics (AER 2009a; AER 2009b), the OECD (Blöchliger/King 2006), or the World Bank (e.g. Meloche et al. 2004) most of them have tended to focus on fiscal autonomy and decentralisation in general terms. Hence, they do not directly allow for meaningful conclusions as to this paper's focused interest on the issue of autonomy with regard to regional innovation policy. Furthermore, most analyses remain focused on the comparison of nation states without sufficiently differentiating between their different regions. Against the background of the increasing importance of both sub-fields of regional innovation policy and intra-national diversity, it therefore seemed necessary to conduct this study to close this gap in documentation.

3.2 Proposed set of indicators and their description

As highlighted above, we propose a system of indicators that emphasises differences between regions of the same country that is more explicitly related to regional competences relevant to regional innovation policy making than other papers. Against this background, it takes into account the following three aspects:

- Regional autonomy: framework conditions set by the constitution;
- Regional competences with regard to innovation policy; and
- Regional influence on priority setting in the allocation of ERDF funding.

In doing so, it was the stated ambition of this study to create a comprehensive point of reference that includes all three aspects for any European region. In technical terms, therefore, the respective assessments had to be transferred into ordinal variables to allow for a meaningful creation of a composite index. In detail, the review of different types of documents with a view to the three different aspects was in the end translated into a ranking on general Likert-Scales of either one to five or one to three.

The first variable "**general regional autonomy**" is based on a review of the constitutions of all 27 European Member States with specific attention to the degree of power regions have in their national contexts. In doing so, specific attention was paid to electoral laws and the existence of a regional representation in the regions. In terms of ranking, the value 1 was assigned to regions in a fully centralized country without regional parliament; 2 to regions in a dominantly centralized context (e.g. regional representatives assigned centrally); 3 to a shared central/ regional structure (centrally appointed representatives plus regionally elected representatives); 4 to dominantly regionalized contexts with regionally elected representatives; and 5 to regions with regionally elected governments that have wide ranging competencies and also representations in other countries and/or in proximity to European institutions. Where the distribution of responsibilities between the national state and the regional level is homogenous within a country this results in identical ratings for all regions of one nation. In some cases, however, individual regions have a special status in their national context (e.g. in Italy, Spain, UK), so that different parts of one country are assigned different rankings.

The second variable "**regional competences with regard to innovation policy**" was in a similar way derived from a focused review of EU Member States' constitutions. In contrast to the first case, a particular focus was put on competences and legislative powers in innovation-related policy making, i.e. in the fields of research, innovation, technology, or education policies. Hence, this aspect explicitly reflects the fact whether regions can decide autonomously on innovation-related policy issues or whether much of this competence remains on the central level. In contrast to the first one, this variable was expressed on a three-point Likert-Scale with "1" indicating full centralisation of RTDI policies, i.e. neither legislative nor administrative competences for such policies on the regional level; "2" indicating dominantly centralised RTDI policy governance, i.e. most legislative competences remain at the national level except in some areas; and "3" indicating a wide range of regional competencies in RTDI policies.

Finally, a third indicator was developed with a view to "**Regional Influence on Structural Fund Allocations**". For many regions, EU structural funding constitutes a significant share of the regional budgetary resources that can be freely spent for purposes of business development and regional RTDI policy. From 2007 to 2013 a total of €347.41bn is available in the EU27 for projects co-financed by the structural funds. Although in some countries – such as in Germany – other sources of funding may eclipse the budgetary volume of structural funding itself, it remains a valid proxy for the majority of European regions where this is not the case. In large parts of Eastern and Southern Europe, European structural funding still constitutes the prominent, in part nearly exclusive, source of funding for regional innovation policy. In particular, this is of

relevance for regions with Convergence status or entitled to allocations from the Cohesion Fund, where most EU allocations do not have to be substantially co-financed.

For the subject addressed in this paper, regional autonomy, the landscape of structural funding has to be analysed from two key perspectives: the administrative and the programming perspective. Both reflect distinct yet connected aspects of the complex process of budgetary allocations in which regions are involved.

