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European Industrial Policy[1]

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Abstract

This survey of European industrial policy aims to set out and explain the great significance of European integration in determining (changes in) structure and performance of industry in the EU. This influence is explored from the policy side by analysing the transformation of the framework within which both EU and Member States' industrial policy can be pursued. Empirical economic analysis is not included because this BEEP Briefing was originally written for a handbook[3] in which other authors were assigned a range of industrial economics subjects. In the last 25 years or so, the transformation is such that the nature and scope of industrial policy at both levels of government has profoundly changed as well. Indeed, the toolkit of measures has shrunk considerably, disciplines have been tightened and the economic policy views behind industrial policy have altered everywhere. The pro-competitive logic of deeper market integration itself is rarely questioned nowadays and industrial policy at the two levels takes on different forms.

The survey discusses at some length the division of powers between, and the complementarity of, the Member States' and EU levels of government when it comes to industrial policy, based on a fairly detailed classification of industrial policy instruments. The three building blocks of the wide concept of industrial policy as defined in this BEEP Briefing consist of the EU framework of market integration, EU horizontal industrial policy and its EU sectoral or specific counterpart. Each one is surveyed at the EU level. Preceding these three sections is a discussion of three cross-cutting issues, namely, the indiscriminate use of the 'competitiveness' label in the EU circuit of business and policy makers, the relation between services and EU industrial policy and, finally, that of European infrastructure. One major conclusion is that, today, the incentive structure for industry and industrial markets is dominated by the stringency of the overall EU framework and to some moderate degree by the horizontal approach.

Keywords: industrial policy, European policies.

JEL codes : L5; L52.

[3] This paper is a chapter in the International Handbook of Industrial Policy, edited by Patrizio Bianchi and Sandrine Labory, published by E.Elgar, 2006 this month.

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Introduction

The present chapter discusses industrial policy of the European Union. The reader will encounter complexity, two levels of policy-making, drastic changes over time and the overall difficulty of where to draw the boundaries of EU industrial policy. In the European Union industrial policy is pursued at (at least) two levels of government: the EU and the member states' levels. Furthermore, owing to shifting convictions in economic analysis as well as the logic of pro-competitive market integration (which has greatly deepened over time), the nature and intensity of European industrial policy has drastically changed over the five decades since the treaty of Paris.[4] These two 'European' features add to 'general' complications in analysing industrial policy, such as the contrast between normative economic ('welfare') and positive analytical approaches of industrial policy, the variations in classification of what industrial policy is, and the potentially vast range of tools, quasi-tools and soft forms of persuasion in this area.

The aim of the present chapter is to set out and explain the great significance of European integration in determining (changes in) structure and performance of industry in Europe. This is due to the deepening of economic integration since the 1970s, the widening of its scope and the enlargement of the club. Member states, drawing on the treaties but also on changing insights about the role and dynamics of markets, have agreed to bind themselves ever more by the pro-competitive logic of deepening market integration and to abide by the ever stricter constraints that this implies. In addition, they have not (or better, only marginally and selectively) shifted to the EU level the tools for interventionist policy-making Member states themselves used to employ in the past.

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[4] The treaty of Paris of 1951 laid the basis for the European Coal and Steel Community, the archetype of former interventionist industrial policy.

The structure of the chapter is as follows. Section 1 discusses at some length the division of powers between, and the complementarity of, the Member states' and EU level of government when it comes to industrial policy. A comprehensive survey is provided based on a wide and fairly detailed classification of industrial policy instruments. Section 2 will address the place and meaning of three cross-cutting issues, namely, the indiscriminate use of the 'competitiveness' label in the EU circuit of business and of policy makers, the relation between services and EU industrial policy and, finally, that of European infrastructure. Sections 3, 4 and 5 will deal, respectively, with the three building blocks of the wide concept of industrial policy distinguished in section 1, that is, the EU framework of market integration, EU horizontal industrial policy and EU sectoral or specific industrial policy. The chapter ends with the main conclusions. The reader hopefully realizes that the subject area is much too vast to be surveyed comprehensively. Choices have to be made. One such choice is that I shall focus more on the framework and the horizontal aspects, as the incentive structure for industry and industrial markets is dominated by these two. A corollary is that section 5, on sectoral and specific policy, is limited to an overall perspective, with (brief) illustrations only about ICT and technology, while refraining from details on sectors. Another choice is to remain complementary to other authors in this volume dealing with a range of specific economic analyses which often are relevant to EU policy.

1. Industrial policy: what the EU and Member states do and do not

There is a great deal of confusion about what industrial policy is, only surpassed by the confusion about what *European* industrial policy might be. The latter is even more complicated because the EU level has ample constraining powers vis a vis Member states' instruments and their use, while at the same time the EU level itself is also restricted in its actions and does not dispose of anywhere near the same range of tools as Member states might employ, in a constrained fashion or not.

1.1 Scope and constraints of European industrial policy

Figure 1 should help to reduce such confusion to an appreciable extent. A complete resolution is beyond the capacity of the author, for the simple reason that no taxonomy can fully respect the range of views on industrial policy which can be found in the literature. The Figure 1 combines three features: a comprehensive classification of industrial policy and of

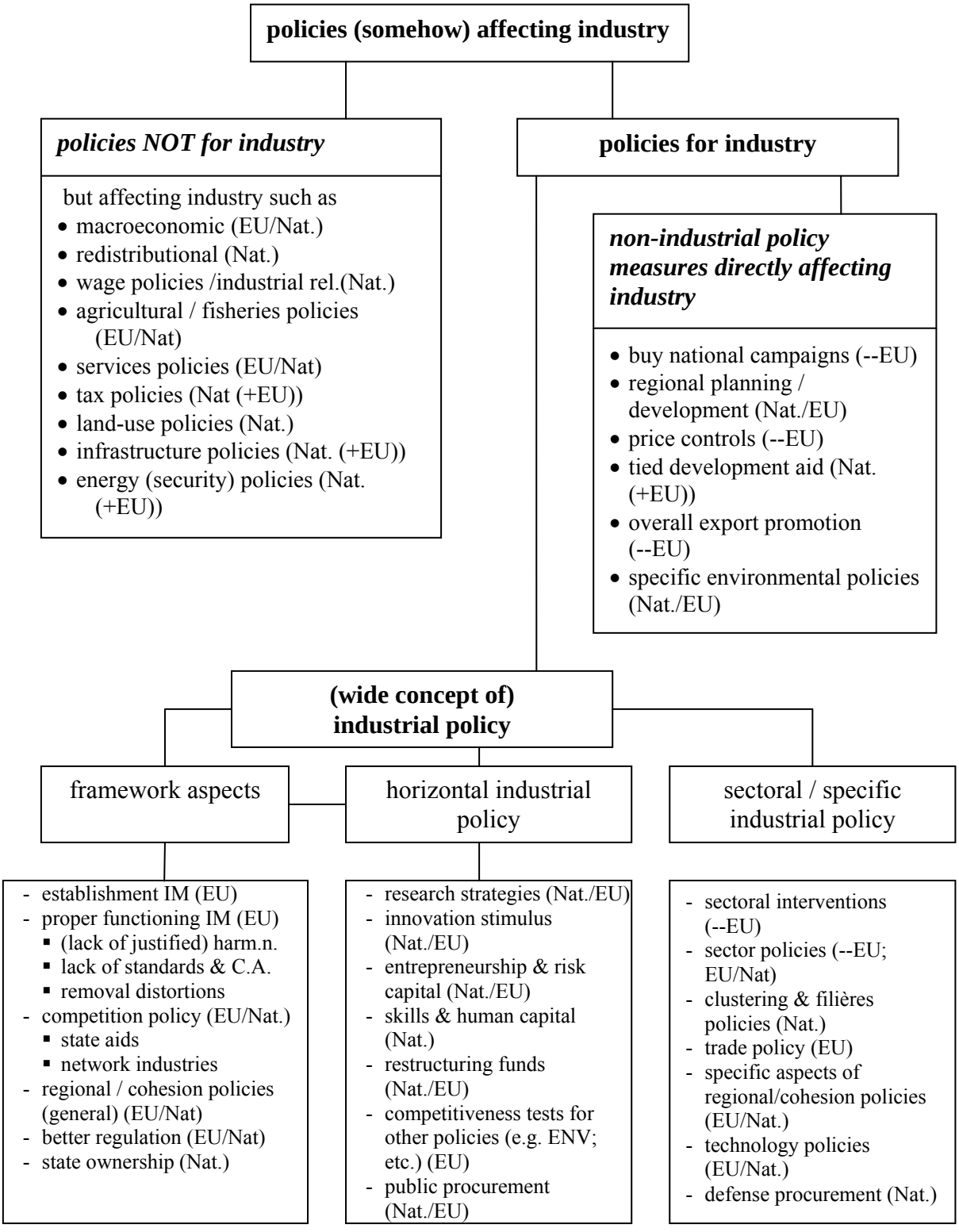
other policies somehow influencing industry, a sixfold breakdown of how EU and national powers are related (see 'notes') and an application of the latter to the many distinct elements of industrial and other policies specified in the classification.

The classification begins by distinguishing two sets of policy which influence industry, yet are not part of industrial policy, namely, 'policies *not* for industry which affect industry' for obvious reasons (such as macroeconomic stability with fiscal and monetary instruments; redistributional tools ; agricultural and services policies; tax policy; energy; land-use, and so on) and 'policies which directly help or constrain industry but are *not meant* (only) for industry' (such as price controls, buy-national campaigns, tied development aid or environmental policies addressing specific hazards such as poisonous chemicals or smog). The remainder is defined as a *'wide concept of industrial policy'* and consists of three building blocks: framework aspects, horizontal industrial policy and sectoral and specific industrial policy. For all the elements specified in Figure 1, a proxy indication is provided about the division or combination of powers at EU and Member states' levels. For a full understanding of the nature, scope and potential of EU industrial policy, all these elements would have to be explained separately, though in a coherent fashion. Given the space constraint, it should be sufficient to concentrate on the three building blocks of 'wide' industrial policy, with occasional references to other elements in the figure where appropriate. Some special attention will be paid to three such references in section 2.

Broadly speaking, the economic and institutional importance of EU industrial policy is greatest for the EU framework aspects. The respective weights of horizontal and sectoral and specific policies cannot be established in general terms. Both are constrained by the EU framework aspects as well as by other subsidiarity considerations which often – though not invariably – mean that the EU level of government has few 'hard' instruments to act. It is crucial to keep these limitations in mind when studying the flurry of EU policy documents on industrial policy, 'competitiveness' strategies or 'entreprise' policies. Most such documents are long on analytical aspects and on recommended directions on how to mend one's ways in European industrial markets, but short or relatively 'soft' on concrete actions or the employment of significant funding and other instruments. One may regard this as the inevitable outcome of a much more *market-driven* approach to industrial change, which is no-doubt correct, but it might just as well be seen as an explicit choice *not* to endow the EU level with forceful instruments and powers to influence or 'engineer' the future path of Europe's industries. Writing in 2005, the two perspectives boil down to very much the same result in terms of industrial policy potential.

Figure 1: EU & National Powers of Industrial Policy

Instruments



Notes:

EU → EU powers
EU/Nat. → shared powers
Nat. → Member States' powers
Nat./ EU → shared powers, mainly national
Nat (+EU) → national, & EU constraints or marg. inputs
EU → little nat'l. leeway, strict EU constraints

The *framework aspects* follow directly from what the EU is. The European Union is, in economic terms, essentially an Economic and Monetary Union. The *Economic Union* consists of the internal market (an extremely comprehensive concept with a strong legal basis and a powerful institutional backing) and a very modest set of 'cohesion' policies. The cohesion policies largely consist of regional instruments for relatively poor regions in the Union, and to some extent for providing funds for relatively poor countries in the EU.
'Cohesion' would seem to refer redistribution from richer to poorer areas in the EU. Nevertheless, cohesion amounts to an efficiency-based long-run strategy of 'catch-up growth'. The interventions are meant to accelerate catch-up growth and, once this is achieved, cohesion policies are terminated. Cohesion policies do influence industry in a number of ways but especially by improving the determinants of location and investment. However, it ought to be noted that cohesion polices do not and cannot address specific industries (or services, for that matter). Such policies are more horizontal i.e. are mainly oriented to hard (networks and roads/bridges/tunnels) and soft (human capital, technical schools, retraining facilities, administrative capacity) infrastructure. The *Monetary Union* in strict treaty terms comprises not only the 'eurozone' of (now) 12 countries[5] but also the non-eurozone countries in sofar as they have obligations under what the treaty calls the second stage of EMU [6].

