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Economic Principles of State Aid Control[*]

Justus Haucap and Ulrich Schwalbe[**]

April 2011

Abstract

This paper summarizes the economic principles of European state aid control. We start with a discussion of the economic justification for state aid control, including the definition of state aid in European law and exceptions to the general ban of state aid. We then explore the motives for granting state aid, ranging from the correction of market failures over political motives to political economy considerations. We then discuss how state aid control fits into the framework of European competition policy before we comment extensively on the more economic approach to state aid control, as implemented by the European Commission, and the state aid action plan.

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I. Economic Justification for State Aid Control

The subject of competition policy usually involves *private* restrictions of competition (i.e., concerning possible restrictions of competition by companies) such as through the abuse of market power, through cartels and collusive behaviour, and through horizontal and vertical mergers.[1] A specific characteristic feature of ***European*** **competition policy** is the so-called state-aid control based on Article 87 of the EC Treaty. It relates to possible **distortions of competition through *state* subsidies** to private or public companies that are in active or potential competition with other companies.[2] Article 87, paragraph 1 of the EC Treaty issues **a general ban on state aid**. There are, however, **exceptions to the rule** defined in Article 87, paragraph 3 of the EC Treaty, which allow aid under certain conditions.

1. Definition of State Aid

The term state aid is not of an economic, but a legal nature. From Article 87, paragraph 1 of the EC Treaty, the Commission and the European Court developed **four criteria** that cumulatively must be met in order to speak of state aid from a legal point of view.

a) Government Funds State aid needs to be a **transfer of government funds.** It is irrelevant whether this is a direct monetary transfer or an indirect allocation of government funds. This means that the transfer of government funds may also take place in the sense that the government forgoes revenues, as would be the case in a tax cut or a waiver of certain fees for example. This could be interpreted as an indirect transfer, which includes opportunity costs for the state.

b) Economic Advantage This state measure must confer an **economic advantage** upon the recipient, which he would not gain in the course of a "normal" business. This therefore excludes the cases in which the state, for example, awards a contract to a supplier after a tender, as long as the services of the supplier are compensated reasonably and not excessively by the state.[3]

c) Selectivity The state transfer must be conducted selectively, thus benefiting some companies more than others. This criterion excludes fundamental or general measures of the state, which generally benefit all companies within the measure. For example, a selective measure would be to change the depreciation procedures for only one company; a general measure, however, might be the expansion of infrastructure of a certain region arranged by the government that increases the attractiveness of a location for investments and thus is supposed to create jobs after the establishment of companies.

d) Impact on Competition and Trade The competition and trade between two or more member states must be affected by the award of government funds. This criterion is sufficiently met if it can be demonstrated that the beneficiary is situated on a market where companies from other member states are also active. According to the new de minimis regulation, the minimum volume of state aid, where the effect on trade can be estimated, is regarded to be €200,000. Amounts below this limit fall under the so-called "de minimis" rule and are not subject to the general ban on state aid.

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[1] See Neumann (2001); Knieps (2001); Motta (2004).
[2] See for example Mueller (2000); OECD (2001); Koenig/Kühling/Ritter (2004).
[3] See European Commission (2002).

2. Exceptions to the General Ban on State Aid

According to Article 87, paragraph 1 of the EC Treaty, all state aid, which meets the four criteria mentioned above, is regarded as incompatible with the common market. However, this does not result in a complete ban on state aid, since Article 87, paragraph 3 of the EC lists exceptions that are not part of the general ban on state aid. In addition, Article 88, paragraph 2 of the EC Treaty empowers the European Council upon request of a member state to determine types of state aid that are compatible with the EC Treaty. In practice, the Commission developed **three different exception categories** that nullify the general ban on state aid and thereby partially subsume the exceptions of Article 87, EC Treaty. These categories of exception exist in so-called **regional, horizontal and sectoral aid.** There are also additional categories that declare the allocation of state aid as compatible with European law. These categories are (a) state aid having a social character (Art. 87, paragraph 2 lit. a, EC Treaty), (b) state aid to alleviate the damages caused by natural disasters (Art. 87, paragraph 2 lit. b, EC Treaty), (c) state aid for the promotion of projects of European interest (Article 87, paragraph 3 lit. b, EC Treaty) and (d) state aid for the preservation of cultural heritage (Art. 87, paragraph 3 lit. d, EC Treaty).

In addition, the so-called "**Deutschland clause"** is included in Article 87, paragraph 2 lit. c, EC Treaty, which is an explicit permission for state aid that was conceived before the reunification in 1990 and was intended for western German regions for the alleviation of the negative consequences following the division of Germany. Since the reunification of Germany in 1990, it has been at least questionable as to whether and to what extent these negative consequences of the division of Germany still justify state aid in former West Germany today.[4] Because the "Deutschland clause" has in practice hardly been used to justify state aid,[5] these and the previously listed exceptions to the rule will not be explained any further, and the following observations are limited to quantitatively more significant regional, horizontal and sectoral aid.

a) Regional Aid In Article 87, paragraph 3 lit. a and c, EC Treaty, government transfers are excluded from the ban on state aid, which are supposed to support those regions in which the income is unusually low, or serious underemployment can be witnessed (Article 87, paragraph 3 lit. a, EC Treaty). The economic sectors or regions are supposed to be supported as long as this financial assistance does not affect trading conditions to such an extent that it runs counter to the common interest (Art. 87, paragraph 3 lit. c, EC Treaty).

The first part of permitted regional aid refers to areas that are disadvantaged compared to the EU average in economic terms. Therefore, in order to assess whether state aid under Article 87, paragraph 3 lit. a, EC Treaty can be justified, European averages such as unemployment rates or the per capita gross domestic product are used as benchmarks by the EU Commission. The second part of permitted regional aid focuses on regions that are considered disadvantaged in comparison to the average of each member state. Thus, it is for the member states themselves to submit petitions to the Commission in order to obtain a permit for a planned state aid allocation.

b) Horizontal Regulations The Commission is of the opinion that there are other fundamental economic problems that can justify the allocation of state aid in addition to the already named exceptions of Art. 87, paragraph 3 of the EC Treaty. For this purpose, the Commission worked out so-called "horizontal rules". They are called horizontal rules, because their effect is not limited to a specific economic sector but rather refer to general

[4] For further details, see Wössner (2001).
[5] See Wössner (2001), p. 114.

state aid that in principle may be awarded to any company in any sector, if the necessary criteria are met.[6]

The concept of horizontal rules consists of the following state aid categories: **State aid for small and medium-sized enterprises,**[7] **state aid for research and development,**[8] **state aid for environmental protection,**[9] **state aid for rescuing and restructuring companies,**[10] **state aid for employment**[11] and **state aid for further education.**[12]

c) Sectoral Rules The EU Commission has identified certain economic sectors such as **coal mining, fishing, agriculture** and various other branches of industry that are considered "sensitive" due to many years of economic problems and are therefore excluded from the general ban on state aid. The rules that apply to these sectors are altogether very heterogeneous; in addition, these sectors, which are handled in a special way with respect to state aid, are subject to rapid change.[13] Therefore, there will be no further elaboration on sectoral rules at this point.

Basically, it should be noted that the just-presented classification of state aid has great potential for arbitrariness.[14] For example, it is conceivable that state aid, which is intended to serve as pure economic development, is concealed as environmental aid in order to avoid the ban on state aid. Other cases in which supposed training aid is designed to rescue a company from insolvency are also conceivable. The results of this "soft" definition of exceptions are serious and may mean that state aid will be approved as an exception to the rule, although it cannot be considered to be predominant in terms of content. The actual facts would have led to a ban on state aid under certain circumstances, and one could almost call this a "type II error".

3. Incentives for State Aid Allocation and the Logic of Supranational State Aid Control

In oligopolistic markets where products are traded internationally government decision-makers can succumb to the incentive to promote **national champions** through proactive policies.[15] The underlying idea is to specifically support national companies with the help of a strategic trade, fiscal and competition policy, so that they can then exert market power on international markets and thus increase the national producer surplus at the expense of foreign producers and possibly also internationally scattered demand.[16] Hence, this is about a classic "Beggar-Thy-Neighbour" policy, as it is known from export cartels as well. The problems and inefficiencies of such a policy are indeed well known; it is also known, however, that the policymakers may be stuck in a **prisoner's dilemma,** which leads to results that are not in the common interest of the participants.[17] While the policymakers do know that it would be collectively better for everybody if it did not come to **subsidy races**, they all act according to the incentive to create an advantage for "their" local companies, and through this, secure more jobs and possibly tax revenues. The solution to this dilemma

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[6] The exceptions here are agriculture, fishing, transport, coal and steel sectors, which are considered "sensitive" sectors that have their own regulations (see Simon, 1999, p. 49).
[7] See European Commission (2001a).
[8] See European Commission (1996).
[9] See European Commission (2001b).
[10] See European Commission (1999).
[11] See European Commission (1995).
[12] See European Commission (2001c).
[13] A more detailed overview of the different configurations of the aid programs along with references to the official journals can be found in Simon (1999), p. 55 ff.
[14] See Vanhalewyn (1999), p. 36.
[15] See, e.g., Monopolies Commission (2004).
[16] For more on the idea of strategic trade policy, see Brander/Spencer (1985), Helpman/Krugman (1989), and Bletschacher/Klodt (1992); for more on strategic competition policy, see Barros/Cabral (1994), Neven/Röller (2000), (2003) and Haucap/Müller/Wey (2005).
[17] The prisoner's dilemma describes a situation where individual rational behaviour of individual group members leads to a poor outcome for the group overall.

can then be found in a contractual or legally secured cooperation such as supranational state aid control.

Just as the delegation of responsibilities in trade policy by the GATT or the WTO can be interpreted as a useful measure for specific self-commitment to overcome a prisoner's dilemma, the implementation of supranational state aid control by the EU prima facie may be viewed as an **act of rational self-commitment** in order to free oneself from a dilemma situation in which nation states conduct strategic competition and trade policies by granting state aid. State aid control is then used primarily to stop ruinous subsidy races (so-called rat races[18]).

4. Appropriate Targeting of State Aid Control

Along the lines of the just-cited interpretation, state aid control should be designed in a way in which subsidies are permitted only if classic **market failure** exists, i.e. state aid should only be eligible for approval if it orients itself by the characteristic features of market failure.[19] However, the mentioned exceptions in Article 87, paragraph 3 EC Treaty de facto had little to do with market failure, apart from horizontal aid in the environment as well as research and development (R&D) sectors. Rather, the focus was on exceptions motivated largely by distribution policy. In the implementation of the **"more economic approach" regarding state aid control**, it is exactly this increased focus on the economic criterion of market failure that plays a central role in the context of a refined economic approach as it is defined in the **State Aid Action Plan** (SAAP).

State aid control targeted towards market failure can be understood as a "competitive order for the competition between systems of Member States, during which steady improvement of the tax-service packages provided by Member States takes place."[20,21] Here, Heine[22] is of the opinion that state aid control by the EU even intensifies the inter-jurisdictional competition so that this would be a positive step--provided the location competition actually increases efficiency--at least in principle, albeit not in its actually existing form.

II. Motives for Granting State Aid

1. Classic Reasons for Market Failure: State Aid as a Tool for Correcting Market Failure

At least since Pigou[23] it is known from economic theory that state aid can in principle help to ease so-called market failure. In contrast to what common usage may suggest, particularly in the political landscape, the term market failure in economics describes a relatively narrowly defined field of inefficient market outcomes. From a neo-classical viewpoint, market failure is present when the market does not provide effective results with the free play of forces. No market failure exists, however, when markets deliver efficient, though not politically desired, results. Thus, widespread access to broadband Internet; high-quality, nationwide postal services on weekdays; an extensive public transportation system (ÖPNV) with busses or trains; or a politically correct media offered on the radio, television and Internet might be politically desirable but often economically inefficient. The market's ineffectiveness to produce the desired political results is in economic theory not referred to as market failure.

[18] Competition processes are called rat races when an increase in expenses does not result in any expected corresponding additional total revenues and are thus characterized by a waste of resources.
[19] See Meiklejohn (1999).
[20] See Gröteke/Heine (2003), p. 258, (translation by Schwalbe/Haucap).
[21] See also Kerber (1998) and from a legal point of view, Koenig (1998).
[22] See Heine (2003), p. 47.
[23] See Pigou (1920) and Fritsch/Wein/Ewers (2007).

The term efficiency, which is essential for the identification of market failure, is often divided into productive (sometimes production-organizational or technical) efficiency, allocative efficiency, and dynamic efficiency in economic literature. ***Productive Efficiency*** implies that a given bundle of services is created efficiently, i.e., at lowest possible costs. Productive inefficiency means that production resources are not efficiently used, and the production is therefore carried out inefficiently at high costs. ***Allocative Efficiency*** describes a situation where people are using a particular service or consuming a product with a higher appreciation for this service or product than the additional costs of its service provision. It is basically a concept where scarce and precious resources are used in a way in which they will benefit a society as a whole to the greatest extent possible. In the simplest model of the neoclassical economic textbook theory, this is the case if the price for services is equal to the marginal costs of their provision. While the terms productive and allocative efficiency are in most cases used in a static context, so-called ***Dynamic Efficiency*** does not focus on a specific point in time but on a period of time. Here, **innovations and investments** play an important role, because they involve the maximization of social welfare over time. It is therefore not important that welfare is at a maximum at every single point in time but rather that it is maximized throughout the relevant period. Dynamic inefficiency is thus the result of inadequate investment and innovation incentives.[24] If productive, allocative and dynamic efficiency is not achieved in a market, this is characterized as **market failure** in economic literature.

The following five facts have been identified as classic causes for market failure in economic literature: (1) **External effects** (synonym: externalities), (2) **public goods,** (3) **imperfect competition** and the natural monopoly as an extreme case of imperfect competition, (4) **asymmetric information distribution** as well as (5) **adjustment or coordination deficiencies.** In these cases, government intervention in the market can lead to economic improvements. In institutional economic literature, there has been a debate, at least since Coase (1960), over which standard of comparison is to be used in order to evaluate the efficiency of a condition and thus to determine whether or not a situation constitutes market failure. The **question of the relevant standard of comparison** was indeed already raised by Coase (1937) and addressed particularly in his contribution to the theory of social costs.[25] Later, Demsetz (1969) illustrated this problem, particularly demonstrated in his article on information and efficiency, in which he coined the term **"Nirvana Approach".** The crucial point of criticism regarding Pigou's theory on market failure as justification for government intervention is that an imperfect reality is compared too simply to a theoretical ideal without asking and analyzing whether this theoretical ideal can ever be achieved or whether it is rather an unattainable ideal--a nirvana. The mere fact that the reality does not match the ideal of the theory is thus not sufficient to derive market failure. The question is rather whether government intervention in reality can produce real improvement, that is, less inefficient results. It is necessary to consider that government intervention can cause inefficiencies in the market process, which in extreme cases lead to a so-called state or policy failure. Particularly the lack of information, political disincentives, faulty analysis and forecasting as well as delays of decision-making and effect regarding the use of funds can be among the causes of state failure when aid is granted.

That said, an evaluation in terms of a **comparative-institutional economic approach** should be conducted prior to granting state aid, in which possible market failure with the potential threat of state failure is carefully considered. After all, granting state aid is not economically justified if a market does not produce the same result as the theoretical ideal but only if state aid is especially appropriate to correct market failure. Below, the five

[24] For more on the concept of term efficiency in economics, see Schwalbe (2008).
[25] See Coase (1960).

market failure facts will be explained more precisely.

a) External Effects Positive and negative external effects describe a situation in which the activity (e.g., production or consumption) of an economic agent affects the utility (increase or interference), profit or production possibilities of other economic agents without these effects being considered in the market-based pricing system.[26] External effects are thus a matter of **damaging or favouring otherwise uninvolved third parties.** External effects are a direct **result of ill-defined or definable and enforceable rights of disposal** so that there is no compensation for the damage or favouritism. Negative external effects are best known from environmental policy. For example, harmful emissions that occur during a production process can cause damage to the residents' health or may require other companies to install costly filter systems. If the persons suffering from environmental pollution do not have assertive ownership rights of the "good" environment, it will not be possible for them to prevent the causal agent from emitting pollutant emissions or to charge the causal agent with the costs for the environmental pollution (external costs). This lack of inclusion of external costs in the market-based pricing mechanism (lack of internalization) results in excessive pollution. An example of such negative external effects are the CO2 emissions that occur in the course of power production (especially coal and gas-fired power plants), as long as external effects are not internalized through taxes or tradable certificates. Positive external effects are assumed to occur in the field of basic research. Basic research is also characterized by the view that third parties cannot be excluded from using the gained findings, as no assertive rights of disposal such as patenting exist. Due to the lack of exclusion possibilities, opportunity is given to freeloaders may emerge who do not reveal their true payment reserves for the considered good and do not participate voluntarily in financing.

