Europeanising National Research Policies

The case of Serbia

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Abstract

The paper analyses recent developments in Serbian research policy through the prism of policy convergence. The research question raised by the authors is concerned with the problem of policy change and adaptation in the European context. On the one hand, it explores what is being transferred from the European policy area to the domestic one, and secondly it looks at the nature of convergence between these policies. The study utilises policy convergence literature in addressing the outcome of the policy transfer. It concludes that Serbia's research system is undergoing a powerful policy harmonisation within the broader framework of European integration. Convergence is documented in several aspects between European and Serbian research policies.

Keywords: Europeanisation, research, policy convergence, Serbia

Introduction

Globalisation is said to have significantly amplified the interactions among nation states. For example, the problems faced by a country's government are often very similar as the ones faced by its neighbours, thus policies adopted in one country are frequently justified on the ground of their effectiveness to solve a problem in another country (Rose, 1973, p. 68). These trends suggest that policies have become much more mobile than they used to be. This is especially true in the European context, where the countries' cooperation is crucial for the Union's survival. Interdependence became a daily concern for national decision makers, which also affects the way policies are formulated and implemented. Hence, it is fair to assume that national policies are affected by policies discussed and developed on a supranational level, such as the European Union (EU).

This paper considers the recent developments in the Serbian research policy and intends to explore in what way these reforms emulate the research policy of the EU. It is evident that challenges that European countries face are increasingly similar, particularly in the aftermath of the 2008 financial crisis, especially in terms of economic performance and availability of financial resources. This is just one example that can serve as another reason why countries might approach global challenges in a more similar fashion. Such trends can produce fewer options for significantly dissimilar policy responses. Like so many other Central and Eastern European countries, Serbia has also often "ordered from the menu" of established institutional practices of the EU (Jacoby, 2004). Thus, supposing similar course of development in the area of research and development policies between Serbia and the EU is not ungrounded.

Since 2000, the EU has defined a set of policy recommendations in the area of research and development (R&D) that are expected to be adopted and implemented across national research systems. It is important to clarify that, in principle, the EU *acquis communautaire* in the field of science and research does not require transposition of EU rules into the national legislative system. However, excellence in science for the purpose of economic development demands well-developed research and innovation capacity, which the EU promotes in its recommendations to both its members and acceding countries. In principle, European countries are expected to have the capacity "to participate effectively in the EU's Research Framework Programmes, to integrate into the European Research Area (ERA) and to contribute to the Innovation Union" (Analytical Report 2011, p. 111). Given Serbia's commitment to become a member of the EU, the country's research policy is expected to be a fertile ground for policy convergence. Therefore, in this paper we will try to assess whether there are elements of policy convergence and what characterises the outcome of this process.

In light of the aforementioned, we put forward the following research question: To what extent is the concept of policy convergence instrumental in explaining the latest changes in the Serbian research policy? It is our expectation that answering this question can be useful to better understand policy change within multi-level policy systems, such as the European Union, as well to describe the main

characteristics of this change in policy areas where harmonization is not an explicit requirement for accession.

This study is designed as a qualitative one and follows the methodology of policy document analysis, which encompasses an investigation of the underlying policy assumptions and normative frameworks, and includes an analysis based on a set of characteristics, e.g. ideologies, problems and objectives. The recently adopted European and Serbian research policies, together with the annual evaluations of the European Commission (EC) provided data for the analysis. The analysis was done through summarising and comparing key policy statements and outlining how they compare to EC recommendations. While such an approach does not allow us to draw direct conclusions on the causes of change in the Serbian research policy, we believe it can still offer a credible comparison between the European and national research policy.

First, we looked at the European level and studied the parts of the Lisbon Presidency Conclusion (also called the Lisbon Strategy). The Lisbon strategy is taken as a point of departure since it is the overall policy framework for research and development in Europe. Although, following its adoption the strategy has been supplemented with several communications from the Commission, these documents are not assessed in this study, since content wise they do not diverge from the policy course of the Lisbon strategy. However, the analysis of the Lisbon Presidency Conclusion has been complemented with the analysis of the annual reports on Serbia's progress in terms of EU accession, issued by the EC. This body of data is assumed to be indicative for the EU policy on research and development in general, while also specifically addressing the policy of one particular research system, namely that of Serbia.