1.2 Internal market rationale

The hard core of the Economic Union is the internal market. A good understanding of the internal market, the logic of its design and of its proper functioning is indispensable to grasp the nature, scope and potential of EU industrial policy at the two levels of government. An economically meaningful definition of the internal market reads as follows : 'the free movement of goods, services and factors of production as well as the right of establishment across intra-EU frontiers, accompanied by all necessary common regulation and/or policies for this internal market to function properly' [7]. What the treaty calls the '*establishment*' of the internal market boils down to the accomplishment of free movement and (company)

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5 Several new Member states may join Euroland in 2006 or 2007, after the compulsory 2 years in the ERM-II without too much turbulence. These might include Estonia and Lithuania. Other new Member states will follow in due course but this may be stretched out over a longer period. Whether the UK, Sweden and Denmark (already in ERM-II but a referendum in 2003 came out with a NO vote) will join any time soon, is unclear. Unlike the new Member states, they are not under the obligation to join.

6 Before joining the euro, all countries must have an independent Central Bank; all EU countries are bound by price stability, fiscal prudency and completely unrestricted capital movements.

7 For a detailed exposition and economic analysis of the EU internal market, see Pelkmans, 2006, chapters 3 – 10. See also COM (2003) 238 of 7th May 2003 on the Internal Market Strategy and its annual Implementation reports.

establishment, but, in actual practice, this accomplishment can often only be had if degrees of common regulation or mutual recognition are agreed first. Thus, the establishment and proper functioning are frequently pursued simultaneously. However, *proper functioning* implies the absence of market failures and this refers to competition policy as well. Therefore, the framework box, bottom left in Figure 1, is mainly about the internal market : when its establishment is incomplete, it leaves a degree of freedom to Member states (the few examples left nowadays include the absence of an internal labour market and the lack of a true EU patent), and when the proper functioning is not (yet) adequately dealt with, it might refer to a lack of justified harmonisation (due to one or a few recalcitrant Member states), a lack of common standards or the slow liberalization of network industries (indeed, without a common EU regulator, unlike the case of national markets).

For the most part, however, the internal market is well established and its functioning improves with deepening and widening of scope. This will be discussed in section 3. The common regulation in 'approximated' (harmonized) or centralized form has recently become much more rigorously scrutinized under the label 'better regulation' (see section 4). The new approach of subjecting all substantive Commission proposals to regulatory impact assessment, based on an analytical methodology, is bound to influence whatever industrial policies are going to be proposed. Finally, the framework box in Figure 1 mentions state ownership. It is good to underline that the EU (treaty) is neutral with respect to ownership (art. 295, EC) and that privatization is strictly a matter of the Member states. The casual substitution between terms such as deregulation, liberalization and privatization when it comes to the liberalization of and EU-wide competition in network industries is incorrect, even though it is routine in many circles. For the EU, privatization is strictly the change of ownership from state (or provincial or municipal) to private shareholders. The Union is interested in the combination of *competition,* also over intra-EU frontiers, hence free movement and (company) establishment, with justified *regulation* in network industries, *not* in state versus private ownership. Equally important, although state ownership is a matter of the Member states, the treaty does not allow any concrete advantage for such firms in the internal market. It is hard to think of any economic reason why a company should remain in state hands, other than a protection against unwanted take-overs. Even fresh capital invested by the state in the company is seen as illegal (because distorting) state aid if an independent investor would not have been willing to do the same.

1.3 Horizontal industrial policy

Horizontal industrial policy is of relatively recent origin. Indeed, of the seven categories specified in the middle box at the bottom of Figure 1, none of them existed at EU level in, say, 1980 in a meaningful way or not at all. The EU had no programmes or in-depth analyses in areas such as innovation stimuli, entrepreneurship and risk capital, skills and human capital and competitiveness tests for EU policies. Around 1980 almost all research funding was spent on nuclear and other energy research in the framework of Euratom. The first ESPRIT (on computers and IT) programme dates from 1981. An EU restructuring fund did not exist except for steel and paid by the steel mills themselves in the framework of the ECSC. And EU public procurement is too tiny to be utilized for strategic purposes and no such objective had been made explicit anyway. However, the issues in the horizontal industrial policy box were influenced by the EU level when imposing *disciplines on national* industrial policies under some of these rubrics. Thus, research subsidies of a 'fundamental' nature are not caught by the state aid regime but if research is 'applied' subsidies are disciplined dependent on how close the applications are to reaching the market. National restructuring programmes did exist and were subjected to complex state aid disciplines, more often than not politically influenced at the highest level of EU politics via adhoc decisions on rescue operations. National public procurement was formally disciplined by non-discrimination provisions in the treaty and a few weak directives on goods and on public works which were hardly enforced in those days. The later shift to horizontal EU industrial policy, beginning with the Bangemann report (1990), therefore required a wholesale rethinking of the way government intervention could usefully facilitate the static and dynamic efficiency of markets in Europe and what market institutions might be of help (for example standards, certification and quality incentives, or, innovation structures, or, skill enhancement). Next to no such thinking had been been present at EU level and no policies had been initiated around 1980.

At the EU level, the 1980s and early 1990s consisted of enormous deepening and widening (of scope) of the framework box in terms of the internal market in goods, services and capital. The corollary of the single market programme consisted of the widening of competition policy, complemented by the EC merger regulation. All this was bound to have many implications for what Member States had become accustomed to do. Friction merged on the interface between the EU level and the Member states' level, in regular struggles between the Commission and the Council and, to some extent, between Member states in the Council. The upshot was to discipline and improve the sectoral and specific industrial policies both at

EU and Member states' levels. Thus the middle box of horizontal issues was of marginal importance at best. Writing in 2005, approaches have radically changed. As section 4 will elaborate, today's emphasis in European industrial policy at both levels of government consists of a combination of the framework and the horizontal boxes, with relatively little attention paid to the sectoral and specific box except for technology policies.

1.4 Sectoral and specific industrial policy

Sectoral and specific industrial policy lies at the origin of the Community. European economic integration began in 1952 with a 'deep' free trade area in coal and steel, called the European Coal and Steel Community. Its ultimate aim clearly being the cementing of peace between former adversaries, the legal commitments consisted of a combination of intra-ECSC free trade in coal and steel with extensive actual and potential interventions in the sectors, including investment plans and (under the admittedly extreme scenario of a 'manifest crisis', art. 58, ECSC) even the administrative organization of intra-ECSC trade. Looking back to the ECSC five decades later, the contrast with today's economic thinking about the functioning of markets and specific interventions is rather sharp. It is true that the ECSC initiated a kind of European competition policy and that state aids were completely forbidden[8]), but otherwise the ECSC hardly managed to create a functioning internal steel market and never accomplished an internal market for coal. In fact, the steel market enjoyed its share of the 'golden growth era' of the EU between the mid-1950s and 1973 but an undistorted internal market in steel only came about just before the ECSC treaty was integrated in the EC treaty (in 2002). In fact, the early and unstoppable decline in coal and the subsequent decline of steel have caused tremendous adjustment problems, often concentrated in certain regions as well, prompting all kinds of regional jobs programmes and adhoc responses. In the same period of concluding the ECSC treaty, attempts to agree on a similar sectoral treaty for agriculture (the so-called Green Pool) only just failed. However, they formed the basis of what later was to become the Common Agricultural Policy in the EEC. The Rome treaty of 1957 did not have a sectoral slant, at least not for industry, except for a minor clause in shipbuilding (which has caused subsidy problems until today). The only sectoral bias one finds is that in (the common) transport policy, which was first interpreted in a highly interventionist fashion, resulting in a delay of two decades before the ECJ in 1985 ordered the Council to speed ahead with the liberalization of intra-EU transport in all six modes.

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[8] In art. 4, ECSC - the huge national subsidies making a mockery of internal free trade and specialization were typically defended on the basis of an escape clause in art. 95, ECSC.

The long EU struggle to come to grips with the enduring steel crisis has ultimately helped the Commission to rationalize the EU state aids regime. This is the subject of chapter 7. Suffice it here to say that, first, the consistency of EU state aid discipline over different sectors had to be accomplished, [9] second, the residual political control of the Council over the Commission's regime under art. 89, EC had to be pre-empted, [10] third, the regime had to be organized in ways similar to the rules of anti-trust with well-justified block exemptions rather than allowing scope for 'negotiating rules' for Member states time and again[11], and, finally, the underlying economics of justifying state aids could be addressed, as was done after an invited paper by Besley and Seabright (1999). The result of the long haul of rationalizing state aids in the EU has been a drastic reduction of national state aid in relative terms and, to some degree, even in absolute terms as well as a more rational rearrangement of the types of aid given.

A quick glance at the sectoral and specific industrial policy box, bottom right in Figure 1, makes it clear that the Member states' discretion for such policies today is limited at best. Sectoral policies other than state aids are, of course, not allowed to be anti-competitive, whilst discrimination in for example filières or clustering goes against the treaty, too. Other than defence procurement (and, indeed, sales worldwide), exempted under the treaty[12], national leeway is modest. EU policies can have sectoral or specific effects, notably under trade policy which is, by definition, as detailed as individual tariff lines at the six-digit level. However, after many GATT rounds, a host of EU bilateral free trade area agreements with Eastern and Southern neighbours as well as with South Africa and Mexico, and the EU version of the Generalized System of Preferences, industrial MFN tariff protection is low overall, cases of MFN tariffs higher than the highest clothing tariffs of 13 per cent are exceedingly rare and most countries (other than non-European OECD countries) do not even pay these MFN tariffs but lower ones or none at all. Quotas vis a vis WTO members are outlawed and all that

[9] Thus, rescue operations in some sectors were 'politically' assumed to be more acceptable than in other ones, e.g shipbuilding, airlines (with their repetitive 'last aid and never again' subsidies), steel in East Germany, etc.

[10] Formerly art. 94, EC, the article can be interpreted as giving the Council the option of imposing exceptions and more political criteria on to the Commission's regime which, otherwise, should be least-distortive for the internal market. In 1990, under the Italian presidency, minister Battaglia led an attempt by a group of Member states to do just that, but it failed.

[11] It should not be forgotten that state aids differ from anti-trust in that the parties called to alter conduct are not companies but Member states, and this may prompt political interventions at the top, sometimes in turn prompted by demonstrations in national capitals. Generally accepted rules by the Council, for example, in block exemptions turn the Council into a 'co-owner' of the regime and make it easier for the Commission to act.

[12] But it begs the question what 'military goods' are because many of them are or can be so-called 'dual purpose' goods, and the latter have come under increasingly strict EU supervision.

remains are a few quotas for aluminium and steel against exporters from several ex-Soviet Union countries not yet in the WTO. Clothing quotas under the Multi-Fibre Arrangement have expired with the arrangement itself (late 2004). EU policies under 'cohesion' cannot be sector-specific but compensation measures (retraining, quality upgrading and so on) are possible. Furthermore, infrastructural investments and other actions improving the investment climate as well as otherwise burdensome environmental clean-ups can be funded under regional and cohesion policies.

What remains boils down to technology policies where both EU and Member states have been active. One can discern a trend with the emphasis shifting more to the EU level of analysis and bringing together the experts at research and sectoral level. Indeed, the line between the EU research strategy in the horizontal box and the EU technology policies in the specific policies box is hard to draw. As sections 4 and 5 will show, both tend to shy away from 'picking winners'. For all these reasons, section 5 will only briefly touch upon two 'evergreens' in the specific policy box, namely, ICT strategy and technology policy.

