

# European State Aid Control: an economic framework\*

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# I Introduction

European state aid control is currently at a turning point. The European Union and its member states increasingly recognize the need to rethink the balance between the various objectives of state intervention. Constraints on state budgets and concerns about the effectiveness of state aid have increased the political pressure towards a more economics, effect-based approach in state aid and state aid control. Both at national and European level, the political mandate is for “*less and better targeted state aid*”.<sup>1</sup>

In this paper, we explore how an increased reliance on economic insights in state aid control can contribute towards the objective of enhancing the effectiveness of state aid control. The economics of state aid control is related to several areas of economics. First, to public economics, since state aid is a form of public intervention in the economy. Second, to the economics of competition, as state aid confers an advantage to some firms, which has the potential to affect the competitive process. Third, state aid control is related to international trade theory, as state aid can affect trading conditions. This latter aspect creates incentives for national governments to use state aid to pursue national economic or political goals, which in turn provides a rationale for supranational (European) state aid control.

Although state aid control is related to these well-developed fields of economics, most of the analysis in the practice of European state aid control is not firmly rooted in economic principles. There are a number of reasons for this state of affairs. One factor for the relative lack of economics in state aid control (relative to other areas of competition policy) is that the economic and legal principles underlying state aid control are by their very nature more challenging. For example, European state aid control involves more than a single objective: it involves economic efficiency as well as equity objectives. Another example is that there are several relevant theories of competitive harm at work, including some that are more dynamic – such as keeping inefficient rivals in the market. There is also the added complication that the cost of the aid to the taxpayer needs to be taken into account.

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<sup>1</sup> The political mandate for an economic approach towards “less and better targeted state aid” has been expressed in various conclusions of the European Council since the launch of the Lisbon agenda in 2000, as well as in the Commission’s *State Aid Action Plan, less and better targeted state aid: a roadmap for state aid reform 2005 to 2009*, available at [http://ec.europa.eu/comm/competition/state\\_aid/others/action\\_plan/saap\\_en.pdf](http://ec.europa.eu/comm/competition/state_aid/others/action_plan/saap_en.pdf).

Another reason that might explain the underdevelopment of economic-based analysis in state aid control is that the field is invariably more political. As a result, existing state aid procedures reflect largely the desire to limit political influence, rather than to focus on economic effectiveness. Accordingly, a strict legal tradition has developed in which state aid is deemed illegal, unless certain (largely form-based) criteria are met. It is sometimes argued that this tradition would be incompatible with a more effect-based approach, which includes the balancing of positive and negative effects. A related view – which has also been expressed in other areas of competition policy – is that predictability is better served by a stricter form-based approach.

This paper addresses these issues and suggests an economic framework of assessment for European state aid control. We argue that the time is right for a more effects-based approach as it is a means of achieving a greater effectiveness of state aid control, i.e. a means to better distinguish “good aid” from “bad aid”. In this context, we advocate the use of a general balancing test as a conceptual framework for analysing state aid cases. In essence, this test asks whether (i) the state aid addresses a market failure or other objective of common interest; (ii) the state aid is well targeted and whether (iii) the distortions of competition are sufficiently limited so that the overall balance is positive. This approach is appropriate both in the design of the state aid rules and in the analysis of individual state aid cases, in particular, in those cases involving large amounts of aid.

In our opinion, the effects-based approach outlined in this paper would contribute towards the policy goal of “less and better targeted aid”. We also conclude that such an approach, provided that it is properly implemented, does not lead to an overall softening of state aid control and that predictability can be assured. Moreover, it is likely, as well as intended, that an effects-based approach will shift the argumentation from legal and accounting battles towards a battle over the impact of the aid on markets and ultimately on consumers. Such a change would not only greatly contribute towards the effectiveness of European state aid control, but in fact enhance predictability. Finally, we argue that an effects-based approach allows for a better prioritisation in the field of state aid control.

This paper is organized as follows. Section II provides a brief overview of the current legal context of European state aid control and discusses possible entry points for more economic analysis. Section III summarizes the most relevant economic concepts applicable to state aid

control from a national perspective, while Section IV focuses on the international aspects. Section V addresses the debate on the relevant policy standard in state aid control. Finally, we present elements of an economic framework of analysis for state aid control in Section VI. The paper ends with some concluding remarks, which will return to the broader issues discussed in this introduction.

## **II The legal framework - room for economic assessment?**

The main provision in the EC Treaty<sup>2</sup> dealing with state aid control is Article 87. Article 87 EC specifies a two stage approach. First, with a view to establish *jurisdiction*, it is assessed whether a specific state measure constitutes “state aid” within the meaning of Article 87(1). Only state measures which constitute “state aid” within the meaning of Article 87(1) are subject to EU state aid control. Second, there is the assessment of *compatibility*, to assess whether the aid measure can be allowed under the provisions of the EC Treaty.

The Treaty applies a negative presumption to all forms of state aid, declaring those measures incompatible with the common market<sup>3</sup>. The Commission may grant an exemption, however, and declare state aid “compatible” under Article 87(2) or Article 87(3) EC. Measures falling under Article 87(2) are compatible as such<sup>4</sup>. Measures falling under Article 87(3), which are in practice more important, can be declared compatible under the discretion of the Commission. In order to enable the Commission to exercise its control, all measures covered by EU jurisdiction have, in principle, to be notified to the Commission *ex ante*, and then approved by the Commission before they are implemented.

The way in which the Commission exercises its discretionary powers is outlined in a number of Regulations and in so-called *soft law* provisions, such as Guidelines and Communications. Specific categories of training aid, employment aid and aid to SMEs are exempted by the so-called block exemption regulations. These measures have to be brought to the Commission’s

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<sup>2</sup> The legal framework of the European Union is based on a number of treaties. In the economic domain, the 1957 Treaty of Rome establishing the European Community (EC) contains the central provisions.

<sup>3</sup> In the European context, the term “common market” stands for the European (EU) market.

attention only *ex post* and information requirements are reduced. In addition, specific soft law provisions exist providing criteria to assess compatibility for aid measures of a horizontal (i.e. non-sectoral) nature, for certain sectoral measures, for measures in relation to public enterprises and with respect to specific types of state aid (state aid “instruments”), such as state guarantees.<sup>5</sup> Smaller amounts of aid are considered to fall outside EU jurisdiction and, hence, do not have to be notified (*de minimis* approach). Measures which do not fulfil the criteria outlined in the soft law provisions or Regulations can, in exceptional circumstances, be approved by direct application of Article 87(3).

We next briefly outline the criteria for assessing jurisdiction, followed by the approach to assess compatibility. We also address to what extent economic analysis is currently undertaken and indicate the scope for further economic analysis.

### ***Jurisdiction – the legal definition of state aid***

Article 87(1) of the EC Treaty states: “*Save as otherwise provided in this Treaty, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, insofar as it affects trade between Member States, be incompatible with the common market.*” The case law identifies four conditions to be fulfilled jointly for a measure to constitute state aid in the meaning of Article 87(1) EC:<sup>6</sup>

- (i) Transfer of state resources - there must be an intervention by the State or through State resources;
- (ii) Economic advantage - it must confer an advantage on the recipient;
- (iii) Distortion of competition - it must distort or threaten to distort competition;
- (iv) Effect on trade - it must be liable to affect trade between MS.

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<sup>4</sup> These measures primarily relate to social measures aimed at individuals, as well as measures addressing damage due to natural disasters.

<sup>5</sup> See Hancher et al. (1999), Biondi et al. (2004) and Rydelski (2006) for comprehensive overviews. A brief description of the main soft law provisions is provided in the *Vademecum on Community Rules on State Aid*, 2003, available at [http://ec.europa.eu/comm/competition/state\\_aid/others/vademecum/vademecumen2003\\_en.pdf](http://ec.europa.eu/comm/competition/state_aid/others/vademecum/vademecumen2003_en.pdf).

<sup>6</sup> See Judgement of the European Court of Justice of 24 July 2003, Case C-280/00, *Altmark Trans GmbH and Regierungspräsidium Magdeburg v Nahverkehrsgesellschaft Altmark GmbH* (“*Altmark* judgment”), paragraph 75.

It is important to note that in most cases the last two criteria (“distortion of competition” and “effect on trade”) are considered to be fulfilled if the measure is “selective” in terms of granting an advantage. A measure can be selective in terms of favouring certain companies, the production of specific products or the development of a specific region. Under this approach, the assessment of the criteria “distortion of competition” and “effect on trade” under Article 87(1) is rather rudimentary. In addition, it is left unclear whether both the competition and the trade criterion have a separate relevance in assessing jurisdiction.<sup>7</sup>

There are three areas in which economic analysis plays, or could play, an important role in the assessment of jurisdiction. First, economic analysis is relevant for establishing the extent to which an aid measure confers an economic advantage to the recipient of the aid. In practice, this is the most important entry point for economic analysis. In many cases, it is fairly straightforward to determine the size of the economic advantage, e.g. for direct subsidies granted to firms. In many other situations, however, it is much less straightforward - in particular, in the context in which governments invest in companies or provide loans or guarantees. In such cases, the “Market Economy Investor Principle (MEIP)” (or one of its derivatives, like the “Private Creditor Principle”) may become relevant. The MEIP is relevant in cases where the State intervenes by means comparable to private investors. The credit approved or the investment undertaken are only considered state aid in the meaning of Article 87(1) if the (monetary) compensation the State receives in exchange for the investment or loan is lower than what a private investor would have requested under such circumstances.<sup>8</sup>

Second, economic analysis has, at least potentially, a role to play in determining whether a measure is “selective” or not. State aid must be selective for it to be capable of affecting the balance between the recipient firms and their competitors.<sup>9</sup> “Selectivity” is what differentiates state aid measures from so-called *general measures*, which apply equally to all firms in all economic sectors in a member state (e.g. most nation-wide fiscal measures). A scheme is also considered selective, if the authorities administering the scheme enjoy a degree of discretionary power. The selectivity criterion is further satisfied if the scheme applies to only

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<sup>7</sup> See for instance the Commission’s *Vademecum: Community Rules on State Aid* (2003), p. 3, referring to the two criteria as one criterion.

<sup>8</sup> Note that the exact quantification of the economic advantage received becomes relevant in particular when the aid is found unlawful and has to be repaid by the aid beneficiary to the aid granting State authority (so-called “recovery”).

part of the territory or a specific industry of a member state (this is the case for all regional and sectoral aid schemes). Measures which are *de jure* not selective may *de facto* have a highly divergent economic impact on firms, sectors or regions. Economic analysis can help identifying the *de facto* impact of an aid measure on specific firms or industries.

Third, economic analysis may be relevant in analysing whether the selectivity of the aid translates into actual or likely distortive effects on competition or trade. For instance, even where the aid is selective, it is possible that the aid does not affect trade between member states, as might be the case when the aid supports the provision of non-tradable goods or services. In view of the Commission's expertise in other areas of competition policy (merger control, antitrust), this area seems to be a natural candidate for economic analysis. Case law, however, requires a rather low "intervention threshold" as regards the criteria of distortion of competition and effect on trade under Article 87(1).<sup>10</sup> In particular, the Court of First Instance has held that "(...) *there is no requirement in case-law that the distortions of competition, or the threat of such distortion, and the effect on intra-Community trade, must be significant or substantial.*"<sup>11</sup> As indicated above, it appears that in practice<sup>12</sup>, distortions of competition and effects on trade are assumed to be present when the measure is selective, that is, when the market position of the aid beneficiary vis-à-vis its competitors is improved by the aid. Accordingly, the scope for more economic analysis appears to be fairly limited in this regard.

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<sup>9</sup> Commission's *Vademecum: Community rules on state aid* (2003), *supra* note 7, p. 3.

<sup>10</sup> Cf. Ahlborn and Berg (2004) and Bishop (1997). See also Frédéric Louis, *EC State Aid Control*, presentation at the conference "EC State aid control: the case for reform", Brussels, 14.06.2005 (referring to the Judgment of the Court of 13 March 1985 in Joined cases 296 and 318/82, *Kingdom of the Netherlands and Leeuwarder Papierwarenfabriek BV v Commission of the European Communities*).

<sup>11</sup> Judgment of the Court of First Instance, 29<sup>th</sup> September 2000, Case T-55/99, *Confederación Española de Transporte de Mercancías (CETM) v Commission of the European Communities*. In this judgment the Court furthermore held that: "(...) *the Commission is not required to carry out an economic analysis of the actual situation on the relevant market, of the market share of the undertakings in receipt of the aid, of the position of competing undertakings and of trade flows of the services in question between Member States, provided that it has explained how the aid in question distorted competition and affected trade between Member States.*", *id.*, paragraph 7. However, in a recent judgment of the Court of First Instance, Case T-34/02, *Le Levant v Commission* (22<sup>nd</sup> February 2006), the Court followed the reasoning of the parties, who claimed that the Commission had failed to identify the relevant product and geographic markets and, consequently, had failed to appropriately specify the distortions of competition and the effects on trade under Article 87(1). The degree of economic analysis required to meet the legal standard under Article 87(1) is not yet fully spelled out, though, by the Court. See paragraphs 104, 123 and 124 of the judgment.

<sup>12</sup> See Opinion of Advocate-General Capotorti delivered on 18 June 1980, Case 730/79, *Philip Morris Holland BV v Commission of the European Communities*. It should be mentioned that the Commission has taken the view that very small amounts of aid (*de minimis* aid) do not have a potential effect on competition and trade between Member States. It therefore considers that such aid falls outside the scope of Article 87(1).