The missing assignment of rights of disposal leads both in the case of negative and positive external effects to a **price mechanism that cannot ensure efficient market results by itself.** Therefore, with a pure market solution, more than the economically efficient amount of CO2 emissions would be produced and less than the economically efficient level of basic research would be conducted. State intervention must, in the case of serious external effects, be aimed at eliminating the divergence between microeconomic and effective costs and revenues for the whole society with measures to internalize the external effects.

Principally, state aid can, for example, in the form of an investment grant for the reduction of environmental pollution, contribute to the internalization of negative external effects. A similar effect can be achieved with state aid for basic research. It remains important, however, that the external effect should first be identified as serious and be quantified in the form of external costs.[27] The evaluation of the external effect is hereby influenced by subjective perception and the level of information possessed by the decision maker. In addition, the period under consideration is relevant for the extent of the external effect or the amount of external costs. Finally, it is necessary to examine whether state aid as an economic tool to internalize the external effects is particularly appropriate or whether other superior economic policy instruments are available. As with taxes, the volume of goods in the social optimum can only be achieved approximately or reached through a lengthy trial-and-error method.

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[26] Since these effects occur outside voluntary market relations, they are called external effects.

[27] Strictly speaking, hardly any economic activity can be imagined where no positive or negative externalities occur (ubiquity of external effects). Every individual is oftentimes positively or negatively affected by the actions of another without compensation through the price mechanism or immediate compensation payments as e.g. with respect to traffic. Consider traffic for example. If the state tried to internalize all externalities, this would amount to comprehensive interventionism that would cripple private economic activity many times over.

b) Public Good A good that is characterized by both **“non-rivalry in consumption” and a lack of applicability of the exclusion principle** represents a so-called pure public good. The presence of non-rivalry in consumption is applied to an already existing good such that additional demand for the same good does not cause further supply costs (i.e., the marginal cost of an additional user is zero). Occasionally, economic literature already regards non-rivalry in consumption alone as a sufficient condition for the existence of a public good whose **private supply without state intervention leads to market failure**.[28] With efficient pricing and a price equal to the marginal costs, the consequence would be that a supplier (with linear pricing, i.e., in simple unit prices) might not demand compensation for the considered good. In this case, the corresponding good would not be provided in the first place.[29] However, if the good is offered at a positive price, users will be excluded, although they do not cause additional costs. The result is allocative inefficiency.

But the deviation from the ideal of perfect competition alone, whose strict conditions are already to be found only rarely in reality, is not a sufficient condition for market failure in an economically relevant sense. State intervention cannot be economically justified solely by the presence of non-rivalry. If it is possible to exclude potential consumers from the use of the good, a supplier can take into account the one-time supplying costs in pricing without this necessarily leading to an inefficient supply.[30]

Therefore, economic literature only talks about a **public good in pure form** and hereby induced market failure, if an exclusion of consumers unwilling to pay is de facto impossible due to ill-defined or definable rights of disposal. Examples of pure public goods are internal and external security or the enforcement of law (e.g., antitrust law). No one can effectively be excluded from the benefits of internal and external security or the implementation of antitrust laws. This non-exclusivity typically results in freeloader behaviour: Since individuals unwilling to pay cannot be excluded from using these public goods, a pure public good is not supplied--or at least not in an efficient scale--without government intervention.

The supply of a public good does not necessarily need to occur by the government itself. It can also be supplied by private enterprises if they can cover their costs through public funding and are publicly assigned the supply. Such funding could come from state aid in terms of Article 87, paragraph 1 of the EC Treaty. However, if a proper temporary tender regarding the private supply of a public good takes place, and the company with the lowest costs for the supply is awarded the job, public grants by the European Courts do not qualify as state aid in this context.

c) Economies of Scale in the Area of Relevant Demand Supply or demand-sided economies of scale in the area of relevant market demand **(“economies of scale”)** can lead to a market with “naturally” incomplete competition. In the extreme case, a market can be a natural monopoly, but cases of **natural oligopolies** are also known in the literature. In the case of a natural monopoly, a sole supplier most cost-effectively produces the quantity demanded by the market. Supply-sided economies of scale are found, for example, in the network business in various network industries (telecommunications, cable TV, train, gas, electricity, etc.).

Demand-sided economies of scale arise, for example, in the presence of significant

[28] Typical items, which are characterized by non-rivalry in consumption, are virtual goods such as software and information content on the Internet.

[29] This is particularly true in the context that the supply of a good is usually connected to substantial costs for the supplier. Thus, the supply of software, which is also characterized by non-rivalry in consumption, causes high one-time research and development costs (fixed costs). The costs for reproduction, that is, the marginal cost, are negligibly low. Through an efficient price at marginal cost (i.e., near zero), it is not possible, however, to cover the fixed costs for the supply.

[30] Such an approach can be observed in various markets for virtual goods, whose supply is not characterized by market failure. In addition, the absorption price system (skimming pricing) is often used by innovators in the early market phases in order to ensure a rapid amortization of the research and development costs. Also, multi-part tariffs or "flat rates" can lead to efficient use.

positive network effects. A positive network effect describes the phenomenon where a new consumer of the same item increases the utility for the current consumers. Therefore, a new consumer of a software application increases the utility for other users, because he represents an additional potential exchange partner (e.g., for texts, documents or information). The resultant desire to participate in the largest possible network can, in extreme cases, lead to the monopolization of the whole market by a supplier.[31] A well-known example for a (quasi) monopoly induced from a demand-side is the application software Microsoft Office. In addition, indirect network effects, which are characteristic for so-called two-sided markets, can lead to a strong concentration of supply.[32]

In general, natural monopolies or economies of scale do not require the need for state aid. In many cases, they even require government price controls to protect consumers against exploitation and to protect potential competitors against interferences in upstream and downstream markets. These cases occur when the monopolistic supplier is protected by high barriers to entry against potential competitors and he can therefore raise his price permanently above the competitive level, i.e., even in later phases of the market. In the sector of broadband Internet coverage, however, a state subsidy for second-service providers may be allowed in the market in order to prevent a consolidation of power in local markets due to economies of scale.[33]

d) Information Problems Information problems are on the one hand relevant because the "good" information itself often has characteristic features of a public good. It is sometimes difficult to exclude users unwilling to pay, yet additional users often cause, in fact, zero marginal costs, i.e., non-rivalry in consumption is prevalent with many information products. Thus, the problem is similar to the one concerning public goods.

On the other hand, information problems are relevant when information procurement costs are distributed asymmetrically between market sides. Asymmetric information exists when one of the relevant actors in the market may be better informed or can more easily (cheaply) inform himself than the other side. The asymmetric distribution of information can create problems of moral hazard[34] and adverse selection.[35]

Asymmetric information generally exists on credit markets. The suppliers of credits do not have full knowledge of the exact default risk of each credit consumer. Consequently, they will adjust their interest on credits (the price of the credit) to the estimated average default risk. Consumers with low individual default risk (so-called good risks) will view this price as too high and choose not to borrow money. Consumers with above-average risks (so-called bad risks) benefit from what they perceive as comparatively cheap prices. The systematic crowding out of the good risks by the bad (negative selection) can in extreme cases lead to market failure, as utilizing transactions remain absent.

With respect to **the raising of capital for small and medium-sized enterprises** in particular, it is assumed that significant information asymmetries exist, which can cause market failure. For both venture capital markets and private granting of credit by banks, it is estimated that the suppliers of capital systematically overestimate the default risk of credits

[31] This occurs if, during several incompatible proprietary technologies, one of these technologies reaches a so-called critical mass of consumers. Due to the then incipient positive feedback effect, this technology will attract total-market demand (winner takes all/winner takes most) after reaching the critical mass. This form of demand-sided competition for the dominant market position can be observed particularly on markets for virtual network goods, as there are no supply-sided restrictions. For example, it is possible for a software supplier to adapt his supply according to the changes in demand at any time (so-called instant scalability).

[32] See Evans/Schmalensee (2008).

[33] European Commission (2009).

[34] Moral hazard exists when one side of the market has the opportunity to change significant transaction-related issues after the conclusion of the contract (ex post) and does so without giving notice (due to information asymmetry) at the expense of the other side of the market.

[35] The classic example of adverse selection, which is caused by information asymmetries at the expense of the consumer, is the market for used cars. See Akerlof (1970).

to this group and therefore set the price for raising capital too high.[36] As a result, raising capital is made more difficult for small and medium-sized enterprises in comparison to larger companies, so that they suffer significant competitive disadvantages.

In order to compensate for these competitive disadvantages, the public sector often grants concessional credits to small and medium-sized businesses. Due to the selective nature of this preferential treatment, these credits have state aid character. Therefore, prior to state intervention (e.g., through a favourable granting of credit), it should always be examined whether or not protective measures emerge on the market itself that can prevent market failure. Possible protective measures are thereby an effective screening or signalling, which reduce the dangers of moral hazard and adverse selection. A detailed examination is also indicated against the background that information asymmetries in capital markets do not necessarily lead to low granting of credit, because ineffective high credits can also be proven as a result of asymmetric distribution of information. In this case, a granting of credit by the state would lead to additional efficiency losses.

e) Adjustment Defects Adjustment defects are situations in which market equilibrium does not exist or a new equilibrium or one at the desired speed does not come into effect due to unfavourable supply and demand situations - especially due to a lack of flexibility on the part of the market players. An example of **a lack of flexibility** is **cutthroat competition,** which is caused by the wrong order of the suppliers' market exit (e.g., in the inland navigation and agriculture sector).

In the EU and its Member States, state aid is often used as an instrument of **sectoral structural policy**. Its objective is to either accelerate the structural change or make socially acceptable the problems caused by the structural change from the agricultural (primary) and goods-producing (secondary) sector towards the service sector (tertiary sector). Sectoral structural policy is needed because of the previously mentioned lacks of flexibility.

Under certain conditions, **adjustment aid** (or **restructuring aid** under European law) can at best be economically justified as an economic policy instrument of sectoral structural policy. Adjustment aid is granted to companies with the aim to simplify the process of adjustment to the prevailing economic conditions. Thus, after reunification, particularly agricultural cooperatives in former East Germany received adjustment aid benefits. With aid granted, for example, for the purchase of modern agricultural equipment, a faster adjustment of the East German agricultural economy to market economy conditions was supposed to be facilitated.

In principle, adjustment aid is intended to help people help themselves. It should only be paid until the necessary adjustment to modified structural framework conditions has completely been implemented. However, it became frequently evident in the past that aid originally conceived as a short-term measure became a permanent benefit for a particular economic sector or certain companies because of political pressure. Hereby, old structures were preserved in contradiction to the original intention – namely to accelerate the adjustment process. A permanent benefit, however, does not constitute an adequate tool to remove market failure caused by adjustment defects. Rather, other economic ends are intended to be reached with permanent benefits that become similar to conservation subsidies.

[36] One reason is that potential investors face comparatively bigger problems in gaining access to reliable information on the business prospects of small and medium-sized enterprises, as would be the case with large enterprises. See European Commission (2006).

2. Politically Motivated Reasons

a) Regional, Distributive, Employment and Industrial Political Purposes Conservation subsidies, also referred to as rescue aid under European law, are used as an instrument for structural policies in order to preserve economic, cultural and rural structures. They are granted, for example, in the form of a compensatory allowance in the agricultural and mining sector. Conservation aid is intended to maintain the income of workers in the affected sector by **structural change** (e.g., coal mining) at a certain socially desired level (distributive political objectives) and to avoid excessive unemployment in the affected regions (employment political objectives). A known form of conservation subsidies is price support purchases in the EU.[37]

In general, aid as a structural political instrument, both in the form of adjustment and conservation aid, must be seen from a critical perspective because of its lack of accuracy and negative side effects. Conservation aid, in particular, sets wrong price signals on product markets and thus leads to distortions of competition in favour of the subsidized industry. In addition, the resulting false income signals have the consequence that workers remain in no longer promising employment contracts. This is hindering the necessary structural adjustment process that results in more economic losses of efficiency. Other instruments such as subject support for workers to achieve employment and distributive political objectives are more appropriate. Through targeted support of workers in old industries, such as in the form of training and retraining measures, the objectives were achieved more efficiently and sustainably without the negative side effects.

The focus of regional policy is on the distribution of the production potential and the infrastructural development of the spaces within an economy. The objective of regional policy measures is to create equal living conditions in a region. Against this background, establishment aid was granted in structurally weak areas, which are characterized by high unemployment, in order to attract companies from promising sectors and to increase labour demand. In addition, policymakers hope for further positive effects such as agglomeration advantages following the establishment of companies.[38] Aid motivated by regional politics, however, contains a substantial forecast risk and may therefore miss the intended effect.

In recent years, targeted support of large enterprises (for example, through selective tax breaks) was evident on a national level. The policymakers' intention was, among other considerations, to strengthen the international competitiveness of these national champions above all. According to the theory of the so-called strategic foreign trade policy, an active industrial policy can, in the presence of significant economies of scale and scope, cause the respective domestic companies to generate medium- to long-term profits abroad, which benefit one's own economy.[39]

Most economists are very critical of such support for “national champions” for several reasons.[40] They doubt that the subsidization of one's industry leads to advantages for the aid-granting state, as the benefits generated by the (possible) profits abroad with the help of support are usually smaller than the costs for the concentration of market power on the

[37] These were especially applied to the agricultural market in order to guarantee a certain income in the industry while simultaneously setting a minimum price. The minimum price was set above the market-clearing equilibrium price. The resulting excess supply that the suppliers were not able to sell on the market at the given minimum price was bought by government decision-makers at the previously established intervention price and--if possible--stored as stock. This storage led to the famous overproduction of butter and pork, the so-called "Butter- und Schweineberge." Alternatively, price support can also be reached through an aid payment that is linked to a capacity limitation (such as abandonment premiums).

[38] Aid in the context of regional policy can cause a competition between different jurisdictions "for the establishment of private enterprises," that can dynamically lead to efficiency gains. It is conceivable, therefore, that the most efficient package of the several service packages will prevail--hence, the region that ascribes the highest value to the establishment of companies. This point is discussed separately below.

[39] See Brander/Spencer (1985).

[40] See Monopolies Commission (2004), marginal no. 1 ff.

domestic market.[41] Even the supporters of the strategic foreign trade policy theory assume that situations in which all states grant aid lead to a poor outcome for everyone (prisoner's dilemma) and to inefficient aid races (rat races).

b) **Merit Goods and Services of General Interest** In many cases, aid is also granted to ensure the supply of a supposedly socially desired amount of goods. Finance literature coined the term "merit goods" for goods that are principally supplied in the market mechanism, but the supply is deemed to be too low by policymakers.[42] The core argument of meritorics is, that individuals either do not know what is good for them (for example certain TV programs or food), which is why these goods/services are not in demand on the market (according to the traditional concept of meritorics), or that individuals might know what is good for them but still do not demand this on the market, because they succumb to other temptations (the newer concept of meritorics). It is also assumed that other individuals know very well what goods and services are good for the general public and should therefore be increasingly consumed. Based on this expertise, it should be decided which supplies should be offered to the "uninformed" individuals at a reduced price so that they consume more of it for their own benefit. A classic example of merit goods cited in literature is school milk.

It is probably not difficult to understand why this idea is largely discredited in a strongly individualistically shaped economic theory. Baumol/Baumol (1981, 426 f.), for example, write in the context of government support for art: "The term merit good merely becomes a formal designation for the unadorned value judgement that the arts are good for society and therefore deserve financial support…the merit good approach is not really a justification for support – it merely invents a bit of terminology to designate the desire to do so." In economics, the concept thus leads a shadowy existence; it is in fact used primarily as a pseudo-scientific justification for one's beliefs, especially by interest groups.