2. The economic relevance of cross-cutting issues

Even a wide concept of industrial policy will not encompass all influences on industrial structure and performance. Conversely, when trying to encompass all such influences, the term industrial policy eventually becomes meaningless. The bottom half of Figure 1 already stretches the concept very far. Before going into the details of the three boxes in the following three sections, however, it is likely to serve the understanding of European industrial policy if some reflections are offered on a few cross-cutting issues of relevance to the performance of industry in Europe. Many issues in the two top boxes in Figure 1 would be eligible for such reflections. A few examples can illustrate how wide the discussion would stretch. Thus, although (industrial) business is capable of surviving under almost any macroeconomic policy regime, or system of industrial relations, or strategy for energy security, there can be little doubt that the quality of such regimes matters a lot for efficiency, profitability and long-run dynamism of industry. Again, these three are ruled by quite distinct combinations of EU and national powers. Thus, macroeconomic stability has become a firm obligation in the treaty for *all* Member states (a major and commendable achievement), even if the division between monetary and fiscal policy differs between eurozone (not having a monetary policy at national level anymore) and non-euro countries

(having national monetary policies, but under considerable constraints). In contrast, the system of industrial relations is truly national – with all the differentiations this implies.

Similarly, the EU has only limited powers over national policies concerning energy security, indeed, virtually none over the very choice of what energy source to give priority to in the first place. A warning is also in place before linking corporate taxation to European industrial policy. First, the EU has no corporate taxation of its own and there is no legal basis to create an EU-wide corporate tax floor. Second, the harmonization of corporate tax in the EU has thus far proved to be extremely difficult, in part because corporate tax *competition* might be better, in part because treasuries dislike the loss of what they regard as fiscal sovereignty, in part because the short-run losses due to harmonization of the tax base are feared by some. Third, corporate taxation relates to business in general and most businesses are found in the services, not in industry. Of course, one can (rightly) argue that tax issues may make cross-border mergers unduly difficult, but again that does not apply solely to industry. A recent fear amongst some political leaders is that corporate tax competition, especially from the new Member states, is inviting a 'race to the bottom'. If this race is not going to be resisted, companies will migrate to Central Europe and accentuate a process of 'de-industrialization' already going on in Western Europe. Apart from the fact that, once again, this applies just as much to services, it is far from clear whether or not low effective tax rates (combining the statutory rate with the tax basis; for example, see Devereux, Griffith and Klemm, 2002) compensate for relatively unfavourable location or other handicaps in Central Europe and whether (many) other determinants of direct investments are decisive.

The three cross-cutting issues selected to be elaborated here are the following: Does EU industrial policy amount to 'competitiveness' policies?; do services matter for industry and, if so, does the EU approach to services matter for industrial policy? And what can Europe do about infrastructure and how critical is that for industrial policy?

2.1 Competitiveness policies for industry?

The European Union has a Competitiveness Council, combining the previous Councils for the internal market, research and industry. Art. 157, EC[13], under the title "Industry', specifies that the Union and the Member states 'shall ensure that the conditions for the competitiveness of the Union's industry exist. For that purpose, in accordance with a system

[13] The European Constitution, not yet ratified, has largely adopted this clause as art. III – 279, substituting Union for Community.

of open and competitive markets, their action shall be aimed at (a) speeding up the adjustment of industry to structural changes; (b) encouraging an environment favourable to initiative and to the development of undertakings throughout the Union, particularly small and medium-sized undertakings; (c) encouraging an environment favourable to cooperation between undertakings[14]; (d) fostering better exploitation of the industrial potential of policies of innovation, research and technological development'. This is to be done in two ways as the third part of this article indicates: first, the Union ' shall contribute through the policies and activities it pursues under other provisions of the treaty [constitution] ' which is what Figure 1 essentially depicts ; second, " The Council, acting unanimously… may decide on specific measures in support of action taken in the Member states..". Interestingly, the draft constitution has added to the last phrase on specific measures: "..excluding any harmonisation of the laws and regulations of the Member states". This competitiveness clause for industry was inserted during Maastricht. One can view it as a confirmation of the essential message hidden in Figure 1, following the debate on and the backing of the 1990 Bangemann report. In any event, art. 157, EC, is inconsistent with the remnants of interventionist industrial policy still around during the conclusion of the Maastricht treaty. Since the Maastricht treaty came into force (November 1993), Commission and Council have displayed a new style of activism in policies related to EU industry and its competitiveness. The main tools are, first of all, analysis, a flurry of horizontal and sectoral policy papers as well as all kinds of networks for horizontal (innovation, new forms of standardization, SMEs and so on) and sectoral (technology, structural adjustment of certain industries and so on) stimulus, and, second, reliance on EU policies and regulation (including the huge area of the internal market itself) *other than* selective intervention for industry, which is what art. 157, EC, requires. From an economic point of view, therefore, it would seem to make sense to integrate the three old Councils of the internal market, industry and research into a single, more strategic competitiveness Council [15].

There are pros and cons of the Union's shift to competitiveness policies as restrictively defined by the treaty and elaborated since 1993. First, the pros. The strategic advantages are

[14] but ".. not … any measure which could lead to distortion of competition…" as the last sentence of the article says.

[15] In actual practice, the transaction and information costs of this heavy Council appear to be rather high, however. Especially, the numerous legal and technical subjects of the internal market do not accord well with the interest and expertise of specialists in industrial analysis and even less with those dealing with the research community in the Union. Also, this Council, already cumbersome with no less than 25 ministers, often sees different ministers or their deputies appear given the diverse national portfolios for them. In other words, there seems to be a trade-off between the opportunities to discuss in strategic terms at ministerial level about how to foster competitiveness and the far more technical agenda that the Council also has to deal with.

crucial and may well dominate. They include the (virtual) termination of short-sighted and distortive interventions to rescue failing firms or sectors in decline owing to comparative disadvantage as well as the very high barriers against a policy reversal in this respect[16] . The focus is on being competitive in Europe and worldwide and this mind-set, even more than treaty texts, has pervasively changed the policy landscape in the Union. The economic advantages, especially in the long run, are obvious. Compared to the more interventionist landscape, one should expect structural adjustment both to be better anticipated by companies and sectors (knowing that the political market is largely taboo) and to be faster if severe problems nevertheless arise. In turn, this will raise productivity overall, hence growth, while presumably reducing the costs of intersectoral labour flows.

Other advantages include the more strategic economic perspective of industry as a whole rather than the crisis-prone adhocery of interventions and a politicized state aids regime. This perspective is (a) profoundly market-oriented [17], (b) far more explicitly focussed on how to improve the economic performance of all sectors, not least the ones already doing well, (c) emphasizing future growth sectors in a horizontal fashion (via innovation policies, framework programmes for R and D, attention for 'entrepreneurship' and risk capital and so on) and vertically (via strategic High Level Groups and stimulus of standardization, networking, benchmarking, special studies and so on), without 'picking winners'. Finally, a co-benefit of the competitiveness orientation of the Union is undoubtedly that numerous regulatory and other measures are better scrutinized as to their impact on competitiveness. This might imply additional support for liberalization (for example in the case of network industries or services, more generally) or an extra form of discipline on regulation before imposing costs on European industry.

There are significant drawbacks, too. The first seems academic, yet is likely to have profound implications for the policy-making process and to some extent its substance.

[16] Consider the dire predictions of sceptical economists that the Italian car quotas against Japan (gradually relaxed and removed in the 1990s) would not actually disappear; similarly, the textile and clothing quota under the Multi-Fibre Arrangement (ended late 2004) did go ; even huge import jumps in textiles and clothing from China in 2005 – though prompting a kind of voluntary export restraint by China – led only to selected and temporary import 'quotas', with some growth and at much higher levels than earlier imports while no state aids will be permitted ; remember the way the Commission dealt with restrictive practices and state aids in steel in 1994; the much stricter state aids regime for airlines was first fiercely resisted but did prevail at last ; the shipbuilding sector, with decades of struggle about hidden subsidies, has adjusted dramatically and state aids are now a trickle compared to the 1980s ; the very narrow scope of action for Member states when they announce rescue operations as with Alsthom in France in 2004 or with EKO Stahl in (East) Germany in the late 1990s ; the tightly controlled clearance under EU competition policy for crisis cartels, etc. .

[17] The Maastricht treaty introduced novel and firm language about the 'economic order' of the Union in this respect. Both art.s 4, EC and 5, EC (new numbering) impose that Member states and the EU act, in all policies and measures, "in accordance with the principle of an open market economy with free competition".

Whereas competitiveness is a straightforward notion for a single company, it is more elusive for sectors and problematic, if not controversial for countries and the EU. It is not unfair to speak of a gulf between academic economists here, and national and international policy makers [18]. For reasons of space, we shall merely refer to some of the implications.

Competitiveness is now so widely defined that it serves as a 'container' in which almost any idea can be dumped. Not only are ill-defined policies rarely good policies, the nebulous approach acts as an open invitation for (industrial) lobbies and national ministers (not least, once they occupy the rotating EU presidency) to argue attention to almost anything, resulting in waves of 'fashionable' topics. This seems to capture what has happened at EU level[19]. In fairness, the Commission understood early on that detached analysis and an apolitical organ suggesting agenda items with authority could counterbalance these risks. Thus it initiated a Competitiveness Advisory Group bringing out a series of special reports with the prominent help of Alexis Jacquemin. In 1997, it started annual Competitiveness Reports, largely written by independent economists, and gradually providing a far more reliable analytical basis than hitherto for EU policy making and for enterprises in Europe in their strategic thinking.

Another manifestation of the 'container fallacy' is the unproductive 'repackaging' and relabelling of instruments and policies. At the symbolic level, the term 'industrial policy' went out of fashion in the mid-1990s and competitiveness policies was the label employed, even though the two Bangemann reports, as the origin of the U-turn to competitiveness concerns in a pro-market approach, utilised "industrial policy". In 1999, however, 'entreprise policy' suddenly appears as a new term[20] and seems to be employed, first, as a subset of competitiveness policy dealing with issues of special (but not exclusive) importance to

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[18] Although the debate is not entirely comparable with that on the (multiple) definitions of industrial policy, it does echo some of its traits and is equally conceptual and perpetual. For discussion, see the attack by Krugman (1994), and partial reconciliations by Jacquemin and Pench (1997) and Galli and Pelkmans (2000) ; see also Lawton (1999). The Commission embraced the OECD definition of 'competitiveness' in the mid-1990s as "..the ability of companies, industries and regions, nations or supranational regions to generate, while being and remaining exposed to international competition, relatively high factor income and factor employment levels on a sustainable basis". The ultimate object here is standards of living (e.g. of the EU) and the suggestion is that nations 'compete' as if they are firms. The Krugman critique applies here, of course. The World Economic Forum, influenced by Porter-type of notions that countries somehow do compete (because their natural endowments matter less and less) by means of alternative economic institutions and strategies, clearly appeals more to policy makers, even if the analytical and statistical basis of the WEF reports leave much to be desired. Among the many questions which can be raised when using such notions of competitiveness, the most important one is what this would (or should?) imply for industry ?

[19] A few examples. The December 1993 Commission White Paper on Growth, Employment and Competitiveness, Bulletin EC, supplement 93/6, emphasizes SMEs, infrastructure and new technologies ; the second Bangemann Memorandum, COM(1994) 319, focussed on industrial cooperation and on intangibles; a benchmarking exercise in COM(1996)463 stresses quality management and quality promotion ; in COM (1999)465 of 5 October 1999 weaknesses in structural change and adjustment are viewed as the 'main challenge for policy makers'.

[20] In the Commission, DG Industry was renamed DG Enterprise as well.

SMEs[21] and, later, as a new label for that part of competitiveness strategy dealing with industry [22]. The former idea was developed as policies for 'entrepreneurship' or 'better environment for business' in a range of activities [23] which have stimulated Member states to reduce the barriers to start-ups and selectively to cut red tape. The latter notion, that enterprise policy would become the new label for competitiveness policies, was swiftly dropped when Chancellor Schroeder started calling for greater EU concern about manufacturing industry in a new industrial policy. The term 'industrial policy' was already back in late 2002 and more prominently in 2004 [24]. Repackaging also took place after the Lisbon goal of making the EU by 2010 'the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion' had been set in 2000. The formulation of the goal, though vague, strongly suggests a similarity to the OECD/EU definition of competitiveness, mentioned above. But such a 'holistic' approach is likely to conflict with the call by Europe's political leaders to have more specific regard to manufacturing industry as restated in the European Council in October 2003 and in earlier public letters by Schroeder, Chirac and Blair to Commission president Prodi. Their concern was caused by a fear of 'de-industrialization' in the light of globalisation and for too costly regulatory initiatives such as REACH (the draft chemicals laws proposed in 2003). Courageously, the Commission preferred to dismiss the de-industrialization thesis on analytical grounds [25] while offering major concessions in unburdening the chemical industry in the REACH process. In doing so, it has stuck to what it calls an 'integrated approach' to industrial policy. This fits the holism of Lisbon but remains very hard to come to grips with, let alone, to assess rigorously in terms of effectiveness. The treaty language of art. 157, EC and Lisbon concurs in that the direct policy influence of the EU level is modest and selective, at best, except insofar as the (open) internal market and competition policy is concerned. Lisbon is largely a matter of the Member states (see Pelkmans and Casey, 2004, for elaboration). In other words, the container of industrial policy is not only filled with a great

[21] See e.g. COM(1999) 569 of 9 November 1999, Report on concerted action with the Member states in the field of enterprise policy.