The rather wide interpretation of the concepts of distortion of competition and effect on trade under Article 87(1) is a reflection of the fact that state aid, unlike mergers and (most) contractual agreements concluded by companies, is presumed distortive. By throwing a wide net around Article 87(1) the Court seeks to provide a central role to the Commission in determining the legality of state support to companies.

In certain areas, the Court has adopted an approach which is more sophisticated and geared towards the economic circumstances of a particular case. For example, in the context of public service obligations (services of general economic interest), the Court has held that subsidies given to a company providing the public service do not constitute state aid in the sense of Article 87(1) when specific conditions are met relating to, amongst other things, the amount of the subsidy and the way in which it has been granted.<sup>13</sup>

### **Compatibility criteria**

As pointed out before, despite the negative presumption of Article 87(1), measures can be declared compatible if one of the exemptions of Article 87(2) or 87(3) are fulfilled. Article 87(2) provides an automatic exemption; Article 87(3) gives a certain discretion to the Commission in assessing compatibility. We will focus on the latter provision as it is, in practice, the more important legal basis for approving state aid measures. Article 87(3) states:

*“The following may be considered to be compatible with the common market:*

- (a) *aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment;*

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<sup>13</sup> *Altmark* judgement, *supra* note 6, paragraph 95. Public subsidies compensating public service obligations are not caught by Article 87(1) when: “*first, the recipient undertaking is actually required to discharge public service obligations and those obligations have been clearly defined; second, the parameters on the basis of which the compensation is calculated have been established beforehand in an objective and transparent manner; third, the compensation does not exceed what is necessary to cover all or part of the costs incurred in discharging the public service obligations, taking into account the relevant receipts and a reasonable profit for discharging those obligations; fourth, where the undertaking which is to discharge public service obligations is not chosen in a public procurement procedure, the level of compensation needed has been determined on the basis of an analysis of the costs which a typical undertaking, well run and adequately provided with means of transport so as to be able to meet the necessary public service requirements, would have incurred in discharging those obligations, taking into account the relevant receipts and a reasonable profit for discharging the obligations.*”

- (b) *aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;*
- (c) *aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest;*
- (d) *aid to promote culture and heritage conservation where such aid does not affect trading conditions and competition in the Community to an extent that is contrary to the common interest;*
- (e) *such other categories of aid as may be specified by decision of the Council acting by a qualified majority on a proposal from the Commission.”*

Paragraphs (a) and (c) constitute the legal base for approving regional investment aid<sup>14</sup>, where paragraph (a) is interpreted to refer to regions with income levels per head significantly below the EU average and paragraph (c) to regions with income and employment levels below the average of the particular member state concerned. Paragraph (c) is also the basis for most other soft law provisions, like for instance the R&D framework<sup>15</sup>, the Rescue & Restructuring Guidelines<sup>16</sup>, the rules applicable to Services of General Economic Interest<sup>17</sup> and the Environmental Guidelines.<sup>18</sup> It also provides the basis for the existing block exemption regulations in the field of training aid, employment aid and aid to SMEs.

The general principle behind the Commission’s compatibility assessment is to balance the positive impact of the aid measure (pursuing an objective of common interest) against its potential negative effects (distortions of trade and competition).<sup>19</sup> In most cases such a balancing will not be carried out explicitly. The approach taken in most block exemption regulations and soft law provisions is to define a set of “eligible costs” on the basis of which

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<sup>14</sup> Community Guidelines on national regional aid (1998), Official Journal C 74, 10.03.1998, p. 9-31. The Regional Aid Guidelines stipulate under which conditions member states can give aid to finance investments by companies setting up in particular regions.

<sup>15</sup> Community framework for state aid for research and development (1996, prolonged in 2002), Official Journal C 045 , 17.02.1996, p. 5-16.

<sup>16</sup> Community Guidelines on State aid for rescuing and restructuring firms in difficulty (2004), Official Journal C 244, 01.10.2004, p. 2-17.

<sup>17</sup> Community Framework for State Aid in the form of public service compensation (2005), Official Journal C 297/4, 29.11.2005, p. 4-7.

<sup>18</sup> Community Guidelines on State Aid for Environmental protection (2001), Official Journal C 37, 03.02.2001, p. 3-15.

<sup>19</sup> See, for instance, the Commission’s *State Aid Action Plan* (2005), *supra* note 1.

companies may receive state aid. The amount of subsidy is specified in terms of maximum aid intensities of the eligible costs (e.g. 50% of R&D expenditure at the stage of industrial research can be covered by state aid). The implicit balancing inherent in this approach is to obtain the positive impact of the aid measure by declaring expenses eligible which target objectives of common interest (like specific R&D expenditure) while restricting the possible distortions of competition by limiting the aid intensity (e.g. to 50%).

The various “soft law” provisions have typically been applied in a rather strict, formalistic way. There is little scope for approving state aid measures which do not meet the conditions set out in the provisions but which would very likely be benign. Alternatively, disallowing state aid measures which meet the conditions, but which are likely to be ineffective or distort competition is not envisaged.

Novel measures or measures which are for other reasons exceptional and therefore not covered by existing soft law provisions are assessed “directly under Article 87(3)”.<sup>20</sup> These cases remain however very limited in number and scope.

Over the years, the Commission’s approach has been to fine-tune the soft law provisions in order to improve their precision. Such fine-tuning has, for instance, been applied to the regional aid guidelines, which stipulate under which conditions member states can give aid to finance investments by companies setting up in particular regions. Whereas the traditional criteria applied in regional aid cases have been the level of GDP per capita relative to the EU average and, in certain cases, relative employment figures, a complementary set of rules has been introduced in order to limit the distortions of competition and trade<sup>21</sup>. These rules thus define lower maximum aid intensity levels for large investment projects and specify that firms cannot receive regional aid when they hold a market share above 25% or when they are active in a sector which is in relative decline.

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<sup>20</sup> Examples are the cases relating to aid in support of the development of broadband provision in Wales (Commission Decision of 1 June 2005; see also Competition Policy Newsletter 2005, 1, p. 8; <http://ec.europa.eu/comm/competition/publications/cpn/>) and aid for the construction of a propylene pipeline connecting Rotterdam, Antwerp and the German Ruhr area (Commission Decision of 16 June 2004, case C67/03, OJ L56/15 2005).

<sup>21</sup> Multisectoral framework on regional aid for large investment projects (2002), Official Journal C 70, 19.03.2002, p. 8-20.

Another example is given by the R&D Guidelines, which distinguish between different types of R&D, according to whether the R&D activity relates to fundamental research or rather to R&D activity “close to the market”. Furthermore, R&D aid to large firms has to induce an expansion of research activity (so-called “incentive effect”).

A special approach is taken in the guidelines on risk capital, which support equity funds that provide risk capital to smaller firms.<sup>22</sup> In this context higher amounts of risk capital aid are approved if it is shown that the aid is proportional to the size of the market failure addressed.<sup>23</sup>

Despite the increased fine tuning of soft law provisions, EU state aid rules remain rather form-based, leaving little room for assessing the impact of the measure on competition and trade. Explicit economic analysis of state aid measures has been of minor importance for compatibility assessment.<sup>24</sup>

In the few cases which undertook a more explicit analysis of the competitive impact of the state aid measure, the following principles emerge. First, state aid is more distortive in markets which are more competitive<sup>25</sup>. The underlying idea is that in markets where profit margins are already rather slim (due to competition) or where market shares are fairly volatile, state aid granted to a specific firm (or group of firms) may have a greater impact. Second, operational aid is almost always considered highly distortive, more than aid to finance investment<sup>26</sup>. As operational aid is directed towards the variable costs, it may directly affect firms’ ability to compete and capture market share.

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<sup>22</sup> Commission Communication on State aid and risk capital (2001), Official Journal C 235, 21.08.2001, p. 3-11.

<sup>23</sup> See Section III for a description of the concept of market failure.

<sup>24</sup> For similar opinions, see Ahlborn and Berg (2004) and Bishop (1997). The UK Office of Fair Trading (2005, at 2.20) has noted in this context: “The Commission has published guidelines outlining in more detail types of compatible state aid under Article 87(3) EC however, these guidelines do not apply economic criteria to assess the extent to which such state aid distorts competition.”

<sup>25</sup> So the Court of First Instance stated that “*it is settled case-law that even aid of a relatively small amount is liable to affect trade between Member States where there is strong competition in the sector in which the recipient operates*”. Case I-288/97 *Regione Autonoma Friuli-Venezia Giulia v Commission* [2001] ECR II-1169, para 44. Similarly, “*Moreover, because of the structure of the market, a feature of which is the presence of a large number of small-scale undertakings in the road haulage sector, even relatively modest aid is liable to strengthen the position of the recipient undertaking as compared with its competitors in intra-Community trade.*” (*Id.*, para 46). See also Case 259/85 *France v Commission* (para 24).

<sup>26</sup> The Court of First Instance has held that “*operating aid, that is to say aid which, like the aid in question, is intended to relieve an undertaking of the expenses which it would normally have had to bear in its day-to-day management or its usual activities, in principle distorts competition.*” Case T-214/95 *Het Vlaams Gewest v Commission* [1998] ECR II-717, para 43.

In sum, in the existing legal context of European state aid control, the competition analysis and the assessment of the negative effects on trade are rather rudimentary. Economic analysis of the state aid character of a given measure is limited mainly to the assessment of the “economic advantage” of the measure. As far as compatibility is concerned, a balancing of the benefits of the aid with the distortive effects of aid is in principle foreseen. In practice, however, the approach taken rests largely on the definition of the eligible costs and the use of maximum aid intensities. An explicit competition analysis or assessment of the effect on trade is done only in the few cases directly assessed under Article 87 (3) or is limited to a partial analysis.

The resulting approach – while perhaps being relatively simple to administer – does not seek to identify the effectiveness of aid and the actual impact on markets. In combination with a rather broad approach taken when considering whether a measure constitutes state aid or not (see above), the state aid approval system thus bears the risk of being overly broad (to look at too many measures) and at the same time to be too imprecise, in the sense of not discriminating enough between “good” aid measures and “bad” aid measures.<sup>27</sup>

### **III The economics of state aid (control): basic concepts**

The economic underpinnings of European state aid control draws on three fields of economics: (i) public economics (to analyse the purpose and effectiveness of state intervention in the national economy), (ii) the economics of competition (to analyse the impact of state aid on competition), and (iii) international trade theory (to study state aid policy in an international context).

In this section we first focus on the public economics perspective of state aid policy: why do national authorities resort to state aid to intervene in the economy? It is important to understand the motives for state aid policy. If and when member states adopt state aid measures, they are likely to do so for a reason. The more state aid policies are used in pursuing (national) welfare objectives, the more likely it is that these national policies are also

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<sup>27</sup> Economists usually measure the precision of a test by assessing type I and type II errors. A Type I error is the prohibition of a welfare increasing State intervention. A type II error is the approval of a welfare decreasing state interventions.

in line with EU objectives (for example, those described in Article 87(3) EC), provided that negative spill-overs in the EU are limited. As a result, appropriate state aid policies at the national level should be a “positive” element in the EU appraisal of state aid.

A proper assessment of the economic costs and benefits of state aid control also has to address the effectiveness of state aid. The last part of this section reviews a number of limitations of state aid, in terms of its effectiveness in achieving public policy objectives, as well as its exposure to political influences by specific stakeholders.

### ***Rationale for state aid***

At the beginning of the 20<sup>th</sup> century, economists developed the analytical tool of a *social welfare function*.<sup>28</sup> A social welfare function maps the utilities of single individuals into an aggregate measure of social welfare, using a system of weights representing the importance attached to the utility of the respective individuals.

The fundamental theorems of welfare economics postulate conditions under which the market mechanism results in a Pareto efficient allocation<sup>29</sup>: the first welfare theorem defines the conditions under which any competitive economy results in a Pareto efficient allocation of goods and services; the second theorem says that under such conditions any Pareto efficient allocation may be obtained by a suitable lump-sum transfer of resources. The welfare theorems thus allow, in principle, to separate the two welfare elements of *efficiency* and *equity*.

Following this line, this subsection addresses two – even though in practice not necessarily independent – ways of increasing social welfare through state intervention. The first is by increasing the efficiency of an economy and thereby “pushing the welfare frontier outward” (sometimes referred to as “making the cake bigger”). The second way is to redistribute the available resources in a way that maximizes the preferences of society for equity and

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<sup>28</sup> The concept of the social welfare function goes back to Bergson (1938). It goes beyond the scope of this paper to discuss the critics on the concept of a social welfare function. See, for instance, Stiglitz (2000) for a discussion.

<sup>29</sup> Pareto (1896) observed that social welfare is unambiguously increased by a change that makes at least one individual better off, without making anybody else worse off. From this principle economists have derived the concept of “Pareto improvement”, “Pareto optimality” or “Pareto efficiency”. A situation is considered Pareto-efficient if it is impossible to make further changes that satisfy the Pareto principle.

redistribution. This is about “moving along the welfare frontier” (“dividing the cake better”).<sup>30</sup>

## Efficiency rationales

Economic efficiency is often analyzed in terms of total welfare, i.e. the sum of consumer welfare (the difference between customers’ willingness to pay and the actual price) and producer welfare (profits) in the markets concerned<sup>31</sup>. A public intervention should be implemented when total welfare increases by more than the cost of the intervention.<sup>32</sup>

When can government intervention be efficiency enhancing? State intervention may improve the functioning of markets (and thereby pass the welfare test) when competition, if left to its own devices, is unlikely to produce efficient outcomes in terms of prices, output and use of resources. These instances are referred to as “market failures”.<sup>33</sup> Markets fail when the market (based on private actors) does not provide a good or service even though the economic benefits outweigh the economic costs. Sound public policy should be directed at improving the efficient functioning of markets by correcting market failures, as long as the benefits of intervention outweigh the costs.