In the final step of our study we have compared the principal elements of the Lisbon strategy (i.e. policy justifications, policy problems, and policy objectives) to the same elements of the Serbian research policy. More concretely, we have examined these aspects of the policy by looking at the most recent national legislation on research and development, adopted by the Serbian parliament in 2005 and amended in 2010, and the Serbian national strategy on research (Strategy for Scientific and Technological Development 2010-2015), adopted in 2009. The analysis includes only documents adopted after 2005 since this is the point after which Serbia's negotiation for the EU accession started to take shape and be concerned with concrete policy areas, such as research.

Policy transfer, diffusion, and convergence

The way policies move from one particular country to another has been studied extensively (Rose, 2004; Dolowitz & Marsh, 2000; Evans, 2009; Radaelli, 2000; Rogers & Rogers, 2003; Stone, 2000). It has been described through several distinct but related concepts, e.g. policy transfer, policy diffusion, policy convergence, policy learning, emulation, and others. As one may expect, terminological clarity and distinctiveness is not easily achieved, especially taken into account the large number of commonalities these concepts share.

Researchers who study how policies move from one setting to another tend to look either on the process through which this movement takes place, or to its consequences in terms of policy outcomes. Thus, the core question is whether we should perceive policy "mobility" as an independent variable or a dependent one. Scholars belonging to the dependent variable camp (Dolowitz & Marsh, 2000; Radaelli, 2000) use the concepts of policy transfer and/or policy diffusion. Dolowitz and Marsh (2000, p. 5) define policy transfer as a "processes by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system." In this case, the emphasis lies on the process rather than on the outcome.

The policy diffusion literature approaches the topic similarly. According to Rogers, "diffusion is the process in which an innovation is communicated through certain channels over time among the members of a social system" (Rogers & Rogers, 2003). Even though the two concepts appear very much alike, they represent two distinct approaches to the conceptualisation of policy mobility. Policy transfer assumes that there is a transmitter (usually a state) and a recipient to whom the policies are transferred (Evans, 2009). Thus, the policy transfer literature would perceive the movement of policies unidirectional through bilateral agreements or other kind of direct interaction between states. This provides also space for criticism since policy transfer fails to account for the role of non-state actors in the process of transfer. On the other hand, the policy diffusion literature sees policy movement as expansive involving a larger number of actors in the dissemination process. It builds on the assumption that there is a core source of policy innovation from where policies travel to other countries (Stone, 2000).

In contrast to the aforementioned approaches, policy convergence studies place particular emphasis on the effects of policy movement. This approach has been defined as "any increase in the similarity between one or more characteristics of a certain policy (e.g. policy objectives, policy instruments, policy settings) across a given set of political jurisdictions (supranational institutions, states, regions, local authorities) over a given period of time" (Knill, 2005, p. 768). Thus, under certain circumstances, the processes covered by policy transfer and policy diffusion might result in policy convergence (Knill, 2005).

Table 1. Policy convergence and related concepts (Knill 2005, p. 768)

	Policy transfer	Policy diffusion	Policy convergence
Analytical focus	Process	Process	Outcome
Empirical focus	Policy characteristics	Policy characteristics	Policy characteristics
Dependent variable	Transfer content / transfer process	Adoption pattern	Similarity change

We can summarise the three approaches following Knill's line of analysis (Table 1.). Policy transfer studies typically look at the content and the process of policy transfer as the dependent variable, diffusion studies seek to explain adaptation patterns over time, while policy convergence studies examine changes in policy similarity across countries and a particular time period (Knill, 2005, p. 767).

The analytical framework that we intend to follow cannot be easily placed in any of the three categories because it draws on all three approaches to some extent. Similarly to policy transfer and diffusion scholars, we also assume that research policies originate from one single source, namely the EU, and that they are either transferred to or diffused between countries. However, the proposed analytical framework will go under the flag of convergence, because it will analyse only the content of the policies and not deal with the process of transfer. Consequently, we define policy convergence as an increase in similarity between national policies in line with transnational policy recommendations. Such a definition emphasises the power of the EU to pull national policies towards common objectives and facilitate the harmonisation of their implementation. In other words, we choose to use policy convergence when referring to the external force potentially guiding the research policy of Serbia.

