7 State aid to business

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A group of blind men encountered an elephant, an animal hitherto unknown to them, and sought to understand what manner of creature it was. One touched its tusk, and found it like a spear. One touched its side, and found it like a wall. One touched its trunk, and found it like a snake. One touched a leg, and found it like a tree. One touched its ear, and found it like a fan. The last touched its tail, and found it like a rope. They went on their way, but fell into dispute about the nature of the elephant, each insisting upon the aspect with which he had come in contact, none comprehending the whole. (Indian parable)

1 Introduction

The views of economists and policy makers on state aid to business have much in common with the way the blind men of fable viewed the elephant. State aid is a subject of at least three primarily academic literatures and at least two primarily policy-oriented literatures. The three academic literatures are those on strategic trade policy (section 2), on tax competition (section 3), and on rent seeking (section 4). The two policy literatures are a predominantly legal literature on the treatment of state action under US anti-trust policy (section 5) and a corresponding literature on EU state aid (section 6), which involves both the treatment of state aid under EU competition policy and the impact of state aid on regional convergence.1 Each of these literatures has implications for the others, but these implications are drawn, if at all, only on the margins. Contributions to each literature occasionally acknowledge the existence of the others, but each literature tends to focus mainly on one specific aspect of state aid; none sees the whole elephant.

2 Strategic trade policy

The New International Economics (which is no longer new) emphasizes product differentiation and economies of scale as determinants of imports and exports. Competition in markets where products are differentiated and the efficient scale of production is large in relation to market size will of necessity be imperfect. The strategic trade policy literature,2 originating with Brander and Spencer (1985), takes off from the observation that, if competition is imperfect, government action might under some circumstances alter market equilibrium to the benefit of home-country firms.

This initial analysis of strategic trade policy considers an international quantity-setting duopoly, with each of two firms based in a different country, selling to consumers located in a third country. The approach is partial equilibrium, eliminates any welfare impact on home-country consumers by assumption, and assumes the two firms behave non-cooperatively (that is, do not collude).3 The case for strategic trade subsidies that comes out of even the seminal model is not strong: by using strategic subsidies, the terms of trade move against the subsidizing country, but its welfare can improve because, with imperfect competition, price exceeds the marginal cost of exports. However, if the other country adopts a similar policy, both are worse off (Brander and Spencer, 1985, pp.95–96).4
The literature that extends the seminal model does not improve the view. If the product is differentiated and firms set prices instead of quantities, the welfare-improving policy for a single strategically motivated country is to tax its home firm, not to subsidize it.

Whether firms set prices or quantities, the assumption that domestic consumers do not participate in the target sector is, in general, false. Consideration of the welfare impact of strategic trade policy on domestic consumers renders the overall welfare effects ambiguous even if only the direct effects of export subsidies on the domestic market for the subsidized good are taken into account. There may be indirect effects of export subsidies on domestic consumer welfare. Unless an export-oriented industry uses only inputs that are in excess supply, policy that promotes exports will cause an exporting sector to bid resources away from other segments of the economy. Domestic consumers of those other sectors will suffer indirect welfare losses.

In practice, the question that a government contemplating implementation of a strategic trade policy will face will not be whether it should or should not promote exports of a particular industry, but which among several exporting industries, if any, it should promote. There is no particular reason to expect that government will be able to pick winners.

Not only does bilateral trade promotion trap countries in a welfare-reducing prisoners’ dilemma outcome, but the WTO Agreement on Subsidies and Countervailing Measures provides for appeals to the WTO that may (a) result in the declaration that unilateral subsidies are illegal and (b) permit countervailing measures unless and until they are removed. This is another reason to think that the implications of the model that by assumption limits subsidies to one country are not likely to be robust.

Goldstein and McGuire (2004) document the long history of a Brazil–Canada subsidy battle in support of their respective domestic regional jet producers. The conflict includes state ownership, privatization, production and export subsidies, public support for military technology that generates applications to civil aircraft, and WTO condemnations all around. Neither theory nor case study evidence make a strong argument for the position that strategic trade policy is likely to be welfare-improving.

3 Tax competition

Theory

Oates and Schwab (1991, p.127) succinctly summarize the polar positions in the literature on tax competition:

Proponents would have us believe that competition offers both protection from self-seeking bureaucrats and assurances that public goods will be provided efficiently; opponents tell us that competition necessarily leads to inadequate local government budgets, regressive local taxes, and insufficient local taxes for the poor.

The Tiebout (1956) model is one of an economy with (among other assumptions) (a) fully-informed mobile consumers able to choose among a large number of communities, (b) communities that offer different packages of local public services, (c) public services that are not subject to external spillovers. The model has consumers ‘vote with their feet,’ moving to the community that offers their preferred bundle of public services and tax rate. Local jurisdictions adjust tax rates to minimize the average cost of providing public services to residents. In equilibrium, the bundles offered are suited to consumers’ preferences for public goods.
With Oates and Schwab (1988, 1991), in contrast to Tiebout (1956), it is capital rather than labour that is mobile. But the basic model has strong efficiency results (Oates and Schwab 1991, p.140):

- First, if communities compete against one another to attract new business investment and jobs, then local taxes are equivalent to user fees.
- Second, . . . localities in a competitive setting are unable to redistribute capital income through taxation because taxes are nothing more than payments for goods and services received. . . .
- Third, interjurisdictional competition fosters efficiency.

As Oates and Schwab acknowledge (1991, pp.134–8), the results of the basic model fail if the number of jurisdictions is small, if there are externalities across jurisdictions in the production of public goods, or if information about the benefit/tax policies of different jurisdictions is imperfect.

McGuire (1991) argues, in the US context, that the policy implications of the tax competition literature are different for competition among states and for competition among local jurisdictions. The assumption that tax rivalry is among many jurisdictions is much less likely to hold, even approximately, at the state than at the local level. Confidence in the realization of the efficiency of outcomes resulting from tax competition among states that is predicted by some models is correspondingly reduced.

