

Innovating out of the crisis?

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Outline

- **Focus in my talk on research and innovation policies which includes issues associated with industrial policy thoughts (Aghion, Boulanger, Cohen, 2011):**
 - Core of long term European competitiveness has been framed within the Europe 2020 strategy (March 3rd, 2010) with at the centre the “Innovation Union” flagship – “turning ideas into jobs, green growth and social progress” (October 6th, 2010).
 - This strategy framework predates the sovereign debt crisis: time for a re-assessment.
- **Following the Europe 2020 strategy three entry points:**
 - The funding of research and innovation – the “rate” of technical change – an old European (Lisbon) concern which needs urgently to be reassessed within the crisis framework;
 - The importance of the “direction” of technical change: environmental sustainability, societal and new social innovation areas (i.e. sectoral dimensions);
 - The regional impact of research and innovation policies in Europe within the new context of sovereign debt crisis concentration in a number of peripheral countries.
- **All three areas are being questioned by the current euro crisis:**
 - From the perspective of lack of effectiveness of some of the proposals;
 - From the perspective for more radical reforms in the current multi-level (European, national regional) governance of research and innovation policy;
 - From the perspective of opportunities for new innovative solutions to the new austerity framework.
- **Will make some concrete proposals.**

1. Achieving smart growth today?

- Fiscal “consolidation” common to all EU Member States:
 - Yet more of a long term “austerity” type in some MS than in others;
 - “Consolidation” sometimes of a very short term nature financial public cash needs vs long term financial public concerns associated with ageing, health care, welfare systems and pensions;
 - Very different prioritisations with respect to long knowledge investments.
- New situation of likely growth divergence between European Member States and regions:
 - Still growth catching-up of “new” MS based on investment attractiveness (Latvia, Estonia but also Poland);
 - Growth divergence between old EU-15 countries based on centre-periphery impact of access to EU single market (Boulhol, H. and A. de Serres, 2010),;
 - Exacerbated by financial markets’ response to the euro-crisis.
- How can EU Innovation and Structural Change policies contribute to smart growth within a public debt context whereby some MS and regions are in a position to “match” relatively easily EU funding and others are lacking public funds to obtain EU research/innovation or structural funds.

European research and innovation policy and competitiveness

- Reprioritize investments in knowledge as the only long term sustainable solution to the crisis. Back to basics:
 - European integration process is only politically sustainable if based on real growth convergence;
 - International competitiveness of manufacturing, agriculture and tradable services is essential for such real growth convergence.
- The intervention of nation states in preventing the collapse of their financial system in 2008 could be described ex post as a “socialisation of debt”. Today, confronted with years of fiscal austerity, it is important to stress the need for a process of “socialisation of knowledge” bringing to the forefront the particular role of the public sector in providing support for knowledge investment in close interaction with the private sector.
- Start from the argument already made two years ago in an expert group report on the ERA for the EC: there is today an absolute need for a clear public funding commitment to knowledge investments (R&D, innovation, higher education) in Europe across all MS.