In the following part, we will elaborate further on the analytical framework of the study, while in the subsequent section we will offer a comparative analysis of research policies. The analysis is divided into three subsections. The first one looks at the characteristics of the European research policy, the second examines the annual reports of the EC regarding the progress of Serbia, while the third one offers a comparison between the European and the Serbian research policies. Based on the generated data, in the last section of the study we will answer the research question raised in the beginning, and propose further directions for research on policy convergence in this topic.

Analytical framework of the study

Policy convergence is a heuristic model, which can provide general guidelines on how to structure a study, but does not give any hints on what the expected outcome of policy transfer could be. At the same time, policy convergence might be instrumental to explain the high level of similarity between policies, but it lacks on explanatory power on how change at the system or institutional level occur and why. Following the approach of Dolowitz and Marsh (2000), we have applied a framework which builds on a set of questions, particularly aligned for the given context. However, before going into these questions some basic elements of our framework need to be outlined, which relate to the way our study perceives policy convergence taking place.

The first aspect deals with the way we conceptualise convergence between national policies with those of the EU. Europeanisation has been frequently described as a two-way process in which member states both influence and are influenced by European policies (Börzel, 2001, p. 194). The reciprocal relationship offers a link between ascending (decision-making) and descending (implementation) stages of European policy making (Ibid.). In the first case, member states seek to influence European level decision making

(i.e. uploading of policy preferences), whereas in the second case they aim to download European policies into their national contexts. Since uploading is directly tied to the official status of a country in the EU, for countries like Serbia this option is not, at least formally, possible (Héritier, 2005). Therefore, we only analyse the descending aspect of policy making and assume that the core source of policy guidance is provided on a transnational level, namely the EU. Hence, in the context of our study the presence of convergence is assumed to be a sign of Europeanisation.

Heinze and Knill (2008) distinguish between two types of policy convergences, which bear much relevance in the context of the European multilevel policy-making. When national policies are becoming similar to each other without reference to a particular model is labelled sigma convergence, or also referred to as horizontal convergence. In contrast, when national policies follow a given model, like the one offered by the EU, Heinze and Knill term it delta convergence, or vertical convergence. National policy makers seem to engage in policy transfer both horizontally and vertically. Policies are frequently formulated through a process of "mixed scanning" (Stone, 2000), where besides European recommendations also examples of neighboring countries become embedded in the process of policy formulation.

The second feature of our analytical framework relates to the way policies are formulated and implemented in the European context. According to Torenvlied and Akkerman (2004), European level policy making has three distinctive characteristics. Firstly, it is composed of multiple layers of collective decision making. The multiple system enables for problems to be dealt with on the appropriate level; however, it can also produce lack of coherence between policies at different levels (Torenvlied & Akkerman, 2004, p. 34). The second feature highlights the relative autonomy of the different levels of decision making, which makes direct policy implementation very difficult. The third feature underlines the European tendency to use soft policy instruments, like non-binding policy recommendations, guidelines, and voluntary agreements to implement its strategic goals (Torenvlied & Akkerman, 2004, p. 36). In multilevel policy-making these instruments are directed from one level to the other, while respecting the second feature, namely the autonomy of layers (Torenvlied & Akkerman, 2004, p. 37). As the nature of social reality is never black and white, and as the nature of interaction between layers can go from simple and straightforward to complex and multifaceted, this autonomy remains yet another assumption. However, it implies that Serbia has the freedom to define and enact policies that address the domestic problems and mobilize domestic capacities to solve them.

The use of soft policy instruments in the EU is commonly associated with the open method of coordination (OMC). As specified by the Lisbon Council, the open method of coordination is a means to spread best practice and to achieve thereby greater policy convergence across member states (Porte, Pochet, & Room, 2001). In principle, the European research and development policy is enforced through such soft policy instruments (Keeling, 2006). Consequently, their implementation is not legally binding and there are no sanctions foreseen for those member states which fail to meet the targets set. However, this does not necessarily hinder policy transfer, and neither does it undermine the power of

EU institutions to encourage policy transfer through its substantial political resources (Rose, 2004, p. 84).

