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STUCK IN BRUSSELS

Should transport policy be determined
at EU level?

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Summary

- Transport policy is increasingly determined at EU level, with national, regional and local governments heavily constrained by a supranational regulatory framework.
- This one-size-fits-all approach has meant regulations have frequently been maladapted to local conditions, and as a result have imposed very large costs on individuals and businesses.
- In some sectors, such as aviation, EU rules may have promoted completion and benefited consumers by reducing protectionist, market-distorting behaviour by member states, such as subsidies for national airlines.
- The European Commission has wasted vast sums on ‘white elephant’ transport projects where the costs have outweighed the benefits. Loss-making cross-border links have been subsidised to deepen integration, while funding has been targeted at the poorer regions of the bloc rather than locations where economic returns would be highest. Several schemes have been plagued by corruption.
- EU climate change policies have imposed huge costs on the transport sector for little benefit. Rather than simply relying on the European Emissions Trading System (ETS), the EU has pursued a multi-pronged approach to carbon abatement, with the different components of its strategy blatantly contradicting each other.
- The biofuels requirement in petrol and diesel is costing taxpayers and consumers across the EU an estimated €20 billion a year. The policy is not a cost-effective way to reduce greenhouse-gas emissions. It harms the poor in developing countries by inflating food prices and drives deforestation by increasing the demand for products such as palm oil.

- EU directives effectively prohibit full vertical integration on railways. The resulting industry fragmentation is thought to have increased costs by approximately £1.5 billion a year in the UK alone, pushing up taxpayer subsidies. A similarly flawed model is now being imposed on seaports.
- Rather than the top-down structures imposed by the EU, regulatory institutions should be free to evolve from the bottom up, their scale depending on market conditions rather than political diktat.

Introduction

EU policy has a substantial impact on the transport sectors of member states. While transport policy debates are typically framed at national level, in reality the choices available to policymakers are tightly constrained by decisions made within the EU institutions. Strategic objectives are increasingly determined by the European Commission's Directorate General for Transport and Mobility¹, the Directorate-General for Regional and Urban Policy, and other Commission bodies, before being approved or rejected by the European Parliament and the Council of the EU.

The exact process is more complex, with the Commission consulting with interested parties and representatives of member states before adopting a particular policy. The Parliament and Council may also suggest changes to legislation. Moreover, EU transport policy intersects with various international agreements involving non-EU parties, for example the 'Open Skies' arrangement with the United States and 'free-trade' treaties more generally. Member states also have a degree of flexibility in their implementation of EU requirements. Policy processes within the EU therefore appear to exhibit a significant degree of pluralism, together with checks and balances. However, as Vaubel (2009) has pointed out, it is clear that the European institutions have a vested interest in the greater centralisation of powers because this enhances their power and prestige. This tendency is evident in transport as in other sectors. Indeed the policy process in general is heavily politicised and clearly very far removed from a classical-liberal approach under which resource allocation and other decisions would typically be made by non-state actors engaging in voluntary exchange within a framework of general rules.

1 For an introduction, see http://ec.europa.eu/transport/about-us/index_en.htm

This chapter summarises the key policies imposed across the Union and examines their economic impact. The final section considers to what extent transport policy should be determined by supranational bodies rather than smaller administrative units.

The aims of EU transport policy

The main objectives of EU transport policy can be placed into two broad categories.² The first aim is to increase economic and social cohesion by improving transport links in order to reduce barriers to trade and address the locational disadvantages of relatively poor and peripheral regions. A further aspect of the cohesion strategy is the harmonisation of regulation, with the stated aim of making it easier for firms to operate and compete in different member states. An implicit objective of such policies may be to cement the Union by artificially deepening social and economic links between member states beyond the level that would arise in a market setting, thereby enhancing the power of EU institutions, breeding mutual dependency and raising the potential costs of exit.

The second broad objective is to reduce the impact of the transport sector on the environment. By 2020, the EU has made a commitment to reduce overall greenhouse gas emissions from its 28 Member States by 20 per cent compared to 1990 levels (EC 2014). Looking further ahead, the European Commission proposes that the EU sets a target of reducing emissions to 40 per cent below 1990 levels by 2030, with 80-95 per cent under consideration for 2050 (ibid.). Given that the transport sector is currently responsible for approximately one fifth of the bloc's greenhouse gas emissions, the impact of such targets is likely to be substantial. Furthermore, environmental concerns are not limited to climate change. Restrictions are gradually being tightened on the emissions of a range of pollutants that negatively affect urban air quality.

2 A third important area would be safety, although such regulation also forms part of the harmonisation agenda.

Key policy initiatives

These ambitious objectives translate into concrete policies which are already having far-reaching effects on the transport sectors of member states. While it is not possible to list every measure, the key implications are listed below.

