The Interrelationship Between STI Policies and Inequality in the Lisbon Process

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Abstract:

The primary aim of the Lisbon Strategy, set out by the European Council in Lisbon in March 2000, is to make Europe "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion." Two pillars support the Lisbon Strategy: (1) An economic pillar aimed at creating a competitive, dynamic, knowledge-based economy, with particular emphasis placed on boosting research and development (R&D) and information technologies; and (2) A social pillar designed to modernise the European social model by investing in human resources (education and training), designing appropriate labour market policies and promote social inclusion. But emphasis is generally placed on the economic pillar, with only passing reference to the social pillar. This paper will explore some of the successes and failures of the Lisbon Strategy in reducing inequality and increasing social cohesion over the past decade, particularly given the accession of the New Member States in 2004 and 2007.

1. Introduction

The primary aim of the Lisbon Strategy, set out by the European Council in Lisbon in March 2000, is to make Europe "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion." Two pillars support the Lisbon Strategy: (1) An economic pillar aimed at creating a competitive, dynamic, knowledge-based economy, with particular emphasis placed on boosting research and development (R&D) and information technologies; and (2) A social pillar designed to modernise the European social model by investing in human resources (education and training), designing appropriate labour market policies and promote social inclusion. These include, inter alia, adding emphasis on the environment (Göteborg European Council meeting in June 2001), the Luxembourg process for employment, the Cardiff process for the functioning of markets (goods, services and capital), the Cologne process on macroeconomic dialogue, the Bologna process for create a European higher education area, and the Barcelona process on investment in R&D activity. But emphasis is generally placed on the economic pillar, with only passing reference to the social pillar. This paper will explore some of the successes and failures of the Lisbon Strategy in reducing inequality and increasing social cohesion over the past decade, particularly given the accession of 10 New Member States in 2004 and two more in 2007.

Renewed focus on the Lisbon Strategy placed greater emphasis on knowledge and innovation, both of which are seen as engines of long-term economic growth. Two headline targets were adopted to be attained by 2010: (1) spending at least 3 per cent of total EU GDP on R&D activities; and (2) increase the overall employment rate in the European Union to 70 per cent. Although some progress has been made over the past decade, Europe will not achieve the twin objectives by 2010. Employment has risen by almost 4 percentage points by the end of 2008, but it remains more than 4 percentage points below the goal of achieving a 70 per cent participation rate. Economic growth was well below the target of 3 per cent from 2000 to 2008, and Eurostat forecasts that the EU economies will contract by an average of 4 per cent in 2009. Still, there has been virtually no progress on social cohesion; income inequality has not decreased over the decade (Gros and Roth, 2008).

Until recently the course of action taken in the Lisbon Strategy by and large neglects the social dimension. Only a few National Reform Programmes identify social cohesion objectives as a key concern. The Strategy initially called for "modernising the European social model, investing in people and combating social exclusion" and to accomplish this objective it proposed a new method of governance based on benchmarking and identifying 'best practices'. Over the decade, the new Open Method of Coordination led to the naming of several specific objectives, such as the Barcelona target of increasing R&D spending to 3 per cent of GDP. Through peer pressure and the system of Integrated Guidelines, countries were encouraged to develop individual action plans to improve the governance of their science, technology and innovation (STI) systems. But it is very hard to find any reference to the social cohesion objective in these action plans.

The failure to achieve the two headline goals appears to focus more attention on social cohesion. An amended Treaty of Lisbon, signed on 13 December 2007, promotes social justice and protection over social exclusion and discrimination, and encourages greater

economic, social and territorial cohesion. New emphasis is being placed on the creation of more and better employment opportunities, improving human capital through education and labour market policies. While it is not clear how these different goals and target will relate to one another in the post-2010 Lisbon process, but it appears that real opportunities, or functionings as Sen (1987) called them, will dominate the discussion and rekindle the debate on distributive justice.

One issue that should be explored in the run-up to the post-2010 Lisbon Agenda is how the Lisbon Process affected inequality within the individual countries and across Europe. This was of the main issues of the EU 6th Framework project 'Researching Inequality through Science and Technology' (ResIST). Very little is known about the processes that contribute to mitigate inequalities through the STI plans being proposed across Europe. This paper aims to improving our understanding of this relationship. It begins by examining the interrelationship between STI policies, social cohesion and inequality from an economic and philosophical viewpoint. Section 3 look more closely at the relationship between inequality and growth from the viewpoint of convergence analysis. This section also presents some descriptive statistics that shows the extent to which convergence is taking place. Section 4 covers the issue of governance of STI policies, and the rise of a new policy agenda that coincides with the Lisbon Process. A final section summarizes some of the issues in the context of the ResIST project.