Janeba (1998) obtains strong efficiency results in a model of tax competition and mobile capital, under the assumption that jurisdictions cannot discriminate in taxes across firms. He writes (1998, pp.150–51): ‘International agreements like GATT or the European Union often establish rules of nondiscrimination. Such agreements are mutually beneficial since deviation leads to a wasteful subsidy race which is worse than nondiscrimination’. But the mere fact that an agreement is mutually beneficial does not mean that it is a non-cooperative equilibrium. The history of state aid in the European Union is rife with examples of member state aid knowingly granted in violation of state aid rules (see section 6).

The relevance of the Tiebout ‘invisible foot’ model of tax competition seems dubious at best for the European Union, where, if only for reasons of culture and language, labour is much less mobile than in the United States. It is also fair to note that much state aid in the EU is driven by the sunkness of capital – capital immobility – in integrating markets and the reluctance of member state governments passively to accept that market integration implies a reduction in the equilibrium number of firms (Martin and Valbonesi, 2005).

Sinn’s conclusion about the impact of tax competition in the EU is not an optimistic one (1990, p.501):

The losers of tax competition will be those who cannot escape and those who benefit from a large government sector. The first group includes immobile workers and landowners. They are the natural victims of the Tiebout equilibrium, since they will serve as the lenders of last resort to Europe’s impoverished governments. The second group consists of the poor. The poor will lose because governments will no longer be able to maintain their current scales of redistribution.

The controversy over ‘delocalization’ that emerged following the May 2004 accession of ten new EU member states lends credibility to Sinn’s analysis. The delocalization controversy is part and parcel of the ongoing debates over fiscal harmonization and social
dumping. These debates do no more than translate the polar positions identified by Oates and Schwab (1991, p.127, quoted above) to the European context.

Glaeser's (2001) topic is location-based tax incentives, which, as he notes (p.1), 'can be seen as tax rates that are chosen on a firm-by-firm basis'. The analysis of location-based tax incentives thus concerns tax competition when tax discrimination is possible. Glaeser reviews five reasons why local governments might offer tax incentives (pp.2–8): to increase local producer or consumer surplus; to realize agglomeration economies; to compensate firms for expected future tax payments; to offer different tax rates to marginal and inframarginal firms; and in return for personal benefits corruptly paid to local officials.

Only the last motive, Glaeser concludes (p.10), gives reason to think that tax incentives will distort firms' location decisions. Discriminatory tax incentives may also lead to the kind of Prisoners' Dilemma equilibrium that is generally highlighted in the tax competition literature (p.11):\(^{12}\)

The mobility of firms certainly stops some localities from redistributing to the poor. However, the mobility of the rich also stems the ability of localities to redistribute. More to the point, I think that mobility generally means that local redistribution is almost always a bad idea. Tax incentives may certainly limit the ability to engage in local redistribution, but probably that local redistribution should never have gone on in the first place.

Glaeser (2001, p.10) makes an analogy between tax discrimination by a local government and price discrimination by a monopolist. The latter increases net social welfare by eliminating output restriction and the associated deadweight welfare loss. To the extent that tax discrimination balances out other distortions (for example, allows the realization of agglomeration economies) it too improves welfare.

But the traditional policy hostility toward price discrimination is not based on the impact of price discrimination on market performance as measured by net social welfare. Policy makers have objected to price discrimination on the ground that price discrimination by an upstream input supplier distorts competition between downstream input users.\(^{13}\) Tax discrimination, as opposed to non-discriminatory tax competition, may similarly distort competition between firms at the same horizontal level, some of which benefit from discriminatorily low tax rates while others do not.\(^{14}\)

**Evidence**

The empirical evidence on the effect of tax competition on business behaviour is abundant and its results are ambiguous.\(^{15}\) One problem in assessing this effect stems from the multiple forms of government intervention that contain implicit or explicit subsidy elements.\(^{16}\)

Huttin finds a limited impact of a temporary reduction in social employment taxes for firms in the French textile industry (1989, p.489):

it had very little effect on employment as a whole, and only some positive effects on investments. . . . The poor efficiency of aid on employment results mainly [from] the fact that a two-year cut in social charges represents a low reduction of the total unit labour cost for hiring an employee (on his average stay in the company). On the investment side, the application of the Plan operated through the liquidity constraints on managers' decisions, and the positive effect of reducing
it to increase investment. It appears mainly efficient for companies where the labour cost is a big share of total cost.

Phillips and Goss (1995) carry out a meta-analysis of estimates of tax rate sensitivities surveyed by Bartik (1992). Their estimates of the elasticity of local economic development with respect to the tax rate range from $-0.216$ to $-0.346$ for studies across states or metropolitan areas, and was much higher ($-1.25$) for studies of jurisdictions within the same metropolitan area. They describe their findings in these terms (1995, p.327): ‘The estimate is at the lower end of the range suggested by Bartik [1991] and generally confirms his view that taxes have a significant but modest impact on economic development.’

Greenstone and Moretti (2004) compare trends in property values in winning and also-ran countries that competed for the same ‘big ticket’ investment project. They find, (p.28) that ‘The results suggest that the successful attraction of a ‘Million Dollar’ plant is on average associated with an increase in property values. Under the assumptions [of the model], this increase in property values may be interpreted as an increase in welfare for the residents of the winner country.’ As they note, this finding does not address the welfare consequences of tax competition at the state or national level.

Empirical studies of tax policy in the USA thus find some evidence of a modest ability of lower taxes to shift investment, and some evidence that successful shifting of investment increases local property values. These results are quite consistent with a ‘beggar-my-neighbour’ interpretation of tax competition and selective incentives policies that reduce overall welfare.

Empirical studies of the investment behaviour by US firms in foreign markets give some support to the idea that such decisions are influenced by tax differences (among many other factors). Grubert and Mutti (1991, p.290), for example, find that ‘a reduction in the host country tax rate from 20% to 10% is projected to increase U.S. affiliates’ net plant and equipment in the country by 65%’. They note that this response may reflect either the shifting of investment from the USA or from a higher-tax rate foreign market to the lower-tax rate host country. One might expect similar behaviour within the USA, and such a conclusion is explicitly drawn by Hines (1999) who summarizes the results of studies of international business behaviour as indicating (p.319) ‘that investment location and tax avoidance activity are more responsive to tax rate differences than is typically implied by domestic evidence’ and concludes that ‘states offering attractive tax climates will be able to draw business activity away from other parts of the United States. . . . [this] may spur a round of competitive tax reductions at the state level’.