The *administrative perspective* illustrates whether the plans for structural funding are developed regionally and if the communication between the authorities and the recipients of funding happens *at* that level. In most countries, these tasks are neither a clear cut regional nor a clear-cut national responsibility. In many cases, responsibilities are shared among a number of different agencies at the national level and a number of regional administrations. To arrive at a clear attribution of these intermediate forms on a Likert-5-Scale, all countries in which just one regional authority was involved received a score of "2" whereas all countries in which just one national authority was involved received a score of "4". All others were assigned a score of "3".

The *programming perspective*, in contrast, reflects to what extent the plans for structural funding (so-called operational programmes) are developed *for* the regional level. Even in cases where one national agency officially administers all the programmes, it can still interact quite intensively with local policy makers to adapt its plans to regional needs and characteristics. If there is a very active process in this regard, it becomes less relevant to which office the recipients send their invoices. As with regard to the administrative dimension there are few countries in which operational programmes are either purely developed for the national or exclusively for the regional level. The Likert-5-Scores for intermediate cases have therefore been allocated based on the share of the budget that was allocated through national and through regional operational programmes respectively. Additionally, it takes into account whether regional operational programmes were available to all or only to a limited number of selected regions.

Finally, both indicators were merged into one by calculating their average.

4 Results: European regions' autonomy with regard to regional innovation policy

Table 1 presents the findings of our analyses of documents differentiated by the three main indicators for each Member State. If the degree of regional autonomy differs for single regions within one country, these deviations are indicated with reference to the regions concerned. Depending on the country-specific constitutional backgrounds, our

analyses related to one specific regional level per country. To inform future analysis, the far right column of Table 1 documents which regional level our analysis refers to. It corresponds to the sub-national level that has innovation policy competencies.

Table 1: Indicators of regional autonomy

Member State	General Regional Autonomy	Competences with regard to Innovation Policy	Influence on Structural Fund Allocations	Regional Level of Reference (NUTS) <i>(first level under central government)</i>
Belgium	5	3	5	NUTS 1, Gewesten/Régions
Bulgaria	1	1	1	NUTS 3, Oblasts/Podregiony
Czech Republic	4	2	2.5	NUTS 3, regions/kraje
Denmark	2	1	1	LAU 1, municipalities/kommuner
Germany	5	3	4	NUTS 1, federal states/Bundesländer
Estonia	1	1	1	NUTS 3, counties/maakond
Ireland	1	1	5	LAU 1, counties and cities
Greece	3	1	2	NUTS 2, regions/perifereies
Spain (average)	3	2	3	NUTS 2, autonomous communities
Spain (most aut.)	5	2	3	NUTS 2, autonomous communities <i>Andalusia, Catalonia, Galicia, Basque Country, Canarias</i>
Spain (more aut.)	4	2	3	NUTS 2, autonomous cities <i>Ceuta, Melilla</i>
France (average)	3	2	5	NUTS 2 regions, regions/régions
France (more aut.)	4	2	5	NUTS 2 regions, region/région <i>Corse</i>
Italy (average)	4	2	3.5	NUTS 2 regions, Regions/regioni
Italy (more aut.)	5	3	3.5	NUTS 2 regions, regions/regioni <i>Bolzano, Friuli, Sardegna, Aosta, Sicily, Trento</i>
Cyprus	1	1	1	LAU 1, districts/eparchies
Latvia	1	1	1	LAU 1, districts/rajoni, cities/pilsētas
Lithuania	1	1	1	LAU 1, municipalities/ savivaldybės
Luxembourg	1	1	1	LAU 1, cantons
Hungary	2	1	2	NUTS 3, counties/megyék
Malta	1	1	1	LAU 1, districts/distretti