2. Why is the interrelationship between STI policies and inequality important?

Social cohesion is a key term used by the European policy community to deal with social issues. The origin of the term is often attributed to Émile Durkheim (1893) who used it to describe how heterogeneous individuals, with diverse values, customs and capabilities, become interdependent through the division of labour. Traditional societies are held together by 'mechanical solidarity', a form of social cohesion based on similar values and customs, whereas modern societies with a complex division of labour are held together by 'organic solidarity', a form of social cohesion that depends on diverse values and customs. The important idea behind this concept, which is incorporated in some documents at the European level, is that social cohesion does not depend on the similarity of its members (in this case nations, regions and individuals), but rather their differences.

The interesting aspect of Durkheim's definition is that it can be traced back to the economics of Adam Smith. Adam Smith (1776) began the Wealth of Nations by establishing that specialization was the main source of productivity growth and wealth accumulation. Using the example was the variety of tasks in a pin factory, Smith demonstrated that an increasing division of labour could increase of dexterity of workers, save time lost in switching between different tasks, and lead to the invention of machines and organization that facilitate work. Driven by the extent of the market (demand), specialisation divided productive operations into their constituent elements, which both saved time in changing between different tasks and facilitated the introduction of new equipment and machines (Knell, 2008). Loasby (1999) describes this idea of the division of labour in modern terms as one that encourages the development of differentiated knowledge, and hence a set of distinctive and heterogeneous capabilities. As the division of labour becomes increasingly sophisticated, a progressive cumulative process develops that encourages the application of science and technology to the production of new products and processes.

Plato's *Republic* introduced the idea of the division of labour as the main source of inequality. For Plato it justifies the need for governance, but for Smith it became the dynamic engine of economic progress. This way of thinking recognized that specialization is as much a cause as it is a consequence of productivity growth, and would imply in Plato's world that inequality is as much a consequence of the division of labour as its cause. To avoid some of the harmful consequences of inequality, Smith advances the idea of empathy in the *Theory of Moral Sentiments* and the idea of self-interest in the *Wealth of Nations* as ways to bring about social cohesion. But as he grew older, he became increasingly sceptical of these beliefs, and even suggested that the division of labour may lead to the 'mental mutilation' of workers. The great tension and turmoil created by the industrial revolution written about by Dickens and Marx, who introduced a distinction between the technical and social division of labour to emphasize the importance of alienation and exploitation in the workplace. Durkheim saw the tension as an erosion of standards, values and beliefs, and believed that social organizations, such as 'occupation' groups, could replace the normative functions of society.

Schumpeter's ideas about competition, innovation and creative destruction provide a good way to illustrate the importance of inequality and how it relates to science, technology and innovation. Competition was seen by Schumpeter as a rivalry between independent and heterogeneous economic agents, all pursuing their own self-interest, but resulting in the common good of society as a whole. His theory is essentially neo-classical in that equilibrium prices and distribution are determined by the scarcity of resources and were the outcome of the competitive process. But Schumpeter, like Marx, also recognized that competition for market share (qualitative competition) was different from the competition for finance capital (price competition), which tended to generate differential profit rates and other sorts of inequalities. Innovation was the main driver of this kind of competition, which Schumpeter (1912) defined as the introduction of new goods, new methods of production, new markets, new sources of supply, and new forms of organization. Schumpeter (1934: 82) coined the term 'creative destruction' to capture the idea that persistent innovation leads to 'industrial mutation', which "incessantly revolutionizes the economic structure from within, incessantly destroying the old one," It is through the competitive dynamic and the tendency toward specialization that both equalities and inequalities are generated.

Economic inequality appears in the very core of economic theory and comprises all disparities in the distribution of economic assets and income. It generally refers to equality of outcome, and is related to the idea of equality of opportunity. Technology is one of the data of both the classical and neoclassical theories of value and distribution, and when this data changes because of the application of science or the introduction of an innovation, disparities will result. Differential profits and wage inequalities are but one example, but a larger one is the growing dispersion of income across countries in the global economy. While it is not clear whether the process of creative destruction increases inequality in the long run, there are clear examples that it increases in the short run. For example the introduction of the automobile in the early 1900s or personal computer in the 1980s substantially increased inequality in society, but gradual decline in prices made them widely available over time. This story is at the heart of the theoretical debate on the possibility of technological unemployment, which can result from the introduction of labour-saving machinery. While Ricardo (1821), a classical economist, saw this unemployment as persistent, Schumpeter (1939) took the neoclassical view that the unemployment was frictional and would adapt through the forces of (price) competition.

