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Conference Paper

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54th Congress of the European Regional Science Association: "Regional development & globalisation: Best practices", 26-29 August 2014, St. Petersburg, Russia

Provided in Cooperation with:

European Regional Science Association (ERSA)

Suggested Citation: Capello, Roberta; Caragliu, Andrea (2014) : After Crisis Scenarios for CEECs: A simulation through the MASST3 model, 54th Congress of the European Regional Science Association: "Regional development & globalisation: Best practices", 26-29 August 2014, St. Petersburg, Russia, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

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After Crisis Scenarios for CEECs: Alternative Evolutions of Structural Adjustments

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Abstract:

Over the last few years, the world economy has undergone a period of severe economic downturn, the worst since the end of WWII. While the significant impact of the crisis is an established result, less common-knowledge is the fact that the crisis has already induced responses in the economic systems, which translate into structural changes.

The aim of this paper is to build after-crisis scenarios on the basis of alternative evolutions of structural adjustments induced by the crisis. A first scenario is defined 'a place-based competitiveness scenario': in this scenario, competitiveness is obtained through the exploitation of local excellence and untapped local resources. The second alternative scenario is defined 'political and spatial scenario': this scenario is built around the idea of limiting the social costs stemming from the crisis.

The development of one of the two alternative scenarios can be justified on the basis of rational criteria; as a consequence, both scenarios have the same legitimization to be supported by policy-makers. The results of the simulation exercise are obtained by running a macroeconomic regional growth forecasting model called MASST3, developed by the authors.

Results unexpectedly show that the place-based competitiveness scenario achieves both the highest aggregate GDP growth rates as well as the lowest increase in regional disparities. In other words, and contrary to general beliefs, the political and spatial cohesion scenario is less effective than the regional cohesion scenario in reducing regional disparities. These results offer useful insight into how future cohesion policies may reinforce local excellences and tap the untapped resources.

Keywords: Economic crisis, structural changes, regional growth, quantitative foresight

JEL classification codes: R11, R15

1. Introduction¹

Over the last few years, the world economy has undergone a period of severe economic downturn, the worst since the end of WWII. The relevance of the effects of the present economic crisis is clear, and is supported by remarkable evidence in the negative trends affecting basic macroeconomic indicators such as GDP, employment, consumption and investment growth. This applies to the whole EU, although the impacts of the crisis are strongly differentiated and large differences in this respect hide behind the average European trend.

While the significant impact of the crisis is an established result, less common-knowledge is the fact that the crisis has now induced responses by the EU economies, in the form of structural changes in the economic systems in both Western and Eastern countries. They are not univocally for the worse, since they may represent a potential asset for the future growth patterns of EU regions when the associated advantages are higher than the costs. Before the crisis, for example, Central and Eastern European Countries (henceforth, CEECs) were characterized by fast convergence in GDP and productivity levels, because of faster growth rates w.r.t. EU15 economies (Dell'Anno and Villa, 2013);² the competitiveness behind such fast growth rates was mainly due to low labour costs, which thus attracted foreign direct investment, thus ultimately fostering convergence towards Western EU levels of GDP. The crisis years have already altered this trend; cost competitiveness seems to have partially vanished (and bound to further worsen, because of the faster catch up of salaries in new member states w.r.t. EU15 countries), with the consequence of a decrease in the convergence trends among EU economies.

However, this is only one of the many possible examples of the ongoing structural changes. The limited resources for public expenditure in the European Union calling for a deep revision of public expenditure allocation criteria in several countries, and limiting Keynesian growth mechanisms, (with a concentration of the fewer public resources in strong areas of the Countries) are another example in this respect.

The reactions by economic systems to turbulence have an additional awkward characteristic; macroeconomic policies and strategies are, in the common beliefs, interpreted as space-invariant. However, they exert quite different effects in different regions of the same country, exacerbating or reinforcing intra-national convergence trends (Camagni and Capello, 2014).

A scenario exercise is helpful in raising awareness of the consequences of the different reactions to the crisis. Especially for CEECs, the way in which economies adjust to the crisis might imply a change in the rhythm of convergence path towards Western economies.

The aim of the present paper is therefore to build after-crisis scenarios on the basis of alternative trends that the responses to the crisis might follow.

The methodology applied to build the scenarios is neither that of a pure forecast nor that of a pure foresight. Our approach can be defined as a *quantitative foresight* in that it is the result of three major steps. The first involves scenario building, whereby an image of the future is constructed on the assumption that a discontinuity will emerge in the main elements or driving forces that influence and regulate the system. The second step is to include these changes into a model of structural relationships that in a traditional manner links conditional (explanatory) variables and the dependent variables. The qualitative assumptions of the first-step procedure are then translated into quantitative ones, which link the expected driving forces to specific values of the model's independent causal variables. The third step involves a simulation procedure leading to a 'conditional' forecast of the dependent variables (Capello et al, 2008; Camagni and Capello, 2011).

¹ The research leading to these results has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement "Growth-Innovation-Competitiveness: Fostering Cohesion in Central and Eastern Europe" (GRINCOH).

² Defined as those European economies that belonged to the European Union before the 2004 wave of enlargement.

The first step is represented by the scenario building. In this paper, a *reference scenario* will first be built, which cannot refer to the past decades as the crisis has already generated some structural adjustment strategies, as Section 2 will show with the use of recent statistical evidence: public administrations in several EU countries will have to face an ongoing revision of public expenditure criteria, and will have to cope in the long run with a constant reduction of the amount of public resources, concentrated in central areas, with a consequent increase of social costs. In particular, CEECs will have to cope with a continuous decrease of competitiveness, due to a loss of flexibility in macroeconomic policy tools because of the increasing integration into the EU.

The paper will then build two extreme adjustment strategy scenarios, on the basis of opposite and alternative response to the crisis; 'a *place-based competitiveness scenario*', based on the assumptions of reinforcing competitiveness through the exploitation of local excellence, will be compared to a *political and spatial cohesion scenario*, built around the idea of limiting the social costs of the crisis.

The aim of this exercise is not to compare a positive and a negative scenario; on the contrary, both scenarios have the same legitimization to be supported by policy-makers. For this reason, the choice between the two alternative after-crisis scenarios is in abstract terms very difficult; and this is where a simulation exercise can be very useful.

The scenarios assumptions feed a macro-econometric regional growth forecasting model, the MASST3 model, recently updated and improved in order to formally model the effects of the crisis (Capello et al., 2008 and 2013).

Results unexpectedly show that the most positive after-crisis scenario for Europe is the place-based competitiveness scenario, whereby unexploited local growth potentials are tapped: in this way, both the highest aggregate growth rates, as well as the lowest increase in regional disparities are achieved. This is also true for CEECs, for which the capacity to invest in dispersed, un-exploited local excellences, seems to be the best way to (re-) gain faster economic growth and enhance regional convergence processes.

2. Structural adjustments induced by the crisis

The economic crisis that began as mostly driven by the contraction of the financial industry in 2008-2009 (Helleiner, 2010) quickly extended to several real aspects of the EU economies (EU Commission, 2010). As a consequence, over these last five years, the most severe crisis to be recorded after WWII in Europe (*The Economist*, 2014) has engendered relevant effects that present a high degree of spatial and industrial heterogeneity.

The impacts of the ongoing crisis are so profound and diverse that they cannot be fully taken into account in one single empirical exercise. Table 1 aims at summarizing the most important recent structural changes experienced by EU economies as a response to the economic crisis. Not all changes are for the worse, and Table 1 presents the advantages and disadvantages that can be associated to each emerging tendency. Finally, each new trend is associated to a process of structural adjustment that can already be observed in real data. Each row in the last column will represent a building block for a reference scenario, that will be discussed in Section 3.

By far the most striking trend recently affecting the EU economy is an increasingly limited availability of resources for public budgets (Table 1, first row). In order to provide Keynesian stimulus to deprived national economies, this prompted most EU countries to borrow money from financial markets, which in turn caused a remarkable increase in the stock of outstanding public debt. Figure 1 below shows that this process gave a halt to a decade of slow but progressive improvement of public finances in countries such as Italy and Spain. In the Euro area, the debt/GDP ratio increased from a bottom value of 58.9% (reached in 2007 and within the boundaries of the Maastricht criteria) to a zenith of 85.2% in 2012. In some EU countries, the accumulation of public debt showed a disastrous pace: in Ireland, for instance, debt is now

almost four times as high as in 2007. The accumulation of public debt has been so fast that the famous 90 per cent threshold suggested by Rogoff and Reinhart (2010) has never been so close for the EU.³

The risks associated to this negative trend are numerous and clear. A contraction of public budgets constraints the freedom of policymakers, reducing the room available for fiscal and, more in general, Keynesian stimuli, threatening the quality of the Welfare State, and, more directly, causing a loss of jobs in both the public sector and the associated industries. A debt-driven aggregate demand also turned out to be highly sensitive to the moods of the financial markets and this reason is widely responsible for the emergence and sudden explosion of the real estate and construction bubble. Global connectedness and the generalized financialization of Western economies led to accelerated changes in the real economy, mainly through expectation channels, driven by global benchmarking on financial returns.

Table 1. Recently emerging tendencies, risks and opportunities, and structural adjustments for the EU

New trends	Risks	Opportunities	Structural adjustments of the EU economy
Limited resources for public expenditure in the EU	Lower Keynesian stimulus in EU areas	Revision of public expenditure criteria	Ongoing revision of public expenditure criteria in several EU countries
	Decreasing quality of welfare state (education, healthcare)	Public budgets more strictly under control (less profligate public expenditure)	Reduced amount of public resources
	Job losses		Concentration of the (fewer) public resources in strong areas in CEECs
Process of adjustment to the EU integration	Loss of flexibility in CEECs (no freedom on exchange rates, public expenditure, and other macroeconomic policy tools)	Financial stability and discipline in public accounts	Loss of cost-competitiveness in CEECs
		Integration in a larger market	
Decline in R&D budgets due to the fiscal and credit crunch and the growth slowdown	Loss of dynamic efficiency	Schumpeterian selection process of innovative actors	Concentration of the R&D resources in strong areas
Reshuffling of industrial specialization patterns	Exposure to new competitors from new areas	Increase in economic potential and resilience	Reindustrialization of sectors related to green economy technologies
Geographical reorientation of FDIs	Loss of economic potential for EU countries	Endogenization of investment (less exogenously-driven growth process)	Loss of FDIs inflows into the EU

³ The 90 per cent threshold refers to an empirical regularity that translates into a supposedly damaging effect of excessive debt on long-run economic performance: “When gross external debt reaches 60 percent of GDP, annual growth declines by about two percent; for levels of external debt in excess of 90 percent of GDP, growth rates are roughly cut in half.” (Reinhart and Rogoff, 2010, p. 573).

However, it must be acknowledged that these events have also engendered a new discussion on expenditure criteria, and have, more in general, elicited a new awareness of the need to spend public money more effectively. In Central and Eastern European Countries (henceforth, CEECs), besides, such renegotiation of expenditure criteria are also matched by an increasing concentration of the fewer public resources in core areas (Hermant-de Callataÿ and Svanfeldt, 2011).

