
WHICH CARGOES WILL DRIVE CONTAINERISATION IN THE FUTURE

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1. Adapting to the new reality

- Unprecedented slump in demand
- A need to better understand why markets plummeted
- Rapid growth in supply
- A need to find new markets

2. This paper aims to:

- Establish commodity mix that has driven container markets to date
- Illustrate recent slump at commodity level
- Discuss suitable parameters to improve forecasting in the future
 - USA case study
- Estimate the demand shortfall faced
- Consider what cargo could fill that system capacity
 - and how it could be won

3. World Trade : 2008

	<u>billion tonnes</u>
Global International trade	7.34
<i>of which</i>	
- oil & chemicals	3.18
- coal	0.74
- ores & minerals	1.26
- foodstuffs	0.53
- metals	0.28
- forest products	0.32
- others	1.03
 <i>Estimated container tonnes</i>	 1.25
<i>equivalent to around 135 million loaded TEU</i>	

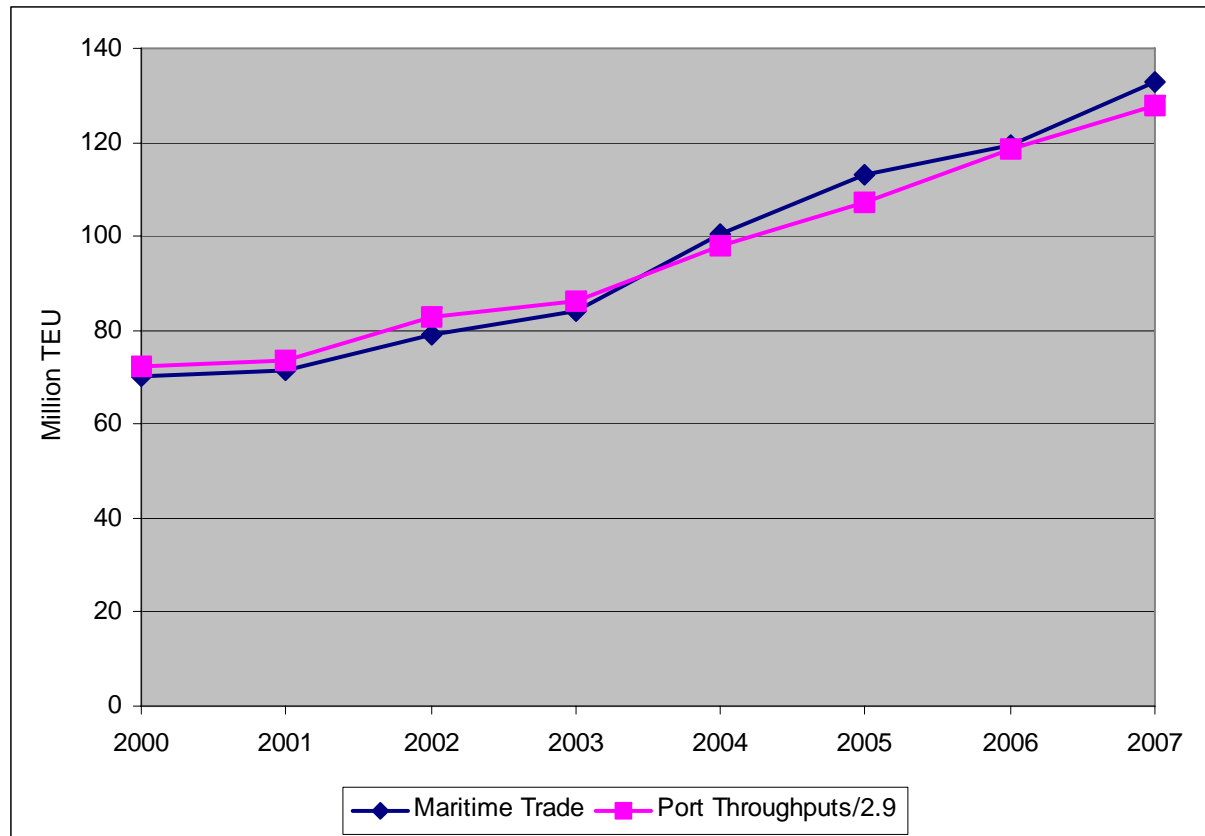
4. Container trades: 1996 - 2008

- 1996 international world container trade approx. 53m TEU
- Grew to estimated 135m loaded TEU by 2008
- Growth dominated by consumer and semi-manufactured sectors

m TEU

	1996	2002	2008	Growth 1996 – 2008
Industrial goods	14.8	21.4	41.5	+26.7
Consumer goods	12.3	16.3	26.5	+14.2
Chemicals/energy	5.8	9.8	17.9	+12.1
Foodstuffs	9.6	13.8	18.8	+9.2
Metals	3.2	5.4	11.4	+8.2
Forest products	3.6	7.1	11.0	+7.4
Raw materials	3.8	5.3	8.3	+4.5
	53.1	79.1	135.4	+82.2