The third aspect of our analytical framework points to the differences in the way policy convergence emerges. Policy convergence can be perceived as either an outcome of learning, which highlights the voluntary character of the transfer, or as an outcome of coercive transfer (Dolowitz & Marsh, 2000, p. 13). In our case it makes more sense to conceptualise the two approaches as distinct ends of a continuum rather than as absolute categories. Considering that the EU relies mostly on soft policy instruments in the area of research and development, leaning towards the learning side of the scale might appear as much more accurate. However, the fact that financial incentives and normative pressures can also act as coercive mechanisms should not be neglected. Policy change and adaptation in Eastern European countries is often driven by a desire to become part of the EU and secure additional funding for national programmes. Hence, policy convergence might be better understood as a "negotiated transfer" where both voluntary and coercive mechanisms can be present (Evans, 2009, p. 245).

Building on the outlined understandings, we have formulated two questions to guide our analysis of policy convergence:

- What are the elements of the European research policy that are being transferred?

This question focuses primarily on the analysis of the European research and development policy. It takes the Lisbon presidential conclusion from the year 2000 as the core source of European level policy and secondly looks at the EC reports on Serbia as a concrete set of recommendations directed to the government of Serbia (between the period of 2005 and 2012)[3]. We studied those parts of the documents that relate directly to research and development, as well as those which refer to it. The study analyses only the content of the policy, while the question of how it was developed and diffused across states is not addressed in this study. Importantly, EC reports are primarily taken as positive or negative message's the EU sends to Serbia and as such expected to influence domestic decision makers.

- What characterises convergence between the Serbian research policy and the European one?

The second question seeks to assess whether Serbia's research and development policy reassembles elements of the European one. In this part we dealt with the nature of similarity between the research policies of Serbia and the European Union. We do so by analysing the content of the Serbian Act on

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[3] The documents we refer to here as "EC reports on Serbia" can be found on the following web page: http://ec.europa.eu/enlargement/countries/strategy-and-progress-report/index_en.htm (Country: Serbia; Document groups: Reports/Conclusions; Specific documents: Opinions/Analytical Report). The complete list of EU documents addressing Serbia specifically which are analysed here is given in the bibliography at the end of this paper.

Scientific Research Activity (2005) and the Serbian Strategy for Scientific and Technological Development for the period 2010-2015.

In sum, we analysed the policy content to be transferred from the European policy arena, and in light of that provide an interpretation of the content of the national research policy. Thus, we looked only at adopted policy documents, and did not investigate the process of policy formulation and agenda setting, neither the role of networks, policy entrepreneurs, or other agents in transmitting policy relevant knowledge prior to the adoption of the policy. Exploring outcomes might be limited in scope, but through an in depth analysis of policy documents it still has the potential to reveal information relevant enough to analyse policy convergence.

Analysis

We proceed with the analysis by dividing it into three sections. First, we analyse the content of the EU policy on research as given in the Lisbon strategy. This is followed by the analysis of reports written by the EC that evaluate Serbia's progress regarding its accession into the EU. Finally, we look into Serbia's key documents, which we take as "carriers" of national policy, like the national regulation on research activities and the governmental strategy for fostering research and development in Serbia. It is, once more, important to point out that the study primarily looks at whether convergence of policies actually takes place and what this convergence might mean in terms of actual policy change.

What is being transferred?

Research and development has been an important policy field of the European community for a long time. In 1987, the Single European Act came into effect with the aim to set up the European single market. It was the first treaty to establish research objectives on a European scale. The act stressed the aim "to strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at international level."[4] In 1993, with the adoption of the Treaty of Maastricht, the importance of R&D for the future of EU was highlighted again. All of these initiatives marked the beginning of the European Research Area, indicating that the European community had begun to take a more active role in the development of a common policy for research and development.

Currently, the European research and development policy is built on the shared belief that Europe is facing a situation of innovation emergency. Europe is spending 0.8% less of its GDP than the US and 1.5% less than Japan every year on Research & Development. Thousands of researchers and innovators have moved to countries where conditions for R&D are more favourable, like the United States.