4 Rent seeking

Theory

There is limited evidence that selective incentives are effective in shifting business investment decisions, scant evidence that they may increase local welfare, and none suggesting that they increase global welfare. One may wonder, then, why tax competition seems to be an enduring feature of the political landscape. The answer may lie in rent seeking.

The literature on rent seeking, the investment of private resources with the object of obtaining privately or publicly sustained market power, can be traced to Tullock (1967). The term ‘rent seeking’ is due to Krueger (1974). In their work, Tullock and Krueger
largely analysed government enforcement of positions of market power in international markets, as did Bhagwati (1982).

But the concept of rent seeking quickly became caught up in the debate over the implausibly small estimates of the welfare cost of private exercise of market power for the USA put forward by Harberger (1954). Posner (1975), making the assumptions that there are constant returns to scale in the process of obtaining monopolies, that the activity of obtaining a monopoly is itself competitive, and that the process of obtaining monopolies yielded no socially valuable by-products, obtained the result that rent seeking to obtain monopoly would result in complete dissipation of the expected economic profit.23

The case of complete dissipation remains a focal point of this literature, partly as a matter of simplicity: in the case of complete dissipation (Hillman and Samet, 1987, p.63) ‘the social cost associated with contestability of a rent can be inferred from the value of the rent itself, and the detailed and hard-to-come-by information on individual outlays made in the course of the contest becomes unnecessary’. But the subsequent theoretical work has made clear that complete dissipation is by no means a necessary equilibrium result, and experimental results suggest the same view.

Baye et al. (1989, 1993) show that a rent-seeking contest for a government grant of monopoly can be modelled as an all-pay auction: all contenders pay (bid) the expense of lobbying decision makers, but only one wins the prize. In the Baye et al. model, dissipation of economic profit in rent-seeking expenses is complete if all contenders have a common value for the prize. If contenders have different values for the prize, dissipation is less than complete.

Empirical

Two formal specifications of rent seeking appear in the theoretical literature. The lottery specification (Tullock, 1980) makes the probability that a particular contestant receives the prize a positive function of the amount invested in rent seeking by that contestant and a negative function of the amounts invested in rent seeking by other contestants. In the all-pay auction formulation, the contestant who pays the largest absolute amount obtains the prize.

Davis and Reilly (1998) report the results of experimental tests of both specifications of rent-seeking behaviour. They find that overdissipation is ‘pervasive’ (pp.110–111): ‘Collectively, the agents tend to dissipate more rents than Nash equilibrium predictions in all auctions – an outcome that diminishes, but does not disappear with experience.’

Anderson and Stafford (2003) report the results of experimental tests of the lottery rent-seeking model, allowing for cost differences across contestants and entry fees. They find that (p.208) that ‘mean group expenditure exceeded the mean predicted group expenditure for all treatments in the experiment. Moreover, in the majority of treatments, mean group expenditure exceeded the value of the prize (that is, overdissipation of rents)’.

Hazlett and Michaels (1993) analyse the extent of rent dissipation in the US cell phone licence lotteries held between 1986 and 1989. Their results suggest that about one-third of expected economic profit from licences for metropolitan areas was dissipated in rent seeking, and about one-fifth for licences for rural areas.

Brook (2005) discusses an extended, and ultimately successful, lobbying campaign by the United Steelworkers of America and leading US steel producers for protection from foreign competition.24 The campaign was financed by a fund that was expected to amount to $10 million, put together by a 5¢ per ton ‘tax’ on steel production.
Systematic statistics are lacking about lobbying efforts at the US state level. The National Association of State Development Agencies reports that the operating budgets of US state economic development agencies totalled $6.3 billion in 2001, nine tenths of 1 per cent of US GDP. If one takes the complete dissipation case as a focal point, this figure suggests rent-seeking expenditures of the same amount.

Under the provisions of the US Lobbying Disclosure Act, lobbyists at the US national level are required to file regular reports indicating who they work for, their income and their expenditures. A public interest group makes this data available over the internet (http://www.opensecrets.org/lobbyists/index.asp). Table 7.1 summarizes annual national lobbying expenditures for the period 1997–2000. The 2000 total, 1.5 billion dollars, was about one-quarter of 1 per cent of US gross domestic product.

The European Union does not, at this writing, mandate the reporting or registering of lobbying activities. Over 10,000 lobbyists are estimated to be currently active in Brussels, of which only 141 are recorded in the Society of European Professional Affairs. In March 2005, the Commissioner for Administrative Affairs, Audit and Anti-Fraud, Siim Kallas, presented an initiative to introduce mandatory transparency rules on lobbying at EU institutions. This proposal was immediately rejected by the lobbying profession, in favour of the existing voluntary code. This code is voluntary, attracts only a few registrants and provides no external transparency, all of which suggests that there is much to be said in favour of mandatory lobbying transparency rules at EU institutions.

Rent-seeking activity by firms in the EU is assessed by Coen (1997) through a study of 94 large European firms. He analyses different firms’ political preferences in three political areas and concludes that firms ‘are attempting to play a complex political game within the confines of their budget constraint’. This game involves collective lobbying based on strategic alliances with rival firms (for horizontal policy making at EU level) and direct

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**Table 7.1** Spending lobbying the US federal government ($ million)