Sen (1992) asserts that the heterogeneity of people, and their individual belief systems, necessarily leads to a plurality of ways to evaluate inequality. Every individual has a belief

system, much in the same way that different belief systems dominate philosophical and policy debates. Sen (1987, 1992) focuses attention on the real opportunities available, or functionings, and the outcome, or achieved well-being. Achieved well-being itself depends on the actual *capability* to function, which provides information about the various functionings. From the point of view of science and technology, these functionings can be vary broad, such as making education and other forms of training available, or very specific, such as providing support for the development of biotechnology. An evaluation of inequality based on Sen's 'capability approach' would therefore focus on what a person does (realized functionings), or what a person is substantively free to do (real opportunities). In the context of the division of labour, equality improves when individuals are provided with real opportunities (through skill development) to move between different tasks, and it tends to generate inequality as people become alienated and loose their freedom to move between different tasks. From this point of view, inequality becomes a complex and multidimensional issue.

Different belief systems underlie different philosophical arguments for distributive justice (Sen, 1992). Sen follows most closely to the point of view of Rawls, who builds a theory of distributive justice on a principled reconciliation of liberty and equality. By contrast, the libertarian or entitlement approach envisioned by Nozick (1974) advocates a minimalist state, whose primary task is the enforcement of political and economic rights within the context of a free market. Following Hayek (1960), it justifies redistribution of goods and services only on condition of consent. This belief system, as Cozzens (2007) points out, would advocate against STI policies that involve financial support, and instead focus on the enforcement and protection of intellectual property rights. Parallels are found in the way economists and policymakers view the relationship between growth and inequality. Some adopt the Keynesian principle of effective demand, which states that aggregate spending explains levels of output and employment or 'demand creates its own supply', and follow neoclassical principles, which imply that 'supply creates its own demand'. In the first instance, a redistribution of income to the less wealthy would increase capital accumulation through increased demand (consumption), and in the second instance it would decrease capital accumulation, as the redistribution of income would reduce savings. In economic theory, capital accumulation is a prerequisite for the adoption of new technology, and hence is important for science and technology policy. Finally, there are belief systems that view science as the driving force behind development of new technology, some that view STI policies from a systemic point of view (innovation systems), and still others that view innovation as a nonlinear, multifaceted activity that involves many different actors.

The Lisbon Strategy mainly focused on economic growth and the creation of new employment opportunities. Large differences in income per capita and output per worker within Europe helped bring about a renewed focus within the Lisbon Process. Four of the original 15 Member States, Greece, Spain, Portugal and Ireland, all of which were below 90 per cent of the EU average gross national product per head in 1990s, were put into a group designated the 'cohesion countries', which meant they could obtain European Union funding to help reduce economic and social disparities. In 2003 Ireland was taken off the list because it reached the EU average and in 2004 all new Member States (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia) qualified for the Cohesion Fund. The accession of 12 new countries into the membership and the revival of the Lisbon Strategy became a focus social cohesion into an economic cohesion where countries and regions were to catch-up with the European Union average.

3. Going for growth and convergence

A fundamental implication of the Lisbon strategy is to reduce the unequal distribution of income wealth across both countries and regions in Europe. The relationship between inequality and growth is a central issue within the theory of economic growth. Neoclassical growth theory predicts that there should be *convergence* between rich economies and poor ones, whereas endogenous and Schumpeterian growth models predict that convergence will only happen under certain conditions. Empirical studies have shown that falling behind is a more frequent phenomenon than catching up, yet there are examples, such as in the European Union, where convergence and catching-up are observed. Convergence, however, does not necessarily imply catching-up: catching-up refers to the possibility of closing the technology gap by increasing the productivity level of the backward country, whereas convergence refers to a reduction of the dispersion (inequality) in the relative productivity levels of a cross-section of countries over time (Barro and Sala-i-Martin, 2004). Convergence happens in neoclassical theory because of the assumption of diminishing returns to capital, which can be offset by introducing R&D activity, human capital, and other science, technology and innovation variables (Kurz and Salvadori, 1998). The lack of evidence of catching-up and convergence, however, stimulated the creation of a vast literature that focuses on testing the validity of alternative growth theories. Temple (1999) suggests that the many different interpretations of convergence may explain why there is no clear link between theoretical models and economic policy guidelines.