Member State	General Regional Autonomy	Competences with regard to Innovation Policy	Influence on Structural Fund Allocations	Regional Level of Reference (NUTS) (first level under central government)
Netherlands	2	2	5	NUTS 2, provinces/provincies
Austria	5	1	5	NUTS 2, federal states/Bundesländer
Poland	3	2	4	NUTS 2, voivodeships/województwa
Portugal (average)	1	1	3	NUTS 2, reg. coord. commissions/comissões de coord. reg.
Portugal (more aut.)	3	1	3	NUTS 2, autonomous regions/regiões autónomas Madeira, Açores
Romania	1	1	1	NUTS 3, counties/județ
Slovenia	1	1	1	LAU 1, administrative units/upravne enote
Slovakia	3	1	1.5	NUTS 3, regions/kraje
Finland (average)	2	2	3.5	LAU 2, municipalities/kunnat (also: complex co-operations of those)
Finland (Åland)	4	2	3.5	NUTS 2, autonomous Åland
Sweden	2	1	3	NUTS 3, counties/län
UK (England)	1	1	2	NUTS 2, counties
UK (devolved adm.)	5	3	5	NUTS 1, devolved administrations Scotland, Wales, Northern Ireland

Source: own compilation; based on national constitutions, ERAWATCH, and Inforegio

4.1 Differences and commonalities among countries with similar characteristics regarding regional autonomy

Evidently, our findings with regard to regional innovation policy confirm the previously established general insight that regional autonomy differs among European countries and even among regions within a country. The variety ranges from dominantly regional structures, which dominantly occur in countries with a federal system or with a regional structure to dominantly centralised countries. To establish a summary overview, we make use of the findings displayed in Table 1 to derive at a general typology for the degree of autonomy in regional innovation policy. In detail, we distinguish three different types of countries:

- *Dominantly centralised countries* display strong centralisation with regard to all aspects considered. Regional governance is not or only very selectively foreseen in their constitution, RTDI competences remain with the central government and the

structural funds' operational programmes are managed and developed by the national authorities. The centralised nations in this group are Cyprus, Denmark, England, Estonia, Greece, Hungary, Latvia, Lithuania, Luxembourg, Malta, Portugal, Romania, Slovenia, Slovakia, and Sweden.

- *Countries with regional autonomy in some fields* display no coherent picture among the variable characteristics. Some of the countries have developed regional structures in their constitution but the RTDI competences as well as the management of the structural funds' operational programmes still remain highly centralised tasks (like the Czech Republic). Other countries (e. g. Ireland) manage European funds regionally but reveal highly centralised structures in almost all other dimensions. Overall, this second group covers the Czech Republic, Finland, Ireland, the Netherlands, Poland, the more autonomous areas of the UK and Sweden as well as the less autonomous areas of Spain and France.
- *Countries with a large degree of regional autonomy* tend to be characterised by a federal structure and a constitution that grants extensive political and executive powers to either federal states or single regions that among many other things administer and draft the structural funds' operational programmes. Likewise, many competences in regional innovation policy rest, in part exclusively, with the regional level. This group unites Belgium, Germany, Italy, Austria as well as the more autonomous areas of Spain and France.

Finding many smaller countries in the group of dominantly centralised countries does not come as a surprise since in many cases they are too small to develop regional structures that would be beneficial and economically efficient. In the group of countries with regional autonomy in some areas are many countries which have undergone or are undergoing a process of devolution like France, Spain, Poland or the UK. Countries belonging to the group with a large degree of regional autonomy have either always been constituted as federal states (Germany and Austria) or, like Italy, have undergone substantial processes of – not least fiscal – decentralisation that were triggered simultaneously from top-down and bottom-up.

Some European countries are characterised by their regions' differing degrees of autonomy. Generally, these are Member States in which some regions display a strong indigenous tendency towards self-governance, either rooted in their specific history (Catalonia, Scotland) or in their geographical location, in spatial distance to the mainland/rest of the country (Canarias, Madeira, French overseas departments (*départements d'outre-mer*, DOM)). Against this (and other) backgrounds Sweden, Spain, Italy, the UK, Finland and France have granted some of their regions a special status and more competencies towards self-governance.