<table>
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<tr>
<th>Sector</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
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<tbody>
<tr>
<td>Agribusiness</td>
<td>86</td>
<td>119</td>
<td>83</td>
<td>78</td>
</tr>
<tr>
<td>Communications/Electronics</td>
<td>154</td>
<td>186</td>
<td>193</td>
<td>204</td>
</tr>
<tr>
<td>Construction</td>
<td>17</td>
<td>22</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Defence</td>
<td>49</td>
<td>49</td>
<td>53</td>
<td>60</td>
</tr>
<tr>
<td>Energy &amp; Natural Resources</td>
<td>143</td>
<td>149</td>
<td>158</td>
<td>159</td>
</tr>
<tr>
<td>Finance, Insurance &amp; Real Estate</td>
<td>177</td>
<td>203</td>
<td>214</td>
<td>229</td>
</tr>
<tr>
<td>Health</td>
<td>163</td>
<td>165</td>
<td>197</td>
<td>209</td>
</tr>
<tr>
<td>Lawyers &amp; Lobbyists</td>
<td>13</td>
<td>19</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Misc. Business</td>
<td>150</td>
<td>168</td>
<td>193</td>
<td>224</td>
</tr>
<tr>
<td>Transportation</td>
<td>112</td>
<td>115</td>
<td>117</td>
<td>138</td>
</tr>
<tr>
<td>Ideological/Single-issue</td>
<td>73</td>
<td>76</td>
<td>76</td>
<td>85</td>
</tr>
<tr>
<td>Labour</td>
<td>21</td>
<td>24</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Other</td>
<td>66</td>
<td>69</td>
<td>87</td>
<td>103</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1224</strong></td>
<td><strong>1364</strong></td>
<td><strong>1437</strong></td>
<td><strong>1555</strong></td>
</tr>
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lobbying (for company-specific goals such as state aid and R&D funding); these activities may be mutually reinforcing. The way in which the various options for both collective and direct lobbying are developed is influenced by cost considerations.

5 US policy towards state aid
The equivocal evidence about the effects of state and local tax and subsidy competition even from the point of view of a single jurisdiction and the prisoners' dilemma outcome that seems likely to result from unfettered state rivalry has prompted calls for federal regulation.28 There are two lines of development of US law that seem to come into play when federal regulation of state aid is discussed. From an economic point of view, neither is entirely to the point.

The US anti-trust state action doctrine
California's 1933 Prorate Act was the basis for a 1940 programme under which the State Agricultural Prorate Advisory Commission administered mandatory limits on the quantities of raisins sold. Brown, a discontented raisin grower, challenged the prorate programme as an unconstitutional interference with inter-state commerce. He prevailed in District Court (*Brown v. Parker* 39 F. Supp. 895 (1941)), and Parker, the State Director of Agriculture, appealed this decision to the US Supreme Court. In a decision that is generally regarded as the origin of the state action doctrine,29 the Supreme Court reversed the District Court decision on the ground that the Sherman Act had never been intended to apply to the states (317 U.S. 341 at 351):

In a dual system of government in which, under the Constitution, the states are sovereign, save only as Congress may constitutionally subtract from their authority, an unexpressed purpose to nullify a state's control over its officers and agents is not lightly to be attributed to Congress.

The Sherman Act makes no mention of the state as such, and gives no hint that it was intended to restrain state action or official action directed by a state. The Act is applicable to 'persons' including corporations . . .

There is no suggestion of a purpose to restrain state action in the Act's legislative history.

The *Parker v. Brown* opinion at least suggests that Congress might adopt laws prohibiting state actions that distort inter-state commerce (317 U.S. 341 at 350):

We may assume for present purposes that the California prorate program would violate the Sherman Act if it were organized and made effective solely by virtue of a contract, combination or conspiracy of private persons, individual or corporate. We may assume also, without deciding, that Congress could, in the exercise of its commerce power, prohibit a state from maintaining a stabilization program like the present because of its effect on interstate commerce. Occupation of a legislative 'field' by Congress in the exercise of a granted power is a familiar example of its constitutional power to suspend state laws.

A follow-on literature debates the proper scope of the state action doctrine. When contributions to this literature discuss the types of state policy that would be affected by reducing the scope of the state action doctrine, it is invariably state regulation of business, in the broadest sense, that is discussed: public utility regulation, licensing procedures, and the like.30 This literature does not seem to contemplate that the state action doctrine protects decisions a state takes in taxing and subsidizing business. By implication, narrowing the scope of the state action doctrine would limit the ability of a state to direct firms to
act in ways that would violate the Sherman Act if the actions were the result of joint decisions by firms. It would not necessarily reach tax and subsidy decisions of states that distort inter-state commerce.

*The commerce clause*\(^{31}\)

Congressional authority over inter-state commerce forbids states from employing taxes that discriminate against inter-state commerce.\(^{32}\) In this context, ‘discrimination against inter-state commerce’ has involved state taxes that disadvantage out-of-state competitors of in-state firms. For example (Hellerstein and Coenen, 1996, p.836):\(^{33}\)

West Lynn Creamery arose out of an effort by Massachusetts to aid its struggling dairy industry. To this end, the state imposed a tax on milk dealers for all in-state sales of milk, whether or not the milk had been produced in Massachusetts. The state then placed all tax proceeds in a segregated fund and distributed the fund exclusively to operators of in-state dairy farms.

The distortion in inter-state commerce that arises from discriminatory tax competition and selective economic development subsidies, however, does not favour in-state firms with respect to out-of-state firms. Rather, the discrimination is in favour of the firm that receives the benefit (whether that firm has an initial presence in the granting state or not). The lower cost enjoyed by the receiving firm distorts rivalry between it and in-state rivals that do not receive the benefit. To the extent that all such firms are involved in inter-state commerce, the latter is distorted.\(^ {34}\)

The tax element of the tax-and-subsidy scheme at issue in *West Lynn Creamery* was critical to the result (512 U.S. 186 at 199):\(^ {35\ 36}\)

A pure subsidy funded out of general revenue ordinarily imposes no burden on interstate commerce, but merely assists local business. The pricing order in this case, however, is funded principally from taxes on the sale of milk produced in other States. By so funding the subsidy, respondent not only assists local farmers, but burdens interstate commerce. The pricing order thus violates the cardinal principle that a State may not ‘benefit in-state economic interests by burdening out-of-state competitors’.

Hellerstein and Coenen (1996, p.847) make a distinction between taxes and subsidies:

1. Subsidies, which involve an actual disbursement of public funds, will be subject to greater scrutiny than tax incentives.
2. Tax discrimination is a long-standing concern of US law; the same cannot be said for discriminatory subsidies.
3. The Commerce Clause itself was motivated by concerns over discriminatory taxation, in the form of interstate tariffs that multiplied under the Articles of Confederation.