Developing trans-European networks

The EU will continue to spend large sums funding infrastructure such as new high-speed railways, motorways and airports in Southern and Central Europe. Smaller amounts have also been spent on schemes in depressed old industrial areas in Northern Europe. Transport has been allocated around €26 billion under the Connecting Europe Facility (CEF), the financing instrument to be used in the EU's 2014–20 budget period to invest in transport, energy and ICT infrastructures (EC 2013a: 16). This is a relatively small amount compared with spending on transport infrastructure by member states, although the skewed geography of the projects means it is highly significant for certain regions.

Harmonising regulation and industry structures

Transport industries will be integrated further at EU scale through regulatory mechanisms such as 'open access' rules. For example, owners of rail infrastructure will be forced to allow different operators to use their tracks and full vertical integration will be prohibited. Rules will be standardised across the whole bloc, with EU institutions taking a much larger role in the development of new regulation. Similar steps have been taken in the aviation and shipping industries.

Modal shift from road to public transport

EU policymakers propose to meet environmental targets by encouraging a major modal shift from road to public transport. By 2050, the aim is for more than 50 per cent of all medium-distance passenger and freight transport to go by rail and waterborne transport. To help achieve this, the length of the EU's existing high-speed rail network should be trebled by 2030 (EC 2014: 19). Within cities, the plan is to halve the use of petrol and diesel cars by 2030 and ban them completely by 2050. Vehicle emissions regulations will continue to be tightened while legislation will encourage greater use of 'low-carbon fuels'.

Economic impact

Some of the EU transport policies outlined above have clearly imposed very heavy costs on both taxpayers and consumers, and this burden is likely to increase over time as radical environmental targets are pursued.³ The benefits are perhaps harder to quantify, but may include efficiency savings from harmonisation and cross-EU competition, together with enhanced infrastructure in peripheral regions and improvements in environmental goods such as air quality. Any empirical analysis of the impact of EU policy is hampered by the absence of relevant counterfactuals: it is not possible to determine which policies alternative institutions would have adopted. Nevertheless, economic analysis does enable broad conclusions to be made about the success or failure of EU policy both in terms of its own objectives and its wider economic effects.

New infrastructure

The development of new infrastructure in the bloc appears to have been a particularly stark policy failure. This profoundly politicised process, which has prioritised ‘cohesion’ over maximising economic returns, has meant significant resources have been diverted to poor value schemes where the costs have almost certainly outweighed the benefits.⁴ Even where returns have been positive – and projects have encouraged growth by lowering the costs of trade – in many instances the opportunity costs have still been substantial, i.e. the funds may well have delivered much greater returns if invested elsewhere.

A case in point is the flagship Lyon-Turin high-speed rail link, which is

3 For examples, and some cost estimates, see Gaskell and Persson (2010).

4 For detailed analyses of schemes, see, for example, Nicolaidis (2014); Kriström (2012); De Rus and Inglada (1997).

co-financed by the EU under the European Interconnection Mechanism and forms part of Priority Axis no. 6 (Lyon-Trieste-Ljubljana-Budapest-Ukrainian border) of the Trans-European Transport Network (TEN-T). The estimated cost of this megaproject – which includes a 57 km-long tunnel under the Alps - has already risen from €12 billion in 2002 to €26 billion in 2012. Worse still, independent analysis suggests that the costs of the scheme will far outweigh the benefits, even if the optimistic official traffic forecasts are accepted (Debernardi et al. 2011). And this calculation does not include the wider economic losses imposed by the project's tax funding (see Feldstein 1995) or additional off-balance-sheet expenditure such as the requirement for a new freight bypass around Turin to support traffic growth on the new line.

Any rational economic analysis would conclude that such an investment represents extremely poor value for money for EU taxpayers, particularly given the potential for high returns from road schemes in core areas of the bloc (see, for example, Dodgson 2009). The current Lyon-Turin railway has vast spare capacity. Rail freight traffic on the corridor decreased from 10 million tonnes in 1997 to less than 3 million tonnes in 2009, while freight levels on competing roads have also been declining. The capacity of the existing line is thought to be at least 20 million tons a year (Debernardi et al. 2011). To add insult to injury, the scheme is being investigated for fraud, including allegations of mafia links.⁵ This is not an isolated example. An estimated €381 million was stolen during the construction of the Salerno-Reggio Calabria highway in southern Italy and large-scale fraud is a recurring problem for EU projects.⁶