Economists (backed by the first welfare theorem) have pointed to a number of situations where market failures exist. The most important in the field of state aid are<sup>34</sup>:

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<sup>30</sup> Note that in the latter case interpersonal utility comparisons become necessary while for the former interpersonal utility comparisons can be avoided by applying the Pareto criterion: the utility of every citizen is (weakly) increased.

<sup>31</sup> A situation in which total welfare is maximised is characterised by Pareto efficiency. It should be noted that the exact measure of the effect of a change on consumer surplus is the *equivalent* or *compensating variation*, which takes into account income effects. The concept of consumer surplus only corresponds under the restrictive assumption of quasi-linear utility functions to those concepts, but is applied in most applications for practical reasons (see Varian, 1992, p.160).

<sup>32</sup> Note that the economic cost of the intervention includes the opportunity cost of the funds employed as well as the cost of raising the funds, i.e. the shadow cost of taxation. We will come back to these points in Section III, “The Limits of State Aid”.

<sup>33</sup> Stiglitz (2000), p.77: “*The first fundamental theorem of welfare economics asserts that the economy is Pareto efficient only under certain conditions. There are six important conditions under which the market is not Pareto efficient. These are referred to as market failures, and they provide a set of rationales for government activity*”.

<sup>34</sup> For summaries of the arguments regarding market failures see Stiglitz (2000), Meiklejohn (1999) or Gual et al. (1998).

Externalities - Externalities exist when actions by one agent have consequences for other agents. This “side effect” may be negative (“negative externalities”) or positive (“positive externalities”). An example of a negative externality is the situation where environmental side effects are not taken into account by producers. An example of a positive externality can be found in the sphere of R&D. When a company undertakes R&D, this activity may have positive spill-over effects for other companies (diffusion of knowledge; technological breakthroughs). Such side effects drive a wedge between the private benefits of a given action (to the actor) and the overall economic benefits of the action, which will lead to an inefficient market outcome.

Public goods (form of externality) - Public goods are goods for which it is difficult or impossible to exclude anyone from using the goods (and hence making them pay for the goods)<sup>35</sup>. Here one can think of national defence, public broadcasting services, but also of services of general economic interest. In a sense, public goods represent an extreme case of externalities, as suppliers of such goods cannot appropriate the benefits to other people. As a result, public goods are not provided by the market up to an efficient level. According to the first welfare theorem, the public financing of such goods or services may then be an efficient response to correct the problem of underprovision of public goods and to achieve a more efficient outcome.

Information asymmetries/ missing markets - In certain markets, there is a discrepancy between the information available to one side of the market (e.g. the supply-side) and the information available to the other side of the market (the demand-side). A well-known example is the financial market, where the company demanding finance (loans or equity) is typically better informed about the state and prospects of the company than banks or investors. If companies have little scope for credibly transmitting this type of information (as is often thought to be the case for SME activity in innovative industries), it is difficult for banks or investors to distinguish “good” from “bad” loans or investments. As a result, the market may not come off the ground, even where there is a considerable group of SME’s with projects worth the investment. According to the first welfare theorem then, providing incentives to the financial sector to increase SME investments can be an appropriate response from the viewpoint of efficiency.

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<sup>35</sup> In addition, public goods are characterized by non-rivalry in consumption: the use or consumption of the good by one person does not reduce the possibilities of others persons to use or consume it.

Coordination problems - Markets may also not function efficiently when there is a coordination problem between market actors. This aspect plays a key role in standards setting. While state intervention can play an important role in providing for better coordination, the specific role for state aid is less clear in this context.

Market power - Another reason why the market may not lead to an efficient outcome is the existence of market power (“failure of competition”). Notably, market power leads to prices that are too high from society’s point of view, thereby not achieving efficiency. State aid measures may, in principle, reduce market power (for example by fostering entry into a given market which would not occur without the state aid). State aid measures may, of course, also create market power. State aid may lead to a build-up of market power in the hands of some firms, for instance when companies that do not receive state aid (e.g. non-domestic firms) have to cut down on their market presence, or where state aid is used to erect entry barriers.

## **Equity rationales and potential trade-offs**

Functioning markets establish an efficient allocation of goods. They also provide opportunity to individuals to engage in an open and fair competitive process. However, the outcome of this process might be perceived as inequitable. Governments may wish to intervene for purposes of creating a more equitable outcome of the market process. This provides a rationale for state intervention, for example in the form of social or regional aid<sup>36</sup>.

Economic theory is not determinative in identifying the “optimal” redistribution of wealth and resources, as this depends on the citizens’ preferences.<sup>37</sup> In most textbooks on the application of economic theory to antitrust and regulation, a utilitarian welfare approach is taken, so as to focus on efficiency considerations.<sup>38</sup> The criterion of efficiency offers a neutral concept allowing economists to identify situations off the social welfare frontier – independent of political concerns about distribution. In principle, integrating equity considerations into the

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<sup>36</sup> Also a policy aimed at cultural diversity and pluriformity of the media may be viewed under the heading of equity, as it relates to society’s perception that the market outcome – though efficient – is not satisfactory in preserving or promoting cultural and democratic values.

<sup>37</sup> See, however, the concept of “efficient redistribution” discussed later on.

<sup>38</sup> Two classical concepts put forward in this regard by economists are the utilitarian approach of putting equal weight on individual utilities and the Rawlsian approach of putting all weight on the individual with lowest utility. However, an infinite amount of possible preference functions are possible.

analysis undermines the normative strength of economic concepts such as “perfect competition”, or the idea of Adam Smith’s invisible hand. A representative quote can be found in the industrial organization textbook by Jean Tirole (1993, p.12): *“In this book, I will treat income distribution as irrelevant. In other words, the redistribution of income from one consumer to another is assumed to have no welfare effect. (The marginal social utilities of income are equalized.) I certainly do not feel that actual income distributions are optimal, even with an optimal income-tax structure (because there are limits and costs to income taxation, as is emphasized by the optimal-taxation literature). Market intervention does have desirable or undesirable income-redistribution effects. But I will focus on the efficiency of markets, using Musgraves’ (1959) framework in which the distribution branch of government worries about distribution and the allocation branch (the one considered in this book) deals with efficiency.”*<sup>39</sup>

A similar approach, limiting attention to the efficiency of markets (to total welfare), appears not appropriate in the context of state aid control. In the area of state aid control, redistribution is often among the very objectives of state aid measures. Social and regional cohesion policy is explicitly mentioned in the Treaty as a possible ground for allowing state aid measures. In fact, equity oriented state aid measures – in particular regional growth measures and, often linked, aid for sectoral adjustment – account for roughly 40% of all state aid granted.<sup>40</sup> Therefore, redistributive concerns have to be taken into account in the approval of state aid and cannot be disregarded in an overall assessment.

One could argue – as in other fields of antitrust policy – that state aid is only one of many instruments governments have at their disposal to address redistributive issues. General transfers to individuals, in particular lump sum, income or consumption related, are not subject to the EU state aid control. In addition, a broad set of measures partially targeting efficiency objectives also have strong distributive effects, and are not covered by the notion

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<sup>39</sup> Similarly, Laffont and Tirole’s (1993) textbook on market regulation employs a utilitarian approach maximizing the sum of the individual utilities. A comparable position is expressed in the text book by Viscusi et al. (2000, p. 9): *“Ideally, the purpose of antitrust and regulation policies is to foster improvements judged in efficiency terms. We should move closer to the perfectly competitive ideal than we would have in the absence of this type of intervention.... Put somewhat differently, our task is to maximize the net benefits of these regulations to society. Such concern requires that we assess both benefits and the cost of these regulatory policies and attempt to maximize their differences. If all groups in society are treated symmetrically, then this benefit-cost calculus represents a straightforward maximisation of economic efficiency.”* They proceed by saying: *“Alternatively, we might choose to weight the benefits to the disadvantaged differently or make other kinds of distinctions, in which case we can incorporate a broader range of concerns than efficiency alone.”*

<sup>40</sup> See State aid Scoreboard, available at [http://ec.europa.eu/comm/competition/state\\_aid/scoreboard/](http://ec.europa.eu/comm/competition/state_aid/scoreboard/).

of state aid either. This is the case for most measures in public education, healthcare and general infrastructure. Therefore, one might question whether an individual state aid measure (or state aid as such) is the appropriate instrument to address redistributive concerns or whether other – less distortive – instruments exist for redistributive objectives.<sup>41</sup>

In any case it has to be recognised that many public policy measures which focus on redistribution have strong side-effects on efficiency and vice-versa.<sup>42</sup> These side-effects may result in a trade-off between equity and efficiency objectives. An important role of economic analysis is to identify any such trade-off.

For instance, state aid to improve living standards in disadvantaged regions by subsidizing local firms may have the side-effect of distorting competition in product markets. These side-effects may be strongly negative from an efficiency point of view. In fact, rather than solving any market failures, they introduce new ones (in the form of distortions of competition). Also, when redistribution is expensive in view of the shadow costs of taxation, no “cost-free” redistribution is possible. One of the reasons why redistributive transfers may not be optimal is linked to the incentive problems they tend to create. For instance, regions may reduce their effort to balance their budget or to eliminate structural rigidities in their economies if the negative implications of budget deficits and slow growth performance are compensated by higher aid receivables. In other words, financial compensations from richer to poorer regions may, if not properly implemented, induce moral hazard problems and thereby decrease economic efficiency.

Alternatively, providing R&D aid for large scale research projects in order to tackle market failures in this field may imply additional resources to already well equipped research centres in the “core” regions to the detriment of the “periphery”. Similarly, both environmental problems (due to congestion and concentration of industries) and income levels may be largest in urban areas, making them the main beneficiary of environmental aid schemes. Such measures may then accentuate existing differences in economic wealth among regions.

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<sup>41</sup> A related argument is that in an environment of vested political influence a restriction to efficiency considerations may be appropriate given the availability of redistributive instruments outside the set of state aid instruments.

<sup>42</sup> Trade-offs are also present in the world of antitrust. Consider the example of perfect price discrimination mentioned in Tirole (1993). Introducing perfect price discrimination by a monopolist enhances efficiency. At the same time it has a strong (negative) distributive side-effect on consumers: the entire consumer rent is appropriated by the monopolist.

Sometimes there is no trade-off between efficiency and equity objectives – either due to positive side-effects or because redistribution itself is an instrument to solve market failures. Consider two countries with an equal endowment of a specific input factor, say, capital.<sup>43</sup> Suppose that the production function is concave in this input factor. The country with a more equal distribution of the input factor will exhibit a higher output than the other country. If perfect capital markets exist, those agents with a higher input endowment would lend resources to agents with lower endowments, and output in the country with less equally distributed income would rise to the level of the other country. If capital markets are imperfect, a government redistribution policy with respect to the input factor, could at least partially replicate the perfect market equilibrium.<sup>44</sup> In such a scenario, redistribution may increase welfare, allowing to rank different regimes under an efficiency criterion. In fact, one can derive the level of “efficient redistribution”, the amount of redistribution which maximizes welfare.

In this context, Sleuwaegen et al. (2000) argue that relocalisation of firms between assisted regions (regions obtaining funds to attract investment) is often welfare decreasing due to “subsidy-shopping motives”<sup>45</sup>. By contrast, relocalisation between non-assisted and assisted regions would increase efficiency on average, and can be considered “efficient redistribution”.

Similarly, Besley and Seabright (1999) have pointed towards an interdependency between efficiency and equity in the context of aid to attract regional investments. When a company chooses to locate in a particular region, this may give benefits to other players in the region concerned as well, benefits which are not taken into account by the investing company. This is also the reason why regions often “compete” to attract the investment. From an overall efficiency point of view, it would be optimal if the region where the spill-over effects are highest would obtain the investment concerned. If so, a “bidding contest” between regions

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<sup>43</sup> Note, however that in richer theoretical settings (incorporating in particular the political system to vote for redistribution, and the inclusion of individual leisure) the property of Pareto rankability might get lost in general. Benabou (2000) for instance concludes: “*This leads to two stable steady states, the archetype for which could be the United States and Western Europe: one with high inequality yet low redistribution, the other with the reverse configuration. These two societies are not Pareto rankable, and which one has faster income growth depends on the balance between tax distortions to efforts and the greater productivity of investment resources (particularly in education) reallocation to more severely credit-constrained agents.*”

<sup>44</sup> See Przeworski (2003, p. 185).

<sup>45</sup> Sleuwaegen et al. (2000, p. 75)

would allow the region with the highest benefits to obtain the investment.<sup>46</sup> However, this result – which is optimal from an economic point of view – may not be achieved when countries are resource constrained. In such a case, poor countries will easily be outbid by rich countries independently of whether the investment is most efficient in the region or not. Redistribution may then improve the efficiency of the process of attracting regional investment.<sup>47</sup>

In sum, it seems appropriate and – in contrast to merger control or antitrust – necessary to include redistributive concerns in the assessment of state aid measures, e.g. by explicitly addressing the trade-off between equity and efficiency in a general welfare test. In most cases, however, the weighting can only be of a qualitative nature as the pecuniary value of social benefits is often not measurable and entails a social judgment. Nevertheless, those judgements are necessary on a political level. De Graaff formulated, referring to Lionel Robbins, already in 1957: “...economists do not really mean that interpersonal comparisons are “impossible”. All that they mean is that they cannot be made without judgements of an essentially ethical nature.”

