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A "Competitiveness Proofing" Toolkit for use in Impact Assessments

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COMMISSION STAFF WORKING DOCUMENT

**OPERATIONAL GUIDANCE FOR ASSESSING IMPACTS ON SECTORAL
COMPETITIVENESS WITHIN THE COMMISSION IMPACT ASSESSMENT
SYSTEM**

A "Competitiveness Proofing" Toolkit for use in Impact Assessments

COMMISSION STAFF WORKING DOCUMENT

OPERATIONAL GUIDANCE FOR ASSESSING IMPACTS ON SECTORAL COMPETITIVENESS WITHIN THE COMMISSION IMPACT ASSESSMENT SYSTEM

A "Competitiveness Proofing" Toolkit for use in Impact Assessments

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1. INTRODUCTION

The purpose of this toolkit is to help services analyse impacts on sectoral competitiveness when performing the impact assessment of a new policy proposal.

The Commission Impact Assessment system is based on an integrated approach, which analyses both benefits and costs, and addresses all significant economic, social and environmental impacts of possible new initiatives. The analysis of different impacts should be proportionate to their quantitative, qualitative and political significance. Analytical efforts that do not lead to further insights or alter the conclusions or their robustness should be avoided.¹

The Commission's Impact Assessment Guidelines (2009) provide general guidance on these issues. They also stress that "When identifying economic impacts, particular attention should be paid to factors that are widely considered as being important to productivity, and hence to the competitiveness of the EU. Competitiveness is a measure of an economy's ability to provide its population with high and rising standards of living and high rates of employment on a sustainable basis. Vigorous competition in a supportive business environment is a key driver of productivity growth and competitiveness."² To this end, the Guidelines already contain a set of specific competitiveness-related questions in the economic impacts section.³

Article 173(1) of the TFEU

The Union and the Member States shall ensure that the conditions necessary for the competitiveness of the Union's industry exist.

For that purpose, in accordance with a system of open and competitive markets, their action shall be aimed at:

- speeding up the adjustment of industry to structural changes,
- encouraging an environment favourable to initiative and to the development of undertakings throughout the Union, particularly small and medium-sized undertakings,
- encouraging an environment favourable to cooperation between undertakings,
- fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

To further improve services' capacity to analyse competitiveness-related issues in a throughout and proportionate manner, this toolkit complements the 2009 Guidelines. As in the case of other documents offering more precise guidance on specific impacts⁴, it neither sets out new requirements nor establishes the preference for one particular analytical method.⁵ It simply suggests in a non-exhaustive manner ways and tools through which specific impacts on sectoral competitiveness may be addressed. Given the diversity of impacts and affected groups and the costs of detailed analysis, pragmatic methodological choices will have to be made and properly justified on a case-by-case basis, the ultimate objective being to ensure the

¹ See Impact Assessment Guidelines, section 3.2.

² Ibid., Annex 8.

³ See Impact Assessment Guidelines, section 8.2. Table 1 'Economic Impacts' pp. 33-34

⁴ See e.g. Guidance for Assessing Social Impacts within the Commission Impact Assessment System and the Operational Guidance on Taking Account of Fundamental Rights in Commission Impact Assessments at http://ec.europa.eu/governance/impact/key_docs/key_docs_en.htm

⁵ Notably sectoral analysis vs. more aggregate assessments of impacts through general equilibrium models and the like.

sufficient quality of the overall impact assessment analysis. There is no one-size-fits-all approach. The quality of the IA, including its assessment of competitiveness impacts rests upon the team's expertise and the proper consultation within the IA Steering Group and with stakeholders.

Providing an appropriate assessment of these impacts is a direct application of the principle of proportionate and integrated analysis. It is in line with the provisions of TFEU Art.173 and responds to the Commission's commitment in its Communication on Industrial Policy "to ensure that all policy proposals with a significant effect on industry undergo a thorough analysis for their impacts on competitiveness". The analysis of impacts on competitiveness (referred to as 'competitiveness proofing') is carried out through the existing impact assessment process, inter alia by "assessing and reporting the overall impacts of a proposal on competitiveness, including the investment, cost, price and innovative implications for industry and individual sectors as well as consumer satisfaction and taking particular account of the potential interactions between a policy proposal and other existing or planned legislation and regulation".⁶

Whereas in the integrated approach to impact assessment **all** costs and benefits should be adequately taken into account, the aggregate perspective may need to be complemented by a more sectoral one focusing on the specific impact of the initiative on sectors of economic activity.⁷

The aims of competitiveness proofing are to:

- (1) Further improve the analytical quality of impact assessment reports with regard to impacts on competitiveness;
- (2) Facilitate the design of policies that take full account of competitiveness impacts, given their overall set of objectives.

The objective of competitiveness proofing is not to give disproportionate weight to sectoral impacts in the overall impact assessment. The intention is to deepen the analysis to allow policy-makers to see better the impacts of the proposal on business competitiveness.

The purpose of this guidance is to offer operational support to impact assessment teams with regard to impacts on competitiveness. It is put together to meet their request for a more structured way to assess such impacts. The guidance outlines the major steps and questions one may ask when performing competitiveness proofing. It contains 12 consecutive steps arranged in the following three sections (see the table below):

Section I, Getting started, helps you better understand the objectives as well as the scope and tools for assessing impacts on sectoral competitiveness.

Section II, Qualitative Screening, helps you to identify what the most relevant impacts on the competitiveness of industrial sectors are in the case of specific initiatives.

Section III, Quantifying the impacts: data sources, refers you to useful sources for quantitative analysis.

⁶ COM(2010) 614 "An Integrated Industrial Policy for the Globalization Era: Putting Competitiveness and Sustainability at Centre Stage", p. 5

⁷ This guidance uses the concepts of sectors, industries, enterprises and related concepts of sectoral, industrial, enterprise or business competitiveness interchangeably. The sectoral approach should not be interpreted as focusing on one or few selected sectors. It implies rather that the aggregate impact of a proposal takes into account the negative and positive impacts on the competitiveness of all directly and indirectly affected sectors as well as their capacity to adjust to the new requirements.

Each section identifies several *optional steps to deliver a separate task* for the assessment of impacts on sectoral competitiveness. This modular structure of the toolkit is meant to provide you with a step-by-step guidance, but also with enough flexibility to skip those parts that you consider less relevant for your IA in line with the principle of proportionate analysis.

Support

Questions or feedback regarding the application of this guidance can be sent to the competitiveness proofing help desk in DG ENTR through its **functional mailbox**:

[ENTR COMPETITIVENESS IMPACT HELPDESK](#)

IA teams may also refer to the materials and links collected in the “competitiveness proofing” webpage:

<http://myintracomm.ec.europa.eu/entr/howwemanage/decisionmaking/Pages/default.aspx>, where they can share their experience and ideas with other IA colleagues and help the competitiveness proofing help desk make this guidance more helpful and operational.

Good examples of assessing the impacts of new proposals on industrial competitiveness that may inspire your analysis are to be found in the [Best Practice Library](#).

I. GETTING STARTED

Before you start, you need to decide:

- 1) Does your IA require a specific analysis of impacts on sectoral competitiveness in the first place? And if yes:
- 2) What is the proportionate level of this analysis?

These two questions are addressed in the two consecutive steps outlined below.

Step 1. Does your IA require a specific analysis of impacts on sectoral competitiveness?

The purpose of this step is to help you understand whether an analysis of this type of impacts is required at all or not (if you know the basics and conclude that your impact assessment needs to look at impacts on sectoral competitiveness, you may skip this step and go directly to Step 2).

As the principle of proportionate analysis makes clear, not all IAs need specific analysis on sectoral competitiveness. This is reflected by the Industrial Policy Flagship Communication where the Commission committed to "... ensure that all policy proposals with a significant effect on industry undergo a thorough analysis for their impacts on competitiveness. Examples of such measures are new internal market legislation, major financial market regulations, that might affect access to finance, and new climate change or environmental legislation."⁸

Therefore, in order to complement the integrated assessment of all impacts of a new proposal, a sectoral analysis might be useful to identify how the proposal affects the different sectors, and whether specific sectors are particularly affected. This step proposes a user-friendly tool to decide whether the IA of a new policy proposal requires a specific analysis of impacts on sectoral competitiveness without prejudging the choice of a methodology to do so.

The first question to be answered therefore is whether an initiative is likely to have a significant effect on sectoral competitiveness or not. Generally speaking, EU initiatives have an impact on competitiveness when they affect at least one of the following:

- A sector's capacity to produce products at a lower cost and/or offer them at a more competitive price (cost / price competitiveness) - the cost of enterprise operations includes the cost of inputs (including resources and energy) and factors of production, which may be directly or indirectly affected by the policy proposal.
- The quality or the originality of a sector's supply of goods or services (innovative competitiveness) - technological development and innovation (of products and/or processes) are of primary importance for both the cost of inputs and the value of outputs.
- Effective market competition and undistorted access to external markets including those of inputs and materials, of public procurement, etc.

⁸

COM(2010) 614 "An Integrated Industrial Policy for the Globalization Era: Putting Competitiveness and Sustainability at Centre Stage", p. 5

- The sector's market shares on the international markets

Sectoral competitiveness is directly related to **productivity and its underlying determinants**. Productivity growth is determined by changes in the quality and quantity of inputs and technological progress —that is, a sector's **propensity to innovate**. In the long-term growth of the standards of living is determined by the nation's or firm's ability to produce more output from given inputs. This is the idea behind **total factor productivity**, the growth of production not accounted for by the factor inputs. Economic theory predicts that in successful enterprises, gains in market share, long-term profitability and rising real wages are usually linked with vigorous productivity growth. Conventional indicators of competitiveness – *unit labour costs or price and quality competitiveness* – also reflect the underlying dynamics of productivity and innovation.

The analysis of impacts on cost and capacity to innovate should also be addressed in an international comparative perspective. For instance, if a policy proposal is likely to increase costs for EU producers – through e.g. stricter product-safety requirements on the EU market – this may affect EU manufacturers' market shares unless their external competitors face the same conditions in Europe and abroad. If the policy affects the production process through e.g. stricter resource-use, or pollution standards, or health and safety at work provisions, which do not apply to competitors, European manufacturers may be at a competitive advantage or disadvantage vis-à-vis firms located elsewhere.