In broad terms, the different regions' competence in innovation policy and with regard to structural funds' management are in line with their general constitutional statutory

provisions. Where strong regional competences are foreseen in the constitution, RTDI-competences and structural funds' management are regionalised as well (Belgium, Germany, Italy). Where the constitution foresees a strong central state, most relevant competences remain with the national level of government (Estonia, Greece, Hungary, Slovenia, Slovakia, Sweden, Finland).

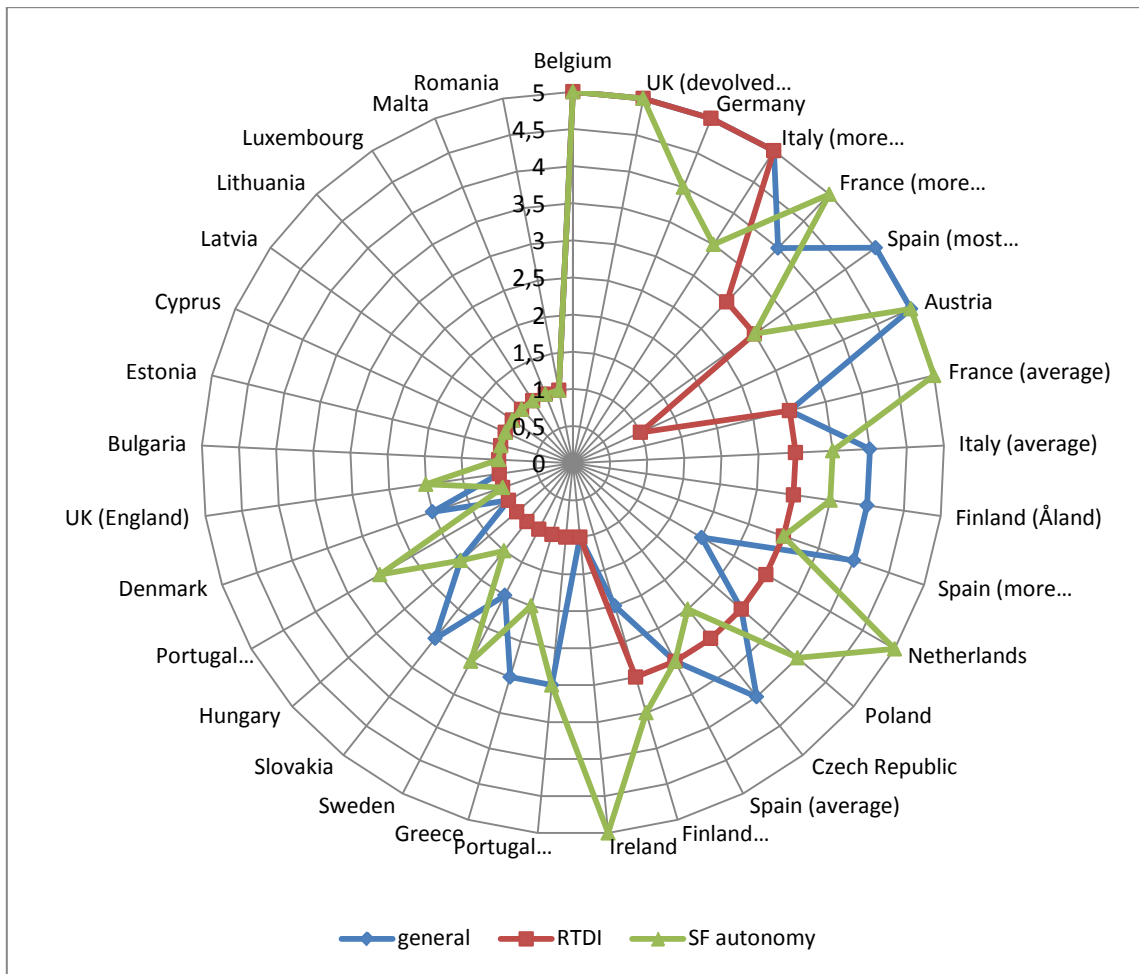
Nonetheless, two more specific findings can be derived from our study (Figure 1):

On the one hand, general autonomy proves to be a necessary but by no means a sufficient criterion for autonomy in regional innovation policy. While a notable number of countries has devolved some competence to their regions, only a limited number of those have regionalised political, administrative and budgetary competences relevant to regional innovation policy to a substantial degree (Belgium, Germany, Italy). In most other cases, competences in research and higher education policy remain fully, or at least dominantly, in the hands of the national government.

