Monograph:
Shires, J. (2003) The Impact of Policy Drivers on the Logistics Supply Chain. Working Paper. Institute of Transport Studies, University of Leeds , Leeds.

Working Paper 580

UNIVERSITY OF LEEDS
Institute for Transport Studies

ITS Working Paper 580

July 2003

The impact of Policy Drivers on the Logistics Supply Chain

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Section One Introduction & Definition of Terms

This report is designed to highlight the impact of policy drivers on the freight logistics supply chain. This section will define the term policy drivers and outline the different types of impacts the can have upon the logistics supply chain. In Section Two a list of policy drivers is presented, along with associated policy levers. An attempt to assess what impact each policy lever has on the logistics supply chain is made in Section Three and in Section Four a number of policies levers are selected to take forward as possible scenarios to be evaluated in the University of Leeds cost modelling work.

Policy drivers are defined as broad aims, targets or statements that are considered to be desirable by the various bodies of government or non-government organisations in satisfying their overall goals such as "maximising social welfare", "staying in power" etc... The types of policy drivers vary by organisation and may be complimentary or contradictory. They may also change over time as new doctrine is implemented or new research findings put into practise. In the Government's, 'Transport 2010 - The 10 Year Plan' (DFT, 2000) the policy drivers are outlined under the heading 'Vision' and are presented below,

- Fully integrated public transport information, booking and ticketing systems;
- Safer and more secure transport accessible to all; and,
- A transport system that makes less impact on the environment.

Policy levers are the policy instruments used to attain policy drivers and can be used to achieve more than one Both policy drivers and policy levers can be categorised under two headings as outlined below,

a) Fiscal Drivers; and,
b) Physical & Regulatory Drivers

The implementation of these policies leads to both direct and indirect *outcomes* that will make some contribution to achieving the policy drivers set out by the government. The policy levers will impact upon the freight industry in a positive, negative or neutral manner and for the purposes of the next section three definitions have been formulated which have been related to the impact of policy levers on costs and externalities. In Section Four a broader range of impacts are discussed for the policy levers that have been selected as possible scenarios.

A Positive Impact - Any outcome that,

1) Lowers operating cost without increasing externalities, and/or;
2) Lowers externalities without increasing costs.

A Neutral lmpact – Any outcome that,

1) Maintains defacto operating costs without changing externalities, and/or;
2) Maintains defacto externalities with out changing operating costs.

A Negative Impact – Any outcome that,

1) Increases operating costs, and/or;
2) Increases externalities.

Making a judgement as to whether any one policy is beneficial or not is difficult in the absence of any data and will differ depending upon who you are. The judgements that will be made in this paper will apply to the freight logistics industry only and the externalities they produce. It is stressed that they are not exact. The next section will outline in more detail some of the possible policy drivers that either currently apply to or could be applied to the freight logistics industry. The likely policy levers that could arise from the policy drivers are then discussed along with the possible transport outcomes and their impacts

Section Two Policy Drivers & Policy Levers for Logistic Supply Chains

The policy drivers outlined below are a mixture of policies that embody current government and industry thinking. Though they are by no means exhaustive they do represent the key policies that are currently being implemented or are in the pipeline for implementation.

1) Reduction of road congestion;
2) Reduction of the production of green house gases;
3) Reduction of local air pollution;
4) Reduction of local noise pollution;
5) Reducing total transport accidents;
6) Improving working conditions;
7) Encouraging development of and take up of new technologies; and,
8) Facilitating efficient supply chain.

For each policy driver there are a number of policy levers which can be used to help realise the policy drivers. The levers are listed in Tables 2.1 and 2.2 along with a specific code.

Table 2.1 Fiscal Policy Levers

Fiscal Levers	**Code**
Subsidies for home shopping	**F1**
Subsidies for eCommerce	**F2**
Introduction of a vignette system	**F3**
Introduction of motorway tolling	**F4**
Introduction of urban congestion charging	**F5**
Increasing fuel duty	**F6**
Increasing excise duty	**F7**
Imposing emission taxes	**F8**
Differential charging of duty on various fuels	**F9**
Reducing rail track access charges	**F10**
Increasing the sensitive lorry mile rates for FFG* and TAG**	**F11**
Subsidies for new inter-modal technology	**F12**
Subsidies for Information and Communication Technologies	**F13**