[22] DG Magnus Lemmel, From industrial policy to enterprise policy, 25 Nov. 1999 in Brussels at the conference on A Sharper Cutting Edge.

[23] A Green Paper on Entrepreneurship, COM (2003)27 of 21 Jan. 2003 ; COM(2002)610 of 7 Nov. 2002 on Better environment for enterprises ; the BEST procedure focussed on facilitating SMEs, see e.g.COM Staff Working Paper SEC (2002) 1212 ; and various benchmarking exercises in this area as in SEC (2002) 1213 and SEC(2002)1214.

[24] See COM(2002) 714 of 11 Dec. 2002 on Industrial policy in an enlarged Europe ; COM(2004)274 of 20 April 2004, Fostering structural change, an industrial policy for an enlarged Europe, a more elaborate and updated version of the former.

[25] See COM(2004)274, op. cit., pp. 6 – 16.

many disparate policies but most of these policies are effectuated at the national level. Starting at pure EU initiatives, without realizing this context, would be flawed.

2.2 Does EU services market integration matter for EU industrial policy?

Services generate about 70 per cent of the value-added of the EU. Clearly, from the demand side the development of the services sector is important for industry as it is bound to be the largest aggregate customer. The question we address here is on the supply side. Do services matter for the dynamic economic performance of EU industry and, if so, does EU services market integration matter for EU industrial policy?

Although all services may have some significance for efficiency, productivity trends and innovation in industry, it is useful first to distinguish government from market services, and, in turn, business-related services from other market services. We focus on business-related services as they interact most intensively with industrial manufacturing [26]. In the EU-25 of 2003 business-related services provided 37 per cent of all market employment, compared to 24 per cent for manufacturing and construction together. Although business-related services are active suppliers to each other and to other services sectors (and, to some extent, even government services), some 30 per cent of the intermediate output from business-related services is consumed by manufacturing services[27]. In the EU-15 business-related services employment has grown from 32 per cent in 1980 to 41 per cent in 2001, whereas the share of manufacturing fell from 27 per cent to 17 per cent. Business-related services are also a growth sector in cross-border trade, especially in the internal market, despite the persistence of a range of barriers : measuring intra-EU trade from the import side, the average annual growth of business-related services trade over 1996 – 2002 was 14.8 per cent (compared to 9.5 per cent for goods). Their significance for the internal services market is overwhelming given that, in 2002 for EU-15, these services represented no less than 61 per cent of intra-EU services trade, with tourism (24 per cent) being second.

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[26] The Commission defines business-related services as business services, distributive trades, network services and financial services. Business services include, on the one hand, professional services (IT- and management consulting, R and D services, engineering consultancy, advertising, accountancy/auditing, legal,etc.) and, on the other hand, operational services (such as industrial cleaning, security, secretarial, specific call-centers, etc.). See DG Enterprise, Working paper, Business-related services – a key driver of European competitiveness, an enhanced economic analysis, Dec. 2004 ; and COM(2003) 747 of 4 Dec. 2003. It should be noted that EU services statistics are both less disaggragated and less harmonized than those for goods, or, labour, for that matter. This can be problematic for measurement and empirical economic analysis. See also Woelfl, 2003.

[27] All data from DG Enterprise, 2004, as in the previous footnote

The rapid growth of business-related services is usually attributed to outsourcing, implying that a good deal of the fall of manufacturing jobs represents in fact a migration of jobs to services. This is undoubtedly the case, resulting from a search for cost cutting and a focus on 'core' business, but there are several other, more deep-seated reasons for this growth as well. Certain relatively new services have become vital for industrial performance, IT services and software above all, but also logistics (with scale-driven production, logistics are critical to performing in the entire internal market both for deliveries and for just-in-time processes). Furthermore, with production 'europeanizing' in Europe-wide firms, a range of professional services and selected other ones no longer have to be sourced locally because these providers may 'follow' the europeanization of the MNCs either by local establishment or by cross-border services on request (but based on a relationship of trust, indispensable for services supply).

It is therefore important for the competitiveness of European industry that the internal markets for services function properly. The recent liberalization of network industries in the Union has thus far selectively helped business (industry and services) to cut input costs such as in lower telecoms, postal, air transport and energy bills for a given set of services. The liberalization of financial markets has been favourable to wholesale customers (sizable business clients) but far less, unfortunately for SMEs and private clients. And there is a hesitant beginning of greater market pressures for professional services and more liberal regulation for example on entry. In marketing and advertising, serious restrictions in some EU countries have remained (despite vigorous efforts, led by the Commission, to overcome them) on the grounds of consumer protection.[28] It is probably inappropriate to generalize about the development of service quality and of the emergence of innovative services but it is possible to identify submarkets where EU liberalization has improved the quality of services [29] and significantly widened the range and innovativeness of services[30] . So, the internal market for services matters to industry and a deepening, widening and better functioning of it is crucial for the competitiveness of manufacturing in Europe.

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[28] For some background and data supporting these contentions, see e.g. SEC(2004) 866 of 23 June 2004, Evaluation of the performance of network industries etc., European Commission ; regular reports on gas/electricity (latest COM(2004) 863 of 5 Jan. 2005, and on telecoms (latest COM(2004)759 of 2 Dec. 2004) ; restrictions are analysed at length in COM (2002) 441 of 30 July 2002, The state of the internal market for services ; COM (2004) 83 of 9 Febr. 2004, report on competition in professional services ; etc.

[29] For example, in postal, see WIK, 2004, Main developments in the European postal market, http://europa.eu.int/post/doc/studies/2004-wik-final_en)

[30] For example, in financial markets, this is attempted to be measured in the Financial Integration Monitor ; for 2004, see SEC (2004) 559, June 2004, Commission Staff Working document.

The deepening and better functioning of the internal services market is currently hindered by a great many barriers and restrictive regulations. To a large extent they are tackled or at least consistently brought into an EU framework (say, for harmonization where justifiable) in the so-called 'services draft directive' in COM (2004) 2 of 13 Jan. 2004, also known as the Bolkestein directive. In particular, for SMEs this directive is crucial. More generally, after a long adjustment period, the scope for arbitrary protection and new restrictions would become minimal once this framework directive was in force. Remaining regulation would have to be justified or liberalized under free movement or establishment. It would improve economic performance, too. Both CPB (Kox, Lejour and Montizaan, 2004) and Copenhagen Economics (2005) expect greater cross-border services trade and establishment (by up to 35 per cent more) in the Union, counting only the direct effects, not the long-run impact of competitive exposure.

However, European industry should not focus solely on the internal market for services. A very dynamic subset of services, namely ICT services, turn out to be distinctly less dynamic than their counterparts in the USA[31] and this is not so much due to defects in the internal market as to other restraints of competition and attitudes being more risk averse, besides less deep ICT investment and a skill gap (see Denis et al., 2005). In this sense, horizontal policies which would probably benefit both services and industry are relevant here, but most of these issues (such as educational; skill gaps; subtle restraints of competition in services via excessive reliance of consumer protection; hindering rapid change because of employment protection laws and so on) have to be addressed at the Member states' level, given the current assignment of powers to the EU level.

2.3 Is European infrastructure crucial for European industry ?

In a trivial sense, of course, infrastructure matters greatly for any modern economy. The questions for this contribution are, first, whether it matters in a special way for (European) industry, and, second, whether the EU does or should have a role in (European) infrastructure in a way especially of interest to industry. It is good to realize that the second question was long taboo in European integration. Before the Maastricht treaty, no provision about or reference to infrastructure could be found in the treaties. Consider the sharp contrast with the internal 'economic integration' of Canada and of the United States. Both countries only began to integrate *after* major infrastructural investments (especially, East West, both

[31] See Bart van Ark, 2004, CPB colloquium ; for a less alarming analysis of the ICT 'gap', see Denis, Morrow, Roeger and Veugelers, 2005, pp. 19 – 36, even if the authors agree on the crucial role of ICT services.

railroads and highways) had been initiated. In Europe, post-war cross-border infrastructure was weakly coordinated, on a voluntary basis, in the framework of the UN-ECE in Geneva and/or bilaterally. Both approaches often failed, remained suboptimal or suffered from long delays. Infrastructure was regarded as a national, not in any way as a European, issue for reason of domestic sensitivity, because of budgetary burdens and, not least, because of a perceived or factual discrepancy between payment for and use of the facilities (especially, in case tolls were rejected as a usercharge).

The taboo was broken in 1984 by the European Round Table of Industrialists in its report on 'Missing links' (ERT, 1984). Member states, trapped in their inward-looking inhibitions, failed to appreciate that broader free trade, investment and, later, services trade as well, let alone the deepening of the internal market, necessitated a European perspective on infrastructure, besides national and local networks. Transiting countries was often unnecessarily costly because links were missing or inefficient routing was imposed by a purely national outlook. This applied to roads and freight rail but also to network infrastructure in (then not yet liberalized) public utilities. A European market with business quickly 'europeanizing' required European infrastructure without having to rely solely on national investments for local needs. Writing more than two decades later, the view has meanwhile been widely accepted, but its consequences seem too painful for Member states' governments for a wholehearted embrace of the idea.

The first question hinges on the role of the state and on the specificity of industry as a user of infrastructure. Because of profound structural changes in the economy and increasing congestion problems, European industry often complains nowadays that (public) infrastructure suffers from neglect and underinvestment, in turn worsening the business climate in Europe and acting as a threat to long-run productivity and economic growth. This would apply in particular to Western Europe. In addition, the special problems of cohesion in countries such as Portugal and Greece (and, until recently, Spain) as well as the Central European Member states and the candidates Romania and Bulgaria, necessitate additional infrastructure investments as a condition for catch-up growth, since the lack of it would reduce the attractiveness of FDI and make exports as a handmaiden of their growth more difficult. Of course, this is linked to the second question by arguing for pan-European investment schemes facilitating their exploitation of the opportunities provided by market integration.

Insofar as Western Europe is concerned, the problem of neglect requires the answer to three difficult empirical questions. First of all, has there been an actual downward trend in

real EU-15 infrastructure investment by governments? The careful survey by Valila, Kozluk and Mehrotra (2005) brings out that indeed there has been a downward trend in this public investment for decades but public investment was still growing (albeit slower than GDP) such that the stock of public capital has grown significantly. The authors empirically reject a number of popular assertions about why the down trend happened including the strictness of EMU rules, the decreasing need for infrastructure, or privatization. What remains as a statistically significant explanation are long-drawn-out periods of fiscal consolidation long before EMU and disconnected from it (the UK being the most severe case). For Central Europe, they find that, during transition infrastructure investment did not collapse and the absence of reliable estimates of public capital stock render it impossible to state whether it is too low for their development at this stage.

Another implied question to be answered is the relation between public capital and economic growth. This complicated issue has generated a huge literature. The survey by Romp and de Haan (2005) finds that the recent, more sophisticated, analyses do find a positive relationship but far more modest than the influential one in Aschauer (1989). The heterogeneity amongst countries is also great, for reasons of the size and quality of the existing capital stock, non-linearities caused by network effects and institutional and political factors. The authors warn that additional investment, though perhaps politically more rewarding, is no good measure if it pulls away money required for a proper maintenance of the physical stock in place, a problem not rarely encountered in Europe. A third question to be answered is whether the EU-15 suffers from a lack of public capital, that is, whether the stock of public capital is 'suboptimal'. Again, this cannot be a pure industry or even a pure business issue. Both modelling (see for example Romp and de Haan, 2005) and empirical analytical problems (see Kamp, 2005) explain why it is so difficult to come up with authoritative answers. Kamp holds that, in 2000, all EU-14 countries but two had ratios of public to private capital that exceeded the growth-maximizing value; the same is true for the EU-14 average. Taking uncertainty margins into account, Kamp suggests that ‘in most EU countries there is neither a shortage nor an excess of public capital…relative to private capital’ (2005, p 85). If long-run trends are extrapolated, the author finds that Austria, Belgium and the UK currently seem to grossly underinvest in public capital. Recent public-private partnerships in the UK might compensate but this is not at all guaranteed.