A second major trend that has been in many ways affected by the crisis is that of the increasing integration of national economies, and in particular those of CEECs, into a larger, EU-wide, economy: “integration with the new Member States started in the early 1990s with bilateral agreements which liberalised 85% of trade between the two blocs. Between 1993 and 2005, the opening of these economies led to a considerable increase in trade on both sides. During this period, the old Member States increased their trade with the EU-10 countries by 6 percentage points, whilst their imports from the new Member States rose by 13 percentage points. These trade flows are characterised by more labour-intensive products from the EU-10 countries, in exchange for goods with greater technology content from the EU-15” (COM 2006-200). An additional positive effect of the process of EU integration is also related to the need to satisfy Maastricht criteria, which also stimulated EU countries to keep public budgets (before the crisis struck) under control.

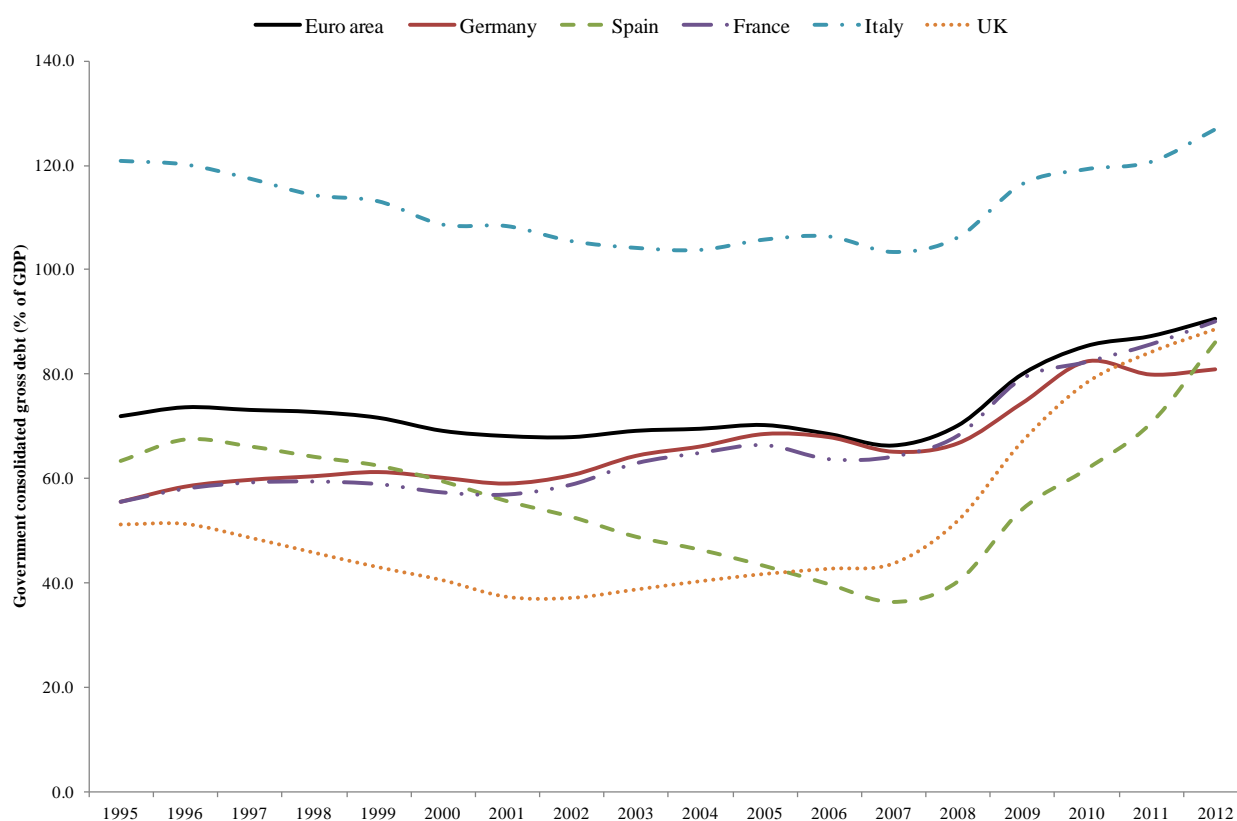


Figure 1. Government consolidated gross debt as a percentage of GDP in the Euro Area and the five largest EMU economies, 1995-2012

Source: Authors’ elaborations, based on EUROSTAT data

However, CEECs entering the EU in the 2004, the 2007 and the 2013 rounds of enlargement also face a relevant risk stemming from the integration process, i.e. that of the loss of cost competitiveness that originally characterised those countries. Besides, countries adopting the Euro as national currency are also giving up national monetary policy instruments, which implies a loss of independence in the use of voluntary devaluation as means of recovering cost competitiveness. Figure 2 represents the evolution for the CEECs between 1994 and 2012 of real effective exchange rates, which aim to assess a country's (or

currency area's) price or cost competitiveness relative to its principal competitors in international markets. Changes in cost and price competitiveness depend not only on exchange rate movements, but also on cost and price trends.⁴

Figure 2 displays a complex and diversified process of loss of cost competitiveness over time. Some of the countries that were losing the most in terms of competitiveness (e.g. Poland) have actually started to regain competitiveness after 2008; some others have kept the process more under control (e.g., Hungary), whilst finally other CEECs are still way above their initial levels of cost competitiveness (and this is particularly true for Czech Republic and Slovakia).

In the long run, however, the evidence clearly suggests that CEECs share a generalised loss of cost competitiveness, which has been exacerbated during the crisis period. As a result, investment flows looking for cheaper labour cost countries are already favouring a ring of areas right outside the EU, such as Ukraine, Moldova, Serbia, Turkey, and the Russian Federation (UNCTAD, 2013) (see also below for the case of FDIs).

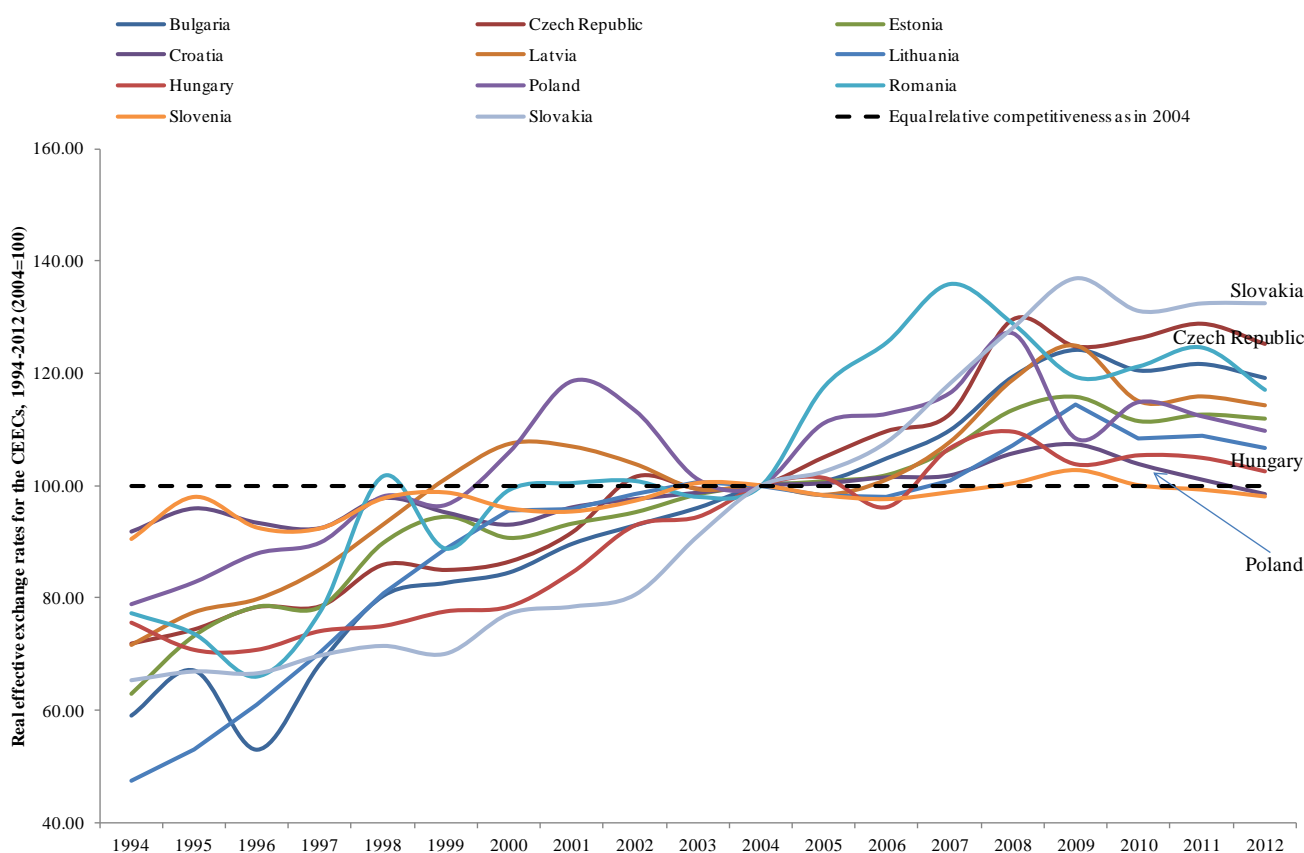


Figure 2. Real effective exchange rates for the CEECs, 1994-2012

Source: Authors' elaborations on EUROSTAT data. Base year = 2004

Despite the growth slowdown and the fiscal and credit crunch, EU R&D budgets have been steadily increasing since 2007. Figure 3 plots Gross Expenditure on R&D over GDP in the EU27 between 1995 and 2012. Data suggest that after a relative decline between 2002 and 2006, entrepreneurs and policymakers reacted to the economic crisis by increasing their budgets devoted to R&D. Interestingly, this result is not caused by the contraction of GDP (denominator of the R&D/GDP indicator) faster than the drop in R&D expenditure. In fact, even absolute R&D figures have been slowly but steadily growing, even in those Countries that have most severely been hit by the crisis (e.g. Spain, Italy, and Ireland).

⁴ Real Effective Exchange Rate is deflated by nominal unit labor costs (total economy) against a panel of the top 42 trading partners to the Euro Area.

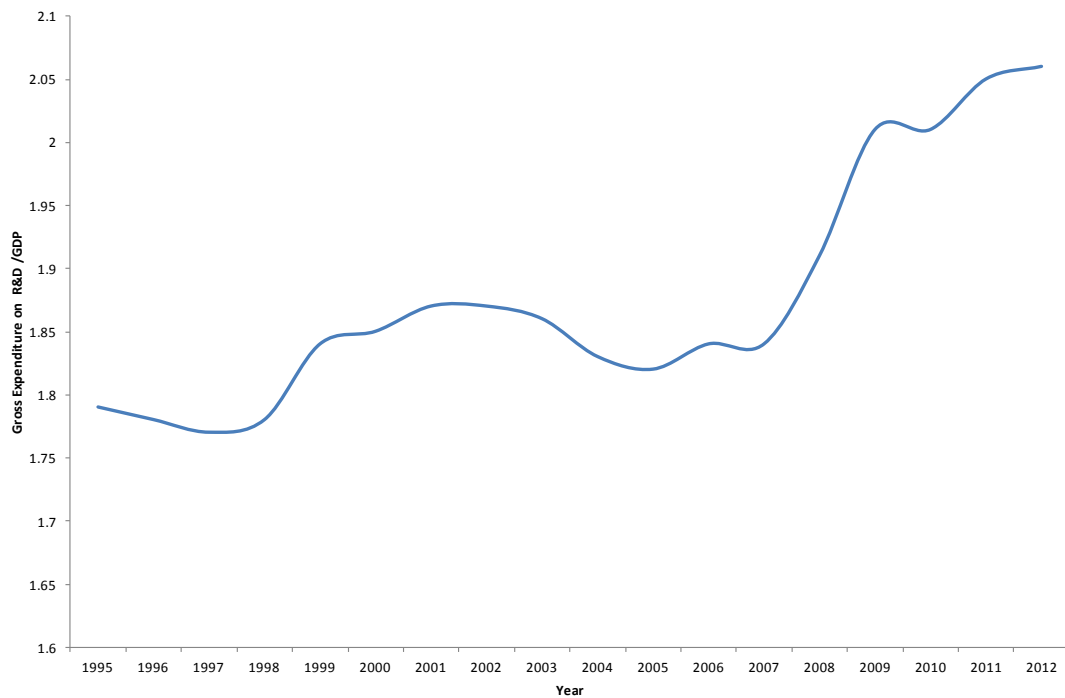


Figure 3. Gross Expenditure on R&D over GDP in the EU27, 1995-2012

Source: Authors' elaborations on EUROSTAT data

However, the crisis did exert a major effect on R&D expenditure, that is the increasing concentration of R&D budgets in areas that already have a competitive advantage in this respect. In order to exemplify this concentration process, Figure 4 plots the variation in regional R&D expenditures over GDP between 2007 and 2009 against the initial R&D/GDP ratio. A positively sloping (and significantly so, at the 95% confidence level) regression line testifies for the fact that during the early crisis years money devoted to R&D activity increased fastest in regions that already presented a comparative advantage before the crisis, in a sort of research intensity *divergence* process.