The principle of merit goods as an economic concept is therefore fundamentally problematic. First, there is the problem of which good is to be classified as eligible for support (identification problem). This generally leads to state interference with the individual preferences of citizens, whereas policymakers must also normatively determine the degree of interference (the amount for consumption). This poses a serious **potential for error and conflict,** because the decision of a collective--or a collective with politicians from the government--is set above the decision of the individual.[43] There is also a lack of information on the part of government decision-makers about how the consumers respond to the changing prices. Therefore, the politically desired amount of the merit good will, at best, be achieved by an expensive trial-and-error method. Against this background, it seems more than questionable to justify a wide array of government policies, such as health care and pension plans, with the argument of meritorics. Ultimately, these are always **value-judgments**, which are inevitable when considering individual and collective preferences.

For state aid justified with the **questionable argument of meritorics**, alternative explanations are also conceivable. Assuming that the modern welfare state supports a person even if he is in self-inflicted need, certain insurance obligations can be interpreted as a means to prevent free-riding behaviour.[44] It would therefore be conceivable that workers make no provisions for old age if they assume that they receive state transfer payments after retiring. In the outlined example, possible free-riding behaviour by compulsory old-age

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[41] See Monopolies Commission (2004), marginal no 16.

[42] See Musgrave (1959).

[43] Such an argumentation is only undisputed in a few exceptional cases where the decision-making authority of a single man can indeed not be regarded as given (e.g., children up to a certain age).

[44] This free-riding behaviour stems from the fact that the exclusion of persons in need from the state transfer system is not intended. In this respect, it would be similar to a negative external effect.

insurance is prevented. Similar arguments could be made for health care and nursing insurance.

In the context of goods worthy of support, the administrative term "**services of general interest**" is used to justify the granting of aid. The term "services of general interest" includes all government measures that are supposed to ensure the "provision of basic supplies" for the population. A typical sector of services of general interest is the provision of **public transport services**. In contrast to the supporters of meritorics, this provision is not justified with the fact that a faulty evaluation of the individual benefit led to an inefficient supply of the respective good. In reality, the market was not supplying the particular good **of public general interest** to the politically desired extent. The politically desired extent does not need to correspond to the economically efficient level of the service provision.[45] The resulting economic losses of efficiency are consciously accepted for the benefit of other policy objectives. The pursuit of these other objectives can be seen as legitimate courses of action in a democracy. However, from an economic perspective, it should be ensured that the provision of services of public general interest to the politically desired extent are performed at the lowest possible economic costs to avoid unnecessary distortions of competition and the inefficiencies that go along with them.

An efficient provision of goods of public general interest can be achieved by **competitively compliant tendering processes**. These need to be structured in a way in which the grant goes to the company that supplies the respective good in the desired quality and volume at the lowest cost. The part of the costs that is not covered in the market-based process can be compensated by government subsidies. Under EU law, these grants--as discussed in the private provision of public goods--do not qualify as aid in the sense of Article 87, paragraph 1 EC Treaty, provided they are awarded within a properly conducted temporary tendering process.

3. Political Economy Reasons

The remarks above make clear that aid intervenes in the market mechanism and can result in significant distortions of competition. In this context, aid causes economic costs. Since they are paid from tax revenues, they first of all represent a removal of income that is distributed to privileged branches or companies. In addition, bureaucratic costs and transaction costs on the part of the company (e.g., for aid consultation, application and reporting duties) are consequences of granting aid. In particular, the protection of a stagnant sector by the means of conservation aid takes away further funding from an economy. Moreover, aid causes undesirable side effects such as price distortions, which may lead to additional state-support payments.

Despite these known disadvantages of aid, the political reality is that aid is granted even when other instruments are better to achieve certain competitive or non-competitive purposes from an economic point of view. Seen from the perspective of economic theory, one-time, subject-related direct transfers (e.g., one-time payment to employees in the mining industry) show a more favourable cost-benefit ratio. The inefficient allocation of aid can also be explained by the fact that **aid** is granted in a **political process**. In the process of making political decisions, the responsible actors also pursue their own interests. When it comes to aid, the risk of self-serving behaviour by political decision-makers is particularly high, because attention is being paid to personal re-election and the electoral success of the respective party. Thus, by short-term populist measures, the (wrong) impression can be conveyed that aid helped to permanently create or preserve jobs in a particular region. Aid that is granted as a large amount to a small group (e.g., a company) is quite noticeable. In

[45] See Haucap (2007).

contrast, the large group of taxpayers finance this aid through relatively small, individual, hardly noticeable amounts. While the low noticeability on the part of taxpayers results in them not taking action, the affected employers and employees mostly act with effective publicity and can therefore contribute to the electoral success of a politician or party.

III. State Aid Control as an Element of Competition Policy

1. State Aid Control in the System of Competition Policy

State aid control has been, next to the cartel ban and abuse control, a central part of European competition policy since the Treaties of Rome, while the important Section of Merger Control was added significantly later. The legally codified competition policy of the EC-Treaty thus includes the traditional sections of cartel ban, merger control and abuse control in addition to state aid control. Between state aid control and the other sections, however, there are significant conceptual differences that distinguish state aid control from the other three. Cartel ban, abuse control and merger control relate to the behaviour of companies. Their purpose is to prevent companies from restricting the competition with agreements or arrangements, thus abusing a powerful market position, and to prevent external corporate growth or an enhancement of existing market power. These sections, therefore, are always about the conduct of companies.

State aid control is a different story. Its purpose was to prevent, above all, Member States of the European Community from using government funds to circumvent competition rules by gaining an unfair advantage with the support of the domestic industry.[46] This already underlines a significant difference between state aid control, on the one hand, and the other Sections of competition policy on the other hand: State aid control is not directed at the competition policy of companies but at the **Member States of the European Community.** State aid control therefore regulates the competition among Member States, as this area involves possible distortions of competition, not by companies but by state representatives. Companies are only relevant for state aid control when they benefit from aid or suffer a competitive disadvantage to the aid-receiving companies. One could argue that the Member States compete through aid by means of the companies.

Another key difference between state aid control and the other areas of competition policy is that the latter, at least from an economic perspective, are particularly concerned with the effectiveness of results produced by a market system with effective competition. As outlined in Section 2, markets may produce inefficient results if market failure exists, for example, because of external effects or asymmetric information.[47] Aid measures can particularly be used to reduce or eliminate inefficiencies caused by market failure, as the "State Aid Action Plan" emphasizes.[48] But even if market failure does not exist, competition in the markets is effective, and market results are efficient, they may be unsatisfactory in terms of distribution or equity. Normative aspects such as equity, equality or fairness are intentionally left out of the efficiency concept in order to clearly separate between descriptive and normative statements.[49] The distribution of living conditions in different regions of a country or in different Member States of the European Community could, for example, be intolerable for normative reasons such as cohesion. Next to the efficiency aspects of market failure, these normative and basically non-economic aspects are also of key importance in state aid control.

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[46] See Möschel (2008).
[47] For more on theoretical economic fundamentals of market failure, see Salanié (2000) as well as Section II.1.
[48] Concerning the State Aid Action Plan, see Section IV.1.
[49] See Schwalbe (2008).

The requirements of Article 87, paragraph 3 also include **normative reasons for granting aid,** such as the adjustment of living conditions. This political objective of the European Community refers to both the economic situation in different Member States and the differences concerning the standard of living among regions within a single Member State.[50] It would therefore be possible to support the standard of living in some regions with regional aid in order to improve the solidarity of the European Community. However, it is not just similar living conditions in a statistical sense that is a political objective of aid policy; it is also development, i.e., the dynamic process of changing the living conditions that are supposed to be on a uniform level within the European Community.[51] This could be guaranteed by regionally differing growth aid. Finally, the granting of aid is also used to reduce social inequalities between different population groups. Ultimately, these questions deal with problems of **distributive justice** that cannot be solved by economic theory alone. In assessing the distributional effects of state aid, the normative foundations upon which the assessment is based have to be made clear. The fact that normative considerations, in addition to the efficiency packages predominant in cartel ban, merger control and abuse control, play a central role in state aid control, distinguishes state aid control from these areas of competition policy.

Another key difference between aid and other areas of competition policy is that **aid equals state transfers** that flow from the taxpayers to the companies. In an economic analysis regarding the effects of aid, it is just as important to always consider the effects of aid payments on the financing side (that is, the so-called "shadow costs of taxation") as the effects on the expenditure side.[52] Here, it is crucial to examine which allocative distortions are caused by the tax financing of aid, or how this tax revenue could have been utilized differently.

Economics has only in recent years analyzed state aid control more intensively, probably because this area is much more complex compared to the other areas of competition policy.[53] For a well-founded economic analysis of state aid control, four domains of economic theory are to be used: Industrial economics to assess the effect of aid on competition; microeconomics for the assessment of market failure; public finance, because aid revolves around tax-financed transfers; and foreign trade, since competition and trade between countries is affected. Knowledge of spatial economics, economic geography and regional economics is useful for an economic analysis of aid effects. Another difficulty arises from the fact that aid is used to achieve both efficiency and distribution objectives, so that positive and normative aspects have to be considered simultaneously.

The overall conclusion is that granting aid is a **tax-financed competition between representatives of the state**, where particularly normative objectives are pursued by means of payments to companies. Because of these significant differences in competition between state representatives, caused by the granting of aid and the competition between companies, it is questionable whether state aid control should be inserted into the usual system of competition policy or whether this European particularity should be operated within a different institutional framework other than competition policy.[54]

2. Alternative Organizing of State Aid Control

Since state aid control is not integrated into the rest of the system of European competition policy for the mentioned reasons, the exclusion of state aid control from the current system of European competition policy could be considered. This issue is usually not discussed in

[50] See Haucap/Hartwich (2006), 98f.
[51] See ibid.
[52] For more on the shadow costs of taxation in relation to state aid control, see Schwalbe (2006) and the references cited there.
[53] A recent overview of the economic literature on aid can be found in Friederiszick/Röller/Verouden (2008).
[54] "State aid control is fundamentally different from the analysis of other competition issues" (Fingleton/Ruane/Ryan, 2006).

the "more economic approach" of state aid control; it is generally rather argued within the established institutional framework.[55] When conducting a refined economic approach to state aid control, it is principally necessary from an economic perspective to extend the analysis to the **institutional organizing of state aid control**. In a comparative-institutional analysis, it is crucial to assess which institution is best suited to carry out state-aid control in an efficient manner.[56] For example, it would be conceivable for there to be purely domestic state aid control with no superior supervisory body. The results likely to emerge from such an organization of state aid control can be compared with the status quo, meaning state aid control by the European Commission, and the results that would, for example, come up during a control of aid allocation by another supranational institution other than the Directorate General for Competition.

As outlined in Section 1, there are a number of reasons that may cause the individual Member States to grant aid to an inefficiently high degree. This would suggest that **purely national control of aid allocation would not lead to a desirable result.** Instead, excessive aid can much rather be expected. However, it would have to be considered that an inter-jurisdictional competition among Member States--a so-called competition among systems--would occur. If this competition takes place in an efficient manner, this could already be sufficient to discipline the governments of the Member States with regard to the granting of aid and thus increase efficiency.[57] However, it is not guaranteed that this is actually the case. In many cases, one must assume that **inter-jurisdictional competition** leads to an inefficient outcome. If jurisdictions compete by means of taxes, then this competition could lead to a "race to the bottom", and the supply of public goods could be inefficiently low.[58] No matter what the outcome would look like in an unrestricted competition of the systems, this result needs to be determined--also due to the subsidiary principle--as a benchmark for comparison with centralized state aid control within the framework of a comparative institutional analysis.

If you look at the status quo (that is, a control of aid allocation by the EU Commission as a central institution), it needs to be analyzed whether this institution is best suited for this task. As already stated, many questions and problems occur in the context of state aid control that lay outside of the usually considered concepts of classical competition policy in which the Directorate General for Competition unquestionably has great competence. Traditional competition policy focuses primarily on competition among companies in markets for goods and services with related issues concerning the effects of mergers, the prevention or breaking down of cartels and the question of unfairness of certain business practices of market-dominating companies. With regard to state aid control, however, the EU Commission has to answer questions on market failure facts, the evaluation of the efficiency of government expenditures and the effectiveness of inter-jurisdictional competition. Nevertheless, an expertise in these areas is not one of the core competencies of a competition watchdog.[59]

It could therefore at least be considered a thought experiment to entrust central state aid control to an institution that combines the specific competencies necessary for the assessment of aid from the different required sections of law and economics, such as public finance and international economics. This institution, similar to the "European Court of Auditors," could then work closely together with the Directorate General for Competition, especially if the effects on competition need to be evaluated. Furthermore, it would be possible to complement state aid control on a national level with an independent national

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[55] An exception is Haucap (2007).
[56] An introduction to comparative institutional analysis from a game theoretical point of view is provided by Aoki (2001).
[57] See Brennan/Buchanan (1980), Edwards/Keen (1996), Sinn, S. (1992).
[58] Sinn, H.-W. (1997).
[59] See Haucap (2007).

body that closely works with the supranational authority, i.e., the European Commission.[60] Such a structure could, on the one hand, guarantee a certain competition of the systems among different Member States, at least for aid without significant cross-border effects, while, on the other hand, the supranational institution would ensure that no aid is granted which leads to distortions of competition and interferences in interstate commerce.

IV. The "More Economic Approach" in State Aid Control

As in other areas of competition policy, economic approaches and methods have in recent years been increasingly used in state-aid control. Here, the key objectives of the "more economic approach" are particularly a smaller and better target-oriented application of aid. In the allocation of aid, a refined economic approach is necessary, and the tendering process is to be made more efficient. Furthermore, the application of law and its predictability is to be improved, and the transparency of the process is to be increased.

1. The State Aid Action Plan

The State Aid Action Plan (SAAP) was approved by the European Commission in 2005.[61] It involves a consultation paper that lays out the objectives for a reform of state aid control. It contains a "roadmap" indicating which reform measures are supposed to be taken from 2005 until 2009.

a) Less and Better Target-Oriented State Aid In accordance with the Lisbon Strategy, the SAAP provides a reduced aid level on the one hand and a better target-oriented allocation of aid on the other. With it, the objectives anchored in the Lisbon Strategy, such as research, development and innovation, investment in human capital and business formations, are to be the focus. To reduce the level of aid, all types of aid that do not support any measures of common European interest are to be kept to a minimum. In order to ensure a better target-oriented aid allocation (i.e., only granting aid without or with minimal anticompetitive effects), aid is primarily to be used **to correct market failure facts**. Furthermore, aid is to be granted less as sectoral aid, where only individual economic sectors benefit, and more as aid of a **horizontal (i.e., cross-sectoral) character**. From an economic perspective, particularly problematic rescue and restructuring aid should be avoided if possible. This way, distortions of competition between Member States can be reduced significantly. Although the EU Commission cannot affect the level of aid itself, as this is determined by the fiscal policies of Member States, a policy of better target-oriented aid can make an important contribution to reducing aid levels in the European Community.

b) More Effective Procedures, Better Targeted Application of Law and Better Predictability, Greater Transparency In the course of the state aid control reform, a tripartite classification was proposed for the assessment of aid, whereby the lower level features a reformed de minimis regulation.[62] Furthermore, a general block exemption regulation was adopted, covering a wide variety of aid.[63] Both regulations ensure an increase in efficiency of the tendering procedure, an improvement of transparency and an increase in legal certainty. The reduction in work load for the Directorate General for Competition associated with the more efficient process allows a focus on the problematic cases, i.e., aid of considerable magnitude, which is not covered by the block-exemption

[60] This corresponds to the demand for a shared responsibility between the Commission and Member States, which was formulated in the State Aid Action Plan. See also Section IV, 1.
[61] European Commission (2005). SAAP.
[62] European Commission (2006). De minimis, see Section V.1.
[63] European Commission (2008). General BER, see also Section V.2.

regulation. This contributes to a more accurate assessment of the problem cases. For a targeted application of law, it is crucial to examine the implementation of Commission decisions by Member States and particularly to better control the return of unlawfully granted aid. For this purpose, the Commission plans to better mediate the general principles, content and importance of state-aid control and to initiate infringement proceedings if necessary. Another block exemption regulation, which was adopted in the course of the reform of state-aid rules, involves regional aid.[64] In addition to the block exemption regulations, the European Commission adopted a set of guidelines regarding regional aid[65], venture capital[66] and environmental protection[67]. Furthermore, the community framework of research, development and innovation[68] needs to be mentioned. It clearly shows how the "more economic approach" is implemented in the course of the reform of state aid rules.

c) Shared Responsibility Between Commission and Member States Since the regulations adopted by the Commission are largely applied by the Member States, an improved implementation of aid policy, greater efficiency and transparency is required. Thus, careful notifications, such as the review of exemption requirements, can significantly shorten the duration of proceedings. In this context, the Commission considers releasing "guidelines for best practices". This could enable independent authorities in the individual Member States to assist the Commission in the application of law, for example, in reviewing the implementation of Commission decisions or the return of unlawfully granted aid. These authorities had already been responsible in the new Member States for the review of the allocation of aid during the accession negotiations.

d) A More Economically Oriented Approach A more economically oriented approach should be particularly used in the allocation of aid, whereas, according to SAAP, aid should mainly serve to correct possible market failure facts. If markets do not produce effective results, it is than argued that state aid could contribute to correct this market failure. If companies make wrong decisions from a welfare point of view, then aid could help to give incentives to companies to make better decisions. The SAAP lists a number of market-failure facts that could be corrected by aid. These include external effects, public goods, information problems, coordination problems and market power.[69] However, aid in general also has significant anticompetitive effects that can significantly reduce welfare and undo the potential positive effects of aid.

