

# EUROPEAN POLICY BRIEF



## Too much or not enough heterogeneity in Innovation Policies among EU Member States?

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## INTRODUCTION

Europe maintains lofty ambitions for building its future strategy of socially and environmentally sustainable growth and prosperity on innovation.

Already in its 2000 Lisbon Strategy, the European Union carved its ambition of becoming the most competitive *knowledge-based* economy in the world. An ambitious target of devoting 3% of GDP to R&D by 2010 was set. And in its subsequent Europe 2020 strategy and Innovation Union Flagship Initiative, it set out a roadmap for sustainable and inclusive growth that needs to be *smart*. The same 3% of GDP was again targeted in the Europe 2020 strategy, having not moved much since 2000, when the Lisbon Strategy was launched. And in the recent Juncker investment plan, innovation projects are prominently envisioned targets for support to revive Europe's economic growth.

Despite this focus on innovation-based growth and R&D targeting, Europe's performance on innovation remains weak to date. According to the latest (2015) Innovation Union Scoreboard indicator (IUS), a composite indicator assessing innovation capacity, developed by the European Commission in support of its Innovation Union Strategy, Europe is not doing well. Relative to the US and Korea who are the leading IUS countries (=100), Europe has a score of 81. This leaves Europe still with a substantial lead relative to the emerging markets. But China, although with a IUS score still half of the EU, is catching up fast.

Europe's gap relative to the US holds across almost all individual indicators that go into the IUS score for innovation enablers and firms' innovative activities. This is a reflection of the *systemic* nature

of Europe's failing innovation capacity. On private R&D expenditures, a key indicator often used for assessing a nation's innovation capacity, the EU gap is substantial, at 57% (with US=100). On public R&D expenditures there is no European gap relative to the US. But Europe's overall (public and private) R&D-to-GDP-ratio continues to stand at 2%, still far away from the 3% target and significantly lower than the US, Japan, South Korea and Singapore. Furthermore, there are relatively few signs of progress. China is fast catching up and already on par with the EU on this indicator.

With poor results comes fatigue, lack of interest and mounting criticism on policy: not enough public funding dedicated to innovation; lack of governance; no real commitment beyond rhetoric; instruments not being used effectively, effective instruments missing. Are these criticisms well-founded? Should Europe abandon its ambition of becoming the most innovative region in the world?

In this contribution (find a more ample analysis in Veugelers, 2015a), we focus on a particular characteristic of Europe's innovative capacity, namely the heterogeneity within Europe across the different Member States. We examine in section 2 this heterogeneity in innovation capacity in more detail: which are the leading and which ones are the lagging EU countries, with respect to which components of innovation capacity? Is there a trend towards convergence over time? And how has the crisis affected this trend of convergence? In section 3, we take a look at the research and innovation policies that EU countries have in place and try to assess whether these policies match with the heterogeneous EU countries' innovation capacity positions. We examine both the budgets allocated by EU Member States to R&I as well as the various R&I policy programmes being deployed. Section 4 examines in more detail, for policy programmes addressing firms' R&I investments, how the heterogeneity in policy deployment of these instruments across EU Member States matches initial strengths or weaknesses of the EU Member States on this dimension. Notwithstanding the large heterogeneity among EU countries in innovation capacity development, the evidence shows a relative homogeneity of policy mixes in different countries. Current innovation policy mixes of instruments do not well reflect the countries' level of innovation capacity development.

## Country heterogeneity in innovation capacity

Because of different capacities to set in motion a virtuous circle of innovation-led growth, but also because of differences in initial conditions that require innovation systems to be composed in a different way, we can expect substantial heterogeneity among European countries in innovation capacity. At the same time, we can also expect economic developments over time to push for convergence in innovative capacity among EU countries.

In order to measure heterogeneity in innovation capacity, we use the  $\sigma$ -coefficient or the coefficient of variation ( $\sqrt{\text{VAR}}/\text{MEAN}$ ).  $\sigma$ -convergence occurs when the dispersion across a group of economies decreases over time. To capture the heterogeneity of innovation cap-

acity across European countries, we use the European Commission's Innovation Union Scoreboard (IUS). IUS uses information from 24 individual indicators to assess 8 dimensions of the Innovation System: Human Resources, Research Systems, Supportive Finance, Firm Investment, Linkages & Entrepreneurship, IPR, Innovative Output, Economic Effects. For a more detailed description of the indicators included in the 8 dimensions, see Veugelers (2015b).