A high proportion of the schemes could reasonably be described as 'white elephants', such as heavily loss-making high-speed railways and barely used airports in peripheral regions. Typically member-state governments have contributed a large share of the funding, imposing significant costs on taxpayers in some of the bloc's poorest areas. In the context of high government debt, the deadweight losses from the tax burden are likely to be particularly high (see Feldstein 1995). Indeed, wasteful spending on loss-making infrastructure – which in turn requires ongoing state subsidies – has arguably made a significant

5 'EU launches fraud probe into Lyon-Turin rail link', *Euractiv*, 9 February 2015, <https://www.euractiv.com/section/transport/news/eu-launches-fraud-probe-into-lyon-turin-rail-link/>

6 See, for example, 'Massive fraud of EU funds rarely reported by member states', *EU Observer*, 3 July 2012, <https://euobserver.com/justice/116856>

contribution to the current fiscal crisis in countries such as Greece and Italy.

The authors are not aware of a comprehensive cost-benefit analysis for the North Sea – Mediterranean Corridor as a whole, the TEN-T Core Network Corridor which stretches from Ireland to Southern France via the UK, the Netherlands and Belgium (EC 2013b). The parts of the corridor which go through the UK contain several transport projects which are unlikely to deliver good value for money for taxpayers.⁷ But then, some of these are projects were under discussion before TEN-T, and might have happened without EU involvement. In countries which are net recipients from the EU budget, especially if they receive large sums earmarked for transport, it is safe to say that a lot of infrastructure projects would never have happened without the EU. For net contributor countries, it is much less clear what the counterfactual what have been.⁸ So even if future research shows the UK's TEN-T-related infrastructure to represent poor value for money, we would be hesitant to lay too much of the blame for this at the EU's door.

But either way, even if future cross-border infrastructure projects should achieve terrific benefit-cost ratios, it would still not be an argument for the UK's general participation in EU transport policy. Even non-EU members can take part in individual cross-border infrastructure projects on a case-by-case basis, if they deem it advantageous to do so. EEA member Norway is a participant in the 'Scandinavian-Mediterranean Corridor' of TEN-T, while EFTA member Switzerland is a participant in the creation of the 'Rhine-Alpine Corridor' (ibid.). Opting out of a project of political integration and 'ever-closer union' would not mean opting out of international cooperation.

Generally speaking, we cannot see the value added of delegating such projects to the EU level, rather than pursuing them through bilateral treaties. But then, this question would not even arise if infrastructure were not such a highly politicised sector. If infrastructure were predominantly provided through the market rather than politically, private sector entrepreneurs

7 For an incomplete list, see: http://ec.europa.eu/transport/themes/infrastructure/ten-t-guidelines/corridors/northsea-med_en.htm

8 The clearest example of the former would be Spain, which is one of the biggest net recipients from the EU budget in general, and also from the transport budget on its own. The UK receives moderate amounts of transport funding, and is one of the largest net contributors overall (EC n.d.).

would tend to invest where they expected to maximise their profits, resulting in an allocation of resources far more reflective of consumer preferences than the current model. (A recent example of this approach is provided in Box 1.) This would sometimes mean project-based cooperation between infrastructure providers in different countries, it would sometimes mean permanent integration and the creation of multinational providers, and it would sometimes mean an exclusively national or local focus. We would not have to decide in advance on the appropriate geographic scale. We would find it out via a market discovery process.

Box 1: Private provision of transport infrastructure: a case study

In August 2014, a businessman from Kelston, a small village in Somerset, found an unconventional solution to a local road traffic problem: he opened a private toll road.

A landslip had closed part of the main road connecting Kelston to Bristol and Bath, forcing drivers to take a long detour, and council repair works turned out to be slow and cumbersome. So Mike Watts, a Kelston resident and himself a commuter to Bath, opened a makeshift road across adjoining fields to bypass the closed section. Kelston Toll Road was access-controlled, with toll booths at both ends. A single trip by car cost £2, with discounts available for frequent users.⁹

The council's response to the undertaking was tellingly ambiguous. They warned residents, in unspecific terms, against the use of the road (Bath & North East Somerset Council 2014), but refrained from actively obstructing the project. It was probably wise that Watts opened his road first, and only applied for (retrospective) planning permission later, when people were already accustomed to using the road. Kelston Toll Road passed a basic health and safety inspection, and was covered by public liability insurance, but planning permission was later withheld.

Kelston Toll Road was an anomaly, the only one of its kind in the UK. There are examples of Private Public Partnership (PPPs) toll roads, and there are examples of Private Finance Initiative (PFI) non-toll roads which are built and maintained by the private sector. But these schemes are still the result of political decision-making, with the private sector only working to deliver outputs the government has specified.