Competitiveness proofing

'Competitiveness proofing' is a complementary instrument in the IA toolkit, whose objective is to reinforce the overall assessment of economic impacts of a new proposal with a better account of impacts on enterprise competitiveness at sector and aggregate level by identifying, and – where proportionate – by quantifying the likely impacts of the new proposal in three dimensions of enterprise competitiveness:

- a) *Cost competitiveness*: the cost of doing business, which includes cost of intermediate inputs (incl. energy) and of factors of production (labour and capital);
- b) *Capacity to innovate*: the capacity of the business to produce more and/or higher quality products and services that meet better customers' preferences
- c) *International competitiveness*: the above two aspects could also be assessed in an international comparative perspective, so that the likely impact of the policy proposal on the European industries' market shares and revealed comparative advantages is taken into account.

The economic impacts table of the IA Guidelines lists a number of questions with direct relevance to enterprises' price and cost competitiveness, their capacity to innovate and their external competitive positions.⁹ Apart from these questions, the Guidelines contain in their annexes detailed guidance on identifying and measuring the impact of a policy proposal on SMEs (the SME 'test')¹⁰, as well as impacts on technological development and innovation.¹¹ Further to these two, there is also guidance on assessing the impacts on competition.¹²

⁹ IA Guidelines, section 8.2 table 1 pp. 33-34

¹⁰ Annexes to IA Guidelines pp.32-34 Section 8.4

¹¹ Annexes of the IA Guidelines, pp. 34-38 Section 8.5

¹² IA Guidelines, p. 40

However, rather than analysing all these different questions at such an early stage of the analysis, IA teams may use the checklist proposed here as a tool to assess whether a policy intervention is likely to have significant impact on business competitiveness.

The table below illustrates this analytical tool with a proposal to ban the use of hazardous materials in EU industrial products. The checklist contains general questions about the size of the expected impacts on the drivers of competitiveness and market shares. The questions do not require an in-depth study or quantitative techniques to answer them. For this first scan, you can use only your and your team's expertise.

You may not be able to give a straightforward yes/no answer to all of them. For instance, the size of the effect may be hard to foresee without data and assumptions. Alternatively, the sign of the impact on competitiveness may be ambiguous or even change over time. For example, a ban on the use of hazardous materials in certain products may result initially in market share losses by European manufacturers using those materials, but with consumer awareness growing and preferences changing, sales of safer products may grow. Similarly, health and safety at work provisions may increase labour costs in the short run, while having longer term positive effects by fostering productivity, reducing absenteeism and supporting recruitment and retention. Impacts may also differ across the affected enterprise sectors making the overall impact uncertain. In the example, the sector that produces the hazardous material will lose, but producers of substitutes may benefit (not shown below as the checklist is for the most affected sector only).

Is the ban of use of hazardous material likely to have a significant impact on enterprise competitiveness in terms of:

	Positive	Negative
Cost and price competitiveness		
Cost of inputs	Yes	
Cost of capital	Yes	
Cost of labour	Yes?	
Other compliance costs (e.g. reporting obligations)	Yes	
Cost of production, distribution, after-sales services	Yes	
Price of outputs (directly not through the cost, e.g. price controls)	No	
Capacity to innovate		
Capacity to produce and bring R&D to the market	Yes	
Capacity for product innovation	Yes	
Capacity for process innovation (including distribution, marketing and after-sales services)	Yes	
Access to risk capital	n/a	
International competitiveness		
Market shares (single market)	Yes	
Market shares (external markets)	Yes	
Revealed comparative advantages ¹³	cannot say	

Filling only those answers that seem straightforward may be enough to decide whether an IA needs to look in greater depth at all or at some impacts on sectoral competitiveness. When

¹³

See Step 12 for definition of RCA

there is considerable uncertainty (i.e., many blanks or question marks in the checklist), a further analysis of impacts on sectoral competitiveness could also be warranted.

For the purpose of illustration it is applied here to one option and is based on yes/no answers. Alternatively, one could prefer to go a step further and apply it to more options —the 'do-nothing' option and alternative options like seeking international solution of the safety problem rather than an EU only regulation, etc. Furthermore, one may want to apply it also to the indirectly affected sectors (those in and outside the value chain).

The example indicates a case for a more detailed assessment of impacts on sectoral competitiveness, as the policy proposal may have strong impacts on most determinants of the competitiveness of the manufacturing sector that uses the hazardous material as input. These impacts may have opposite signs – the regulation is likely to impose additional compliance costs; but on the other hand, it may also encourage innovation and the use of new materials.

The result of this checklist should not be interpreted as evidence that competitive gains and losses would cancel out, because these impacts have not yet been quantified or even qualitatively assessed. The checklist only shows that the effects may be significant.

It should also be noted that when impacts on competitiveness are expected to be significant, a more detailed analysis may be worthwhile regardless of the fact that the net impact on competitiveness or the initiative's overall net benefit may be expected to be positive.

This is of course true for any specific set of significant impacts and it is in line with the IA rationale: an integrated comprehensive approach identifying winners and losers, helping to devise, where appropriate, mitigating measures for those heavily affected while achieving the objectives of the policy intervention. Thus, for instance, the examination of the competitiveness impacts of the Emission Trading System, through among others macroeconomic modelling, led to the policy conclusion to continue free allocation of allowances to those energy-intensive sectors that are exposed to the risk of carbon leakage.

In brief, even when the IA proves net benefits to society, a more in depth assessment of impacts on sectoral competitiveness can help you see how the objectives can be achieved while minimising potential negative impacts on most affected sectors and facilitating their adjustment to the new requirements in the short term. In the case of proposals, which affect numerous inter-linked sectors of the economy, however, it might be appropriate to use computable general equilibrium (CGE) simulations and/or macro-econometric input-output models that allow to assess the economy wide impact of a policy change as well as the likely magnitude of gains and losses by sector and the spill-over effects between sectors.

Step 2. How deep should we go?

Sections 3.2 and 8.2. of the IA Guidelines present the criteria that should be taken in consideration when deciding the extent to which significant impacts should be analysed throughout the whole IA process. This section complements the IA Guidelines by providing specific context with respect to impacts on sectoral competitiveness.

The magnitude of the expected impacts and their political importance are two key determinants. The type of policy intervention also offers useful pointers.

In the case of policy interventions of a self-regulatory nature (such as codes of conduct, or voluntary standards), the case for an in-depth analysis of impacts on sectoral competitiveness is likely to be limited since the sector itself plays a key role in determining the content of the initiative. However, more detailed scrutiny may be required with regard to impacts on competition within the sector and on the competitiveness of upstream or downstream sectors.

If the intervention concerns an infrastructure project (e.g. transport or communication facility) or the provision of public services (e.g. satellite navigation services), it is also likely to have a positive impact on business competitiveness although this may depend on the charges paid by users.

Regulatory initiatives are most likely to produce impacts on sectoral competitiveness. In the case of those, explicitly aiming at improving the framework conditions for sector competitiveness, the positive impacts are likely to outweigh the negative. Yet an analysis is still warranted to clearly identify overall benefits, to identify the policy option yielding higher benefits and, optimally, identify some indicators and benchmark values for the subsequent ex-post evaluation of the actual impact of the policy on sectoral competitiveness.

Many regulatory initiatives however, primarily pursue policy goals other than competitiveness, (e.g. protecting the environment, the consumers, the employees, or the investors), but may affect sectoral competitiveness positively or negatively. These are the typical candidates for a more detailed assessment of impacts on sectoral competitiveness.

The assessment of impacts may be mainly **qualitative** for those proposals that are likely to have a limited impact on competitiveness or for which it can be shown that no other analysis is proportionate. Services should strive to include **quantitative** elements (and when possible carry out quantitative estimate of impacts) in those cases where impacts are expected to be particularly significant. The analysis may be limited to the direct effects (i.e. the impact on the directly affected sectors), or extended to indirect effects if these are also likely to be significant and it is possible (and proportionate) to analyse them.

Step 1 and 2 should allow you to ascertain the merit of a specific analysis of competitiveness impacts, to identify the relevant impacts of the policy proposal and to have an idea of how extensive your analysis should aim to be. This could helpfully feed into your planning for further analysis and already provide possible feedback information on the design of your set of options. This planning stage is just to get you started. Bearing in mind that impact assessment is an iterative process, indications may have to be modified as the works proceeds (and, for instance, certain impacts appear more significant than originally thought thus calling for deeper / quantitative analysis; or – conversely – quantitative estimation proves to be exceedingly costly / impossible to carry out).

II. QUALITATIVE SCREENING

Following the first two steps described above, relevant impacts may usefully be subject to the qualitative screening described in this section.

This part of the toolkit uses the questions and guidance already included in the IA Guidelines. They are divided into four groups covering: a) identification and description of the affected sectors; b) cost and price competitiveness (including consumer choice); c) capacity to innovate; and d) international competitiveness.

If you work for a sectoral unit overseeing the sector directly targeted, you should be able to answer most of these questions using your own or your unit's expertise and knowledge. If the affected sector is outside your immediate area of expertise, which is more often the case, you need some basic knowledge of its operations, including inputs, factor intensities (capital, labour and energy intensities), as well as intensity of market competition, sizes of enterprises and other characteristics of the sector. You may consult DG ENTR competitiveness impacts help desk, or the IA steering group for background materials, such as:

- 1) Existing sectoral studies: you can find some studies of manufacturing sectors at:
http://ec.europa.eu/enterprise/policies/industrial-competitiveness/industrial-policy/future-of-manufacturing/index_en.htm
- 2) Previous impact assessments affecting the same sectors:
[\(http://ec.europa.eu/governance/impact/ia_carried_out/cia_2011_en.htm\)](http://ec.europa.eu/governance/impact/ia_carried_out/cia_2011_en.htm)
- 3) Ex-post evaluations of effective policies or regulations on the sector (see EIMS – the Commission's database storing information on evaluation results:
http://www.cc.cec/home/dgserv/sg/evaluation/pages/eims_en.htm)

You may also check studies and publications of the respective European or national business chambers as well as European sectoral social dialogue committees where relevant. (See Step 8a for details).

Ideally, the final input into the IA report from the qualitative screening would be a short analysis with the following elements:

1. Affected sectors
2. Identified impacts on these sectors of the policy proposal
3. Qualitative estimate of the nature and magnitude of impacts:
 - a. how big is the expected impact;
 - b. is it a direct or indirect result of the intervention; and
 - c. when is it expected to occur.
 - d. is the impact transitory or permanent. (duration of the impact)
4. The probability that the impact will take place
 - a. How likely is the impact
 - b. Does it depend on critical assumptions

This analysis should make adequate use of the results of internal and external consultation as required by the Guidelines.