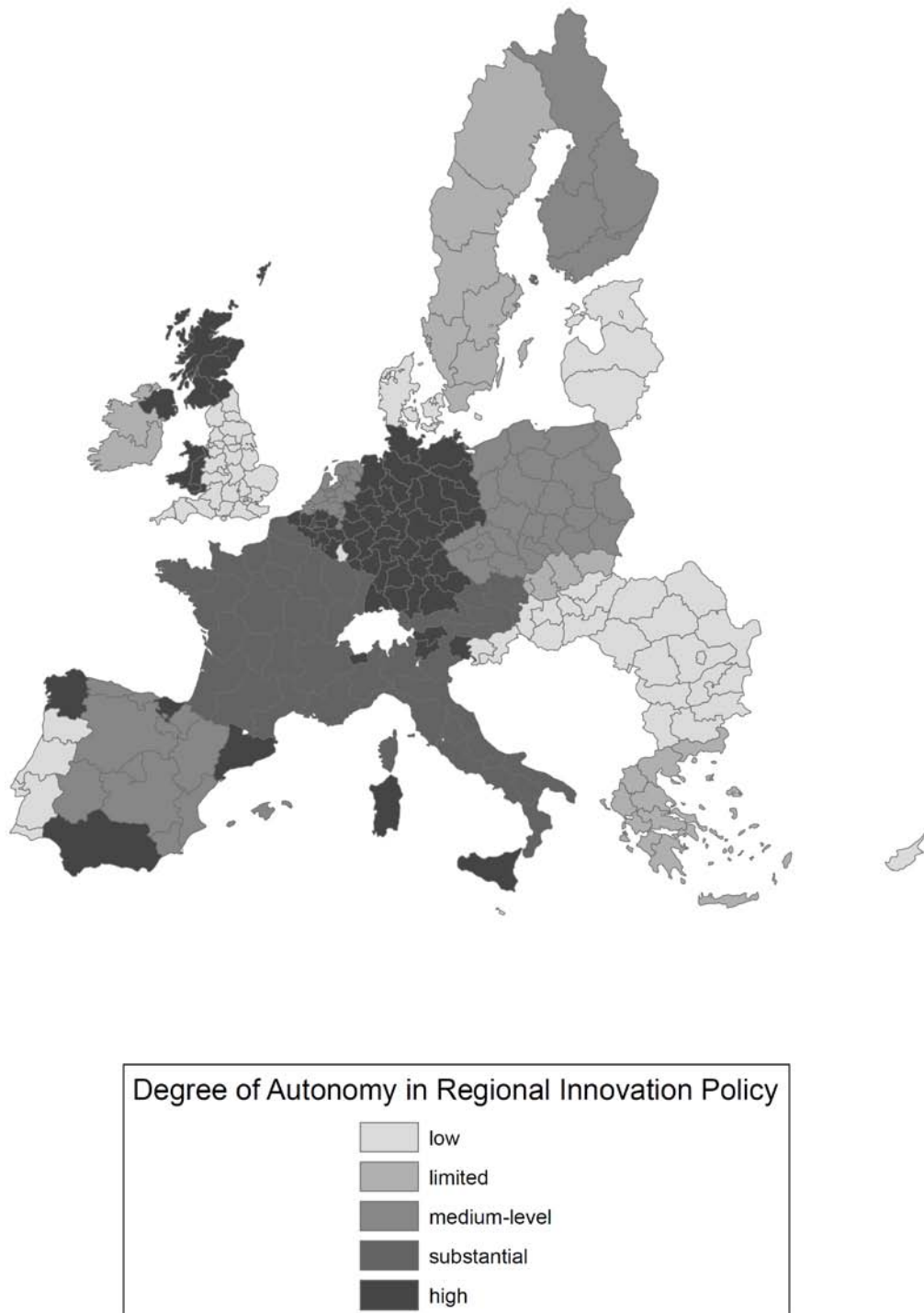
On the other hand, the example of Ireland, the Netherlands, Portugal and Poland illustrates that regions can gain influence on issues related to regional innovation policy, even where no strong regional competences in innovation policy are foreseen in the constitution. Due to centrally imposed regulations, the management of the European structural funds has to be regionalised, if at all possible. As a result, new, or disproportionately strong, levels of regional governance with a limited influence on those innovation policy measures within the Cohesion policy framework have emerged.

