
THE UK PORTS INDUSTRY:

Forecasting Growth & Developing Capacity

by

MDS Transmodal

1. AGENDA

- Past trends, 1965-2004
- Ports & Public policy
 - History and forthcoming review
- Forecasting and capacity
 - The evidence base MDST is gathering

2. PORT SUPPLY & DEMAND AND THE STATE

- 1962 Rochdale committee highlighted need for:
 - statistics
 - forecasts
 - a National Ports Authority
- 1963 legislation delivered a National Ports (advisory) Council
- NPC produced first comprehensive National Port Statistics from 1965
 - establishing an excellent framework with which we still benefit
- Last forecasts produced by NPC in 1980
 - underestimated unitised growth 1978 to 1988 at 40%
 - actual growth was 80%
 - forecasting an inexact science!
- NPC closed 1980 eliminating formal role of State in defining required capacity

3. PORT SUPPLY & DEMAND AND THE STATE

- 1981 BTDB privatised creating ABP

But failure to close Dock Labour Scheme until 1989 encouraged cargo to continue to switch to 'Non Scheme Ports'

- 1989 Dock Labour Scheme abolished restoring competitiveness to major urban 'Scheme' ports
- Early '90s most major trust ports privatised

Port productivity improved radically, delaying the need for new infrastructure

- Environment legislation extends its impact on the industry
 - Habitats Directive
 - Birds Directive
 - Also introducing RSPB and English Nature into forecasting field
- 2000 White Paper 'Modern Ports' published – continuing 'free market' policies; responsibility for new port projects left with market players
 - To deliver requisite capacity as demand outstrips supply

4. GB PORT TRAFFIC GROWTH 1965 - 2004

- Overall growth + 84% (299m > 550m tonnes)
- Mean annual growth + 1.6%

m tonnes

	1965	2004	
Non energy Foreign Dry and Semi Bulk	76	90	+ 18%
Petroleum products	91	90	- 1%
Crude oil: discharged	64	84	+ 31%
loaded	-	78	Now declining
Coal: discharged	18	38	+ 111%
loaded	26	2	- 92%
General cargo/unitised	12	146*	+ 1117%
Coastwise/other	12	22	+ 83%
Overall	299	550	+ 84%