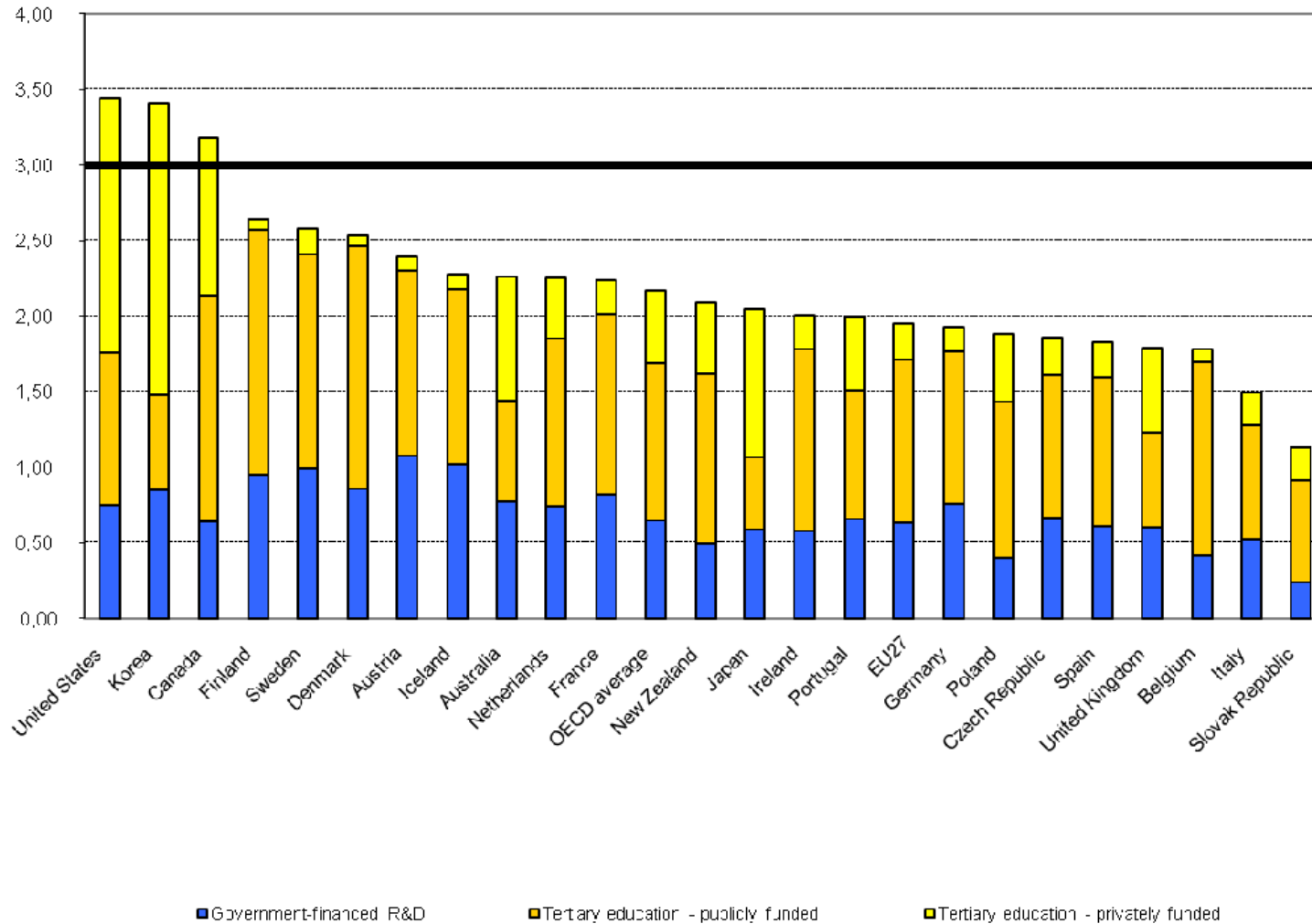
On Europe's "rate of technical change"

- It made little sense back in 2002 to introduce a Barcelona 3% R&D/GDP target, as part of the 2000 Lisbon strategy, whereby one asked the private sector, as opposed to the public sector, to invest most in R&D (2% vs 1%) without offering private firms any means to leverage such an effort.
- Asking for more private investment in R&D without offering a credible plan for integrating further the final Single Market both in products and services, was viewed in retrospect missing the point:
 - Companies invest private resources in R&D only if they consider the final market large enough to recover the investment;
 - Having national markets fragmented by regulation, language, and entry processes, implies an increase in the marginal costs of the overall "time-to-market" decision, leading to a reduction of the rate of return to R&D investment;
 - The institutional separation between European research, leading to proof-of-concept or prototype stage, European innovation policy and European competition policy, remained a continuous source of uncertainty;
 - Many services of direct relevance to innovation (financial services, telecom services, education services, social services) remained exempt from the Single market services directive and hence became at European level dominated by fragmented national regulation.