5. Global Port throughput & estimated loaded containers based on commodity mix , 2000 - 2007

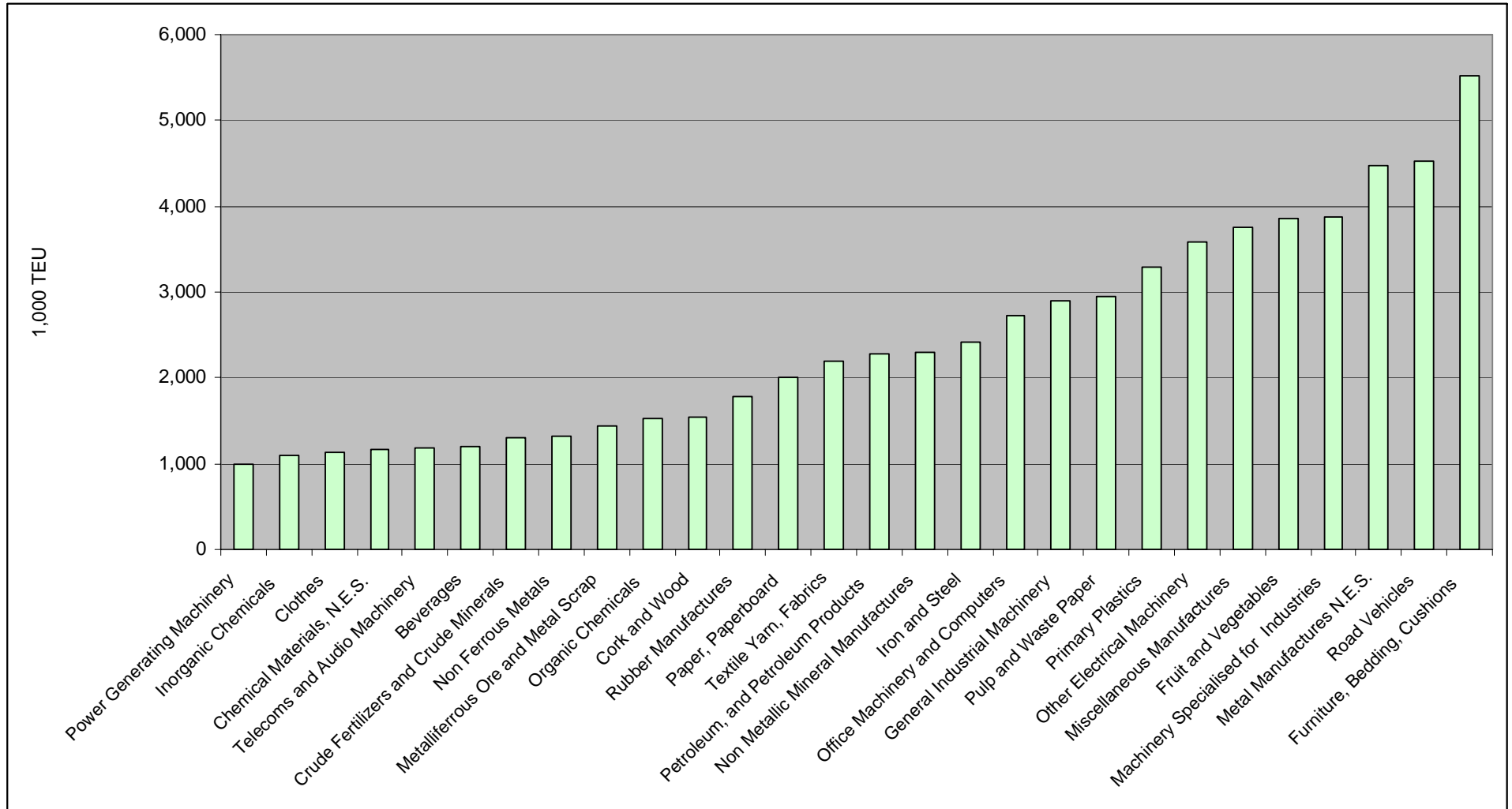


* Customs data available to January 2009

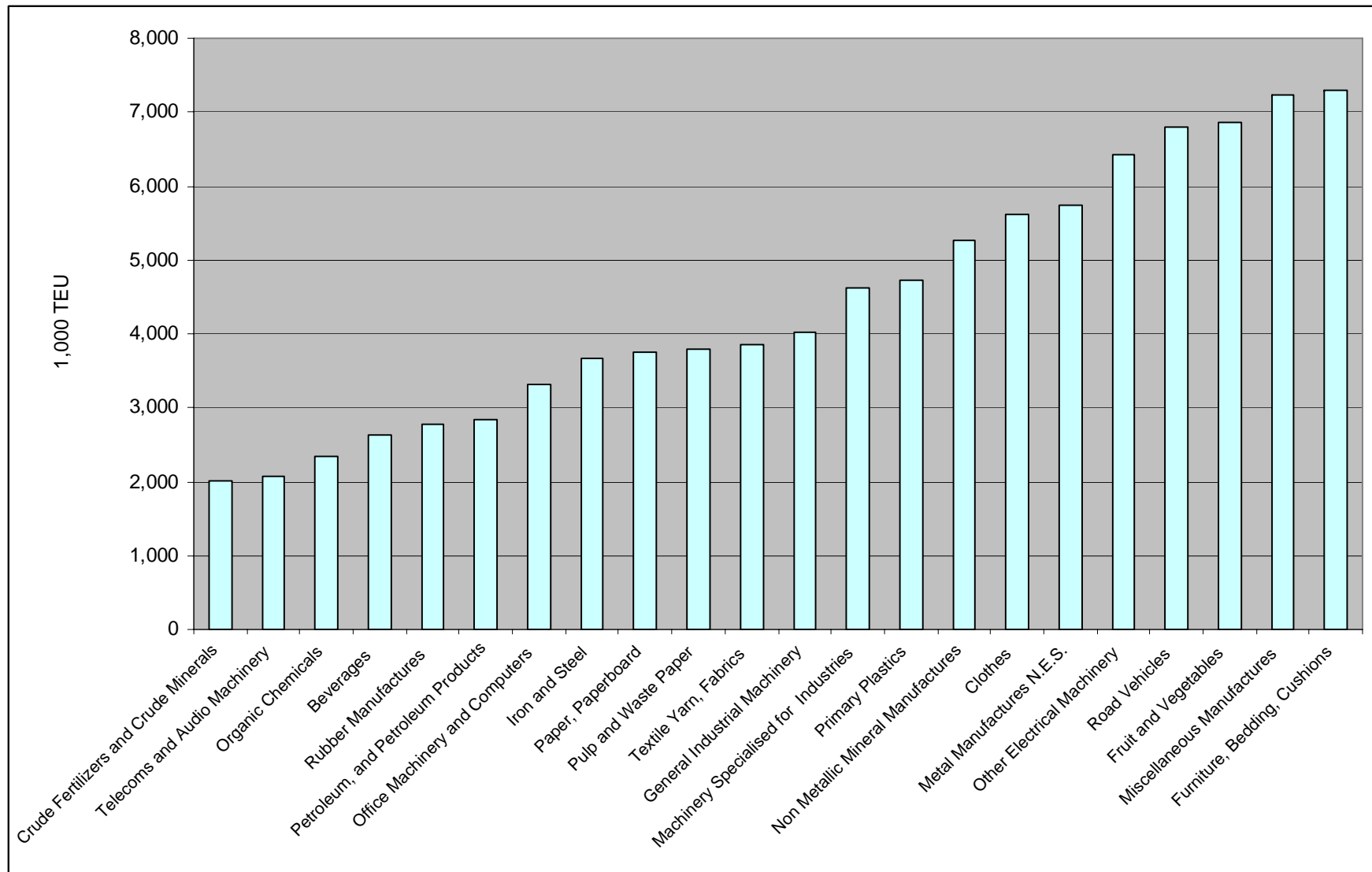
* Not all ports yet declared 2008 throughput

- Close correlation validating trade statistics to examine container flows
- Using Customs data collected THROUGH the shipping industry publicly available within 6 – 7 weeks of month end in huge detail