9 'My own private toll road: £150,000 to avoid a detour on the A431', *Guardian*, 4 August 2014; 'Private toll road for Kelston A431 on Google Maps', BBC News Somerset, 7 August 2014; 'Temporary toll road for A431 at Kelston opens to traffic', BBC News Somerset, 1 August 2014. 'Hundreds pay £2 a time to use private toll road built by businessman who was fed up with waiting for council to re-open bypass', *Daily Mail*, 4 August 2014; 'Toll road hero who came to the rescue when his council closed a vital route could lose his home if his gamble goes wrong', *Daily Mail*, 8 August 2014.

Kelston Toll Road was different. There was no government decision to build such a road. The public sector had no input in deciding where exactly it should be located, what its exact purpose should be, who its exact target group should be, what pricing structure it should adopt, what legal structure the business should take, how it should contribute to other policy objectives, or any questions of that nature. Critics of private economic activity would say that Kelston Toll Road was not 'democratically accountable'. (Or in Mike Watts' own words, 'If people don't want to use the road then don't.'¹⁰)

The project was purely a response to (latent) local consumer demand, and a product of local knowledge about unique local circumstances. The idea emerged out of pub conversations, in a Kelston pub frequented by both Mike Watts and by the landowner through whose fields the road would later pass. The nuisance caused by the road closure was a frequent topic of conversation, so the pub's patrons served as a 'focus group' for an early 'market analysis'. An economics teacher looking for an example to illustrate the concept of 'dispersed local knowledge' could do worse than use Kelston Toll Road.

The project is a reminder that infrastructure can be provided in ways radically different from the current status quo. The road may be an anomaly in the current setting, but it is, in fact, much closer to the historical norm of infrastructure investment in the UK. For well over a century, private initiative was the driving force in the development of railways, turnpikes and canals.

Under this model, the bulk of infrastructure planning is driven by (current or anticipated) consumer demand, not political considerations. Infrastructure users vote with their feet (or wheels) rather than through circuitous political channels, and investors risk their own money and are economically dependent on the decisions of ordinary consumers. Changes in consumer behaviour provide quick and direct feedback loops to entrepreneurs. Market entries, exits and takeovers are frequent occurrences, and a plurality of ownership structures and business models may coexist. The problems associated with politicisation and government ownership are avoided.

10 'Kelston toll road opens to traffic', *Bath Chronicle*, 1 August 2014.

Market structures

The economic impact of EU regulation has also been mixed, partly depending on the sector to which it has been applied. For example, in the case of rail, EU open access rules have effectively prohibited genuine private ownership of the infrastructure by removing the right to exclude. And while some member states have gone further than the requirements of the directive in imposing particular structures on the rail industry, the EU approach has encouraged fragmentation of the sector, undermining traditions of vertical integration that had emerged through a market discovery process during the 19th century.

The British government's own *McNulty Report* (2011: 91) identifies fragmentation as a key barrier to efficiency and summarises many of the resulting transaction costs. Similarly, Taylor and Sloman's (2012) review of the literature provides concrete examples of inefficiency, including large numbers of staff employed to deal with the 'interfaces' between the various layers of the industry. This has raised costs by an estimated £1.5 billion per year in the UK (*ibid.*)¹¹, translating into significantly higher taxpayer subsidies. It has also encouraged rent-seeking behaviour by creating a 'distributional coalition' of special interests reliant on state handouts (see Wellings 2014; 2016). Ideally the degree of vertical integration would be determined by market processes such as mergers and demergers which reflected the costs and benefits of different organisational structures.

EU aviation policy, with similar objectives to the interventions in the rail market, has arguably been far more successful in terms of delivering economic benefits. This perhaps partly reflects the nature of aviation markets, with the EU approach more in tune with 'natural' market structures than is the case on the railways. The sector was also historically highly protectionist with both airports and airlines typically under state ownership and the latter often heavily subsidised by member-state governments and viewed as 'national champions'. EU rules, on state aid for example, have helped reduce, though not eliminate, these market distortions. Indeed the 'single market' appears to have enhanced competition and improved efficiency, with for example low-cost airlines free to operate across the bloc. It is an open question to what extent this would have happened without EU intervention.

11 Converted to 2016 prices.

One of the ironies of EU integration is that while the EU has taken on a host of responsibilities that would be better solved at the national, regional, or local level, it has been slow in areas where the efficiency gains from international cooperation have been obvious. Air traffic control is one such area. European airspace is still fragmented along national borders, which is wholly inappropriate for air travel. Thus while US air space is governed by one single air traffic management organisation, governance of the European air space is shared among 38 different ones (Langner and Schwenke 2011). Fragmentation raises costs in various ways, the most obviously one being the cost of air traffic management itself – the average American flight controller handles twice as many flights as the average European flight controller. It also leads to unnecessarily long flight paths.