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[4] The Single European Act. Last retrieved on March 30, 2012, from
http://ec.europa.eu/economy_finance/emu_history/documents/treaties/singleuropeanact.pdf

Although the EU's research sector is the largest in the world, it remains fragmented and not innovation-friendly enough, which supports the necessity of a coordinated research and development policy on the European level.[5]

In March 2000, the European Council set out a ten-year strategy to make the EU the most competitive and dynamic knowledge-based economy in the world (Dill & van Vught, 2010, p. 401). Later on, this document became to be known as the Lisbon strategy, which was framed as a virtuous combination of goals concerning "social cohesion" and "competiveness" (Borrás & Jacobsson, 2004, p. 190). With respect to the latter aim, the strategy outlined the importance to prepare Europe for a transition to a knowledge-based economy and society by providing better policies for research and development (European Council, 2000). In particular, it called for a better management of national R&D resources, increasing the mobility of researchers, stimulating excellence through benchmarking, enhancing the flow of knowledge between research institutions, and improving the environment for private research investment (European Council, 2000). In order to realise these goals, the European Council defined during its Barcelona meeting in 2002 several targets to be met by member states. These objectives included an ambitious goal to increase the percentage of expenditure on R&D activities to 3% of the national GDP (1% public and 2% private investment). The Council also asked for the regeneration of national research infrastructure, ensuring an adequate supply of highly trained R&D personnel, and for enhancing the transfer of knowledge from the public to the private sector.[6] Ten years after the Barcelona meeting it became obvious that none of the targets have been fully met (Dawson, 2011, p. 215). Therefore, many of these objectives were passed on to Europe 2020, the successor of the Lisbon strategy.

To support the implementation of the Lisbon strategy, the EC has initiated several programmes which aim to contribute to the outlined objectives and which might be grouped into three general categories. In the first category we can find programmes which aim to provide and manage information relevant to the Lisbon objectives. A concrete example would be the Innovation Union Scoreboard of the EU, which provides comparative assessment of R&D performance, or the ERAWATCH homepage, which looks into policy coordination across member states. The second category groups together initiatives that provide programme relevant funding. In this category we can find Europe's major funding programme, the Horizon 2020 (former Seventh Framework Programme), or the European Science Foundation. The third category involves initiatives that seek to set up new organisations in Europe. A typical representative of this category would be the newly established European Institute of Innovation and Technology.

It is evident that the EU has managed to develop a consistent research policy, with a set of defined problems it wants to tackle, a list of objectives and related policy measures that can help to achieve the

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[5] Innovation Union. Last retrieved on March 30, 2012, from http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=why
[6] ERAWATCH. (2011). Last retrieved on March 30, 2012, from http://cordis.europa.eu/erawatch/index.cfm#

defined objectives. In an attempt to crystalize out these elements, we followed the scheme that the object of policy transfer might include policies, institutions, ideologies or justifications, attitudes and ideas, and negative lessons (Dolowitz, 1997 in Stone, 2000). However, we limited the analysis to three aspects which directly relate to policy content, namely ideologies and justifications, perceived problems and challenges, and identified policy objectives. Table 2 provides an outline of the most important elements of the EU research policy in this regard.

Table 2. Elements of the European research policy

Policy ideologies and justifications	R&D has the potential to create economic growth and employment; R&D has the ability to solve the problems of social and environmental sustainability.
Policy problems	Underinvestment in R&D (Compared to US and Japan); Too much fragmentation and costly duplication of research efforts; Lack of research personnel.
Policy objectives	Increase the level of R&D investment; Support better management of R&D resources; Encourage the mobility of researchers; Support excellence in training researchers; Improve the environment for private research investment; Encourage knowledge transfer between private and public sector; Ensure adequate protection of intellectual property.

Progress monitoring: policy guidance in action

In the process of EU accession, the EC regularly provides feedback on the progress Serbia makes. In effect, the EC evaluates the country's effort to adopt recommendations set by the EU, some of which also act as conditions for joining. The evaluation is done according to different policy areas, and research and development is one of them. The goal of these evaluations is not to provide countries with specific step-by-step guidelines on how to change, but rather to point into the direction of change in order to improve the general conditions in the country when it comes to research activities. These recommendations are normally based on already set objectives in EU policy documents. The idea in this section is to see whether these evaluations, which are an important element of the ongoing dialogue between Serbia and the EC, act as catalysts for policy convergence.

If we take a closer look at the EC's reports in the period 2005-2012, we can notice that as the accession process progressed, research, science and innovation have been paid more attention to. In almost all the documents the EC is both positive and critical. To illustrate this point, in 2005, EC said that in Serbia and Montenegro (then still being one country) policies that would support economic reform and strengthen capacities for research and innovation are poorly implemented, whereas investment in research and innovation is in general very low. In June 2007, Serbia became part of the 7th Framework

Programme which was welcomed by the report of the EC from that year, together with the increased number of Serbian projects in the 6th Framework Programme. The report expressed that Serbia was "relatively advanced" in the development of legislative framework for research. However, in the same document, the EC stated that Serbia did not undertake any activities regarding the "definition of an integrated research policy."