Hellerstein and Coenen (1996, p.849) also distinguish between general subsidy schemes and selective, one-shot subsidies. Although they acknowledge that discriminatory tax measures and subsidies are (p.868) ‘often indistinguishable’ in their economic effects, they nonetheless take the view that the negative Commerce Clause should not be applied to state subsidies in the way that it is to state tax measures. In stating this view, they emphasize that the form by which subsidy benefits are delivered differs from the form of tax benefits, that form is a traditional concern of the law, and that ‘consideration of a subsidy
forces the mind of the public body to consider most pointedly the cost and consequences of moving forward.

Leaving aside the general place of form versus effects in US law, it is clear that anti-trust law has come to emphasize effects rather than form as the vital element. The 2004 Circuit Court of Appeals Cuno decision involved selective tax breaks in Ohio (386 F.3d 738 at 741):

In 1998, Daimler Chrysler entered into an agreement with the City of Toledo to construct a new vehicle-assembly plant near the company’s existing facility in exchange for various tax incentives. Daimler Chrysler estimated that it would invest approximately $1.2 billion in this project, which would provide the region with several thousand new jobs. In return, the City and two local school districts agreed to give Daimler Chrysler a ten-year 100 percent property tax exemption, as well as an investment tax credit of 13.5 percent against the state corporate franchise tax for certain qualifying investments. The total value of the tax incentives was estimated to be $280 million.

The Circuit Court of Appeals condemned the investment tax credit under the negative Commerce Clause. The Cuno decision is under appeal to the US Supreme Court, and national legislation has been proposed that seeks to reverse the decision. The ultimate fate of the Cuno decision therefore remains to be determined.

A direct approach
If the scope of the state action doctrine were limited compared with what seems to be its current range, states would be less able to compel business behaviour that would, if undertaken by firms collectively and on their own initiative, violate the Sherman Act. That would not mean that the Sherman Act would apply to state actions taken in pursuance of essential state functions.

The negative Commerce Clause, in contrast, directly limits some state actions that distort inter-state commerce. The reach of the negative Commerce Clause is limited to tax measures that favour in-state over out-of-state firms. It does not address distortions in inter-state commerce resulting from the favouring of one in-state firm over other in-state firms. It does not reach selective subsidies at all.

From an economic point of view, there is much to be said for a direct approach, that is, national legislation clearly adopting the policy that discriminatory state economic development measures, tax and subsidy, distort inter-state commerce and are prohibited under the commerce clause of the Constitution. Such a proposal would not prevent state competition to promote economic development. It would require that such competition be general rather than discriminatory, and would do much to prevent a Prisoners’ Dilemma outcome that leaves all states worse off without promoting the economic development of any state.

6 EU control of state aid: competition policy v. convergence
In the European Union the legal basis for development of a system of state aid control is articles 87–9 of the EC Treaty. The system is embodied in a superstructure of guidelines, frameworks and regulations that have been developed over the years and focus on the anti-competitive effects of state aids. In this section we first review this normative system for state aid control and then move on to an analysis of general trends in member state aid (first subsection below), with particular attention to the implications of the accession of ten new member states in May 2004. Second, we outline (second subsection below) the EU’s own subsidy programmes, carried out through the Structural Funds.
The EU reactive policy on state aid: rules for competition policy

State aid control in the Community is based on articles 87–9 of the EU Treaty, which contain the general principle that state aid is incompatible with the common market and give the Commission wide power to investigate potentially illegal aids and to order their repayment. Potential cases of state aid should be ex ante notified to the Commission for clearance and aid cannot be put into effect before it has been cleared (the ‘standstill principle’).

Article 87 contains a list of mandatory exemptions and examples of discretionary exemptions. The general prohibition in 87(1) includes a definition of state aid, develops the idea of avoiding discrimination among undertakings at the national level based on national origin, and aims to promote economic efficiency and market integration by ensuring that competition is not distorted. Mandatory exceptions include state aid having a social character and aid to assist recovery from disasters or exceptional occurrences. Discretionary exceptions include state aid to promote economic development in disadvantaged regions, aid to promote projects of common European interest, and aid to promote culture and heritage conservation.

The Commission has adopted a number of frameworks, guidelines and regulations clarifying how discretionary exemption clauses apply, thus implementing a coherent structure of state aid rules across all member states and sectors of the economy. These guidelines, which apply to state aid granted following the notification to the Commission, mainly cover themes under categories presented in 87(3)(a) and (c) and explicitly address the following:

– transactions by public authorities, such as state guarantees, furnishing risk capital, public land sales, export credit insurance, fiscal aid;
– horizontal schemes for research and development aid, environmental aid, rescue and restructuring aid, regional aid;
– sectoral aid schemes to shipbuilding, steel, coal, electricity, broadcasting, motor vehicle industry, synthetic fibres, air transport, maritime transport . . . .

Block exemption regulations, that is, aid permitted without prior notification to the Commission, have been drawn up for employment aid, aid to small- and medium-size enterprises and on training. Along with these exemptions, a de minimis rule has been amended in an effort to reduce the administrative burden on the member states and on the Commission itself (which ought to be left to concentrate its resources on cases of real importance to the Community) and in order to simplify matters for small and medium enterprises which are usually the beneficiaries of such small amounts of aid.

There are then sector-specific conditions for the application of state aid rules to agriculture, fisheries, public transport and services of general interests. As it is concerned with services of general interest it is relevant to stress here that, following the Altmark judgment, the European Court of Justice ruled that certain forms of government support for public services did not constitute state aid as defined in the treaties, providing larger scope for supporting private sector delivery of key public services.

Other fields where the EU is currently making significant changes are related to the framework for regional aid, the framework on rescue and restructuring aid and, in a number of procedures regarding notification forms, standardized reporting, interest rate to be used for recovery of illegally granted aid and rules relating to time limits guidelines on state aids.
Current trends  Notwithstanding the legal system discussed above and the political priority to the reduction of the amount of state aid declared at the Lisbon European Council in March 2000, state aid continues at a high level in the Community, and continues to differ substantially among member states.