Proposal for a new 3% knowledge investment target

- Hence the proposal for a new 3% knowledge investment target: with clear policy advantages over the old Barcelona 3% target:
 - It focuses on what governments are *directly responsible for*: whether in terms of direct funding such as public R&D or in setting the funding rules as in the case of funding directly higher education or fixing the tuition fees with respect to higher education;
 - New 3% target thus offers *credibility*. Public authorities can be kept accountable for succeeding or having failed reaching the target;
 - *All* European MS are challenged to either find their own public resources to increase such knowledge investments, alternatively to call upon private resources to invest in individuals' future human capital;
 - The target is *realistic* even under the severe austerity conditions MS with large sovereign debts problems are confronted with today, because it offers also scope for lowering the public funding part of higher education in favor of raising private funding through e.g. tuition fees;
 - The growth in *private* R&D investment as a % of GDP can then be viewed as the outcome of the policy: public R&D and higher education investment having attracted increased private domestic or foreign investment.

Proposed new 3% target for 2020



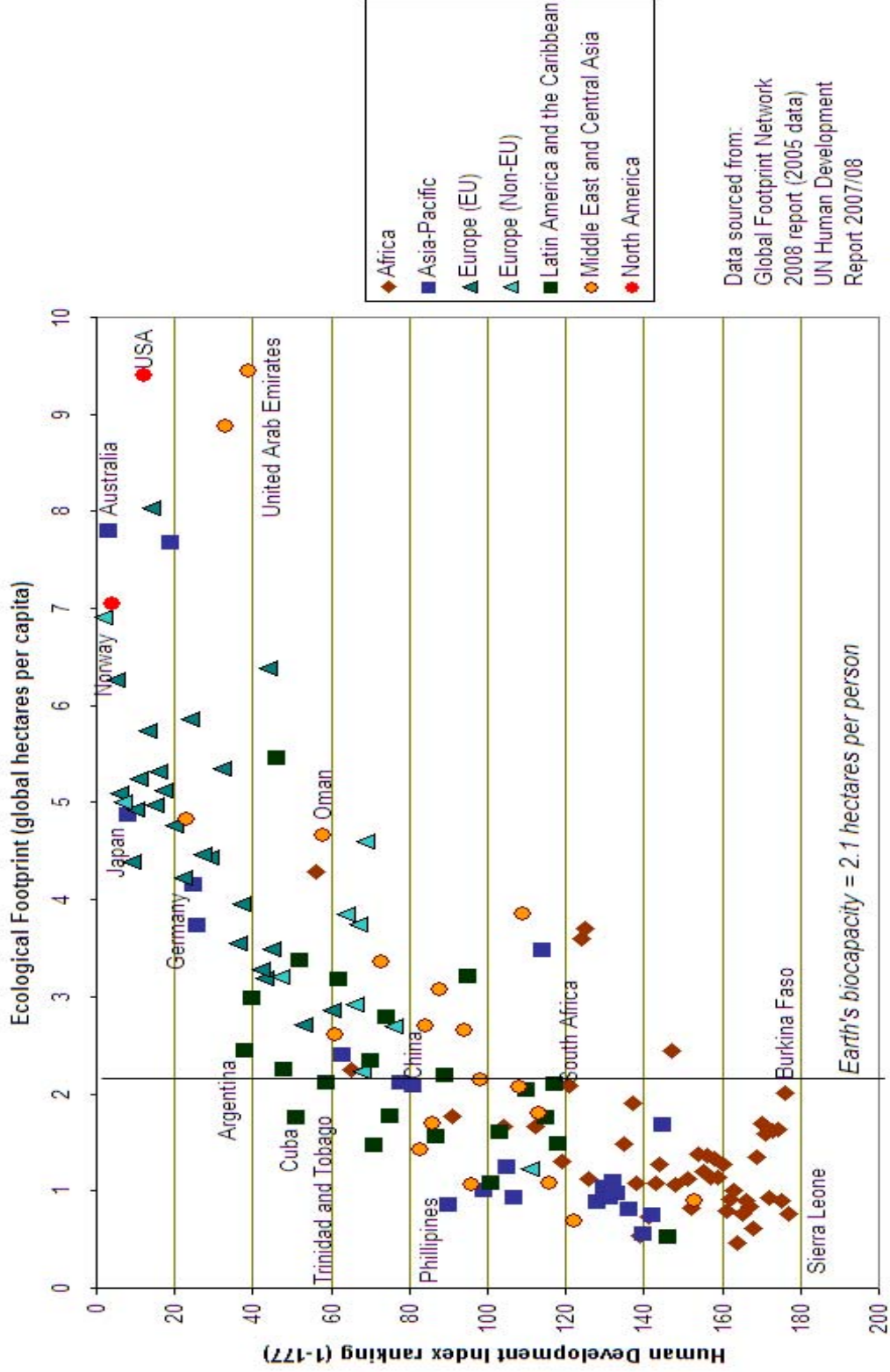
2. Sustainable growth – influencing the direction of technological change