6. Global container growth by commodity (1996-2008) – GROWTH > 1,000,000 TEU: growth based on consumer durables



7. Leading commodity groups in 2008 – > 2,000,000 TEU: led by household goods



8. Container growth by export region (1996 – 2008)

Regions	millions loaded TEU		
	1996	2008	1996-2008
AUSTRALASIA & OCEANIA	1.6	2.8	+ 1.2
EAST AND SOUTHERN AFRICA	0.9	1.8	+ 0.9
FAR EAST	24.2	73.5	+ 49.3
of which: - CHINA	6.0	37.9	+ 31.9
- JAPAN	4.1	7.8	+ 3.8
GULF & ISC	2.7	7.0	+ 4.2
LATIN AMERICA	3.4	9.3	+ 5.9
MEDITERRANEAN	4.0	8.4	+ 4.3
NORTH AMERICA	7.6	14.2	+ 6.6
NORTH WEST EUROPE	8.0	17.4	+ 9.4
WEST AFRICA	0.5	0.9	+ 0.3
ALL	53.0	135.2	+ 82.2

- Commodity modelling converted to trade generators – 60% absolute growth derived from Far East

9. Container growth by import region (1996 – 2008)

Regions	millions loaded TEU		
	1996	2008	1996-2008
AUSTRALASIA & OCEANIA	1.8	3.6	+ 1.9
EAST AND SOUTHERN AFRICA	1.0	4.8	+ 3.7
FAR EAST	17.2	43.3	+ 26.1
GULF & ISC	6.9	12.5	+ 5.6
LATIN AMERICA	3.5	8.2	+ 4.7
MEDITERRANEAN	3.7	11.0	+ 7.3
NORTH AMERICA	9.5	29.8	+ 20.3
NORTH WEST EUROPE	8.5	19.7	+ 11.2
WEST AFRICA	1.0	2.3	+ 1.3
ALL	53.0	135.2	+ 82.2

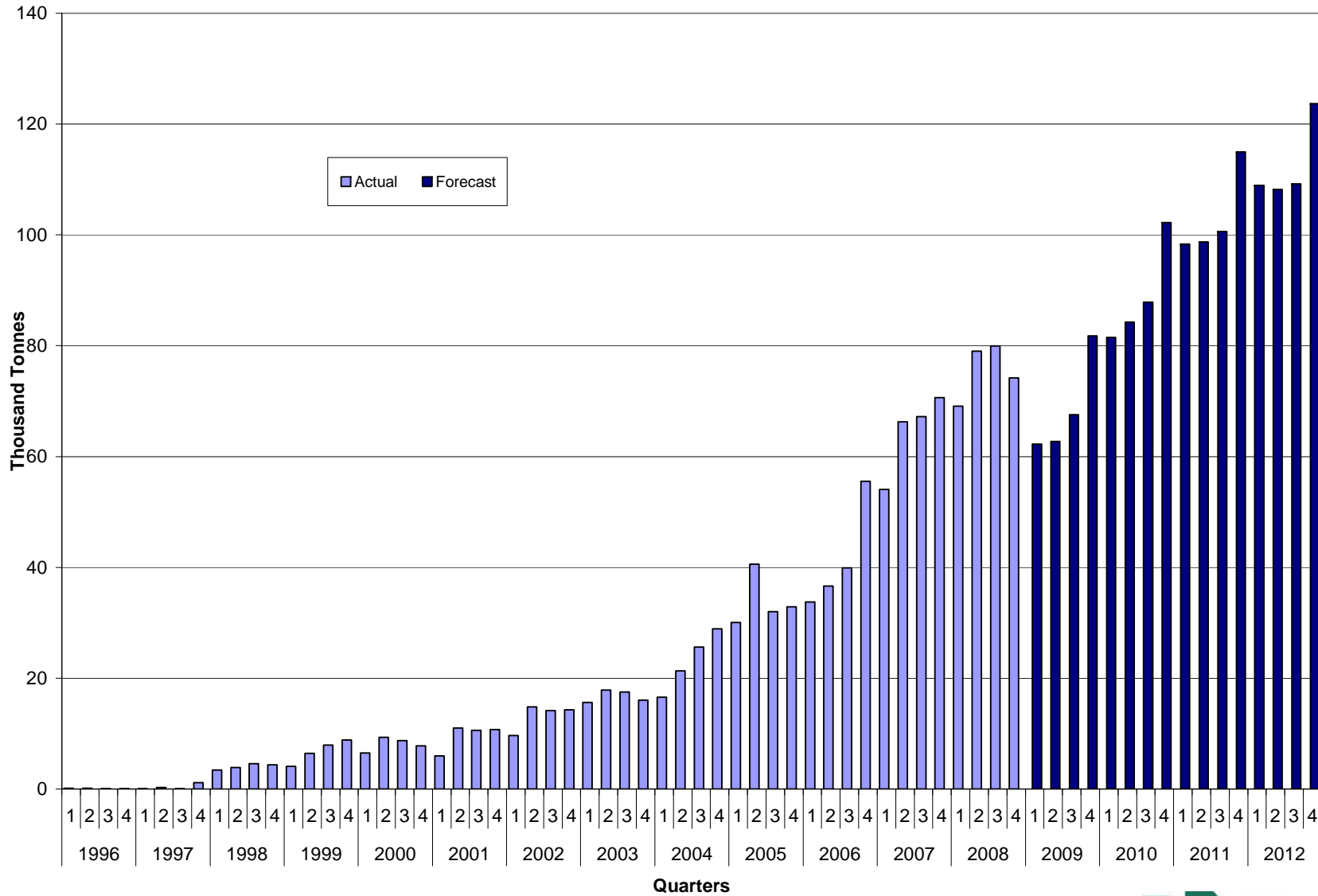
- Commodity modelling converted to trade attractors
 - 32% absolute growth to Far East economies
 - 25% absolute growth to North America