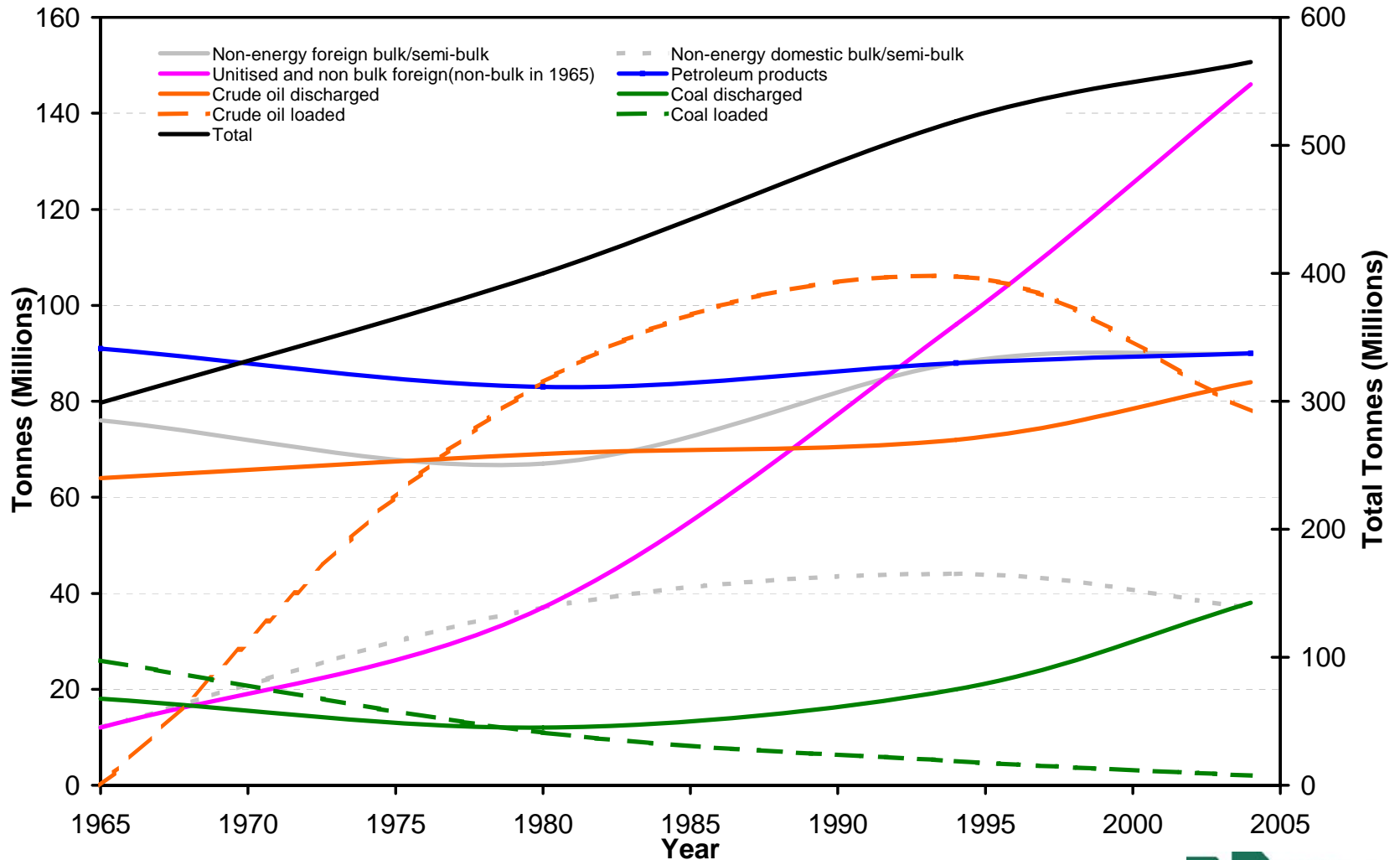
Excludes one port traffic

* includes Channel Tunnel

5. PORT TRAFFIC GROWTH 1965 - 2004

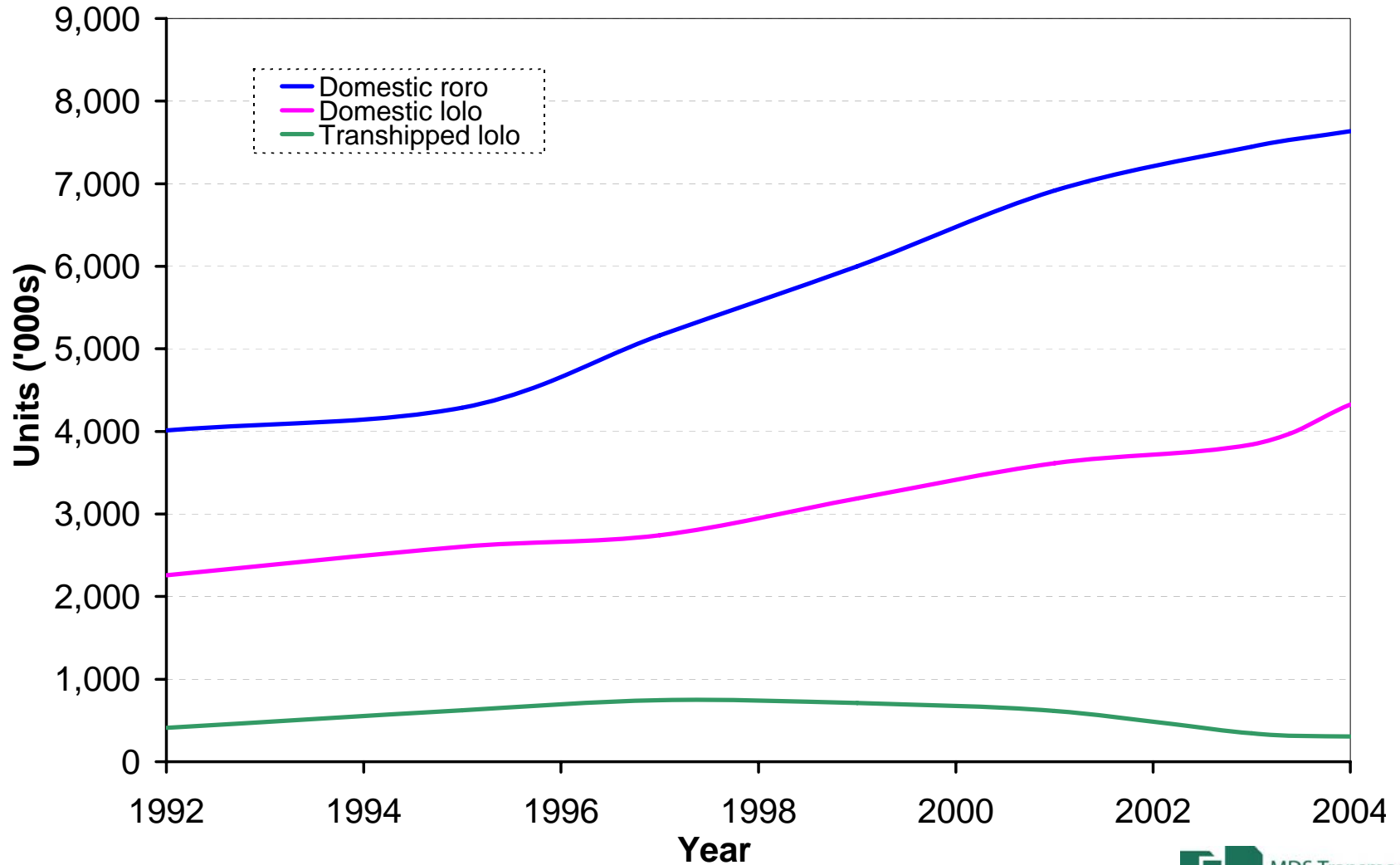
Long Term Trends in Port traffic

(based only on years 1965, 1980, 1994 and 2004; includes the Channel Tunnel)



6. UNITISED PORT CARGO GROWTH: 1992 - 2004

Overall UK unit load traffic, 1992 - 2004



7. UK PORT TRAFFIC SUMMARISED: 2004

Million tonnes

Cargo category	Cargo sub-category	Traffic (Million Tonnes)	% UK Major Port Traffic	% UK Traffic
Container traffic		58	10%	
Roll-on Roll-off traffic		114	20%	
<i>Of which:</i>	<i>Ports</i>	99		
	<i>Eurotunnel</i>	15		
Liquid Bulk		260	45%	
<i>Of which:</i>	<i>Liquefied gas</i>	7		
	<i>Crude oil</i>	162		
	<i>Oil products</i>	86		
	<i>Other liquid bulk products</i>	12		
Dry Bulk		114	20%	
<i>Of which:</i>	<i>Ores</i>	18		
	<i>Coal</i>	41		
	<i>Agricultural products</i>	13		
	<i>Other dry bulk</i>	42		
Other general cargo		27	5%	
<i>Of which:</i>	<i>Forestry products</i>	11		
	<i>Iron & steel products</i>	10		
	<i>General cargo & containers < 20'</i>	7		
Total UK major ports	(inc. Eurotunnel)	573	100%	97%
Other UK ports		15		3%
Total UK Ports		588		100%
<i>Of which:</i>	<i>England</i>	395		67%
	<i>Wales</i>	60		10%
	<i>Scotland</i>	110		19%
Total Great Britain		565		96%
	<i>Northern Ireland</i>	23		4%