The assessment of whether and to what extent aid distorts or threatens to distort competition and brings about interference in international trade requires an estimate of the economic effects of aid measures. It should be noted that different types of aid can lead to the same or similar results, depending on the specific situation. By the same token, different competitive effects can be linked to aid identical in amount and type, if the conditions in which aid is granted differ significantly. In other words, the same type of aid can have different effects in different situations, and different forms of aid can lead to the same result. An analytical approach that focuses solely on the form of aid will therefore, in many cases, provide incorrect results. It would, therefore, as in other areas of European Competition Law, make sense from an economic point of view to move from an approach solely focused on the form of aid **(form-based approach)** to an approach that is focused on the effects of an aid measure **(effects-based approach).** The SAAP and already-implemented measures

[64] European Commission (2006). Regio, see also Section V.3.
[65] European Commission (2006). Guidelines Regional Aid.
[66] European Commission (2006). Guidelines Venture Capital.
[67] European Commission (2008). Guidelines Environmental Protection.
[68] European Commission (2006). RDI.
[69] See Section II.1.

have initiated such a transition. The drive for an effects-based approach in state aid control was substantiated by means of a three-stage test--the so-called balancing test. It should be noted, however, that this transition has not been fully completed in a satisfactory manner. This is particularly true for the economic analysis on the fact level, i.e., the question of whether the payment is actually aid, which is inconsistent with the common market.

2. The Balancing Test

Determining whether aid is justified according to the SAAP is to be accomplished by the three-stage testing procedure--the so-called "balancing test".[70] Using this test, the positive and negative effects of aid are balanced against each other. The balancing test specifies the conditions for the discretionary decision for which the EU Commission has been offered ample leeway due to the very general wording of the grounds of justification in Article 87, paragraph 3.

a) Positive Effects of Aid (Stages 1 and 2 of the Test) In the **first stage of the test**, it is examined whether market failure is corrected by aid, whether an objective of common European interest is in pursuit or whether a different objective of regional or social character is desired for example. If market failure exists, then competition does not lead to an allocatively efficient market outcome. However, even if the resulting allocation is efficient from an economic perspective, the market outcome can be undesirable for political or social reasons. If the necessary precondition of market failure or a normative objective is met, then the **second stage of the balancing test** is initiated to examine whether an aid measure is the **most appropriate tool** to achieve the given objective. It is therefore important to raise the question to what extent respective market failure can be eliminated specifically and effectively by aid. Even if market failure exists, this does not automatically mean that the situation will improve with government intervention. There might be the risk that aid would fail to achieve the desired effect and would change the competitive situation disadvantageously due to a state miscalculation. It should therefore also be examined whether there are possibly several market failure facts and how the competitive situation--if only one market failure is fought specifically by aid--is expected to deteriorate as a result of state intervention.[71] It may also be the case that other economic policy measures and tools are available that are better suited to solve the respective problem. Distributive political objectives could also be achieved by a change in national tax policy, for example, which is more suitable to achieve the desired objective, so that one can do without an aid payment.

Furthermore, it needs to be examined whether aid causes an **incentive effect**, i.e., causes the behaviour of the company directly or indirectly affected by aid to change in the desired manner. If aid does not cause a change in the behaviour of the supported company, it does not lead to an additional economic benefit, and tax revenues from the consumers are wasted.[72] In the analysis, the welfare of all who are directly or indirectly affected by aid must always be considered. This effect not only includes the beneficiaries of aid and current or potential competitors of the beneficiary but also companies on upstream and downstream levels of the value chain. Finally, the consumers must also be considered. Since aid changes the limits and incentives under which a company operates, it can be assumed that the behaviour of the company changes, for example, with regard to the supplied quantity, market entry or exit, or its research, development and innovation activities. This, in turn,

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[70] See Frederiszick/Röller/Verouden (2008).

[71] In this context, this is referred to as a "second-best-problem." See also Section IV.5.b.

[72] One could argue here that the authority of the European Commission concerning state-aid control is limited to the protection of cross-border competition. The criterion of the incentive effect should, contrary to the draft regulation of the European Commission, not be taken into consideration for a uniform and directly applicable block exemption regulation.

could cause changes in behaviour of competitors or other affected parties. Here, cross-border effects have to be taken into account, whereas the effects on employment and input markets are of particular importance. Finally, the question regarding the counterfactual must always be asked, i.e., how would the company behave if it did not receive aid? Furthermore, it needs to be examined whether **aid** is **proportionate,** that is, whether the same objective could not be achieved with less use of resources, e.g., whether different, reduced aid would lead to the same effect.

Verification that the conditions of the first and second stage are met proves to be difficult in practice for several reasons, because in most cases, the quantification of market failure (i.e., the assessment of welfare loss that is caused by market failure) is problematic. This is particularly the case when several types of market failure (information and coordination problems) exist simultaneously. If this problem is not solved, then the problem concerning the proportionality of aid cannot be assessed. Only when the extent of market failure is known can the amount of aid be determined that should be used at most for the elimination of market failure. Principally, when it is analyzed whether aid is the most appropriate tool to correct market failure, a variety of alternative economic measures in the broadest sense need to be examined and compared to the aid measure. This in turn represents a considerable expenditure.

b) Negative Effects of Aid and Balancing (Stage 3 of the Test) If the planned aid passes through the first two stages of the test, then possible anticompetitive and trade-distorting effects of aid are identified in the **third stage of the test**, and the actual **balancing between the negative and positive effects of aid** takes place. Aid should only be granted if the positive effects outweigh the negative. This sort of balancing involves a first stage, where the relevant welfare standard needs to be made clear, and the relevant market must be defined. Finally, possible anticompetitive effects of aid are to be determined. The distorting effects can be measured by identifying who the beneficiaries are and what conditions are connected to aid; what characteristic features the market and the beneficiaries have; and finally, how large the aid payment is and which tool is involved. These points will be outlined below.

In assessing the effects of aid, economic objectives must be distinguished, i.e., the elimination or correction of market failure facts on the one hand and normative objectives such as balancing regional differences in terms of quality of life, on the other. While it is possible to include an efficiency criterion in the balancing between welfare-enhancing and welfare-reducing effects of aid concerning economic objectives, from an economic perspective regarding normative objectives, it is only possible to assess whether aid can achieve the normatively set objective in an effective manner (with minimal distortive effects) or whether there are other, more suitable tools available. An example of this would be the adjustment of living conditions in different regions. The normative objective itself is beyond an economic analysis, and possible anticompetitive and welfare-reducing consequences connected to the achievement of this objective have to be accepted. Economic theory can only determine if aid is the best and most appropriate tool to achieve the set objectives, or whether these objectives can be achieved in a more efficient way with other instruments. The following primarily considers cases in which aid is used to achieve an economic objective--cases in which aid is used to increase efficiency or welfare within a market or an economy by correcting market failure.

In assessing state aid from an economic standpoint, the fundamental question is therefore which **welfare standard** should be used as a criterion, whereby in this case, only the efficiency objectives can be considered. The previous criterion concerning the allocation of aid was the effect that aid has on the beneficiary company and its respective competitors

(effect-on-rival standard) with which the anticompetitive effects of aid were attempted to be estimated**.** This concept is closely connected to the idea of a level playing field. According to this criterion, an aid measure is always anticompetitive if it changes the relative market position of the companies. However, this is usually the effect of an aid measure, so that this criterion would consequently lead to the conclusion that any kind of aid is anticompetitive and therefore illegitimate.[73] When using this criterion, aid to correct market failure and increase welfare would cease to be an option. In addition, this concept does not correspond to the effects-based approach, because it does not focus on the effect of aid on markets, the competition and consumers. It rather primarily considers the producer surplus of the competitors and the beneficiaries respectively. From an economic perspective, however, limiting the central criterion for the evaluation of anticompetitive effects to the effects on competitors is not useful, because the anticompetitive effects of aid generally not only affect the competitors of the beneficiary but especially the consumers. The evaluation criterion of the producer surplus of the competitors falls short, because allocative efficiency is determined by the economic surplus, i.e., the sum of the producer and consumer surplus. Though it could be argued that a long-term analysis shows that the negative effect of aid on the competitors of the beneficiary also negatively affects the consumers, from an economic perspective, direct focus on the effect of aid on consumers is preferable.

In the other areas of European competition policy, the **consumer welfare standard** has become the established evaluation criterion by now. If one were to apply this criterion to state aid control, only the effects of aid on the consumer would be considered. Short-term price developments, which occur on the relevant product markets as a result of aid from a consumer point of view, could hereby serve as evaluation criterion. However, this is just as problematic from an economic perspective as the current limitation on the effects on competitors. If only the effect of aid on the consumers in the respective product markets is considered, and the effects on companies--both the beneficiaries of aid as well as their competitors--are not taken into account, aid could cut the company's marginal costs and lead to lower prices in the short term and thus to higher consumer welfare.[74]

However, aid may in the medium or long term lead to restrictions of competition, e.g., in the form of higher barriers to entry. Beneficiaries could increase their market share at the expense of their competitors, even if they are more efficient. These negative effects could be identified if the change in the producer surplus were to be taken into account. In addition, aid can also affect the incentives and the behaviour of market participants on the upstream or downstream market level, which would have to be taken into account in an economic analysis of the effects of aid as well. Aid reduces the cost pressure that the beneficiary companies are exposed to and can cause an “aid culture”, which can lead to productive inefficiencies. If a company can expect to receive state aid the moment it has difficulties, then the incentives to produce efficiently, to carry out investments or to engage in research and development are reduced. This could, on the one hand, lead to productive inefficiencies if production is not carried out at minimal cost and, on the other hand, result in major dynamic inefficiencies. If aid is granted not only once but repeatedly, this can lead to a permanent distortion of relative prices and significant allocative inefficiencies.[75] A limitation on consumer welfare, as it is common in other areas of competition policy, therefore appears to be problematic for assessing the effects of aid.[76]

[73] See Frideriszick/Röller/Verouden (2008), 646.
[74] Monopolies Commission (2008), marginal ref. 1086.
[75] Ibid. marginal ref. 1087.
[76] A very long-term assessment with a limitation on consumer welfare would eventually capture the negative effects on competition, because in the end, potential distortions of competition resulting from aid would, for example, become visible in the form of higher prices or inferior supply.

For these reasons, a more general criterion should be used for the evaluation of aid effects instead of the consumer welfare standard. One obvious criterion would be the **total welfare standard,** where the consumer and producer surplus on the relevant market and the upstream and downstream market levels are taken into account. With it, any kind of direct aid effect on the affected market participants (i.e., consumers and producers) could be recorded. However, from an economic point of view, the total welfare standard also falls short in assessing the effect of aid: Since aid is a transfer scheme--that is, a redistribution measure--even the total welfare standard would insufficiently take into account the financing side of aid. Because tax collection results in evasive reactions of those affected, allocative distortions occur on the financing side, which would also have to be considered. Otherwise, aid measures would generally be assessed to be too positive. It would therefore be useful, as the former chief economist of the Directorate General for Competition proposed, to take into account the interests of the taxpayers when assessing the effects of aid.[77]

The SAAP itself does not contain any information about the welfare standard to be used, although there are references to opportunity costs of taxation.[78] In the community framework regarding state aid for research, development and innovation (RDI), it is pointed out that in the context of state aid control, the total welfare standard should be used, i.e., that both consumer and producer surplus should be taken into account.[79] One of the investigations on the economic assessment of aid methods to be used that was funded by the Commission also argued for a “social welfare standard”.[80]

At this point of the test at the latest, it is necessary from an economic perspective to define the relevant product and geographic market. Without **defining the relevant market**, an economically correct assessment of the competitive effects of aid is impossible. In principle, analogous to merger control, the same conceptional framework could be used, i.e., the hypothetical monopolist test or SSNIP test.[81] However, in the context of state aid control, some methodological modifications of the concept are necessary. These result mainly from the fact that the effects of aid can spread across different markets and economies. To identify these effects, it is necessary to track the effects of aid on companies and markets. This is a significant difference to the market definition regarding a merger for example.[82] For this purpose, it is recommended to define the market mainly by demand substitution and to consider the supply substitution only after the definition. The reason for that is that matters of state aid control always revolve around the identification of a distribution of profits and losses caused by aid, so that a separate examination of the effects on consumers and producers seems reasonable.[83] All markets are to be taken into account in which the beneficiary is active or likely to be active in the short term.

However, in the context of granting aid, another problem can occur, which is analogous to the known phenomenon of the “cellophane fallacy.” It has long been known that the definition of the relevant product market, particularly in the case of improperly excessive prices, can easily lead to false conclusions. Due to excessive prices, the consumers consider products as substitutes, something they would not do with competitive prices present. This leads to the risk of defining the relevant market too broadly, particularly in cases of price abuse.[84] An economically correct definition of the relevant product market must therefore

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[77] See Friederiszick/Röller/Verouden (2008), 647.
[78] European Commission (2005), SAAP, marginal ref. 8.
[79] See European Commission (2006), Section 1.1.1 Fn. 3.
[80] Nitsche/Heidhues (2006), 5 ff.
[81] For more on the hypothetical monopolist test, see Schwalbe/Zimmer (2009).
[82] "With antitrust policy, the market is delineated to see whether the market mechanism will ensure competition. With state aid control, the definition of the market is required to trace the effects of aid across markets" (Fingleton/Ruane/Ryan, 2006, p. 83).
[83] Fingleton/Ruane/Ryan (2006), p. 83f.
[84] For cellophane fallacy, see for example Kerber/Schwalbe (2007), marginal ref. 1164 ff.

originate from competitive analogue prices, which often are not easy to calculate in practice. If, however, aid payments cause the prices of products and services, such as fee financing of public online services, to artificially remain at a level below the competitive analogue price, then in such a case, a **reversal of the cellophane fallacy** is to be expected. Due to the artificially low prices, consumers are not willing to consider alternative products, which they would have thoroughly accepted as attractive substitutes at a higher, competitive analogue price.[85] In this case, there is a risk to define the relevant product market too narrowly, as important substitutes are not included in the examination. Admittedly, however, if only for conceptual reasons, from an economic perspective and in such a case, the hypothetical monopolist test to define the relevant market is to be used, as this approach focuses on the relevant competitive restrictions. Nevertheless, an integrative approach--as it is used by Ofcom, for example, the British competition and regulatory authority for communications services--could be useful, especially if it is impossible or unreasonable to have a reliable assessment of the competitive analogue price due to a lack of comparative markets or new products and services. This approach is based on the properties of new services and the comparison with already supplied services. Depending on the scenario, with or without new services, surveys of consumers, other commercial suppliers as well as suppliers in upstream markets are appropriate tools to assess what developments would follow and to keep the forecast risk to a minimum.[86]

Due to the cross-border effects of aid, greater emphasis is to be put on determining the relevant geographic market when defining the market. The role of potential competition should also already be taken into account in the definition of the relevant market and not, as in other areas of competition policy, during the assessment of the competitive situation of the market. Aid might just cause potential competition. This in turn could be important regarding the creation of a common market.[87]

The negative effects aid can have on competition can be divided into four categories, which affect productive, allocative and dynamic efficiency.[88] **Productive efficiency** could be influenced on a market if an inefficient company or an inefficient economic sector receives aid and is thus artificially kept alive. Aid will in this case lead to output that is not produced at minimal cost or that is not desired by the consumers. In both cases, significant welfare loss can be the consequence that especially affects the consumer.