Thus, if European industry insists on infrastructure spending being increased in EU-15 (for Central Europe, this is not controversial) as a precondition for improved competitiveness in general, it would seem that economic analysis does not support such an argument. It is not

excluded, however, that specific elements or sectoral shortcomings might have to be addressed because the 'public capital' literature deals with larger aggregates.

The question for horizontal EU industrial policy is whether the EU level should be involved to ensure or at least foster a European perspective and the development of "European" infrastructure in the sense of missing links, greater overall (EU) network efficiency and cross-border (seamless) interconnections for network industries sharpening competition in such former 'national' utilities. It is here that subsidiarity strongly suggests a justified EU role (see Pelkmans, 2005b) given cross-border externalities and, sometimes, scale. This was hesitantly recognized in the Maastricht treaty as TransEuropean Networks (TENs), but without much financial funding (mainly feasibility studies and minor subsidies) and no other competences than voluntary agreements in TEN projects. The EC White Paper on Growth and Competitiveness of December 1993 (see EC, 1993) contained the first economic underpinning of the TEN approach, followed by the Christopherson report of 1994 and the Essen European Council decision about a range of TEN projects. As a generalization, it is not unfair to say that TENs have generated more disillusions than concrete improvements in European infrastructure.[32] Nevertheless, the awareness of a number of serious shortcomings in the "Europeanness" of networks or the absence of them has undoubtedly increased. Of course, the regulatory, environmental, spatial planning and budgetary constraints lead to enormous delays even for projects which tend to be supported in the wider EU interest.

In network industries such as gas and electricity, markets themselves normally pay for infrastructure. The question here is mainly whether interconnectors across borders are built (and by whom), knowing that this would invite more competition given third-party access. In freight rail the relevance for industry is probably most obvious. Rail freight in Europe is expensive, slow and of mixed quality as far as business customers' wants are concerned. Liberalization (see di Pietrantonio and Pelkmans, 2004) should help improvements on all three accounts. One critical condition for that to happen is access to cross-border, long-haul freight rail corridors. Thus freight rail liberalization began with freeing the TEN-RF corridors for competition and free entry. Still, owing to the dual use of rail track for both freight and passengers in Europe, which is very costly for freight (some 40 per cent cost increase only on

[32] In a survey paper like this, it is hard to substantiate this statement in detail. After the relative optimism of the first years, see e.g. the annual reports in COM(1998) 356 of 3 June 1998 and COM(1999)410 of 15 September 1999, and the hope that public-private partnerships could help fill the huge funding gaps (see High Level Group, 1997), progress became disappointing and highly selective. See also the implied criticism in Boxes 1 and 2 of the European Initiative for Growth, COM (2003)690 of 21 Nov. 2003, an attempt to revitalize the TEN policy.

that account), capacity problems are expected once a modal shift to rail at lower cost and better quality takes place.

A somewhat different issue played in air transport where delays and expensive rerouting of planes were due to the absence of a common air traffic infrastructure (with tremendous inefficiencies as a result) and a routing system where national interests (usually the military) were allowed to assume a very large part of the air corridors without any weighing of competing European civil aviation interests. In telecoms and the internet, in contrast, the liberalization of the former has generated major expenditure on B2B high speed networks (indeed, with excess of so-called 'dark fibre') and Europe is rapidly responding to the broadband challenge for B2C and C2C connections (see COM (2004)759 of 2 Dec. 2004 on telecoms), especially in the EU-15. A special case of electronic networking, where the EU has assumed a true European perspective, is the powerful GEANT network for universities (with terabit speeds by 2010) and some 10 per cent of direct EU subsidies. The GALILEO satellite GPS system (with a major EU contribution) should allow surface and maritime navigation and facilitate logistics and freight tracking systems. Finally, for road networks, the revised Eurovignette system, adopted in 2005, allows mark-ups for expensive bottlenecks (more often than not, cross-border ones like the Brenner pass), thereby reducing a significant obstacle to upgrading precisely of cross-border infrastructure. More generally, the 'missing links' idea would seem to be better pursued after October 2003, when the European Council of government leaders agreed that the cross-border segments of infrastructure could receive much higher percentages of EU support.[33]

Except perhaps on a case study basis, the author is not aware of analytical work singling out the (special?) relevance of industry for TENs. Should one call the TEN approach a kind of horizontal industrial policy, with co-benefits for consumers, and more indirectly for growth? This seems to go too far and, moreover, fails to take into consideration that TENs might crowd out other investment that, perhaps, might have a higher social marginal productivity. The latter problem has sometimes played a role in EU cohesion policies which emphasize infrastructure investments with a view to improving the capacity of poor regions to participate in the internal market. Depending on how this is done (see for example Martin, 1999; de la Fuente and Vives, 1995) it may or may not aggravate agglomeration effects and might boost economic growth in poor regions at the cost of growth in a country as a whole. In Central Europe, if multinational investors look for a production base with main outlets in

[33] See COM(2003)690 of 21 Nov. 2003, A European initiative for growth, pp. 10 and further.

Western Europe, clearly, the quantity and more often the quality of infrastructure will have to be improved over a period of decades. EU cohesion and structural funds can provide so much support that the risks of crowding out could be minimized (although co-financing will always imply some risk in this respect).

3. EU framework conditions for industrial policy

Both national and EU industrial policies are severely constrained by the EU framework of the internal market, complemented by its common polices and cohesion. This is not surprising as it reflects the fundamental choice of Member states to achieve economic progress, formulated in the EU's economic objectives, via a deep and well-functioning internal market. The internal market is governed by far-reaching instruments such as free movement and free establishment which purposefully reduce national policy autonomy in areas which might affect, actually or potentially, cross-border economic intercourse. Art. 4, EC, speaks about the internal market being governed by the principle of an "open market economy with free competition". Even without entering into the details of internal market governance, including competition policy and different degrees of common regulation where justified, it should be clear that there is not much scope for a direct impact on industrial activity. Indeed, (1) EU industrial policy cannot itself be inconsistent with this ambitious regime, even if the additional constraint of art. 157, EC, (see section 2.1) did not exist ; (2) the notion, implied in art. 157, EC, that national industrial policy has more degrees of freedom and greater choice than EU industrial policy must be understood against these framework conditions resulting from the internal market regime. Of course, since Member states have explicitly agreed with this set-up, one could interpret the framework as a quasi-constitutional denial to fall back on interventionist industrial policy in the future.

In Figure 2 the EU framework governing industrial policy is spelled out in some detail. Both so-called 'negative integration' (the establishment of the internal market via prohibitions for Member states to intervene with cross-border flows, see top of the figure) and 'positive integration' (that is, where Member states cooperate or regulate together or centrally ; see middle and bottom of the figure) constrain the industrial policy of Member states and of the Union in numerous ways. Most of these aspects are under a 'hard' legal regime, ultimately enforced by the Commission as the 'guardian of the treaty' and, where necessary, by the European Court of Justice. All the main areas have been specified. Attention should also be called to the column of guiding principles. Several of those principles are of a constitutional

nature and can suffice, depending on the case, to nullify specific measures of national industrial policy. Two are more policy oriented. The 'better regulation' principle has been embraced by the Union as a fundamental approach for all EU regulation, be it 'new' or when reviewing packages of the existing regulatory 'acquis communautaire'. It is briefly discussed in section 4. Moreover, Member states are already bound by the legal duty to respect 'proportionality', which says that measures should go no further than what is needed to accomplish the objective. The notion of 'cooperative federalism', coined by political science, is meant to express the idea that the two levels of government are not effectively separated (as is often the case in the USA) but, in contrast, often work together to pursue specific objectives or implement rules or codes. This is important for horizontal industrial policy where joint initiatives with a view to complementarity are routine. For reasons of space, a further study of Figure 2 is left to the reader.[34]

Figure 2:
EU Framework governing Industrial Policy

KEY ASPECTS	SUBSTANTIVE ELEMENTS	PRINCIPLES
establishment of INTERNAL MARKET	free movement • goods • services • capital • codified technology • workers (host c.c.) free establishment • entrepreneurship • FDI	- non-discrimination - proportionality - no frontiers - ownership (EU neutral)
proper functioning of INTERNAL MARKET	overcoming market failures (a) via rules and codes • harmonisation / approximation - Old and New Approaches - Global Approach (C.A., risk-based) • common regulation - uniform rules (and selected, autonomous Agencies) • mutual recognition (no EU rules) • competitive public procurement • standards and voluntary C.A. overcoming market failures (b) via competition policy • complementarity EU and Member states • EU → anti-trust	- subsidiarity - 'better regulation' - 'cooperative federalism' -' open and ompetitive'

[34] Greater detail can be found in the literature, e.g. Pelkmans, 2006, op. cit. or other surveys.

	→ network industries (see (a)) → state aids prohibition / control <u>common EU policies</u> • transport (link with infrastructure) • trade (see 'specific industrial policy') • agriculture (link with cohesion / envi.) • environment (IM priority, cost/benefit and competitiveness tests)	
regional / structural and cohesion policies	- measures strengthening hard and soft infrastructure (locational attractiveness) - measures for re-training / skill enhancement - support for adjustment after industrial decline / rural stagnation - cross-border regional facilitation - removing environmental legacies	- long-run catch-up growth - co-financing and additivity

Notes: C.A. = conformity assessment (testing, certification, accreditation)
host c.c. = host country control (i.e. protectionist)

It is important, however, to appreciate the *systemic* obstacles this framework generates *against* a return to old, interventionist and politicized industrial policy. For a while the probability of a policy reversal seemed slim. But since 2004, if not before, leading politicians in countries such as France, Germany and Italy and sometimes industrialists have occasionally called for a return to industrial policy. These calls tend to be vague because it is well-known that national autonomy is greatly circumscribed and, in addition, the European mind-set is much more pro-competition or pro-market than several decades ago. Looking at Figure 2, national industrial policies cannot affect free movement and free establishment. The case law in this area goes very far and severely limits policy action that is in some sense discriminatory (for companies from other EU countries) or distorts free movement/establishment. Thus, 'golden shares' of national governments in privatized former utilities have been condemned by the ECJ as going against the free movement of capital, here, the equal opportunity of all potential shareholders in the Union. Similarly, in overcoming market failures of the internal market (see (a) in the second row, second column), all five items greatly limit national discretion, even if full uniformity of EU rules is not applicable. Thus, mutual recognition even dispenses with common rules, but it imposes equivalence and otherwise falls back on the strict requirements of free movement (see for example Pelkmans, 2002). Overcoming market failures via competition policy exercises equally constraining effects (see (b)). In industrial policy one tends to think that this applies with particular force to state aid control (which is correct) but one should not forget that the Commission has taken a restrictive view on crisis cartels, that network industries (where interventionist industrial

policy was routine only 20 years ago) are being or have already been liberalized [35] and that merger control (begun at EU level in 1990) has further reduced the options for national policy makers. Last but not least, the internal market being 'open' to the world economy (at least, for industrial products) further curtails the toolkit of national industrial policy, if ever one would wish to return to interventionism. Quotas have been abolished in GATT and cannot come back. Industrial tariffs are low or zero and are "bound" in Geneva, which means that any increase beyond the bound level will cause an upheaval and, in any event, will have to be compensated. In rare instances, a trade measure of 'damage control' (think of the 2005 restraints on China for selected clothing items) is possible, for a short period, but one cannot build a true policy on that. Just before this book went to the press, France announced that it had selected ten sectors which must be prevented from falling into 'foreign' hands. The reader should note that the way this was suggested as being compatible with European law was that national security and military goods were involved so that art. 296, EC would apply as well as an escape clause in the EC Takeover Bid directive 2004/25. This escape route is so extreme that its use is already a powerful signal of how strong the constraining effect of the EU framework is [36].