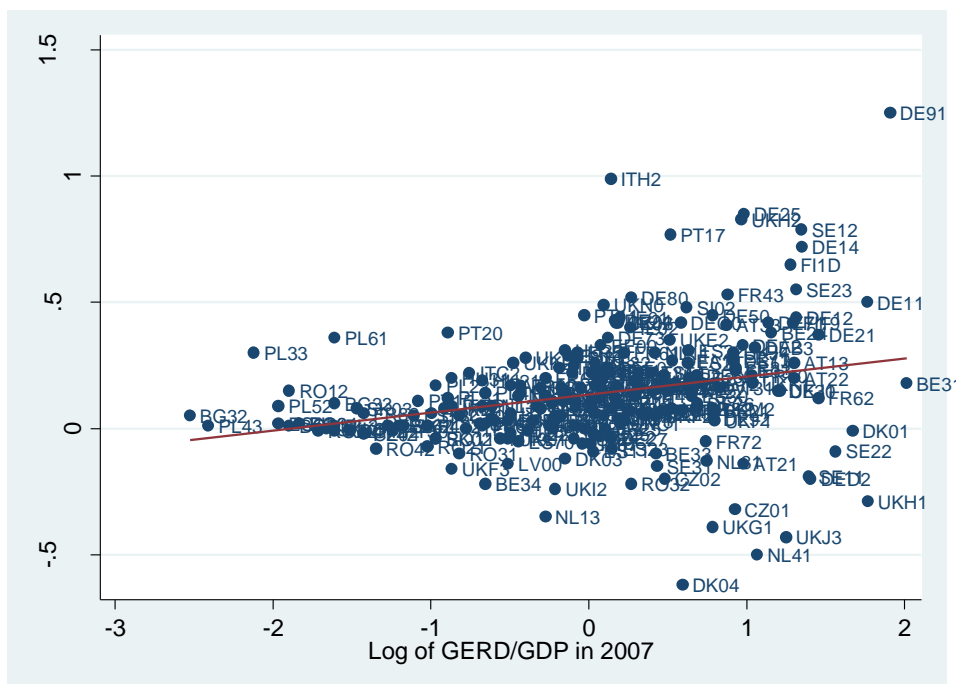


Figure 4. Concentration of R&D resources in strong research areas during the crisis (2007-2009)

Source: Authors' elaborations on EUROSTAT data

The concentration trend of R&D investment is also evidenced in related empirical studies (Capello and Lenzi, 2013); especially in EU15 regions, R&D expenditure has been strongly concentrating in areas with traditionally strong R&D capabilities, or, to use Cohen and Levinthal (1990)'s label, with a high absorptive capacity. A reduced availability of both private and public resources, in fact, has fostered a process of restructuring of allocation mechanisms, so that R&D resources are being increasingly concentrated in science champions.

A fourth and rather direct impact of the ongoing crisis revolves around the process of reshuffling of industrial specialization patterns in EU regions. This recent evolution is made up of two components, viz. a long-run trend, that can be relatively stronger in CEECs, because of their relatively less advanced economic structure, and a short- and medium run effect directly induced by the crisis, which can enhance, or hamper, the long-run processes above identified. In order to capture this recent trend, Figure 5 plots the location quotients of NACE2 industries calculated on the labour force for the years 2008 and 2012 with the EU27 specialization level as benchmark. As evidenced by Figure 5, which also displays with a dashed line the reference line (average specialization in each industry for the EU27), whilst CEECs tend to be more specialized in relatively less knowledge-intensive industries (and in particular primary activities and construction), the EU15 lost some specialization in more advanced sectors, to the (consequential) advantage of CEECs. Figure 6 suggests, therefore, that a process of technological and industrial catch-up is still ongoing in CEECs, despite the slowdown imposed by the great contraction.

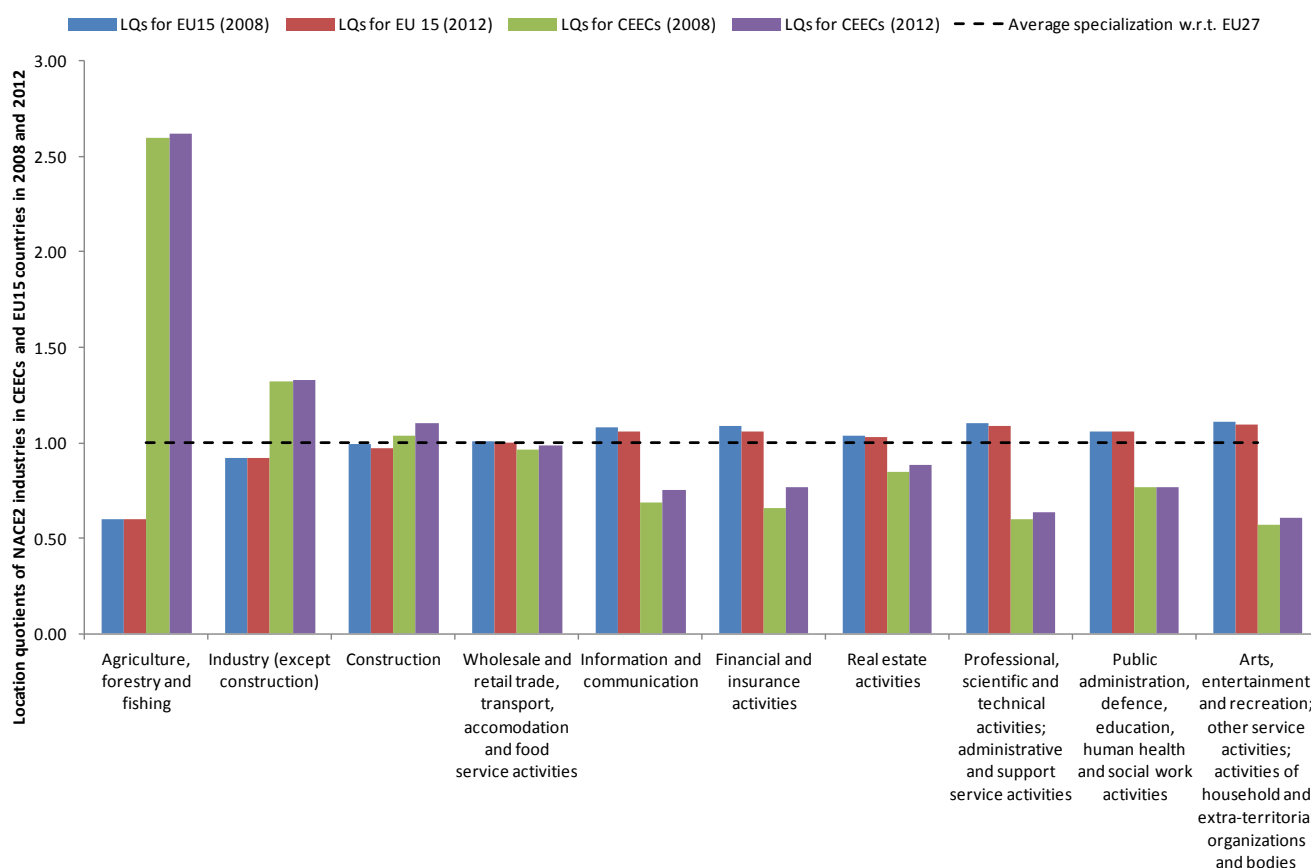


Figure 5. Location quotients of NACE2 industries in CEECs and EU15 countries in 2008 and 2012

Source: Authors' elaborations on EUROSTAT data

A fifth and final major trend could, however, represent a major concern for CEECs, that so far thrived on the massive inflow of FDIs driven mainly by the remarkable cost-competitiveness (in particular in terms of wages) of these areas (Hagemejer and Tyrowicz, 2012). Recent data suggest that this inflow may have been reversing, because of the second point above mentioned, viz. the worsening of cost competitiveness in

CEECs. Many EU15 countries, that up to the beginning of the crisis preferred near-shoring in CEECs, are now looking for cheaper labor costs, and thus are increasingly looking at countries at the immediate borders of the EU.

In order to exemplify this emerging trend, Figure 6 plots net FDIs inflows (in percentage of total world FDIs) into CEECs and bordering countries between 1970 and 2012. For “bordering countries”, we mean countries with a direct border to the EU27, with the exclusion of Norway, which is often a net FDI lender and, more generally, does not enjoy cost-competitiveness. This list includes, therefore, Albania, Belarus, Bosnia, Montenegro, Moldova, the Russian Federation, Serbia, Macedonia, Turkey, and Ukraine.