The following matrix is one possible template that could be used for each affected sector to present the results of the qualitative screening with regard to competitiveness impacts in the consultation document and in the IA report.

Competitive impacts	Affected sectors		Sizing (timing) of impacts	Duration of impact	Risks and uncertainty
	Directly	Indirectly			
Cost and price competitiveness					
Capacity to innovate					
International competitiveness					

Summing up, you may benefit from qualitative screening in three ways:

1. It can inform the way in which you consult other services and external stakeholders.
2. It helps you see more clearly the needs for quantification and may give you ideas of availability of data and models to proceed with quantification.
3. It may turn out to be your final deliverable either because it indicates that negative or positive impacts on competitiveness are not sufficiently significant to merit explicit quantification or because the latter may be either impossible or simply too costly to be proportionate.

What follows is the outline of the consecutive steps, and the respective tools for each step that would help you deliver the outputs of qualitative screening.

Step 3. Which are the affected sectors?

A detailed analysis of impacts on competitiveness requires you to identify the affected sectors. As argued above, three major types of impacts are important for the analysis of impacts on sectoral competitiveness: a) the cost of business operation; b) the capacity to innovate; and c) the international dimension

As competitiveness proofing should take into account direct and indirect (positive and negative) effects and distinguish and account for short and longer-term effects, you could also consider three groups of stakeholders and impacts thereof:

1. Impact on the sectors directly affected by the policy initiative;
2. Indirect impacts on sectors in the supply chain of the affected sectors
3. Indirect impacts on sectors outside the supply chain

The first group above refers to the **direct effects**. The second and the third type are **indirect effects** triggered by changes in relative prices and in supply and demand on the markets for inputs and outputs of the targeted sector. They may occur in parallel or with a delay (second round effects) relative to the direct effects. They are important for two reasons. Firstly, they may significantly exceed the primary effects if they affect many sectors in or outside the supply chain. Secondly, they can even undo the overall expected benefits/costs if they have an opposite sign to the direct effects.

Indirect effects can be found in:

1. downstream sectors, sectors consuming the output of the affected sector and that face new prices of intermediate or capital consumption;
2. upstream sectors, that is, suppliers of goods and services used by the affected sector that may suffer changes in the demand for their products;
3. markets of complementary goods, because their demand moves in the same direction with the demand for the products of the affected sector (e.g. increase in the prices of fuel will affect the demand for cars); and
4. market for substitutes, because their demand moves in the opposite direction relative to the demand for the products of the affected sector (e.g., increases in the price of fuel may boost demand for public transportation.)¹⁴

Some policies may affect many or most business sectors. Examples of such interventions are for instance those affecting labour costs (e.g. the Working Time Directive) or those affecting cost of energy (e.g. renewable energy policies) or those affecting access to and the cost of finance (e.g. capital requirements for banks), or personal data protection for instance. Aggregate benefits and costs would normally be assessed but **the distribution of impacts across sectors** could also be analysed when proportionate (for instance when a sector is particularly affected). In these cases, you may need to take into account labour, energy, resource and capital intensities to better 'size' the distribution of impacts, identify the most adversely affected industrial sectors; and look at their performance and chances to sustain the policy intervention.

¹⁴

See annex 2 case 1 for illustration

Step 4. What is the effect on SME competitiveness?

The "SME test", already an integral part of the IA guidelines and practice, includes questions on cost, innovation capacity and other framework conditions such as access to finance, skills, resources and markets.¹⁵

In its Review of the Small Business Act, the Commission underlined the link between competitiveness proofing and the "SME test", undertaking "to further strengthen the application of the 'SME test' in its impact assessment procedure to ensure that impacts on SMEs are thoroughly analyzed and taken into account in all relevant legislative and policy proposals, with a clear indication of quantified effects on SMEs, whenever possible and proportionate. While performing "competitiveness proofing" of its proposals the Commission will analyze the ability of European businesses, and SMEs in particular, to compete on the EU markets and abroad."¹⁶

Hence, once the affected sector(s) are identified, the next step should be to ask whether SMEs would be particularly affected. If data is available, the sectoral share of SMEs could provide a useful insight. The SME share is an important indicator of the likely impact of the policy proposal on industrial competitiveness for two reasons. First, impacts on cost competitiveness are much more pronounced with regard to SMEs. Some compliance costs for instance do not decline with size, resulting in higher average regulatory burden for SMEs as percentage of revenues. Furthermore, their capacity to adjust to the higher regulatory burden is constrained by their limited access to finance. Second, changes of the conditions for innovations have stronger impact on SMEs in average, because they account for the majority of innovative companies; and because the innovative SMEs are more dependent on innovations to survive relative to large innovative firms.

Summing up, the objective of competitiveness proofing in respect to SME competitiveness would ideally be to:

1. identify the relative weight of SMEs in the respective sector(s);
2. reinforce the application of the SME test to the respective sector(s), by applying the concept of cost, innovative and market competitiveness; and
3. ensure adequate representation of the affected sector's SMEs in the consultation process.

Step 5. What is the effect on cost and price competitiveness?

A policy proposal may have positive or negative, direct and indirect, impacts on the cost of business operations and thus on returns on investment and investment flows. It may impose direct compliance costs on affected sectors, or it may increase costs indirectly due to the change of behaviour of suppliers, consumers, employees and investors in result of the regulation. Alternatively, it may reduce administrative burdens or decrease prices of inputs. Whatever the reason for these changes, the policy proposal may affect the business either through the cost of intermediate goods and services (including energy), or through the cost of the factors of production (labour, capital and natural resources). Further to costs, it is also

¹⁵ See Impact Assessment Guidelines SEC (2009) 92, p 40; and Part III: Annexes to IA Guidelines

¹⁶ COM(2011)78 p. 6

important to check if the proposed policy intervention affects competition, for instance by constraining or liberalizing price setting or consumer choice (more guidance on impacts on competition is provided in section 8.3. of the IA guidelines).

The questions that follow can help you identify those impacts. They are not meant to lead to a comprehensive taxonomy of business costs but rather to guide the search for the possible consequences of the policy proposal for cost and price competitiveness.

Possible questions would cover potential additional *compliance costs* (or the reduction of existing compliance costs), as well as other *operational costs* (of inputs and factors of production), which are consequence of the new proposal but are not related to compliance. Finally, one could ask about the likely impact of the proposal on *consumer preferences and prices*.

A. Does the assessed proposal cut or increase compliance costs of the affected sector(s)?

Compliance costs include the monetary value of **the time**, devoted by staff and management to comply with the new policy requirements (e.g. new reporting requirements) as well as **the money** for buying the products and services required by the policy (e.g. new equipment or external business services related to the new requirement). The typical questions would be:

- 1) Does the policy option affect the nature of information obligations placed on businesses, such as the type of data required, reporting frequency, the complexity of submission process, etc.?
- 2) Does it require the use of new equipment (e.g. to reduce pollution, or to register sales, or to measure the content of a substance in the final product, etc.)
- 3) Would it require additional staff time or business services provided by the private or public sector (such as external accounting or audit services, or conformity verification by authorized public or private sector entities, etc.)
- 4) Do compliance costs place certain enterprises or sectors at a disadvantage relative to their competitors? (including by creating an uneven playfield.)
- 5) How are SMEs affected in particular?

B. Does the proposal affect the prices and cost of intermediate consumption?

A policy proposal may affect the cost of intermediate consumption:

- 1) by affecting the price or availability of natural resources including raw materials and other inputs (intermediate goods and services) used in production;
- 2) by introducing restrictions (or bans) on the use of hazardous materials;
- 3) *indirectly*, when changes in the cost of output of directly affected sector are passed on downstream, or shift of demand to substitutes bids prices up, and those substitutes are used in intermediate consumption.

C. Does the proposal affect the cost of capital?

A policy proposal may affect the cost of capital either by:

- 6) increasing the prices of capital goods
- 7) affecting availability and cost of financing (equity, bank loans and bonds). Access and cost of financing in turn is determined by multiple factors among which:
 - (a) financial market conditions
 - (b) capital mobility and FDI framework;
 - (c) protections of shareholders rights;
 - (d) bank capital requirements;
 - (e) financial risk profile of the sector;
 - (f) Incentives to invest in this sector in the EU (returns on investment relative to returns on investment in other markets) and other countries.
- (a) When relevant, a qualitative analysis would ideally examine these factors and their impact on the cost of investing in the affected sector and on investors' preferences.

D. Does the proposal affect the cost of labour?

Employers' labour costs include wages, benefits, and taxes on labour. Policy interventions may affect labour costs through e.g. minimum wage setting, impacts on the reservation wage level, or through changes leading to demand for additional labour or skills. Examples of direct effects on labour costs include (but are not limited to) policies¹⁷, which may lead to:

- a. changes in retirement age; or
- b. changes in minimum wages; or
- c. changes in social insurance contributions, or other taxes on labour; or
- d. changes in accounting or reporting obligations

Indirect effects on labour costs could be the result of policies, which:

- a. affect (restrict or promote/facilitate) labour mobility;
- b. affect employee protection legislation (by limiting or easing employers' flexibility with regard to hiring and firing of workers); or

¹⁷

Some of these policies may fall outside the areas of EU competence. They are listed here for the purpose of illustration and because they may have relevance for analysis of competitiveness impacts at national level.

- c. affect (increase or reduce) labour market rigidities and flexibilities as a side effect.
- d. changes leading to additional/new labour demand (due to new skills requirements e.g. enabling businesses to implement new less-polluting technology); or to labour cost savings (e.g. though exempting micro-enterprises from some accounting obligations)

Except for affecting the cost of labour, policies may impose additional *compliance costs related to employment*: e.g. higher standards for health and safety at work or additional reporting requirements about the company's workforce. It should be noted, however, that such standards can also be based on agreements between employers and employees (e.g. Directive on workers' health protection in the hospitals sector; cross-sectoral agreement on prevention from silicosis; etc.) and as such reflect the advantages and added value of the standards also for business and their positive impact on competitiveness.