The high coefficient of variation observed suggests considerable heterogeneity of innovation capacity within the EU. Although the dispersion has decreased in the period 2006-2013, reflecting a slow process of  $\sigma$ -convergence, dispersion remains substantial. Furthermore, convergence has lost momentum since the start of the crisis in 2008.

**Table 1: Trends in the heterogeneity in IUS within Europe**

<i>IUS score</i>	2006	2008	2013
Average EU	0.49	0.50	0.55
Coefficient of Variation (CV)	0.39	0.36	0.35
Innovation Leaders (FI, SE, DK, DE)	0.67	0.68	0.72
	<b>Gap with Innovation Leaders (=100)</b>		
Innovation Followers (NL, BE, UK, IE, AT, FR, LU, SI, EE, CY)	76	79	81
Moderate Innovators (IT, CZ, ES, PT, EL, HU, SK, MT, HR, LT, PL):	47	48	50
Modest Innovators(LV, RO, BU):	27	31	30
EU-13	42	44	46
EU-South (EL,IT, ES, PT, CY, MT)	52	57	57
High Fiscal Consolidation countries	48	50	51

Source: own calculations on the basis of IUS (2014)

Note: High Fiscal Consolidation countries are countries with weak overall budgetary position: programme countries, countries with high consolidation pressure (higher spreads relative to German bonds) and/or countries with more consolidation pressure, given their higher deficit and/or debt position): IE, SK, BG, ES, PT, LT, LV, EL, IT, HU, CY, CZ, PL

This dispersion holds between the Innovation Leaders and the rest, as the gaps of the average scores for the different IUS groups show. While the Innovation Leaders continue to gradually improve their IUS score, all other groups of countries have improved their scores too and somewhat faster, as the narrowing gaps show, pointing to a slow process of catching-up. This catching-up was strongest in the pre-crisis period, but has decelerated since 2008. It was most visible in the group of Innovation Followers, but also the bottom group of Modest Innovators has been able to reduce its lag. It is in the group of Moderate Innovators where we find catching-up to be most sluggish.

When we look specifically at the southern European countries, we find that while they had been making considerable progress in the pre-crisis period, catching up with the leaders has come to a halt since 2008. In contrast, in the EU-13 countries catching-up continued after 2008, albeit at a slower pace than pre-2008.

Most of the EU-13 and the EU-South countries have undergone a strong fiscal consolidation process since 2008. When we look

explicitly at countries in high fiscal consolidation mode, we see first of all that they have a serious gap on innovation capacity *vis-à-vis* the innovation-leading countries in the EU. Next we see that this gap is being bridged only very gradually, at a pace that has slowed down since 2008.

When looking at the 8 dimensions composing the Summary Innovation Index, we observe the lowest average score for Firm Investments in the EU, which is Europe's weakest spot in innovation capacity. It is also the dimension where dispersion has increased substantially between 2006 and 2013. Also for linkages, dispersion has increased. For all other dimensions, the dispersion has narrowed over time, but it nevertheless remains high for Research Systems as enabler. For Human Resources and Economic Impact, we note the lowest degree of dispersion.

**Table 2: Heterogeneity in Europe with regard to the scores of IUS components**

	ENABLERS			FIRM'S ACTIVITIES			IMPACT	
	Human Resource	Research System	Finance	Investm	Linkage	IP	Innov	Econ
Average Score 2006	0.46	0.40	0.57	0.45	0.50	0.51	0.51	0.53
Average Score 2013	0.58	0.53	0.56	0.42	0.55	0.56	0.55	0.60
CV 2006	0.32	0.64	0.49	0.35	0.46	0.65	0.51	0.36
CV 2013	0.24	0.58	0.43	0.43	0.49	0.51	0.48	0.31
EU13-Gap with Leaders-2006	64	26	45	62	40	23	36	52
EU13-Gap with Leaders-2013	76	29	55	49	41	34	37	55
EUSouth-Gap with Leaders-2006	55	47	40	61	48	35	56	69
EUSouth-Gap with Leaders-2013	59	55	41	50	58	50	59	72
High Fisc-Gap with Leaders 2006	64	41	43	64	45	29	46	58
High Fisc Gap with Leaders 2013	73	44	48	46	46	38	47	66

Source: Own calculations on the basis of IUS (2014)

While the EU13 countries have been catching up on most pillars of the IUS, they have fallen further behind on Firms' investments. On Firms' IP they have, despite some catching-up, still an important gap towards the Innovation Leaders in Europe. The EU-13 countries exhibit the widest gap *vis-à-vis* the Innovation Leaders for the Research System, and the gap is narrowing only slowly. The gap is smallest and fastest-closing for Human Resources. The latter trend is important for these countries, as the quality of the workforce is an important part of the absorptive capacity of nations (cf supra), which is pivotal for most of the EU-13, in view of this group's catching-up position relative to the frontier countries.