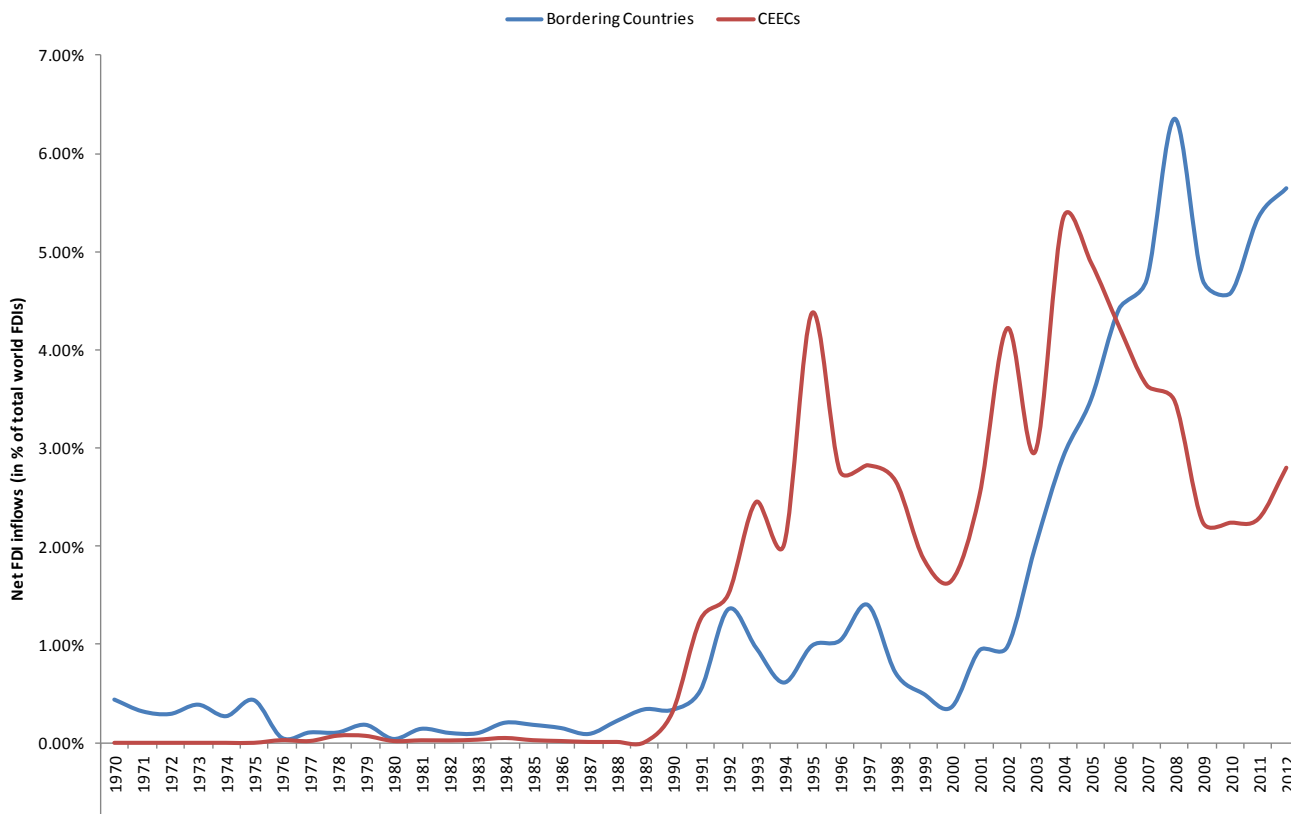


Figure 6. Net FDIs inflows (in percentage of total world FDIs) into CEECs and bordering countries, 1970-2012

Source: Authors’ elaborations on UNCTAD data

Figure 7 clearly shows that right before the crisis struck, i.e. in 2006, bordering countries substituted CEECs as major destination of FDIs. This trend needs to be properly taken into account in any scenario dealing with after-crisis scenarios in CEECs, as – if confirmed – this evolution may subtract a major source of growth to CEECs, that would from now on need to switch towards a more endogenous pattern of development.

The adjustments of national economies to the crisis, especially in CEECs, are relevant. The way in which they will continue will mark the future of Europe and its territory. Once the reference scenario is built on the above trends, other alternative, and even opposite, scenarios can be created on the basis of different assumptions on how economic systems will respond to the crisis. In this paper, this takes place through the choice of two alternative policy goals: to increase competitiveness, in the scenario of regional cohesion, and to limit the social costs of adaptation to changes, in a scenario of social cohesion.

3. Scenarios of adjustments to the crisis

3.1. A reference scenario: stuck in transition

A reference scenario has first been built. This scenario is built with the aim not to merely extrapolate the conditions before the crisis; the new adjustment strategies already undergoing in Europe will likely remain in the future (hence for its label “stuck in transition”). Public administrations in several EU countries will have to face an ongoing revision of public expenditure criteria, and, in the long run, will have to cope with a constant reduction and concentration of the amount of public resources, with the consequent increase of social costs (EBRD, 2013). Moreover, CEECs will need to address a continuous loss of competitiveness, due to a loss of flexibility in macroeconomic policy tools (devaluation of national currency) because of the increasing integration into the EU (Table 2).

Table 2. Elements for the definition of the reference, place-based competitiveness and the political and spatial cohesion scenarios

New trends	Reference scenario: stuck in transition	Alternative scenarios	
	Structural adjustments for the EU economy	Place-based competitiveness scenario	Political and spatial cohesion scenario
Limited resources for public expenditure in the EU	Ongoing revision of public expenditure criteria in several EU countries	Different public expenditure criteria: concentration in medium-size cities, more oriented towards the private sector	Different public expenditure criteria: concentration in peripheral areas, more oriented towards the public sector
	Reduced amount of public resources		
	Concentration of the (fewer) public resources in strong areas in CEECs		
Process of adjustment to the EU integration	Loss of cost-competitiveness in CEECs	More integration of CEECs within the euro zone	Postponement of the integration of CEECs within the euro zone
Limited R&D budgets due to the fiscal and credit crunch and the growth slowdown	Concentration of the R&D resources in strong areas	Generalized increase in R&D resources, more oriented towards second-rank cities	Generalized increase in R&D resources, more oriented towards peripheral areas
Reshuffling of industrial specialization patterns	Reindustrialization of sectors related to green economy technologies	Reindustrialization of the EU	Growth in 'soft' industries (tourism, public administration)
Geographical re-orientation of FDIs	Loss of FDIs inflows into the EU	FDI incentives towards second-rank cities	FDI incentives towards peripheral areas

Source: Authors' elaboration

A sustained increase in world demand will no longer be based on debt expansion in private demand in advanced countries, as happened in the recent past, giving rise to systemic risks and monetary bubbles not only in real estate markets. Other sources of aggregate demand must be found, because the increase in imports by emerging, fast-growing economies will not be sufficient. In our opinion, a major role in this regard may be played by the development of a new production paradigm, i.e. that of the green economy. In fact, its spread could simultaneously provide the necessary new source of world demand – mainly in the form of new investment in renewable energies, energy-saving technologies and organizational methods – and new tools for boosting productivity in Western countries (Camagni and Capello, 2011).

R&D investment will be limited, and concentrated in few strong areas, generating a risk of increasing marginality and lack of competitiveness in peripheral areas, reinforcing the tendency towards a loss of intra-national convergence.

All these structural adjustments take place within a framework of constant economic policies, and of a halt in the crisis period in 2015. No major change will take place affecting the EU economy. In particular, no significant changes are assumed on the role of Europe in the world economy apart from the continuation of the present socio-economic trends which register a decline relatively to the emerging areas. Moreover, no major change is assumed in technology, so that no major technological leap will take place before 2030. Moreover, in the reference scenario no new policies are foreseen; in other words, European, national and regional policies will remain in the wake of current ones. The stability pact targets decided by the European Commission (3 per cent of deficit/GDP) will remain the same. For national policies, the various countries will try and maintain the present effort towards balanced national budgets, with limited spending and inflation. Regional policies, especially those of the European Union which are implemented in the model, are assumed to remain as they presently are. For instance, for EU cohesion policies, the effort and distribution will remain the same of the current programming period 2007-2013.

3.2. A scenario of place-based competitiveness

A scenario of place-based competitiveness is a scenario based on the willingness to achieve the competitiveness levels of the pre-crisis period. Competitiveness is interpreted as if depending on the exploitation of a hugely differentiated and scattered endowment of “territorial capital”, made up of natural and artificial specificities, varied settlement structures, cognitive and relational assets at different degrees of complexity and development. All these elements – especially those that are not yet fully or creatively exploited – represent the assets and potentials on which any development strategy should rely. In fact, as today widely accepted by the most advanced literature on the subject, long-term development is largely a supply-side phenomenon. In this view, growth follows general rules and institutional frames, but above all is nourished by the internal entrepreneurial capabilities of regions and places and by the local capacity to exploit existing resources efficiently. Therefore, local policies require a detailed knowledge of local resources and potentials, in line with the Barca Report (2009) and the Smart Specialization approach (McCann and Ortéga, 2011 and 2014).

Modern territorial development policies are in this scenario designed with the aim to maximize the returns to public investment. This scenario is built on the idea that maximum returns to public investments are not reached through investment in strong areas, but through the capabilities of single policies to act on the specificities of each single area, of local actors to “tap” and mobilize previously “untapped” assets of territorial capital, and use them in the most efficient ways. In fact, the possibility for any region to contribute to the general EU growth strategy depends on the creative exploitation of its own assets of territorial capital, their preservation, completion and enrichment by setting appropriate priorities to local and regional policies. Thus, the aggregate development effects will be maximized, and at the same time the economic and social costs of an unbalanced development process kept under control, as suggested by theoretical reflections (OECD, 2001, ch. 1 and 6; Camagni, 2001).

With this framework in mind, the limited resources for public expenditure in the EU are assumed in this scenario to be re-directed towards second-rank, medium-sized cities, loci of most of the un-exploited

potentials for growth, where agglomeration economies due to limited urban size can still produce growth advantages. In this scenario, the attention given to competitiveness leads to a redistribution of public resources in favor of R&D and innovation measures, in particular those devoted to small and medium sized cities. These policies will also favor productivity increases and therefore competitiveness; in CEECs, increases in productivity will be higher than increases in wages, gaining competitiveness and a re-launch of industry activities. In Western countries, measures in support to the green technologies will also favor a reindustrialization of the European economies.

The attention to second-rank cities in CEECs will have as a side effect an increase in their attractiveness for foreigner direct investment; foreign investors will thus interpret a possible location in medium sized cities as a strategic access to potentially increasing markets.

The macroeconomic framework of this scenario is similar to the reference scenario, except for the public expenditure growth rate; a higher availability of public resources characterizes the scenario, with the result of an increase in tax rates to stick to the “austerity measures” of the European Union. The re-industrialization of some sectors is also facilitated by a lower interest rate and by private investments.

3.3. A scenario of political and social cohesion

A second alternative scenario is *political and social cohesion*, based on a different policy goal. This scenario has in fact the aim to limit the social costs that are associated with the crisis, without giving up economic modernization. The scenario foresees social incentives to fight high unemployment rates, and to keep the increase in wages in line with the increase in productivity levels, so to (re-)gain cost competitiveness. All this requires a political cohesion between policy-makers and trade-unions. Moreover, this scenario assumes the creation of employment opportunities in the public sector, the availability of public resources devoted to health and social services and for launching economic activities in peripheral areas and modernizing and exploiting their territorial assets; all these hypotheses support spatial cohesion.

In this scenario, the limited public expenditure are distributed in favor of rural areas. Green technologies and related industries no longer represent the most appealing fields in which to invest public resources, and leave this role to service activities, especially health and social services. Industrial activities per se have no reason for capturing the interest of policy-makers. Instead, all industries related to tourism will have a possibility to expand, representing a good way for re-launching and modernizing rural areas, through the exploitation of natural resources (mountains, forests, sea, rivers), and enhancing local identity, expressed through local handicraft activities, local food production, etc.

R&D and related innovation activities (like the creation of broadband networks) will help the modernization of activities in rural areas, and for this reason the distribution of innovation expenditures will mostly take place in rural areas. In this scenario, EU smart specialization strategies will achieve their best, being able to identify the innovative technological domain of each region, i.e. the technological fields in which regions are specialized and to which regional policies should be tailored to promote local innovation processes (Camagni et al., 2014; McCann and Ortega-Argilés, in 2014). In this scenario, regional policies are successful as they are tailored to the regions’ technological domains, also of rural areas, in order to promote local innovation processes in their fields of specialization.

All the described tendencies assume a higher availability of public resources than the reference and the regional cohesion scenarios. The public expenditure growth rate inevitably increases, and, thus, public debt increases, which is partially financed through tax rate increases.