The total cost of fragmentation is not precisely known, but the comparison of domestic to otherwise similar international flights, or of European cross-border flights to American cross-state-border flights gives an indication. According to one estimate, fragmentation costs are in the area of €3.4 billion per year. The EU has recently sped up the process of moving to a single European airspace. A first step is the creation of nine so-called ‘functional airspace blocks’ (FABs), which are airspaces jointly managed by between two and nine countries. FAB boundaries are meant to be closer approximations of traffic routes than national boundaries.

This is an area where there is a strong rationale for international cooperation. However, while EU policy appears to be delivering economic benefits, it is not clear that the EU is a necessary institution for such agreements. Non-EU members such as Norway and Iceland form part of the Northern FAB, for example, together with Denmark, Sweden, Finland and Estonia. Switzerland is part of the central European FAB, together with France, Germany and the Benelux countries, while Bosnia-Herzegovina is part of an Eastern European FAB. It is quite conceivable that the Single European Sky will expand further in the future, ceasing to be a truly ‘European’ arrangement. So again, on its own, a ‘Brexit’ would be unlikely to make much difference in this policy area. As in the case of cross-border road infrastructure projects, ‘international cooperation’ and ‘EU integration’ are two very different subjects.

While beyond the scope of the current political debate, it is, in principle, well worth exploring to what extent governments need to be involved in air traffic control at all. In the US context, the chairman of the House Transportation and Infrastructure Committee (Congressman Bill Shuster)

has recently proposed a privatisation of air traffic control.¹² If such a solution were adopted in Europe, it is very unlikely that it would be organised along national boundaries, or indeed EU boundaries.

Environmental policies

The long-term costs of the environmental component of EU transport policy probably far outweigh the burdens imposed by the funding of new infrastructure and intervention on industry structures. Many of these costs are hidden, however, and are not readily appreciated by taxpayers and consumers, who may face higher prices but fail to comprehend their connection to EU policy. Key additional costs include increased public transport subsidies resulting from modal shift, more expensive vehicles due to environmental standards, and higher fuel costs due to the emissions trading scheme and biofuels requirements.

The latter example illustrates the scale of the burdens imposed. By 2020, the EU aims to ensure 10 per cent of transport fuel comes from renewable sources.¹³ In 2011, biofuels subsidies were already costing EU taxpayers an estimated €5.5-6.9 billion, with this figure projected to rise to €11.0-13.8 billion in 2020 (Charles et al. 2013). Additional fuel costs to motorists are estimated at a further €8.1 billion (2015), rising to €9.7 billion in 2020 (ibid.). EU consumers also face higher food prices due to biofuels displacing other crops, adding up to €4 billion a year to their shopping bills in 2010-11. The largest negative impact, however, is likely to be on consumers in developing countries, where a far higher proportion of incomes is spent on basic foodstuffs such as cooking oil.

Evidence is accumulating that biofuels policies are not a cost-effective method of reducing greenhouse-gas emissions (for example, Oxfam 2012). The agricultural sector requires substantial fossil-fuel inputs, reducing the net benefit, while biofuels subsidies may also encourage deforestation by raising the price of products such as palm oil. A government impact assessment estimated that, in the UK, the costs of the EU biofuels obligation would outweigh the benefits by a factor of more than seven (DfT 2014).

12 'Rep. Bill Shuster Releases "Principles" For Bill to Privatize U.S. Air-Traffic Control', *Wall Street Journal*, 15 June 2015, available at <http://www.wsj.com/articles/rep-bill-shuster-releases-principles-for-bill-to-privatize-u-s-air-traffic-control-1434398386>

13 <https://ec.europa.eu/energy/en/topics/renewable-energy/biofuels>

There are numerous economic objections to the imposition of environmental targets, including methodological problems in calculating the 'social cost' of carbon, but the discussion of these is beyond the scope of this chapter.¹⁴ However, if the objective of reducing CO₂ emissions is taken as given, then tools that replicate market mechanisms - such as a carbon tax or a cap-and-trade system - are more cost-effective than a piecemeal approach. The government decides on the volume of emission reductions, but leaves it up to firms and households to work out the least painful way of implementing them. What that 'least painful way' is varies from firm to firm and from household to household, depending on individual preferences and circumstances. Secondly, the optimal mix of carbon abatement strategies cannot be known in advance; it has to be found out through trial-and-error processes. Market-oriented systems allow for experimentation, and ensure that the knowledge thereby created diffuses quicker than under alternative systems.