* FFG – Freight Facilities Grant ** TAB – Track Access Grant

Table 2.2 Physical & Regulatory Levers

Physical & Regulatory Levers	**Code**
Planning constraints on out of town retailing	**P1**
Lorry bans during working hours	**P2**
Night time lorry bans	**P3**
Weekend lorry bans	**P4**
HGV only lanes	**P5**
Imposing working time directive	**P6**
Imposing emission standards	**P7**
Increasing road transport deregulation	**P8**
Providing open access for rail freight	**P9**
Public provision of inter-modal terminals	**P10**
Road expansion/enhancements	**P11**
Imposing intelligent speeds adaptation systems	**P12**
Reducing speed limits	**P13**

In Table 2.3 we outline the policy levers associated with the listed policy drivers. It is clear from the table that certain policy levers are associated with more than one policy driver. This stems from the fact that the transport outcomes of certain policy levers are desired by more than one policy driver. For example, road pricing would, all things equal, reduce road traffic and so help achieve reductions in congestion, air pollution, noise pollution, green house gases and road accidents.

Table 2.3 Policy Drivers and Policy Levers

	Policy Levers	
Policy Drivers	*Fiscal*	*Physical & Regulatory*
1) Reduction in Road Congestion	F3, F4, F5, F6, F7, F8, F10,F11, F12	P1, P2, P5, P9, P10, P11
2) Reduction in Green House	F3, F4, F5, F6, F7, F8, F9, F10, F11, F12	P1, P2, P7, P9, P10
3) Reduction in Local Air Pollution	F3, F5, F6, F7, F8, F9, F10, F11, F12	P1, P2, P7, P9, P10
4) Reduction in Noise Pollution	F3, F5, F6, F7, F8, F10, F11, F12	P1, P2, P3, P4, P9, P10, P12, P13
5) Encouraging Development & Take Up of New Technologies	F1, F2, F8, F9, F12, F13	P7, P12
6) Reducing Total Accidents	F3, F5, F6, F7, F8, F10,F11, F12	P1, P2, P9, P10, P12, P13
7) Improving Working Conditions		P6
8) Facilitating Efficient Supply Chains	F3, F4, F5, F8, F9, F10, F11, F12, F13	

* IT&CT – Information technology and communications technology.

Section Three Policy Levers Impact on the Logistics Supply Chains

A list of transport levers and their possible outcomes are outlined in Tables 3.1 and 3.2. The end column labelled 'impact' attempts to indicate the effects of each transport outcome on the freight logistics industry and society in general (positive + or negative -). The judgements used for each impact are very general and may well differ for individual cases. Without comprehensive data it is not possible to evaluate the impacts precisely.

Table 3.1 Fiscal Levers – Suggested Supply Chain Effects

Transport Levers	Outcomes	Impact
Fiscal Levers		
F1 - Subsidies for home shopping	*Increase in urban LGV traffic:-* - increases in all externalities.	 -
F2 - Subsidies for eCommerce (downloadable products)	*Modal shift:-* - reduces all externalities as freight traffic shifts away from road to the web. - reduction in road traffic improves vehicle performance & delivery.	 + +
F3 - Introduction of a distance related vignette system for HGVs only.	*Reduction in all HGV traffic, particularly in urban areas*:- - reduces all externalities. *Vignette charges*:- - increases operating costs. - encourages more efficient operations. *Increase in all LGV traffic but particularly in urban areas:-* - less efficient operations due to use of smaller vehicles - increase in all externalities. *Modal shift:-* - may encourage shift away from road to other modes, principally rail and sea shipping and so a reduction in all externalities.	 + - + - - +
F4 - Introduction of motorway tolls	*Reduction in all types of motorway traffic:-* - improves vehicle performance & delivery planning.* - reduction in externalities. *Toll charge*:- - increases operating costs. *Increase in non-motorway traffic:-* - deteriorating vehicle performance & delivery planning, - increase in all externalities. *Modal shift:-* - may encourage shift away from road to other modes, principally rail and sea shipping and so a reduction in all externalities.	 + + - - - +
F5 - Introduction of urban road pricing	*Reduction in urban road traffic*:- - improves vehicle performance & delivery planning. - reduces all externalities. *Road charges*:- - increases operating costs. - encourages more efficient operations. - encourages take up of alternative fuel engine technology to escape charge & so reduces environmental externalities.	 + + - + +

* Journey time savings and greater reliability lead to improvements in vehicle performance & delivery planning.

Table 3.1 Continued.....