### ***The Limits of state aid***

More controversial is the issue of how to correct for market failures. There are several significant problems to be addressed before one can be sure that state aid is effective and leads to a welfare enhancing outcome.

The first issue is measurability. The existence and, in particular, the magnitude of a particular market failure is hard to measure. Consider, for example, granting an R&D aid to a firm in order to create the “right” incentive to innovate. The market failure associated with this kind of aid may be related to the fact that the social return to R&D investment is higher than the private return. The exact size of the market failure depends on the difference between the social and the private returns, which in turn depends on a large number of other factors such

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<sup>46</sup> This result is established within a multi-auction approach (Bernheim and Whinston 1986a) where regions can provide “bids” contingent on firms’ investment decision.

<sup>47</sup> Another important example why equity considerations may become relevant is the situation of a country being hit by a demand shock in one of its sectors resulting in unemployment. If employment in the particular sector would go down without state aid, the wage cost becomes part of the total welfare assessment. See for instance Brander and Spencer (1987) or Lahiri and Ono (2004), p.85.

as market structure, the ability to appropriate intellectual property, the patent system, the importance of the innovation, the R&D production function, to name just a few. In practice it is almost impossible to determine the precise size of the market failure. Nevertheless, it is certainly possible to investigate whether a market failure is likely to exist at all and whether it is significant. In other words a qualitative assessment is possible, while a quantitative approach will not be very reliable in most cases.

A second related issue is that the intended benefit of state aid need not be larger than the costs. State aid is costly. It involves using state funds that could have been used in other domains of government (opportunity costs of state aid) as well as the cost of raising the funds required (shadow costs of taxation). Even if one assumes that state aid is employed in the right kind of situations and in the right manner, it may still not be worth it, especially if its impact is smaller than anticipated (presumably because the market failure is small), or the costs are high.

Thirdly, there may be undesirable side effects of state aid. Much of state aid has an impact on the functioning of the market. This may create anti-competitive side effects<sup>48</sup>, which may ultimately hurt the consumer. Some of these side effects affect national market participants only; others affect firms or customers in neighboring countries as well. The latter – so called international spillover effects - will be discussed in more detail in the following section on European state aid control as they provide one of the strongest justifications for a European state aid control system.

A final area of difficulty is termed “government failures”. A prominent example is the claim that governments are not good at “picking winners” either because they lack the relevant information, and/or because they are passing out favors to further their own goals. The literature on political economy has produced a number of insights as to when these informational or commitment problems lead to ineffective policy decisions.<sup>49</sup> The argument is based on politicians or regulators pursuing their private goals, which in some circumstances do not coincide with the public goals. For instance, in the so-called “representative democracy model” politicians strive to be reelected and choose their policies accordingly. In this set-up, policies are not always effective in raising social welfare. A particular concern is the existence

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<sup>48</sup> See also the survey by Fingleton et al. (1999) and UK Office of Fair Trading (2004).

<sup>49</sup> A comprehensive introduction into this literature is provided by Persson and Tabellini (2000).

of commitment problems of governments.<sup>50</sup> To achieve an effective policy, design issues such as accountability and transparency of government become important parameters.<sup>51</sup>

The above discussion suggests that although market failures may be the economic rationale for state aid, the effectiveness of state aid is determined by many other factors. Only in a world where “perfectly informed and benevolent dictator” decides on state aid policies, would one expect state aid to be perfectly effective.

## **IV The Rationale for European state aid control**

This section analyzes the rationale for (supranational) state aid *control*, which is different from the rationale of national state aid. National intervention relates to situations where there is a wedge between private benefits and social benefits. EU state aid control is needed when “private” (country-specific) benefits of state intervention are not aligned with “social” (EU-wide) benefits. In other words, state aid is about the behaviour of (national) market participants, whereas state aid control is about the behaviour of national governments.

In principle, one can distinguish between three justifications for supra-national state aid control. The first and most prominent one is that cross-border externalities may drive a wedge between national and international interests. Second, insofar as national authorities face commitment problems, delegating state aid control to a supra-national authority may be beneficial. Third, safeguarding the proper functioning of the internal European market provides a justification for European state aid control. The latter rationale is closely linked to the first two, though.

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<sup>50</sup> Such commitment problems may, for instance, be due to the election cycle: governments may be willing to renegotiate contracts agreed upon by their predecessors, resulting in dynamic inefficiencies.

<sup>51</sup> See, for instance, Neven and Röller (2000) and Duso (2002) for some empirical evidence. Neven and Röller (2005) provide a model analyzing the design of merger control policy in a political economy framework. See Vickers (2005) for similar views.

## ***Cross-border externalities***

Cross-border externalities occur when national governments do not take into account the (negative) side-effects of their intervention on other European states.<sup>52</sup> In economics, the literature on “strategic trade policy” (Brander and Spencer 1985, 1987) provides the strongest theoretical basis for having a supranational (European) system of state aid control. This literature studies settings in which countries compete with each other in an individually rational, but collectively wasteful subsidy competition, with the prospect to appropriate a larger share of international oligopoly profits. While this concept was originally put forward in relation to export-subsidies, comparable prisoners’ dilemma type of situations are common to a broad set of situations involving various forms of state aid, from launch aid in the aviation industry or other types of R&D aid to the attraction of foreign direct investment (FDI) or rescue and restructuring aid.

To give an example, consider a situation in which rescue and restructuring aid is given to a failing firm in one member state producing products for markets located outside the EU and facing competitors located in other European countries. Assume that the industry is in decline, forcing a gradual exit of certain producers. In such a situation the order of exit will typically depend on firms’ ability to commit to stay in the industry.<sup>53</sup> A unilateral commitment to subsidize one of the firms can alter the order of exit, and induce the immediate closure of other (non-domestic) firms.

The insights of the strategic trade literature point to the importance of imperfect competition, in particular resulting from scale economies, as a factor influencing the scope for strategic trade conduct. Under imperfect competition the reaction function of aid beneficiaries is shifted outwards, resulting in less foreign output and, under the assumptions of the model, to higher price levels. By contrast, in perfectly competitive markets, aid to individual firms will affect profits of individual firms but not change the competitive price level and output. Finally, at the other extreme, export subsidies to a monopolist tend to expand output and

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<sup>52</sup> In principle, the same type of reasoning holds for positive externalities like international information spillover. In this case governments may provide insufficient funding from a European perspective or may not support those projects which maximize European welfare (even though they may be regarded as positive).

<sup>53</sup> The classical reference on such type of exit models are Fudenberg and Tirole (1989) and Ghemawat and Nalebuff (1985, 1990). For a survey of the literature, see Neven et al. (2004), pp. 16.

lower prices towards efficient levels. Overall, we thus have an inverted-“U”-relationship in terms of the most distortive effects in the various market structures.

The second insight is that negative spillovers are a necessary precondition for prisoners’ dilemma situations to emerge.<sup>54</sup> When a prisoners’ dilemma situation is present, a ban on export subsidies is optimal from the point of view of the group of countries as a whole.

Two particular caveats/extensions should be mentioned when applying this doctrine to European state aid control. First, the strategic trade literature does not take into account the specificities of an integrated European market. Second, if there are externalities that are location specific, subsidy races may not result in prisoners’ dilemma situations.

As regards the first point, Collie (2005, 2002, 2000) extends the traditional strategic trade framework to an integrated economy, that is, the subsidized product is not exported to a third non-producing country but produced for consumption in an unsegmented common market between several countries. Within such an environment it is no longer only firm profits which determine national (and European) interest, but also consumers’ interests: consumers tend to benefit from expanded output and, hence, from lower prices induced by state subsidies. In such an environment Collie shows that the prohibition of state aid is still welfare enhancing if the costs of funding the subsidies are sufficiently high and products are close substitutes.<sup>55</sup> Collie therefore extends the main result of the strategic trade literature – subsidy competition may give rise to a prisoners’ dilemma type of situation – to the conditions of an integrated economy. However, if products are highly differentiated the negative impact on competing firms is reduced while the beneficial effects on consumers is increased, resulting in state aid becoming welfare enhancing.<sup>56</sup>

With respect to the second point, the conclusions of the “strategic trade policy” literature have to be qualified by an important argument put forward by Besley and Seabright (1999) in an FDI setting: if countries are heterogeneous and therefore the benefits to attract investment vary over regions, competition between countries to attract FDI can result in an efficient allocation of investment across regions. As described in the previous section, despite the

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<sup>54</sup> See Besley and Seabright (1999, p.21).

<sup>55</sup> These results hold both for Bertrand and Cournot settings (Collie, 2002).

existence of negative externalities between regions, subsidy competition may induce an overall efficient outcome as it results in regions attracting FDI which derive the highest economic benefit from attracting FDI. The broader policy conclusion drawn by the authors is the need to focus on the institutional particularities of intergovernmental subsidy competition – issues like accountability, commitment capability in a dynamic context or institutional restrictions on bidding become the focus of assessment. Those issues will be addressed further below.

To conclude, negative cross-country externalities are a strong justification for a supra-national control system of national state aid measures. So for instance Fingleton et al (1999, p.76) have advocated an approach emphasizing international spillovers: “*We conclude that a supra-national system of state aid control might be appropriate in order to prevent countries giving aids that have strongly negative externalities on other countries without sufficient positive effects in the home country.*”

### ***National commitment problems***

A second possible justification for European state aid control is based on a potential commitment problem faced by national governments. Kornai (1980) generally referred to this problem as the “*soft budget constraint*”. The idea is that governments may not be able to commit to clear rules and a fixed budget *ex ante*. In such a situation firms have smaller incentives to become efficient, as they (correctly) anticipate that the government will have no choice but to bail them out when the need arises. As a result efficiency and welfare is reduced.<sup>57</sup>

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<sup>56</sup> It has to be mentioned that the current body of literature does not consider settings involving other market failures besides imperfect competition. More research is needed to obtain a fuller picture in this regard.

<sup>57</sup> See Kornai et al. (2003) and Dewatripont and Maskin (1995). Conceptually, consider a bank providing a credit for a private investment project (for instance the expansion of a national firm into a neighboring EU market). The project could be of two types – a less profitable one which exhibits a negative net present value and a profitable one exhibiting a positive net present value. The bank cannot observe the profitability of the project when deciding about the credit approval. After the investment the bank observes the project’s profitability. In case the project is not profitable the bank has two options. It can close down the firm or grant a second credit. Depending on the parameters it may be profit maximizing for the bank to provide a second credit in order to recover some of its losses on the first credit. In a dynamic context this is fatal, however. Managers who know the profitability of the project *ex ante* and have some private benefits in starting the project and keeping it alive are willing to propose unprofitable projects taking into account that the bank will bail them out later, if need be. Thereby *ex ante* inefficient projects are implemented. Note that this commitment problem arises in a purely profit-maximizing environment, and will be exaggerated if the funding source is not a profit maximizing entity. An example of this is provided by the Hungarian economy in the 1970s. Hungary, at that time still a socialist economy, was experimenting with the introduction of market reforms. Despite the introduction of incentives for

Dynamic commitment problems of such a type induce important economic inefficiencies. They are common problems in rescue and restructuring cases, but equally important for regional measures where national governments “bail-out” regional governments, under R&D schemes where inefficient start-ups or R&D projects receive on-going funding due to such dynamic commitment problems. Similarly, projects that start off as public-private partnerships (PPI) sometimes continue, after some years, as fully public entities.

An important question in this context is whether national commitment problems justify intervention by a supra-national authority. Are they not a purely national problem and – perhaps even more importantly – can a supranational control authority solve the problem?

Assume for a moment that the economic effects are de facto national, that is, the aid beneficiary operates on a local national market. Kornai (1980) defined two conditions for commitment problems to arise in such a context: first, the possibility for the beneficiary to renegotiate the terms of the funding ex post and second, the existence of a close administrative relationship leading to some form of regulatory capture. Whether these conditions are met in the context of European state aid control is a matter of debate. It may be argued that the European Commission is less able or possibly even less willing<sup>58</sup> to enter into ex post renegotiation than national governments would. The closeness of the administrative relationship relates to the issue of whether national governments are more prone to lobbying on the part of firms than the European Commission, which may be more distant from national firms’ interests.

Another aspect to consider is that a supra-national institution may be better placed to spread “best-practice”, or even ensure consistency across jurisdictions, thereby increasing the efficiency of aid funding authorities.

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state owned firms to maximize their profits, firms were always bailed out when exhibiting long term losses. This “insurance against bankruptcy” resulted in severe dynamic inefficiencies.

<sup>58</sup> A supra-national authority may have higher reputation losses. This may be the case as the Commission has to approve measures such as rescue and restructuring aid on a regular basis while national governments provide those means less often. Furthermore, a negative European precedent results in dynamic inefficiencies across Europe changing the relation of short term benefits (which are national only) and long term losses in dynamic incentives (which are Europe-wide).

In sum, a supranational institution may in principle be an instrument to solve national commitment problems. The extent to which national commitment problems are a justification for supranational state aid control remains controversial, however. While the Commission may be better placed to resolve commitment problems, it is likely to be also less well informed about national circumstances.

### ***Internal market rationale***

The internal market is one of the pillars of the European Union. It is based on the rationale that a more integrated European market will - by increasing competition and by allowing companies to restructure and achieve scale - promote economic growth.<sup>59</sup> Given this view, national state aid measures are counterproductive, because they not only directly harm other countries (the basic externality argument) but also undermine the functioning of the European internal market, by preventing firms from achieving scale and effectively competing.