10. Global trade – 2007-2008 – case studies - the crash in Q4 2008

'000s loaded TEU

Commodities	Quarter	2007	2008	Index (2007=100)
Wine	1	131	135	104
	2	140	137	97
	3	149	157	105
	4	157	155	99
	Annual	577	584	101
Car Tyres	1	145	159	109
	2	161	168	104
	3	167	190	114
	4	161	142	89
	Annual	634	659	104
Telephones	1	108	125	116
	2	118	138	117
	3	130	154	118
	4	174	157	90
	Annual	530	574	108
Seats	1	721	712	99
	2	702	730	104
	3	629	603	96
	4	666	657	99
	Annual	2718	2702	99

11. Detailed case study: USA imports car tyres from China – Q4 2008 FELL - how to forecast ahead?



12. Detailed case study: USA imports of wine from Australia – Q4 2008 GREW - how to forecast ahead?



13. Demand crisis in Q4 2008: bringing the commodities together

	Q1	Q2	Q3	Q4
Exports from:				
China	115	107	106	89
Of which to Europe	113	105	103	93
N. America	105	96	101	90
Japan	104	99	94	74
Of which to Europe	91	85	84	60
N. America	98	78	76	75
South Korea	94	104	108	92
Of which to Europe	106	103	106	88
N. America	93	95	101	89
Imports to USA	98	92	95	89
Of which from Far East	100	89	89	88

•Challenge to identify the cause!

- published late February

14. Trade & disposable income – the key relationship

- GDP traditional tool on which to base forecasts
- GDP figures also reflect public spending and spending on services therefore not a reliable indicator of trade
 - And not so easy to forecast either!
- Global container growth dominated by imports of durable and semi-manufactured goods to western economies
 - therefore function of consumer spending AFTER essential household expenditure (food, energy, mortgages)
- Such spending is **optional** and was boosted by access to credit
 - therefore highly dependent on expectation (job security) and net equity (house prices)!
 - can these be usefully measured?

15. USA case study: 2006 – 2008 – crisis unfolds

- Estimated disposable (income and credit) funds FELL -3.4%
- Spending on 'essentials'(food, energy, mortgages) ROSE +7.3%
- Estimated 'residual' funds available after essentials FELL – 19.5%
- Spending on cars/consumer durables/apparel FELL –5.7%
- Net housing equity (values less mortgages) FELL RAPIDLY -51.0%
 - and container imports went into reverse