Transport Levers	Outcomes	Impact
Fiscal Levers		
F6 - Increase in all fuel duty	*Reduction in all types of road traffic*:- - improves vehicle performance & delivery planning. - reduces all externalities. *Fuel duty charges*:- - increases operating costs. - encourages more efficient operations. - encourages take up of more efficient engine technology to reduce costs & so reduces environmental externalities. *Modal shift:-* - may encourage shift away from road to more fuel efficient/non fuel modes, principally rail and sea shipping and possibly pipelines and so a reduction in all externalities.	 + + - + + +
F7 - Increase in excise duties	*Reduction in all types of road traffic*:- - improves vehicle performance & delivery planning. - reduces all externalities. *Excise duty charges*:- - increases total costs. - encourages more efficient operations. *Modal Shift:-* - may encourage shift away from road to other modes, principally rail and sea shipping.	 + + - + +
F8 - Imposition of emission taxes	*Reduction in all types of road traffic*:- - improves vehicle performance & delivery planning. - reduces all externalities. *Emission charges*:- - increases total costs; - encourages take up of low emission engine technology to reduce costs & so reduces environmental externalities. *Modal shift:-* - may encourage shift away from road to other modes, principally rail and sea shipping and possibly pipelines and so a reduction in all externalities.	 + + - + +
F9 - Reduction in fuel duties for low emission fuels/energy sources.	*Lower fuel duty:-* - encourages take up of low emission fuel/energy source engine technology to reduce costs & so a reduction in environmental externalities.	 +
F10 - Reducing rail track access charges	*Modal shift:-* - reduces all externalities as traffic shifts away from road to rail. - reduction in road traffic improves vehicle performance & delivery, & so reduces operating costs for remaining road based traffic.	 + +
F11 - Increasing the sensitive lorry mile rates for FFG and TAG	*Modal shift:-* - reduces all externalities as traffic shifts away from road to rail. - reduction in road traffic improves vehicle performance & delivery.	 + +
F12 - Subsidies for new inter-modal technology	*Modal shift:-* - reduces all externalities as traffic shifts away from road to rail. - reduction in road traffic improves vehicle performance & delivery.	 + +
F13 - Subsidies for information and communication technology	*Operating Costs:-* - improves vehicle performance and delivery planning.	 +

Table 3.2 Physical & Regulatory Levers – Suggested Supply Chain Effects

Physical & Regulatory Levers		**Impact**
P1 - Planning constraints on out of town retailing	*Increase in all types of urban traffic:-* - deterioration in vehicle performance & delivery planning. - increases all externalities. *Reduction in suburban customer trips:-* - improves vehicle performance & delivery planning. - reduces all externalities.	 - - + +
P2 - Lorry bans during working hours	*Reduction in working hours (daytime) HGV traffic:-* -reduction in congestion -reduction in all externalities. *Increase in non-working hours (nightime) HGV traffic:-* - improves vehicle performance & delivery planning. - likely to incur higher labour costs because of unsocial hours. - increase in all externalities (especially noise).	 + + + - -
P3 - Night time lorry bans	*Increase in working hours (daytime) HGV traffic:-* - deteriorates vehicle performance & delivery planning. -increase in all externalities. *Decrease in non-working hours (nightime) HGV traffic:-* - reduction in all externalities (especially noise)	 - - +
P4 - Weekend lorry bans	*Reduction in weekend hours HGV traffic:-* -reduction in congestion -reduction in all externalities. *Increase in non-weekend hours HGV traffic:-* - deteriorates vehicle performance & delivery planning. - increase in all externalities.	 + + - -
P5 - HGV only lanes	*Increases Operating Speeds* - improves vehicle performance & delivery planning.	 +
P6 - Imposing working time directive	*Reduction in labour flexibility & reduction in driving times* - increase in operating costs.	 -
P7 - Imposing more stringent emission standards	*Reduction in all types of road traffic:-* - improves vehicle performance & delivery planning. - reduction in all externalities. *Emission Standards:-* - increases fixed costs from purchase of new vehicles. - encourages more efficient operations. - low emission engine technology reduces environmental externalities. *Modal shift:-* - may encourage shift away from road to other modes, principally rail and sea shipping and possibly pipelines and so a reduction in all externalities.	 + + - + + +
P8 - Increasing road transport deregulation	*Additional Competition* - puts downward pressure on costs.	 +
P9 - Providing open access for rail freight	*Modal shift:-* - greater opportunities for road traffic to switch to rail, so reductions in all externalities. - reduction in road traffic improves vehicle performance & delivery for remaining road based traffic.	 + +
P10 - Public provision of inter-modal terminals	*Modal shift:-* - greater opportunities for road traffic to switch to rail, so reductions in all externalities. - reduction in road traffic improves vehicle performance & delivery for remaining road based traffic.	 + +

Table 3.2 Continued.....