For the EU South, the largest gap *vis-à-vis* the Innovation Leaders is on Finance as enabler, with very little catching-up to be observed. This may have important implications for these countries' future prospects as they are also in high fiscal consolidation mode. Also on Firms' investments they have been losing ground relative to the Innovation Leaders, very much like the EU13.

## Assessing the heterogeneity in innovation policies in EU countries

A country's optimal innovation policy mix will depend on its level of innovation capacity and will be dynamically evolving along with and driving its development path. We should therefore expect heterogeneity in innovation policies across EU countries, and changes over time within countries. Even when countries would have similar stated policy goals, the instruments deployed to achieve these goals should be sufficiently differentiated to reflect the countries' distinct innovation positions. There is no one-size-fits-all optimal innovation policy instruments prescription with respect to the innovation policy instruments.<sup>1</sup> In this section we take a look at the research and innovation policy instruments which EU countries have in place and try to assess whether these policies match with the countries' innovation capacity position. In order to empirically assess the (trends in) heterogeneity in innovation policies in the EU, we will look at two important dimension of innovation policy: (i) how much of public funds is spent on research and innovation; and (ii) how it is spent, i.e. which instruments are deployed (to what amount) in the innovation policy mix. As a source of information for the mix of policy instruments we use the EU's EraWatch/TrendChart (TC). For public funds, we use the GBAORD database. As both datasources have their limitations, the analysis should be interpreted with caution (see Veugelers, 2015b, for more on both databases).

### Public Spending on Innovation in Europe

Table 3 shows the average GBAORD as % of GDP for the EU countries. It shows first that public spending on R&I is in general very low. When looking at trends over the period 2006-2013, one can see a gradual increase over time. This increase was most pronounced in the pre-2008 period and has slowed down markedly thereafter.

When looking across EU countries, one again notices substantial differences in public spending, as revealed by the coefficient of variation. Public spending correlates with IUS performance in general: *Innovation leading* countries spend more than *innovation followers*, which in turn spend more than *moderate innovators*. *Modest innovators* spend the least.

When looking at trends over the period 2006 till 2013, we note very little change overall. While innovation followers, moderate and modest innovators were catching up before 2008, this process stalled and even reversed after 2008, leaving a bigger divide in public spending on innovation in 2013 than in 2006 (see also Veugelers (2014) for deeper analysis on the increasing innovation divide in Europe). This levelling-off and even reversal of convergence holds for the EU-13, but even more so for the South.

<sup>1</sup> In line with Romer (2000), we see goals as more long-term and broad based, while programmes are the means to achieve these goals. Even for countries with similar stated goals, programmes to reach these goals still need to be adjusted to the economy' specific and evolving strengths and weaknesses. As an example, while smart specialization can be a common goal for EU countries, the deployment of strategies or programs to smartly specialize, will need to show sufficient heterogeneity. Countries and regions at different positions should deploy different programs to achieve a similar goal of smart specialisation.

The High-Fiscal-Consolidation countries show a similar pattern of halted convergence and resuming divergence *vis-à-vis* the Innovation Leaders after 2008. The average trend for the High-Fiscal-Consolidation countries masks an increase in heterogeneity within this group after 2008, as the coefficient of variation indicates. Hence, the dispersion of public R&I spending in Europe has increased since the crisis, not only because of an increasing divide between fiscally stronger leaders and fiscally weaker laggards, but also because of a widening gap among the fiscally weaker laggards. For example, while Portugal and Spain scored similarly in 2006 (with 0.67% of GDP), Portugal has managed to safeguard its public R&D spending relative to GDP better than Spain, maintaining a ratio of 0.93% in 2013, against only 0.54% for Spain.