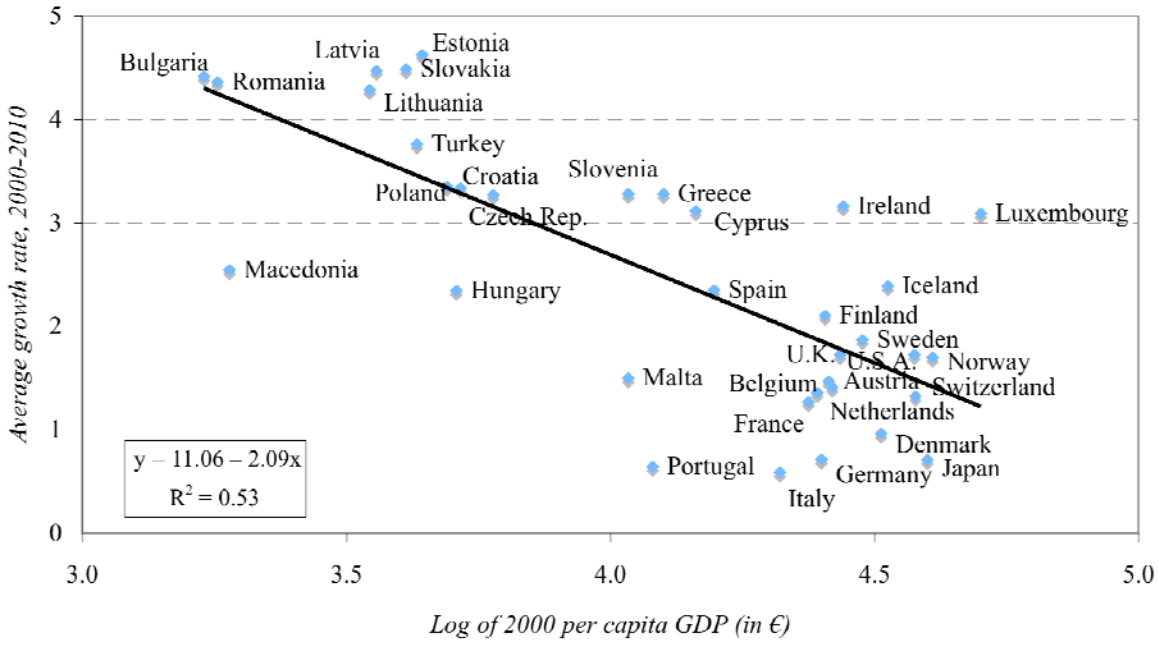
Two concepts of convergence appear in the empirical growth literature: ß-convergence and σ-convergence. When relatively poor economies grow faster than rich ones and catch up in terms of per-capita income, then there is ß-convergence and when the dispersion of income, measured by the standard deviation of per capita income across a group of economies decreases over time, then there is σ-convergence. Most convergence analysis measures absolute beta-convergence, which occurs when relatively poor economies grow faster than rich ones and catch up in terms of per-capita income (Barro and Sala-i-Martin, 1992). Studies of ß-convergence most often show that the average growth rate of GDP per capita has little relation with the initial level of real capita GDP, and when it does, it shows that most countries tend to fall behind.

Neoclassical growth theory predicts ß-convergence when technology is a freely available public good and that every economy has the same preferences and saving rate. Convergence occurs in this context because economies with a relatively lower quantity of capital per effective worker (such as the new Member States) should experience a higher growth rate of the ratio. If the production function is of the Cobb-Douglas variety, the growth of national income will be also unambiguously higher. By relaxing the assumption that all economies have the same preferences and technology, convergence becomes conditional on whether the relatively backward country is proportionately further away from its steady-state position. The hypothesis of σ-convergence depends on the two countries having different saving rates, with each country converging asymptotically to its own steady-state value at a speed that relates inversely to the distance from that steady state. Models based on this hypothesis predict that countries should have different levels of income per person if the saving rate is different between countries.

Baumol (1986) discovered that it is possible to reduce inequality within groups of countries, or clubs, as he described them. Since the European Union can be considered such a club, we might expect that the initially poorer countries to experience significantly higher per

capita growth rates. Figure 1 shows the convergence of European countries, conditional upon geographical proximity. This figure shows the relationship between the log of per capita GDP in 2000 and the growth rate of per capita GDP from 2000 to 2010. Eurostat forecasts were used for 2009 and 2010. The downward slope of the regression confirms that inequality is decreasing and that there is a ß-convergence in real per capita income across countries. In addition, the simple OLS regression indicates that the speed of convergence is about two per cent per year, which is often cited as a stylized fact. Table 1 provides an overview of labour productivity in the cohesion countries together with the New Member States relative to the original 15 Member States. Every European country shows progress in closing the productivity gap with the original 15 Member States, but it also appears that the EU-15 have fallen further behind the United States in the mid 2000s, which is often cited as a benchmark by the European Commission.