Supranational state aid control can be thought of as a commitment device to a principle – the internal market principle – which is in everybody’s interest *ex ante*, but difficult to abide by *ex post*. For instance, Member states tend to be reluctant to open-up their markets when national incumbents are not “fit” for competition. Consequently, inefficient national industries or firms often go hand in hand with a slower liberalisation process. State aid control can play a vital role in breaking such cycles.<sup>60</sup>

Accordingly, Biondi and Eeckhout (2004) point to the priority of internal market considerations in state aid control: “...*the assumption upon which the entire reasoning is based is the recognition that both sets of rules [internal market v state aid rules] are pursuing an identical aim, namely that of ensuring the free movement of goods under normal conditions of competition.*”<sup>61</sup>

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<sup>59</sup> See also Midelfart-Knarvik and Overman (2002), p. 325.

<sup>60</sup> The internal market argument has recently been linked to the strategic trade/ exit game literature cited before. Martin and Valbonesi (2006) argue that market integration triggers an exit process of firms and therefore creates incentives of governments to subsidize inefficient, domestic incumbents to the detriment of European-wide welfare.

<sup>61</sup> Biondi and Eeckhout (2004), p. 108.

## V The policy standard for assessing state aid at the European level

The first step towards a more refined economic approach is to define a relevant policy standard in the assessment of state aid measures. Recall that Article 87(1) EC prohibits state aid measures which distort competition, insofar as they affect trade. Article 87(3) EC identifies a number of conditions under which state aid measures are compatible, which relate to both economic development and social and regional cohesion objectives. The common element underlying these conditions is that the measure should be in line with the “common interest”. The crucial question is what interpretation should be given to the concept of common interest, i.e. what is the relevant standard for assessing whether an aid measure is in the common interest?

In this section we argue that maximizing total (European) welfare, subject to redistributive objectives, is the proper interpretation of the concept of “common interest”. Accordingly, we advocate an approach which differentiates between a total welfare approach – which focuses on the efficiency of markets and the economy at large<sup>62</sup> – and a “social welfare function” approach, which takes redistributive concerns into account. In other words, we propose to conceptually separate efficiency and equity objectives. Much of what economists can say is about efficiency (e.g. that state aid has the potential to increase efficiency if and only if market failures are addressed). With respect to distributive objectives, economics can provide certain guidance, e.g. with a view to minimise the cost in terms of efficiency of achieving such objectives (or even to identify measures which can contribute to both). The judgement on the value to be placed on equity and efficiency is ultimately one of a political nature. Nonetheless, to be clear about any trade-offs between the two is an important element in properly identifying measures that are in the common interest.

The remainder of this section will address the appropriate *policy standard* (i.e. the yardstick to be applied by the control agency when deciding to allow or disallow state aid) for assessing measures aimed at economic efficiency. We do not address the relevant standard under equity considerations. This does not imply that the equity considerations are less important though.

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<sup>62</sup> The concept of total welfare in the context of state aid does not only include the sum of consumer and producer welfare in the markets concerned, but also the cost to tax payers associated to the funding of state aid.

In developing our arguments, we begin by commenting on the welfare standard approach in the context of other areas of competition policy (in particular in Article 81 and merger control) and then focus on state aid control.

### ***Policy standards in other fields of competition policy***

Let us begin by recalling that other fields of competition policy – notably antitrust and merger control – have converged in recent years to what is, by and large, a consumer welfare policy standard. In the context of Article 81, the Commission holds that “[t]he objective of Article 81 is to protect competition on the market as a means of enhancing consumer welfare and of ensuring an efficient allocation of resources”<sup>63</sup>. The reference to “efficient allocation of resources” could be interpreted in terms of total welfare. However, given that Article 81(3) explicitly refers to “consumer benefit”, it appears that the Commission is to focus on consumer welfare<sup>64</sup>.

In merger control, the emphasis is now firmly on consumer welfare. The recently adopted Merger Guidelines indicate that “[e]ffective competition brings benefits to consumers, such as low prices, high quality products, a wide selection of goods and services, and innovation. Through its control of mergers, the Commission prevents mergers that would be likely to deprive customers of these benefits by significantly increasing the market power of firms.”<sup>65</sup> In the context of the analysis of efficiencies claimed by the merging parties, the Guidelines specify that the “relevant benchmark in assessing efficiency claims is that consumers will not be worse off as a result of the merger”<sup>66</sup>.

It is worth reflecting on the rationale put forward in support of a consumer welfare policy standard in these areas (as opposed to a total welfare standard). In principle, economists advocate a *total* welfare standard – an approach going back to Williamson’s analysis in the

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<sup>63</sup> Guidelines on the application of Article 81(3) of the Treaty, Official Journal C 101, 27.04.2004, p. 97-118, at para 13. See also Kjølbye (2004).

<sup>64</sup> It should be mentioned that the overall EU “market integration” objective plays a role in the application of Article 81, especially in the context of territorial restraints. In addition to not reducing consumer welfare, agreements between companies should not add to segmentation of national markets. To a certain degree, the two objectives are aligned (see Peeperkorn 1999, p. 65).

<sup>65</sup> Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (“Merger Guidelines”), at para. 8.

<sup>66</sup> Merger Guidelines, *supra*, at para. 79.

late 1960s – which encompasses a balancing of rents to producers and consumers. Nevertheless, there are several arguments in support of entrusting a competition agency with a consumer welfare standard. These are based on the following considerations: (i) informational advantages, (ii) merger selection bias, and (iii) lobbying activities. In addition, a consumer standard is considered to be easier to implement.<sup>67</sup> It is important to emphasize that none of the rationales for a consumer standard are normative. Instead, it is the presence of regulatory imperfections or regulatory failures, which can justify the consumer standard as a policy standard. In particular, such imperfections can turn a consumer standard into the policy standard that in fact maximizes total welfare.

We now review the arguments briefly in some more detail, starting with informational advantages on the part of firms. Besanko and Spulber (1993) argue that consumer welfare should have more weight in merger assessments in order to counterbalance a certain under-enforcement bias due to a problem of asymmetric information (the competition authority having less information regarding efficiency gains resulting from mergers than the merging parties themselves). The basic idea is that under a total welfare standard, firms tend to propose mergers that exhibit relatively large efficiencies. As a result of the problem of asymmetric information, it becomes optimal for the competition authority to adopt a low probability to block mergers, leading to under-enforcement from a total welfare perspective. The underenforcement can be avoided by the agency committing to a consumer standard *ex ante*.<sup>68</sup>

The second line of argument - a selection bias - starts from the observation that competition authorities can only assess mergers that are notified (see Lyons, 2002). Under a total welfare standard, firms will put forward mergers which meet the total welfare test (to obtain approval) but which, under this constraint, maximize firm profits. Inasmuch as profits and consumer rent are negatively correlated, it will not be the total welfare maximizing mergers which will

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<sup>67</sup> Werden (1996), for instance, argues that the assessment of a differentiated product merger by the enforcement agency is made much easier under a consumer standard because an estimation of firms' profits requires additional, strong assumptions about the functional form of demand. In this context, Ilzkovitz and Meiklejohn (2001) also point to the practical problem of assigning the European part of firms' profit under a (European) total welfare standard.

<sup>68</sup> A related argument is put forward by Lagerlöf and Heidhues (2005). They analyse the incentives of firms to deliver verifiable but costly information on efficiencies under different merger control regimes. As it is the firm which decides on whether to collect the information or not, efficiency assessments are carried out in favourable cases only. They conclude that an efficiency defence is optimal from a total welfare perspective in case of (high) efficiencies resulting in price reductions post-merger (so that the merger would meet a consumer standard).

be put forward by firms. Implementing a consumer welfare standard may counterbalance this bias.

Finally, Neven and Röller (2005) analyze a political economy environment using a common agency framework (see Bernheim and Whinston, 1986b) where firms (both merging firms and non-merging competitors, but not consumers)<sup>69</sup> can provide inducements to the enforcement agency (the common agent) which are contingent on the outcome of the merger review. They show that - under certain institutional settings - a consumer standard maximizes total welfare. In particular, an institutional environment of low transparency (which allows effective lobbying) and low accountability of the agency implies that a consumer standard is superior to a total welfare standard.

In sum, there are a number of arguments that support a consumer welfare approach in merger control. Whether these arguments carry over to the field of state aid control is an open question, to which we now turn.

### ***The policy standard in the field of state aid control***

As we have mentioned above, total welfare is the appropriate standard as far as economic efficiency is concerned. Nevertheless, in certain political and institutional environments, entrusting a control agency with a consumer welfare standard may be optimal from the point of view of maximizing total welfare. Before investigating this issue in state aid, let us note that in contrast to other areas of competition policy, total welfare in state aid does not only include the sum of producer and consumer surplus, but also the cost to tax payers. This is an important difference to other areas of competition policy and we will return to this later.

We begin by asking whether the policy standard in state aid should be based on total welfare or on consumer welfare. In light of the above discussion, the answer will depend on whether

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<sup>69</sup> The assumption that consumers are underrepresented in merger proceedings is supported by two arguments. First, consumers may not be well informed about the consequences of proposed mergers and accordingly may not be able to formulate their interest appropriately. Second, consumers may face prohibitive transaction costs in representing their interests. These costs can be associated with the traditional problems of free-riding and collective action with numerous agents.

there is a potential enforcement bias (as in merger control) inherent in an explicit total welfare standard that is likely to be reduced or avoided by a consumer standard.

As we mention above, one of the distinguishing features of state aid control is that the Commission has to deal primarily with member states and not with firms. Information as well as potential lobbying efforts run from the aid beneficiary (the firms or the industry favoured by the measure) via the national government to the Commission. To the extent that state authorities are prone to be captured by individual interest groups, the Commission is confronted with governments supporting vested interests (namely, those of the beneficiaries of the aid). Given the institutional architecture of the European Union, it is likely that governments' influence and bargaining powers *vis-à-vis* the Commission is not smaller than that of individual firms. Hence, there is an institutional risk that distorted interests are carried forward, via national governments, to the Commission.

In terms of systematic empirical evidence there are not many studies to our knowledge that investigate the political economy of European state aid control. One example is the study by Neven and Röller (2000), who investigate the political economy of state aid allocation. They find that the allocation of state aid can be explained to a very large degree with political and institutional variables. Even though the evidence provided is not based on any structural estimation, it is nevertheless striking that most of the variation is due to non-economic factors.

A related question is then whether national governments are more likely to support certain types of vested interests. The OECD Roundtable on subsidies and state aid in 2001 concluded that domestic opposition to subsidies is relatively low, while domestic support is relatively large as long as the negatively affected firms are located in a foreign country.<sup>70</sup> Furthermore, as in other fields of competition policy, the aid beneficiaries tend to be concentrated, while the negative externalities tend to be spread widely over the population. All this suggests that national governments are more likely to support national producers.<sup>71</sup>

Overall, we consider it likely that the political pressure in state aid is substantial, and certainly not lower than in other areas of competition policy. In addition, it appears that national governments are more likely to support domestic producers, rather than domestic consumers

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<sup>70</sup> OECD (2001), p.8.

<sup>71</sup> *Id.*

(and obviously not foreign interests). It is also unlikely that non-domestic rivals are underrepresented in state aid control procedures either directly, or through their respective governments. Accordingly, we argue that decision making at the EU level can benefit from more emphasis on consumers for similar reasons as in merger control: informational disadvantages, selection, and lobbying.

With regard to the informational disadvantages, the Commission's investigative powers to collect market information are rather limited in the field of state aid control. In the first phase of the investigation – before the opening of the “formal investigation procedure” – information exchange is channelled through the aid granting member state by means of the notification process (it may be triggered by a third party complaint, however). After opening the formal investigation procedure the consultation of third parties is carried out by a publication in the EU's Official Journal asking for comments from interested parties. A more direct exchange (as in hearings) or a proactive market inquiry is not envisaged, even though not excluded either.<sup>72</sup> In any case, a legal instrument to facilitate the collection of market information through third parties does not exist.

As far as selection bias is concerned, note that the Commission mostly assesses state aid measures that are notified. Under a standard of review focusing on total welfare, member states would tend to select measures which marginally meet the total welfare standard, yet maximize domestic producer surplus.<sup>73</sup>

Finally, with respect to the lobbying bias, recall that the political economy literature shows that a government takes efficient decisions either when the government is benevolent itself (i.e. it is immune to lobbying) or when *all* affected parties are represented by a lobby.<sup>74</sup> Given

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<sup>72</sup> Paragraph 8, Council Regulation (EC) No 659/1999 of 22 March 1999 states: “...*the formal investigation procedure should be opened in order to enable the Commission to gather all the information it needs to assess the compatibility of the aid and to allow the interested parties to submit their comments...*”

<sup>73</sup> Note that a selection bias can provide a rationale for the European funds, as the Commission proposes and selects measures which aim at maximizing European welfare.

<sup>74</sup> In the latter case, a balanced lobbying process results in an “efficient lobbying equilibrium”, where national interests are neutralized by the other parties' lobbying effort. For instance, a recent working paper suggests that the “*empirical puzzle in the literature concerning the apparently nearly “welfare-maximizing” behavior of the US government in setting trade policy*” can partially be explained by efficient lobbying competition. See Gawande and Krishna (2005). An introduction to this literature is provided by Persson and Tabellini (2000), p. 172. The standard common agent model – on which most lobbying models build upon - was developed by Bernheim and Whinston (1986b); an application to trade issues is developed by Grossman and Helpman (1994).

that consumers are not fully represented in the state aid procedure, it follows that a total welfare standard may be subject to an enforcement bias.

In sum, the main arguments put forward in the literature on merger control in favour of a consumer standard appear also valid in the context of state aid control. As a result, a consumer standard - rather than a total welfare approach – seems more prudent. In other words, a policy standard focusing explicitly on consumer welfare appears better suited to foster total welfare than a standard of review focusing explicitly on total welfare.