Even though these policies may not target a specific sector, their impacts are likely to differ across sectors, with labour-intensive sectors being more affected (both in either positive or negative ways). The impact may also depend on whether the industry is high-skill or low-skill intensive as remuneration levels and hence labour costs may reflect scarcity of skill supply, and the additional costs are shared between employers and employees according to labour demand and supply elasticities.

E. Does the proposal affect the cost of energy?

The cost of energy can be affected by policies allowing overdependence on a limited number of suppliers or sources of fossil fuel. It can also be affected in the short term by targets for switching between fuel mixes or different modes of energy provision and billing.

F. Does the policy proposal affect consumer's choice and prices?

At the end of the day, comparative advantages based on business costs materialize through the informed free choice of the consumer and the actual price s/he pays for the products and services. The analysis of cost competitiveness could be complemented by an inspection of the likely impact on consumer's choice and prices. That is, examine whether the proposal:

- a. may affects the availability of certain products on the market;
- b. bans or limits the marketing (or advertising) of certain products;
- c. regulates or otherwise affects the prices consumers pay for the products of the affected sector;
- d. affects the quality of the goods and services consumers buy;
- e. affects the transparency and comparability of information about quality and prices of products and services

In order to determine the distributional impact of the proposal, the analysis may also consider the extent to which **changes in production costs are transferred to the consumers** (if increases in costs are largely transferred to consumers in oligopolistic markets characterised by low demand elasticity, the final impact may be reduced consumer welfare rather than reduced business earnings).

G. Would the impacts above require a major restructuring of affected enterprises' operations?

This is the most challenging (but potentially crucial) question about the cost implications of the policy proposal. Until now, you would have identified most of the changes in compliance and operational costs. Now you may want to consider:

- 1) What would be the adjustment costs for enterprises (incl. workforce)?
- 2) Would the sector need a major restructuring such as closing of production lines, substitution of technologies, substitution of skills, etc.?
- 3) May it lead to closing down of enterprises?
- 4) Would SMEs be able to meet the cost of restructuring?

Step 6. What is the effect on the enterprises' capacity to innovate?

A policy proposal may have an impact on enterprises' capacity to innovate. When this is expected to be significant, such impact may be assessed examining the potential impact on:

- 1) enterprises' capacity to carry out R&D leading to innovation in its products, which can be further traced to the impact of the proposal on
 - (a) supply of skills needed by the sector
 - (b) the efficiency of protection of intellectual property rights;
- 2) the sector's capacity to bring to the market new products or improve the features of the current ones (*capacity for product innovation*), which depends crucially on technical skills and application of new technologies;
- 3) the capacity to innovate in processes and product related services, including distribution, marketing and after-sales services (*process innovation*), which depends on the supply of management and organizational skills and talents; and
- 4) the ability to access risk capital.

The Commission's guidance on impacts on technological development and innovation offers a detailed guidance on how to evaluate the likely impact on business capacity to innovate.¹⁸

Step 7. What might be the effect on the sector's international competitiveness?

The assessment of the impacts on productivity is instrumental in identifying the drivers of competitiveness. However, in some instances the picture would not be complete without taking into account the potential differential impact of the proposal on domestic and foreign firms. For instance, if a policy proposal is likely to increase costs for EU producers (by e.g. introducing stricter product-safety requirements on the EU market), it may not affect EU manufacturers' relative prices and market shares if their competitors face the same requirements and there are not suitable cheaper substitutes. However, if the policy affects the

¹⁸ Annexes of the IA Guidelines, Section 8.5, pp. 34-38

production process (e.g., through stricter resource use or pollution standards), or raises labour costs (e.g. through new safety-at-work requirements), then European manufacturers may be at a competitive disadvantage vis-à-vis firms located elsewhere. Accordingly, in its International impacts section, the IA Guidelines require that every IA should look at the competitiveness of European businesses, and should “analyse the impacts of the policy to see how the objectives can be achieved while avoiding or minimising potential negative impacts on European competitiveness. This could include an analysis of similar regulations which already exist in the EU's main trading partners”¹⁹

The typical questions one may ask are:

- 1) What is the likely impact of the assessed option on the competitive position of EU firms with respect to non-EU competitors?
- 2) What is the likely impact of the assessed option on trade and trade barriers?
- 3) Does the option concern an area in which international standards, common regulatory approaches or international regulatory dialogues exist?
- 4) Is it likely to cause cross-border investment flows, including the relocation of economic activity inward or outwards the EU?

IA teams may refer to the IA Guidelines Annexes (section 8.7., p. 38) for guidance on qualitative assessment of the likely impact on international trade and investment flows.

¹⁹

IA Guidelines, p. 42

III. QUANTIFYING THE IMPACTS: DATA SOURCES

From a technical point of view, the assessment of the quantitative impact of a policy measure is undoubtedly the more demanding part of an IA, and sometimes cannot be fully done due to methodological constraints, or would require a disproportionate effort. The gathering of the needed data may be challenging and often involves concerned stakeholders, which makes data verifications more challenging. The proportionality of quantification must therefore be considered with due care taking into account the general desire to quantify impacts as much as possible but also the costs of the process and the degree of reliability of the expected results (consider for instance whether outcomes which would require additional data, or would be extremely dependent on assumptions for running the model would provide actual value added for the decision-making process)

Quantification of impacts on competitiveness may require descriptive statistics, input-output analysis using national or sectoral accounts, applied general equilibrium modelling or other econometric exercise. For policy proposals that affect diverse set of sectors, models such as computable general equilibrium (CGE) and macro-econometric input-output models can be used to quantify overall impacts. They may be useful not only to assess the economy wide impact of a policy change, but also to estimate the likely magnitude of gains and losses by sector, the spill-over effects between sectors, the sharing of extra cost between producers and consumers, etc. Other models, such as the partial equilibrium models, may be easier to use and can also provide useful insight into potential impacts.

The steps suggested below give an overview of possible outputs of the quantitative analysis, rather than specific tools and methods to deliver them, as these would depend on the issue at hand. These steps build on the output of the five steps of the qualitative screening.

Step 8: Provide evidence on the structure and performance of the directly affected sector(s)

This step extends Step 3 and Step 4 of your qualitative screening. Its purpose is to underpin the preliminary conclusions with statistical evidence. A quantitative assessment of the sector's performance would ideally be based on:

- the weight of the targeted sector in the EU economy as measured by its share in value added and employment, regional and national concentration of the sector, etc.;
- the number and distribution of firms, including the share of SMEs, and its concentration ratio;²⁰
- its labour productivity or total factor productivity;

²⁰ The concentration ratio (CR) refers to the percentage of market share controlled by the largest firms in the industry. CR4 and CR10 are very often used (i.e. market share of the 4 and 10 largest firms).

- its profitability as measured by net profit margin; return on assets;
- its market share of the world market; and
- the flow of Foreign Direct Investment (ratio of inward/outward FDI stock to value added)

Step 8a: Take stock of existing sectoral studies and ex-post evaluations

The Commission has completed a number of industrial and market studies, as well as ex-post evaluations of policies. For instance, a list of studies on manufacturing industries can be found in the webpage:

http://ec.europa.eu/enterprise/policies/industrial-competitiveness/industrial-policy/future-of-manufacturing/index_en.htm

If desk research is insufficient, you may consult the websites and publications of the respective business associations or concerned social partner organizations.

You may use Transparency Register to find your contact and call them for their latest data and analyses. The Transparency Register can be found in the Europa website.

Step 8b: Update existing data

If existing studies are outdated, Eurostat has databases with up-to-date sectoral statistics. Screening the NACE Statistical Classification²¹ will help matching the main economic activities of the affected sector(s) with their corresponding codes.

NACE Rev.1.1		NACE Rev.2		INDICATORS
INDUSTRY/ ACTIVITY CODE	DESCRIPTION	INDUSTRY/ ACTIVITY CODE	DESCRIPTION	
D	Manufacturing	C	Manufacturing	Number of enterprises
...
DJ	Manufacture of basic metals and fabricated metal products	C244	Manufacture of basic precious and other non-ferrous metals	
DJ27	Manufacture of basic metals	
DJ271	Manufacture of basic iron and steel and of ferro-alloys	C2442	Aluminium production	
DJ272	Manufacture of tubes	C2443	Lead, zinc and tin production	
DJ2721	Manufacture of cast iron tubes	C2444	Copper production	
DJ2722	Manufacture of steel tubes	C2445	Other non-ferrous metal production	
DJ273	Other first processing of iron and steel	C2446	Processing of nuclear fuel	
DJ2731	Cold drawing	C245	Casting of metals	
DJ2732	Cold rolling of narrow strip	C2451	Casting of iron	
DJ2733	Cold forming or folding	C2452	Casting of steel	
DJ2734	Wire drawing	C2453	Casting of light metals	
DJ2735	Other first processing of iron and steel n.e.c.; production of non-ECSC ferro-alloys (included in DJ271 in NACE Rev.1.1)	C2454	Casting of other non-ferrous metals	
DJ274	Manufacture of basic precious and non-ferrous metals	C25	Manufacture of fabricated metal products, except machinery and equipment	
DJ2741	Precious metals production	C251	Manufacture of structural metal products	
DJ2742	Aluminium production	C2511	Manufacture of metal structures and parts of structures	

²¹ NACE (Nomenclature statistique des Activités économiques dans les Communautés Européennes) is the statistical classification of economic activities in the European Community used by the Eurostat and the Member States. NACE Rev.2 was introduced in 2008 to reflect the technological developments and structural changes of the economy. One must therefore use the correspondence table to compare statistics before and after 2007.

The three following databases are generally the most important in the absence of sectoral sources²²: SBS; PRODCOM and COMEXT.

The *SBS database* (Structural Business Statistics) provides data at a very detailed sectoral level: the number of enterprises in a sector, the number of persons employed, turnover, value-added, investment, productivity, the share of SMEs in value added and employment, etc.

Industry profile - Key data from SBS database

GEO	TIME	1996	1997
European Union (2...)		:	:
European Union (2...)		:	:
Belgium		:	:
Bulgaria		139	161
Czech Republic		287	299
Denmark		:	:
Germany (includin...)		:	:
Estonia		45	48
Ireland		54	59 (p)
Greece		:	:
Spain		1,627	1,649
France		2,916	2,900
Italy		4,569	4,330
Cyprus		:	:
Latvia		:	34
Lithuania		48	55
Luxembourg		7	8
Hungary		:	:
Malta		:	:
Netherlands		:	205
Austria		322	302
Poland		746	952
Portugal		1,542	1,431
Romania		:	202
Slovenia		228	182
Slovakia		32	40
Finland		1,216	1,246
Sweden		513	626
United Kingdom		:	1,665

22 Explanation on the contents of and links to the main EU and international databases are provided in Annex III. In the case of the aluminium industry, sectoral organisations and institutes such as the International Aluminium Institute, the World Bureau of Metal Statistics or the International Energy Agency.