Figure 1. Convergence of GDP across Europe



Source: Own calculation based on Eurostat Statistical database

Table 1: The European productivity gap, 2000-2008

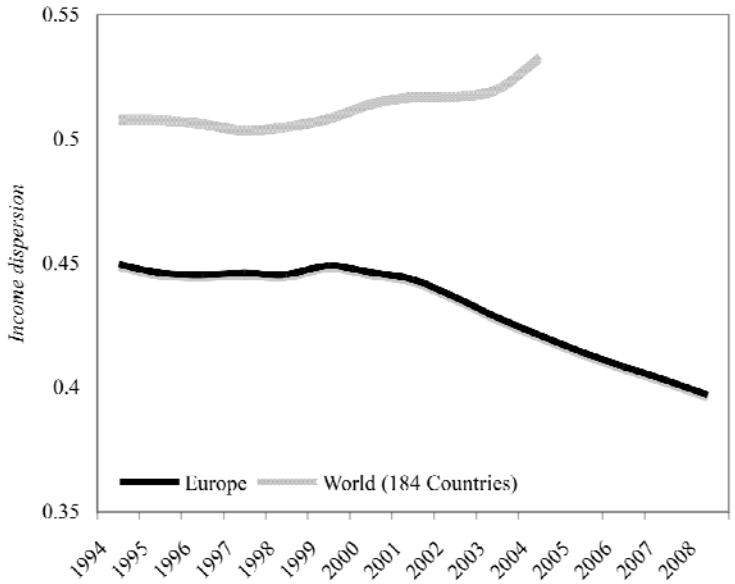
	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-15	100	100	100	100	100	100	100	100	100
U.S.A.	123	123	123	125	127	128	128	127	130
Bulgaria	27	28	29	30	30	30	31	32	33
Czech Rep.	55	56	56	60	61	62	63	65	67
Estonia	41	42	45	49	52	54	56	58	56
Cyprus	75	77	75	74	75	75	75	76	77
Latvia	35	37	38	40	41	43	45	49	46
Lithuania	38	42	43	47	48	49	51	54	56
Hungary	57	60	63	64	65	65	66	66	68
Malta	85	80	82	81	81	82	82	82	83
Poland	45	46	48	54	55	55	55	55	56
Portugal	61	60	61	61	61	63	64	65	65
Romania	..	..	26	28	31	32	36	40	43
Slovenia	67	68	69	71	74	75	76	77	78

Source: Own calculation based on Eurostat Statistical database

Barro and Sala-i-Martin (1992) make clear that ß-convergence is not a sufficient condition for σ-convergence. While β-convergence remains a primary focus of empirical growth models, σ-convergence is a better measure of inequality across countries and regions. In other words, catching-up may not necessarily coincide with a reduction in inequality. Figure 2 illustrates σ-convergence in terms of the variance between the group of countries in Europe and the rest of the world. The figure shows the cross-sectional standard deviation of the log of real per capita national income for the 27 Member States of the European Union from 1994 to 2006 and a cross-section standard deviation of the log of real per capita national income for over 200 countries represented in the World Bank database from 1994 to 2004. A downward sloping curve for Europe indicates that income inequality has declined within the region, whereas the upward sloping curve the world as a whole indicates increasing inequality for the world as a whole. This confirms that Europe is in a convergence club and is not the norm. Figure 3 shows the dispersion, or σ-convergence of GDP per capita, employment rate and human resources in science and technology (HRST) per capita for 270 regions in Europe from 2000 to 2007. This measure of dispersion continually fell for GDP per capita and HRST per capita, and it only increased the first two years for the employment rate. The most remarkable aspect of this figure is that inequality of HRST was reduced significantly during this period and to a larger extent than income and employment per capita.

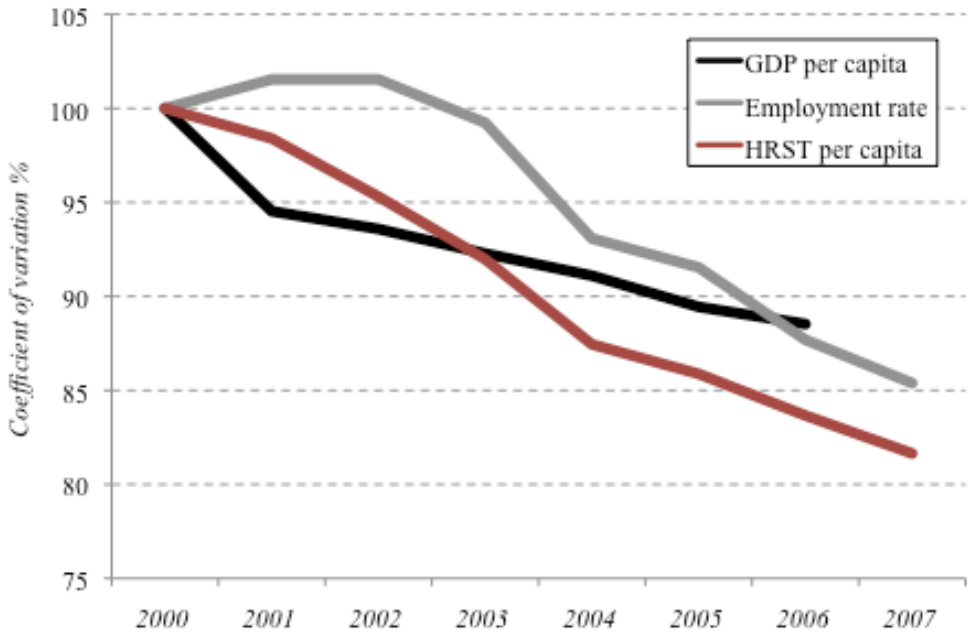
Endogenous growth models following the tradition of Romer (1990), Aghion and Howitt (1992) and Grossman and Helpman (1991) focus on how R&D activity and human capital affect growth and inequality. The appearance of these models sparked a flood of empirical studies that integrated science and technology, as well as other control and environmental variables into the model. Bernard and Jones (1996) stressed the importance of technology in growth empirics, and harkened back to historical approach espoused by Abramovitz (1986), who focused on the set of national characteristics and institutional arrangements that influence economic growth and equality, including the general level of education and technical competence, as well as the political influences on risk and uncertainty (social capability). Management studies also focus more on Richardson (1972) describes as the 'appropriate knowledge, experience and skills' needed by firms and organizations to introduce new products, processes and forms of organization.

