The Decoupling of Road Freight Growth from Economic Growth

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GDP and Road Tonne-Kms: Parallel Growth

Source: Dept for Transport
Growth of Road Freight ‘in Perpetuity’

- Extrapolating GDP and Tonne-kms to 2205
- Average household income of £1 million
- Need for 30 million 32 tonne articulated lorries

*A picture of daily life in the millionaire society begins to emerge…. people will spend most of their time driving around in the family juggernaut picking up piles of machine-made stuff from automatic warehouses or wandering about the tarmac plain searching for someone to carry out repairs when it goes wrong.*

(John Adams, 1981)

‘We have to consider the option of gradually breaking the link between economic growth and transport growth.’

Source: Technical University of Berlin
Decoupling of road tonne-km GDP trends

Index value (1990=100)

GDP

road tonne-kms
‘Road Haulage Gap’

Had road tonne-kms and GDP trends remained coupled:

• *Extra 28.5 bn tonne-kms of road freight movement*

• *Road hauliers’ share (2004) = 73%*

• ‘*Road haulage gap’ = 21 bn tonne-kms*

• *19% of road tonne-kms carried by UK road hauliers in 2004*
Possible Reasons for the Decoupling

• Economies of scale exhausted: *end of the era of centralisation?*
Centralisation of Warehousing in Retail Distribution Systems

Boots

Tesco

Replacing 17 regional depots with one central distribution centre
Possible Reasons for the Decoupling

• End of the era of centralisation?

• Domestic supply lines fully extended: end to wider sourcing?
Stabilisation of the Average Length of Haul Trend?

Source: Dept for Transport
Possible Reasons for the Decoupling

- End of the era of centralisation?
- Domestic supply lines fully extended: end to wider sourcing?
- Effect of higher freight rates: high cost of transport dampening demand?
Corporate Services Price Index for Road Haulage

Elasticity of demand for road haulage

For every 1% increase in the real cost
0.1% reduction in demand
2.4 bn fewer tonne-kms
Would account for 12% of decoupling

Source: Office of National Statistics
Possible Reasons for the Decoupling

• End of the era of centralisation?

• Domestic supply lines fully extended: end to wider sourcing?

• Effect of higher freight rates: high cost of transport dampening demand?

• Decline in road’s share of the freight market: marginal
% of freight moved by road in the UK
Growth of Freight Tonne-kms by Road and Alternative Modes: 1998-2003

Road freight growth in line with GDP

20.7bn T-km

Rail, water and pipeline

4.6bn T-km

22%

Source: Dept for Transport
Possible Reasons for the Decoupling

• End of the era of centralisation?

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• Decline in road’s share of the freight market: marginal

• De-industrialisation / off-shoring: loss of manufacturing
### Increased Import Penetration in the UK

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Import Penetration Ratio</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1997</td>
<td>2002</td>
</tr>
<tr>
<td>Fabricated metal products, excl machinery</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td>Radio, TV and communication equipment</td>
<td>93</td>
<td>253</td>
</tr>
<tr>
<td>Motor vehicles, trailers and semi-trailers</td>
<td>56</td>
<td>134</td>
</tr>
<tr>
<td>Publishing, printing, recorded media</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Tobacco</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Chemicals, chem products, manmade fibres</td>
<td>56</td>
<td>80</td>
</tr>
<tr>
<td>Office machinery and computers</td>
<td>105</td>
<td>146</td>
</tr>
<tr>
<td>Other transport equipment</td>
<td>62</td>
<td>79</td>
</tr>
<tr>
<td>Textiles and textile products</td>
<td>55</td>
<td>70</td>
</tr>
<tr>
<td>Electrical machinery and apparatus</td>
<td>55</td>
<td>69</td>
</tr>
<tr>
<td>Clothing, dyeing, fur</td>
<td>77</td>
<td>93</td>
</tr>
</tbody>
</table>
Effect of the Loss of Manufacturing on the Supply Chain

- Component supplier
- Warehouse
- Main assembly plant
- Retail distribution centre
Possible Reasons for the Decoupling

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• Effect of higher freight rates: high cost of transport dampening demand?

• Decline in road’s share of the freight market: marginal

• De-industrialisation / off-shoring: loss of manufacturing

• New economic growth in services: freight generation by service sector
Changing Composition of GDP

% of GDP

1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003

Services
Construction
Production
Agriculture
Possible Reasons for the Decoupling

- End of the era of centralisation?
- Domestic supply lines fully extended: *end to wider sourcing*?
- Effect of higher freight rates: *high cost of transport dampening demand*?
- Decline in road’s share of the freight market: *marginal*
- De-industrialisation / off-shoring: *loss of manufacturing*
- New economic growth in services: *freight generation by service sector*
- Displacement of freight from trucks to vans under 3.5 tonnes
Growth of Van and Lorry Traffic: 1993-2010

Source: Department for Transport
Possible Reasons for the Decoupling

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• New economic growth in services: freight generation by service sector

• Displacement of freight from trucks to vans under 3.5 tonnes

• Increased penetration of UK haulage market by foreign operators
Activities of foreign-registered trucks excluded from the tonne-km estimates
Foreign Penetration of UK Road Freight Market

Increase in cabotage penetration

<table>
<thead>
<tr>
<th>Year</th>
<th>Distance (m tonne-km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>79 m tonne-km</td>
</tr>
<tr>
<td>2003</td>
<td>1610 m tonne-km</td>
</tr>
</tbody>
</table>

Increase in foreign haulier penetration of UK legs of international journeys

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<tr>
<th>Year</th>
<th>Distance (m tonne-km)</th>
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<tbody>
<tr>
<td>1997</td>
<td>4310 m tonne-km</td>
</tr>
<tr>
<td>2003</td>
<td>9530 m tonne-km</td>
</tr>
</tbody>
</table>

Foreign hauliers captured 6.75 bn more tonne-kms in 2003 than 1997

- Equivalent to 1.35 million hauls of 20 tonnes over 250 km

Accounts for 1/3 of the decoupling of road tonne-km and GDP trends
Factors Contributing to the Decoupling

Tonne-kms in line with GDP
Factors Contributing to the Decoupling

- Erosion of manufacturing to other countries
- Changing structure of the economy
- Diminishing rate of centralisation

1997

- Foreign haulier penetration: 33%
- Higher freight rates: 22%
- Modal shift to rail and water: 12%
- Other factors: 33%

2004

Tonne-kms in line with GDP

Foreign haulier penetration

Other factors

Higher freight rates

Modal shift to rail and water

Erosion of manufacturing to other countries

Changing structure of the economy

Diminishing rate of centralisation
Government Objective: Decouple Lorry-kms from GDP

‘The 10 Year Plan aims to reduce lorry intensity, that is the extent to which economic growth generates additional lorry traffic’


Ratio of lorry-kms to GDP

Lorry-km estimate includes UK and foreign-registered vehicles

Source: Dept for Transport
Reduction in Empty Running / Increasing Payload Weight

Decline in empty running

Increase in average payload

Up-plating to 44 tonnes

Source: Department for Transport