The *PRODCOM database* provides statistics on the production of manufactured goods: data on the physical volume of production sold during the survey period (kg, m², number of items, etc) and its value in Euros.

Industry profile - data from PRODCOM (for aluminium bars ..., code 24422230)

Statistics on the production of manufactured goods Value ANNUAL 2009

These tables only show the production data.
To use the database that contains both production and related trade data, please click here and follow the instructions.

PRODCOM Code	Unit	flag EU27	Value EU27	Base EU27	flag EU25	Value EU25	Base EU25	Belgium	Bulgaria	Czech Republic	Denmark	Germany	Estonia	Ireland	Greece	Spain	France	Italy	Cyprus	
24422230	EUR		615423		EU27-EU02(R)	590229	600	C	C	0	2178	9445	0	0	135947	61937	C	59428	0	
24422250	EUR	E	6498793		EU27-EU02(R)	6448793	50000	C	C	C	100198	C	0	C	119301	770425	C	463016	1267350	0
24422330	EUR		221039		EU27-EU02(R)	220829	70	C	0	C	0	20606	0	0	0	C	C	C	16301	0
24422350	EUR		31744			311744		C	0	C	0	C	0	C	0	C	C	C	66102	0

ALL VALUES AND VOLUMES ARE EXPRESSED IN THOUSANDS
All confidential data and all national estimated data is suppressed
(C)=Confidential, (CE)=Confidential Estimated, (E)=Estimated

The *COMEXT database* provides the value and quantity of goods traded between the EU and non-EU countries; EU trade by Member State, by partner and by product group; share of EU and various EU aggregations (eurozone, EU15, EU 12; EU27, etc.) in world trade. Most of the Prodcum codes correspond to one or a number of codes in the external trade classification known as Combined Nomenclature (CN)²³

²³

Imported and exported goods have to be declared stating under which subheading of the Combined Nomenclature they fall.

**The CN headings with their corresponding Prodom headings - Year 2009**

3917 39 15	Flexible tubes, pipes and hoses, of addition polymerization products, reinforced or otherwise combined with other materials, seamless and of a length > the maximum cross-sectional dimension, whether or not surface-worked, but not otherwise worked (excl. those with a burst pressure of >= 27,6 MPa)	<input type="checkbox"/> kg	<input type="checkbox"/> S
22.21.29.50	Plastic tubes, pipes and hoses (excluding artificial guts, sausage skins, rigid, flexible tubes and pipes having a minimum burst pressure of 27.6 MPa)	<input type="checkbox"/> kg	<input type="checkbox"/> S
3917 39 19	Flexible tubes, pipes and hoses, of plastics, reinforced or otherwise combined with other materials, seamless and of a length > the maximum cross-sectional dimension, whether or not surface-worked, but not otherwise worked (excl. addition polymerization products, condensation polymerization products and rearrangement polymerization products, and products able to withstand a pressure of >= 27,6 MPa)	<input type="checkbox"/> kg	<input type="checkbox"/> S
22.21.29.50	Plastic tubes, pipes and hoses (excluding artificial guts, sausage skins, rigid, flexible tubes and pipes having a minimum burst pressure of 27.6 MPa)	<input type="checkbox"/> kg	<input type="checkbox"/> S
3917 39 90	Flexible tubes, pipes and hoses, of plastics, reinforced or otherwise combined with other materials (excl. seamless or cut to length only; tubes with a burst pressure of >= 27,6 MPa)	<input type="checkbox"/> kg	<input type="checkbox"/> S
22.21.29.50	Plastic tubes, pipes and hoses (excluding artificial guts, sausage skins, rigid, flexible tubes and pipes having a minimum burst pressure of 27.6 MPa)	<input type="checkbox"/> kg	<input type="checkbox"/> S

Illustration: Profiling of the directly affected sector/market (Aluminium industry)²⁴

Aluminium, the most abundant metal in the Earth's crust, is a relatively homogeneous product. It has specific characteristics (non-magnetic, resistant to corrosion, ...) that makes its a strategic input for many sectors ranging from aerospace to construction equipment. In the upstream production stage, its Value Chain consists of mining, smelting / recycling and refinery. The downstream part consists of second processing and fabrication of intermediaries (rolling mills, extruders, casters and wire producers), [...].

The production stage is divided into 2 segments. Primary aluminium is produced by smelting raw materials, while secondary aluminium is produced by melting aluminium scrap. Primary (or unwrought) aluminium is made in three separate steps. Bauxite ore is mined. Alumina (aluminium oxide) is then extracted from the bauxite ore in an alumina plant, to be shipped to a smelter who will produce (alloyed) aluminium in ingots, slabs, ... Secondary aluminium is either produced by refining (end-of-life products such as beverage cans, ...) or by re-melting (industrial waste...) [...].

The sector is capital-, resource- and energy-intensive. The primary aluminium sector needs 15 Mega Watt per hour to produce 1 ton of aluminium, against 0,75 MWh for secondary production using scrap. [...]

The International Aluminium Institute lists, for 2010, 117 primary aluminium smelters in the world excluding China. Of these, 21 are in EU27, with a further 7 in Norway and 4 Iceland. Mining and processing is commanded by a small number of multinational companies, which are vertically integrated into subsequent stages of production in various ways. In the EU the sector is dominated by six companies; the three largest ones are of non-EU origin (Hydro, Rio Tinto/Alcan and Alcoa [...]

Prices for raw material inputs and primary products are set or referenced through the London Metals Exchange (LME), the Shanghai Metals Exchange or the Chicago Exchange. The other cost factors are usually determined locally.

In addition to the examples above, there is a wealth of other databases with useful information broken down by sectors, and hence potentially useful for a sectoral analysis. The EU Industrial R&D Investment Scoreboard for innovation, the European Labour Force Survey for labour market data, and so on. Annex 2 contains many more examples.

²⁴

Illustrative text based among other documents on Ecorys (2011) & CE Delft (2008)

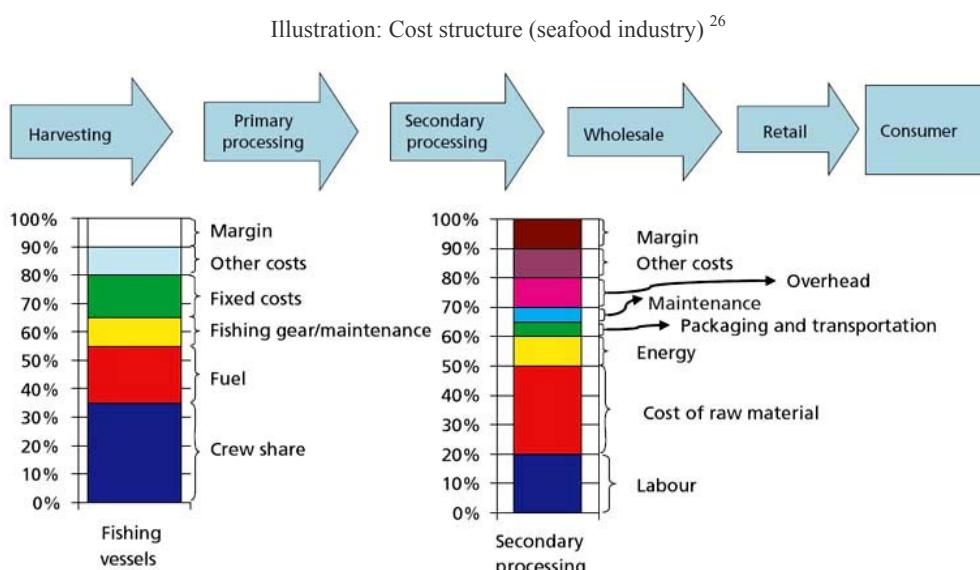
Step 9: Provide data evidence on indirectly affected sectors

If the qualitative screening shows significant indirect impacts (positive or negative), it may be advisable to replicate the steps above for other sectors in or outside the value chain that may be most affected. Here the IA team may use its intuition or rely on more systematic methods like input-output analysis and value chain mapping and profiling. Helpful guidance on value-chain mapping and profiling can be found online at:

<http://myintracomm.ec.europa.eu/entr/howwemanage/decisionmaking/Pages/default.aspx>

Step 10: Quantify additional compliance and/or operational²⁵ costs related to the assessed initiative

This step is the quantitative counterpart of Step 5. If feasible, it may be useful to complete the sector profiling with an overall cost breakdown like the following corresponding to the seafood industry:



When it is feasible, and proportionate, this type of cost-structure description adds to the answers of step 5 numbers to support the understanding of the significance of the positive and negative impacts identified there.²⁷ Moreover, with a sufficiently detailed breakdown of sectors, cost structure descriptions can be found in input-output tables.²⁸

²⁵ As noted in step 5 above, additional operational costs are those extra production costs (of intermediate goods/ services and factor inputs) that are entailed by the new regulation, but are not directly related to compliance with it.

²⁶ Illustration taken from www.fao.org.

²⁷ The IA guidelines (Chapter 10 pp 46-60) contain detailed step-by-step guidance on the assessment of the cost of information obligations (EU Standard Cost Model).

²⁸ Eurostat Manual of Supply, Use and Input-Output Tables (2008), Ch. 11

Step 11: Quantify the expected impacts on the capacity of affected enterprises to innovate

This analysis would ideally include several input and output indicators on sector innovations. The indicators of the European Innovation Scoreboard²⁹ constitute a reasonable starting point. Data can be found in the Community Innovation Statistics (CIS) website:

<http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/cis>

This database and others related could help building the quantitative assessment that would follow the identified impacts in Step 6. Data may also be obtained from the industrial chamber of the corresponding sector. These can typically provide, if required, with publications and data, and may help you project the future impacts of the policy option on the capacity of the sector to innovate. Additional ideas can be found in section 8.5 of the IA Guidelines Annexes.