Negative effects of aid on **allocative efficiency** can occur in the form of the creation or strengthening of market power or a market-dominating position. Thus, a company or group of companies can gain such a significant competitive advantage over its competitors through an aid payment, that the market share or market power of the beneficiary company grows in a way that it is able to increase the prices for its products and its profits significantly. These additional gains could be used, among other things, to strengthen the company's position on other markets. The beneficiary company could furthermore secure its position by the erection of barriers to entry or may be put into a position to force competitors out of the market with abusive practices such as predatory pricing.

State aid, such as in the form of establishment aid, can also help to influence the location decisions of companies and thus affect **spatial allocation of economic activities**. This in turn has consequences for interstate commerce, as the flow of goods between Member States is altered.[89]

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[85] This could be called "reverse cellophane fallacy." In connection to the provision of Internet services of public service broadcasters, see Dewenter/Haucap (2009). For general information on the problem of "reverse cellophane fallacy," see Froeb/Werden (1992), Schwalbe/Zimmer (2009).

[86] See Ofcom (2006).

[87] Ibid.

[88] For more on the efficiency concepts, see Schwalbe/Zimmer (2009).

[89] These effects could also be welfare-increasing if the companies without aid chose an inefficient location. See Section IV 5.c and V.3.

Finally, the important effects of aid on **dynamic efficiency** still need to be mentioned, which can be particularly reduced by changes in the dynamic incentives with regard to investments for example. There are possible scenarios regarding aid for research, development and innovation, where aid results in heavily inefficient investments in R&D.[90] In particular, the effects on dynamic efficiency are important from an economic point of view, because they can have a decisive influence on the overall economic development of the community.

The **characteristic features of the relevant market**[91] could be used as criteria to assess the negative effects of aid on competition, the nature and extent of aid and, finally, the allocation process of aid.[92] Once the relevant market is defined in product and geographic terms, market shares of the beneficiary or beneficiaries and its competitors can be detected. If the beneficiary already possesses a large market share, then this can be an indication of existing market power. The same also applies to a pronounced asymmetry of market shares. If this asymmetry is reinforced by aid (i.e., the market share of the beneficiary company increases relative to those of its competitors), a distortion of competition is more likely to be expected. Market shares, however, are less meaningful for differentiated products, because the closeness of substitution relations among the products is what matters more. Concentration is also an important criterion, as competitive problems are more likely to be expected in an already highly concentrated market. The existence of entry barriers is also an indication that distortions of competition are caused by aid. If the relevant market is characterized by significant overcapacities, low innovation and non-temporary decline in demand, it seems likely that aid merely solidifies the inefficient structures. The effects on upstream and downstream markets are also important. If aid, for example, increases the price for important input, it can have negative effects on other Member States. Other important characteristic features relate to the nature of the product and its distribution. If the aid beneficiary is a company that already operates in several Member States, it is more likely to be expected that aid affects trade flows among Member States or the location decisions by companies.

The nature and **extent of aid** also allow a conclusion on the competitive effects. However, a general correlation between the amount of aid and the extent of the induced distortion of competition cannot be deduced. The amount of aid is always to be assessed proportionally to the size of the market. A small amount of aid in a small market can lead to significant distortions of competition, while large aid in a sufficiently large market has no noticeable effects on competition. In principle, it is certain that larger amounts of aid more likely cause a distortion of competition for a given market size than smaller amounts of aid. In addition to the amount of aid, its intensity also needs to be taken into account, because higher aid intensity tends to equal greater distortion of competition. Moreover, it is to be considered whether aid is granted once or repeatedly. Particularly in the case of repeated allocation of aid, there is a risk that companies develop an aid mentality that harms productive efficiency. Concerning the **type of aid**, the effects of aid on the normal operating procedure are usually different from investment aid for example. If aid subsidizes the variable production costs of a company, then this usually translates into a direct effect on prices and therefore on competitors and consumers. An aid investment has no direct effect, but long-term effects in the form of market entry or exit can occur, or location decisions of companies are affected. It usually makes a difference whether aid is granted in the form of direct payments, tax deductions or bonds. Direct payments tend to have a greater effect on competition than indirect benefits.

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[90] Aid could, for example, trigger a patent race in which companies invest more than the socially optimal amount.

[91] A detailed overview of the relevant market characteristics can be found in Nitsche/Heidhues (2005).

[92] For more on the criteria for assessing the anticompetitive effects of state aid, see Friederiszick/Röller/Verouden (2008), 654ff.

Concerning **the allocation of aid,** the degree of selectivity of a measure and the transparency of the process is particularly important. It is also crucial to consider whether the measure is ad hoc aid or aid scheme. The lower the **degree of selectivity** aid is, the lower the anticompetitive effects will be. If all companies of a certain size or within a specific region receive aid, competition will be distorted in most cases less than a high degree of selectivity, that is, if only one company or a small group of companies receive aid. Similarly, a **non-discriminatory, open and transparent tendering procedure** is more likely to be unproblematic, because such a procedure is difficult to be used for industrial policy ideas, such as to enforce the creation of national champions. It can also be assumed that **aid schemes** lead to fewer distortions of competition than **ad hoc aid.** However, aid schemes can also lead to negative effects if only a small group of companies in a specific industry qualify as beneficiary. Aid intensity is high, and powerful companies can also receive aid within the framework of the aid scheme. In these cases, the aid scheme can also cause the creation and strengthening of market power or affect the spatial allocation of economic activities.

An **efficiency objection,** which can be put forth in horizontal and non-horizontal mergers, is not possible in the area of state aid control, since state representatives--not companies--are the cause for possible distortions of competition. However, the criterion of market failure, which is the main economic justification for granting state aid,[93] can be regarded as a kind of efficiency objection, because market failure exists whenever the market does not produce an efficient outcome due to such frictions. Since the burden of proof that market failure exists lies with the Member States, and this evidence cannot be easily provided, it can be assumed that the “more economic approach” regarding state aid rules tends to lead to a more critical assessment of aid and a more restrictive state aid control.[94]

The problem concerning the effects of aid on competition or on interstate commerce can principally be analyzed on two different levels. During the investigation, it is first examined whether a payment in fact qualifies as aid, i.e., on the **fact level.** Secondly, the competitive effects of aid are especially analyzed in the third stage of the balancing test--on the so-called **justification level**--that examines whether an aid payment is justified in a particular case. From an economic point of view, it would be useful to conduct an economic analysis of the effects of a state payment or aid on both levels. If the economic analysis is limited to the justification level, there is the danger that state payments are made, because they were not classified as aid due to the absence of an insufficient analysis on the fact level, or they are not made, because they were incorrectly classified as aid but did not pass the balancing test. In the following Section, the possibilities of an economic analysis on the fact as well as the justification level are described in more detail.

3. Economic Approach on the Fact Level

The usual definition of the term aid implies that aid is only incompatible with the common market when a favouring effect occurs as a result of transfer of state measures, and this preferential treatment selectively affects certain branches of production or companies. This is only a necessary but not sufficient precondition for the incompatibility of aid with the common market. Additionally, it is crucial that aid distorts or threatens to distort competition and therefore affects trade between Member States.[95] The aforementioned criteria of selective favouring, the distortion of competition and the effect on trade can serve as starting points for an economic analysis. However, in the course of the reform of state aid rules, an economic analysis on the fact level (Article 87, paragraph 1, EC Treaty) (e.g., the question concerning

[93] See Section II. 1.
[94] See Monopolies Commission (2008), marginal ref. 1098.
[95] Schmidt/Schmidt (2006), 226.

the incompatibility of aid with the common market) is neither planned for the SAAP nor for the previous implementations. Rather, the cursory examination remains in place for the time being, which even lags behind the standards of the traditional form-based approach. This could potentially result in a problematic gap.

Only when it was determined that the transfer of state aid is incompatible with the common market was a second step initiated on the justification level (Article 87 paragraph 3, EC Treaty) of the balancing test, involving an economic analysis of whether the distorting and trade-restricting effects can be more than balanced by the positive effects, such as the correction of market failure, the reaching of an objective of common European interest or the cohesion objective, i.e., whether aid can be granted in exceptional cases. Nevertheless, it is problematic to substantially limit the economic analysis to the justification level, because the European ban on state aid only takes effect and justifies an intervention by the EU Commission as supervisory body when an imminent distortion of competition was previously discovered on the single market (Article 3, paragraph 1, letter g, EC Treaty).

As part of the ban on state aid in Article 87, paragraph 1, EC Treaty, an in-depth economic analysis is so far only carried out with the **“private investor test”**, once “favouring” is present. With the help of this test, it is examined, Therefore, in accordance with equally settled case-law, it is necessary to assess “…whether, in similar circumstances, a private investor of a dimension comparable to that of the bodies managing the public sector could have been prevailed upon to make capital contributions of the same size.”[96] If this is the case, it would not be considered favouring, since the company could have raised capital under the same conditions on the capital market.[97]

Unlike favouring, the criterion of distortion of competition is usually not subject to a sophisticated economic analysis. Only a general-sector specific investigation is conducted, which lags well behind the standards that were applied under European Competition Law, even before the introduction of a refined economic approach. Thus, a precise definition of the relevant market, which would have to be carried out within the framework of state-aid control in a modified form, is omitted.[98] State aid control--unlike the antitrust provision of Article 81, EC Treaty--also does not require a “noticeable” distortion of competition as an unwritten characteristic feature. This practice of the EU Commission has in the past been approved by the European courts. What the jurisdiction demands of the economic reasoning by the European Commission regarding state-aid rules therefore deviates fundamentally from the rules they put in place for the antitrust prohibition provisions (Articles 81, 82 of the EC Treaty and Article 2 paragraph 3 of the Merger Regulation).

When providing evidence of an effect on cross-border competition and trade within state-aid facts (Article 87, paragraph 1, EC Treaty), the European Commission neither has to fulfil the standards of the effects-based approach, which it uses in the antitrust sector, nor meet the requirements of the form-based approach traditionally significant in antitrust law.

From an economic perspective, it appears to be reasonable to use a more refined economic approach, also on the fact level (Article 87, paragraph 1, EC Treaty), both in relation to a possible distortion of competition and an effect on international trade, as this is also the standard in other areas of European competition policy, merger control and abuse control. Here, it would be useful after an adjusted market definition for state aid control to test objectively whether aid leads to a significant distortion of competition. This procedure would be connected to a limitation on the scope of the European Commission's aid supervision and would have to be flanked by the introduction of complementary state aid control on a national level and the private right to take legal action.

[96] ECJ decision 2002, 4397, C-482/99 – Stardust, marginal ref. 70.
[97] For general information on the "private investor test," see Sühnel (2006).
[98] For more on the definition of the relevant market in the context of state-aid control, see Section IV. 2.b).

In an economic analysis of a possible **distortion of competition** on the fact level, a first-step analogue to merger or abuse control would require state-aid control to **define the relevant product and geographic market** in order to determine the market position of the beneficiary company, while respective modifications are taken into account at the same time. This assumes that the beneficiary company and the supported project has already been determined. If this is the case, it can be determined based on the definition of the relevant product and geographic market, whether aid causes a significant distortion of competition or increases the risk of such a distortion. For this purpose, it is reasonable from an economic point of view to use market shares, the respective level of concentration and the Herfindahl-Hirschman-Index (HHI) as indicators for identifying a distortion of competition after the definition of the relevant market. Based on the data that the EU Commission listed in its guidelines for the assessment of horizontal mergers, a market share threshold of 25 percent and a HHI of 1,000 could be established as benchmark.[99]

The higher the **market concentration,** the more likely it is that aid to established companies will distort competition because a tight oligopoly involves a significant strategic interdependence between market participants. In this case, an existing factual distortion of competition seems likely. At the same time, the incentives to grant distortive aid are particularly high in the political realm. If aid is to be granted to an established market power or a market-dominating company, there is a risk that this company can further strengthen its position against its competitors and continue to increase its existing market power. Furthermore, as explained above in connection with the balancing test, it needs to be considered that aid can facilitate certain predatory practices for a market-dominating company such as cutthroat pricing. Finally, it should be noted that aid can prevent or hamper market entry of potential competitors by establishing or increasing market entry barriers.

The degree of selectivity of the aid measure could also be used as a further criterion in the analysis of a possible distortion of competition on the fact level. If the aid is of a pronounced selective character and only affects one or very few companies, it tends to distort competition more likely. However, if the selectivity of aid is low because, for example, all companies of a certain size or within a specific region are to be supported, distortions of competition threatening to occur due to the aid would need to be investigated more closely. If such distortions are also to be expected with low selectivity, then aid on the fact level would be incompatible with the common market but could possibly be approved on the justification level in exceptional cases.

However, the ban on state aid of Article 87, paragraph 1, EC Treaty not only covers aid to specific companies or for certain projects but also so-called **general aid schemes.** Thus, aid measures with horizontal objectives often do not specify which companies and which sectors benefit as well as which markets are affected in practice. In this case, a definition of the relevant market in product and geographic terms cannot be undertaken. The test should therefore be limited to the question of whether the state measure is likely to cause a significant intervention on the market and the competitive process on the EU single market.

It seems appropriate to expect from the outset a significant distortion of competition with certain kinds of aid. However, since the characteristic feature of the benefit (selectivity) of Article 87, paragraph 1, EC Treaty is interpreted very broadly, a general presumption cannot be justified for all constellations. Hence, measures are also classified as aid, which benefit all companies in a specific region or of a certain size. The same applies to measures that are configured horizontally and benefit companies from different industries.

In general, it is to be assumed that **rescue aid for ailing companies** usually leads to a distortion of competition. The cause of the difficulties can in many cases be traced back to a productive inefficiency of the company that is kept alive artificially by rescue aid at the

[99] See European Commission (2004), marginal ref. 19.

expense of efficient competitors. Therefore, the danger of inefficient and distortive aid appears to be particularly high. The same applies to aid for sectors where significant overcapacities exist **(restructuring aid).** In both cases, there is a considerable risk that this kind of aid maintains and solidifies inefficient market structures. In these cases, whether aid is exceptionally permissible following market failure--as for example due to adjustment defects or normative reasons--could be examined in more detail in the context of the balancing test on the justification level. The latter could be the case if social reasons, such as the loss of a large number of jobs in a region with already low-living standards, justify the granting of such aid in exceptional cases.

It is therefore reasonable to perform a **noticeability test** along the lines of Article 87 paragraph 1, EC Treaty for all other forms of aid. Here, elements of the so called **"significant impact test"** (SIT) could be used, whose introduction had been planned by the EU Commission in 2003 in order to better concentrate on the problematic distortions of competition. The SIT of the EU Commission has not been introduced due to the resistance of the Member States, especially since they could not agree on the positive list provided therein. In this list, certain predetermined sectors were listed, in which significant cross-border effects were supposed to be considered unlikely. However, such a positive list is a very inflexible instrument, and there is a risk that relevant issues are not covered in this list. It might however prove to be useful to use certain elements of the SIT in an economic analysis on the fact level. Elements of selectivity, the level of aid, aid intensity and the nature of the tendering process could hereby be considered.

The noticeability of a distortion of competition would tend to be lower if aid were not limited in advance to a particular company or sector. This applies, even if aid, which is received by a single company over the course of three years, does not exceed the amount of 1 million Euro. A low noticeability can also be assumed if aid is granted based on activity, and the aid intensity (i.e., the share in funding of the total expenditure of the project) does not amount to more than 30 percent. Finally, transparent tendering processes are to be used for individual aid and the benefit of general aid schemes must be accessible to all companies that meet certain criteria.