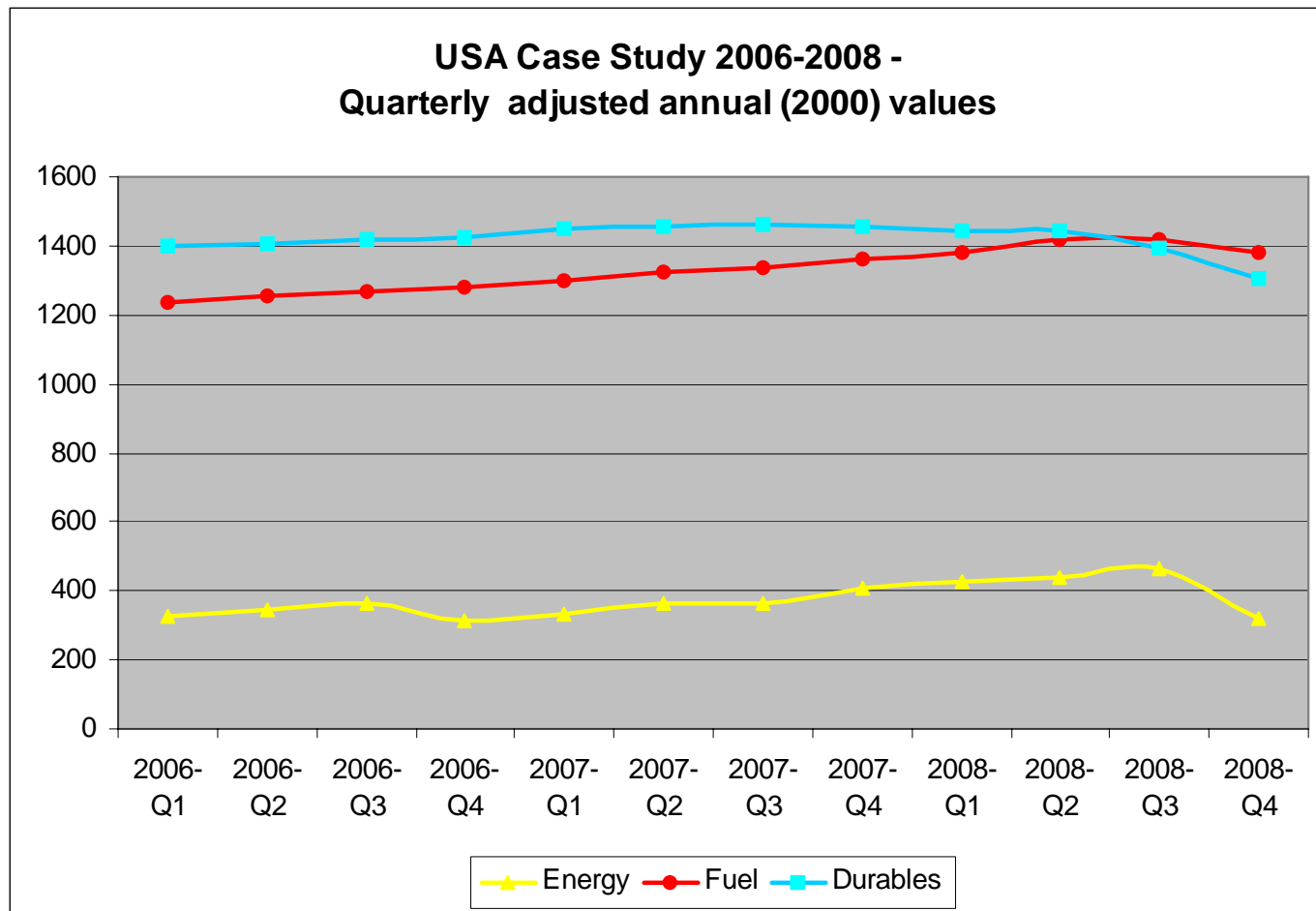
(based on MDST interpretation of Bureau of Economic Analysis data)

16. USA Case study: 2000 – 2008 : a pattern

- Value of 'durable' goods consumed fell as proportion of residual income
- Energy food and interests payments squeezed discretionary expenditure
- 'Double whammy' of energy price hike & credit crunch in Q3 2008 (v. Q3 2007) when:
 - \$25 billion more in energy spend
 - \$189 billion less borrowed (house values falling)
 - therefore \$214 billion less discretionary spending
 - \$122 billion cut in spend on cars/consumer durables/clothes
- For all cars/consumer durables/apparel
 - By 2008 every \$3 of total retail sales corresponded to \$1 of import wholesale value
 - Impact on imports dramatic

(based on MDST interpretation of data Bureau of Economic Analysis data)