3.3. From qualitative to quantitative assumptions: the scenario methodology

In general, the aim of a forecast is to obtain precise values of specific economic variables in the future, on the basis of extrapolations of a system of past socio-economic relations. Exactly because they extrapolate from past tendencies, forecasts yield the best results in a short-term perspective. The aim of a forecasting

exercise is, in general, to achieve a quantitative value in a certain year, paying little attention to the intermediate path, or to the feedback and adjustment processes by which the end value is determined.⁵

Foresight is a radically different exercise. It is mostly qualitative in nature, and its aim is to provide an image of the future based on radical breaks, on structural effects which destroy past tendencies. A new technological paradigm, new socio-cultural models, new political regimes are all examples of structural breaks in the elements regulating an economic system which give rise to completely new and radically different images of the future. A foresight is a possible, probable and even desirable image of the future under the assumption that these events, or perhaps only one of them, will occur. Contrary to forecasts, foresights do not address the dynamic processes that will produce the final outcome; rather, they explore the general consistency of the final image by analysing all the adjustment processes that are likely to happen. In general, a foresight is built on an image of what the future will look (explorative projections), but also of what the future should look (desirable projections). Foresight provides insights into the future based on a structural and radical break with the past, and assuming in general a long-term perspective (usually decades).⁶

The logic of our methodology is neither that of a pure forecast nor that of a pure foresight. Our approach can be defined as a quantitative foresight in that it is the result of three major steps. The first involves scenario building whereby an image of the future is constructed on the assumption that a discontinuity will emerge in the main elements or driving forces that influence and regulate the system. The second step is to insert these changes into a model of structural relationships, called MASST in its third version, which in traditional manner links conditional (explanatory) variables and the dependent variables (Capello et al., 2008 and 2013). The qualitative assumptions of the first-step procedure are translated into quantitative ones linking the expected driving forces to specific values of the model's independent causal variables. A detailed account of the quantitative assumptions for the design of the three scenarios in both the national and the regional MASST3 sub-models is available in the Technical Appendix 1. The third step involves a simulation procedure leading to a 'conditional' forecast of the dependent variables.

The intention is not to provide precise estimates of future GDP levels, but rather to highlight the main tendencies, major adjustments to change, relative behavioural paths that will be at work, given some conditional assumptions about the influence of the main driving forces.

It is not the aim of this paper to present the macroeconomic forecasting model MASST, which is already published in different versions in other scientific outputs. A short description of its logic is in any case presented in the Technical Appendix 2.

4. Scenario results

4.3. Economic performance

4.1.1 Reference, stuck in transition scenario results

This Section discusses the results of the simulations of the MASST3 model both for the reference scenario, as well as for the two alternative scenarios described in Section 3. The results in terms of average yearly GDP growth rates, and manufacturing, service, and total employment growth rates over the simulation period (2012-2030) are shown in Table 3.

The reference scenario allows for a mildly optimistic view on the future growth rates of the EU economy. Average yearly growth of GDP is equal to 1.84 per cent, which is slightly higher than the average growth of

⁵ On forecasting methodologies see, among others, Hawkins, 2001; Hendry and Clements, 2001; Loomis and Cox, 2000.

⁶ On foresight methodologies see, among others, EC, 2004; Miles and Keenan, 2000; UNIDO, 2004.

EU15 countries (1.83 per cent). The process of convergence would still be ongoing, with CEECS growing on average by 1.90 per cent on a yearly basis.

Table 3. Simulation results by macro aggregates in the reference, place-based competitiveness and political and spatial cohesion scenarios

Scenario	Reference: stuck in transition			Place-based competitiveness - reference			Political and spatial cohesion - reference		
	EU27	Old15	CEECS	EU27	Old15	CEECS	EU27	Old15	CEECS
Variable									
GDP growth	1.84	1.83	1.90	0.49	0.50	0.34	-0.11	-0.12	-0.05
Manufacturing employment growth	1.55	1.63	1.25	0.52	0.56	0.35	-0.57	-0.64	-0.30
Service employment growth	1.54	1.45	2.20	0.43	0.43	0.45	0.05	0.06	-0.02
Total employment growth	1.54	1.48	1.89	0.45	0.45	0.35	-0.07	-0.07	-0.10

Source: Authors' elaborations

The last two columns in Table 3 show a further breakdown of growth rates in terms of countries belonging to two subgroups, according to the depth of the public debt crisis in 2008-2010. Because these countries include several CEECS economies, interestingly growth rates are expected to be slightly higher for this group of countries.

Another element that emerges from the results lies in productivity growth. As can be inferred from the fact that GDP grows faster than employment (Table 3), the reference scenario suggests that growth in this scenario is mainly driven by productivity growth, in turn also due to the industrial composition of employment growth, with new jobs being created mostly in high value-added industries.

A further major element of interest in this scenario is the generally equilibrated growth of both manufacturing and service employment. In this sense, minor, but non-negligible, differences can be identified. While areas in CEECs tend to face a faster growth in service industries, that have so far been relatively under-developed, EU15 countries face a process of re-industrialisation, whose seeds can already be identified in the presently ongoing structural changes induced by the crisis (on this point, see also Section 2). Moreover, growth seems to be productivity-led: employment growth is found to be lower than GDP growth, in particular in CEECs.

Figure 7 shows the spatial distribution of average GDP growth rates in EU regions. Darker colours indicate regions expected to achieve positive growth rates; the more intense the colour, the faster GDP growth is expected to be. On the contrary, blue in all its variations refers to regions whose GDP is expected to shrink.

The long-lasting effects of the currently ongoing crisis in peripheral countries are evident on the map. Several regions in Italy and Spain present only mildly positive growth rates; in Greece, the large majority of regions achieves negative growth rates of GDP over the simulation period. Other countries initially affected by the debt crisis (noticeably, Romania) appear to slow down their convergence path. On the contrary, a few areas in Central and Eastern Europe (Slovenia and Hungary, above all) represent major growth areas.

Table 3, next, shows the results for the same indicators for the two alternative scenarios, viz. the place-based competitiveness (a) and political and spatial cohesion (b) scenarios.

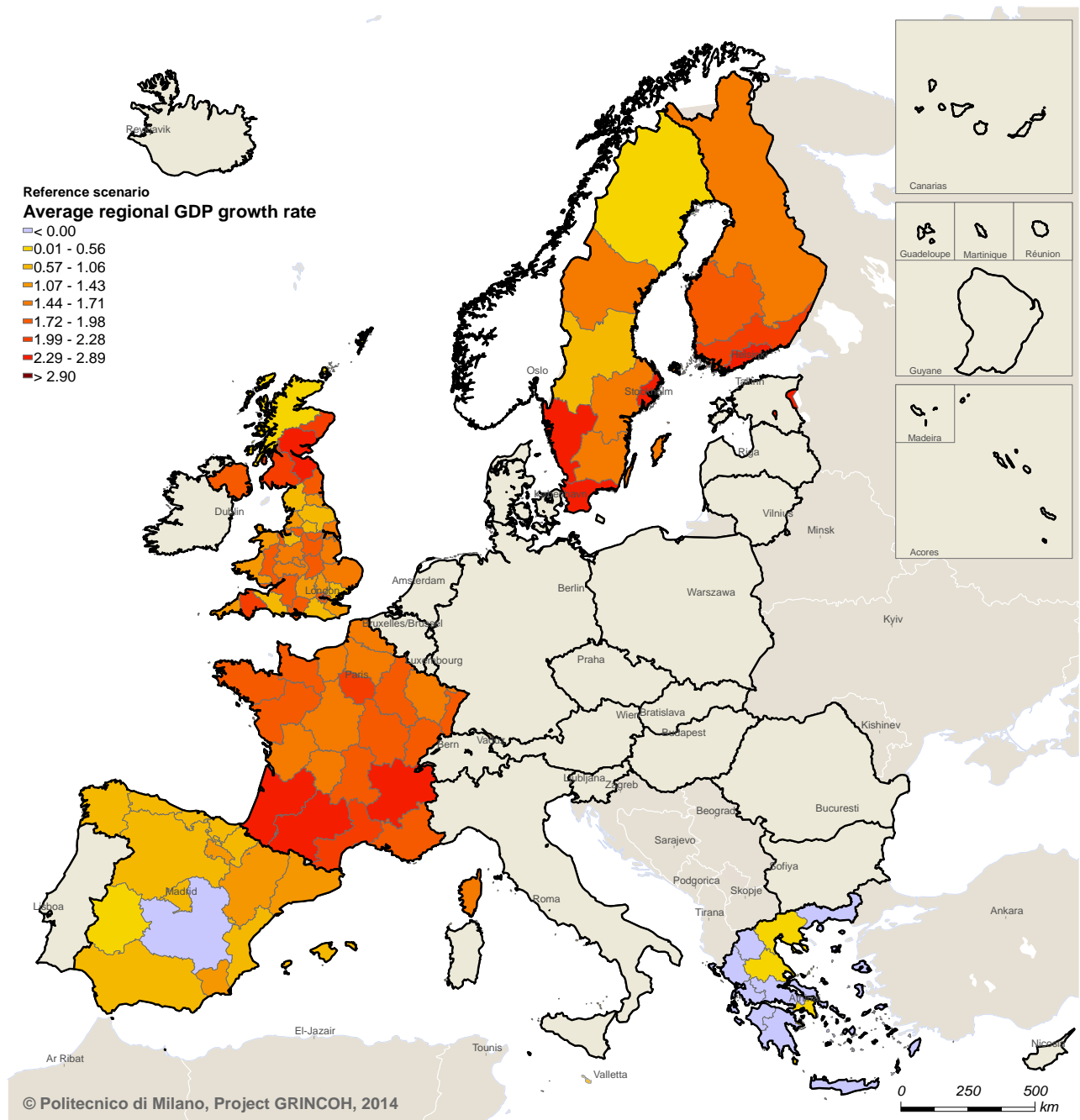


Figure 7. Average regional GDP growth rate 2012-2030 for the reference scenario.

Source: Authors' elaborations

Given the nature of the assumptions, described in Section 3, related to the possible bifurcations Europe may face as a result of the crisis-induced changes, some of these findings follow straightforward; however, unexpected results also come after the simulation exercise.

4.1.2. Results for alternative “response to the crisis” scenarios

Place-based competitiveness scenario results

Table 3 displays results also for the two scenarios built on alternative assumptions on the responses to the crisis with respect to the reference scenario.

In aggregate terms, the regional cohesion scenario turns out to be the most expansive scenario among the three. GDP grows faster than the reference by half percentage point (over the 18 years period of simulation, this implies that by 2030 aggregate GDP in the first alternative scenario would be 13 per cent higher than in the reference case).

In the place-based competitiveness scenario, growth takes place mostly because of fast productivity growth (Table 3). Employment grows in fact more than in the reference case, but less than GDP, suggesting that the productivity-led growth phenomenon is even stronger than in the reference scenario. In the same vein, the regional cohesion scenario presents a rather balanced growth of employment, with a slight advantage for manufacturing employment in the EU15, and a relative faster growth for service employment in CEECs, with respect to the reference scenario. A scenario where all territorial excellences are exploited seems to give the expected positive effects.

Regionalised growth forecasts provide further evidence about the spatial distribution of these results. Figure 8 maps average GDP growth rates in the political and spatial cohesion scenario case. The map (represented with the same colour code as Figure 7, but again, as in the case of Table 3, as a difference w.r.t. the reference scenario) clearly shows a concentration of growth differentials in EU15 regions. Countries that would benefit the most from such a scenario, favouring areas hosting second-rank cities, include most importantly France, Spain, and Greece. In Greece, in particular, all regions that in the reference scenario would achieve negative growth rates, grow (or lose less) than in the reference. Although this scenario would be no panacea, it does suggest that policies aiming at a spatially more balanced growth pattern would be beneficial not only for spatial disparities, but also for overall economic performance. Besides, a one-way concentration of economic resources does not necessarily mean that more efficient outcomes will be obtained.