**Table 3: Trends and heterogeneity in public R&I spending in Europe (GBOARD)**

<i>GBOARD as % of GDP</i>	2006	2008	2013
Average EU	0.51	0.56	0.58
Coefficient of Variation (CV)	0.41	0.37	0.42
Innovation Leaders (FI, SE, DK, DE)	0.80	0.82	0.94
	<b>Gap with Innovation Leaders (=100)</b>		
Innovation Followers	68	73	66
Moderate Innovators	54	60	56
Modest Innovators	36	39	21
EU-13:	48	52	48
EU-South	56	65	55
High Fiscal Consolidation countries	52	59	50
CV within High Fiscal Consolidation	0.37	0.38	0.42
CV within Low Fiscal Consolidation	0.36	0.33	0.35

Source: own calculations on the basis of Eurostat (2014)

### Innovation Policy Instruments used in Europe

In terms of number and funds allocated, the most important categories of innovation policy measures implemented over the period 1990-2013 in EU Member States, are the following (based on TrendChart):

- Funding for specific public research programmes allocated in a competitive manner to universities and public research organisations. (AVG = 18.4%; CV=1.01)
- Measures designed to foster collaboration between public organisations and businesses on RDI programmes, referred to as 'collaborative RDI programmes'. (AVG=11.8%; CV=1.36)
- Financial instruments (loans) (AVG=11.3%; CV=1.89)
- Direct business innovation support (AVG=9.9%; CV=1.05)
- Direct business R&D support (AVG=9.8%; CV=1.12)
- Tax incentives (AVG=8.1%; CV=1.72)

Together, these six instruments account for 70% of the reported TrendChart budget outlays. This six-pack of innovation policy instruments takes up the bulk of the reported TrendChart budget in all EU countries, irrespective of their innovation performance: 76% for Innovation Leaders, 71% for Innovation Followers, 64% for Moderate Innovators and 70% for Modest Innovators.

To further analyse the heterogeneity in policy instruments being deployed in the EU along differences in innovation capacity development, we group the TC instruments into the following five areas.

**Skills:** Support of human resources for R&D; Innovation skills development;

**Public R&D:** R&D infrastructure, Competitive funding of research (HEI&PRO), Centres of Excellence, Public sector innovation;

Support for **Firm** R&I investment: tax incentives, loans, innovation support services, support for start-ups, innovation networks and platforms, innovation vouchers, direct business R&D support, direct business innovation support;

**Linkage** support: incubators, technology transfer, collaborative R&D programmes, mobility schemes, S&T parks, cluster initiatives, spin-off support, competence centres ;

**Other:** awareness raising, support for venture capital, E-society, IPR measures, public procurement, regional programmes ;

Table 4 details the importance of each of these areas in the total reported TC budgets for the various innovation capacity development groups of EU countries. It shows that most of the reported TC budgets goes to support firms' investment in R&I (with various instruments), followed by programmes to support public research organisations and universities (excluding institutional funding) and programmes to support linkages within the innovation system. Surprisingly small budgets are reported for programmes to support skill formation.

With respect to heterogeneity in reported spending in these areas, the coefficient of variation is lowest for programmes to support *firms' investments*. There are limited differences in the average budget shares for this category of interventions between Innovation Leaders, Followers, Moderate and Modest Innovators (the higher score for Moderate Innovators is due to Greece, which reports in the TC to spend 96% of its budget on Financial Instruments (loans)). There are also but minor differences between East and West, North and South Europe and between low- and high-fiscal-consolidation countries. This homogeneity in the relative importance of this type of instrument across EU countries is remarkable, especially in view of the heterogeneity in the relative performance of the EU countries on firms' R&I investments (see above).

In the category *Other*, we also find substantial heterogeneity, although it is a small residual category in all groups of countries. An outlier on this dimension is Estonia, one of the (two) EU-13 countries among the Innovation Followers. Estonia reports spending 44% of its TC budget on support for venture capital, one of the « *other* » instruments.

Programmes supporting *skill formation* are also deployed to largely different degree across EU countries, although they are of minor importance in most countries, irrespective of their IUS score and their geographic location. This is a remarkable result, as one would

expect this area to be most important for catching-up countries. The availability of innovation skills is not only important for these countries creative capacity building, but also as part of their strategy of building absorptive capacity in restructuring industries. The country with the highest reported budget in this area is Finland, one of the Innovation Leaders. Moreover, the large heterogeneity in this area is not only at variance with different levels of innovation capacity development, it also does not square with the relative “homogeneity” in the scores for skills among EU countries (see above).