According to the Spring 2004 State Aid Scoreboard, the overall volume of state aid fell between 1999 and 2002 from €52 billion to €49 billion, reaching the 0.56 per cent of EU GDP in 2002 (or 0.41 per cent excluding fisheries, agriculture, and transport). Large disparities in level of aids between member states continue to be recorded: in 2002, Germany, France and Italy granted about of 59 per cent of the total EU level of aids; the share of total aid in GDP ranges from 0.25 per cent in the United Kingdom to 1.28 per cent in Finland.

About 57 per cent of total aid in the Union in 2002 was directed towards the manufacturing and service sectors, 28 per cent towards agriculture and fisheries, 11 per cent towards coal, and the remainder towards transport or non-manufacturing sectors ‘not elsewhere classified’. Once again, there are significant sectoral differences among member states: aid to coal represents 26 per cent and 23 per cent of the total for Germany and Spain, respectively; in Austria and Finland, the share of aid towards agriculture and fisheries was 66 per cent and 84 per cent, respectively; aid to the manufacturing and service sectors represents 78 per cent of the total in Denmark, 70 per cent in Belgium.

These disparities among member states in state aid level and beneficiary sectors are at the bottom line in the analysis on the enlargement process of the European Union. The accession of eight Central and Eastern European countries (the Czech and Slovak Republics, Hungary, Poland, Slovenia, Estonia, Lithuania, Latvia), as well as Cyprus and Malta, was realized on 1 May 2004. Among many other issues, the long process of accession negotiations has focused on obtaining transparency in the levels and aims of existing state aid. A 'sunset clause' has been set for the end of April 2007: by that time, the new member states should have ensured compatibility of their subsidies with the EU state aid rules.

Accordingly to the Autumn 2004 State Aid Scoreboard, total aid in the new member states, excluding agriculture, fisheries and transport, is estimated at €5.7 billion per year in the period 2000–2003. That corresponds to 1.42 per cent of GDP, and is more that three times the level of EU-15 in 2002. Most of the aid granted by the new member states was awarded by Poland (€2.4 billion), the Czech Republic (€1.9 billion) and Hungary (€0.57 billion). It is worthwhile to observe that the largest part of state aid (78 per cent) in the new member states is given in the form of sectoral aid, potentially the most distortive type of state aid (permitting the survival of less efficient firms and compelling the exit of more efficient firms). Favoured sectors include coal, steel, shipbuilding, finance and motor vehicles, where undertakings often receive rescue or restructuring aid. These data highlight a further field of conflict between EU-15 and the new member states, given that sectors receiving aid are almost the same in both the areas.

EU active policy on regional aid: the Structural and Cohesion Funds
The state aid articles of the EU Treaty apply to aid granted by the member states. Thus they do not apply to the EU’s own aid programmes, even though those aid programmes may distort competition and affect trade among the member states in the same way as member state aid.
The Structural Funds are the Union's mechanisms for carrying out regional and social policy. They include the European Social Fund (ESF), the European Regional Development Fund (ERDF), the European Agriculture Guidance and Guarantee Fund Guidance Section (EAGGF Guidance Section), the Financial Instruments for Fisheries Guidance (FIFG) and the Cohesion Fund.\(^{51}\)

The ESF has its origin in Article 123 of the original EC Treaty; its role was to be to cushion labour market adjustment costs associated with economic integration. The ERDF was set up in 1975 to promote growth in the less developed regions of the Community. The Cohesion Fund was set up in 1993, in the run-up to economic and monetary union, to channel aid to member states with GNP per capita less than 90 per cent of the Community average. The original qualifying member states were Ireland, Greece, Spain and Portugal.\(^{52}\) With the EU enlargement of 1 May 2004, all the new member states qualified for the Cohesion Fund.\(^{53}\)

As its name suggests, the EAGGF Guidance Section is twinned with the agricultural guarantee fund and the Community's Common Agricultural Policy. Like the ESF, the CAP is anticipated in the Treaty of Rome (Article 40).\(^{54}\) Guidance Section funding, as indicated in Table 7.2, has always exceeded the combined funding of the Structural Funds (the latter, over the period 2000–2006, will account for over one-third of the EU budget).

The regulations governing the Structural Funds have been revised repeatedly over the years. The revisions have sought to direct aid to regions and sectors that are less advantaged from the point of view of the EU as a whole, rather than from the point of view of any one member state. The 2000–2006 Structural Funds concentrate on three clearly defined objectives. Regions whose development is lagging behind (Objective 1) receive 70 per cent of the funding. Economic and social conversion in areas experiencing structural difficulties (Objective 2) will take up 11.5 per cent. Promoting the modernization of training systems and the creation of employment (Objective 3) absorbs a further 12.3 per cent of funding. The remainder is spread over four Community Initiatives seeking to address specific problems and the adjustment of fisheries structures outside the Objective 1 regions.

The accession of 10 new member states on 1 May 2004 poses a policy dilemma for the Structural Funds (Van der Beek and Neal, 2004, p.587): 'continuing an active regional policy makes enlargement unattractive to the existing members; switching to the reactive policy makes the EU membership less attractive to the accession countries'. Those

<table>
<thead>
<tr>
<th>Year</th>
<th>Agriculture</th>
<th>Structural operations</th>
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<tbody>
<tr>
<td>2000</td>
<td>40.9</td>
<td>32.0</td>
</tr>
<tr>
<td>2001</td>
<td>42.8</td>
<td>31.5</td>
</tr>
<tr>
<td>2002</td>
<td>43.9</td>
<td>30.9</td>
</tr>
<tr>
<td>2003</td>
<td>43.8</td>
<td>30.3</td>
</tr>
<tr>
<td>2004</td>
<td>42.8</td>
<td>29.6</td>
</tr>
<tr>
<td>2005</td>
<td>41.9</td>
<td>29.6</td>
</tr>
<tr>
<td>2006</td>
<td>41.6</td>
<td>29.2</td>
</tr>
</tbody>
</table>

*Source:* EC Commission.
authors highlighted the fact that the modest active regional aid toward new member state has been not a rational regional strategy and called for an appropriate way to master the issue. Considering possible solutions to this dilemma, it could be reasonable to ask what has been the effectiveness of the EU active regional policy in reducing disparities before accession. Sala i Martin (1996) concludes that since the speed in rate of convergence in Europe is very low and stable (close to about 2 per cent a year in many regions), and given that the level of redistributive effort is different in the different regions, the Structural Funds cannot be very effective.55

7 Conclusion

Some versions of string theory hypothesize the existence of 11 space–time dimensions. There seem to be at least as many dimensions to state aid.