With this in mind, the European Emissions Trading System (ETS) is a workable if far from perfect solution. Once an overall carbon cap is specified, there is no case for doing anything else on this front. However, the EU is pursuing a multi-pronged approach to carbon abatement, particularly in transport, and the different components of its strategy blatantly contradict each other. The whole point of the ETS is to allow each individual household and firm to work out their own carbon abatement plan, rather than imposing any one plan on the whole population. Yet the EU's approach can be described as setting an overall target first, and then still dictating detailed plans for particular sectors, including transport.

In 2009, the EU introduced mandatory emission standards for new vehicles. Until 2015, the average CO₂ emission level of new passenger cars was to be cut from about 160g per km to 130g, with separate targets for other vehicle types (ICCT, 2014). Average emission levels of new cars were already showing a downward trend at the time, but they fell by no more than 1 per cent per annum, so the EU targets required substantial additional investment in carbon abatement. In 2013/14, the EU set more stringent follow-up targets for 2020, with the most important one being a 95g/km target for passenger cars. The problem with this policy is not necessarily that the targets are too stringent, but that the approach is extremely prescriptive and inflexible. It is not limited to setting overall targets for the industry as a whole, rather, each individual vehicles manufacturer has

14 See for example, Niemietz (2012: 132-139); Whyte (2013).

their own individual set of targets. Those manufacturer-specific targets are set according to the composition of their car fleet, with manufacturers of heavier vehicles being allowed a higher level of emissions. This is why Daimler and BMW, which produce relatively large and heavy cars, have been given target levels of 140 and 139 g/km for 2015 (101 and 100 g/km for 2020), while Toyota and Fiat, which produce relatively small and light cars, have been given targets of 128 and 123 g/km (92 and 89 g/km for 2020). The policy is already producing the inefficiencies that one would expect. Unsurprisingly, some manufacturers found it much easier to meet their targets than others: in 2012, Peugeot-Citroën, Toyota and BMW had already overfulfilled their targets, while others had yet to get there (ibid.).

Compare this to a hypothetical policy of a 'sub-ETS' applied only to the car industry. Such a policy would have been illogical – why should a unit of carbon emitted by a car be treated any differently from a unit of carbon emitted by an airplane or a factory? – but less illogical than the policy actually in place. Under this hypothetical 'cars-only ETS', the most likely outcome would have been that the overachievers would have cut their emissions even more, and sold the permits thereby freed up to those carmakers who faced the greatest difficulties in reducing emissions. The total volume of emission reductions would have been the same, but it would have been implemented by those manufacturers who had the means to achieve those reductions at the lowest cost.

Note, also, that the targets refer to the average emissions, not to the total emissions, of a carmakers' fleet. In a 'cars-only ETS', one possible response would have been to simply produce fewer cars, rather than to change their engineering drastically. Especially for an upmarket producer, focused more on margins rather than volume, this might well have been the preferable alternative. But it is an alternative which the EU approach does not recognise. A manufacturer who reduces their production volume will still have to achieve the same reduction in average emissions on the remaining car fleet, while conversely, a manufacturer who increases their production volume will not have to keep their total emissions constant through sharper cuts in average emissions.

There are various other distortions in the EU carbon standards. The term 'average emissions' is somewhat misleading, because it is not the actual emissions that will be compared against the target level. It is a hypothetical value which is calculated using a politically determined formula that gives special weights to features the EU wants to encourage. For example, if a

company produces two cars emitting 45g of CO₂ per km and one car emitting 90g, its 'average emissions' in this sense will not be 60 g/km, but 52 g/km, since the EU awards so-called 'super-credits' to cars which emit less than 50g of CO₂ per km. This introduces additional distortions as reducing emissions from 50 g/km to 49 g/km counts for more than reducing emissions from e.g. 60 g/km to 59 g/km. Manufacturers can also obtain credits for using so-called 'eco-innovations', i.e. politically favoured technologies.

In short, the whole approach is dirigisme taken to the extremes. And a similar criticism also applies to the Fuel Quality Directive (2009/30/EC), the Renewables Directive (2009/28/EC) and the Biofuels Directive (European Parliament and Council, 2009a, 2009b, 2003). These directives define targets for a reduction of the greenhouse gas intensity of fuels, and for the inclusion of bio- and other renewable fuels in the fuel portfolio (see above). By contrast, a relatively cost-effective ETS-only approach to carbon abatement could be summarised as 'a unit of carbon is a unit of carbon'.