4. Horizontal EU industrial policy

The main emphasis nowadays in the Union is on horizontal industrial policy. A sharp definition of what 'horizontal ' means in actual practice is not easy. The term probably originates from the desire *not* to intervene sectorally (vertically) and to defend policy makers against ad-hoc pressures for rescue operations and direct interventions in single enterprises. Such 'specific' industrial policy, another term often used, is not desirable in case declining industries or badly performing companies ask to be helped by the state, nor is the state any better than market players at 'picking winners' for the future. At the same time, the boundaries between the framework conditions (see section 3) and horizontal policy are not always clear-cut and the distinction between the two is, at times, fluid.

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[35] Which implies quite an intrusive mix of competition policy and pro-competitive regulation, see Pelkmans, 2001.

[36] In principle, art. 296, EC, goes further than mere state ownership because the latter can prevent any (including a hostile) take-over but cannot change the competitive environment of the company. Its application might be possible for military goods and for goods and services vital for national security, but this would only work if the goods and services are of a purely military nature. As soon as so-called dual-purpose goods are produced (and that is likely to be the case for most of these sectors), much of the discretion disappears since free movement and undistorted competition apply.

Another problem in setting out a proper picture of EU horizontal industrial policy is that the overall scope of this approach is vast, too vast for a chapter like the present one. To get around this difficulty, this section will employ two summary representations of crucial EU policy papers which give a rich impression of the EU horizontal approach and which can be used for annotations in the text. Elaboration of the economic analysis underlying the initiatives (or the lack of it) is impossible for reasons of space. Doing justice to the many interesting initiatives and their rate of success is equally unfeasible. In Figures 3 and 4 the Commission papers on industrial policy of 1994 and of 2004 are summarized.

After the treaty revision from Maastricht came into force the EU did not wait a moment before taking multiple action on the industrial policy front. Late 1993 and 1994 yielded no fewer than three major initiatives (not counting the Christopherson group on TENs, see section 2.3). First, the White Paper on Growth, Competitiveness and Employment of December 1993 links industrial policy with macro variables such as growth and employment. It stresses how crucial it is for the EU to be present, if not strong, in the markets 'of the future' (for example telecoms, biotech, environmental protection, new materials and energy). Commissioner Bangemann personally led a group on the Information Society, working out an action plan in the autumn of 1994. At about the same time, the Commission published its first post-Maastricht industrial policy paper which is largely of a horizontal character. Extracts from the latter are shown in Figure 3. The idea is to articulate further the current 'unprecedented effort to restructure and innovate' in the EU, induced by EC-1992 and greater trade openness. The European Information Society can be seen as 'sectoral' although it is of course an extremely broad and elusive concept. Otherwise, four priorities are identified, all clearly 'horizontal'. The first labelled "intangible investment" turns out to be a collection of initiatives which would seem to have in common that they are formulated in a pro-market fashion (for example, research with more regard to market needs and aiming at spin-offs ; economic incentives for clean technologies ; promoting quality).

Figure 3
EU Horizontal Industrial Policy proposed in 1994

DRIVE:
- EU industry has improved its competitiveness
- but… faces mounting international competition, emergence of the information society, continued needs in less developed regions, inadequate European networks, and demand for intangible investment

PRIORITIES
→ European Information Society action plan
→ four horizontal priorities (see below)

PROMOTE INTANGIBLE INVESTMENT	DEVELOP INDUSTRIAL COOPERATION	ENSURE FAIR COMPETITION	MODERNIZE ROLE PUBLIC AUTHORITIES
- general support for intangibles in investment (via tax) - research, with regard to market needs + spin-offs - promoting alliances - promoting quality - promoting clean technologies, with economic incentives - incorporate vocational training in other policies	- removal of legal / fiscal obstacles to industrial cooperation - facilitate (BC Net) - round tables - various cooperation schemes for cooperation with companies in Latin America, MED countries, and Asia - energy & standards cooperation with Central Europe	- a post-Uruguay Round (EU) agenda on international competition rules - rendering contingency protection in EU trade policy more efficient - stricter & more coherent EU state aids regime - pursuing the internal market for network industries	- regulatory reform - greater simplification EU laws (later Molitor report and SLIM) - improve administrative cooperation between Member States & Commission (i.e. 'cooperative federalism') - streamlining EU industrial policy decision-making in various Councils

Source: COM (94) 319 of 14 September 1994
Note: Horizontal aspects only

As could be expected given art. 157, EC, the EU level has little more than persuasion and some, rather limited funding available, whereas selected results will have to come from the Member states such as tax treatment of intangibles and economic incentive measures promoting clean technologies (with possible exemptions at EU level). Some initiatives, such as quality (which should be driven by market incentives), vocational training and business alliances, are mainly at the enterprise level. Indeed, a quality policy at the EU level was resisted later as inappropriate even if voluntary certification and testing are (weakly) encouraged via EOTC. On alliances, the EU level walks a tightrope between strong powers disciplining individual (anti-competitive) alliances and soft, non-interventionist encouragement of high-tech alliances in general.

This is also evident from the second priority where the EU level can mainly try to remove legal and fiscal barriers to 'industrial cooperation' (which requires directives) and otherwise little more than encouragement, a 'marriage bureau '(like BCnet) and active liaison functions in other continents under trade and cooperation agreements. The third priority (fair competition) is remarkable because it is mainly about a post-Uruguay agenda for worldwide competition rules, a wish meanwhile removed from the Doha agenda under the pressure from developing countries. Other items such as a stricter and more coherent state aid regime[37] and the pursuit of the internal market for network industries have been taken up with vigour and much has been achieved in the meantime. The desire to render contingency protection (such as anti-dumping) more efficient seems benign but one can ask questions about the 'fair competition' nature of EU anti-dumping. It has often been suggested that, at least in part, EU anti-dumping serves as the last instance of protectionist and selective industrial policy (see Evenett and Vermulst, 2005, for a survey).

The fourth priority (modernize public authorities) is mainly about regulatory simplification and reform, which has grown into a major plank of EU (and increasingly of national) policy making. The 1994 Commission paper anticipates the Molitor report (1995) on regulatory simplification for competitiveness as well as the SLIM programme (on simplification, see Pelkmans, Labory and Majone, 2000, for a critical review), initiatives which have since been completely overtaken by a far more intrusive and broader approach of RIAs. The prudent idea of streamlining industrial policy decision making has served as a prelude for the eventual merger of the Internal market, industry and research Councils with the Competitiveness Council, a decade later.

The overall impression of the 1994 Commission paper is that the EU was still searching for an effective common approach between the Member states, the EU level and EU industry as the principal actor. The horizontal approach of 2004, summarized in Figure 4, is definitely wider in scope and almost certainly better equipped with ideas, funds and (sometimes) instruments. This contrast is not to be interpreted as that, therefore, it is more 'effective ' in accomplishing goals or somehow 'better'. Such an assessment is very difficult to make, given the vast areas of activities, the constraints in terms of powers specified in Figure 1. and the potential or actual gaps between the desired results in policies and the genuine impact on European business. It is good to see the main reasons for the greater ambition in horizontal EU industrial policy after the turn of the century. The instrumental reasons include

[37] Coherence especially with structural policy and with criteria for EU (as opposed to national) subsidies.

(a) larger funding over time for research and for technology in the respective framework programmes ; (b) a more useful composition of these funds, with greater concentration on fewer areas, better exploitation of cross-border networking and the links between researchers/ engineers and business strategists more systematically pursued ; (c) a focus on 'hard' instruments where possible (that is, legal or financial rather than talkshops); (d) an increase in the funds for cohesion, which can be used for horizontal industrial policy (and only since the enlargement of 1 May 2004 has there been a threat of decline per country/region). But there were also reasons emerging from the very top of European politics, such as the fear of delocalization or de-industrialization (in particular, China and India have not failed to leave a deep impression on political leaders). An explicit public appeal was made by three leading prime-ministers (an initiative of Chancellor Schroeder) to have much more concern about the impact on European industry when regulating or intervening at EU level.

Probably the greatest drive for a more aggressive industrial policy arises from the frustration about prolonged, very low growth in Western Europe since late 2001 and the hopeless failure of the Lisbon process, as far as economic performance is concerned (see Kok et al., 2004). One could, however, argue just as well that, given so many powerful drives and the predicament of Europe, the industrial policy proposed is still too little, too late.

Figure 4:
EU Horizontal Industrial Policy proposed in 2004

DRIVE:	•	worrying combination of (too) slow structural change and selective (but not general) 'delocalisation'
	•	disappointing EU performance in productivity growth, research and innovation
	•	too weak risk-taking & entrepreneurship
	•	EU has still assets and many opportunities (e.g. intra-branch)
	•	Eastern enlargement → reorganize value-chains for competitiveness and growth
PRIORITIES	→	'better law-making' approach, combining a 'deeper' internal market, with a lower regulatory 'burden'
	→	'integrated approach' to competitiveness, in 5 areas (knowledge, the I.M., cohesion, sustainable development, worldwide dimension)

"BETTER EU LAW-MAKING"	INTEGRATED (MULTI-POLICY) APPROACH COMPETITIVENESS
- IM and one-stop-shop regulations benefit industry → pursue - RIAs - alternative methods to regulate - a fresh look at competitiveness impact of existing acquis - verify cumulative effects of regulation	- European Research Area (I.M. for R & D) (more funding, reversing brain-drain, better framework conditions for business R & D) - Innovation policy (business-driven, diffusion, funds, innovation systems) - human capital & skills - competition policy for innovation & tech transfer and new merger control (with 'efficiency test') - deepening / widening internal market (services, standards, financial markets, company law, fiscal) - cohesion / industrial clusters, TENs - incentives for 'green business', clean energy / tech - facilitating access-to-markets outside the EU (worldwide; Neighborhood strategy)

Source: COM (2004) 274 of 20 April 2004
Notes: Horizontal aspects only ; I.M. = internal market

Figure 4 presents the drives as set out in the Commission proposal. One can appreciate that the Commission convincingly argues against a doom scenario of delocalization and underlines that reallocation of productive factors and structural change more generally are inevitable processes (for productivity trends to go up) which should not be resisted. However, its analysis shows that a too slow structural change, combined with selective delocalization, is a menace to Europe's recovery and growth trend. The Commission is right in emphasizing the problem of too weak risk taking and entrepreneurship but, surprisingly, nowhere in the paper is its initiative on 'Entrepreneurship in Europe' even mentioned.[38] Of course, it is exceptionally difficult to influence deep-seated inhibitions against risk-taking in Europe but both the limited impact from taking barriers away for SMEs and de nuovo companies and the insistence that risk taking be rewarded and not discouraged is undoubtedly worth including in its horizontal industrial policy. Fortunately, the drives in Figure 4 also includes opportunities, not least the Eastern enlargement. Horizontal industrial policy is nowadays based on what is called an 'integrated' (across a range of policies) approach to competitiveness.[39] Thus the focus on only two priorities is a little misleading, although there is no denying that many of these policies are related.

[38] COM(2003) 27 of 15 Jan. 2003, Green paper, Entrepreneurship in Europe ; COM(2004) 70 of 11 Febr. 2004, Action plan : the European agenda for entrepreneurship.
[39] See also COM (2003)704 of 21 Nov. 2003, Some key issues in Europe's competitiveness – towards an integrated approach.

The first priority, 'better lawmaking', goes beyond industry alone, of course. However, since much of the acquis can be found in the area of goods regulation, occupational health and safety, and environment, affecting industry directly, European industry regards a lower regulatory burden as a handmaiden to competitiveness. The question is really whether the EU can deal with market failures in a least-cost fashion without compromising the objectives. Since these organs are the supreme political organs in the EU, it seems hard to imagine that they will accept such self discipline all the time. Moreover, a good deal of potential excess burdens might well arise from the detailed implementation and this can depend on what Member states do in the transposition process or what 'comitology' (the EU / Member states technical committees dealing with implementation or revisions, an instance of 'cooperative federalism') or the Commission decides in the follow-up of political decisions. After more than a decade of wavering, the EU has finally introduced RIAs for all proposals or amendments of a non-trivial character[40]. Detailed manuals [41] have meanwhile been developed and are compulsory for internal RIA preparation of the Commission. Amazingly, an interinstitutional agreement between the EP, the Council and the Commission extends the RIA process to all major amendments of Commission proposals in the process of adopting EU legislation. This chapter is not the place to assess the RIA approach and its effectiveness for the EU public interest (but see Radaelli, 2003 and Renda, 2006, for instance). It is also too early to assess whether the 'regulatory burden' for European industry is likely to go down as a result of these initiatives. One should not forget that there may well be justifiable reasons for those burdens if market failures have to be overcome. The empirical issue is, rather, whether European industry is *unduly* burdened because interventions are not based on market failures or not on well-defined objectives, or, entail higher costs than benefits for society (hence, a regulatory failure replaces a market failure), or, because costs of rules are disproportionate even if the net social benefit is positive. The biggest case so far (on REACH, the new chemicals regulatory regime) shows how complex such assessments are likely to be (Pelkmans, 2005-b). It is nevertheless progress that these issues are now squarely faced in the Union and thus can at least pre-empt true excesses while forcing political decision-makers to be clear and accountable for the choices they make. The status of the other two items (impact of the existing acquis and the problem of 'cumulative impact') is much less clear. They prompt

[40] See COM(2002) 276 of 5 June 2002 on RIA policy and methodology, and COM (2005) 97 of 16 March 2005, Better regulation for growth and jobs in the EU.