- Focus has been on the “rate” of technical change... Policy makers seem to have forgotten about the “direction” of technical change. Again some basic economics: remember the first, seminal NBER book on research and innovation published in 1962 on *“The Rate and Direction of Inventive Activity”*.
- The central issue is now at the opposite end of the previous one. Can resources, not just research but also procurement and other investments, be shifted across different national/European stakeholders to more productive “societal use” to influence not only the rate but also the direction of technical change and innovation?
- A green economy with innovation will require a major private sector commitment to creating more efficient green technology options. Yet, private sector investment is unlikely to be forthcoming as long as there is no commitment to setting an effective price on Green House Gas (GHG) emissions – by setting tight caps that will not be quietly loosened by the issuance of additional emissions permits to alleviate industrial “distress”.
- The danger is that the public debt crisis leads one to an “inadequate-effort level equilibrium trap” as exemplified by the case of carbon-capture technologies. Because current costs of carbon-capture pilot operations are too high to make it believable that firms facing CO₂ emissions limits would adopt these methods, many countries with coal deposits resist tight caps on CO₂ emissions – in the absence of affordable carbon capture they would lose access to that source of energy, and profits, respectively. As a result the necessary investment in R&D (required to create the expectation that those caps would turn out to be tolerable) simply is not forthcoming.

Green competitiveness

- As illustrated in the case of carbon capture, solutions are not just European: there is a need to broaden research and innovation to include the rest of the world. At the same time such broadening raises question as to how to achieve green competitiveness for European industry (look forward to Fisher's presentation).
- One should think of e.g. "Innovation Partnerships" as proposed in the Innovation Union flagship with BRIC countries (e.g. in case of NER 300 and Carbon Capture Schemes and/or energy renewables), but also with other developing countries.
- At the sustainable consumption level, the innovation challenge appears (see figure) at opposing ends: avoid the tendency towards "destructive creation" innovation in favor of frugal innovation.
- The international financial crisis and the looming crisis of climate change have brought to the forefront an understanding that the realistic solution to a truly global sustainable development strategy is not simply to provide the world's investors with global financial access. Having access to the fruits of expanded public and private investments in science and technology at the global level, is no less and probably more critical in the long run (reinforces point made in slide 4, bullet point 2).
- What makes the "climate crisis" a unique green growth opportunity, if a perilous one, is that citizens in Europe, the US or Japan, are crucially dependent in their sustainable future on the speed of (green) knowledge diffusion throughout the rest of the world as well as in their own countries.
- In short, a Europe 2020 sustainable growth strategy better be called a global world 2020 strategy.

Human Welfare and Ecological Footprints compared



3. Cohesion and inclusiveness

- Will not focus on inclusive growth, as discussed before lunch by Atkinson and Scarpetto, but rather on the territorial dimension of research and innovation.
- Excellence in research and research quality assessment is heavily dependent on scale: the European scale is ultimately the logical scale for selecting excellence in publicly funded research, for reducing costs in selecting and evaluating research proposals and for enabling high quality research specialization.
- Europe's regional scope represents by contrast the long tail of European opportunities for innovation and growth specialization based on diversity.
- Towards a European common research policy, towards a European regional innovation policy.
- The latter is hence important to European growth: synergies at regional/local level between “smart, sustainable and inclusive growth”:
 - Smart growth in achieving a smart specialisation growth pattern based on local problem-based and/or demand driven innovation and local user expertise. It is at local level that knowledge externalities can be reaped most easily (Dominique Foray).
 - Similar argument for sustainable growth: exploiting demand-led local applications: green buildings, cities, housing, mobility, planning authorities, etc.
 - Inclusive growth in terms of local social cohesion, quality of life, inclusive cities. Managing locally welfare schemes depend on local collaboration: the role of social innovation.