On programmes to support *public R&D capacity building*, the results need to be taken with care, as the TC does not include institutional funding for public institutes, but only competitive funding programmes. What is remarkable is the reported low TC budget shares in this area by the 4 Innovation Leaders. Among the non-leading countries, there is less difference in this regard.

Where the Innovation Leaders stand out most prominently is in their share of reported TC budgets devoted to programmes supporting *linkages*. Finland reports 51% of its TC budget for collaborative R&D programmes. For the EU-13 countries, such programmes only account for 8% on average. As detailed above, the EU-13 countries exhibit a substantial gap *vis-à-vis* the Innovation Leaders on their linking performance. Possibly, their rather low reliance on instruments to support linkages can be related to the poor quality of the research system in these countries.

**Table 4: Heterogeneity in innovation policy instruments deployed in the EU**

	Share of reported TC budget allocated to				
	SKILLS	PUBLIC R&D	FIRM INV	LINKAGE	OTHER
Average EU	5.5%	23.1%	47.7%	17.7%	4.2%
Average EU weighted	3.9%	14.1%	56.3%	21.4%	4.2%
<b>Coefficient of Variation</b>	<b>1.09</b>	<b>0.85</b>	<b>0.45</b>	<b>0.96</b>	<b>1.82</b>
Innovation Leaders	6.8%	7.0%	45.1%	37.5%	3.4%
Innovation Followers	6.3%	23.1%	44.8%	16.8%	9.0%
Moderate Innovators	4.6%	23.3%	57.0%	11.6%	1.0%
Modest Innovators	6.1%	23.5%	47.4%	17.6%	5.9%
EU-13	5.3%	29.0%	47.2%	8.0%	10.4%
EU-South	4.5%	22.0%	51.4%	21.0%	1.2%
High Fisc Cons	5.8%	19.6%	54.6%	14.7%	5.2%

Source: Calculations on the basis of TrendChart  
Note: weights are countries' reported TC budgets.

Overall, the analysis shows that EU Member States use a rather standard set of innovation policy instruments, with most countries deploying a similar mix of “bread and butter” policy instruments, largely independent from their innovation capacity development.

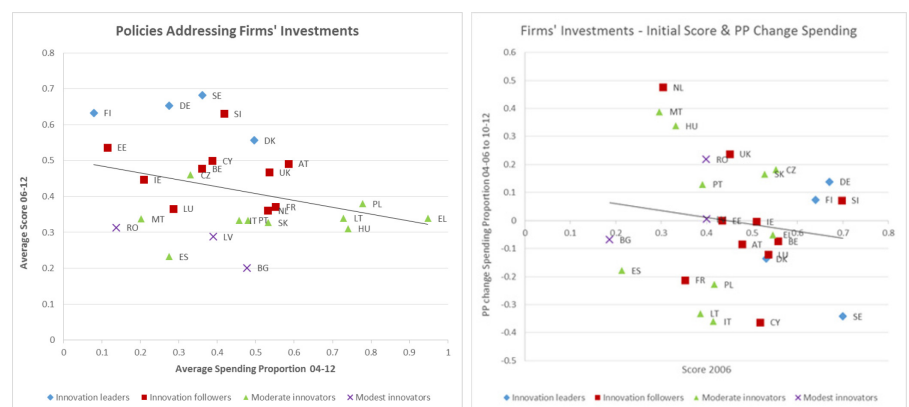


## Matching innovation policy deployment and innovation capacity development: the case of programmes supporting firms' investment

A final piece of analysis in this contribution matches the mix of policy instruments deployed by EU Member States to their innovation performance. More specifically, we want to further investigate whether countries are deploying their innovation policy instruments and budget in areas where they have strong innovation performance, or rather introduce measures to address areas of weak innovation performance. It is important to stress that the analysis cannot establish any causal relationship between (changes in) policy mix and the (changes in) innovative performance, it can only identify correlations.

For this exercise, we try to map the area of policy instruments as closely as possible to the targeted area of innovative performance. In view of the limitations of the data, we can do this mapping only sufficiently adequately for the IUS component of firms' investment in R&I. This is the area where in most EU countries the reported TC budget is heavily concentrated. It is also the area where Europe on average scores relatively weakly compared with global competitors such as the US and needs to catch up as a group. Within the EU, it is the area where there is a high and persistent heterogeneity, with notably a considerable gap between leading and lagging countries. It is also the area where, despite this heterogeneity in performance, there is a remarkable relative "homogeneity" in innovation policy deployment (see above).