A possible criticism of the consumer standard might be that state aid measures always tend to affect consumers positively, at least in a static context. For example, assuming some market power *ex ante*, a production subsidy will typically result in an output expansion and a reduction in prices, to the benefit of consumers.

However, the same criticism might be expressed towards the use of a total welfare standard, if one were to define total welfare as the sum of consumer and producer welfare. In the above example, with some market power *ex ante*, the production subsidy tends to foster both consumer welfare and total welfare alike (output moves towards the total welfare optimum, thereby increasing allocative efficiency).<sup>75</sup>

However, it is important not to forget about the cost of financing state aid. The positive correspondence between state aid and consumer benefit no longer holds when consumers are also considered in their capacity as tax payers. In this light, we propose that the opportunity costs of funding, that is, the direct cost of the subsidy and the deadweight loss due to distortionary taxes, needs to be part of the policy standard for state aid. Collie (2005, 2002, 2000) has shown that within such an environment, state aid control enhances total welfare for reasonable estimates for the opportunity cost of funding. Importantly, Collie's results are derived under a total welfare standard, but apply equally under a consumer/tax standard.

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<sup>75</sup> In case of a monopoly setting, these arguments converge into the classical regulation literature on “natural monopolies”. A production subsidy driving prices down to marginal cost minimizes the deadweight loss associated with monopoly and is welfare enhancing as long as the benefits to the customers exceed total cost. See for instance Viscusi et al. (2000), Chapter 11, for an introductory discussion. For an analysis within an oligopoly setting, see Garcia and Neven (2004).

In operational terms, by including the tax dimension, a consumer standard bolsters the requirement that state aid is effective in changing firms' behaviour and not resulting in mere windfall profits. This issue (also called the "incentive effect") is crucial in many areas of state aid – for instance, in state aid directed towards firms' location decisions or whether R&D aid results in crowding out or crowding in of private investment. In all these cases, a consumer/tax standard is a significant safeguard to ensure the effectiveness of aid measures and to ensure that aid increases total welfare.

A further aspect of the effect of state aid on consumers is that the short-run and the long-run impact on consumers may be very different. As in other areas of competition policy, short-run benefits might translate into long-run losses, if aid leads to exclusionary conduct. If aid is used to predate rivals or to prevent exit, short term lower prices have to be compared to possible future increases. Even in the short-run, aid may not always benefit consumers if it leads to anticompetitive behaviour, such as when aid forecloses or marginalizes foreign competitors. Incumbents that cross-subsidize competitive segments may deter entry and harm consumers in the short run.

A related question is whether a consumer standard in state aid is tougher than a total welfare standard. In general this will depend on how the aid affects firms' profits. Firms' profits are composed of two groups: beneficiaries and rivals. Under most standard assumptions, it stands to reason that the beneficiary benefits, while the rivals are being harmed. Whether aggregate industry profits are increasing depends on the precise circumstances. Nevertheless, to the extent that subsidies increase industry profits, a consumer standard would be tougher, i.e. all aid that is compatible under a consumer surplus standard would also be compatible under a total welfare standard, but not the reverse.

Let us briefly turn to two other possible standards often cited in the field of state aid: the "effect-on-rivals" standard and the internal market standard.<sup>76</sup> The effect-on-rivals standard is closely linked to the idea of a "level playing field". The idea of a level playing field focuses on achieving *ex ante* fairness: a measure is not distortive if it leaves the market position of all competitors unchanged. From a conceptual perspective this approach could essentially lead to

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<sup>76</sup> In fact, both standards are closely linked. Biondi and Eeckhout (2004, p.105) summarize the internal market jurisprudence by stating that "*in a nutshell, the language of free movement is one of discrimination,*

all aid being “bad”, since the inherent effect of most aid measures is to change the relative market position of the companies in the market. In this sense, the effect-on-rivals standard is consistent with the legal presumption that state aid is illegal.

The main shortcoming of the effects-on-rivals standard is that it does not directly assess the effect of an aid measure, on either markets, competition or consumers. This approach makes it difficult to use the standard as an overarching standard in the field of state aid, as it does not recognize potential benefits of aid both at the national and the European level. On the other hand, an effect-on-rivals standard is closely linked to a consumer standard in more dynamic settings. An advantage obtained through state intervention (and not through superior performance) is likely to reduce the incentives to compete. In other words, the effect-on-rivals can be a proxy for the negative impact on consumers in a dynamic sense. The greater the negative impact on rivals, the more likely it is that consumers will be negatively affected in the longer run.<sup>77</sup> At this point one can not help but mention the similarities with the debate of “competition on the merits” as well as “protecting competitors vs. the competitive process” surrounding the Article 82 reform. There are, however, important differences here<sup>78</sup>. The conduct in question in state aid is not undertaken by private firms, but by governments. In this sense, an approach that minimizes the impact on competitors might be more justified in the context of state aid control than in the context of the antitrust rules.

Finally, the internal market standard. This standard is usually not associated with balancing positive versus negative effects of a particular measure. Rather, it is often interpreted as one where any obstacle to the proper functioning of the internal market is prohibited.<sup>79</sup> This *per se* approach makes it difficult, as in the case of the effect-on-rivals standard, to use the internal

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*obstacles, and market access*”. These are the same elements one would assess under an effect-on-rivals standard trying to establish an equal, non-discriminatory level playing field.

<sup>77</sup> This correspondence has led Martin and Strasse (2005) to propose a consumer welfare standard for assessing state aid. Under their approach, a positive impact on consumer welfare in the long run is taken as an indication that the aid measure benefits the competitive process and is unlikely to harm rivals in a significant way.

<sup>78</sup> Furthermore, in those situations where the relative positions of competitors are strongly affected, lobbying efforts of firms may be high, justifying a more careful assessment by the European Commission. The argument was put forward by Garcia and Neven (2004, p. 10). Note that in contrast to a welfare reducing horizontal merger, rivals’ interests are not aligned with the aid beneficiary’s interests. Profits of competitors not benefiting from the aid measure are usually always negatively affected. Hence, one can expect that the criticism that has been made in the context of merger control, namely that the Commission protects competitors at the expense of consumers, is less likely to apply in the context of state aid control.

<sup>79</sup> See Biondi and Eeckhout (2004, p.108).

market standard as an overarching standard in the field of state aid, as it does not recognize potential benefits of aid at the national or European level.

In sum, we see merit in implementing a policy standard that emphasises consumers and tax payers in the assessment of state aid measures. Emphasising these categories of actors is likely to bolster the requirement that state aid is effective and increases total (EU) welfare. The effect on rivals could play a role in terms of understanding the dynamic effects of state aid on competition (such as keeping inefficient firms alive). However, as a final objective we do not think that the effect-on-rivals standard should be endorsed.

## **VI Elements of a general framework – towards an effects-based approach**

In this section we outline some elements of a framework for the assessment of state aid measures.

To recall, state aid that affects trade between member states and distorts competition is prohibited under Article 87(1), unless the European Commission exempts the aid from this prohibition under Article 87(3). The common element for exempting aid under Article 87(3) is that the aid is in the “common interest”. As mentioned above, we propose to interpret the meaning of “common interest” as encompassing two fundamental aspects, efficiency and equity. To the extent that an aid measure is analysed in terms of its impact on efficiency, we argue that there are good reasons to employ a welfare standard that takes explicitly into account consumer benefit and the effect on tax payers.

As a conceptual framework for evaluating state aid measures, we advocate the use of a general balancing test. In essence, this test asks whether (i) the state aid addresses a market failure or other objective of common interest; (ii) the state aid is well targeted (i.e. is the aid an appropriate instrument, does it provide an incentive effect and is it kept to the minimum necessary) and whether (iii) the distortions of competition are sufficiently limited so that the overall balance is positive.

Further, we argue that in order to further increase the effectiveness of EU state aid control, a more *effects-based* approach is warranted. Whereas traditionally most aid measures are scrutinised under a “one size fits all” approach based on formal criteria, a more systematic assessment of the positive and negative effects of the aid is warranted, in particular for aid measures involving large amounts of aid. Such an approach would be a means to enhance the effectiveness of state aid control, to better distinguish “good aid” from “bad aid”.

### ***A structured assessment of state aid measures: the balancing test***

We propose to implement an effects-based approach in state aid control through a “*balancing test*”. In particular, we suggest the following 3-step test for assessing the compatibility of a state aid measure under Article 87(3):<sup>80</sup>

- (a) *Is there a market failure or another objective of common interest? (e.g. social or regional cohesion)*
- (b) *Is the aid measure targeted, i.e. does the proposed aid address the market failure or other objective? In particular,*
  - i. *is the aid measure an appropriate instrument, i.e. are there other, better placed instruments?*
  - ii. *is there an incentive effect, i.e. does the aid change the behaviour of firms?*
  - iii. *is the aid kept to the minimum, i.e. could the same change in behaviour be obtained with less aid?*
- (c) *Are the distortions of competition and effect on trade sufficiently limited, so that the overall balance is positive?*

Fundamentally, the test balances the positive and negative effects of state aid. This can be done by first analyzing the “benefits” of a state aid measure under (a) and (b). Finally, the “cost” or negative effects of an aid measure are assessed under (c), including the balancing.

Before commenting on the three legs in more detail, let us mention one other issue. It may be argued that when state aid is properly used to solve a market failure (parts (a) and (b)) then there may be no “real” distortion of competition (there may be a distortion of competition in

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<sup>80</sup> See also the Commission’s *State Aid Action Plan* (2005), *supra* note 1.

the strict sense of Article 87(1), but not in the sense that there are concrete negative effects against which the positive effects of the aid measure have to be balanced). In other words, some form of “integrated” approach might seem more appropriate, leading to a two legged test rather than a three legged test.

We believe that the idea of balancing two sides under the compatibility criteria - that is, to distinguish positive and negative elements in the sense of a cost-benefit analysis - is a more practical approach.<sup>81</sup> The legal notions of “distortion of competition” / “effect on trade” are terms describing the negative side of aid, with “common interest” the positive side. Solving market failures or addressing cohesion objectives adds to the positive side, while introducing (new) distortions is a negative. In practice the two sides are often separable and the “integration” can be done under the balancing in (c). Consider the following example:<sup>82</sup>

#### **Example: Environmental Aid**

A pipeline for the transportation of a chemical product A is built with public support. Suppose that state aid is justified because the pipeline reduces the risk of environmental damage relative to other means of transportation, such as motorways. Consider two types of distortion of competition. Suppose product B, which is a close substitute for product A in the downstream market, can not use the pipeline for technical reasons. The state funds provided for the construction of the pipeline therefore put producers of product B at a competitive disadvantage, resulting in a lower market presence and lower profitability. This manifests a first distortion of competition. A second potential distortion could arise vis-à-vis other modes of transportation, such as waterways: compared to a situation without aid fewer products will be transported via those alternative modes. The first type of distortion is (at least conceptually) separable from the addressed market failure: internalizing the environmental externality does not automatically lead to a discrimination of product A and B. As a result, whether one chooses an integrated approach or not is irrelevant. The second distortion, however, is inherently linked to the market failure. Within an integrated approach, the latter effect might not be considered a “distortion” in the market for transportation, in that it simply corrects a market failure and improves the functioning of the market. Under a balancing approach, it would be considered a “distortion”, but would be balanced against the possible positive environmental benefits. The result of the assessment - compatibility or prohibition - would be the same under both approaches though.

The example illustrates that some distortions are inevitably linked with market failures, while others are a side-effect (new market failures). However, it also shows that there is no problem in identifying both effects as a distortion in the legal sense of Article 87(1) and leave it up to

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<sup>81</sup> See, in a different context, Stiglitz (2000), Chapter 11.

<sup>82</sup> These stylized facts are derived from a case concerning aid for the construction of a propylene pipeline between Rotterdam, Antwerp and the Ruhr area, see Commission decision of 16 June 2004, case C67/03, OJ

the final balancing under Article 87(3) to decide on compatibility. It is worth noting in this context the concepts of “distortion of competition” and “effect on trade” are not necessarily identical under Article 87(1) and Article 87(3). Article 87(1) has an important *jurisdictional* dimension, which is based on spillovers across member states. In particular, the mere *existence* or likelihood of an effect on non-domestic rivals is relevant under Article 87(1). Such an approach may be reasonable, as long as the *magnitude* and *importance* of these effects are assessed under Article 87(3).

Linked to the question of an integrated versus a balancing approach is the question of sequencing of the individual steps. The balancing test as presented here is considered a complete test requiring a full assessment of all legs in order to come to an overall assessment. Alternatively, the test could also be implemented in a sequential way. In this case, a “weak” performance on one of the first steps would lead to incompatibility of the aid measure. Such a sequential approach results in lower resource requirements and in an overall tougher regime. The disadvantage of such an approach is, however, that aid measures may be declared incompatible without proper assessment of the distortionary effects of the aid on competition and trade – the limitation of which provides the main justification for a European state aid control though. Consequently, such an approach seems to be appropriate only if those elements are addressed sufficiently under Art. 87(1) or through other pre-selection filters, e.g. within block exemption regulations or guidelines.

We now discuss the individual legs of the test in more detail.

## **Assessing the benefits – legs (a) and (b) of the test**

An appropriate starting point in any case assessment is to ask whether there is a market failure or an objective of common interest (leg (a) of the balancing test). This transparency vis-à-vis the objective of the aid measure is needed to assess the effectiveness and necessity of the aid. Only if there is a market failure, can a measure have the potential to increase economic efficiency. Furthermore, addressing efficiency and equity upfront clarifies possible trade-offs

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L56/15 2005. The example is, however, not to discuss the merits of this particular case but to explain the general idea.

between the two. The existence of a market failure or a cohesion objective is, however, a *necessary but not sufficient* condition for state aid to be effective and appropriate.