Physical & Regulatory Levers		Impact
P11 - Road expansion/ enhancements	*Reduction in congestion* - improves vehicle performance & delivery planning.	 +
P12 - Imposing intelligent speeds adaptation systems	*Reduction in speeds* - deteriorates vehicle performance & delivery planning. - reduces the number of accidents.	 - +
P13 - Reducing speed limits	*Reduction in speeds* - deteriorates vehicle performance & delivery planning. - reduces the number of accidents.	 - +

It can be seen from Tables 3.1 and 3.2 that the impact of policy levers is very mixed and that in many cases they can have both beneficial and negative effects on the freight logistics industry. In Section Four a number of policy levers are selected to take forward as scenarios for the freight logistics cost modelling that the University of Leeds will be undertaking.

Section Four Selecting Policy Lever Scenarios

Only a small number of key levers can realistically be examined by the freight logistics cost model and so the levers selected need to be those which will have the largest impact on freight costs and logistics, are policies with a genuine chance of being implemented and that are also measurable. With this in mind seven policy levers have been selected to take forward to the modelling stage. Each policy lever is outlined below in section 4.1, with the implications for freight costs and logistics discussed in section 4.2

4.1 Selected Policy Lever Scenarios

a) Urban Road Pricing

The concept of urban road pricing has been trail blazed in the UK by the Mayor of London, Ken Livingstone. The mayor introduced a congestion charging scheme on 17th February 2003 as part of a transport strategy for London that also incorporated traffic management and public transport schemes. A £5 congestion charge is levied on all vehicles entering the congestion charging area (several square miles of central London) between the hours of 7am and 6.30pm, Monday to Friday. There are a number of exemption/discounts for the following people/vehicles disabled people (blue badge holders), residents within the charging zone, emergency vehicles, alternative fuel vehicles and roadside recovery vehicles. The scheme is currently being evaluated by a number of other city authorities, with several already having investigated the possibilities of implementing similar schemes, including Edinburgh and Leeds. Early evaluation has found a 38% drop in central London car trips compared to last year's levels. The revenues raised from the congestion charge are by law ploughed back into the pubic transport schemes for the capital.

b) Birmingham Relief Road Toll

The Birmingham Northern Relief Road (M6 Toll) is the first tolled motorway to be built in the UK. Currently under construction it is scheduled to open in January 2004. The private company that will operate the toll road, Midland Expressway, has recently published the tolls that will be charged. The charges are published in Table 4.1 and differ by vehicle type and time period. The schemes proponents have estimated that the toll will save, on average, around 45 minutes per trip as well as improving the journey times for those travelling along the existing M6 route. The scheme is revenue negative as the charges are designed to recover the costs of the private initiative scheme plus a profits element.

Table 4.1 M6 Toll Standard Charges*

Class	Guide	Day (06:00 - 23:00)	Night (23:00 - 06:00)
Class One	Motor Bike	£2	£1.50
Class Two	Car	£3	£2
Class Three	Van	£6	£5
Class Four	HGV	£11	£10

* Note there will be a £1 discount for the first 10 million vehicles.

(c) Motorway Tolls

This concept would see charges for the use of all of Britain's motorway system and could take the form of access tolls or distance related charges. Like the M6 Toll charges could vary by vehicle type, motorway and time of day. The government has indicated that such a system of charges will not be considered until 2010 at the earliest, as such background information on potential charges is not available as yet. It is likely that such a scheme would be revenue neutral and that users would receive the money back via reduction in road taxes.

(d) Lorry Road User Charges – Distance Related Vignette System

This is similar to the vignette system of charges that operates in many European countries except it is distance related not time related and would charge users an amount per mile travelled. The 2002 budget saw the chancellor announce the scheme for the UK haulage industry along with offsetting tax reductions for the industry.