**Figure 1: Firms' Investment in R&I: Matching Scoring and Spending**



Source: Calculations on the basis of TrendChart and Innovation Union Scoreboard 2014 Database.

We first examine whether countries that score well on firms' investment in R&I are also spending a large share of their public R&I budget on supporting firms' investment in R&I overall. Figure 1 (left) shows no clear correlation between the two. The *Innovation Leading countries* are the best-scoring EU countries on firms' investment in R&I (together with Slovenia). The instruments for supporting firms'

investment take up a relatively small part of their total reported TC budget, compared with other countries. The countries that have more of their innovation policy budget concentrated on stimulating firms' investment in R&I (PL, LT, EL, HU) are scoring relatively low on firms' R&I investment. This is indicative of the deployment of this group of instruments to address country weaknesses. But this evidence is only very weak. Overall, there is no clear pattern to discern.

We examine this combination further in the right panel of Figure 1, which maps the 2006 score of the countries on firms' R&I investment onto a change in the subsequent period in spending on instruments to support firms' R&I investment. It allows us to see whether changes in innovation policy measures (as measured by allocating larger parts of the reported budgets) address initial weak points in the innovation performance of the country or rather support strongholds.

Overall, the figure shows a weak, rather negative correlation, tentatively suggesting that countries with low scores on firms' R&I tend to increase their spending on instruments to support firms' R&I investment. A prime example of this is the Netherlands. On the other hand, Sweden, one of the best-performing EU countries on this dimension, reduced the importance attached to instruments supporting firms' R&I investment. Unlike Sweden, Germany, also among the better-performing EU countries on this dimension, continued to increase the importance attached to instruments supporting firms' R&I investment, albeit modestly. The same holds for Finland.

Overall, the figures illustrate that the relationship between innovation policy deployment and performance is a complex one.

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## Concluding remarks

The challenges that innovation policy in Europe needs to address are huge. Europe continues to display an innovation capacity gap *vis-à-vis* other major countries and regions in the world, catching up only very slowly. Furthermore, there is substantial heterogeneity in innovation capacity among EU Member States. The divide between the Innovation Leaders in the North on the one end and the Innovation Laggards from the South and the East on the other end proves to be very difficult to address. Since 2008, the process of convergence which had already been very slow, has come to a halt if not shifted into reverse gear, a trend that in view of the weak fiscal position of many of the Innovation Lagging countries is likely to persist if not further aggravate in the near future.

Notwithstanding the large heterogeneity among EU countries in innovation capacity development, the evidence on innovation policies shows a relative homogeneity of policy mixes. Overall, innovation policy deployed by EU Member States is a rather standard set of instruments, with most countries applying a similar mix of « bread and butter » policy instruments, irrespective of their innovation capacity development. The majority of policy mixes needs a careful

review to assess their adequacy in addressing country-specific innovation challenges. There is only very weak evidence to suggest that the policies in place actually address individual countries' weaknesses. As an example, greater emphasis of innovation policy on supporting the absorption and adaptation of existing frontier technologies by industry would make more sense for the EU countries in catching-up mode.

The evidence suggests that policy mixes are the outcome of a variety of factors, only one of which is a country's innovation capacity development. Other factors include policy fashions and perceptions of one-size-fits-all best practices in innovation policy. This may be a danger for ERA. Exercises like the National Reform Programmes or the European Semester may drive EU-countries' innovation policy rhetoric too much towards a same fashion (see also Tödting & Trippi (2005) for similar observations)

Innovation Policy in the countries of the EU with lower innovation capacity cannot be conducted by imitating a "common practice". The Europe 2020 strategy and the ERA should not be thought of as a harmonisation process: innovative and productive structures differ across countries and regions. A decentralised policy approach implies more possibilities of adaptation to specific local needs. Nevertheless, coordination between the various policy levels is important. European-level policies and national policies as well as regional policies should form a coherent mix, whereby all policies focus on those capabilities, market and systemic failures that are best addressed at the respective level. The idea is to facilitate co-operation and to boost diffusion of policy know-how.