[41] The latest version is SEC(2005) 791 of 15 June 2005, Impact Assessment Guidelines``

large questionmarks because, by definition, these are far more sensitive still, and inevitably will take a decade or more to tackle satisfactorily.

The multi-policy approach to competitiveness is rich and better endowed with resources and powers than was possible ten years ago. Every single item of the list under this heading in Figure 4 is worth a chapter in the present volume. The following can be no more than a few brief annotations for the guidance of the reader. We shall limit ourselves to three areas : research, innovation and human capital.

The European Research Area has emerged from the Lisbon process's requirement that public and private R&D in the EU should be pushed up from 1.9 per cent (in 2001) to 3 per cent of GDP. Even more than public R&D it is business R&D in Europe which is lagging behind the USA and Japan.[42] The subsequent action plan[43] envisaged three lines of policy : improving the effectiveness of public support for research, redirecting public budgets towards R&D, and improving the framework conditions for research. For the first line, the so-called 'open process of coordination' in the Lisbon framework was utilized which is of doubtful utility, to put it mildly (for instance Pelkmans and Casey, 2004). The Sapir report (Sapir et al., 2003) stressed the current avoidance rather than the search for excellence and recommended a European Research Council based on the competitive model of the USA. But, since the bulk of public money for R&D is national in the EU (some 94 per cent), it would only help if a good deal of this national money was also subjected to competition and peer review on a European basis. Redirecting public money towards R&D is always tough, but particularly so when budget constraints are tight in a period of very low growth. At EU level economists have suggested a radical switch away from agricultural support to R&D[44] but this is fiercely resisted. The framework for research has everything to do with the overall prospects for top quality business and academic research in the Union and with the motives behind the brain drain of many thousands of researchers towards the USA. These issues, too long disregarded in the Union, are now frantically studied and the debate is at last beginning to be led by leading researchers themselves.[45] However, the inhibitions are deep-seated in academic Europe and career prospects, sustained funding of basic research and a range of other problems will have to be addressed in a convincing fashion.

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42 See e.g. COM(2002) 499 of 11 Sept. 2002, More research for Europe: towards 3 per cent of GDP.

43 See COM(2003) 226 of 4 June 2003, Investing in research: an action plan for Europe.

44 Sapir et al, 2003 ; Gros and Micossi, 2005.

45 See e.g. High Level Expert group, 2005, Frontier Research, the European Challenge, Brussels, European Commission DG Research ; EIROforum, 2005, Towards a Europe of Knowledge and Innovation, via http://www.eiroforum.org/efarchives/efsciencepolicy05.pdf.

The Union has long been concerned about Europe's incapacity to transform inventions into innovations. But little more has been done than 'policy by speech'. This has changed since the beginning of the 21st century.[46] After the Barcelona European Council of March 2002, mostly devoted to an acceleration of the Lisbon process, a series of intiatives were undertaken such as the European Innovation Scoreboard[47] and a new EU approach.[48] The 'open method of coordination' approach among the Member states which amounts to benchmarking and learning from one another's innovation systems became more structured.[49] For the medium term, the innovation activities are going to be intensified and closely linked with the policies to foster 'entrepreneurship' in Europe. As part of the medium-run EU budget proposals for 2007 – 2013 (the so-called EU Financial Perspectives, setting expenditure ceilings for a period of seven years, with the purpose of pre-empting annual budget battles between the Member states or between the Council and the EP), the Commission proposed a Competitiveness and Innovation programme, one subprogramme being that on Entrepreneurship and Innovation [50]. A major plank of this subprogramme is support for young, innovative SMEs in Europe, in particular as to improving access to start-up finance. It is held that European capital markets are too risk-averse and companies without an established reputation and with high-risk investment needs tend to be locked out. Already, since 2000, the EU has run a Risk Capital programme to promote and complement venture capital activities. In these new proposals four financial instruments would be established : venture capital support for innovative SMEs in their early stage, as well as in their expansion stage, guarantees and countergarantees for SME loans, and capacity building. Daringly, the impact assessment suggests the effect on job creation might be as high as nearly 400000 jobs although the analytical basis for this statement is not provided. It is good to see that this new subprogramme also undertakes a range of horizontal activities which have to do with 'innovation governance and culture'.

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[46] Since at least a decade, the EU is actively interested in stimulating innovation. It is strongly emphasized in the Lisbon strategy. The text will only briefly point to recent initiatives and attempts to meusure improvements as concretely as possible.

[47] For instance, see SEC (2003) 1255 of 10 Nov. 2003, 2003 European Innovation Scoreboard.

[48] COM(2003)112 of 11 March 2003, Innovation policy: updating the Union's approach in the context of the Lisbon strategy.

[49] See DG Enterprise, 2004, Innovation policy in Europe 2004, TrendChart, via www.cordis.lu/trendchart comprising an elaborate comparison of the national innovation systems and the lessons one might learn from it.

[50] COM(2005) 121 of 6 April 2005, Proposal for a decision.. (etc.) establishing a Competitiveness and Innovation Framework programme (2007 – 2013), also SEC (2005) 433, plus an Annexed Commission Staff Working Document providing an Impact Assessment.

The emphasis on human capital and skills is of course another very broad (and not solely industrial) area of attention. Its importance for innovation and growth is well known [51]. The EU level has only very limited competences here as this is a national (and, at times, regional) power par excellence. The broad scope as well as deep concerns about weakening educational performance and lifelong learning in Europe has prompted the Lisbon process to give it priority. Since the Lisbon process is Member states driven, there is no conflict with subsidiarity. But it also means that the results are uncertain and disparate over the Union. Human capital and skills at EU level are more a derivative of employment policy and of cross-migration issues than of industrial policy, even if the concerns largely overlap. In the Kok 2003 report [52] on European employment policies a separate chapter is devoted to more investment in human capital and lifelong learning. Similarly, in the European Employment Strategy [53]it plays a role, with specific quantitative indicators as interim targets. Where it comes to cross-border migration, the EU level is more appropriate and recent activity has been commendable [54] The Lisbon process has also addressed more generally the question of knowledge promotion on a European scale and of quality assessment in higher education. This began in earnest with the 'Education and training 2010" programme[55]. At University level the initial reservations would seem to have reduced and several intiatives by the Commission and the universities themselves in 2005 may make a more European approach, belated as it is, more effective. [56] The irony of Europe taking no less than 50 years after the

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[51] An interesting illustration is given by a Box in the Sapir report, based on unpublished work from Philippe Aghion, showing the growing importance of human capital for innovation at the productivity frontier. For both total factor productivity and labour productivity, the regression of the interaction between distance to the technological frontier and skilled labour is positive and significant. See Sapir et al, 2003, op. cit., p.33

[52] Kok et al., 2003, Jobs, jobs, jobs, creating more employment in Europe, Brussels, November]

[53] European Commission, 2004, More and better jobs for all, Brussels, January, and the Council Decision 2003/578 of 22 July 2003 on Guidelines for the employment policies of the Member states, item 4, which underlies it]

[54] See the Action Plan on Skills and Mobility, COM (2002) 72 ; the reform of the EURES system on job vavancies (see Commission decision 2003/8 of 23 December 2002, in Official Journal EC, L 5 / 16 of 10 January 2003 ; the many calls for student mobility and the various programmes the Commission has undertaken since 1987 to promote cross-border student exchange such as "Erasmus", etc. ; its attempts to stimulate researchers' mobility over frontiers, see COM (2001) 331 of 26 June 2001 on Mobility within the European research Area ; its cautious support of the so-called Bologna process, which is intergovernmental and involves non-EU countries as well but can be helpful in the longer run to facilitate transparency about national academic degrees, and should – ceteris paribus – lower considerably the transaction and information costs for cross-border mobility of students and graduates. In addition, it has the advantage of making it easier for Asian and American students to come to Europe and for multinationals to comprehend European degrees. The details of the Bologna process do matter, however, and misgivings abound in Europe about the risk of lowering quality or diluting certain master's degrees. For mutual recognition to work in actual practice, however, some measure of comparability and simplicity over a continent of more than 40 countries is badly needed.].

[55] See the Interim report in COM(2003) 685 of 11 Nov. 2003.

[56] See COM (2005) 58 of 5 Febr. 2005, The role of the universities in the Europe of knowledge ; COM (2005) 152 of 20 April 2005, Mobilising brain power of Europe, enabling universities to make their full

Messina declaration of May 1955, which began the ”relaunch" of European integration culminating in the EEC treaty in 1957, to come to terms with the idea of Europe-wide search for excellence and competition at intercontinental level, is particularly great. In Messina, the foreign ministers called for a European top university to pre-empt a brain drain of the finest European minds to the USA. Subsequently, negotiations took 17 years, aiming essentially at preventing a European "Harvard" to coming into being, solely because the elite club of the oldest universities did not accept the emergence of a possibly superior competitor.[57] For a reversal of the current brain drain to the USA, however, much will have to be fundamentally reformed in Europe.

The other four areas mentioned in the right/bottom column of Figure 4 are in fact other policy areas with an interface with industrial policy: aspects of EU competition policy, further deepening of the internal market, cohesion and questions of access to third markets. This testifies to the incredible scope and complexity of horizontal industrial policy. At times, it is more insightful to call this approach the constant attention to opportunities and risks for industry in Europe when it comes to *other* EU policies and strategies, rather than a policy of its own.

5. Sectoral and specific European industrial policy

Sectoral and specific industrial policy of the old days has largely disappeared. In this sense, the sectoral and specific industrial policy of the EU has modernized and become far more modest. Sectoral interventions are limited to a few remnants of the past (such as lingering but dwindling subsidies in coal; perhaps the R&D support for Airbus under the 'Community interest' clause (art. 87. 3.b., EC) and some remaining subsidies in shipbuilding; a handful of more explicit forms of industrial protection via trade policy such as a few quotas in steel and aluminium against some former USSR republics). All of these are national except the quotas, with the Commission exercising supervision, and on the way out, some faster than others.

Modern EU specific industrial policy can have a sectoral slant but only in a non-interventionist way. Since 1991 sectoral Commission papers typically scan all impacts of EU policies and rules (or indeed, free movement and the rest), consider what adverse impact can be reversed and what beneficial effects might be amplified, conduct joint studies on

contributions to the Lisbon strategy ; European University Association, 2005, Glasgow Declaration, Strong universities for a strong Europe, Brussels, April

[57] The European University Institute was the result and started formally in 1972 (de facto in 1975) in Florence.

competitive positioning and (may) search for R&D elements which the EU could usefully support. This fairly consistent approach is the counterpart of the focus on horizontal policy and the reliance on the overall EU framework. It is undoubtedly a significant improvement on protectionist, ad hoc, politicized or anti-adjustment interventions or plain nationalism. Two and a half decades ago, an entire range of sectors was subject to sectoral European industrial policy of the old variety, in one way or another, via the relaxing of state aid supervision, explicit (often 'grey') protectionism, special regulations, anti-dumping and so on. Around 1980, the range came to include cars, aircraft, shipbuilding, coal, steel, textiles and clothing, railway rolling stock, telecoms equipment, consumer electronics and so on. Picking winners took place as well in often ingenious ways.