Figure 2. The dispersion of national income across Europe and the World



Source: Own calculation based on World Bank and Eurostat Statistical database.

Figure 3: Dispersion of GDP per capita, Employment rate and Human Resources in S&T per capita in Europe, 2000-2007.



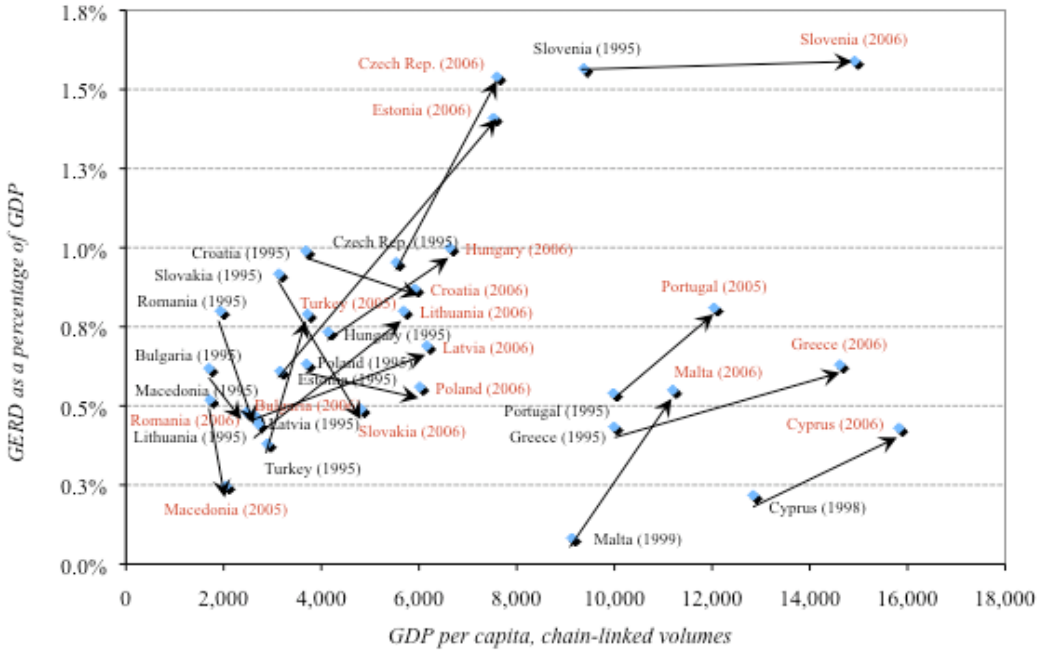
Source: Own calculation based on Eurostat Statistical database.

A particular issue that is important for the eastern European New Member States is that these countries have gone through massive systemic change since the collapse of central planning. Systemic differences in the way institutions affect incentives, and in consequence, the diffusion of new technologies, products and processes, explain some of the differences in growth rates. Hanson and Pavitt (1987) made the case that the institutions embedded in the Soviet system of innovation exacerbated the economic and technological inequalities between eastern and western Europe. Instead of catching up, the centrally planned economy fell further behind as there was little incentive to introduce new products, new processes and organizational innovation. The reason, Freeman (1995) points out, is that the Soviet innovation system committed a large share of R&D funds to the military and space without many technological spillovers to other industries. After an initial collapse of R&D activity in the early 1990s that greatly exceeded the collapse in GDP, many eastern European countries experienced some growth in the share of R&D from the middle of the 1990s. Figure 4 shows that most eastern European countries have increased both their share of GDP devoted to R&D activity and per capita GDP from 1995 to 2006, with the largest increases made by the Baltic countries, the Czech Republic. R&D activity as a percentage of GDP declined in five of the catching-up economies, all of which are in or near the Balkan region.