In the same year a report entitled "*Modernising the Taxation of the Haulage Industry – Progress Report One"* (DFT, 2000) outlined some preliminary thoughts on the charge, the key points of which were that the charge should:

- *apply to all lorry operators, regardless of their nationality;*
- *apply on all UK roads;*
- *vary according to the characteristics of the lorry, e.g. weight, axle structure and vehicle admissions standard;*
- *vary according to the type of road – for example, charging less for motorways, and*
- *have the potential to vary according to the time of day – for example, to have the potential to charge lorries less for using motorways during the night than during the day.*

The aim of the charge is to reflect the costs of climate change, local air quality, road maintenance, safety, traffic congestion and noise. The government intends to charge all lorries that have a gross vehicle weight over 3.5 tonnes. The charge for frequent users the charge is likely to be administered via on-board equipment based around satellite and/or microwave technology. For infrequent users (mainly foreign operators) a scheme has still be finalised but will most likely follow the German model, with drivers giving journey details before their journeys at terminals located near a ferry port or border crossing. The driver will be charged there and then.

It is the government's intention to vary charges by time of day, vehicle type and road type. However, the ambitiousness of the scheme means that the government will at first only charge the heaviest vehicles for travelling on either motorways or non-motorways, with the charge not varying by time of travel. The charges will be offset through reductions in fuel duty and as such will be revenue neutral. The government hopes to implement the scheme by 2006.

(e) Road Expansion/Enhancement

In Chapter 6 of the Government's "Transport 2010 – The 10 Year Plan" the government's investment plans for road enhancements and expansion are outlined. The chapter notes that the strategic road network (most motorways and other trunk roads) is the keystone of the UK's transport system. It is comprised of less than 4% of the English road network (10,500 km out of 284,000 km) but carries 34% of all road traffic and 67% of all freight traffic. There are therefore a number of pinch points in the network leading to heavy periods of congestion (see Figure 1) and the government intends to tackle these through a number of measures, but first and foremost through investment in this strategic road network.

The investment strategy totals £21 billion and consists of £13.5 billion of public investment, £2.5 billion of private finance and £5 billion of public resources expenditure. This will be channelled into delivering the following improvements,

"

- *40 schemes currently in the Highways Agency's Targeted Programme of Improvements*

- *30 trunk road bypasses*
- *widening some 5% of the strategic road network (360 miles/576km) and associated junction improvements*
- *80 major schemes tackling bottlenecks at other junctions*
- *£130 million a year on smaller-scale targeted improvements, including £90 million to relieve congestion and safety hot spots*
- *widespread introduction of new technology for better network management to reduce delays and improve reliability*
- *new incident warning systems to prevent multiple collisions and other safety improvements at accident blackspots*
- *quieter surfaces installed on over 60% of the network including all concrete stretches."*

DFT (2000)

The most recent announcement by the Government in July, 2003, outlines a £7 billion investment strategy that will see road widening schemes on the M25, M1, M18, M62 and the A1/A1(M).