If none of the outlined assumption facts lead to a definite result, then the question of whether a particular action causes significant cross-border restrictions of competition is to be answered within the framework of a more profound investigation. Several factors must be considered that concern both aid and its allocation (eligibility criteria) as well as the relevant markets, the predictable effects on competition and the market position of the beneficiary company (market conditions). Eligibility criteria include the amount of aid, its size relative to the costs of the supported activity (aid intensity) and the nature of its allocation. It is hereby important to consider whether aid is granted only once or repeatedly and whether an open and transparent procurement process took place. In addition, market criteria include the existence of overcapacities, the market share of the beneficiary, market concentration, market share lead compared to the next competitor, the amount of market entry barriers (significant sunk costs), its degree of vertical relationship, the degree of product differentiation, and the expected price development resulting from aid.

With regard to the characteristic feature of **restrictions on transnational commerce**, "noticeability" (analogue to the antitrust law) should be used as an unwritten precondition to avoid, that the scope of Article 87, paragraph 1, EC Treaty extends to matters of minor transnational importance with only a local focus. This seems appropriate, since state aid control as well as antitrust laws aim at protecting competition on the single market (Article 3, paragraph 1, letter g, EC Treaty). Only a well-founded risk of negative cross-border effects can thus trigger state-aid control and a ban on state aid on a European level.

It needs to be taken into consideration that European courts are ultimately responsible for the interpretation of the facts associated with a state aid ban. The included characteristic feature of a distortion of competition has traditionally required a very low standard to meet this criterion. This problem could be solved by legal clarification. However, it is also conceivable that a change in the application of law could already be sufficient, and the European courts would give up their traditional jurisdiction. The decision by the European Court of Justice regarding the Le Levant case from February 22, 2006 can serve as an indication of this. In it, the Court rebukes the European Commission explicitly for their failure to further examine the characteristic feature of a distortion of competition in the contested negative decision.[100]

If a higher required standard for the existence of a distortion of competition came into effect, it could be argued that this might make it more difficult for Member States to assess whether or not a measure is subject to notification according to Article 88, paragraph 3, EC Treaty. This could be rectified by maintaining the low standards for verification in the context of Article 88, paragraph 3, EC Treaty and only imposing greater disclosure obligations on the EU Commission concerning Article 87, paragraph 1 EC Treaty.

4. Economic Approach on the Justification Level

While a detailed economic analysis, including a market definition of the relevant market and an investigation of competitive conditions, as well as the effect of aid on competition and transnational commerce, does not in fact occur on the factual level, such an investigation is intended especially for the justification level of the balancing test in the course of the compatibility assessment of Article 87, paragraph 3, EC Treaty. Here, complex economic analyses are henceforth to be carried out that have not yet been utilized. This applies to the criterion of the incentive effect on the second stage and to the balancing of the positive and negative effects of aid within the framework of the third stage of the balancing test. Such an approach may prove to be problematic, since this assessment will in many cases not be necessary. This could, for example, be the case if an aid measure already failed to pass the first or second stage of the balancing test, because the aid did not eliminate market failure or was not appropriate or necessary to do so. In this case, the balancing test is already aborted prior to the economic analysis of the competitive effects of an aid measure. Therefore, future cases are possible in which the EU-Commission prohibits an aid measure without having investigated its distortive effect on the EU single market. This seems problematic, because the EU Commission is only legitimized to exercise state-aid control under the protective purpose of Article 87, ff., EC Treaty when competition on the European single market is impaired by aid.

Therefore, as already explained in Section 4.2, it would have to be considered from an economic point of view whether it should already be assessed during an investigation on the fact level regarding a distortion of competition, if market failure exists and whether aid is the appropriate and necessary means to correct market failure. If this is the case, then the competitive situation is not aggravated regularly in the outcome, but the competitive framework is expected to improve. In many cases in which supposed market failure is to be eliminated, there is a risk of state fragility due to forecast errors with the result that the existing competitive situation is worsened (second-best problem).[101] Due to the threatening more-than-optimal intensity of state interventions, it is appropriate that the burden of proving the existence of a specific market failure should lie with the Member States, which should carry out a more detailed examination of the existence of market failure before reaching the justification level, as practiced by the European Commission. The existence of

[100] ECJ, verdict of February 22, 2006, Rs. T 34/02, Le Levant/Commission, Slg. 2006, II-267, marginal ref. 127.

[101] See Section IV 5.b.

the characteristic feature of a distortion of competition on the fact level would mean confirming, therefore, whether the aid is appropriate for a noticeable intervention in the cross-border competition process and guiding the conduct of market participants and their investment decisions into a very different direction. The market failure criterion, therefore, has a comparable function on the justification level as the efficiency objection within the European cartel ban (Article 81, paragraph 3, EC Treaty).

5. Economic Problems in Assessing the Effect of Aid

It has already been pointed out in Section III that there are serious differences between state-aid control and other areas of competition policy. These can lead to problems that cannot be found to a comparable extent in the other areas of competition policy. These problems include firstly the financing problem and secondly the so-called "second-best" problem. In addition, there are some difficulties associated with the location competition induced by aid and the general economic policy.

a) Financing Aid State aid is a transfer, where money is taken from a group of economic agents--taxpayers--by levying an income tax that is allocated to another group, such as beneficiaries or regions. This is in contrast to merger control as well as control of abusive practices and leads to a number of additional difficulties in assessing the welfare aspects of state aid that do not occur in other areas of competition policy.

If aid is financed through taxes, then levying these taxes will generally change the behaviour of economic agents, because they will make different decisions than if these taxes were not levied. This generally results in inefficiencies and hence welfare losses. These welfare losses are called **"shadow costs of taxation"** in literature. As some recent studies have shown, these welfare losses can be quite significant.[102] Although such a tax will trigger only a small effect on each individual taxpayer, overall, changes in factor supply can occur that lead to welfare losses far beyond previous estimates.

Therefore, within the framework of a welfare-theoretic assessment of state aid, two sides have to be taken into account: **the revenue and the expenditure side.**[103] This continues to be widely accepted in economic literature on state-aid control. Thus, for example, it was stated, "Last but not least, it must be borne in mind the government's expenditure in implementing the policy has to be financed and this is likely to lead to some loss of efficiency in other parts of the economy".[104] The effects of tax financed aid should therefore be taken into account in the assessment: "As a result, we propose that the opportunity costs of funding, that is, both the direct cost of the subsidy and the deadweight loss due to distortionary taxes, need to be included in the standard of state aid."[105] For this, the following proposal is made: "Governments should take efforts to measure under the shadow costs of using funds for state aid and require a level of benefits of state aid that is above the identified costs."[106] In the SAAP, the revenue side is mentioned: "Tax payers in the end have to finance state aid and there are opportunity costs to it. Giving aid to undertakings means taking funding away from other policy areas. "[107]

However, the authors confine themselves mostly to mentioning these problems. Although some **empirical estimates regarding the funding costs** of state aid are cited, these costs are largely ignored in the welfare analysis. In addition, the present estimates of the shadow costs of taxation cannot be transferred directly onto the issue of state aid in the European

[102] See Parry/Oates (1998), Browning (1997).
[103] For more on the problem of considering the financing side of aid, see Schwalbe (2006).
[104] Miklejohn (1999a), 9.
[105] Friederiszick/Röller/Verouden (2008), 645.
[106] Nitsche/Heidhues (2005), 13.
[107] European Commission (2005), marginal ref. 8.

Union, as the underlying data were obtained in a model framework that is not appropriate for the assessment of the overall effects of state aid.[108] The underlying data come from other countries (e.g., USA, New Zealand and Australia) with a different institutional framework. However, if welfare losses are systematically underestimated or even ignored due to the financing of state aid through taxes, then one runs the risk of **overestimating the positive effects of state aid on welfare** and of proceeding too generously with the allocation of aid. In order to reach an economically meaningful assessment of the welfare effects of aid, the same emphasis must be placed on the financing side as on the expenditure side. Unfortunately, this is currently not the case. Heidhues/Nitsche state in their extensive scientific advice, "While theoretically and empirically very relevant, there is little explicit use of the shadow costs in theoretical models and practical appraisal in the context of state aid control."[109]

It would therefore have to be considered to better include these shadow costs of taxation in the assessment of the effects of state aid. For this purpose, procedures could be used that have already been applied many times in the investigation of tax effects and which allow an assessment of the effects of government revenues and expenditures. These procedures are so-called "computable general equilibrium models" (CGE).[110] These are quantitative models that allow an estimation of the magnitude of the effects of economic policies. Moreover, it is not just individual markets that are analyzed in these models, but a quantitative model of an entire national economy (or several economies interconnected by trade such as the European Community) as it is constructed.

Using a CGE model analogue to the simulation models of merger control, the total effect of state aid (i.e., on companies, consumers and taxpayers) can principally be estimated: "This provides an ideal framework for appraising the effects of policy changes on resource allocation and for assessing who gains and who loses."[111] Due to the fact that state aid revolves around transfers, simple partial analytical models, such as those used in the simulation of mergers, are not sufficient. If a determination of the welfare effects of state aid was only limited to the expenditure side of the two scenarios — "with aid" and "without aid" -- it would usually lead to an erroneous assessment of the welfare effects. A situation with aid would then have to be compared with a situation without aid, where the respective amount is used for other purposes. This could be another kind of aid but also expenditures on infrastructure or education. A tax cut or a reduction of the state budget deficit would also have to be considered. A simple partial analysis is not sufficient for this, even if the shadow costs of taxation are taken into account, because the feedback effects of tax-financed state aid must also be borne in mind. That is exactly what also needs to be estimated when dealing with the welfare effects of state aid.

Of course it would be unhelpful to try to develop an independent model for each individual aid, because the required effort would be substantial. However, such approaches could be used to lay down the limit for the amount of aid intended for the balancing test, at which point a detailed investigation by the Commission sets in. CGE models allow a better assessment of the welfare costs of financing state aid compared to a simple, project-related, cost-benefit analysis, which usually underestimates the cost of financing. It is to be assumed that this limit is lower than previously suspected in regard to the welfare losses due to the financing of aid by distortionary taxes.

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[108] The above-mentioned estimates come from partial analytical models, i.e., those models that deal with analyzing individual markets. Here, however, an approach taking into account all markets would be preferable. See Parry/Oates (1990), p. 9.

[109] Heidhues/Nitsche (2005), 70.

[110] For an introduction to this subject, see the older but still instructive book by Shoven/Whalley (1992) or the more recent introduction by Munk (2003).

[111] Shoven/Walley (1995), 1.

b) Second-Best Problems Next to the aforementioned difficulties of an economical analysis of aid, another conceptual problem occurs--especially concerning state-aid control--that has at best been described in footnotes in previous theoretical economic studies, although it makes the allocation of aid appear problematic overall. These problems are referred to as “second-best” problems, and the “second-best theory” has drawn attention to them. This goes back to an article by Lipsey and Lancaster on the theory of the general equilibrium.[112] In this article, they examine economies where not all conditions for a Pareto-Optimum are met due to external effects or other restrictions, for example. That means that at least one of these conditions is not in effect. In this case, it does not make sense from a welfare-theoretical point of view to try to ensure that all the other conditions for a Pareto-Optimum are met, but greater welfare improvement could be achieved if one or more condition(s) were no longer in effect. In other words, if more allocative distortions exist, the elimination of one distortion does not generally lead to a Pareto-improvement.

If the optimality conditions for a competitive equilibrium are not met due to an external effect, and an allocative distortion is simultaneously present because of asymmetric information for example, the **elimination of the inefficient allocation due to the external effect** could lead to a welfare reduction. This is the case if the external effect worked as a counterweight to inefficiency, which was caused by asymmetric information. Due to its elimination or reduction, this counterweight is decreased, and welfare is thereby reduced. The elimination of market failure by aid does not necessarily mean an increase in welfare. The attempt to bring about a better, more efficient allocation and achieve greater welfare through aid can cause the exact opposite.

This fact has been known in economic theory for a long time and is occasionally mentioned in economic literature on state-aid control. As Gual (2000) writes, “... government intervention to achieve the social optimum is subject to the usual caveats of [a] second-best analysis. If other distortions are present in the economy, there is no guarantee that social welfare is increased ...”[113] However, the discussion of the second-best problem is limited to its reference. The reason lies in the fact that a well-founded analysis of the problem not only requires examining the market where market failure exists but an analysis of all other markets in the economy. An analysis of all markets of the integrated market also needs to be conducted simultaneously. However, this is not soluble due to the great complexity of the problem on the one hand and the significant data availability and measurability problems on the other.

Only if the market failure eliminated or reduced by aid is of a comparatively small extent, it would be reasonable to assume that the second-best problems are negligible, because then they will not have a strong equalizing effect as to any imperfections on other markets. This also means that aid will not have significant welfare-enhancing effects, for the removal of a small market imperfection usually only has minor welfare-increasing effects. Therefore, the following problem arises: If significant market failure is eliminated or substantially reduced by aid, then it is likely that serious second-best problems exist. If this is not the case, then aid in general will not cause large increases in welfare. How this problem can be solved in practice is unclear. It will most likely have to be assumed that second-best problems do not exist, or they are of secondary importance.

c) Effects on Spatial Competition and Economic Policy Another problem next to the financing of aid and the second-best problematic is the undesirable effects of central state-aid control on the spatial competition between Member States and regions as well as on the general economic policy of the individual Member States. If one assumes that not only the

[112] Lancaster/Lipsey (1956).
[113] Gual (2000), 15.

competition among companies but also the competition among systems of the Member States and regions have positive effects, the question arises whether it makes sense from an economic point of view to take away the allocation of (establishment) aid as a competitive parameter from the Member States and regions by transferring state-aid control to the EU-Commission. In economic theory, it has been known for some time that the free choice of location for companies, especially in markets with imperfect competition, usually does not lead to an efficient spatial diffusion of the companies.[114] The allocation of corresponding establishment aid could help companies and investors make better (i.e., more efficient) location decisions.

The new political economy shows that policymakers generally have a strong interest that companies locate in their jurisdictions. This creates jobs, the tax base is increased, and the re-election chances of the decision makers are enhanced. On the demand side, mobile companies look for favourable location conditions under which they can produce with low costs, and the produced goods and services can be sold easily. **Establishment aid** is therefore an effective tool to consider and internalize the positive external effects of such an establishment, especially in the form of agglomeration advantages that an establishment can trigger in a particular region. Depending on the characteristic features of the company willing to locate and the respective region, these positive externalities can be of different sizes. From an economic perspective, it is efficient that policymakers have the opportunity to conduct a price differentiation through aid in the form of differently sized discounts on tax payments. In a spatial competition, the Member State or region that expects the largest welfare gain can assert itself.[115]

Furthermore, it should be noted that companies often have to make long-term **location-specific investments** in case of an establishment, as it applies for example to infrastructure providers in the energy, transport or telecommunications industry. These location-specific investments are to be regarded as sunken costs. In these cases, there is a risk that the corresponding authority, upon completion of the location-specific investment, adversely changes the framework for the company in the form of subsequent tax increases or other regulatory interventions. This is a so-called **hold-up problem.** The company that anticipates such behaviour on the part of the authority will therefore either not locate or make lower, location-specific investments compared to the efficient amount. Establishment aid can thus be seen as an instrument to protect specific investments against subsequent deterioration and exploitation by the respective authority. This way, it can contribute to efficient location-specific investments.

However, there may be a hold-up problem on the part of the beneficiary company. For example, this could be the case if it built up a growing threat potential to migrate from the region and thereby reduced the number of jobs in the region significantly. It depends primarily on the specificity/irreversibility of the investments and which of the two sides has the greater threat potential. Migration threats by a company that invested heavily in location-specific facilities (e.g., infrastructure) have only very limited credibility.

Furthermore, the question arises why the allocation of establishment aid, which is only one of a variety of possible parameters in spatial competition, should be subject to **oversight by the European Commission**. Spatial competition is only transferred by aid supervision of the EU onto other parameters of the economic and industrial policy, such as the expansion of physical infrastructure, free or subsidized training of manpower, building regulations, etc..

[114] See, for example, Hotelling (1929) and d'Aspremont/Gabszewicz/Thisse (1979). In this context, it is referred to the principle of minimum and maximum differentiation; i.e., free choice of location will cause the companies to set up either too close to one another or too far apart.
[115] For more on the importance of aid for location competitions, see Haucap/Hartwich (2006), 114 ff.