Source: DfT Maritime Statistics 2004 (see notes to tables 3.10 and 30.13)

8. CHALLENGES & OPPORTUNITIES

- **GLOBALISATION & CONSEQUENT TRADE GROWTH 1996 - 2004**

- World container traffic: +103%
- UK continent ro-ro market: + 52% (inc. Eurotunnel)
- UK lolo market: + 44% (by TEU)

- **SHIP SIZE: PANAMAX PLUS CONTAINER VESSELS (3000 TEU+)**

	<u>World Fleet</u>	<u>Mean TEU</u>
1990	73	3534
2005	946	4865
2008	1467	5239

- by 2008, 197 ships of 8000 TEU+
- new 4000 lane metre freight ferries approaching Panamax dimensions

- **ENVIRONMENTAL CONSTRAINTS**

- forelands defended by the BIRDS
- hinterlands defended by NIMBYS
- Habitats directive obliges proof of **need & absence of alternatives**

9. TERMS OF REFERENCE

- **TO GENERATE FORECASTS FOR EACH CARGO CATEGORY**
 - for Great Britain
 - for Northern Ireland
 - based upon identifiable drivers
- **TO ASSESS THE CASE FOR CONTAINER TRANSHIPMENT**
reinterpreted to assess:
 - 3rd country transshipment in GB ports
 - transshipment of GB containers elsewhere
 - implications of different (generic) port capacity developments on both transport businesses **and** end user costs.
 - relative impact of new port capacity on inland networks
 - estimating the wider economic implications (DTZ Pinda)

10. FORECASTS: PRESENT STATUS

- Modelling and market analysis work complete
- Initial results based on 2003 data
- Revision using 2004 base almost finalised
- Final report will
 - compare supply and demand
 - review the impact of port traffic growth on regional transport infrastructure
 - be compatible with GB freight model results for road and rail

11. FORECASTS: GB BULKS & SEMI BULKS: 404m tonnes in 2004

	Driver	2004 – 2030 growth m tonnes
1. Liquefied Natural Gas	- replacement of North Sea supplies	Substantial growth
2. Crude Oil	- inbound limited by refinery capacity - North Sea outbound in terminal decline	Minimal change Loss Overall fall
3. Oil products	- growing demand/limited domestic refinery capacity	Growth
4. Other liquid bulks	- modest increase in chemicals	Minimal change
5. Ores	- modest production growth	Minimal change
6. Coal	- declining UK production - medium term closure some power stations	Expansion Reduction Net minimal change
7. Agricultural products	- grain, feed and fertiliser trends	Minimal change
8. Other dry bulks	- predominantly building materials	Minimal change
9. Forest products	- growth in panel materials and paper	Minimal change
10. Iron and Steel	- existing plant/trends in consumption	Minimal change

12. FORECASTS: GB UNITISED CARGO: 146m tonnes in 2004

- By tonnage GB massively a net importer:
 - deep sea: 64% imports
 - short sea: 63% imports
- Recent growth of 5.5% in TEU per annum (1992 – 2004)
- Principal driver for growth is falling trade barriers – not GDP
- Tonnage growth forecasts based upon country – country – commodity econometric relationships
- Unit load volume forecasts based upon growth in imports
 - exports simply occupy capacity of returning units

13 . FORECASTING METHODOLOGY: NON UNITISED

- Identify drivers: for example
 - energy demand
 - power stations fitting FGD kit
 - agricultural trends (e.g. livestock population)
 - construction industry output
 - car consumption per head
- Cross check with trends
- Demand for bulks derived from the industries that consume them!

14. FORECASTING METHODOLOGY: UNITISED

- Multiple regression exercise relates historic relationships (1990-2004) between:
 - GDP
 - exchange ratesfor each country - country – (2 digit) commodity flow
- Project GDP (source OECD)
- Conduct sense checks
 - will projected exports earnings support forecast imports!