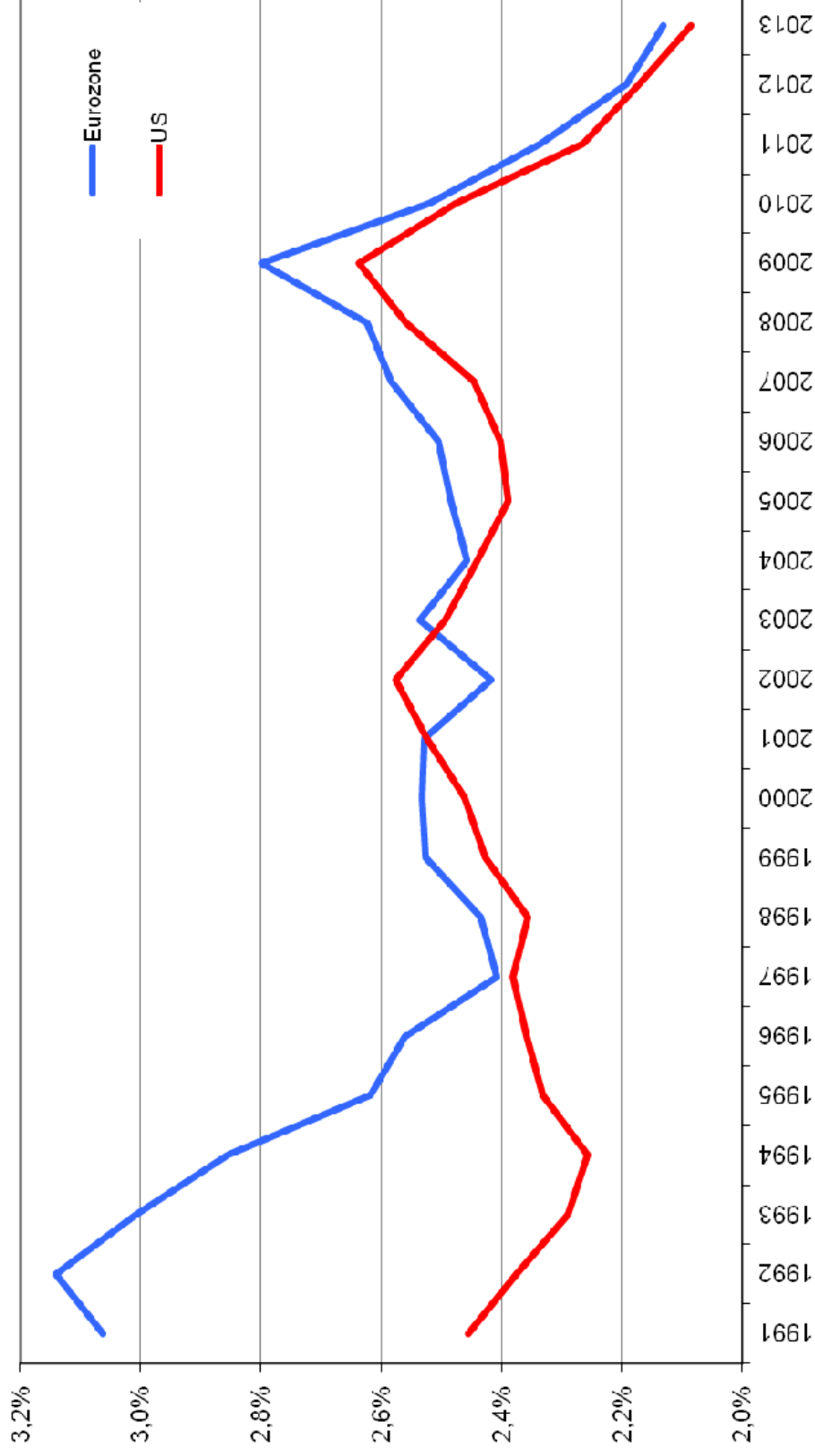
Smart specialisation, regional disparity and social cohesion