This extreme form of competition between systems--where (establishment) aid is a permitted parameter of spatial competition and not subject to upstream control--would practically only be fully operational if aid were also completely financed by the Member State or region that granted the aid (fiscal equivalence).[116] Furthermore, a region with financial difficulties is not permitted to receive compensation by another authority; i.e., the budget restrictions of the region must be "hard". Otherwise, there is the danger that the costs associated with the establishment of a company would be passed onto other authorities, and a region could grant too much aid, so that companies make inefficient location decisions in response to excessive establishment aid.

The principle of fiscal equivalence is almost impossible to realize. It is not clear at what level it should be realized in Germany, for example--in a municipal, in parts of a state, a whole state, in multiple states (e.g., in Northern Germany) or across the federal territory. If the individual state were to be the definitive reference unit, the problem would not be solved, because while cross-subsidization within a state would be unproblematic, cross-subsidization between states would be forbidden. In spatial competition, each state would then have to set the tax burden and decide on allocations to investors.[117] Such free aid competition of the federal states would not be compatible with the financial constitution of the Basic Law, as far as the states are entitled to the taxes, which are common taxes under Article 106 of the Basic Law. This applies to income and the corporate and VAT tax, the largest share of tax revenues. The federal government still has the (competing) legislative power with the result of uniform taxation, which actually does not affect the taxpayer's state. The mandatory state fiscal equalization under Article 107, paragraph 2 of the Basic Law also stands in the way of realizing fiscal equivalence. The policy of redistribution between regions is also mandatory in the EU. The most disadvantaged areas are supported according to Article 158 ff., EC Treaty in the interest of economic and social cohesion of the Union. This involves distributive politically motivated cash flows of a substantial magnitude (often in the form of EU subsidies).

There is also the **risk of incorrect predictions** in allocating establishment aid, i.e., the expected positive effects differ from the actual. While an underestimation of the positive effects is rather unproblematic, the absence or an unexpectedly small amount of expected positive effects could prove to be problematic, although this forecast risk could theoretically be reduced by a repayment of the granted aid if the expected positive effects for the region remain absent. The realization and implementation of such a repayment obligation, however, is only possible if it includes guarantees that lie in the aid beneficiary's area of responsibility, such as the commitment to provide a certain number of jobs. However, it cannot include the actual external effects that cause respective relocating in the region as a whole, because they are difficult to quantify and cannot be exactly predicted. Inefficiently high establishment aid may also result from the fact that policymakers act selfishly concerning the allocation of aid (e.g., with regard to the upcoming election) and consequently take short-term populist measures and support special interests.

Since the principle of fiscal equivalence within the given legal framework cannot be sufficiently realized, and the allocation of aid coupled with forecast problems can trigger cross-border distortions of competition on product and service markets, it currently does not appear to make sense from an economic point of view to give up control of establishment aid. It also needs to be borne in mind that the ban on state aid of Article 87, paragraph 1, EC Treaty is not absolute. The allocation of establishment aid is not denied from the outset to the Member States in the existing system. However, it could be advantageous and efficiency

[116] Monopolies Commission (2008), marginal ref. 942.
[117] Ibid.

enhancing from an economic point of view to better take into account the positive effects that cause a spatial competition for relocating companies.

Distortions of competition between Member States may not only be caused by selectively acting aid such as establishment aid but also by **general economic policy measures**. Therefore, the proposal to eliminate the distortions of competition of the EU through a complete harmonization of economic rules--in particular national regulations (labour market policy, environmental and product standards, company law), corporate taxes and government expenditure--can be found in literature.[118] A ban on state aid on a European level is not sufficient; the extensive enforcement of a "level playing field" should much rather be sought. This could contribute to the elimination of artificial distortions of competition caused by nation-states and allow companies to best use the cost advantages of production and maximize welfare in the European single market.[119]

An approximation of laws can in some areas be a useful tool, for instance, if this significantly reduces transaction costs regarding cross border facts. A comprehensive harmonization within the EU is problematic, because this would completely eliminate competition among systems between the Member States and the regions in the EU, and the different habits and preferences of the Member States in relation to the shaping of the economic framework would not be taken into account. As part of the competition among systems, institutions are competing for performance and high value-added mobile factors such as business, financial capital and mobile labour force.[120] The economic parameters available to the states and regions to attract mobile factors and prevent their migration are comprised of public services such as infrastructure, wages, training and technology as well as product regulation on the one hand and taxes and duties for financing on the other hand. The competition among systems can help to reveal the actual preferences of consumers--meaning the decision-makers of mobile factors--with regard to the tax-service package provided by the state.

In addition, the competition among systems, regardless of the mobility of factors, opens up the possibility to test and compare different approaches to socio-political problems through a completion of ideas. The competition among systems is a kind of discovery process and offers incentives for political actors to develop attractive institutional rules and reduce unnecessary regulations and bureaucratic hurdles.[121] Competition by other authorities can lead to healthy pressures for reform. A complete harmonization of the economic framework within the EU, as it is occasionally demanded, is therefore to be opposed from an economic point of view, as it would eliminate the inter-jurisdictional competition.

6. Individual Case Analyses vs. Per se Rules

From an economic perspective, the question ofwhether an individual case analysis or a per se regulation should be carried out with regard to the allocation of aid is closely connected to the question concerning an effects-based approach in state-aid control in comparison to a form-based approach. As stated in Section IV.1.d, different types of aid can cause the same effect. The same aid, however, depending on the specific situation, can cause different effects. Due to this fact, an approach that is based on a concrete individual case would be preferred from an economic perspective. However, it should be noted that an investigation of each aid in terms of its effects would involve huge costs. A complete waiver of per se rules and presumption facts in European state-aid control is therefore not reasonable. An

[118] See Ehlermann (1995).
[119] See Monopolies Commission (2008), marginal ref. 937.
[120] See Monopolies Commission (1998), 16 ff.
[121] For more on the competition between systems as a discovery process, see Monopolies Commission (1998), 18 f.

appropriate **combination between per se rules and individual case analyses** seems preferable, whereas all aid is to be exempt from the individual case analysis where significant negative effects are not to be expected.

This combination has been achieved by the SAAP and the associated implementation measures in a useful way, so that a tripartite structure of state-aid control is the result. For a low amount of aid, the amended de minimis regulation applies, which contains clear and easy-to-use rules. According to the de minimis regulation, aid below 200,000 Euro is exempted within three years.[122] In addition to the de minimis regulation, a series of block exemption regulations (BER) (for example, a general BER and a BER for regional aid) have been adopted, which exempt certain groups of aid.[123] It should be noted from an economic point of view that some of the exempted aid (e.g., for female entrepreneurs) is less about improving efficiency and more about normative objectives that do not necessarily increase efficiency by eliminating market failure.

If a measure meets neither the requirements of the de minimis regulation nor one of the block exemption regulations, it is subject to notification of Article 88, paragraph 3, sentence 1 of the EC Treaty and is examined by the EU Commission. Here, **two different types of procedures** are planned: first, a faster procedure, where legal presumptions are also used, and an in-depth investigation of problematic cases and major projects in which a detailed economic analysis including the above-mentioned balancing test is carried out. The latter usually has to do with a high amount of aid, which cannot be subsumed under the usual categories covered in the BER. On the one hand, this kind of aid especially has the potential to correct significant market failures, but on the other hand, because of its sheer amount, it has the risk of significant distortions of competition so that a detailed economic analysis is necessary. As the first cases of use of the new RDI-framework indicate, this involves an investigation which is considerably more complex and elaborate than the ones previously carried out on the compatibility level.

As pointed out in Sections IV.2 and IV.3, the EU Commission applies the "more economic approach" only to the justification level (Article 87, paragraph 3, EC Treaty) so far, but not to the fact level (Article 87, paragraph 1, EC Treaty). Therefore, not the EU Commission, but the respective Member State carries the burden of proof. When a thorough test procedure is performed, the Member States on which the burden of proof lies--and the beneficiary companies in the background--must exercise a considerable effort to convince the EU Commission of the compatibility of the aid and meet many information requirements. This is one of the main differences with regard to antitrust law, where the "more economic approach" led to an intensification of the EU Commission's obligation to provide evidence.

V. Specific Implementation of the SAAP - Examples

Following the implementation of the SAAP, the European Commission has adopted a series of block exemption regulations, guidelines and notifications in recent years. The **block exemption regulations** (BER) represent directly applicable laws and their proper use, which can, for example, at the instigation of a competitor of the beneficiary, be reviewed by the national courts. Here, the general block exemption regulation of 2008 especially needs to be mentioned, which consolidates and simplifies the previous BERs with a single general BER and adds other areas to it.[124] In addition, block exemptions for regional aid have to be named

[122] However, it has to be pointed out that the de minimis regulation only relates to transparent aid. See Section V.1.
[123] For more on the general BER, see Section V.2, and on BER for regional aid, see Section V.4.
[124] European Commission (2008a).

and for aid that does not exceed a certain limit (de minimis).[125] These BERs definitely contribute to achieving the objective of simplifying the allocation procedure,[126] as Member States are no longer required to notify the Commission about aid falling under these regulations and meeting the requirements set therein and no longer have to wait for the approval by the Commission before granting aid. They can rather implement their aid measures immediately.

In addition to the block exemption regulations, the Commission adopted a set of **guidelines** regarding, for example, regional aid, the allocation of venture capital and environmental protection. Furthermore, the Commission submitted several other notifications and guidelines, for example, about services of general interest or research, development and innovation.[127] Moreover, the Directorate General for Competition carried out an internal reorganization, and the members of the previous aid department were integrated into the respective departments responsible for various sectors.

Overall, it is evident that the Commission has in recent years taken on and largely carried out the reforms proposed in the SAAP. The new block exemption regulations, notifications and community framework are generally appropriate for simplifying the procurement process, making it more transparent and increasing the predictability of aid decisions. The following is a discussion regarding four measures, which serve as examples of the reform of aid rules that the Commission has adopted: The extension of the de minimis regulation, the general block exemption regulation, the block exemption regulation for regional aid and the community framework for research, development and innovation.

1. Extension of the De Minimis Regulation

The new de minimis regulation doubled the existing limit for aid from the amount of 100,000 Euros in three years, i.e., 200,000 Euros within three years that are now subject to the de minimis regulation. Collateral of up to 1.5 million Euros is approved. The regulation only applies to "transparent" aid, i.e., aid whose gross substitution equivalent can exactly be calculated and no risk assessment has to be made. Here, the gross substitution equivalent is the cash value of financial support without regard to any taxes on funds. That way, grants, interest subsidies and limited tax exemptions satisfy this condition, but capital injections by the public sector do not. Consequently, municipal projects that are implemented in a public-private partnership, for example, are not subject to the de minimis regulation and have to be notified according to Article 88, paragraph 3, sentence 1 of the EC Treaty, so that high transaction costs generally arise. The limitation of the de minimis regulation on transparent aid leads to greater legal certainty, as the rules of the regulation are clear and easy to handle. On top of that, the regulation realizes significant cost savings on the part of the Commission, because a large number of cases can be processed without significant administrative effort.

However, from an economic point of view, a number of **objections to the de minimis regulation** have been raised. The regulation implicitly assumes that a small amount of aid generally only causes small distortions of competition. This does not have to be the case, as in small markets with few companies, for example. Here, aid that falls under the de minimis regulation might already lead to a distortion of competition. Although the aid might only have a small impact in each individual case, granting a lot of the same kind of aid can have significant effects.[128] A similar argument can be made in connection to the effect on

[125] European Commission (2006a, 2006b).
[126] However, whether the general block exemption regulation increases the transparency of the process is questionable, because the Commission already had to publish several explanatory documents to the exemption regulation: a summary of the 45-page document as well as a special summary for the citizens of the EU European Commission (2008b, 2008c).
[127] European Commission (2006c, 2005b).
[128] See Nitsche/Heidhues (2005), 113 ff.

interstate commerce. However, these effects have not occurred or had such a limited effect in the past that the benefits caused by the simplification of procedures, transparency and the savings in administrative costs dominated significantly.

From an economic perspective, it is useful to **exempt small amounts of aid.** Nevertheless, it should be noted that potential for improvement still exists. It is questionable whether a flat-rate equally valid for all sectors and industries leads to desirable results. Thus, in this scheme, the size of the market, the position of the beneficiary and the competitive situation on the market is not taken into account. If aid is primarily to be used to eliminate market failure, then in some markets, the amounts provided by the de minimis regulation can be sufficient. In other markets or industries, this would require amounts higher than 200,000 Euros, and the amounts corresponding to the de minimis regulation would be ineffective. In small markets, aid of a limited amount could in turn also develop distorting effects.

From an economic point of view, it would therefore be useful not to include a flat-rate of equal amount for all in the de minimis regulation, but to make the amounts dependant on the size of the market (measured in terms of total sales), the market position of the beneficiary (measured in terms of market share) as well as aid intensity (the share of aid with regard to the total expenditures of a project). This could be guaranteed by appropriately **staggered flat-rates**.[129] Therefore, a smaller flat-rate amount could be intended for a company with a large market share on a smaller market than one with a smaller market share and/or a larger market. Intervention discretion could be granted to the Commission for aid above a certain threshold (e.g., 1 million). Below that, the (refutable) presumption could be valid that aid does not cause noticeable distortion of competition, whereas this presumption should be valid at low intensity (e.g., less than 30 percent) regarding activity-based aid granted in a transparent process.[130] Regularly taking into account the specific competitive situation for the de minimis regulation would be desirable on the one hand, but on the other hand, it would mean a greater effort on the part of legal practitioners and authorities and lead to legal uncertainty. Furthermore, one could consider setting the criterion of transparency a little less stringent, so that public-private partnerships can be supported.

2. General Block Exemption Regulation

The general block exemption regulation adopted in 2008 combines the five pre-existing block exemption regulations for aid to small and medium-sized enterprises (SME), research and development aid for SME, employment, training and regional aid. Furthermore, a number of additional aid groups such as environmental protection, venture capital as well as research and development aid for large companies were included in the general BER.

Overall, this very complex block exemption regulation includes nine different aid groups with **26 different categories of aid** that do not require a special examination. For example, under certain general conditions, aid for disabled or disadvantaged workers, for women as entrepreneurs or aid for the loan of highly qualified personnel are exempt from a detailed examination. The general BER is, as the de minimis regulation, also only valid for transparent aid.

The aid categories that are exempt from a separate test are, on the one hand, those which are appropriate, in principle, to correct market failure, such as environmental protection aid (externalities), venture capital aid and other aid to SME (information problems) and training aid (hold-up problem). On the other hand, these groups concern social and normative objectives (female entrepreneurs, regional aid and aid for disabled or disadvantaged workers).

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[129] See also Monopolies Commission (2008), marginal ref. 1060.
[130] Ibid. marginal ref. 1061.

For the various aid groups, the regulation lists the **thresholds of the gross grant equivalent** for the notification of a series of individual aid between 2 million (e.g., for small and medium-sized enterprises to participate in trade fairs or for the use of advisory services) and 20 million (projects mainly for basic research).

In accordance with the balancing test, aid must have an incentive effect, i.e., it must be appropriate for altering the behaviour of the company. Such an incentive effect would not have been given if the company had carried out the project without any aid. For small and medium-sized enterprises, it is assumed that such an incentive effect exists when an application for aid is submitted before the project was launched. For large companies, however, there are higher standards. The Member State must examine (Article 8, paragraph 3, general BER), whether the recipient has analyzed the feasibility of the project ex ante based on quantitative and qualitative indicators for each of the cases with and without aid. An incentive effect for a large company is to be assumed if the size or scope of the project or the total amount of money spent increases significantly or the completion of the project is accelerated significantly.