Leg (b) ensures that the aid targets the market failure or achieves another common interest objective, i.e. it asks whether the aid solves the problem. This leg touches upon the problem of “government failure”. Specifically, building on past practice in state aid control, the test addresses three aspects. The first part of leg (b) asks whether the aid instrument is the *appropriate instrument*. In other words, it asks whether there are other, better placed instruments, which are either more effective or less costly in reaching the objective chosen. Clearly, a certain type of state aid measure may not be the most effective way at achieving the stated goal. There may be other government instruments – inside and outside state aid – that might be better placed to improve the functioning of markets or achieve a social objective. From an economic point of view, many different policies outside state aid can be thought of, such as infrastructure provision, education, labour market policy and product market regulation. Similarly, problems of regional or social cohesion can be addressed through state aid, but also through other, possibly more generic policies. How far the net should be spun in terms of a search for better placed instruments is a matter of policy decision. At a minimum alternative measures inside state aid should be assessed.

The second part of leg b. asks whether there is an *incentive effect*, i.e. does the aid change the behaviour of firms. Without an incentive effect, firms behaviour is not affected and consumers are not affected either, since the aid is simply transferred from the tax payer to the firms. Note the crucial role that a consumer standard plays in this context. If there is no incentive effect, there cannot be any benefit to consumers, hence the necessity of the incentive effect. In this sense, the consumer standard (as operationalized by the incentive effect) is a safeguard against windfall profits to firms.

The issue of the incentive effect is related to, but not identical to, the third part of leg (b). While the second part asks whether the aid measure will result in the company adopting the required behaviour, the third part asks whether the same change in behaviour be obtained with a lower amount of aid. The second question thus relates to the *impact* of the state aid measure, the third to the *efficiency* of the state aid measure.

When assessing the benefits of an aid measure, different questions will arise depending on the objective that is pursued. An example from the area of state aid to risk capital funds might be instructive at this point.

### **Example: Risk Capital Scheme**

Consider a risk-capital fund (created, in part, with public money) which is financing the earliest phase of enterprise formation, the seeding phase. Why could public funding of such type of activity be justified from a market failure perspective? Assume that the expected return on investment is very low, or even negative. By contrast, suppose that the provision of risk capital at later stages is highly profitable. If firms cannot write complete contracts committing themselves to stay with venture capitalists throughout the different stages of development, cream-skimming behaviour may be observed: private venture capitalists provide funding for later stages only and free-ride on early fund providers. Based on this market failure, an in-depth assessment of the measure is possible. First, it has to be assessed whether there are other, better placed instruments than state aid available. Could, for instance, a relatively simple change in financial market regulations allow complete contracts? Second, does the aid measure change the behavior of private investors, so that the objective is reached, that is, does the measure attract (“crowd-in”) additional private funds by solving the bottleneck in the seeding phase of funding? Past examples of successfully implemented schemes can be useful evidence in support of the case. Finally, it has to be assessed whether the same change in behavior could have been obtained with less aid. This involves questions relating to the endowment of the fund, as well as the financial conditions under which funding is provided to start-ups.

Another example might be a regional development scheme. The objective here is on whether the scheme leads to higher levels of economic activity in the region, an objective which is in principle not a market failure objective. Nevertheless, even when one is concerned with regional or social cohesion, it is possible that targeting market failures is the best way forward, as certain state aid measures may well be capable of pursuing both efficiency and equity rationales at the same time. Using state funds to resolve market failures in disadvantaged regions has the effect of both increasing economic efficiency and fostering regional cohesion within the country.<sup>83</sup>

### **Example: Risk Capital Scheme (continued)**

Consider a risk-capital fund set up in a less prosperous region of Europe<sup>84</sup>. Assume that due to exogenous factors - such as political instability - both the amount and the conditions at

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<sup>83</sup> Another concern is that regional aid does not go against regional comparative advantages. See the work done by Midelfart-Knarvik and Overman (2002) who argue – based on an empirical analysis of European and national regional aid measures – that those measures did not become effective as they went against regional comparative advantages.

<sup>84</sup> These stylized facts are derived from two state aid cases relating to risk capital provision in the UK. The example is, however, not to discuss the merits of this particular case but to explain the general idea.

which private risk capital is provided are less favorable than in other regions. The number of start-ups and fast growing SMEs is smaller than in regions of comparable size. In such circumstances, providing public funds to develop the regional risk capital market can be a sensible policy instrument for more economic activity and growth in this region. Experience of other regions with comparable shortcomings could give some guidance.

Three further points should be emphasized when assessing the benefits of aid measures: First, the concept of market failure is still a relatively broad concept. There are several market failures that can be argued. State aid control should however concentrate on a small set of well-defined market failures and specify those clearly in its guidelines.

Second, market failures are difficult to measure. We therefore suggest that the empirical assessment should focus on whether the underlying conditions for a particular market failure do exist (such as, do incomplete contracts exist? Is the return on investment for seed capital negative?) and whether the market outcome is consistent with the existence of a market failure (for instance, whether the private market for seed capital is underdeveloped as compared to regions not affected by this market failure).

Third, as already mentioned, the focus and depth of analysis depends on the particular area of state aid. For instance, the incentive effect is a particular concern in cases of environmental aid, regional investment aid, and R&D. Appropriateness of the aid is of particular concern in the context of regional investment aid. For instance, labour market policies, infrastructure development, or improved stability of the regulatory and legal environment are in most cases more important elements of an effective policy to attract regional investments.

### **Assessing and balancing the negative effects – leg (c) of the test**

Even if a state aid measure targets a defined market failure (leg (a) and (b) of the test), it may cause significant distortions of competition in the EU (in other words the aid may introduce other types of market failures). For this reason, the overall balance needs to be assessed, which is done under leg (c). A proper balancing would seek to identify and analyse the effects on competition and on trade. Not all forms of state aid are likely to distort competition in an appreciable way. This insight is particularly important in the context of Article 87(3), where

the balancing is to take place.<sup>85</sup> We begin by defining a typology of theories of harm and then mention possible criteria that can be used in the assessment.

### **A typology of the distortions of competition**

We propose to differentiate between four different (but mutually dependent) types of distortion of competition. The first three relate to the impact of aid on *effective competition* between *firms*. The fourth relates to the impact of aid on competition between *Member States*. We will address these in turn.

#### *(i) Reducing effective competition by supporting inefficient production*

A first potentially harmful effect of state aid is that it keeps inefficient firms or sectors in place. Consequently, it negatively affects productive efficiency, as well as the efficiency of the economy as a whole (total welfare). In particular aid granted in markets featuring overcapacity and aid given in declining industries is likely to be problematic in that it risks creating or maintaining inefficient market structures. These industries normally witness exit or consolidation so as to restore the profitability of the industry to normal levels. State aid to individual companies may alter this process by cementing the market position of any given recipient. Also when aid is not given to particularly inefficient firms, market structures may arise which feature several players operating significantly below efficient scale.

Examples include state aid to rescue firms in financial difficulty, financial arrangements in the electricity sector whereby state bodies purchase power at inflated prices shielding incumbent operators from effective competition, sector specific aid (e.g. to sectors using outdated technologies), as well as aid to particular regions which may be used to allocate production factors inefficiently across regions.

#### *(ii) Reducing effective competition by distorting dynamic incentives*

State aid may alter the investment incentives of firms, thereby decreasing dynamic efficiency (welfare in the long run). When a company receives aid to invest in e.g. production capacity or R&D, this generally increases the presence of this company in the (future) product market.

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<sup>85</sup> The mere *existence* or likelihood of an effect on non-domestic rivals is the relevant criterion under Article 87(1). Under Article 87(3) it is not the existence but rather the *magnitude* and *importance* of these effects

This increased presence may lead rivals to revise their future revenue prospects from their own investments downward and to adjust their own investment plans accordingly.

Two reactions from rivals can be envisaged. Either they reduce the scope of their original investment plans (crowding out effect), or they maintain or increase the scope of their plans. In both cases rivals are affected. In our view, one should be concerned primarily about crowding out effects, as they may result in a lower overall increase (or even in an overall decrease) in the level of investment activity in the markets. Further, it must be borne in mind that “soft budget constraint”<sup>86</sup> problems might erode the beneficiary firms’ incentive to become efficient.

*(iii) Reducing effective competition by increasing market power - exclusionary practices*

State aid measures can be used by a single firm (or a group of firms) to increase or maintain market power, by foreclosing actual or potential competitors. For instance, subsidizing firms in their “home market” may create entry barriers for (non domestic) competitors, while the resulting monopoly profits can be used by the recipient firms for expansion into new (foreign) markets. In the context of R&D, if funding of public R&D is done through a large incumbent firm only, R&D competition may be significantly impeded, especially if other players would have been better placed to undertake the R&D project.

The degree to which the recipients of state aid have a degree of control over the various markets concerned is important. Where the recipient is already dominant on a product market, the aid measure may reinforce this dominance by further weakening the competitive constraint that rivals can exert on the recipient company.

*(iv) Distorting production and location decisions across Member States*

By supporting domestic production and attracting foreign investors, member states directly intervene in the international allocation of resources, thereby affecting trade flows and potentially inducing a shift in the localisation of economic activities across Member States. In principle, two main concerns can be identified: First, trade may be affected in that the aid

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in terms of welfare which becomes relevant for the analysis of whether the aid measure is in the “common interest” of the EU or not.

<sup>86</sup> See Section IV.

measure affects trade flows in goods and services in the EU, taking location choices as a given. Second, aid measures may alter the location of productive assets in the EU.

In both instances, national governments may have an interest in supporting domestic production and in attracting foreign investors, because of the positive implications for employment, tax revenues and the business environment in the member state. These measures may result in an inefficient production structure throughout Europe. In addition, these measures may create negative spillovers for other member states when the good or service is traded. As discussed above, such type of negative international spillover may induce subsidy races between member states whereby every member state ends up worse off.

### **Criteria for assessing the negative effects of state aid**

After having identified the possible distortions of competition - or, if one likes, the “theories of harm” - the significance of these negative effects has to be assessed. Under a proper balancing, distortions of competition become relevant only to the extent that they significantly affect trade in the EU. In other words, state aid measures that reduce effective competition, but primarily at a local or regional level should be assessed more positively at the EU level. In other words, the analysis of the impact on competition and trade under Article 87(3) should go beyond that of Article 87(1).

We now describe a number of potentially relevant elements for assessing the significance of the distortive effects of aid measures and their effect on trade. We identify three main groups of criteria: procedural aspects of the granting process, market characteristics and criteria linked to the amount and type of aid.<sup>87</sup>

#### *(i) procedural aspects of the granting decision*

The level of distortion of an aid is likely to depend on procedural aspects of the granting process such as:

- selectivity of the process;
- aid schemes vs. ad hoc aid; and
- open tender procedure.

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<sup>87</sup> For a similar list of indicators see UK OFT (2005); for a discussion of the criteria within a theoretical framework see Garcia and Neven (2004).

Aid measures may have strong potential to distort competition insofar as the granting process is not transparent and does not follow an open and non-discriminatory procedure. In such cases there is a potential that aid measures may be designed to support specific firms, e.g. national champions. Accordingly, in general terms aid schemes tend to be less distortive than ad hoc aid measures. Open tender procedures are to be regarded as less distortive as well: open tenders reduce the risk of “picking winners”.

Even though aid schemes may be a priori less distortive than ad hoc aid, they are not without effect. Schemes may have a serious impact on the location of production within Europe, in particular, when the scheme is de facto sector specific. Further, specific selection factors may exist, which result in de facto selectivity for a small group of firms with significant market power or potential to obtain significant market power as a result of the measure. This may in particular be the case if the measure addresses only a small number of beneficiaries, or when there are no safeguards to exclude firms with significant market power. For instance, high intensity aid schemes may de facto direct a large share of the scheme budget to a small group of firms. In such cases, the aid scheme may need to be assessed under the same criteria as individual aid measures.

*(ii) market characteristics*

*Market characteristics* are important elements to assess the negative effects of an aid measure both with respect to its impact on effective competition and production shifts between different jurisdictions. A list of such market characteristics includes<sup>88</sup>

- size or market share of recipient; asymmetry of market shares;
- entry barriers, R&D intensity of the beneficiary’s markets;
- the degree of product differentiation; complementarities with neighbouring markets;
- segmentation of markets between member states;
- tradability of the goods/impact on location choices.

For individual aid measures, the market share of the beneficiary in the affected markets may indicate market power.<sup>89</sup> Distortions are more likely to arise if the aid measures increase the

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<sup>88</sup> See Garcia and Neven (2004), UK OFT (2004) and Nitsche and Heidhues (2006) for a more detailed account.

asymmetry between competitors, in the sense of making large firms (in terms of market share) even larger. Other relevant factors for assessing the capacity of aid to increase the beneficiary's market power include the level of product differentiation, the significance of entry barriers, as well as the presence of buyer power.<sup>90</sup>

When firm specific information is not available, general information about the concentration in the affected markets may still be relevant. An existing track record of competition problems in the affected markets (for instance, past or on-going anti-trust cases or the fact that the beneficiary is a strong national incumbent in a recently liberalized sector) may provide additional indications.

Market characteristics are important to assess the potential of a measure to significantly influence trade flows, either by shifting production between jurisdictions or by influencing localisation decisions by firms. The degree to which goods or services are tradable is important in this respect. The potential to affect trade may also be higher if the aid beneficiary is a large firm with economic activities in several member states. Furthermore, the potential to shift rents between jurisdictions depends on the concentration in the affected markets.