One issue that is not dealt with very well in convergence analysis, or in discussions about inequality in the Lisbon Process, is the importance of public spending on R&D for social and health reasons. Using data from Government budget appropriations (GBAORD) for the protection and improvement of human health (NBS04) and social structures and relationships (NBS08) shows that there remains extreme inequalities in the priorities that

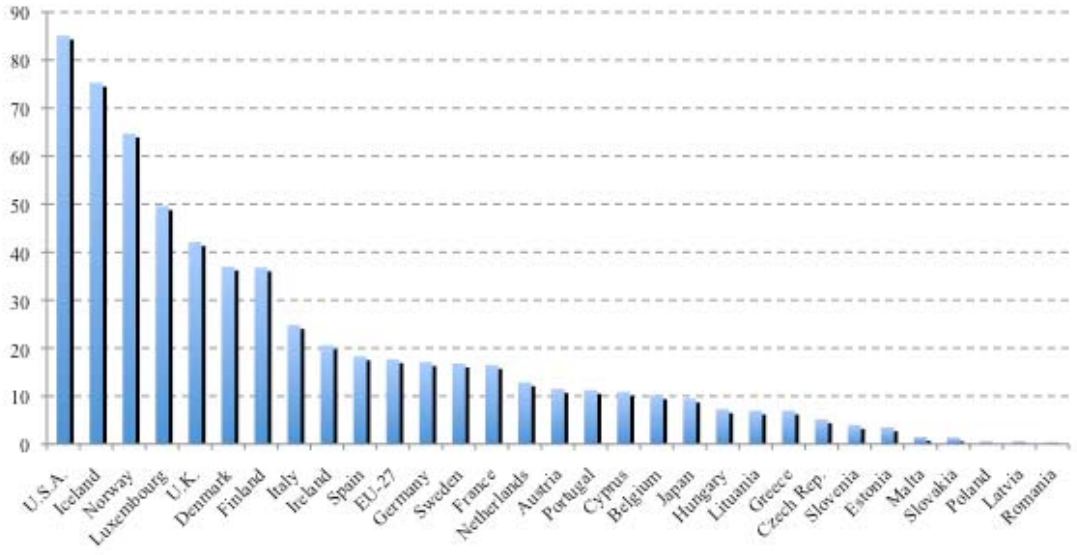
different governments have in supporting well-being as an achieved outcome. Figure 5 shows that the Nordic economies, plus the United States, United Kingdom and Luxembourg spend more per capita on social and health issues than the rest of Europe. The New Member States are at the bottom end of the figure. While the evidence suggests that economic inequalities have diminished over the past decade, the trend shown in this figure suggests that certain social inequalities that involve science and technology continue to persist in Europe.

Figure 4. Change in GERD as percentage of GDP relative to change in GDP per capita, 1995 and 2006.



Source: Own calculation based on Eurostat Statistical database.

Figure 5. Government budget appropriations for R&D per capita for Protection and improvement of human health (NBS04) and Social structures and relationships (NBS08), 2005



Source: Own calculation based on Eurostat Statistical database.

4. The Lisbon strategy and STI policy

How to achieve the goals set out in the Lisbon process resulted in a proposal that suggests to integrate innovation policy into other public policies such as education and training, environment, regional, industrial, health and social, etc. Earlier generations of innovation policy were more closely linked to science and technology as the source of innovation, though more recent policy agendas recognized complexities and nonlinearities in the innovation process. The new 'third generation' innovation policy recognizes that innovation also depends on organisational, social, economic, marketing and other knowledge. Lengrand (2002) proposed that innovation should be stimulated across any number of governmental or policy areas. Focus of innovation policy should be on how to achieve a more horizontal innovation policy through the open method of coordination, improve vertical integration and coherence, and develop new forms of governance and policy making processes (OECD, 2005). Successful governance of innovation policy therefore depends to a great extent on its ability of policymakers to balance and align economic with social policy objectives.