17. USA case study 2006-2008: quarterly adjusted annual (2000) values



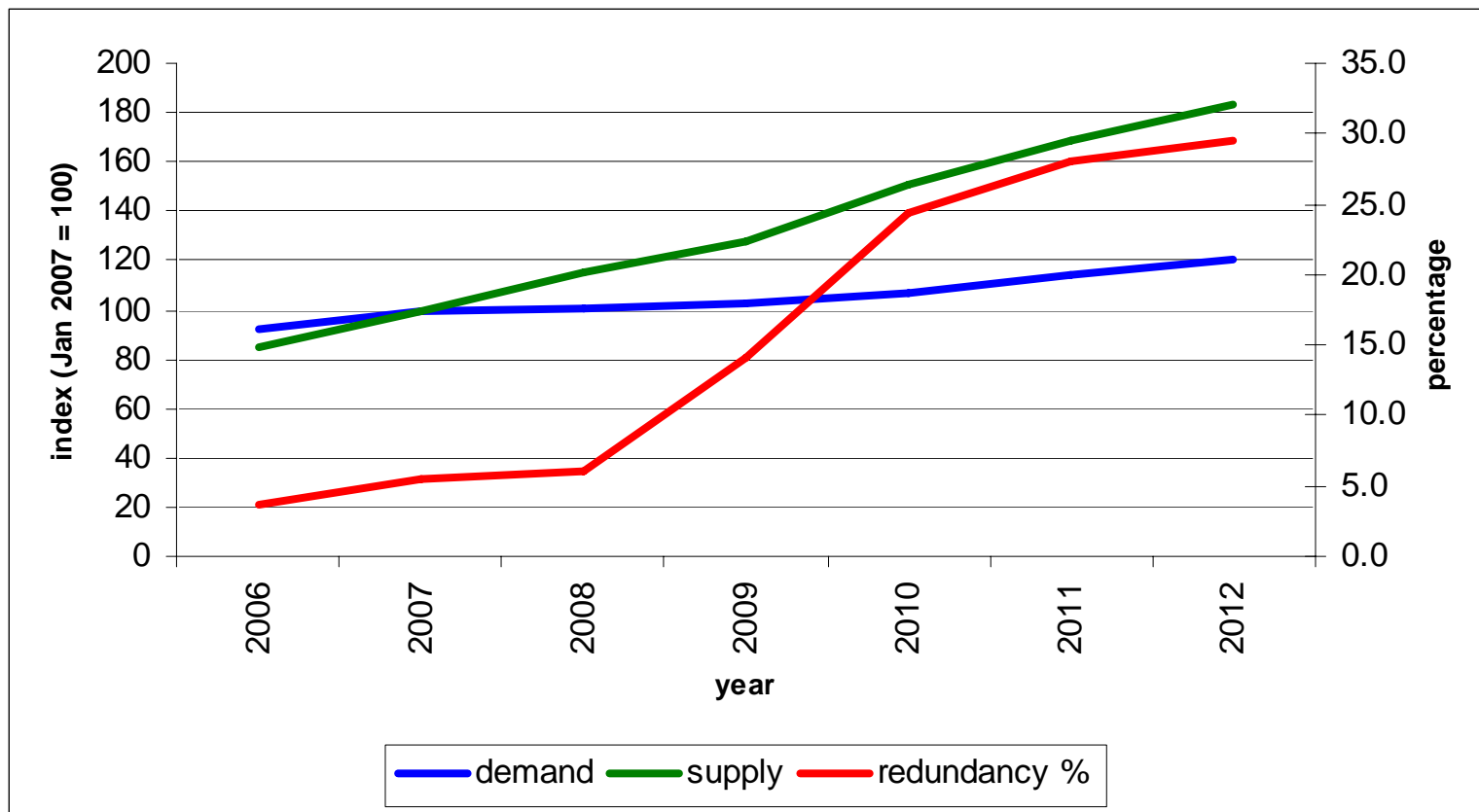
18. The capacity the industry has to offer

- Container industry investing heavily in new capacity
 - New ship orders add 43% to capacity, 2009 –2012
- Even if:
 - markets stabilise by end 2009
 - slow steaming approach continues

30% of planned capacity in 2012 redundant

19. Ship capacity supply & demand

Global deep-sea box demand and vessel supply indices and percentage redundancy



20. Filling the demand gap

- Last 15 years container industry expansion has:
 - facilitated transfer of manufacturing to lower cost producers
 - catered for the consequent growth in western consumption
- Failure to maintain credit systems has broken this model
- One solution to return to basics and once again penetrate other freight markets
 - neo bulks
- Statistical analysis suggests recent 'containerisation' slow
 - growth in underlying tonnages only matches container growth 1996-2008