- At the geographical level, the crisis is likely to further increase the gap between front runners and laggards in knowledge investments by exacerbating the different existing capacities of countries and regions to respond.
- There is a need to radically rethink the way structural funds are used to help peripheral and cohesion regions to unleash their growth potential. The notion of smart specialization needs to be broadened to include the public sector.
- Most public sectors, whether regional or national are directly or indirectly crucial for long term growth and in particular for the knowledge based economy the Europe 2020 strategy is aiming at. One may think of education, mobility including public transport, public administration and in particular tax collecting national and local authorities, utilities as well as the health and social security services, including pensions.
- The crisis challenges also regional cohesion policies, and in particular the role of research and innovation in those policies (for memory €86 bn out of the €344 bn of structural funds is directed towards innovation compared to €50 bn for the whole of FP7. Currently only 26% has been allocated to operations). Yet, income inequality in Europe is already higher than in the US and other large countries in the world.

Towards European public sector integration

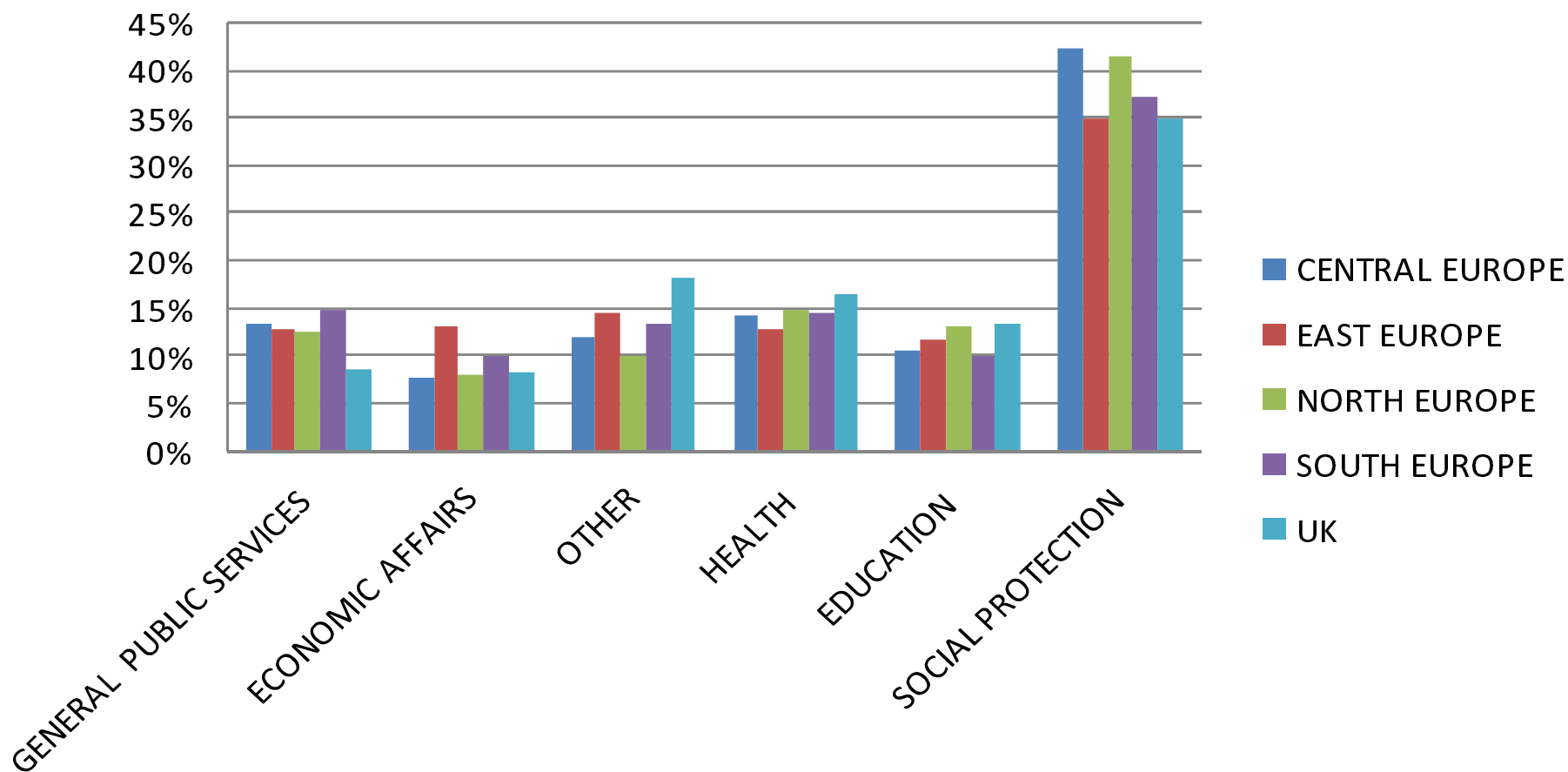
- The public sector is the sector which has up to now been ignored in economic integration in Europe.
- While the budgetary austerity in the euro zone has forced many governments to cut back on public investment projects, one of the central problems is that the old 3% Maastricht criteria of public deficit does not take into account the *quality* of public expenditures.
- There is a huge difference between public expenditures devoted to consumption activities and public expenditures devoted to public investment across EU countries.
- One of the most robust results from modern growth theory is the strong positive impact of public investments in e.g. infrastructure and education boosting overall productivity and hence also economic growth.
- Yet and as highlighted in the picture below, Eurozone countries have dramatically cut back public investment over the last two decades.