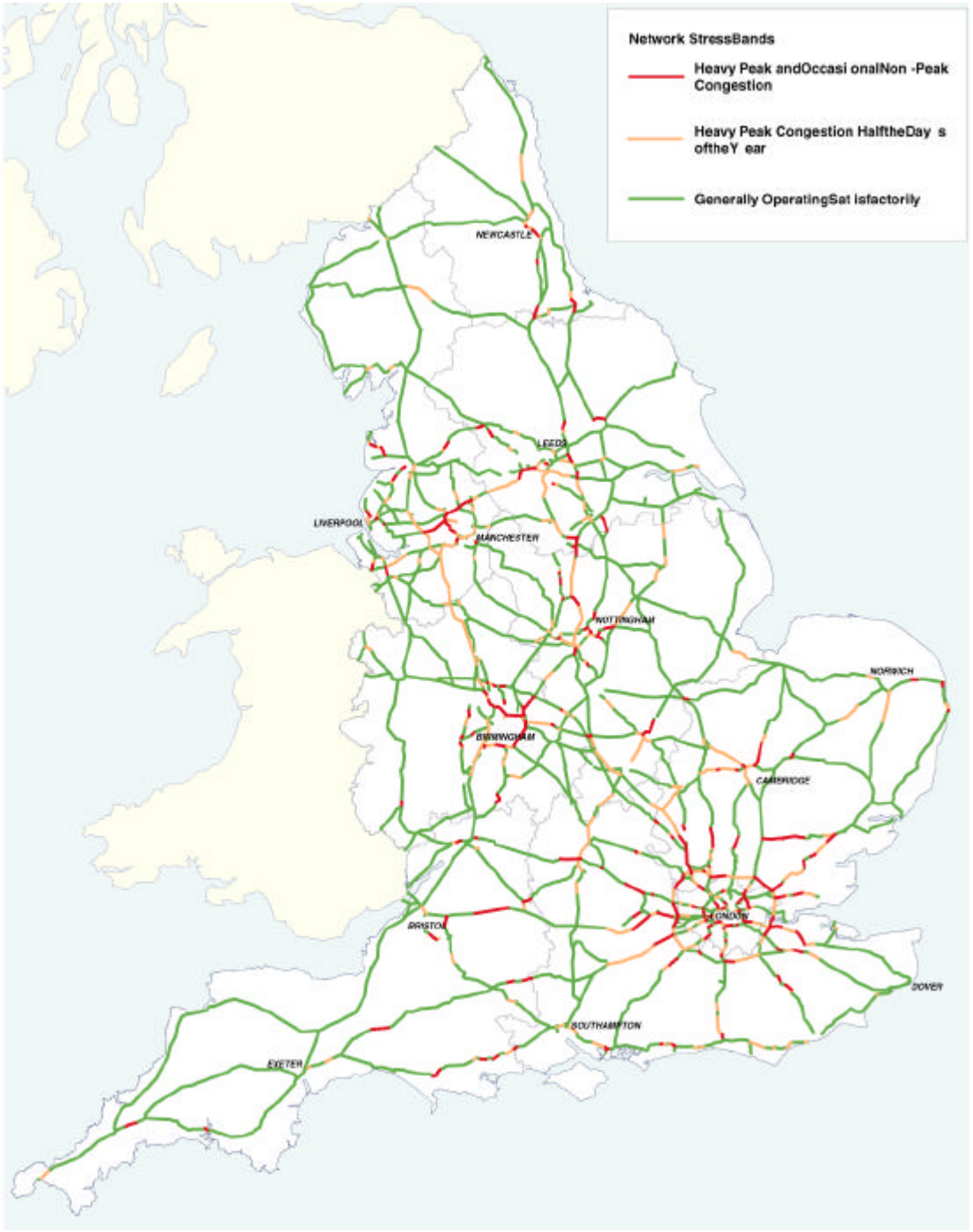

Figure 4.1 Proposed Road Expansion/Enhancement Schemes

Source: DFT (2000) Transport 2010 – The 10 Year Plan

(f) Fuel Duty Increases

Fuel duty increases that are not revenue neutral will lead to rises in the operating costs of both road hauliers and other motorists. Duty increases take place during the budget and are implemented with immediate affect and can be made fuel specific. The fuel retailers do not have to pass them onto their customers, but this rarely occurs.

(g) Subsidies to Rail Freight

The rail network has been receiving subsidies in various guises for a large number of years. The rail infrastructure is now back in the hands of public ownership as Network Rail. The company sets the access charges for the use of the rail system and also gives priority to companies who use the rail system. Subsidies for freight use could take the form of reduced track access charges. Alternative subsidies could take the form of an increase in Track Access Grants or an increase in the Freight Facilities Grant both of which relate to the sensitive lorry mile rates.

4.2 Implications for Freight Cost and Logistic Modelling

(a) Urban Road Pricing

Urban road pricing is likely to divert retailers and customers to out of town shopping centres or to cities/towns that do not have urban road pricing. The case of London is a special one since the size of the capital and the large share of the travel market held by public transport make it less likely to suffer from the effects just described. For regional cities, such as Leeds, the introduction of urban road pricing would be expected to lead to a diversion of retailers and customers. If both retailers and shoppers moved to out of town shopping centres this would reduce both the haulage length and delivery time within the logistics supply chain, especially within congested city centres. It would also tend to improve the reliability of deliveries. If the retailers and shoppers moved to other regional centres then haulage patterns would be altered, with the time spent in congested centres unaltered.

(b) Birmingham Relief Road (BRR) Toll

Proponents of the BRR have estimated that, on average, trips that travel the length of the BRR will be reduced by around 45 minutes, compared with the "as now" situation. This will lead to quicker journey times and increased reliability. Since the scheme is designed to be revenue negative the cost of its use will tend to outweigh any operating cost gains that are accrued from quicker journey times, however this may be outweighed by the valued benefit of improved reliability. The reduced journey time could also permit longer trunk hauls and may have implications for the location of regional distribution centres.