15. FORECASTS FROM EARLIER STUDIES

Recent container growth forecasts 1999-2015

			%p.a.
Dibden inquiry	MDST	119%	5.0
Felixstowe S/Bathside B inq.	OSC	112%	4.8
London Gateway inquiry	Drewry	105%	4.6
for RSPB/English Nature	MDST	115%	4.9
	Actual 1999-2004		6.3
	<i>(exc. 3rd country transshipment)</i>		

Recent ro-ro growth forecasts 1999-2015

Dibden inquiry	MDST	93%	4.2
London Gateway inquiry	Drewry	93%	4.2
	Actual 1999-2004		4.9

16. SHIPPING ARRIVALS STAGNANT (GB) - but ships becoming larger

	Vessels arriving in G.B. (‘000s)		% over 5000 deadweight	
	1985	2004	1985	2004
Tankers	25.9	20.9	31%	43%
Ro-ro vessels	56.2	74.6	8%	43%
Container vessels	3.1	7.8	41%	68%
Other dry cargo	53.3	34.0	14%	19%
	138.5	137.3	15%	38%

- Only ro-ro and container vessel arrivals growing
- Between 1985 and 2004:
 - 139% growth in trailers but only 33% in ro-ro arrivals
 - 158% growth in lolo containers and 152% in lo-lo arrivals
- Main demand pressure therefore for:
 - more lo-lo and ro-ro quay space
 - ‘larger berths’
 - more lo-lo berths.

17. VALUE OF TRANSHIPMENT/CASE FOR MORE LOLO CAPACITY: METHODOLOGY

- To develop a cost model based upon
 - port charges (GB and Continent)
 - road, rail and feeder costs
 - diversion costs for deep sea vessels
 - forecasts of traffic growth informing ship size
- To model market shares for leading lines and alliances as their individual scale also informs strategy
- To assume individual lines aim to minimise their own costs of serving GB economy

18. PRINCIPAL NEED FOR LOLO CAPACITY – WHERE SHOULD IT GO?

Scenarios considered:

1. No new deep-sea developments
 - rely on continental transshipment
 - consequence includes huge increase in feeder berths required
2. Extensive new port development in south east UK
3. Alternatively, extensive new deep water capacity in the regions
4. Continental ports fill up (not expanded beyond existing plans)
 - forcing deep sea ships to use UK regional ports