Centralisation vs. competition and discovery

The shortcomings of EU transport policy outlined above raise serious questions about current institutional structures and whether alternative arrangements could improve economic outcomes. Indeed, economic theory suggests that the present approach will result in the misallocation of resources due to knowledge problems, perverse incentive structures, politicisation and the disproportionate influence of special interests over the decision-making process.¹⁵

A key aspect of this centralised approach to transport policy is the imposition of one-size-fits-all regulations on the whole of the Union. Businesses may derive benefits from uniform rules because the same products and services can be traded across a vast region. For example, bespoke production lines catering to the regulatory requirements of different countries are unnecessary, bringing economies of scale. The costs associated with monitoring compliance may also be reduced. Having said this, in many cases such economies will be limited because, say, variations in language and cultural tastes mean goods and services must be tailored to specific markets in any case. And clearly potential economies of scale will vary by sector, depending on production methods etc.

Unfortunately a one-size-fits-all approach cannot take into account local time and place specific circumstances, leading to large inefficiencies. Take the example of vehicle standards. The benefits of air pollutant controls on vehicles may be concentrated in large cities where pollution levels are said to have a negative impact on health. Yet drivers in rural areas, where

¹⁵ On knowledge problems, see for example Hayek (1945); on incentive structures and special interests, see Olson (1965).

any benefits are negligible, will face substantial costs meeting standards imposed across the entire EU. In such circumstances, a dispersed approach to regulation is more appropriate, with local institutions making decisions based on the costs and benefits in their location. Ideally these local institutions would include 'proprietary communities' based on voluntary agreements, which would have strong incentives to reflect the subjective preferences of their 'customers', unlike local governments (Beito et al. 2004).

Dispersed, bottom-up regulation has a number of additional advantages compared with centralised, top-down regulation imposed at supranational level. In particular it creates competition between competing jurisdictions, which has several benefits. If regulations (or indeed taxes) are especially burdensome in one location, then businesses and consumers may have the opportunity to move elsewhere to reduce costs. Indeed, the possibility of exit is of immense importance in the preservation of economic and other freedoms more generally¹⁶ and may also act as a constraint on predatory politicians. In the context of jurisdictional competition, governments imposing heavy regulatory and tax burdens risk a vicious circle of business exit, falling growth and lower revenues.

Competing regulatory jurisdictions also enable a discovery process to take place. Different administrations may adopt different rules and structures, which leaves scope for some innovation and experimentation. Successful models may then be copied in other locations, and failed models abandoned. Through this process of evolution and emulation, the economic efficiency of institutions is likely to increase over time. Indeed it has been hypothesised that Europe's former economic pre-eminence partly resulted from the dynamic effects of its division into numerous competing units (Raico 1992; Diamond 1997).

16 See, for example, Scott (2009).

Regulatory scale as market discovery process

It can be seen that one-size-fits-all policy suffocates competition and undermines the discovery process that may bring economic benefits via a process of evolution and emulation. The exit option is also significantly undermined. At the same time, such centralisation produces losses when policies do not take account of time and place specific conditions. Yet clearly for some economic activities there may be substantial efficiency gains from standardisation across a large geographical area.

This raises the question of how the optimal geographical scale of regulation and other policies should be determined. In other words, there are both economies and diseconomies of scale. If the 'economies of scale' outweigh the 'diseconomies of scale' there will be efficiency gains from increasing the scale of regulation or vice versa. Yet given that such trade-offs are dynamic, varying over time and space and by economic sector (see above), it seems highly improbable that the European Union would form the optimal unit. Similar limitations also apply to member states, although their boundaries at least sometimes reflect linguistic and cultural divisions - or indeed natural boundaries such as the English Channel¹⁷ - that may be relevant to the trade-off in some sectors.

The main point, however, is that politicians and central planners face insurmountable problems if they attempt to determine the optimal geographical scale at which regulation and other policies should be decided and imposed. This reflects the problems outlined above, such as knowledge limitations and poor incentive structures. Fortunately there is an approach

17 In some instances the transaction costs associated with such natural boundaries (e.g. high shipping costs) may make certain exchanges uneconomic.

to regulation that is far more effective at adapting to highly varied, ever-changing trade-offs, and utilising dispersed, subjective knowledge specific to particular times and places.

In contrast to a top-down, highly centralised and politicised process, rules systems can be developed by market institutions themselves. Indeed, there are numerous historical examples of successful private regulation, such as the evolution of 'merchant law' (*lex mercatoria*) – a system of courts and regulation for traders across medieval Europe (Benson 1990). Similarly, major financial markets, including the London Stock Exchange, operated under private regulation for most of their history, with intrusive statutory controls a relatively recent phenomenon (Arthur and Booth 2010). Such arrangements can address so called market failures such as information asymmetries and externalities, while competition between different rules systems facilitates a discovery process that encourages efficiency gains. One element of this market process is discovering the optimal *scale* of regulation, from local to transnational. Under this model, firms and individuals are free to exit one rules system and join another (or none at all), meaning there are strong incentives for private institutions to evolve rules that reflect the preferences of market participants.