Most of the dimensions of string theory are imperceptible to the ordinary human senses. While much state aid is also imperceptible, this state of affairs is not rooted in laws of nature. In this regard, the United States and the EU have lessons to offer to one another. At present, the United States has substantial transparency in lobbying expenses at the national level, while the extent of lobbying expenses at the state level and the amounts of aid granted at both the state and the national level are essentially opaque. In the EU, the extent of lobbying expenses at the member state and the Union levels are opaque, while EU efforts have made the extent of member state aid substantially transparent. Transparency would be much improved if the United States would establish federal control of state aid that distorts inter-state commerce, if EU would adopt rules requiring documentation of lobbying efforts at the EU level, and if both jurisdictions were to adopt rules requiring documentation of lobbying efforts at the component (state, member state) level.

Increasing transparency in aid delivered in the form of discriminatory tax competition would reduce the asymmetric information which usually affects the evaluation of the net benefit of location incentives. In turn, such an increase in transparency would help the selection of aid-seeking companies and reduce artificial inefficient location decisions.

A second indication is that the case for selective development aid is a weak one, and that this observation applies to selective aid to home firms for their operations in international markets, to selective aid by the United States’ federal government and by the European Union, and to selective aid granted by regional and local governments. It ill-behooves the policy makers of market economies to short-circuit the market mechanism. It may be possible to make an argument for transitional regional and sectoral aid; it seems much less possible to defend operating aid or selective tax breaks that distort market competition.

Notes

1. The latter issues in turn suggest connections to the large literature on foreign aid to less developed countries, which we leave aside in this chapter.
2. On which, generally, see Krugman (1988). The passenger aircraft industry may be one industry that approximately satisfies the assumptions of the strategic trade policy literature; see Baldwin and Flam (1989), Pavcnik (2002) and Irwin and Pavcnik (2004) for references.
3. The strategic trade literature tends also to take market structure as given (one firm in each country) but this is not a necessary characteristic of the approach. If one Cournot duopolist receives a sufficient large subsidy per unit of output, the equilibrium output of the other firm may be driven to zero, thus changing market structure from duopoly to monopoly. See Horstmann and Markusen (1992). Pursuit of this approach has implications for the economic analysis of EU state aid policy.
4. Essentially the same result appears in the tax-competition literature.
5. Brainard (1994, section 3) demonstrates the ambiguity of the welfare effects of state aid and tariff protection by one of two countries in a model of international trade in a declining industry; Anis et al. (2002) obtain corresponding results for the case in which both countries may engage in strategic trade policy.
6. This remark suggests a connection with the rent-seeking literature.
7. At the risk of being disingenuous, since it is far from being the only example, the track record of French governments in picking losers suggests the contrary.
9. For discussions and surveys of the tax competition literature, see Bradbury et al. (1997), Kenyon (1997), Wilson (1999) and Glaeser (2001). Brueckner and Saavedra (2001) estimate tax rate reaction functions for a sample of 70 Boston-area cities: their slope estimate is positive, implying that strategic interaction does occur and suggesting that the “large numbers” assumption may fail even at the local jurisdiction level.
10. It should also be noted that European Union rules (article 87(3)(a) and (c) of the EC Treaty) provide for exceptions to the general prohibition against state aid.
11. The professional economist is of course entitled to argue that local governments may lack either the information, or the ability to use the information, or the will to implement objective function-maximizing redistribution policies (or all three). On the other hand, the political preferences of the professional economist are entitled to as much weight, but no more, than the preferences of any other citizen (Harberger, 1971, p.785).
12. In US anti-trust, hostility toward price discrimination can be traced to the perceived impact of railroad rate discrimination on rivalry among downstream users of transportation services. The founding fathers of what has become the European Union saw the appearance of a level playing field for competition between firms based in different member states as essential to the overriding goal of political union, and viewed a prohibition of price discrimination as essential to maintaining the appearance of such a level playing field.
13. Lambertini and Peri (2001) show that fiscal incentives, such as fiscal taxes or sectoral state aid, are welfare improving for a country which is in the intermediate phase of globalization: this result is derived by developing the Fujita, Krugman and Venables (1990, ch.16) model of spatial industrial agglomeration and specifically focuses on how the tax policy that maximizes social welfare is related to falling trade costs. Lambertini and Peri’s results suggest that during the transitional phase towards full economic integration, as in the current EU integration process, pressure towards harmonization of tax rates could be suboptimal.
14. Measures of economic activity considered by the surveyed studies included employment, output and income.
15. Schwartz and Clements (1999) describe a wide array of government activities that may contain subsidy elements, among which (1) direct government aid to producers or consumers (cash subsidies); (2) government guarantees, interest subsidies to enterprises, soft loans (credit subsidies); (3) reductions of specific tax liabilities (tax subsidies); (4) government equity participation (equity subsidies); (5) government provision of goods and services at below-market prices (in-kind subsidies); (6) government purchases of goods and services at above-market prices (procurement subsidies); (7) implicit payments through government regulatory actions that alter market prices or access (regulatory subsidies).
16. Wasylenko (1997) similarly reads the literature as suggesting a tax elasticity of approximately 0.2, suggesting that reducing tax rates by 10 per cent will increase economic activity, variously measured, by 2 per cent.
17. Target industrial incentives seem to continue despite some indications (for example, Hartzheim, 1997) that state and local governments are developing an appreciation for the downside of such policies.
18. For an early survey of the rent-seeking literature, see Tollison (1982).
19. Tullock (1967, p. 228): “Generally governments do not impose protective tariffs on their own. They have to be lobbied or pressured into doing so by the expenditure of resources in political activity. One would anticipate that the domestic producers would invest resources in lobbying for the tariff until the marginal return on the last dollar so spent was equal to its likely return producing the transfer.’