To give a summary overview of the degree of autonomy that can be assigned to each European region when all three factors are combined, a map of regional autonomy is presented in Figure 2. While the authors are aware that the three aspects considered are not mutually exclusive, they are still in part mutually reinforcing and complementary and should hence not only be presented in isolation.

Figure 1: Composite Index of Regional Autonomy



Source: own analysis, own illustration

Figure 2: Composite Index of Regional Autonomy

Source: own analysis, own illustration

4.2 Illustrative Examples of EU Member States' different approaches in dealing with regional autonomy

Whereas the two previous sections of this chapter have shown a broad picture of the situation in Europe, the following section will illustrate in more detail different ways in which regional autonomy has been established and is being made use of in different European countries. The rationale for selecting certain cases was to cover countries which differ widely as regards regional autonomy, its implementation and its recent historical evolution. Thus, similarities and differences will be illustrated with the case of Portugal, which stands for a country that is still rather centralised and regions are granted only a limited degree of autonomy, Poland, where regional autonomy has reached medium level and, Germany, as an example of a country with traditionally high levels of regional autonomy that has recently undergone certain changes.

In general terms, it is the objective of this section to put the earlier, quantitative account into perspective by illustrating that future studies should ideally not only make use of the presented quantitative framework of reference as such, but use it as a starting point for more detailed considerations of national idiosyncrasies and particularities. Without such background information, all indicator-based accounts give but a static impression as they, by themselves, do not provide a basis to anticipate future developments. The examples presented below, however, may help to gain an impression of these dynamics as they help us to understand whether the respective processes of devolution are completed, just initiated or may in fact even been reversed.

4.2.1 Portugal

Portugal is divided into seven statistical regions at the NUTS 2 level. Five of them constitute the Portuguese Mainland (Continente) while the other two, Açores and Madeira, are made up by groups of islands in the North Atlantic.

In 1969, the then very centralised state of Portugal was divided into planning regions which in 1979 were followed up by Regional Coordination Commissions, *Comissões de Coordenação Regional (CCR)*, and the later parallel institution of Regional Directorates of Environmental and Spatial Planning, *Direções Regionais do Ambiente e do Ordenamento do Território (DAOT)*. Initially, the CCRs mandate was limited to providing a forum of co-ordination for different municipalities. In the course of the 1980s and the 1990s, however, the mandate was gradually broadened leading to the eventual merger of CCR and DAOT into today's *Comissões de Coordenação e Desenvolvimento Regional (CCDR)* in 2003.

National legislation has put these regional co-ordination and development commissions in charge of interpreting the administrative and financial autonomies that have been granted to the Portuguese regions in a process of deconcentration – among them the management of about 50% of the Portuguese structural funds allocations and the drafting of regional operational programmes. Internally, they have a complex structure including a president's office, an administrative counsel, a budgetary commission, and a regional counsel.

Their political autonomy, however, is virtually non-existent, as they are in charge of a very limited segment of regional affairs and their presidents are not elected but appointed by a branch of the central government that was specifically created in 2003: the Ministry of Urban, Spatial and Environmental Planning, *Ministério das Cidades, Ordenamento do Território e Ambiente*. In contrast to this, the autonomous regions of Açores and Madeira have regional parliaments elected by the respective populations. Nonetheless, even their scope for autonomous regional policy decisions, in particular in the field of RTDI policy, remains very limited.