Step 12: Quantify the expected impacts on affected sectors' international competitiveness

The IA Guidelines provide guidance on qualitative assessment of the proposal's likely impact on international trade and investment flows (IA Guidelines Annexes, section 8.7) The purpose of this last step of competitiveness proofing is to offer support:

1. applying section 8.7 of the IA guidelines to the affected sector(s), and
2. quantifying the expected impacts on the sectors' international competitiveness

There is a host of standard indexes that are intended to reflect the international position of an economy and its firms. Some of the most commonly used are:

- ✓ The *ratio of inward FDI stock to value added* indicates the contribution of FDI to capital formation and signals the attractiveness of the host country.
- ✓ The *ratio of outward FDI stocks to value added* is an indicator of corporate strength, where companies venture abroad to seize opportunities from foreign markets and resources.
- ✓ Export market shares show how much of the total ‘world’ export is covered by the export of a particular country for each industry. They reflect the capacity to respond to external demand or open up new markets in direct comparison to international competitors.

²⁹

Visit <http://www.proinno-europe.eu/metrics>

- ✓ Revealed Comparative Advantage (RCA) compares the share of a given industry's exports in the EU's total manufacturing exports with the share of the same industry's exports of a group of reference countries.
- ✓ Relative Trade Balance (RTB) compares the trade balance of a particular commodity to the total volume of trade, exports plus imports.
- ✓ Relative Unit Labour Costs (RULC) measures the cost of labour in a given industry relative to its productivity (unit labour costs) and relative to the corresponding index in another country.

While RCA and RTB reflect the position of individual industries in the world market, RULC reflects the ability to remain competitive. Changes in these indices will show in which industries Europe is developing a comparative advantage or disadvantage. However, they have to be interpreted with care: from the aggregate point of view, the loss of competitiveness in an individual industry may well reflect the outstanding export performance of other domestic industries. For example, appreciation of the Euro may worsen the competitive position of a given industry, but may just reflect strong productivity growth in other industries, and hence strong exports and an increasing demand for the euro.

Another issue is that of the domestic content of exports. For example, any country involved in electronics' assembly will record a high share of electronics' exports that will not reflect the actual production structure of the country, artificially inflating the RCA index.

Comparative advantage can be explored using trade flows by means of the index of revealed comparative advantage (RCA), which measures the extent to which the EU is specialised in a given sector. For each sector in the EU, the share of exports in total EU exports is computed and then compared to the share of world exports of the sector in total world exports. For a given sector, a RCA index greater than one signals that this is a sector where the EU exports relatively more than the world average, and is interpreted as Europe having a comparative advantage in this sector.

Annex 2 provides a longer list of sources of data and indicators that can be used to assess the competitiveness of EU industry on the world market. It also contains links to statistical documents or sites providing the values for these indices. For instance, the statistical annexes of the annual "European Competitiveness Report" (ECR) provide operational definition and related figures for the last 10 years at sector level.

ILLUSTRATIONS OF QUALITATIVE SCREENING OF COMPETITIVENESS IMPACTS

1. Policy initiative: Banning hazardous substances

Certain substances or products can have hazardous characteristics. This requires a proper risk management that weighs the benefits and costs of such substances being used in the production process or being put on the market. Depending on the severity of the risk, a substance ban might be a policy option. When the risk is mainly with regard to safety at work, banning the use of the substance in the production process might be a policy option. When the hazard is coming from the substance contained in the final product (product safety risk), a "marketing in Europe" ban might be considered.

Direct effects

If European businesses are no longer authorised to use the substance ("safety-at-work" ban), they lose a business opportunity on the EU market and on export markets. This type of ban would give a competitive advantage to non-EU producers as they would be allowed to continue marketing the product in Europe as well as in the rest of the world without major restructuring of their production process.

If European businesses are no longer authorised to market the substance ("marketing in Europe" ban), they could still produce in Europe for export purposes while non-EU producers would lose the European market. As the domestic market is typically of special importance for (European) producers, there may be a loss for European producers of economies of scale. However, this effect is likely to be less severe than that of a "safety-at-work" ban of the substance. A potential benefit is the innovation efforts that a ban is likely to induce in order to seek for a substitute for the banned substance or for alternative production methods.

Both types of ban could result in extra costs for client industries if there is no similar substance at a similar price. This should come at extra cost, assuming that the production process so far had been the least-cost one. If there is no similar input, European client companies will have to redesign their mixtures and products, typically requiring additional and frontloaded R&D efforts.

If client companies don't find a similar input at a similar price, they will have to change their pricing. This could reduce their sales if substitute products exist and if their customers face low switching costs in changing vendors. In order to avoid this, companies could also reduce their profit margins. Reduced sales and/or reduced profitability can both undermine their long-term capacity to survive.

Indirect (second round) effects

The search for substitutes offers new business opportunities for those producing and marketing the substitutes. The new business opportunities should be in a similar order of magnitude as for those losing business opportunities due to the ban, as long as the substitute offers similar performance at similar cost. Of course, whether the substitute will be produced in or outside Europe will depend.

In case the substitute was less performing than the banned substance, benefits for consumers will decline, triggering a welfare loss from this side.

Other less straightforward effects may come from unsuspected channels. For instance, searching for substitutes abroad may facilitate internationalisation of SMEs by increasing their multilingual skills and contacts. Increasing in-house language skills in a broad sense entails short term extra costs but an eventual advantage thereafter accessing foreign markets and customers.

Less damaging option

- see if an absolute ban is necessary and proportionate as there might be less radical risk-management options available, such as better information of customers, restricting sales to expert customers or better risk management at the workplace. For instance, is it proportionate to ban a substance used for coating lenses used in medical instruments, when the quantity used is very small and when the lenses are sealed inside the machine, preventing all contact with the operators?
- offer transitory period taking into account the development cycle of affected products & manufacturing processes, if industry accepts to better inform and train those who produce and use risky products.
- allow the use/sale of existing stocks.

2. Policy initiative: Restricting advertisements targeting children

An "advertisement to children" ban aims at protecting children (and their parents) against being manipulated while not being aware of the effects of advertisement. It follows the philosophy that the best way to avoid this manipulation is to forbid it in first place.

Direct effects

When advertising to children is banned, firms selling products for children (such as toys, soft-drinks and sweets and food) have to identify alternative and potentially less efficient modes of communication and marketing using and revise the allocation of their marketing budget. If they do not succeed, consumers' (children's and their parents') preferences will change (children being less keen on products affected by the ban) and sales will drop.

For a transition period, incumbents and products already on the market will benefit from such a ban at the expense of new entrants and new products. This could slow down innovation in this product segment.

Indirect effects

Indirect effects are difficult to identify as it is first rather unknown how effective advertisement targeting children actually is. In case it was very effective, i.e. a higher budget spent on such product, it would in principle depend on how the target group would spend its budget in the absence of such an advertisement.

Less damaging option

- Allowing advertisement, but strictly restricting the form and contents (including "no-go messages").

3. Policy initiative: Capping mobile phones' roaming fees

High roaming prices are a bonanza for mobile phone operators. However, they impose excessive costs on consumers and undermine the competitiveness of EU industries which would gain from the development of cross-border activities. The level of cross-border activities depends inter alia on the level of transaction costs. Roaming is often a necessity for such activities. If roaming prices are high, transaction costs are high. As a result a number of EU industries and firms remain local and are not taking full advantage of the internal market. The allocation of resources is sub-optimal. Economies of scale are not exploited. This damages their cost / price competitiveness.

In such a case, the objective of EU action should be to stimulate competitive developments on this market (diminishing the negotiation power of dominant mobile service providers). This can be done by setting a maximum charge for specific roaming services within the Community (a Eurotariff) and/or by offering consumers the possibility to opt out of the roaming services offered by the operator as part of a package (unbundling).

Effects on businesses and impact on competitiveness

Price-capping and unbundling don't affect the availability or cost of inputs for the mobile phone operators, but influence directly their commercial processes (pricing and marketing). Such measures should increase competitive pressures, bring the prices closer to cost levels and improve the cost competitiveness of their business clients.

However the loss of revenue and profitability could indirectly affect the capacity of the sector to invest on network infrastructure and innovation. Indeed, some operators claimed that high profits on roaming fees were a way to finance both activities. Without this source of income, they argued, companies would not have the resources to create new markets and their position on the global market would be weakened (possible loss of external competitiveness)..

Moreover these policy options could also affect the structure of this industry in various ways, for example if they fell more heavily on smaller, independent or newly-started operators. It is true that costs of entry are high because of infrastructure network costs but this has nothing to do with price caps. Some of these operators could exit the market if the type of price-capping and unbundling is technically difficult or costly to implement. Smaller operators especially could face a risk of a price squeeze. New operators and potential new entrants would also not benefit from high profit margin to pay for their infrastructure, which would de facto protect long established incumbents. In such circumstances, the policy would reinforce the oligopolistic nature of this industry. But SMEs in the other sectors will benefit.

Price-capping and unbundling are expected to have a positive impact on the competitiveness of European Industry in general. Decoupling of the roaming services would in particular further increase its bargaining power as businesses are among very large users. Securing better prices for roaming should automatically improve the cost competitiveness of EU industries.

Less damaging option

- set a Eurotariff at a level which guarantees a sufficient margin to recuperate innovation costs.
- whenever possible, prefer a 'safeguard' approach to a cost-based cap (as the first leaves more space for market forces to determine prices).
- opt for modalities that don't disadvantage smaller, independent or newly started operators active on the EU market.
- when two policy options offer comparable gains for EU industries in general, go for the option that is the least damaging for the targeted industry's total profits .
- if the price capping is retained, foresee a evaluation of the impact on the competitiveness of European operators on the EU market and abroad, this relatively shortly after the implementation of the price cap (to avoid irreversible damages to the industry).
- if the price capping is retained, foresee a sunset clause (because of the very special and restrictive nature of this tool, the Commission shall assess whether, in the light of developments in the market, there is need to extend its duration beyond a set period).

