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Public policy intervention in freight transport costs: effects on printed media logistics in the Netherlands

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Abstract

Trends in contemporary logistics management have led to an increased transport-intensity of production and distribution activities. Transport costs are increasingly traded off against other logistical costs and seem to have lost importance in strategic decision-making. At the same time, in Europe, transport policy aims at regulating freight transport demand by manipulating its costs, for instance, via taxation. In addition, investment in infrastructure lags behind growth in transport, potentially resulting in increased congestion. This paper explores how effective manipulation of transport costs is in order to regulate freight transport demand in supply chains for books and newspapers.

Keywords: Transport costs; Logistics; Regulation; Printed media industry

1. Introduction

1.1. Background: the ambivalent role of freight transport

Freight transport is commonly considered an important condition for economic development and economic growth (e.g. Banister et al., 2000). Irrespective of these positive impacts on the total performance of societies and economies, it is no longer possible to discard the negative impacts of transport, in particular the production of substantial negative social and environmental effects, including air pollution, noise, congestion, and traffic accidents. In particular the strong growth of freight transport by road is considered problematic. Road transport has a dominant position in total freight transport (see Fig. 1) and the negative effects per unit of road transport (e.g. tonne kilometre) are relatively high (see Table 1; for comparisons of external costs of various modes of transport, see Annema and van Wee, 2000; Forkenbrock, 2001 or Proost et al., 2002).

The negative effects of transport are expected to increase in magnitude in the future, since a substantial growth in European freight transport is envisaged. For instance, long-term modelling studies have shown that between 1995 and 2020, freight transport on Dutch territory, expressed in tonne kilometres, will increase by 80% (AVV, 2000). It is likely that the negative effects associated with this growth in transport will by far outweigh the consequences of technological innovations such as more fuel-efficient engines or a better use of transport capacity.

1.2. The policy response

Many governments in Western Europe feel that the balance between the benefits and costs of transport is not optimal, which is supported by scientific research (see Fig. 2). Moreover, it is considered problematic that a large proportion of the negative effects of transport are passed on to society. It is mainly for these reasons that transport policy in Europe has shifted from an approach, in which

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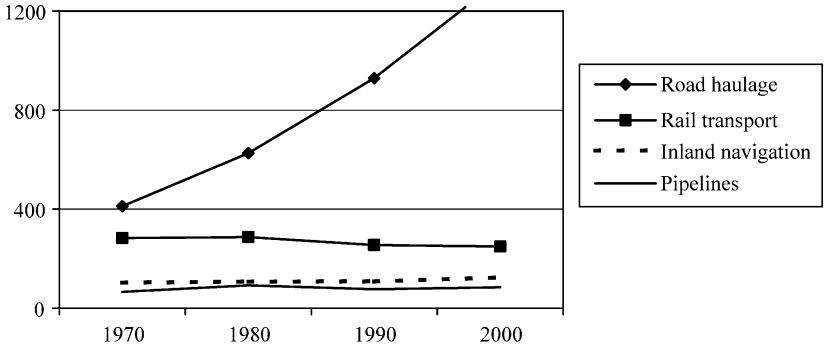

Source: EC, 1999: 45, supplemented with Eurostat data for 2000.

Fig. 1. Trends in freight transport in Europe (in milliard tonne km).

infrastructure was expanded in response to increasing traffic volumes, to an approach based on a mix of traffic and demand management measures (Banister et al., 1999). Nowadays, important policy goals include a reduction in the negative effects of freight transport (by technological and logistical innovations) and less congestion on the main transport axes, thus improving the accessibility of urban regions.

Public authorities do not have a large variety of instruments with which to directly intervene in freight transport. The most effective instruments for change are within the domain of the logistical management of production and distribution. Decisions in that context however are made by shippers and transport companies. Public authorities may only indirectly affect such decisions, predominantly through infrastructure and fiscal policies (other policy instruments (such as the assignment of locations that are not accessible by freight transport or only during specific time slots, other physical restraints, quality standards for vehicles, environmental regulations, and working time directives) either are part of such policies or have similar effects). Yet, contrary to earlier policies, most governments have become reluctant to expand road infrastructure networks at a large scale, mainly because of the high costs and the observation that it usually induces more transport and subsequently leads to more negative effects (e.g. Southerland, 2004). The consequence of this strategy is that, in all likelihood, (road) congestion problems will intensify. Alternatively, regulation of freight transport through taxation has become more popular among European governments. Various governments, for instance, have introduced new taxes on road freight transport (Switzerland, Austria) or are considering the introduction of such taxes (e.g. Germany, the Netherlands and the United Kingdom). In addition, the European Commission aims at a full internalisation of all external costs produced by transport (e.g. EC, 1998, 2001). In addition to this, several governments (among which the Dutch) have restructured (or plan to do so) general tax regimes by replacing fixed annual taxes by taxes directly related to the actual transport volume (including fuel duties and per-kilometre taxes).

1.3. Research focus and structure of the article

This paper discusses whether direct intervention in transport costs for regulating freight transport demand is an effective instrument to cause significant changes in this sector. The costs shippers incur whilst distributing their goods namely are not only transport-based. Moreover, there is evidence that the share of transport costs in total delivered unit costs is decreasing, possibly creating reduced sensibility amongst stakeholders towards cost interventions. Given these considerations, this article assesses the (side) effects of public policies influencing transport costs. The analysis is largely based on the PhD dissertation of the first author (Runhaar, 2002). The paper has the following structure. Section 2 describes some conceptual aspects underlying the study and refers to the results of some related studies. Section 3 discusses the results of a stated adaptation survey that aimed at assessing the impact of higher transport costs. Section 4 contains some conclusions and reflections on the policy implications.

Table 1
Environmental pollution by mode of transportation in freight transport (2001)

	Road	Inland navigation	Rail transport
CO (g/tonne km)	0.90	0.13	0.02
VOS (g/tonne km)	0.22	0.05	0.00
NO_x (g/tonne km)	2.39	0.79	0.28
PM_{10} (g/tonne km)	0.14	0.04	0.00
SO_2 (g/tonne km)	0.02	0.05	0.02
CO_2 (g/tonne km)	256.13	49.66	12.58
CH_4 (g/tonne km)	0.01	0.00	0.00
N_2O (g/tonne km)	0.01	0.00	0.00

Source. Emissions and tonne kilometres (on Dutch territory): CBS, Statline (2003).