In CEECs, the effects of a less concentrated scenario are evident; regions that do not host the capital cities show a higher performance than in the reference. Interestingly even if there is a concentration of resources in non-capital regions, also the latter enjoy more expansionary effects with respect to the reference scenario, regaining efficiency thanks to a decrease in the costs of concentration.

Political and spatial cohesion scenario results

The political and spatial cohesion scenario presents a rather different picture. As shown in Table 3, the growth of both GDP and manufacturing employment are lower than in the reference case. Because of the relevant public investment in health and social services, this scenario displays a higher rate of growth of service employment with respect to the reference scenario. Jointly analysed, these findings suggest that the political and spatial cohesion scenario is characterised by lower productivity growth with respect to both the reference and the place-based competitiveness scenario; the political and spatial cohesion scenario depicts, in fact, the possible future attempt to minimise the social costs associated to the crisis, to the partial expense of competitiveness and slowdown of productivity growth.

The spatial distribution of GDP growth rates generated within this scenario (Figure 10) expectedly presents a very different picture with respect to the reference and place-based competitiveness cases. Darker colours, indicating regions where GDP growth rates are higher than in the reference case, can mostly be found in peripheral areas (regions in CEECs on the Eastern borders of the EU, as in Poland, Romania, and Bulgaria), in rural Scandinavia (both in Finland and in Sweden), in lagging regions of Southern Europe (Spain, France, and Italy). Clearly, areas that are competitive now benefit less, while a significantly more equally distributed growth process w.r.t. the reference case seems to emerge. A legitimate question that follows is whether the political and spatial cohesion is the one achieving higher cohesion, lowering regional disparities as would be expected.

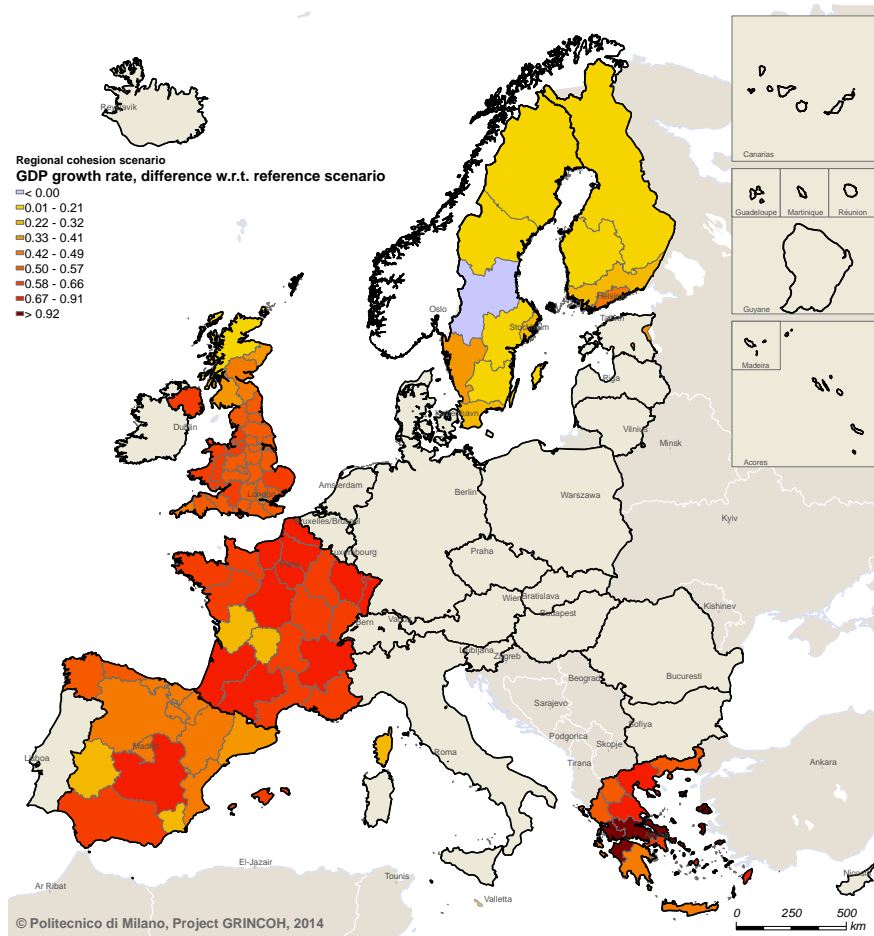


Figure 8. Average regional GDP growth rate 2012-2030 for the place-based competitiveness scenario (difference w.r.t. reference scenario)

Source: Authors' elaborations

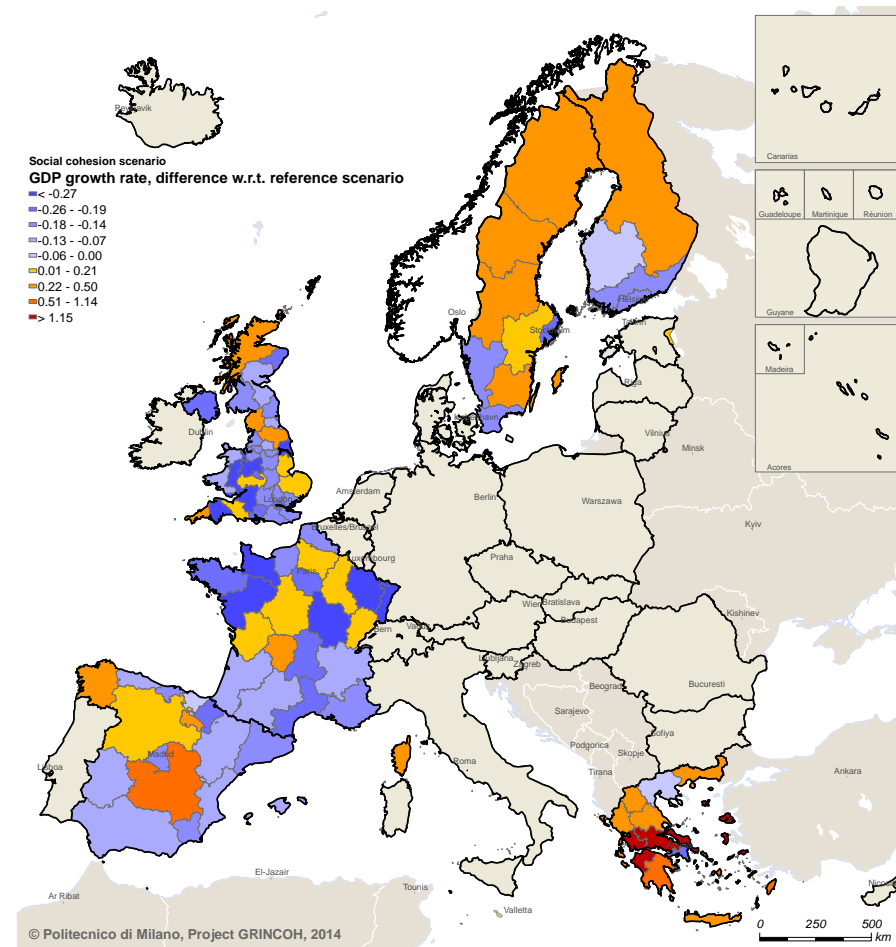


Figure 9. Average regional GDP growth rate 2012-2030 for the political and spatial cohesion scenario (difference w.r.t. reference scenario)

Source: Authors' elaborations

4.2 Evolution of regional disparities

A sound way to further inspect the spatial equity associated to the three scenarios is via the analysis of the Theil index. Figure 10 (a. through c.) shows the evolution over time of this index, both in its general form (Figure 10.a) as well as in its two main components: Figure 10.b shows the evolution of the between countries Theil index, Figure 10.c the change of the within country component.

This type of analysis is crucial for assessing the impacts of the presently ongoing crisis on regional disparities in the EU. In fact, one of the main goals of the European Union being the reduction of spatial disparities (European Parliament, 2007; EC, 1999), the evolution of spatial disparities represents a source of major concern; a situation that, before the crisis, was improving thanks to Eastern country decisive convergence trends towards Western European levels. The structural trends, summarised in Section 2, emerging because of the crisis point to a generalised concentration of resources that might bound to give a halt to the previous process of convergence.

In fact, Figure 10.a shows that indeed overall Theil indices confirm this expectation, with a rise in all three scenarios. This increase turns out to be faster for the reference case, based on an extrapolation of both long-run patterns of evolution dating to the period before the crisis, as well as on the structural trends recently emerging because of the economic downturn. Interestingly, the reference scenario is also based on assuming no major deviation in policymaking style; in other words, it is based on the hypothesis that the process of concentration of economic resources that can be already verified in the recent data will continue along the same tracks. In the case of the other two scenarios, instead, policies and strategies are expected to change, which results into a containment of the worsening of spatial disparities (Figure 10.a).

Strikingly, in the place-based competitiveness, the convergence trend is higher than in the political and spatial cohesion scenario. This provides further evidence to those suggesting that development policies based on territorial excellence generate highest aggregate effects and keep the economic and social costs of an unbalanced development process under control (OECD, 2001, ch. 1 and 6; Camagni, 2001; Camagni and Capello, 2014).

The result of the decrease of general disparities in the place-based competitiveness scenario is the result of the strong decrease in disparities among countries, only partially limited by an increase in intra-country disparities (Figures 10.b and 10.c).

For what concerns the political and spatial cohesion scenario, it displays the lowest intra-national disparities, as it was reasonably expected. However, the decrease in international disparities is so limited that the final effect is of a general increase of total disparities, just a little bit lower with respect to the reference case.

The combination of these findings suggests that overall disparities have been growing in the last few years, and will continue growing in the absence of a major change in the style of policymaking, mostly because of a rise in within country disparities. This statement is linked to the process of convergence of CEECs, which will likely continue for the years to come, as also testified by the trends discussed in Section 2, and that is rapidly reducing the differences between EU15 and New Members.