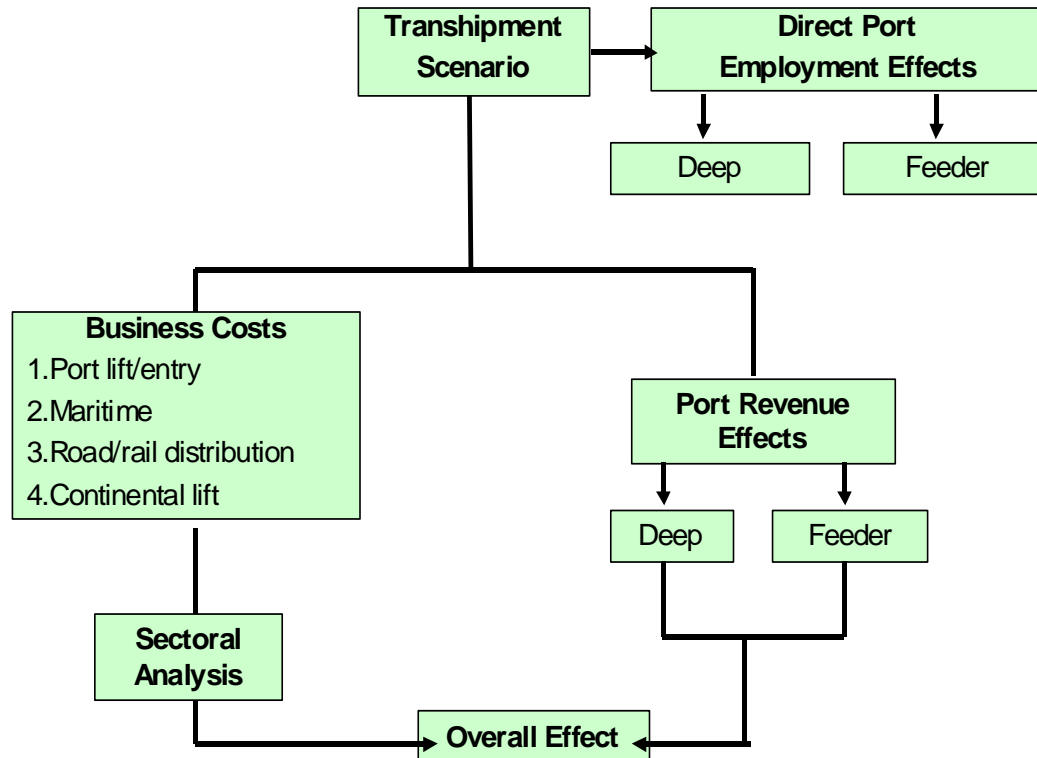
19. DEEP-SEA SCENARIOS EVALUATED

- By delivery costs
 - Cost to industry, mid English Channel to inland delivery/TEU
- By GB transport earnings for
 - GB ports (including transshipment)
 - road hauliers
 - rail operators
- By extra feeder berths required (potential planning issue)
- By impact on rail network (associated capacity issues)
- By environmental impact
 - measured by Sensitive Lorry Miles

20. EVALUATION SUMMARISED

- User costs minimised by developing South East ports
 - the most cost efficient strategy
- GB transport earnings maximised if Continental ports full
 - reflecting increase in rates chargeable
 - user costs rise in step
- Environmental benefits maximised by minimising South East port throughput
 - but benefits small by comparison with user costs
- Failure to develop new deep water berths implies massive need for more feeder berths
 - also with environmental consequences
- Not full NATA appraisal

21. WIDER ECONOMIC IMPACT: METHODOLOGY



- Key comparison is between scenarios
- Long time horizon – where we assume *ceteris parabus*.
- Three components are not to be viewed as cumulative. They simply describe different aspects of the scenarios.

22. SOME MESSAGES

- Employment
 - jobs follow the traffic
 - ports very important in local/sub-regional context – but not a significant regional employment engine
 - not a zero sum game – regional differences between scenarios, but all with potential to gain
- Business costs
 - the market will find a way – access to goods and markets not affected
 - relative cost difference between scenarios is small given the amount spend on transportation/freight by business
- Wider picture
 - not a NATA framework
 - have not considered who pays for necessary logistics/transport infrastructure/differential land take

23. ISSUES & IMPLICATIONS: MDST VIEW

- **There will be a need for more port capacity**
 - particularly for deep sea lo-lo terminals
 - a more limited but important case for ro-ro on-shore capacity
- **There is a consequential need for more rail capacity**
 - potential conflicts with passenger growth (e.g. ECML & Crossrail)
 - linked to capability to carry 9'6" containers efficiently
- **Increasing dependence on imports concentrating 'the same' freight on fewer links**
 - ports/railheads/distribution parks are effectively only transit facilities
 - raises question as to who should pay for inland infrastructure
 - already encouraging logistics developments in dock estates
 - port strategy therefore plays increasing role in national economic efficiency
- **Analysis of port traffics inland reveal impacts on the South East & East of England**
 - are there lessons for location of additional port development?
 - should there be complementary investment in inland infrastructure?
- **The ports industry is self funding & commercially successful and:**
 - through globalisation likely to play an increasingly important role in regional economic development
 - raises question as to how port industry's self sufficiency and its regional strategic significance best managed

24. PORTS LONG TERM ROLE

- One third of all freight lifted in Britain port related
- Half of all rail freight port related
 - these proportions growing through globalisation
- Port traffic – particularly containers – to continue to grow
- Long term economic efficiency dictates need for clear and coherent relationship between Government transport and land use policy and the ports industry