Public Investments as % of GDP



Source: European Commission, AMECO databank

AUGUR project: Functional expenditures in % of total government expenditures - 2009



a) First proposal

- But it is not just a question of the volume but of the quality of such investments.
- What I propose is to allow the best performing European country's public services to take the lead in a new phase of economic integration in the EU: that of public services. As a result the performance of the public sector in Europe, still responsible for the largest part of GDP, will receive a dramatic boost in efficacy and efficiency.
- We all know the typical European joke of the Brussels dinner organized by an Italian, prepared by a Briton and with a German giving the after dinner speech. But the ideal picture also exists of course. There is no reason why not to exploit much more fully across Europe the diversity in different member states, even regions, of the quality and efficiency of public service delivery. ***Smart public specialization.***
- Think of the Dutch tax-paying office taking on the responsibility for earning tax revenues in Greece, Italy or even Belgium.

b) Second proposal

- The large sovereign debt in some of the peripheral European countries should be viewed as potential pilot cases for triggering innovation in public procurement with the help of the private sector.
- Concrete example of lighting. About 19% of the electricity generated globally is used for lighting purposes and around 70% of all existing lighting equipment is energy inefficient by today's standards. Lighting, and in particular public lighting is a pure case of "low hanging fruit" innovation. New technologies such as LEDs can provide energy savings of up to 80%.
- Debt stricken countries, regions or municipalities in Greece, Portugal, Spain or Italy, should become pilots for new innovative procurement aimed at reducing public electricity expenses and based on new creative financing solutions. One could talk here about new North-South European Private-Public Partnerships. Furthermore, with the help of the European Investment Bank using available structural funds, it should be relatively straightforward to eliminate the 'lowest initial cost' bias from the public sector's procurement equation in those countries/regions.

Siemens or Philips lighting the Acropolis?



Conclusions: Reaping policy synergies

- There is a need for a re-assessment of the nature of multi-level governance within Europe with respect to research and innovation. The proposed “Innovation Union” should consist of a European Research Area and of Regional Innovation Areas.
- Within the Innovation Union both ERA and the RIAs are all about collaboration: the ERA about mobility as tool for collaboration and concentration in research, the RIAs about the art and talent of leadership in making people participate in new challenges, in having access to the region’s social capital.
- At the moment European policies appear often of the exact opposite nature:
 - MS research (and development) policies continue to be dominated by national obsessions with the ERA and the ERC seen primarily as a mobility enhancing framework of interest to the technologically most advanced MS attracting international talent from across the EU to their own emerging hotspots;
 - At regional level, innovation policies have increasingly become dependent on European structural funds, managed and implemented through regional “management authorities” which handle such funds being primarily concerned about their reputation with the EC in terms of accountability and control. This had added to a risk averse use of structural funds.
- New forms of public-private partnerships between the use of European budgetary resources (research and structural funds) and the use of private, loan based resources could raise significantly the effectiveness of European research and regional innovation policies.

Thank you for your attention!

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