DATA SOURCES FOR QUANTITATIVE ANALYSIS

KEY CLASSIFICATIONS FOR INDUSTRIAL ACTIVITIES & PRODUCTS

EU classifications & nomenclatures

- CN (Combined Nomenclature)
<http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2010:284:SOM:EN:HTML>
EU classification introduced in 1988 and used for the purposes of foreign trade custom tariffs (imported and exported goods have to be declared stating under which subheading of the nomenclature they fall); categories are identified by an 8-digit code, made of the HS code (see below) followed by 2 additional digits created to address the needs of the Community.
- CPA - Statistical Classification of Products by Activity in the European Economic Community
http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CPA_2008&StrLanguageCode=EN&IntPcKey=20701907&StrLayoutCode=HIERARCHIC
Contents: ...
- NACE - Nomenclature statistique des Activités économiques dans les Communautés Européennes
http://epp.eurostat.ec.europa.eu/portal/page/portal/nace_rev2/introduction
Contents: statistical classification of economic activities in the European Community used by the Eurostat and the Member States.
Contribution: identifying economic activities to be included in the value chain (mapping phase) and codes necessary to extract data from PRODCOM and other EU databases...
- PRODCOM List
http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=PRD_2010&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC
Contents: products are assigned an 8-digit Prodcom code; the first 4 digits correspond to the NACE code of the economic sector usually producing the product. The list includes appr. 4000 product categories...
Contribution: ...

International classifications & nomenclatures

- HS (Harmonized Commodity Description and Coding System)
http://www.wcoomd.org/home_hsoverviewboxes_tools_and_instruments_hsnomenclature.htm
elaborated under the auspices of the World Customs Organization (WCO) for classifying traded products; comprises about 5,000 commodity groups identified by a 6-digit code.
- ISIC - International Standard Industrial Classification of all economic activities (rev4)
<http://unstats.un.org/unsd/cr/registry/regest.asp?Cl=27&Lg=1>
Contents: systematic industrial classification made by United Nations Statistics Division based on criteria such as input, output and use of the products produced, the character of the production process
Contribution: mapping value chain & preparing data collection on EU-competitors thanks to correspondence tables with NACE codes ...
- SITC - Standard International Trade Classification (Rev 4)
<http://unstats.un.org/unsd/trade/sitcrev4.htm>
Contents: classification of trade activities based on ...
Contribution: mapping value chain & preparing data collection on EU-competitors thanks to correspondence tables with NACE codes; study of long-term trends in international merchandise trade and aggregation of traded commodities into classes more suitable for economic analysis ...

KEY DATABASES FOR ASSESSING IMPACT ON ECONOMIC ACTIVITIES / (INDUSTRIAL) SECTORS

EU databases

- AMADEUS [Contents](#): firm-level database
- BACH - Bank for the Accounts of Companies Harmonised
<http://www.bachesd.banque-france.fr/> [Contents](#): aggregated and harmonised information on the financial statements of non-financial companies from 11 Member States (AT, BE, DE, DK, ES, FI, FR, IT, NL, PT, SE, UK), Japan and the United States; 3 firms' size classes (small, medium-sized and large enterprises); 23 sectors or sub-sectors based on NACE; time series of nearly 20 years; 95 items, including assets, liabilities and the profit & loss account.
[Contribution](#): used to analyse the assets, liabilities, financial position and *profitability* of enterprises, according to their sector and size class
- COMEXT
http://epp.eurostat.ec.europa.eu/portal/page/portal/external_trade/data/database
[Contents](#): value (€) and quantity (nbr of items, kg, m², m³ ...) of goods traded between Member States and non-EU countries; share of EU in world trade; external trade of EU, the Member States and main third countries by SITC product group; EU trade by Member State, by partner and by product group; plus various EU aggregations (eurozone, EU25, EU27, ...). Annual and monthly data are available for 1995 on.
[Contribution](#): ...
- EU Industrial R&D Investment Scoreboard
<http://iri.jrc.ec.europa.eu/reports.htm>
[Contents](#): The Scoreboard is a benchmarking tool which provides, every year since 2004, reliable up-to-date information on R&D investment and other economic and financial data (including net sales, profits, capital investments, market capitalisation, number of employees) for the top world corporate R&D investors (1.000 companies based on the EU and 1.000 companies based outside the EU). The data in the Scoreboard are published as a four-year time-series to allow further trend analyses to be carried-out, for instance, to examine links between R&D and business performance.
- EU KLEMS Growth and Productivity Accounts
<http://www.euklems.net/>
[Contents](#): For detailed sectoral productivity and total factor productivity for quantitative studies focusing on technical change in the industry (manufacturing) up to 2007.
- EU Science and technology database
http://epp.eurostat.ec.europa.eu/portal/page/portal/science_technology_innovation/data/database
[Contents](#): R&D, innovation data, patent statistics , knowledge-intensive sectors, human resources in science and technology.
- EUROFOUND
<http://www.eurofound.europa.eu/about/index.htm>
[Contents](#): Eurofound provides information, advice and expertise – on living and working conditions, industrial relations and managing change in Europe – for key actors in the field of EU social policy on the basis of comparative information, research and analysis.
- European Labor Force Survey
<http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/lfs>
[Contents](#): The EU LFS is a large household sample survey providing quarterly results on labour participation of people aged 15 and over as well as on persons outside the labour force. All definitions apply to persons aged 15 years and over living in private households. Persons carrying out obligatory military or community service are not included in the target group of the survey, as is also the case for persons in institutions/collective households.
- PRODCOM
http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/data/tables_excel
[Contents](#): statistics on the production of goods in the Member States, measured by value (€) and by the volume (kg).

m^2 , number of items, etc) and classified according to the Prodcom list (see classifications)
Contribution: ...

- SBS - Structural Business Statistics

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database

Contents: describes the behaviour (structure, conduct and performance) of businesses across the EU, through nbr of enterprises, nbr of persons employed; turnover; value-added; investment; productivity; SME share of added-value & employment. It covers industry, trade and services (data available for the EU-27 and for the Member States). The statistics can be broken down to a very detailed sectoral level (several hundred economic activities based on NACE classification). SBS does not collect information on the external trade (see COMEXT) or the production of specific products (see PRODCOM).

Contribution: to answer questions on the level of specialisation of the EU, the vulnerability of a sector, its strategic importance or its degree of internationalisation ("which EU countries are relatively specialised in the manufacture of a certain type of equipment?"; "how productive is a certain sector and how does it fare in terms of operating profitability?"; "how much wealth and how many jobs are created in an activity?"; "how many enterprises by sourcing and economic activity".

International databases

- COMTRADE / UN database on International Merchandise Trade Statistics

<http://comtrade.un.org/db/>

Contents: more than 1.75 billion trade records starting from 1962 + analytical tables cover trade values and indices for individual countries and regions.

- IEA Statistics & Balances (International Energy Agency)

<http://www.iea.org/stats/index.asp>

contents: for energy prices, fossil fuel prices, etc.

- IMF balance of payments (International Monetary Fund)

www.imf.org/external/np/sta/bop/bop.htm

- OECD.Stat

<http://stats.oecd.org/index.aspx?lang=en> and <http://www.oecd-ilibrary.org/statistics>

Contents: OECD members "Industry and Service Statistics", "Structural Analysis (STAN) Databases" including "Input-Output databases"; "Structural and Demographic Business Statistics (SDBS)" including "Structural Business Statistics" per economic sector; International Trade by Commodity Statistics (ITCS); "Productivity Levels and GDP per capita"

Contribution: data on main EU competitors to assess the evolution of EU international competitiveness

- UNCTAD

www.unctad.org [replace with precise addresses]

Contents: For data on foreign direct investment (FDI) to assess import and adoption of technical change through capital investment.

INDICATORS OF INDUSTRY'S COMPETITIVENESS IN THE WORLD MARKET

Changes in these indicators imply that EU industries are developing a comparative advantage or disadvantage. However, they have to be interpreted with care: from the aggregate point of view, the loss of competitiveness in an individual industry may well reflect the outstanding export performance of other domestic industries. For example, appreciation of the Euro may worsen the competitive position of a given industry, but may just reflect strong productivity growth in other industries, and hence strong exports and an increasing demand for the euro.

- Real Effective Exchange Rate (REER)

The REER or, equivalently the "relative price and cost indicators", aims to assess a country's (or currency area's) price or cost competitiveness relative to its principal competitors in international markets. It corresponds to the Nominal Effective Exchange Rate (NEER) deflated by selected relative price or cost deflators.

- **Relative Trade Balance (RTB)**
Measures a sector's trade balance relative to total trade in the sector.
- **Relative Unit Labour Costs (RULC)**
Measures the cost of labour in a given industry relative to its productivity (unit labour costs) and relative to the corresponding index in another country.
- **Sectoral ULC indices**
Can reveal interesting patterns associated with specialisation due to international trade. If there is a sector where a country has a comparative advantage, wages should grow more slowly than productivity, hence lowering ULC. As a consequence, sectoral ULC may point to comparative advantages and disadvantages vis-à-vis our trade partners without looking at trade flows.
- **Revealed Comparative Advantages (RCA)**
Measures the extent to which the EU is specialised in a given sector. . For each sector in the EU, the share of exports in total EU exports is computed and then compared to share of world exports of the sector in total world exports. If RCA for a given sector > 1, the EU exports relatively more than the world average which signals a comparative advantage. If the EU-27 RCA < 1 and goes down over time, it signals a worsening comparative disadvantage (ex. Textile, RCA going from 0.82 in 1996 to 0.64 in 2006).

BIBLIOGRAPHICAL SOURCES

By (industrial) sector or market

Recent studies providing in-depth understanding of the driving factors for competitiveness in a sector

- European Commission, *EU industrial structure 2011 – Trends and performance* (DG Enterprise & Industry)
http://ec.europa.eu/enterprise/newsroom/cf/itemshortdetail.cfm?item_id=3934
Contents: analysing the competitiveness of the EU economy from a sectoral perspective; insight into the relative performance of each industry
- Sectoral Growth Drivers and Competitiveness in the European Union (2009)
http://ec.europa.eu/enterprise/policies/industrial-competitiveness/documents/index_en.htm
Contents: sector data 1995-2004 on value added, hours worked, productivity, profit margins, RCA, FDI, R&D intensities, enterprise demography, regulatory impact, openness
- Aeronautics and space industries
 - Aerospace (2009)
http://ec.europa.eu/enterprise/sectors/aerospace/files/aerospace_studies/aerospace_study_en.pdf
Contents: data on and analysis of the aeronautics industry (NB: excludes space).
 - Global Monitoring for Environment and Security GMES downstream market (2008)
http://ec.europa.eu/gmes/pdf/studies/gmes_ds_final_report.pdf
Contents: data on GMES downstream employment, revenues, growth, regulatory impact.
 - European Global Navigation Satellite System-based industry (forthcoming)
Contents: data on and analysis of the GNSS industry.
- Biotechnology industry
 - The financing of biopharmaceutical product development in Europe (2009)
http://ec.europa.eu/enterprise/sectors/biotechnology/files/docs/financing_biopharma_product_dev_en.pdf

Contents: data on capital (own capital, risk capital, public funds) available for the development of new products in the biopharmaceutical industry.