The general BER lays down the **maximum permissible aid intensities and the costs eligible for aid** for the individual categories of aid. The amount of the permissible aid intensity (i.e., the share of the (approved) total cost a Member State is allowed to bear in the project) is an indication of how high the risk is of distorting competition with a certain type of aid, on the one hand, and its intended benefit for the public, on the other hand, as estimated by the Commission. The lower the permissible aid intensity, the greater the feared distortions of competition. By determining the aid intensity, an indirect--albeit flat and rough--balancing of the positive and negative consequences of aid is conducted. For example, the permissible aid intensity for research and development projects in basic research is 100 percent, yet in industrial research it is only 50 percent. This difference emphasizes that in basic research it is assumed that the market does not provide this research to an efficient extent. This is mainly because no immediate monetary returns can usually be realized, unlike in industrial research. Regarding general training measures, where transferable skills are gained, an aid intensity of 65 percent is permissible. For specific training measures, however, which are primarily for the benefit of enterprises offering training, an aid intensity of only 35 percent is allowed. If an aid measure meets the conditions specified in the regulation and does not surpass the respective group-specific intensity limit, its compatibility with the common market is to be assumed.

From an economic point of view, it is positive that the previous block exemption regulations regarding aid have been combined in a single regulation in order to **improve the transparency and legal certainty**. Block exemption regulations can make a major contribution to the simplification of procedures. They can only serve this purpose if the exemption conditions are formulated clearly and its implementation is straightforward. Positive evidence of the incentive effect of aid to large companies provided in the draft regulation, however, presupposes a costly and time-consuming process.

Large companies regularly set up a "business plan" prior to applying for aid in which they have already conducted an in-depth (counterfactual) analysis. However, closer scrutiny of the analysis by the authorities of the Member State leads to a significant bureaucratic extra expenditure and seems very inefficient, since the control is entrusted to the aid-granting agency. On the one hand, it is questionable from an economic point of view whether the simplification of the procedure by the block exemption regulation is not contradicted by the additional bureaucratic expenditure of the examination of an incentive effect of aid on large companies. On the other hand, it remains to be seen whether the additional benefit of examining the incentive effect and avoiding the allocation of aid without incentive effects is

larger than the additional costs of the examination. This is especially true, because the companies have an information advantage over the authorities.

3. Regional Aid

As early as December 2005, the EU Commission adopted new guidelines for regional aid, which are valid from 2007 to 2013. The guidelines include the rules for the allocation of state aid; that is, the guidelines define which regions qualify for regional aid and what the maximum amount of aid should be. According to Commissioner Neelie Kroes responsible for competition, these new guidelines also follow "the orientation of the State Aid Action Plan towards less and better targeted aid."[131]

To assess the new guidelines for regional aid, it is necessary to identify the objectives of regional aid. What is regional aid all about? In Article 87, paragraph 3, lit. a and c, EC Treaty, government transfers are excluded from the ban on state aid, which are supposed to support those regions "in which the standard of living is unusually low or serious underemployment can be witnessed" (Article 87, paragraph 3, lit. a, EC Treaty). The economic sectors or regions are supposed to be supported as long as such support does not affect trading conditions to such an extent that it runs counter to the common interest (Art. 87, paragraph 3, lit. c, EC Treaty).

The first part of permitted regional state aid refers to areas that are **disadvantaged in economic terms** compared to the EU average. Therefore, in reviewing whether aid according to Article 87, paragraph 3, lit. a, EC Treaty can be compatible with the objectives of the EU, the EU Commission uses criteria such as the **per capita gross domestic product and/or unemployment rates** compared to the average of the EU Member States for compatibility. The second part of permitted regional state aid, on the other hand, focuses on regions that are considered to be disadvantaged in comparison to the average of each Member State. Thus, it is for the Member States themselves to submit petitions to the Commission in order to obtain a permit for a planned state aid allocation.

According to the guidelines for state aid with a regional objective 2007-2013, it is the aim of regional aid "to support the development of especially disadvantaged regions by supporting investments and jobs."[132] Pursuant to the guidelines, the focus is particularly on "supporting the establishment of new companies in disadvantaged areas" with the objective of broadening and diversifying the local economic activity. In addition, national regional aid should, in accordance to the guidelines, provide remedies for problems of disadvantaged areas and thus promote "economic, social and territorial cohesion of the Member States and the European Union as a whole".

The new guidelines for aid with a regional objective apply to all industries except fishing, agriculture (except for the food processing industry), coal and steel, transport, shipbuilding and the synthetic fibres industry. For these sectors, there are special regulations that go beyond the general guidelines for regional aid. Besides, the new guidelines are a multi-sectoral aid scheme which, in contrast to earlier schemes, now also applies to the automotive and food-processing industry.

In concrete terms, the guidelines include new criteria for the definition of development areas. According to this, based on the conclusions of various European Councils, the total amount of aid is to be reduced. Based on the valid guidelines of 2006, 52.2 percent of the EU-25 population lived in development areas, namely 34.2 percent of the EU-25 population in regions considered disadvantaged compared to the average of the EU-25, which can be supported in accordance to Article 87, paragraph 3, lit. a, EC Treaty and qualify for the highest amounts of support (40-50 percent). An additional 18 percent is eligible for support

[131] European Commission (2005).
[132] See European Commission (2006), marginal no. 3.

in accordance with Article 87, paragraph 3, lit. c, EC Treaty, who are living in less-disadvantaged areas where the lower aid rates of 10-20 percent are intended to be applied. Pursuant to the new guidelines, the population eligible for regional aid only amounts to 43.1 percent of the EU-25 total population.[133]

Regions with a per capita GDP of less than 75 percent of the EU-25 average (i.e., disadvantaged regions) qualify for maximum aid rates in accordance with Article 87, paragraph 3, lit. a, EC Treaty, as well as for operating aid of very limited scope, which is supposed to reduce the variable costs of companies. Twenty-seven point seven percent of the EU-25 population live in these regions. Given the large wealth disparities among these regions--between 32.2 percent and 74.9 percent of the EU average--they are divided according to their level of GDP relative to the EU-25 average in three categories.

In addition, areas in the outermost regions are subject to Article 87, paragraph 3, lit. a, EC Treaty, regardless of their relative GDP. Furthermore, "regions affected by the statistical effect" whose GDP is less than 75 percent of the EU-15 GDP but more than 75 percent of the EU-25 GDP receive a transitional status and qualify for the lowest rates of aid in accordance with Article 87, paragraph 3, lit. a, EC Treaty. However, large companies can claim an aid rate of 30 percent until December 31, 2010. The situation of these regions will be reviewed in 2011. If their situation deteriorates, they continue to qualify for the assistance referred to in Article 87, paragraph 3, lit. a, EC Treaty. Otherwise, they fall under Article 87, paragraph 3, letter c with an aid rate of 20 percent beginning on January 1, 2011.[134]

Regions with a per capita GDP of over 75 percent of the EU-25 average can support the Member States under Article 87, paragraph 3, lit. c, EC Treaty with less regional-aid rates (between 10 and 15 percent) if they were identified as development areas according to a national regional development policy and meet the maximum population limit and certain minimum requirements in order to prevent abuse.

The new guidelines, compared to the existing rules until the end of 2006, include a number of other changes serving clarification and simplification. In particular, the rules for large investment projects (over 50 million Euros) have been included in the guidelines on regional aid for the first time. All in all, it is evident that regional aid especially aims at achieving the objective of a regional balance and is therefore primarily motivated by distribution policy. In other words, regional aid is primarily concerned with so-called non-economic objectives (i.e., a regional balance) and ultimately with fairness and distributive political objectives. Which specific objective this *control* of regional aid intends to pursue is not entirely clear. On one side, serious distortions of competition and trade are attempted to be prevented. On the other side, the European Commission not only stresses that concentration should be on "less distortive, more targeted aid", but also that state aid control should help to ensure that "public funds are used effectively for the benefit of EU citizens".[135] Furthermore, the control of regional aid is justified with the argument that a **subsidy race** is avoided, which would lead to **inefficient use of public funds**.[136] Consequently, it is at most indirectly about the restrictions of competition on relevant markets; in the centre of this argument is the efficiency of public funds.

Thus, if the objective is indeed less about avoiding distortions of competition and primarily about preventing the waste of public funds and ensuring its efficient use by controlling establishment aid, then the unsatisfactory result is that, according to the

[133] This includes a safety net, according to which no more than 50 percent of the population of each Member State is allowed to fall out of support.
[134] Transitional arrangements are intended until 2010 for the areas that suffer the biggest reductions in aid rates, and until 2008, for areas that lose their entitlement to support according to the new guidelines.
[135] See European Commission (2007), 129.
[136] See Haucap (2008).

guidelines, especially the poorest regions are still allowed to waste their resources and use them inefficiently. In addition, such an objective raises the question of the legitimacy of *European* state-aid control. This is exactly what has been noted by the Federal Government in its statement on the State Aid Action Plan,[137] and Möschel also points out that the European Union possesses no competence for general economic or financial policies of the Member States.[138] Regardless of that, a transfer of control competencies or a veto right on a supranational level might be economically reasonable in order to prevent inefficient subsidy races and a strategically motivated allocation of subsidies. In this case, state-aid control would be limited to those areas that actually play a role in ***strategic*** **subsidies.** This may actually only be the case for tradable products that should have a corresponding *significant* single market effect.

Overall, it is evident that the **"more economic approach" concerning regional aid looks completely different** than other horizontal aid. While the possibility to cure market failure plays a central role in justifying aid (in terms of efficiency defence) in the SAAP and reforms of other horizontal aid, this is not the case with regional aid. This is because regional aid is primarily used to achieve distributive objectives; market failure in the narrower sense does not matter. In other words, other horizontal aid is about "less distortive, more targeted aid"; regional aid is only concerned with "less aid". In the view of liberal economists, this is also very desirable, but the urgent issue regarding the efficient allocation of competences between the EU and Member States remains to be discussed.[139]

4. Community Framework Research, Development and Innovation

The community framework for research, development and innovation (RDI) of November 22, 2006 applies to aid for research, development and innovation projects that is not already exempt by the de minimis regulation or exempt from the notification duty by a block exemption regulation in accordance with Article 88, Section 3, sentence 1, EC Treaty. The objective of RDI aid is **economic efficiency**. With reference to the SAAP and the balancing test, different research, development and innovation-related market failure facts are cited that can be corrected by appropriate aid. These include positive externalities such as knowledge spillovers, public goods problems as they can occur in basic research, and information and coordination problems.

The community framework RDI defines various categories of aid, including aid for research and development projects, where it is distinguished among different research categories such as basic research; industrial and experimental research; aid for technical feasibility studies; aid for young, innovative companies or for innovation clusters. For these particular categories, permissible aid intensities are given, which may all be as high as the supported activity is remote from the market. Thus, the maximum permissible aid intensity is 100 percent for basic research, 50 percent for industrial research and 25 percent for experimental research. The underlying assumption is that distortions of competition on product markets are more likely, the greater the investment for the development of new or modified products or processes.

Depending on the type and amount of aid, two different test methods are intended within the RDI community framework: A simplified and fast-test procedure, which is also based on legal presumptions, and a more complex procedure that is based on the three-stage balancing test. The simplified procedure is used when aid does not exceed certain limits, which vary depending on the type of aid and supported activity. If those limits are exceeded, then there will be a detailed examination of the aid measure, while specific guidelines for

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[137] See ibid.
[138] See Möschel (2008).
[139] See Haucap (2008) and Möschel (2008).

the review of the incentive effect of aid are included in the RDI community framework. Thus, the incentive effect of aid must in some cases be concretely demonstrated by the notifying Member States, particularly regarding project aid for large enterprises, project aid for SME over 7.5 million Euros, aid for process and organizational innovation in the service sector and aid for innovation clusters. In appropriate cases, Member States must--regardless of whether the limit has also been exceeded for the concrete activity--submit an ex-ante assessment of the increased RDI activity to the EU Commission based on a comparison between the situation without aid and the situation after aid has been granted. Possible indicators for the incentive effect are hereby an increase in project scope, project reach, an accelerated process and an increase in the total expenditures on RDI.

As long as the respective aid measure meets the criteria of chapter 5, does not exceed the threshold laid down for the supported activity in chapter 7, and demonstrates the incentive effect in accordance with the procedures described in chapter 6, no further testing will be conducted. Rather, it is assumed that the three-stage balancing test would lead to a positive result. Since the EU Commission focuses on thresholds rather than on market shares, this presumption fact comes into effect regardless of the size of the market and the market position of the beneficiary.

If the limit for the respective activity is exceeded, the aid measure becomes subject to the three-stage balancing test. In this case, the Member State must demonstrate in step one that the aid measure serves a legitimate common interest. Only the intended elimination of market failure qualifies as justification for an aid measure. These include knowledge spillovers, imperfect and asymmetric information as well as lack of coordination and networking. Social or distributional objectives are not considered in the RDI framework. The respective Member State must hereby demonstrate the specific market failure in the particular case.

If this condition is met, stage two of the balancing test examines whether **aid** is **proportionate and appropriate** to correct market failure and whether an **incentive effect** exists. A measure is deemed to be an appropriate instrument if the respective Member State has considered other measures within the framework of an impact assessment and (transparently) comes to the conclusion that the granting of selectively acting aid causes benefits. In this context, the EU Commission grants the Member States leeway for assessment. In the proportionality test, the Member State must specifically outline to what degree an open selection process occurred and whether the aid does not exceed the necessary minimum. For the demonstration of an incentive effect on the other hand, positive evidence, which requires a complex and expensive analysis, is necessary. The determination of the incentive effect is “... the most important component in the analysis of RDI state aid”.[140]

If the aid measure passes the first two stages of the test, stage three involves the actual balancing between the positive effects of the elimination or reduction of market failure and possible aid-induced distortions of competition and trade. Prerequisite for a sound economic analysis of possible distortive effects of RDI aid is the correct definition of the relevant product and geographic market, which is rather problematic especially in dynamic industries, because the contours of the market do not stand out clearly in each case due to technical developments.[141]

In principle, RDI aid can have **several types of distortive effects on competition** that are divided into static and dynamic effects. Thus, RDI aid can establish or strengthen the **market power of one or several companies**, where the level of entry barriers, existing

[140] European Commission (2006), No. 7.3.3.
[141] For more on the problem of defining the relevant market in dynamic industries, see Evans/Schmalensee (2001) and Teece/Coleman (1998).

buying power as well as the selection process are used as indicators in this respect. It is likely that no problems regarding market power will occur when market shares of the beneficiaries are less than 25 percent and the HHI is below 2,000. Another negative effect of RDI aid could be the **preservation of inefficient market structures.** Such a case could occur if significant excess capacities exist on the market, the market is declining or it is a particularly sensitive sector.

The primary negative effect that RDI aid can bring about is a **reduction of dynamic innovation incentives** for competitors by increasing the presence of the beneficiary company on product markets, i.e., a crowding out effect could occur. On the opposite side, there are possible knowledge spillovers from the beneficiary company to competitors, which may in turn have positive effects on the dynamic development of the market. The amount of aid, the type of aid, its proximity to the market and the allocation procedure can be used as indicators for this aid effect. Economic indicators are potential barriers to exit, competitive incentives for a future market, the degree of product differentiation and the intensity of competition.

The typification of possible negative distortions of competition and the transparent description of assessment criteria in the RDI community framework are to be welcomed from an economic perspective, since this significantly increases the transparency and economic basis of aid decisions in the RDI sector compared to the previous practice. As discussed in Section IV.3, it is also critical to note that the competitive situation is not analyzed on the fact level but on the justification level in the context of the third stage of the balancing test. Rather, the existence of a cross-border distortion of competition should have been identified economically, well-founded even prior to the fact level, before the suitability and necessity of an aid measure is examined as part of the balancing test in relation to the economic or distributive political objective.

The central position that is given to the **incentive effect** and therefore to possible dynamic distortions of competition, is **justified from an economic point of view**, as research, innovation and development investments primarily influence the dynamic development of the economy, wherein the dynamic incentive effects are of particular importance. In many cases, positive externalities occur due to knowledge spillovers in the research and development sector, so that without proper support, research and innovation is too low compared to the social optimum. However, if aid did not cause any change in behaviour in relation to the funded project, then the beneficiary would not make different price or quantity decisions without aid on the considered markets, i.e., the level of research and development would remain on the inefficiently low level. Therefore, the **emphasis on the incentive effect in the context of RDI aid is justified**. If an incentive effect does not occur (i.e., the behaviour compared to a situation without aid does not change), then market failure remains, and the beneficiary can possibly use the granted amounts on neighbouring markets in order to gain a competitive advantage there. It is disputed, however, whether the absence of changes in behaviour is a particularly appropriate indicator for a distortion of competition.[142]

[142] See Monopolies Commission (2008).

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