The new policy agenda entails developing new institutional arrangements, which redefines rules and conditions of innovation policy-making. It explicitly recognizes the need for coherent policies that consider the possibility of conflicting policy objectives when innovation policies span ministerial boundaries, while continuing to acknowledge the necessity to achieve policy coherence, consistency and effectiveness. Power and conflict will become important issues as innovation policy becomes more horizontal, especially since policymaking will involve several different ministries that have very different objectives and perceptions of what is important in the policy process. The MONIT report (OECD, 2005), which stands for 'Monitoring and Implementing Horizontal Innovation Policy' attempts to address some of these issues within the context of the new policy agenda, within which policy coherence is seen to depend critically on the ability of the policy-making process and framework to facilitate coordination, alignment and integration of different conflicting policy goals. To ensure coordination and integration and achieve better governance, the MONIT report suggests following a three stage policy cycle: (1) setting and prioritisation; (2) implementation; and (3) evaluation and learning.

Goal formulation and prioritisation are central to the governance process. Issues that consider the legitimacy of innovation policy gain salience, where previously a more single-minded focus on the instrumental effectiveness of policy measures in terms of given policy objectives often prevailed. While earlier science-based innovation policy agendas are essentially single-goal oriented, and concerned only with innovation as an instrument to achieve policy objectives, the new policy agenda envisages innovation policy as both cross-sectoral and multi-objective. Policy implementation, therefore, should adopt a form of instrumental or goal-oriented analysis, which connects the different economic and social goals and priorities with any number of feasible policy instruments. In this context science, technology and innovation become in instrument in achieving the goal of economic growth, but also environmental sustainability, employment generation, social equity and cohesion, etc. Finally, evaluation and policy learning requires policymakers to engage in active dialogue with different innovation actors (stakeholders), both on the theoretical level and on the factual level. This requires a continuous dialogue, and constantly monitoring the performance of implemented policies at different stages, mainly as a means of learning and fine-tuning existing policies.

The need for an action plan for the implementation of the Lisbon agenda induced virtually every European country to consider issues that were important to STI policy and its governance agenda. Almost every country has put into place a 'Lisbon Strategy Action Plan'

as well as some kind of competitiveness and innovation action plan and/or an economic growth or development plan covering the period up to 2013. While most countries have been able to carry out goal formulation and priority setting, very few European countries have been able to introduce horizontalization and policy learning into the policy process. Eastern Europe has particular problems as the institutional arrangements remain fragmented and are relatively inflexible to the needs of the new policy agenda (Knell, 2008). To encourage the development of new innovation policies, the European Union introduced the 'Competitiveness and Innovation Framework Programme' (CIP) to encourage the competitiveness of European enterprises.

The twin issues of inequality and social cohesion do not play a prominent role in the in the development of new action plans, particularly in Eastern Europe. Despite attempts to include social cohesion within the new policy dialogue, especially in the context of technology transfer and various training schemes (Lengrand, 2002: 74), emphasis is placed on competition and economic growth. Technology transfer and education and training are only instruments to speed up the growth process. Geography also appears in the dialogue, and it is important for both economic and social cohesion, but it appears to take a back seat in the run up to the post Lisbon agenda.

5. Some concluding remarks on the Lisbon Agenda and the ResIST project

The Lisbon process provides a good example of some of the issues being discussed in European policy circles and their relevance for the twin issues of inequality and social cohesion. Inequality and social cohesion are central to the European policy dialog, but in reality emphasis in the policy process is placed on the relationship between inequality and growth. Structural inequalities (functionings) are very large across Europe, but they appear to be trend toward convergence both across countries and across regions. Distributional inequalities (opportunities) are also very large, but the basic principles of governance of the European Union are also closing this gap. Difficulties in implementing the new innovation policy, or the attempt to move science and technology into other policy circles, is a governance issue that fits well with the idea of representational inequalities.

The new 'third generation' policy agenda is a combination of the Knowledge Economy Policy Paradigm (KEPP) and the Social Cohesion Policy Paradigm (SCoPP), but the current policy dialog appears to emphasize KEPP more than SCoPP. This emphasis reflects a desire by the European Union to encourage convergence across the Member States, as well as a strong desire to 'catch-up' with the United States. Social cohesion and inequality is a central issue, but it mainly concerned with regional inequalities of income and other structural inequalities or functionings related to science and technology. In other words, the current policy agenda appears to be driven by economic policymakers who have a good understanding of the relationship between science, technology and innovation with economic growth and economic cohesion.

A post-2010 Lisbon process may continue this policy agenda, but there are some interesting trends developing in the policy dialog. The first is that there is more emphasis being place on education and training. More equal opportunities for education and training reduce structural inequalities (functionings) and it is seen as an important prerequisite for catching-up and convergence (human capital). Second, more proactive STI policies and funding opportunities, particularly at the regional level and for small and medium size firms, reduce the distributional inequalities through greater access to new technology. Third, governance, and in particular the 'open method of coordination' has become an increasingly

important issue that will have important consequences for reducing representational inequalities in Europe. Finally, the issue of happiness (Frey, 2008) is increasingly entering the policy dialog, which gets to the heart of the issue of well-being.

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