The EC tends to compliment Serbia on improving conditions and encouraging its institutions to participate in EU research programmes, as it was the case in 2007, 2008 and 2009 progress reports, as well as in establishing firmer connections with ERA structures, such as signing a memorandum with the Joint Research Centre (2009 and 2010 reports), installing EURAXESS Jobs Portal and Services Network (2009 report), or appointing observers in most ERA governance bodies (2010 report). Still, the EC did not give up asking Serbia to develop an integrated research policy and was generally critical of the country's investments in research, both private and public, being too low. Eventually, in the 2008 report, the Commission asked Serbia to adopt a national strategy which would have this as its main goal. The recommendation has been followed up quickly by a draft national strategy in August 2009, which was also acknowledged by the EC. According to its 2009 report, Serbia made an effort to design "an integrated research policy aiming inter alia at increasing investment in research and ensuring a sufficient number of scientists." In the next year's report, the Commission welcomed the adoption of the new Strategy for Scientific and Technological Development 2010-2015, and described it as being "fully in line with the objectives of the ERA" (Analytical Report, 2011). The adoption and implementation of this strategy are further seen as "part of Serbia's integration into the European Research Area." It seems that the only problem that remains is that the funding of research is still very low.

The fact that the EC considered both public and private investment in research (less than 0.5% of GDP), as well as the overall national research capacity of Serbia too low, was also stressed out in the Analytical Report in 2011 (Commission Opinion on Serbia's application for membership of the European Union, 2011). The report, in effect, identified "increasing investment in research, modernising infrastructure, increasing human capital and building innovative capacity" as key challenges of Serbia when it comes to research and innovation. Even though the EC explicitly compliments Serbia in this report for adopting the 2010-2015 strategy, it now wanted to see the Action plan that will implement the 2010-2015 Strategy. This report somehow implies that the Commission cannot be any longer satisfied by "legislative innovation" but stresses that "consistent implementation and close monitoring of the targets set at national level, in particular on investment in research and on mobility of researchers are of key importance" (Analytical Report 2011, p. 113).

Unlike the progress reports, the Analytical Report reveals a more complete picture about the Commission's view of the Serbian research system. Based on the extensiveness of the reports, it somehow appears that the EU is looking at the Serbian research sector more and more closely as the country's accession progresses. In addition, it seems that the Commission became more interested in quantitative indicators of progress as such, and also mentions "national targets" while recognising that

"the lack of reliable statistics, in particular on investment by the private sector, makes it very difficult to monitor the targets set" (Analytical Report, 2011, p. 112).

Finally, the 2012 report further acknowledged the links Serbia has established with the European Research Area and the Innovation Union and is overall positive about the direction of the developments in Serbia when it comes to research and development. However, as expected, according to the EC, both public and private investments in research remain low, as it is also the case with the overall research capacity, where EC points out the particularly low number of researchers.

Considering this set of documents it appears that Serbia is rather responsive to EU's recommendations and as the accession progresses it becomes more firmly and more diversely connected with various structures, programmes, networks operating within the European Research Area and the Innovation Union. Its key strategic document is seen by the Commission as being in line with the principles of ERA, also when it comes to regulatory ones. However, some of the weaknesses remain, and as highlighted by the reports, low investment in general, low investment from private sources, too much dependence on direct state support and weak links with industry, are just some of the explanations behind "the low research and innovation capacity" argument. In the next phase of the analysis we explore to what extent Serbian R&D policy follows up on these externally identified weaknesses and more generally on the EU policy guidelines.

How much convergence are we talking about?