Operating outside established rules systems would typically have significant costs, such as making it more difficult to gain the trust of potential customers. Major European car manufacturers could, for example, join a private regulatory body that assured certain vehicle safety standards. Smaller firms, perhaps new market entrants, might decide not to participate in such a framework (or indeed set up a competing standards body with less stringent requirements). They would seek a competitive advantage by selling vehicles more cheaply by not implementing stringent safety rules, but would also risk deterring those customers who sought the reassurance of an established regulatory body. Ultimately the decision would rest with consumers, with such market segmentation potentially delivering significant welfare gains for drivers who valued lower prices (and alternative spending options) over high safety levels.

There are, however, some practical problems with moving towards systems of private regulation. In certain sectors, markets are non-existent or heavily distorted due to government ownership or the nature of 'public goods'.

Prime examples of the former include road networks and state control over land-use. Private regulation of roads would deal with issues such as

the potential externalities from unsafe vehicles (Knipping and Wellings 2012). Similarly, private rules for both roads and land-use could address local externalities such as noise and urban air pollution (for example, vehicles not meeting certain quality standards could be excluded from a private neighbourhood) (see Beito et al. 2004). Yet government controls effectively prohibit these and similar solutions based on private property and voluntary agreements. Indeed the imposition of EU measures – often in addition to pre-existing state intervention – may further crowd out private regulatory options.

Policies of deregulation and privatisation at various administrative levels would facilitate the development of non-government systems of rules. However, in the absence of such an approach, a workable ‘second best’ option might be a light-touch approach to regulation that genuinely devolved limited powers to small political units such as local authorities. This would at least facilitate some degree of competition and tailoring of rules to place specific conditions, though unfortunately local governments are still subject to the problems associated with special interest influence and politicisation.

Another set of problems relates to externalities potentially affecting large geographical areas, such as sulphur dioxide (acid rain) and carbon dioxide emissions (global warming). Given the pathologies of government regulation, including insurmountable economic calculation problems, there is clearly a high risk that the costs of intervention will outweigh the benefits. Nevertheless, there may be a theoretical case for transnational regulation of certain activities in an environment where voluntary, market-based alternatives are suppressed. It is difficult to identify, however, externalities for which EU regulation represents the most appropriate geographical scale. In the case of global warming, for example, effective measures might have to incorporate major emitters such as China, India and the United States, to avoid ‘carbon leakage’.¹⁸

18 Carbon leakage is the phenomenon whereby mitigation measures in one region lead to an increase in emissions in another region that does not impose similar measures, for example through energy intensive industries relocating from the EU to China.

Conclusion

The European Union is playing an increasingly important role in transport policy across the region. The economic impact has been mixed, with very heavy costs imposed on businesses and consumers but also some benefits from the removal of pre-existing interventions by member states. While it is extremely difficult to estimate these costs and benefits, it is clear that in economic terms EU policy has been very far from optimal. This reflects calculation and incentive problems inherent to centralised planning and one-size-fits-all policymaking, and suggests the EU is typically not an appropriate institution for the development and implementation of transport policy.

There are therefore strong arguments for allowing regulations and investment decisions, together with institutional scale, to be determined by market processes rather than political and bureaucratic mechanisms. A radical programme of deregulation would help facilitate this. Where remaining state intervention makes this difficult, there should be a bias towards political decentralisation to make better use of local knowledge, reflect local preferences and facilitate competition between jurisdictions. Transnational agreements may bring significant economic benefits in some areas, but the optimal scales of regulatory institutions vary markedly from sector to sector. In this context, there is a strong case for moving away from an EU-centric approach and towards a patchwork of voluntary cooperation between private rulemaking bodies, infrastructure entrepreneurs and the institutions of local governance.

This would not, of course, preclude trans-regional and trans-national cooperation, but in a more decentralised setting, with such cooperation clustering around specific areas, and its relative merits assessed on a

case-by-case basis. 'Ever-closer union' would not be an aim in itself, and there would be no set of institutions with an open-ended remit and a vested interest in their own growth.

Indeed, in the areas where there is a case for large-scale international cooperation, it is very unlikely that the EU itself is the right scale. In those areas, such cooperation is already established or emerging, and it already exceeds the boundaries of the EU. When it comes to the emissions trading, air traffic control or cross-border transport projects, the distinction between the EU, the EEA and the EFTA is relatively unimportant. Some of these schemes even extend to countries which are not part of any of these arrangements. In this sense, transport is a policy area which already illustrates the distinction between project-based cooperation, which is a matter of cost-benefit analysis, and political integration, which is a matter of political preferences.

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