Figure 5. Theil indices for the reference and alternative scenarios, 2012-2030

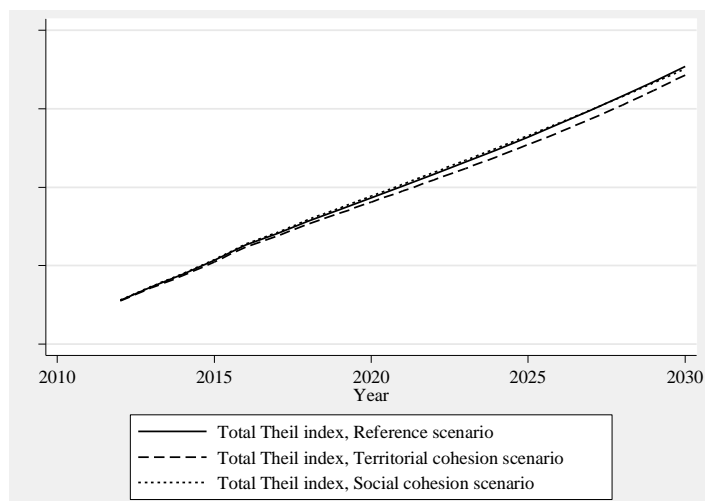


Figure 10.a. Total Theil indices for the reference and alternative scenarios, 2012-2030

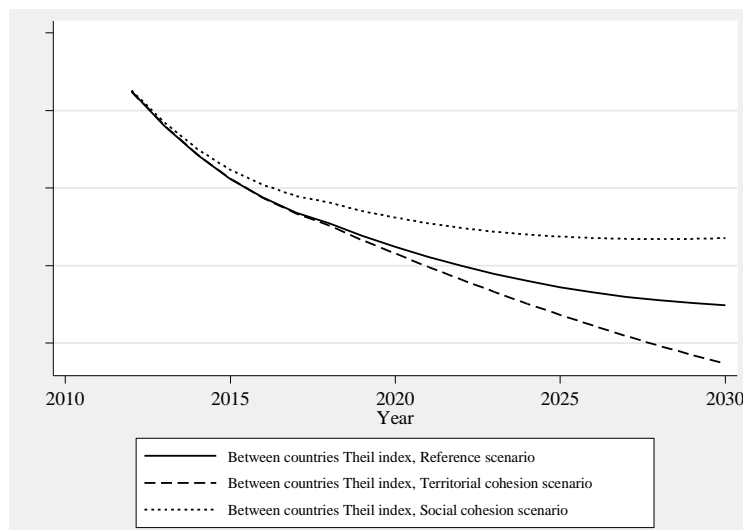


Figure 10.b. Between countries Theil indices for the reference and alternative scenarios, 2012-2030

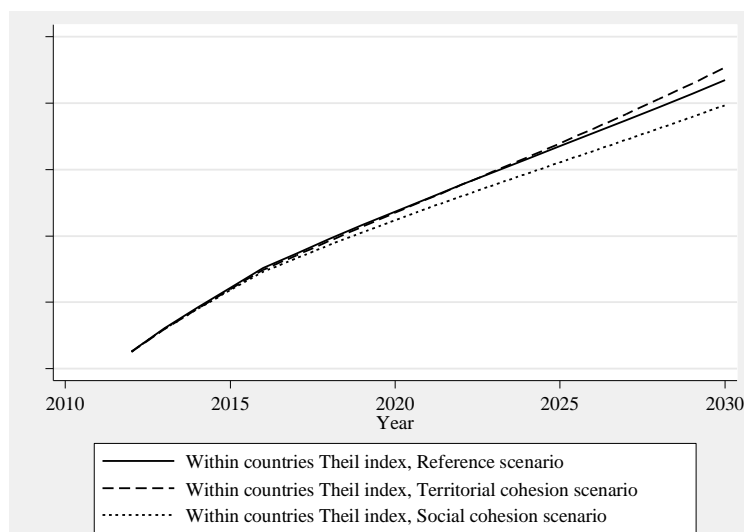


Figure 10.c. Within countries Theil indices for the reference and alternative scenarios, 2012-2030

Source: Authors' elaborations

In this respect, the place-based competitiveness scenario, based on the assumption of a more balanced distribution of economic resources across areas of first and second rank w.r.t. the reference case, is particularly beneficial for the increased resources attributed to second-rank cities in CEECs, which have so far been relatively neglected in a concentrated model of development. The political and spatial cohesion scenario, as also suggested by Figure 10, presents instead a limited growth of within countries disparities, because of the policy aim on which it is based, i.e. a more balanced distribution of economic resources, in this case also aiming at stimulating growth in rural and peripheral areas.

5. Conclusions

The after-crisis scenarios presented in the paper show remarkable differences in future European trajectories according to the response that countries will have to the crisis. The structural changes already present in the economy will affect as such the future of Europe and its territory, as the reference scenario shows. In aggregate terms, under the assumption that the crisis ends in two years (2016) and macroeconomic policies will not change, Europe will manage to grow, even if some regions will show still a very low regional growth rate, stressing the importance of wise policies to go out of the crisis.

When alternative after-crisis scenarios are built, based on alternative policy goals (a competitive and a cohesive goal), an interesting result emerges. The so called political and spatial cohesion scenario, with the aim to keep the social costs of the crisis under control, registers, as expected, the lowest aggregate GDP growth; however, results on the convergence trends display that this scenario is not the one where convergence is higher. The place-based competitiveness scenario, in which competitiveness is achieved through the exploitation of under-exploited territorial resources, on excellence present in second-rank areas, is able to achieve at the same time two important results: a lower increase in disparities, and a higher aggregate GDP growth.

This result is even more relevant for CEECs. The tendency of a concentration of resources in large cities and central areas, reinforced during the crisis period with the hope to get out of the crisis by investing on the champions, is something that has to be avoided, as it generates relevant disparities. However, also the opposite situation of investing in keeping the social costs of the crisis under control, does not seem to be the best reaction strategy. Also for CEECs, the capacity to invest in dispersed, un-exploited local excellence, seems to be the best after-crisis scenario for Europe and its territory, (re-)gaining economic growth and enhancing regional convergence trends.

These results suggest the importance of cohesion policies in favor of local excellences and reinforcing territorial specificities, rather than urging generalized social support.

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Technical Appendix 1: Quantitative assumptions

In this Appendix, all major assumptions used to build the reference scenario as well as the two alternative scenarios described in Section 3 are described.

Figure A.1 plots the values for the various groups of countries used in the simulation of the three scenarios (EU15 and CEECs, both divided into virtuous and vicious countries, i.e. those countries experiencing a public debt or not during the crisis years).