In this part, we look at Serbian research policies that were adopted between 2005 and 2012. It is important to notice that during this period Serbia has developed and enacted a new research policy and also placed research and development into the spotlight of its national growth strategy. Table 3 provides an overview of the most relevant documents adopted in this period. Out of these documents the Act on Scientific Research Activity and the Strategy on the Scientific Technological Development of the Republic of Serbia were included into the analysis.
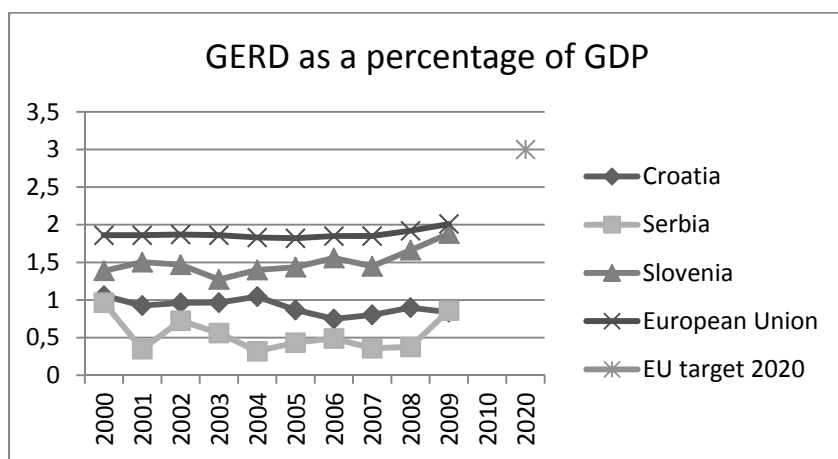
Table 3. Overview of key policy and regulatory documents in Serbian R&D sector

	Serbia
Legal framework	[2005, 2010] Act on Scientific Research Activity [2005, 2010] Act on Innovation Activity
Research policy documents	[2009] Strategy on the Scientific and Technological Development of the Republic of Serbia in the period from 2010 to 2015. Focus and Partnership
Related policy documents	Serbia 2020[7]

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[7] In the consultation phase

Serbia's R&D activities have significantly decreased since the dissolution of SFR Yugoslavia in 1992. According to the Statistical Office of the Republic of Serbia, the number of research organisations (including institutes, faculties and research units) during the period between 1990 and 2001 dropped steadily, from 297 to 189.[8] Figure 1 illustrates Serbia's current position within the region with respect to the investment in R&D relative to the GDP. When looking at the Innovation Union Scoreboard 2010, Serbia is categorised as a modest innovator, with a below average performance.[7] These facts support the view that Serbia is lagging behind most of the European countries, and even some of its neighbours, in terms of research performance and thus, needs a prompt policy solution to catch up.

Figure 1. GERD as a percentage of GDP in Croatia, Serbia, Slovenia and EU average, 2000 – 2009; EU's target of 3% in 2020.

Source: UNESCO Institute for Statistics

Serbia's main policy document in the area of research and development is the Strategy for Scientific and Technological Development of the Republic of Serbia for the period 2010 to 2015. A similar document stating the country's strategy before 2010 did not exist. The 2010-2015 strategy was developed by the former Ministry of Science and Technological Development (now the Ministry of Education, Science and Technological Development) and adopted by the Serbian Government in 2009. It sets forth the vision of creating an innovative Serbia in which scientists attain European standards, contribute to society's overall level of knowledge, and further the technological knowledge of the economy. The strategy defends the position that enhanced economic development is only possible if the country increases its present level of investment in research and development. Moreover, it defines the establishment of an

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[8] Statistical Office of the Republic of Serbia, last retrieved on March 30, 2012, from http://webrzs.stat.gov.rs/WebSite/

integrated innovation system as its ultimate purpose. Hence, it seems that Serbia has finally drafted an exit plan out of almost 20 years of recession in terms of research and development.

Assessing the content of Serbia's research policy reveals high level of similarity with the European one as demonstrated in Table 4. The economic narrative, which has become the sine qua non for justifying political intervention in the R&D sector forms the basis of both policies. The primary emphasis is put on ideologies and justifications that advocate for the potential of R&D to become the engine of the future economy of Europe and its member states. This line of argumentation is clearly evident in the Serbian case as well. The second line of EU level justification, namely the potential of R&D to solve the problems of social and environmental sustainability is not emphasised in the Serbian case. This data may suppose that Serbia sees the contribution of R&D primarily in the economic sphere, which might be a larger concern for the Serbian society at the moment than strengthening social institutions, democratisation, or enforcing social justice.