Nowadays, while such bad policy making is avoided, it is not so easy to find out whether good policy has taken its place. Good industrial policy might be verified as correcting or improving upon market functioning, in particular dynamic efficiency, and as being least-cost. The present chapter cannot go into the numerous sectoral policy papers the Commission has published since 1991; it would be too encyclopaedic and it would be impossible to do justice to specialized and useful analyses. Many sectors have been subject to such broadly encouraging but largely non-interventionist 'policies', based on specialized study groups and High Level panels and with wide consultation of the sectors involved. Examples include textiles and clothing, cars, trains (both for new technology and for interoperability purposes), aircraft, new materials like 'new ceramics ' and superhard fibres, chemicals (culminating in new proposals to transform regulations in such a way that innovation would not be discouraged, as is now the case ; this has become the REACH process), biotechnology, shipbuilding, telecoms equipment (especially the attempt to keep the advantages EU companies had acquired with GSM, in 3G equipment), environmental technologies and so on. Such approaches have not been accompanied by trade protection anymore, or by large subsidies. When this chapter went to the publishers, the Commission published a paper on what it calls a 'new, integrated industrial policy [COM (2005) 474 of 5 Oct. 2005 and SEC (2005) 1215, with further details] which attempts to combine systematically its given horizontal perspective with a detailed screening of 27 sections, with respect to initiatives which can be taken to address weaknesses or new challenges at the sectoral level, always coherent with the horizontal framework underlying it.

It is nonetheless worthwhile to digress briefly on two aspects because they are critical for the reader to appreciate some remaining specifics of EU industrial policies of today, namely the EU's preoccupation with ICT, and its changing approach to technology policy.

The Union can look back on 25 years of what is now called ICT policies, beginning with ESPRIT in 1981 and currently concentrating on what is called the i2010 programme starting in 2006. Much has been written on the EU efforts but it is hard to escape the painful conclusion that the results of much collaborative research and co-production and (altogether) very considerable sums of EU money (usually 50 per cent of the costs) have not led to an improvement of the competitive position of the European ICT industries at any point in time during this quarter of a century, be it in hardware or software. It is probably fair to summarize by noting that the Union has held on far too long to a protective (and sometimes protectionist) approach, only shifting to a more pro-competitive, demand-oriented perspective in the course of the 1990s. The EU's ICT industry value added is for about 80 per cent in services and only 20 per cent in manufacturing. The manufacturing ICT sector finds itself squeezed between the proven innovative capacity of US industry and the cost-effective industrial processes in China and East Asia more generally.

The software industry, though bigger, is probably even weaker in relative terms (Dang Nguyen and Genthon, 2005) when assuming a global view. What matters for the latter, far more than for the former, is the widespread presence and fostering of knowledge, of users' sophistication and of a pro-competitive and innovative climate. In turn, this requires low entry barriers, risk taking and access to venture capital (a private approach to 'backing winners'), possibly at the margin supported by extra capital venture for SMEs from EU funds but on a market basis. The eEurope programme up to 2005 and the i2010 programme are, in these respects, incomparable to the old approach to ICT. eEurope is promoting a knowledge-based economy, about getting Europe on line, including e-government and education and eHealth. It also aims to stimulate new services based on ICT (broadband, in particular) [58]. The question can be asked whether eEurope can accelerate or prompt developments which, in the final analysis, are market-driven for the most part, especially because the EU instruments amounted to little more than persuasion projects, studies and modest funding. It is also crucial to understand the complementarity between eEurope, R&D programmes on ICT and regulation where appropriate. Nonetheless, the attention on user's demands and market processes in the 'Information Society' (but not as a blueprint anymore) stands in marked contrast to the old approaches to ICT. This can be further improved upon by focusing on those aspects that the EU ought to cover from a subsidiarity perspective, such as interoperability, open standards and security issues in the internet, because they are by

[58] See COM(2002) 263 comprising the eEuropeAction Plan, and COM (2004) 108 of 18 February 2004, eEurope 2005 Mid-term review.

definition cross-border and in the European public interest. They happen to be critical from a user perspective. Indeed, the uncertainty or incompleteness holds back deeper investments in many ways while suppressing new e-practices such as eMoney. From a still broader perspective, that of Lisbon and economic growth, the swifter adoption and wider deployment of ICT hardware and software is crucial to obtaining a higher trend growth in Europe [59]. In future, the demands aspects are to be widened to multi-media and contents orientation among others. The idea is that ICT investment, much lower in Europe than in the USA and in Japan, relative to GDP, can only be stimulated in the long run if the dynamics of the (internal) market provides the opportunities. It remains to be seen whether i2010 [60] is genuinely going to be more effective but it would seem to represent a policy approach no longer built on grand illusions and no longer prioritized from the existing (EU) supply side.

EU technology policy began in earnest with the Single Act of 1985 when it was given a legal base. Framework programmes began a few years earlier but were heavily biased towards energy under Euratom. Nevertheless, even the term "technology policies" is not clear at the EU level because R&D is often called 'research' whereas large parts of framework programmes also dealt and deal with applications in potential or close-to-market technologies. Besides, there was the EUREKA programme, largely market-driven and not accompanied by guaranteed subsidies. Two decades of such programmes in EU-wide networks of companies and technology centres have radically altered the mind-set of European firms, from 'local' to European, if not global. As the MERIT / CATI database developed by John Hagedoorn of Maastricht University has shown [61] how EU firms have been driven to extensive networking in Europe in this way, while engaging in numerous strategic networks and alliances with (basically, non-competing) partners from other continents for market penetration purposes.

With the internal market gradually becoming more integrated and cross-border mergers easier over time, the Europeanization of industry has also changed the technology landscape drastically. It is a moot question whether EU technology programmes were effective in the first decade or so. They tended to be splintered over far too many 'priorities' and compromised excellence by replacing technological leadership by equity criteria (such as all Member states 'getting reasonable shares'). They suffered from initial asymmetry of information between the Commission and business about where 'needs' could be identified,

[59] See in particular Denis, McMorrow and Roeger, 2004, and Denis, McMorrow, Roeger and Veugelers, 2005 as well as van Ark, 2004 ; see also chapter 2 of the Commission's European Competitiveness Report 2003 on the intra-firm organisational implications of ICT and the productivity gains.

[60] See COM(2005) 229 of 1 June 2005, i2010 – A European Information Society for growth and employment ; Reding, 2005

[61] : See e.g. Hagedoorn, Link and Vonortas, 2000 for a survey

risking picking winners or protecting losers. Gradually, in scaling up to the sixth and seventh framework programmes with ever rising sums of EU money (substituting for national efforts presumably), priorities have been reduced to a few and a much more rational assessment of the state of the art preceded choices, with a shift to a more market-driven approach such as the new "technology platforms". Technology platforms bring together for a number of years the entire array of companies and centres having received R&D subsidies for a specific subject matter in order to induce synergies and mutual inspiration, and possibly a larger range of marketable products. Such platforms may be the origin of new standards, new ideas, new combinations, etc. They attract market participants looking for certain applications as well. The platforms do not receive money other than the original R and D subsidies, while the Commission expects progress reports to be done there, with all the expert and commercial exposure available.

Where the EU has only slowly improved its technology policy is in the corporate environment. First, the common EU patent was voted down in 2004 on trivial and provincial language excuses of only two countries, a very costly failure; patenting in the EU costs on average five times as much as in the USA. Second, the competitive environment has become tougher in the internal market over time and, for companies beyond a minimum size, this might be expected to spur the search for new technologies and products. Unfortunately, the overall R&D carried out by EU business is much less, relatively, than business R&D in Japan or the USA. Moreover, some relocation of high-tech research (for example in pharmaceuticals) to the USA and even to China (in electronics) has prompted questions about the lack of stimulus for quality research in technology in Europe.

Finally, Europe has only moderate R&D in defence, in sharp contrast with the USA. To the extent that defence R&D generates spin-offs sooner or later, or creates a common cost base for civil and military products, the Union may be at a disadvantage. Repeated attempts to combine at least defence research in the EU have not been very effective. The probable sidelining of the draft Constitution is a setback in this respect because it would provide a basis for a special agency in this area, based on voluntary collaboration.

All in all, the sectoral and specific EU industrial policies are by no means dead, but have altered radically in nature while having become on the whole non-interventionist. Of course, this chapter cannot hope to assess their factual effectiveness, nor does it pretend to do so. The only major weakness so far not seriously addressed is the failure to optimize the two-level problem, so strongly argued by Eaton et al. (1998). One cannot be surprised about the problem of 'free riding' at the Member states level in a two-level technology policy, without

strict two- level coordination. The EU level has no say on the national policies, their 'waste' or excessive duplication horizontally or with the EU, or indeed on their deplorable quality where relevant. However, the national spending is easily more than 90 per cent of total European expenditure. That is why a future European Agency for Research, if ever adopted by the Council, should be given a mandate to deal as well, and on a competitive basis, with a part of national subsidized R and D. The issue here is not whether a Member state would thereby lose its power to subsidize, but, rather, whether 'peer review' can ensure a high minimum level of quality and originality. This is similar to technology platforms where a kind of perhaps informal peer review, but with applications in mind, disciplines and stimulates high tech output at high minimum levels.

6. Conclusions

European industrial policy cannot be understood by focusing solely on technology, ICT and a few other specific stimulating policies. It is indispensable to assume a broad perspective with a good appreciation of the EU framework determining largely both the constraints at Member states' level and the considerable limits of action at the EU level, besides an understanding of what initiatives are feasible, and how, with respect to 'horizontal' and 'specific' industrial policies. The upshot has been that industrial dynamics in the Union have become ever more firmly determined by market pressures in a meanwhile very big Economic Union (with no fewer than 455 million consumers up to 485 million in 2007) and by exposure to globalization, given very low industrial trade protection and the absence of barriers to FDI (as well as national treatment). Inevitably, EU industrial policy has therefore drifted into endeavours to strengthen fundamental determinants of competitiveness, to some degree corresponding to dynamic comparative advantage. Hence there is the 'horizontal' emphasis on research strategies, skills and human capital and a general promotion of innovation throughout industry. Moreover, this accords well with the deepening of the internal market, still going on, and the consistency of EU competition policy, in reducing distorting state aid and severely limiting the scope for discriminatory or distortive promotion of 'national champions'. In addition, endeavours have been made to facilitate SMEs and 'entrepreneurship' by cutting red tape and making access to venture capital easier. Over the last few years, political leaders, calling for a new industrial policy against de-industrialization, acknowledged this horizontal perspective when they merely insisted on reducing the burden

on industry arising from new EU regulation, while refraining from a systemic policy reversal.

Sectoral and specific industrial policy, so familiar from the 1950s, 1960s and 1970s has almost entirely disappeared at the Member states' level. It is no longer tolerated at the EU level, given that treaty amendments and accepted supervision policy have become routine. At the EU level, such interventionist policy (other than once tolerating it for Member states) could only be supported via trade policy. Also the latter has lost a good deal of its tools, with the possible exception of anti-dumping action (under WTO constraints and tightened EU law). Nowadays, the EU institutions are very active in stimulating a better sectoral environment in many sectors but this is no longer done by means of protection, distortive subsidies (funds go to adjustment, retraining or research) or permissive competition policy. Policy reversals are not totally excluded (witness the temporary constraints in Chinese textile exports) if pressures are extreme but there is no doubt that competitiveness and hence adjustment retain overriding importance. The EU has greatly increased technology funding (quite often as a corollary of research programmes) in areas such as new materials, space, hydrogen, health and environmental technologies. Also here, the EU level seeks to avoid a 'picking winners' approach by letting technology forums develop where many ideas and applications can blossom.

This chapter has not discussed the (in)effectiveness of EU industrial policies. Even if partial, this would be a difficult exercise given the multidimensional nature of policies and the importance of constraints and/or the absence of powers for the EU level. For research and technology, however, the most visible element presumably of policy today, there is undoubtedly a serious lack of coordination in a two-level game. It is essential that the research climate in Europe become more demanding, challenging and promising (hence stopping the brain drain), that quality be stimulated by a tough peer review approach, and that excessive duplication at the two levels be avoided. However, even these measures may not be sufficient. After all, European industry (and services even less) invests much less in R&D than Japanese and US business and, unless their output and subsequent innovation to markets are systematically far better than their rivals in Japan and the USA - an assumption that would go against all evidence -, this underperformance is bound to erode competitiveness amongst developed economies in the longer run. Apparently, it is not so much the size of the internal market but its proper (and dynamic) functioning which might lead EU companies to hold back on R&D.

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