In theory, the autonomous regions of Açores and Madeira have limited political capacity to define orientations in terms of S&T and research policy. In practice, however, they rely on national programmes as much as the other regions. Additionally, it should be noted that while Açores has a Regional Directorate of S&T, Madeira does not. Apparently, the two island regions' small numbers of population (<250,000 inhabitants) and R&D personnel (<400 FTE) seem to limit the added value of regionally specific institutions and programmes.

4.2.2 Poland

Looking at the example of Poland, the sixteen voivodships (*województwa*) which exist today were created following the Act of Self-governance of Voivodships of 5 June 1998, which came into force on 1 January 1999. This Act focuses on shifting powers and responsibilities from the central to the regional and local levels; a clear indication of dissolution of the previously centralised administration system. The sixteen voivodships contain 379 *powiats* (counties) and 2,478 *gminas* (communes, municipalities). Each voivodship has a directly elected regional parliament (*Sejmik*) and the Voivodship Board (executive) that is headed by the Marshall (*marszałek*), the highest representative of the voivodship's self-government. He is elected by the voivodship's parliament by an absolute majority. As head of the council, he also represents the voivodship externally. In order to represent the central government and to coordinate the work of the regional and the central governments, the Polish Prime Minister appoints a representative in each voivodship, the so-called voivode (Zoltowski et al. 2003).

Generally, Polish RTDI policies tend to be centrally organised: Though regions are increasingly playing their role in regional innovation policies in terms of responsibilities and financial means – as a consequence of the above-mentioned reforms, the Polish regional self-governments received important powers in regional economic development and conceived Regional Development Strategies, most of them within the time-frame 2000-2020 - the national level still has a significant role to play in research, development and innovation policies. The increasing competencies of the regional level (voivodships) become clear when considering that during the programming period 2004-2006, only one national programme (Integrated Regional Operational Programme) was implemented at the regional level. In contrast, in the 2007-2013 programming period, Regional Operational Programmes for all 16 voivodships were adopted by the Executive Board of Voivodship. In 2010, Poland started a process towards a more efficient and competitive national research and innovation system. In this context, the role of Polish regions is defined through (i) laws on regions and economic development and (ii) strategies. Poland foresees to establish a Science and Innovation Council that will coordinate regional and national policies (European Commission 2009; Jerzyński 2011; OECD 2011).

Since the EU accession in 2004, EU funds represent the majority of the regional policies budget (complemented by national co-funding). In the 2007-2013 funding period, Poland benefits from about €67bn European investment, from which over €16.5bn are spent through the regional Operational Programmes. Poland developed five national ('Infrastructure and Environment', 'Human Capital', 'Innovative Economy', 'Development of Eastern Poland', 'Technical Assistance') and 16 regional programmes for all 16 voivodships. Nearly one quarter of the Polish Operational Programmes budget has been designated for investments into the development of the Polish regions. Main missions of the Regional Operational Programmes (ROP) are the decentralisation of the regional development programming, an increased effectiveness of development activities, the strengthening of the civic and self-government dimension as well as the effective use of structural measures. The main domains of regional Operational Programmes refer to the research infrastructure, knowledge transfer, science-industry linkage and support for innovative SME. In addition to EU funding, the Polish regions are increasingly launching own measures and initiatives. The ROP objectives are set by the voivodships in compliance with regional development strategies on the one hand, and with National Strategic Reference Framework (NSRF) goals of an enhanced competitiveness and the promotion of a balanced development on the other hand, aiming at ensuring consistency between the regional approach with the national and European strategies, goals and priorities, and also considering SME support (Jerzyński 2011).

Generally, Poland's regional policy undergoes a shift from compensating regional inequalities to fostering innovation as a means to support growth and competitiveness, and to create a favourable environment for domestic and foreign firms. To an increasing extent, EU Structural Funds are prioritising innovation-related matters, notably in the context of the Lisbon Strategy. Finally, the regionalisation of diverse policy fields following the reforms in 1999 – economic development, planning, transportation – increased the potential and possibilities of regions to conceive policy related to their specific regional matters and needs (Bachtler et al. 2006).