Table 4. Comparison of policy elements between European and Serbian research policy

	European research policy	Serbian research policy
Policy ideologies and justifications	- R&D has the potential to create economic growth and employment; - R&D has the ability to solve the problems of social and environmental sustainability.	- Investment in R&D is a precondition for economic growth.
Policy problems	- Underinvestment in R&D (Compared to US and Japan); - Too much fragmentation and costly duplication of research efforts; - Lack of research personnel.	- Underinvestment in R&D and research infrastructure; - Failing to retain young researchers and engineers in the country; - Lack of interest of students for studying natural sciences; - Minimal private investment in R&D; - Weak international competitiveness of domestic R&D sector.
Policy objectives	- Increase the level of R&D investment; - Support the better management of R&D resources; - Encourage the mobility of researchers; - Support excellence in training researchers; - Improve the environment for private research investment; - Encourage knowledge transfer between private and public sector; - Ensure adequate protection of intellectual property.	- Increase investment in R&D to 1% of GDP; - Stimulate the training and preservation of human capital in research; - Aligning the funding of research projects to national priority areas in R&D; - Enhance inter-sector and cross-sector co-operation in R&D; - Advance the protection of intellectual property rights; - Support partnerships with international scientific organisations.

Concerning the identified problems of the R&D sector, a high number of common features across both policy documents stand out. Underinvestment in R&D is probably the most obvious example, while concerns regarding the lack of human resources in R&D and inattentive R&D funding also seem to replicate across policies. A small difference is visible with regards to research productivity, which appears as a greater concern in the national setting. Serbia is much more worried about the low levels of scientific output which can lead to the country's failure to attain world class excellence in any scientific discipline. This problem is likely to be rooted in the country's socio-historic context and highlights that Serbia is also taking into account problems specific for its own situation within a broader setting.

As we move on to policy objectives, the national path becomes much more detached, although none of them diverge substantively from the European course line. Corresponding to EU recommendations, the Serbian research policy has foreseen an increase of financial resources devoted to R&D, although it was much more modest than the official EU benchmark, and was set at a 1% target. In addition to increased investment, the national research policy also calls for a prioritisation of research areas and to aligning the system of research funding to those areas. Investments are expected to favour those fields that could be considered as the countries' strength in terms of R&D. Besides increased and targeted investments into research, a common element of both policies is the desire to bridge private-public research efforts, train additional researchers, and to provide an adequate protection of intellectual property rights. All of these objectives seem to follow up directly on EC recommendations from at least two of the progress reports that we analysed in the previous section.

Conclusion

It seems that even without explicit coercive mechanisms, the European research policy has been successfully diffused in the case of Serbia. The comparative presentation of policy elements makes it evident that Serbia is undergoing a policy harmonization process. If we are to take the reports of the EC as indicative, the Serbian research policy seems closer than ever to the European research policy. The country's research policy makes direct reference to the Lisbon strategy and to its commitment to fulfil the common objectives defined in it. It incorporates to a large extent the justifications, problems and objectives provided by the Lisbon strategy into its own national policy. Hence, it is possible to state that the Serbian research policy direction demonstrates convergence towards the European research policy, as defined in the Lisbon strategy. Yet, Serbia seeks to strengthen its institutional links with structures associated with the European Research Area and to intensify its participation in the Framework Programmes. This shows Serbia's commitment to the EU policy, perhaps even in a more explicit manner than its legislative changes do. In other words, Serbia arguably wants to converge. At the same time, capacities remain low and the question that imposes itself here is whether this increasing strength of linkages and apparent convergence can have any effect on domestic capacities, or this will remain the area in which the EU can do little about and hence fail to Europeanise.

This brings us to the second part of our study which addresses the question of what characterises policy change behind convergence. Policy convergence in this case can be criticised on the basis of delivering superficial adaptations, but lack of any substantive change. Potentially, this could account for the persisting obstacles that the EC points to in its progress reports, which concern the low research capacities in Serbia, insufficient investment from both public and private sources into R&D, and the weak links between the public research sector and the economic sector. The changes can thus be perceived as a facade, a symbolic act to present the country in a positive light towards European decision makers. Börzel (2001) argues that it is also likely that adaptation costs might be higher in the implementation of these policies, which could mean that one should expect much higher divergence in that respect. This can be particularly true when considering the different levels of financial and human resources available to Serbia that might constrain the country's efforts to fully implement the adopted research policy. Therefore, convergence studies that rely only on policy content analysis, without exploring their implementation, might fall into the trap to overemphasise the level of convergence. To depict a more complete picture of policy convergence, an analysis of policy implementation is inevitable.

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