- Competitiveness of the European biotechnology industry (2007)
http://ec.europa.eu/enterprise/sectors/biotechnology/files/docs/biotech_analysis_competitiveness_en.pdf
Contents: data on employment, patents, new companies, R&D and R&D funding, access to finance in the biotech industry.
- Ceramics industry
 - Ceramics industry (2008)
http://ec.europa.eu/enterprise/sectors/metals-minerals/files/finalreport_ceramics_131008_en.pdf
Contents: data on production, employment, productivity, profitability, trade, structure and firm size distribution of the ceramics industry.
- Construction sector
 - Construction sector: Sustainable competitiveness of the construction sector (2011)
http://ec.europa.eu/enterprise/sectors/construction/files/compet/sustainable_competitiveness/ecorys-final-report_en.pdf
Contents: data on turnover and value added, employment, structure, production characteristics of the construction sector.
- Defence sector
 - Study on the impact of emerging defence markets and competitors on the competitiveness of the European defence sector (2010)
http://ec.europa.eu/enterprise/sectors/defence/files/study_defence_final_report_en.pdf
Contents: overview of the defence markets in Brazil, Russia, India, China and South Korea and their importance to the competitiveness of the EU defence industry.
 - Study on the competitiveness of European SMEs in the defence sector (2009)
http://ec.europa.eu/enterprise/sectors/defence/files/2009-11-05_europe_economics_final_report_en.pdf
Contents: data on turnover, employment, R&D, trade of EU SMEs in the defence sector.
- Eco-industry
 - Eco-industry (2009)
http://ec.europa.eu/enterprise/policies/sustainable-business/eco-industries/index_en.htm
Contents: data on turnover, employment, structure, productivity, profitability, trade, firm demography, regulatory barriers, investments, access to finance in EU eco-industries.
- Energy-intensive industries under the Emission Trading Schemes
 - Ecorys (2011), *Competitiveness of European companies in the context of greater resource efficiency*
http://ec.europa.eu/enterprise/policies/sustainable-business/sustainable-industry/sustainable-industry-forum/files/2_ecorys_berg_en.pdf
Contents: analyses of measures, drivers and barriers to resource efficiency in nine sectors.
 - DTI / Idea / Ecorys study
(forthcoming)
 - Wuppertal Institute (2007), *The relationship between resource productivity and competitiveness*
http://ec.europa.eu/environment/enveco/economics_policy/pdf/part2_report_comp.pdf
Contents: analyses of data on resource productivity.

- Food industry
 - Competitiveness of the European food industry: an economic and legal assessment (2007)
http://ec.europa.eu/enterprise/sectors/food/files/competitiveness_study_en.pdf
Contents: data on turnover, value added, R&D expenditure. Analysis of competitive position of EU food industry.
 - Impact of the increased use of biofuels on the competitiveness of the EU food industry (2007)
http://ec.europa.eu/enterprise/sectors/food/files/competitiveness/biofuelsstudy_finalreport_en.pdf
Contents: data and information on the structure of the bio-diesel and bio-ethanol subsectors, as well as the sugar-ethanol, cereals-based, and oilseed-based clusters of food supply chains. Discussion of the main drivers of change.
 - Competitiveness of the European meat industry
(forthcoming)
- Gas appliances sector
 - Gas appliances sector (2009)
http://ec.europa.eu/enterprise/sectors/pressure-and-gas/files/study_competitiveness_eu_gas_appliances_final_en.pdf
Contents: data on turnover, employment, trade, regulatory conditions, distribution and markets, competitors, RCA in the EU gas appliances sector.
- Glass industry
 - Glass industry (2008)
http://ec.europa.eu/enterprise/sectors/metals-minerals/files/finalreport_glass_141008_en.pdf
Contents: data on productivity, profitability, price margins, trade, structure and firm size distribution of the glass industry.
- ICT industry
 - ICT industry: SMEs in the ICT services industry (2009)
http://ec.europa.eu/enterprise/sectors/ict/files/study_report_ict_services_en.pdf
Contents: data on structure, turnover, employment, productivity, value added, profitability, trade, FDI, R&D support, business conditions, entry and exit barriers, market structure, regulatory conditions for the EU ICT services industry.
- Metal industry
 - Metalworking and metal articles industries (2009)
http://ec.europa.eu/enterprise/sectors/mechanical/files/metalworking/mma_final_report_181109_final_en.pdf
Contents: data on production, employment, productivity, profitability, industry structure, firm size distribution, trade, barriers to entry in the EU metalworking and metal articles industries.
 - Competitiveness of the EU Non-ferrous Metals Industries (Ecorys, 2011)
http://ec.europa.eu/enterprise/sectors/metals-minerals/files/fn97624_nfm_final_report_5_april_en.pdf
Contents: The chapters of the report cover the basic industry facts, key issues relating to the competitiveness of the industry, and a strategic outlook and policy options. It takes cognisance of input from the Commission and industry stakeholders and associations.
 - Steel industry (2008)
http://ec.europa.eu/enterprise/sectors/metals-minerals/files/final_report_steele_en.pdf
Contents: data on structure, regulatory conditions, market prospects, inputs, employment, price developments, value chain of the EU steel industry.

- Pharmaceutical industry
 - Pharmaceutical industry (2009)

http://ec.europa.eu/enterprise/sectors/healthcare/competitiveness/monitoring/index_en.htm

Contents: data on turnover, employment, cost structure, value added, productivity, profitability, industry structure, firm size distribution, trade, barriers to entry, ROI, R&D in the pharmaceutical industry.
- Security industry (production security-related equipment and services)
 - Security industry (2009)

http://ec.europa.eu/enterprise/policies/security/files/study_on_the_competitiveness_of_the_eu_security_industry_en.pdf

Contents: data on turnover, market size, competitors, main drivers in the EU security industry [define "security"].
- Services sectors
 - Services sectors (2008)

http://ec.europa.eu/enterprise/policies/industrial-competitiveness/documents/index_en.htm

Contents: data on employment, turnover, value added, productivity, inputs, firm size distribution, inputs in selected EU services industries (industrial cleaning, private security, private employment agencies, architectural/engineering /technical consulting, logistics, computer and computer-related services and activities, facilities management).
- Shipbuilding industry
 - Shipbuilding industry (2009)

http://ec.europa.eu/enterprise/sectors/maritime/files/fn97616_ecorys_final_report_on_shipbuilding_competitiveness_en.pdf

Contents: data on structure, regulatory conditions, competitors, production-related indicators, value added, productivity, profit margins, trade, employment, labour costs, inputs, R&D and innovation, access to finance, market shares for the EU shipbuilding industry.
- Tourism industry
 - Study on the competitiveness of the EU tourism industry (2009)

http://ec.europa.eu/enterprise/sectors/tourism/files/studies/competitiveness/study_on_tourism_competitiveness_2009_en.pdf

Contents: data on profitability, market size, regulatory conditions of the EU tourism industry.
 - The Travel & Tourism Competitiveness Report (2009)

http://www3.weforum.org/docs/WEF_GCR_TravelTourism_Report_2009.pdf

Contents: country data on regulatory conditions, environment sustainability, safety and security, health and hygiene, prioritization of travel and tourism, air and ground transport infrastructure, tourism infrastructure, ICT infrastructure, price competitiveness, human resources, affinity for travel and tourism, natural and cultural resources.

General reports on EU and international competitiveness

- European Commission, *European Competitiveness Report*, annual publication of DG Enterprise & Industry

http://ec.europa.eu/enterprise/policies/industrial-competitiveness/competitiveness-analysis/index_en.htm

Contents: its statistical annexes contain sector data on production, productivity, hours worked, ULC, RCA and relative trade balance. The contents of the other chapters vary from year to year. Those dealing with (industrial) sectors are reported under sectoral studies.
- European Commission, *Member States Competitiveness Performance and Policies*

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- European Commission, *EU Industrial Structure Report: Trends and Performance*, bi-annual publication of DG Enterprise & Industry
- European Commission, *Science, Technology and Competitiveness key figures Report* (DG Research & Innovation)
<http://ec.europa.eu/research/era/docs/en/facts&figures-european-commission-key-figures2008-2009-en.pdf>
Contents: data on R&D expenditure, university funding, human resources, education, output (publications, patents), high-tech exports, framework programmes.
- European Commission, *Europe's Digital Competitiveness report* (DG Information Society)
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Contents: data on and analysis of the ICT sector.
- Centre for Global Competitiveness and Performance (2010), *The Global Competitiveness Report 2010-11*, World Economic Forum
http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf
Contents: ranking countries according to their competitiveness based on the Global Competitiveness Index (GCI), developed for the World Economic Forum and first introduced in 2004. The GCI captures the microeconomic and macroeconomic foundations of national competitiveness through 12 pillars of competitiveness. The pillars are: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation.
Contribution: useful for overall EU initiative tackling macro-economic problems affecting all sectors; provides information on the relative position of key Member States compared to main non-EU competitors
- International Institute for Management Development (IMD), *World Competitiveness Yearbook 2011*
http://www.imd.org/research/publications/wcy/wcy_online.cfm
http://www.imd.org/research/publications/wcy/Factors_and_criteria.cfm
Contents: rankings of nations according to their competitiveness, on the basis of 20 factors: domestic economy, international trade, international investment, employment, prices, public finances, fiscal policy, institutional framework, business legislation, societal framework, productivity, labour market, finance, management practices, attitudes and values, basic infrastructure, technological infrastructure, scientific infrastructure, health and environment, education.

World Bank (2010), *Doing Business 2011 – making a difference for entrepreneurs*
<http://www.doingbusiness.org/reports/doing-business/doing-business-2011>

Contents: rankings of nations according to their business climate, on the basis of eleven indicators: starting a business, obtaining a construction permit, getting credit, protecting investors, paying taxes, trading across borders, registering property, enforcing contracts, closing a business, getting electricity, employing workers.