Poland's classification clearly indicates the tendencies towards higher autonomy of the 16 regions, showing that the roles and functions of both the central and the regional levels are laid down by the constitution. While RTDI policies are dominantly organised at the national level – with increasing shifts of competences to the voivodships as shown above – ERDF means are dominantly organised on the voivodship level.

4.2.3 Germany

Germany has a long tradition of regional government and federalism. However, German federalism was established in its current form by the constitution in 1949 (Basic Law), and has gained momentum since reunification. The Basic Law divides authority between the federal government and the federal states, with a subsidiary principle, articulated in Article 30: "Except as otherwise provided or permitted by this Basic Law, the exercise of state powers and the discharge of state functions is a matter for the Länder." Thus, the federal government can exercise authority only in those areas specified in the Basic Law.

The federal government is assigned a greater legislative role and the Land governments a greater administrative role. The areas of shared responsibility for the Länder and the federal government were enlarged by an amendment to the Basic Law in 1969, with joint areas of action for instance in higher education, and regional economic development. The Länder also retain significant powers of taxation.

The federal system in Germany has undergone several changes during the last 10 years in order to make the system more effective with e.g. the following goals:

- strengthening federal and state legislation by dividing legislative powers more clearly and abolishing framework legislation;
- reducing barriers by redefining the requirements for the Bundesrat (legislative body representing the sixteen Länder at the federal level) approval of federal legislation;

- reducing the use of mixed federal-state funding and restructuring the options for federal financial assistance while emphasizing the promises made in the second solidarity package for Eastern Germany.

The German Federal Reform was finally agreed upon by both Bundesrat and Bundestag (after intensive discussions since 2003) in mid 2005 and came into effect on 1st September 2006. A central issue with regard to RTDI policy making was an adaptation of competences in the field of higher education which is one of the key competences at the Länder level. Additionally, amendments to Article 23 of the Basic Law specified the competences between different levels of policy making as regards decision-making at the level of the European Union and to strengthen the German position within the policy making processes at the European level. However, overlapping competences could not be completely eliminated.

5 Conclusions

The EU wide differences in regional autonomy that we can observe today are based on comparatively recent developments which have occurred in parallel in a number of nations. In general, we found that the conception of a relevant quantitative reference framework for future research is not an easy task. Against this background, the main merit of our analysis may not lie in the overall index as such but in its composite parts. Moreover, our findings have been complemented by an illustration of different national cases to underline that the constitution of regional autonomy is a dynamic process that develops against different backgrounds and in different directions.

That notwithstanding, the study's main aim remained to transform selected qualitative information into quantifiable indicators, a challenging task complicated by differences in constitutional frameworks and idiosyncrasies in legal terminology. In the end, however, this paper was able to identify and document a number of common characteristics in the available texts which makes for the first structured review of legal documents that has been conducted with a specific focus on aspects relevant to regional innovation policy.

In detail, the resulting framework of reference refers to three central aspects that are central to describing regional autonomy in a way that is relevant to regional innovation policy: General constitutional autonomy, autonomy with regard to regional innovation policy, and regional influence on the allocation of European structural funding.

In general terms, our study confirms a positive relation between overall autonomy and autonomy for RTDI policy as well as competences to develop and implement structural fund based policy programmes. Furthermore, however, it documents that a significant

number of regions displays substantial autonomy in general terms while many issues related to regional innovation policy are still under the control of national government. Against this background, a notable number of European regions' ability to implement regionally-adapted policy and to devise meaningful intelligent specialisation strategies may have to be critically reconsidered. Against this background, it seems reassuring to see that the centralised effort to delegate competences in structural fund based regional innovation policy to the regional level seems to be taking shape in practice.

Future studies, finally, could benefit from a further differentiation of our approach in terms of the diverse sub-fields of regional innovation policy as well as in terms of a more differentiated analysis of different channels of policy delivery. Without a doubt, the classification scheme presented in this paper provides not only an analysis at a given point in time, but also a first point of reference that needs to be developed and reconsidered further by future studies.

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