   In many market-oriented economies, government restrictions upon economic activity are pervasive facts of life. These restrictions give rise to rents of a variety of forms, and people often compete for the rents. Sometimes, such competition is perfectly legal. In other instances, rent seeking takes other forms, such as bribery, corruption, smuggling, and black markets.
21. This approach was applied by Cowling and Mueller (1978), in work that extended that of Harberger (1954). Among many other discussions of the complete dissipation result, see Fisher (1985) and Fudenberg and Tirole (1987).
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25. Organizations spending less than $22 500 on lobbying during a six-month period are exempted from the filing requirements.
31. For discussion, see Smith (1999a, 1999b).
32. Other requirements for state taxes are (Cuno v. Daimler-Chrysler, 386 F.3d 738 at 742) that ‘the activity taxed has a substantial nexus [presence] with the taxing State . . . the tax is fairly apportioned to reflect the degree of activity that occurs within the State . . . and . . . the tax is fairly related to benefits provided by the state’.
34. To the extent that the discriminatory aid has the effect of shifting investment that would have taken place in any case from one state to another, there is no net creation of jobs or increase in post-investment output, compared with the outcome if the aid had not been granted. To the extent that state budget constraints are binding, the immediate effect of forgone tax revenues or subsidy spending is to limit the ability of the state to provide public goods. This limitation is more severe if discriminatory tax competition leads to a Prisoners’ Dilemma outcome in which rival states grant mutually-neutralizing economic development measures.
35. Of course, from an economic point of view, a pure subsidy does distort competition, and the first sentence that is quoted here is incorrect.
36. See, for example, Continental TV v. GTE Sylvania 433 U.S. 36 (1977).
37. See, for example, Continental TV v. GTE Sylvania 433 U.S. 36 (1977).
38. Cuno v. Daimler-Chrysler 386 F.3d 738. The facts of the case are also discussed by Enrich (2002).
39. In so doing, the Circuit Court remarked on the subsidy-targeted tax measure distinction (386 F.3d at 746): ‘Although the defendants liken the investment tax credit to a direct subsidy, which would no doubt have the same economic effect, the [Supreme] Court has intimated that attempts to create location incentives through the state’s power to tax are to be treated differently from direct subsidies despite their similarity in terms of end-result economic impact.’
40. See Zelinsky (2003) for arguments in favour of abandoning the negative Commerce Clause entirely.
42. From a procedural perspective, the grant of a notified state aid, after the Commission investigation, may result ‘positive’, ‘conditional’ or ‘negative’. The Commission can start a procedure of investigation for non-notified aid on its own initiative, a procedure which in the case of a negative judgment results in the recovery of the offending state aid.
43. Article 88 sets out the basic procedural rules regarding the enforcement of article 87, and article 89 is the legal basis for Council regulations in the state aid field.
44. On fiscal state aid, see Nicolaides (2004).
45. As described in the Commission Regulation (EC) No 69/2001, the de minimis rule consists in the definition of a threshold figure below which Article 92 (1) can be said not to apply and – consequently – the aid need no longer be notified in advance to the Commission under Article 93 (3). Actually, the total amount of de minimis aid may not exceed Euros 100 000 over a three-year period and any sector is eligible with the exception of transport, agriculture and export-related activities.
46. The recent ruling by the European Court of Justice in the Altmark case (Case C-280/00, 24 July 2003) provides that compensation for the costs incurred in the discharge of a public service obligation do not qualify as state aid if a number of conditions are cumulatively met: (1) clear public service obligations; (2) pre-established parameters for determining the compensation; (3) no overcompensation; (4) either selection of operator through tender procedure or determination of compensation with reference to costs of a typical, well-run undertaking.
47. Early indications of Commission thinking in this field show the intention to ban aid to large firms altogether except in Objective 1 regions, which post-2007 will be almost exclusively in the new member states of Central Europe and the Baltic states.
48. See http://europa.eu.int/comm/competition/state_aid/scoreboard/. The Spring 2005 State Aid Scoreboard records a slight decline in the level of state aid in relation to GDP, ‘but the underlying trend is more stable than downward’ (Scoreboard 2005, p. 4). Given this evidence, the analysis which follows is based on the
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Spring Scoreboard 2004, which permits better data comparisons with the first data on new member's state aid collected in the Autumn 2004 Scoreboard.

See Martin and Valbonesi (2000, Table 5.1) for a discussion.

The state aid effect on similar sectors' structure in different countries is captured by Collie (2000): the author develops a symmetric Cournot duopoly model describing an integrated market where one firm is located in each member state. The result is that the prohibition of state aid may very well increase overall welfare and thus provide a rationale for a ban of state aid.

The European Investment Bank and the European Investment Fund provide aid through financial markets, often in coordination with Structural Fund activities.

In the period 1999–2001, the Cohesion countries accounted for 10 per cent of total expenditure on state aid to the manufacturing sector, while the same data amount to 76 per cent for the four big economies (Germany, France, Italy and UK). See the EU Third Report on Economic and Social Cohesion, p.129(http://europa.eu.int/comm/regional_policy/sources/docoffic/official/reports/cohesion3/cohesion3_e n.htm).

For the years 2004–6, EUR 18 billion (in 2004 prices) are available, and more than half of the funding has been reserved for the new member states. See the EU Third Report on Economic and Social Cohesion.

Giving substance to the CAP was one element in the 1965 'empty chair' crisis, which led to the Luxembourg Compromise.

Boldrin and Canova (2001), analysing the evolution of income across EU regions over the last 20 years.


Bartik, T.J. (2002), ‘Evaluating the impacts of local economic development policies on local economic outcomes: what has been done and what is doable?’, Upjohn Institute Staff Working Paper no. 03–89, November.


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