Policies need to be supported by analysis, monitoring and evaluation practices, which then feed back into the policy process. Within the set of indicators currently being collected and monitored to evaluate progress, the area that is least represented relates to the diffusion and linking capacity. Especially the lack of Industry Science Link Indicators is disturbing since this is one of the particular deficiencies of the EU innovative capacity. The establishment of a systematic and consistent data base is a necessary condition for improvement in this regard.

To conclude, the way forward for improving innovation policy in Europe is via better analysis/diagnosis to guide policy design *ex ante*, by exploring new (combinations of) instruments, better evaluation *ex post*, and terminating experiments that have proved unsuccessful. Although these policy suggestions seem to imply only incremental changes to the current policy framework, they are nevertheless not easy to implement, as they require reforms in the organisational design of the policy process and bolder policy action underpinned by deeper analysis and qualified advice.

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## RESEARCH PARAMETERS

### Objective of the research

In the face of the financial and economic crisis and long-term challenges from globalisation, demographic shifts, climate change and new technologies, Europe needs to redefine its development strategy. The objective of WWWforEurope – Welfare, Wealth and Work for Europe – is to strengthen the analytical foundation of this strategy. It goes beyond the Europe 2020 targets of smart, sustainable and inclusive growth and lays the basis for a socio-ecological transition. The new development strategy aims at high levels of employment, social inclusion, gender equity and environmental sustainability.

### The research programme

WWWforEurope will address essential questions in areas of research that reflect vital fields for policy action to implement a socio-ecological transition:

- It will deal with challenges for the European welfare state, exploring the influence of globalisation, demography, new technologies and post-industrialisation on welfare state structures.
- It will analyse the impact of striving towards environmental sustainability on growth and employment and provide evidence for designing policies aimed at minimising the conflict between employment, equity and sustainability. This involves using welfare indicators beyond traditional GDP measures.
- It will investigate the role that research and innovation as well as industrial and innovation policies can play as drivers for change by shaping the innovation system and the production structure.
- It will focus on governance structures and institutions at the European level and the need for adjustments to be consistent with a new path of smart, sustainable and inclusive growth.
- It will explore the role of the regions in the socio-ecological transition taking into account institutional preconditions, regional labour markets and cultural diversity and examining the transitional dynamics of European regional policy.

This research will be conducted within a coherent framework which from the outset considers linkages between research topics and highlights how different policy instruments work together. The results of all research areas will be bound together to identify potential synergies, conflicts and trade-offs, as a starting-point for the development of a coherent strategy for a socio-ecological transition.

### Methodology

The project builds on interdisciplinary and methodological variety, comprising qualitative and quantitative methods, surveys and econometrics, models and case studies.

## PROJECT IDENTITY

<b>Coordinator</b>	Karl Aiginger, Director, Austrian Institute of Economic Research
<b>Consortium</b>	<p>Austrian Institute of Economic Research          Budapest Institute          Nice Sophia Antipolis University          Ecologic Institute          University of Applied Sciences Jena          Free University of Bozen/Bolzano          Institute for Financial and Regional Analyses          Goethe University Frankfurt          ICLEI - Local Governments for Sustainability          Institute of Economic Research Slovak Academy of Sciences          Kiel Institute for the World Economy          Institute for World Economics, RCERS, HAS          KU Leuven          Mendel University in Brno          Austrian Institute for Regional Studies and Spatial Planning          Policy Network          Ratio          University of Surrey          Vienna University of Technology          Universitat Autònoma de Barcelona          Humboldt-Universität zu Berlin          University of Economics in Bratislava          Hasselt University          Alpen-Adria-Universität Klagenfurt          University of Dundee          Università Politecnica delle Marche          University of Birmingham          University of Pannonia          Utrecht University          Vienna University of Economics and Business          Centre for European Economic Research          Coventry University          Ivory Tower          Aston University</p>
<b>European Commission</b>	Domenico Rossetti di Valdalbero, DG Research and Innovation
<b>Duration</b>	1 April 2012 – 31 March 2016
<b>Funding scheme</b>	FP7 Collaborative Research Project
<b>Budget</b>	EC contribution: EUR 7,999,858.25
<b>Website</b>	<a href="http://www.foreurope.eu">www.foreurope.eu</a>
<b>For more information</b>	Kristin Smeral, <a href="mailto:wwwforeurope-office@wifo.ac.at">wwwforeurope-office@wifo.ac.at</a>