Figure A1 Main national sub-model assumptions

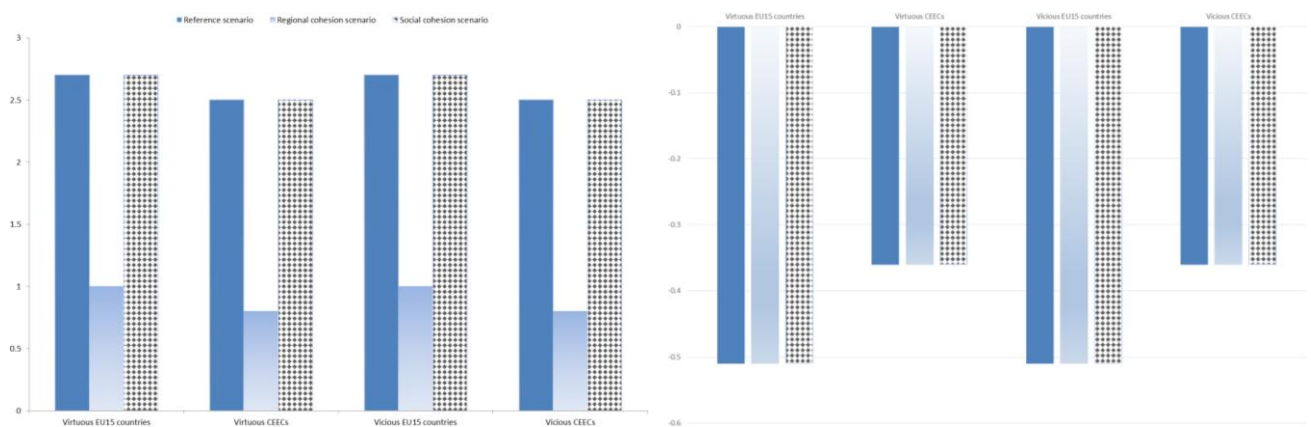


Figure A1.a Real interest rate

Figure A1.b ULC

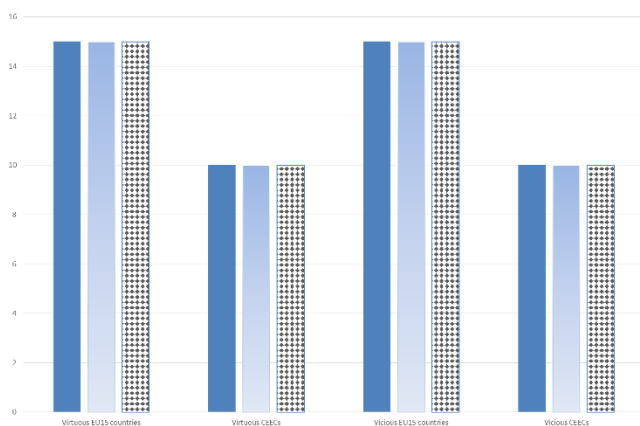


Figure A1.c FDI

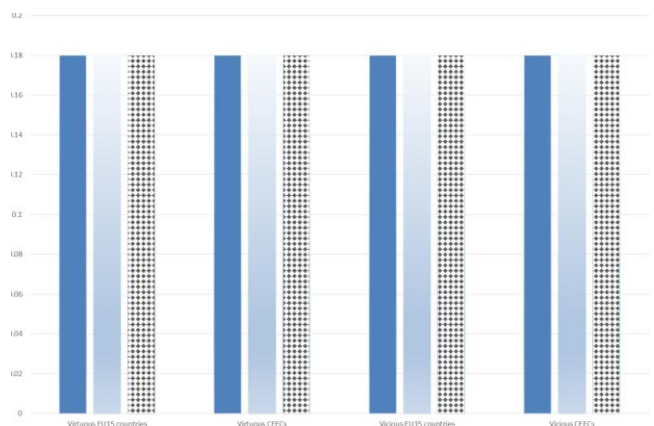


Figure A1.d Exchange rate €/USD

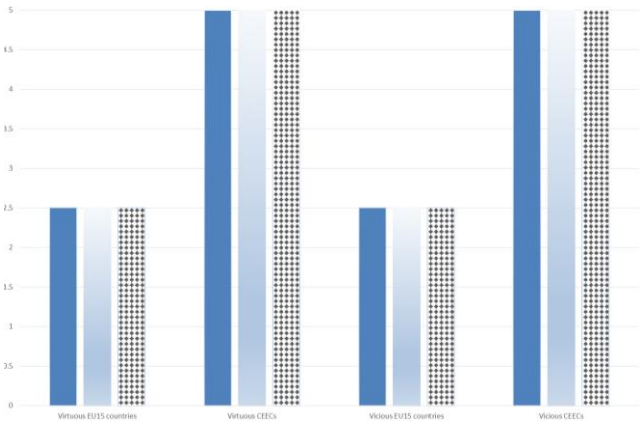


Figure A1.e Inflation rate

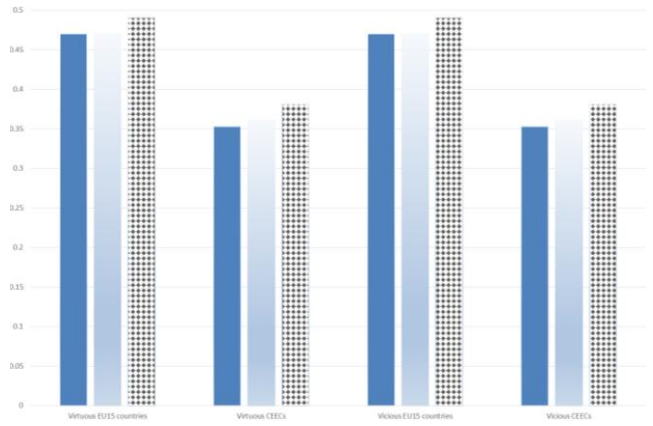


Figure A1.f Tax rate

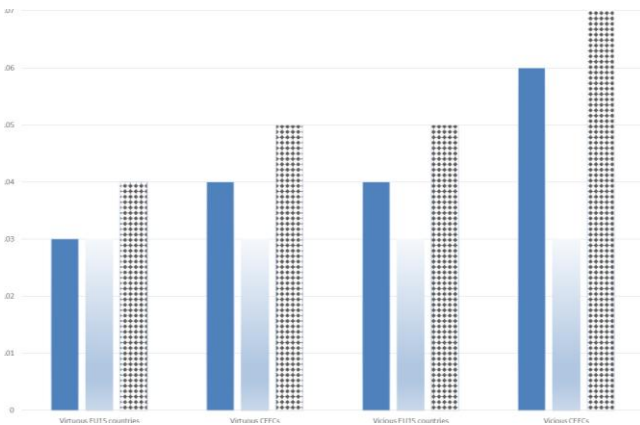


Figure A1.g Interest rate on public debt

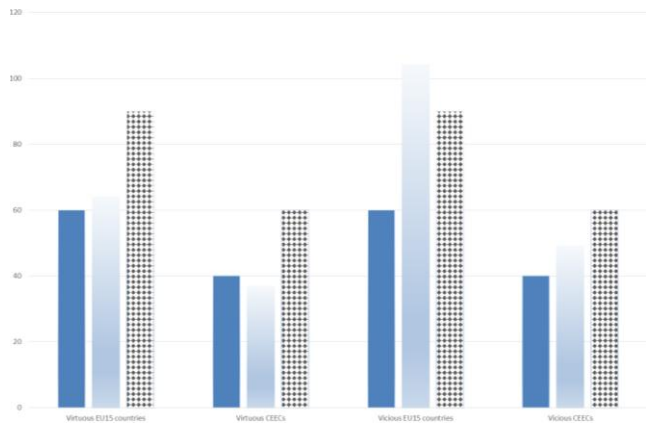


Figure A1.h Debt/GDP

Figure A.2. Main assumptions in the regional MASST3 sub-model

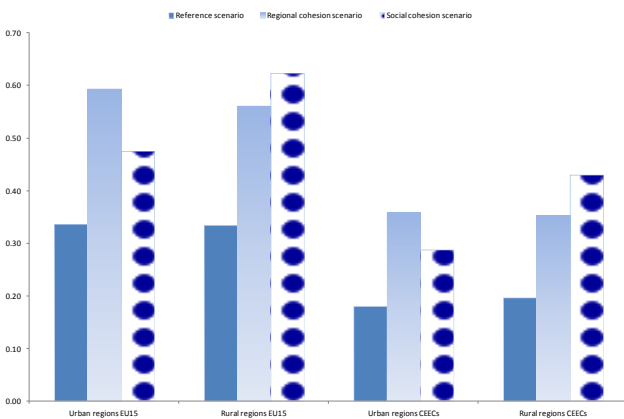


Figure A2.a Trust

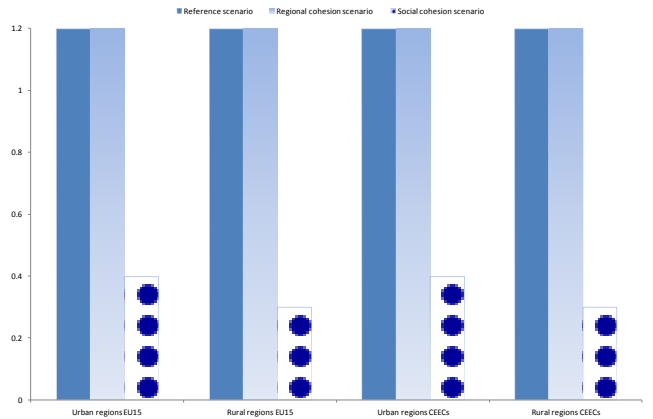


Figure A2.b Energy consumption

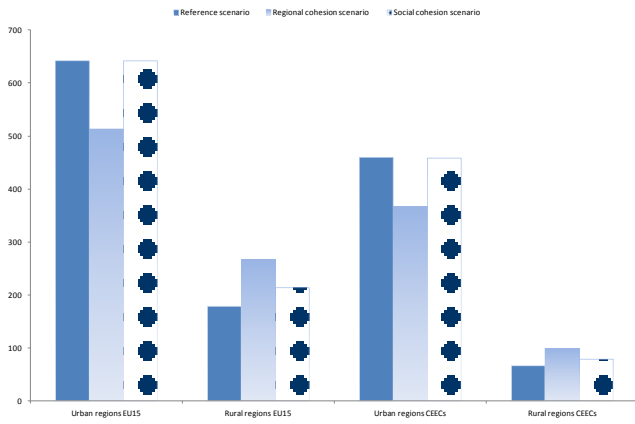


Figure A2.c FDI

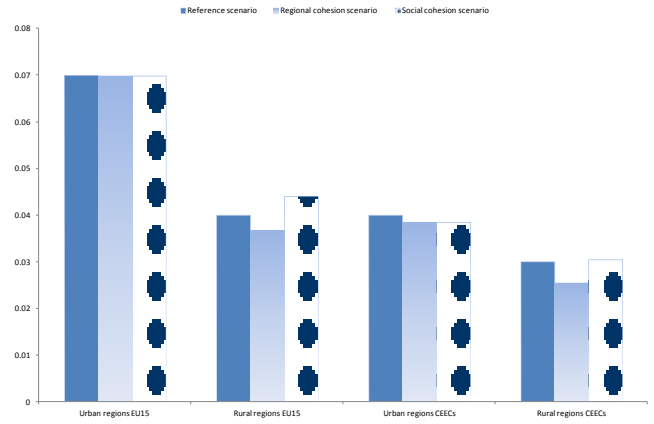


Figure A2.d Private managers

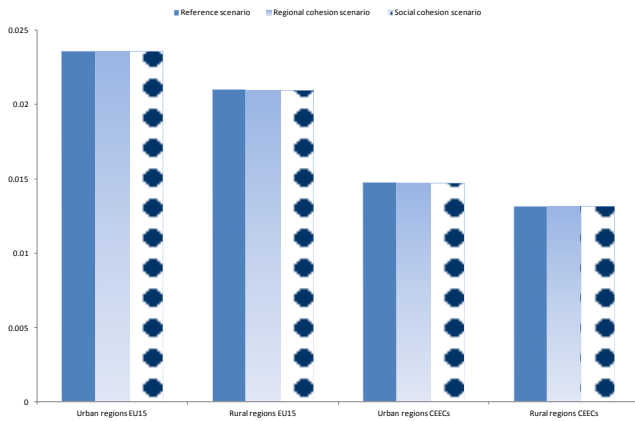


Figure A2.e Blue collars

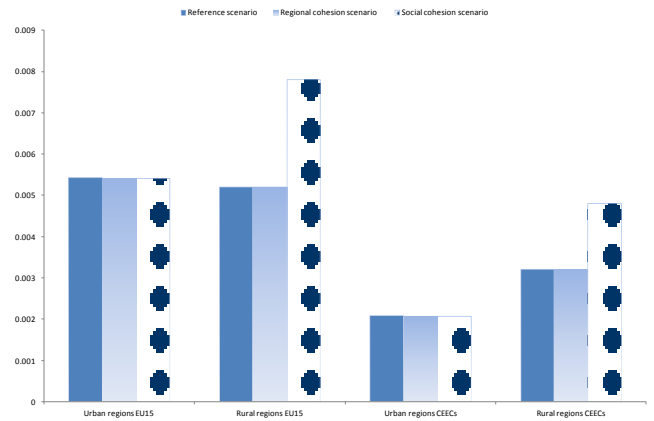


Figure A2.f Public managers

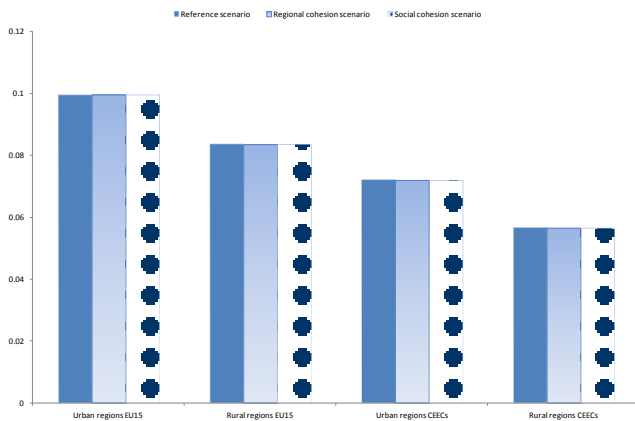


Figure A2.g All managers

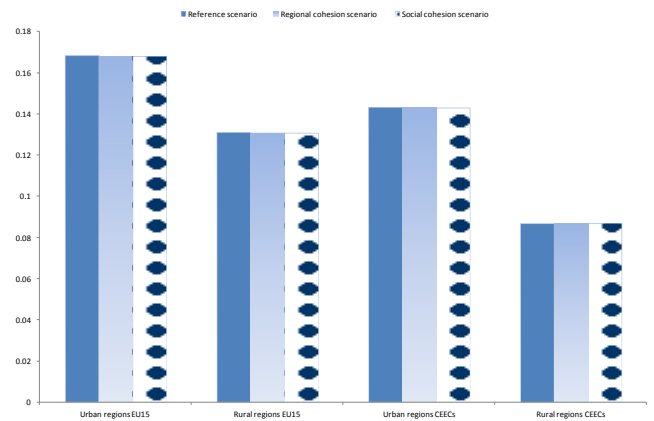


Figure A2.h Human capital

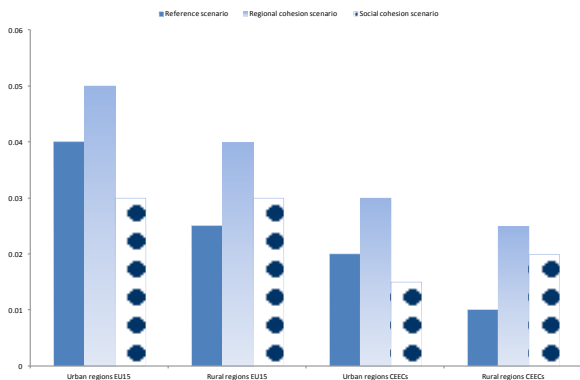


Figure A2.h R&D

Technical Appendix 2: The MASST model

The MASST (MAcroeconomic, Sectoral, Social and Territorial) model is a macro-econometric regional growth forecasting model developed by the authors since 2005. The MASST model has been conceptually defined for the purpose of investigating regional growth and its determinants, on the basis of different assumptions on the driving forces of world, European, national and regional growth. The MASST model is structured as follows. It comprises two blocks of equations, one explaining national growth, and the other explaining regional differential growth. The sum of the two provides, by definition, total or absolute regional growth. This structure differs substantially from the existing econometric regional growth models, which in general move towards a direct interpretation of absolute regional growth either by replicating national macroeconomic models, or by constructing complex systems of equations for each region linking the region to both the national aggregate economy and to the other regional economies through input-output technical coefficients.

The advantage of the MASST model's structure is that a strong interconnection between regional and national growth is established: national macroeconomic trends and policies generate an effect on both national and regional growth, but at the same time regional structures and policies affect both regional and national performance in an interactive national-regional manner. This structure allows account to be taken of complex vertical feedbacks between the regional and national economy without imposing a complex system of interlinked equations.

The MASST model can produce: i) GDP growth rates (and levels); ii) manufacturing, service and total employment growth rates (and levels); iii) population growth rates (and levels), for all EU27. All outputs can be delivered for different spatial breakdowns: at the EU aggregate level; by country; by groups of countries decided by the modelers; by NUTS2 of all 27 countries; by groups of regions decided by the modelers.