21. The volumes available globally

- Estimated loaded containers 2008: 135m TEU
 - equates to 1.25 billion tonnes
- Container market shares vary
 - almost 100% for electrical goods, wine, clothing etc.
 - but high proportion of container cargo already from lower penetration categories (where 20% - 100% containerised)
 - examples include steel, timber, fertilisers, paper and fruit & vegetables
- Total tonnes neo-bulks in that group approx 593m tonnes: equating to 56m equivalent TEU
 - Representing major opportunity
- Significant proportion may be available for containerisation
 - Especially where flows <shipload quantities

22. The potential neo-bulk commodities - goods not containerised

SITC	Description	Million Tonnes
67	Iron and Steel	173.4
66	Non Metallic Mineral Manufactures	85.8
56	Chemical Fertilizers	71.6
52	Inorganic Chemicals	54.4
78	Road Vehicles	37.7
6	Sugar and Honey	26.5
57	Primary Plastics	23.9
63	Cork and Wood Manufactures	22.5
25	Pulp and Waste Paper	14.8
68	Non Ferrous Metals	14.4
5	Fruit and Vegetables	14.1
64	Paper, Paperboard	12.6
Others		41.7
All		593.5

- tonnages of the cargo representing the 56.2m TEU

23. Neo bulk opportunities: 2008

'000s equivalent TEU

From \ To	AUSTRALASIA & OCEANIA	EAST AND SOUTHERN AFRICA	FAR EAST	GULF & ISC	LATIN AMERICA	MEDITERRANEAN	NORTH AMERICA	NORTH WEST EUROPE	WEST AFRICA	Total
AUSTRALASIA & OCEANIA	114	9	774	107	16	31	89	56	1	1,197
EAST AND SOUTHERN AFRICA	19	352	218	102	12	120	74	264	58	1,220
FAR EAST	1,198	1,492	10,856	4,077	1,411	2,339	3,296	1,975	1,019	27,662
GULF & ISC	103	172	676	1,309	47	388	324	360	37	3,415
LATIN AMERICA	49	323	870	223	776	607	2,077	1,158	48	6,130
MEDITERRANEAN	69	109	360	769	526	1,276	608	377	206	4,301
NORTH AMERICA	156	101	1,154	392	1,405	350	140	780	91	4,568
NORTH WEST EUROPE	172	395	1,408	922	782	500	2,435	534	363	7,511
WEST AFRICA	2	19	7	4	3	28	11	43	50	167
Total	1,881	2,972	16,323	7,904	4,978	5,640	9,053	5,546	1,874	56,172

- 56m TEU equivalent traded 2008
- 73% **between** trade regions (deepsea)
- North America 16% deepsea destinations
- Far East 39% deepsea origins

24. Converting neo bulks: challenge & opportunity

- Historically container service expansion into neo bulks driven by shortage of conventional tonnes
- Availability of very large container ships delivers 'at sea' economies of scale
- Port container handling costs high/tonne for neo bulks when empty return lifts included
- But opportunity lies in:
 - eliminating intermediate storage costs
 - improved inventory control
 - piggybacking on existing rail, feeder and barge inland container networks

25. Global patterns for neo bulks

- Goods generally also destined for western economies
 - the one billion people of N.America, Europe & the Mediterranean
- Goods originate from more diverse sourced
 - shallower ports
 - less well equipped container terminals
 - potential applications for smaller/older container ships
- **DIFFERENT NETWORK SOLUTIONS MAYBE REQUIRED**

26. Global patterns for neo bulks: 2008

Million equivalent TEU

	Origin	Destination
Far East	28	16
North West Europe	8	6
Latin America	6	5
North America	5	9
Mediterranean/Black Sea	4	6
Gulf & India S.C.	3	8
Sub Saharan Africa	1	5
Australasia	1	2
	56	56

- assumes all neo bulks (where +20% goods already containerised) converted to TEU equivalents

27. Summary

- Containerisation growth heavily dependent on discretionary consumer spending
 - therefore highly sensitive to fall in disposable income
- Last decade growth in demand reduced drive to increase container penetration
- Short & medium term forecasting needs to concentrate on consumer spending power
- Supply & demand projections point to at least 30% vessel redundancy by 2012
 - unless other cargo found
- Total neo bulks moving globally equal approximately 56m TEU
 - theoretically enough to fill the 30% of potentially redundant capacity
 - most such goods also destined for western markets
- Case therefore to:
 - design suitable supply chains to address shipper requirements
 - put in place container handling facilities closer to origin of goods
- An opportunity to make more intensive use of available assets.