Significant negative effects may also exist even when the targeted product is non-tradable, as it may have an impact on upstream, downstream or complementary markets. In particular, a state aid decreasing the price of an input may adversely affect the production possibilities of a downstream product in other member states by increasing the relative cost of production. Aid measures in important input markets (like banking) or in large markets with a European dimension (like markets in the automotive sector) have a higher potential to affect trade flows in a significant way than aid to niche segments.<sup>91</sup> Aid measures in markets characterized by structural over-capacity or stagnation at EU level are of particular concern, especially when inefficient capacity is kept in place or even expanded as a result of the aid measure.

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<sup>89</sup> For instance, market shares are implemented as a criterion in the Multisectoral Framework on Regional Aid for Large Investment Projects (2002), *supra* note 17. In the existing framework it is established that individually notifiable projects will not be eligible for investment aid if the beneficiary has a market share of more than 25% (before or after the aid granted). These thresholds are applied only for aid measures related to relatively large amounts of eligible cost (investment projects of more than EUR 100 million).

<sup>90</sup> Market shares may only partially reflect the market power of a particular firm in a differentiated industry. Closest competitors of the aid beneficiary may be affected significantly stronger, increasing for instance the possibility of exit of those competitors to the detriment of consumers.

<sup>91</sup> Careful reflections are, however, necessary on the aid amount relative to the size of the affected sector. High aid amounts in niche markets may distort the market conditions less than small amounts in emerging markets (e.g. biotechnology).

*(iii) amount and type of aid*

In addition to the procedural aspects of the granting process and the market characteristics, the amount and type of aid instrument is of importance. Criteria in this category include

- the absolute amount of aid; aid intensities;
- 'one time last time principle', repetition; duration;
- aid to variable cost, aid to investment cost affecting entry or quality;
- granted as direct subsidy, tax reduction or guarantee.

In general, the larger the amount of aid, the higher the potential to reduce effective competition and affect location decisions. The same logic also applies to aid measures repeatedly given to the same beneficiary in order to preserve a market position, such as aid granted to a (large) firm in financial difficulties.

In terms of the *type of aid*, one can differentiate between operational aid and investment aid. Operational aid tends to have a direct impact on the level of variable cost, and thus on the price level and consumers. As a result operational aid can be expected to have a stronger impact on the flow of goods and services. Investment aid can also affect effective competition and trade, but its impact is typically more long-term, such as through the location decision of firms.

Naturally, the effect of all the above mentioned criteria - procedural aspects, market characteristics, as well as the amount and type of aid - is interrelated. For example, a large investment aid to an individual firm has a clear potential to distort competition and affect trade in the European market. This potential is larger when the granting process is not transparent and does not follow an open and non-discriminatory procedure. Moreover, if the beneficiary is a significant player in the relevant market concerned, then the investment will further affect trading conditions, as well as likely induce a shift in the localization of economic activities across Member States. A proper balancing should aim at analysing these aspects in an integrated way.

Analyzing the various interdependencies will require a certain amount of sophistication and investigation effort. This should not lead towards less effective state aid control, or to less predictability. Careful attention should be given in this respect to the architecture of state aid control.

## ***The architecture of state aid control: precision and predictability***

A more effects-based approach in state aid control – as envisaged by the balancing test proposed in the previous section – should lead to more precision in terms of discriminating between “good” aid and “bad” aid. At the same time there is a need for a sufficient level of predictability for the member states when designing state aid measures. In our view, an economic approach does not necessarily mean *less* rules - the focus should be on *better* rules, thereby preserving predictability. Moreover, an explicit analysis of the economic effects of aid measures on markets and consumers is needed *in certain cases*. This requires that it is clear under what conditions a more effects-based analysis is triggered. It also implies that the effect-based analysis is clearly spelled out in guidelines and other soft law provisions, including the theories of harm and the empirical evidence required to assess them.

An economic approach is relevant for a number of stages. First, it is relevant for designing explicit provisions (such as safe harbours identifying measures which are per se allowed and prohibition regions identifying measures which are per se prohibited). Second, and related, it can be used for identifying under what conditions a more effects-based analysis is required (linked with priority setting). Third, an economic approach can be applied to provide an analytical framework (which may include the formulation of presumptions) to assess individual aid measures where this is appropriate.

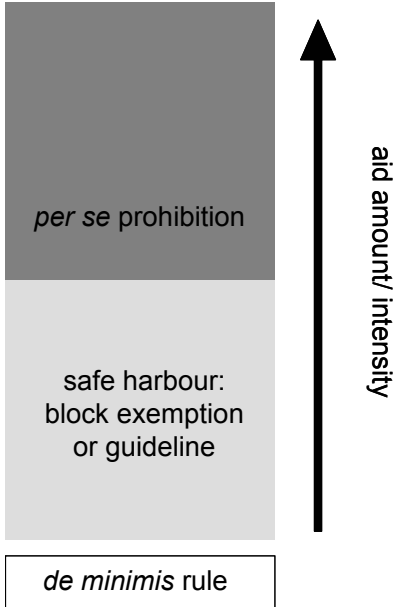
It is useful to start by looking at the approach as it has traditionally been used by the Commission up to the *State Aid Action Plan*<sup>92</sup> (see Figure 1). The assessment is largely based on defining aid intensity *thresholds*, below which the aid measure is allowed (safe harbour region) and above which it is prohibited (prohibition region) – both within the context of guidelines and block exemptions. Detailed rules have been devised which specify the cost categories which are eligible for state support, the maximum aid intensities to be applied and a number of criteria which, if they are met, allow for higher maximum aid intensities (“top-ups”).

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<sup>92</sup> *Supra*, note 1.

For the majority of cases, the case handler’s standard assessment accordingly concentrates on evaluating the proper classification of the costs covered by the measure and whether the criteria for higher aid intensities are met. Hence, the assessment is in most cases of a “black and white” type: for instance, if a measure is found to target investment in a disadvantaged region and the aid intensity is below x%, it is declared compatible, otherwise it is declared incompatible; if a measure is found to target industrial research and is restricted to SMEs it is declared compatible as long as the aid intensity is below y%.

**Figure 1: Traditional Architecture**



The traditional compatibility assessment concentrates largely on the correct categorization of aid measures by member states: is the measure an R&D aid or in fact a restructuring aid, do the costs relate to “industrial research” or rather to “pre-competitive research”; are the target companies SMEs or are they larger companies? Clearly this assessment must continue to be an important element of any effective state aid control system. However, it falls short of an effects-based appraisal of the economic justifications of a measure or of the consequences of the measure in terms of the effect on competition and trade.

In general, the appropriateness of such a *per se* approach depends on whether (i) the rules in general are designed correctly and (ii) the degree to which the individual measures and the circumstances in which they are implemented vary.

Take for example a rule applied in the R&D Framework (1996).<sup>93</sup> Industrial research activities are considered as not very distortive and relatively prone to market failures. As a result, industrial research may get up to 50% state support, which is more than pre-competitive research, which can only get up to 25%. The rule “industrial research may get up to 50%” may be right on average, yet it may be wrong in individual, but important cases. Allowing for further economic analysis in certain cases where the average is not met, is at the root of the effects-based approach that we propose in this section.

Only in very few cases is an effects-based analysis - at least in principle - part of the traditional approach. For example in the R&D Framework (1996), an effects-based analysis is foreseen by assessing the incentive effect,<sup>94</sup> but the assessment of the relevant criteria in practice has been applied in a rather rudimentary form. Furthermore, the incentive effect is only one part of a proper balancing test, one which seeks to compare the positive aspects of an aid measure with the negative aspects. An aid measure which provides an incentive to the firm to undertake the intended action may still result in significant distortions of competition.

As indicated above, an economic approach does not mean a full economic assessment in all cases. The obvious solution - like in all other areas of competition policy, such as mergers and antitrust - has to be a sensible combination of safe harbour thresholds and prohibition thresholds and a more complete economic assessment for those cases (limited in number) which fall between these two thresholds.

Figure 2 outlines the proposed architecture. Under such an approach one could choose to keep the *per se* prohibition region unchanged. At the other end of the spectrum strict safe harbour regions may be identified for measures for which one is confident that no substantial distortions of competition and effects on trade will arise. Those could be block-exempted.

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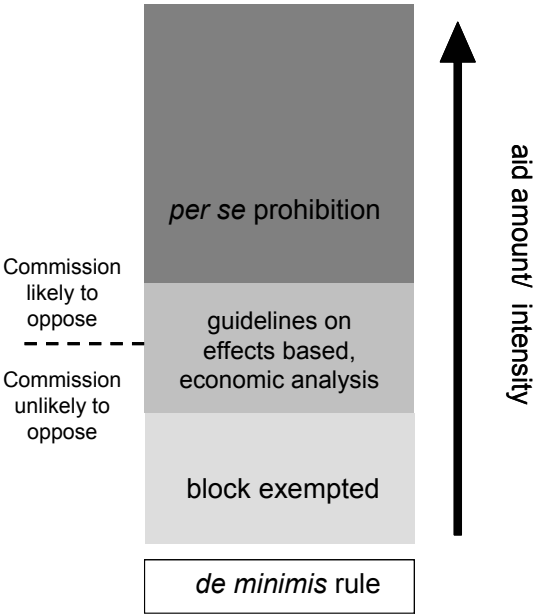
<sup>93</sup> *Supra*, note 15.

<sup>94</sup> The R&D Framework (1996, prolonged in 2002) foresees an assessment of the “incentive effect” particular in two cases: “*in the case of individual, close-to-the-market research projects to be undertaken by large firm; in all cases in which a significant proportion of the R&D expenditure has already been made prior to the aid application.*” Under the incentive effect it is assessed whether “*planned aid will induce firms to pursue research which they would not otherwise have pursued*” by taking into account *inter alia* changes in quantifiable factors, market failures, additional cost connected with cross-border cooperation.

In principle, the thresholds could be based on aid intensity; aid amount; size of the aid beneficiary; market share of aid beneficiary or other specific (e.g. sectoral) criteria, or a combination. In our opinion, however, a reasonable approach to trigger an effects-based approach in individual cases could be based on aid amounts as, firstly, it provides for a simple threshold and, secondly, larger aid amounts, generally speaking, tend to go with greater potential distortions of competition.

Guidelines should outline the analytical framework applied for an effects-based, economic assessment of the individual measures. Within these guidelines, the Commission could make use of “soft” safe harbour regions, indicating, for instance, that below certain aid intensity thresholds or when certain specific criteria are met, the Commission would be *unlikely* to take a negative decision on the aid measure. In Figure 2 the soft safe harbour threshold is indicated by a dashed line.

**Figure 2: Possible Architecture**



It should be noted that the “burden of proof” in case the thresholds are not met, should lie, at least in part, with the Member State. In other words, Member States should come forward with evidence allowing the Commission to assess whether the aid meets the economic test, as they are best placed regarding the relevant information needed on, for example, the presence

of market failures. This approach also creates the right incentives (similar to efficiencies in merger control), since it is the Member State that should know best when achieving the objective requires the use of state aid.

In sum, the proposed approach implies two aspects of design. First, the level of the safe harbour thresholds (both “strict” and “soft” ones) and the thresholds for *per se* prohibition need to be assessed. Second, the effect-based analysis has to be clearly spelled-out in Guidelines and Block Exemptions.

## VII Concluding Remarks

In our view, the main benefit of an increased reliance on economic analysis in state aid control is to make the positive and negative implications of state aid more explicit and their balancing more systematic. A more systematic assessment of the positive and negative effects of the aid, in particular for aid measures involving large amounts of aid, would be a means to enhance the effectiveness of state aid control, to better distinguish “targeted aid” from “untargeted” aid.

We do not believe that an effects-based approach will lead to overall softening of state aid control. Many of the economic indicators and fact-based assessments can be rigorously implemented. This includes the assessment of market failures, as well as the distortions of competition. A consistent implementation of such an approach could contribute substantially to a policy shift towards both less and better targeted aid. A cautious implementation of the more economic approach is needed, however. Procedural shortcomings still hamper a rigorous economic assessment: obtaining much of the information necessary hinges on a sufficient level of cooperation by member states. Such an implementation would imply designing an adequate state aid architecture and requiring a high standard of proof as regards the positive benefits of state aid claimed by member states.

We also like to emphasize that predictability of the state aid regime may well gain from a more effects-based approach. It is far from obvious that the current form-based approach provides optimal predictability. The current regime has not yet reached the point where the

often cited trade-off between precision and predictability becomes relevant. Moreover, it is likely, as well as intended, that an effect-based approach will shift the argumentation from legal and accounting battles towards a battle over the impact of the aid on markets and ultimately on consumers. Such a change would not only greatly contribute to the precision and effectiveness of European state aid control, but also to its predictability.

A further advantage of an effect-based approach – if implemented cautiously – holds the potential to reduce the scope for politics in the field of state aid control. To be sure, we do not believe, or even advocate, that political factors will or should not play a role in state aid control. However, de-emphasizing politics is helpful in terms of increasing the effectiveness and predictability of state aid control.

Finally, an effects-based approach has the potential to raise the awareness on the costs and benefits of state aid, both at the level of the EU and at the level of the member states. As far as economic objectives are concerned, similar cost-benefit analysis – as implicit in our proposed economic test – would need to be done at the Member State level, at least for those cases requiring individual analysis. In this sense, an effect-based economic approach in state aid control would be complementary to efforts to improve the effectiveness of state expenditure at national levels.

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