(c) Motorway Tolls

The charging of tolls on all motorways will have very similar effects to the BRR toll if it is revenue negative. In addition it will force traffic onto non-trunk routes in a bid to avoid paying the tolls. The effect on the logistics chain would probably be to shorten it and/or to divert traffic away from road to other alternatives such as rail, sea shipping and even pipelines.

If the tolls were part of a revenue neutral scheme then the impact of the scheme would depend upon how the compensation part of scheme were implemented. If a universal reduction in excise duties was implemented there would still be a tendency for traffic to divert away from motorways as they would benefit from the reduction whether they

used the motorways or not. If the compensation was specifically targeted, so each users received back what they had paid via a fuel duty rebate, then the use of the motorways would be less affected depending upon the generalised cost of when people travel and whether tolls varied by time of day and by route.

(d) Lorry Road User Charges – Distance Related Vignette System

These charges as proposed by the government are designed to be revenue neutral and to apply to both trunk and non-trunk roads. The implications arising from whether a scheme is revenue neutral or revenue negative have already been raised and are applicable to this case. The key difference with lorry road user charges and motorway tolls is that only HGVs would incur the charges. The likely affect on the logistics chain would be to shorten, with more use made of LGVs so increasing the number of trips made. There is also likely to be some modal shift away from road to rail, sea shipping or even pipelines.

(e) Road Expansion/Enhancement

The addition of extra lanes to the UK's most congested motorway sections will reduce congestion in the short to medium term at least. This will give rise to shorter journey times and better reliability, therefore leading to a lengthening of the logistics chain.

(f) Fuel Duty Increases

In the short to medium term fuel duty increases will have little impact upon freight movements and in the long term will tend to lead either to a shortening of the logistics chain or to the adoption of more efficient engine technology to compensate for the fuel duty increase. There may also be some modal shift away from road in favour of rail, sea shipping or even pipelines.

(g) Subsidies to Rail Freight

Subsidies to rail freight will have to be substantial if they are to achieve any modal switch away from road. In certain niche markets they might be affective in attracting traffic from road or encouraging inter-modal operations.

4.3 Summary of Effects on Logistics Chain

In Table 4.3 the affects of the seven scenarios on the logistics chain are outlined. The next stage of work will see an attempt to model these affects and as such the impacts outlined are crouched in terms that will be more suitable to modelling.

Table 4.3 Possible Effects of Scenarios on the Logistics Chain

Scenarios	Impact On Logistics Chain
1) Urban Road Pricing	- reduction in the length of the logistics chain (primarily in the non-trunk haul section) - improved reliability - reduced journey times
2) Birmingham Relief Road (BRR) Toll	- increase in the length of the logistics chain (primarily in the trunk haul section) - improved reliability - reduced journey times
3) Motorway Tolls	- reduction in the length of the logistics chain (primarily in the trunk haul section) - reduced reliability - reduced journey times - modal shift away from road
4) Lorry Road User Charges - Distance Related Vignette System	- reduction in the length of the logistics chain (primarily in the trunk haul section) - additional use of LGVs - increase in number of deliveries - modal shift away from road
5) Road Expansion/Enhancement	- increase in the length of the logistics chain (primarily in the trunk haul section)
6) Fuel Duty Increases	- reduction in the length of the logistics chain (primarily in the trunk haul section) - adoption of more fuel efficient engine technology - modal shift away from road
7) Subsidies to Rail Freight	- modal shift from road to rail (if subsidies very substantial, otherwise only in niche markets)

Section Five: Conclusions

This paper has defined and outlined a number of policy drivers and associated levers that could affect or will affect the freight logistics chain. The impacts of the levers has been documented and a number have been highlighted as scenarios that will need testing as part of the logistics cost modelling that will be carried out by the University of Leeds.

This paper is meant to be a discussion paper and as such is meant to stimulate ideas and discussion. At this stage it is still possible to change the scenarios to be examined in the logistics cost modelling work to be undertaken by the University of Leeds. If anyone feels strongly that certain scenarios should be included or excluded and wished to discuss them then please contact me either by email jshires@its.leeds.ac.uk or by phone 0113 343 5347.

References:

Department for Transport (2000) "Transport 2010 – The 10 Year Plan".

Department for Transport (2000) "Modernising the Taxation of the Haulage Industry – Progress Report One"