



MASSACHUSETTS INSTITUTE OF TECHNOLOGY

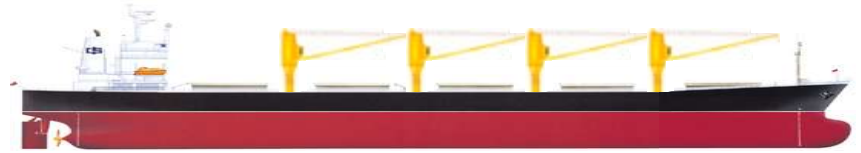
Iron Ore Transportation in Capesize Bulk Carriers



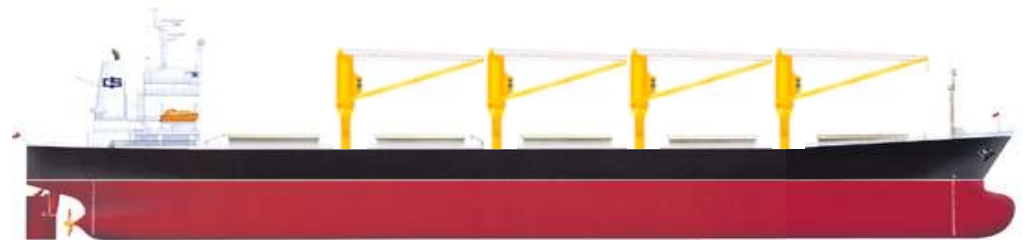
Nicholas Hadjiyiannis

Main types of bulkcarriers

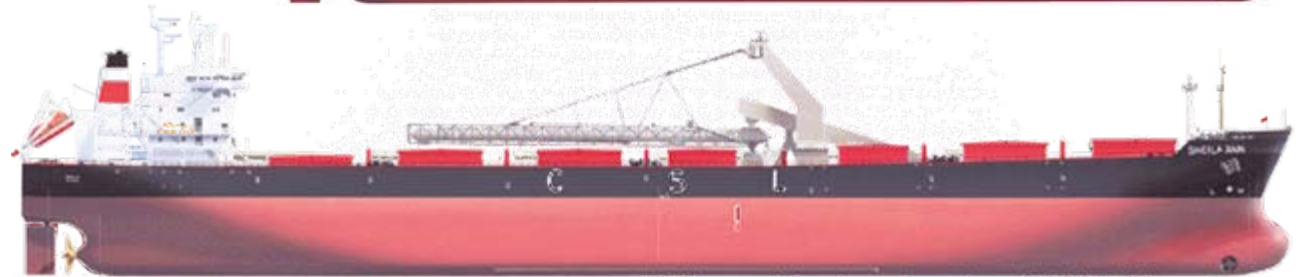
Handysize ~35,000dwt



Handymax ~50,000dwt



PMX ~75,000dwt

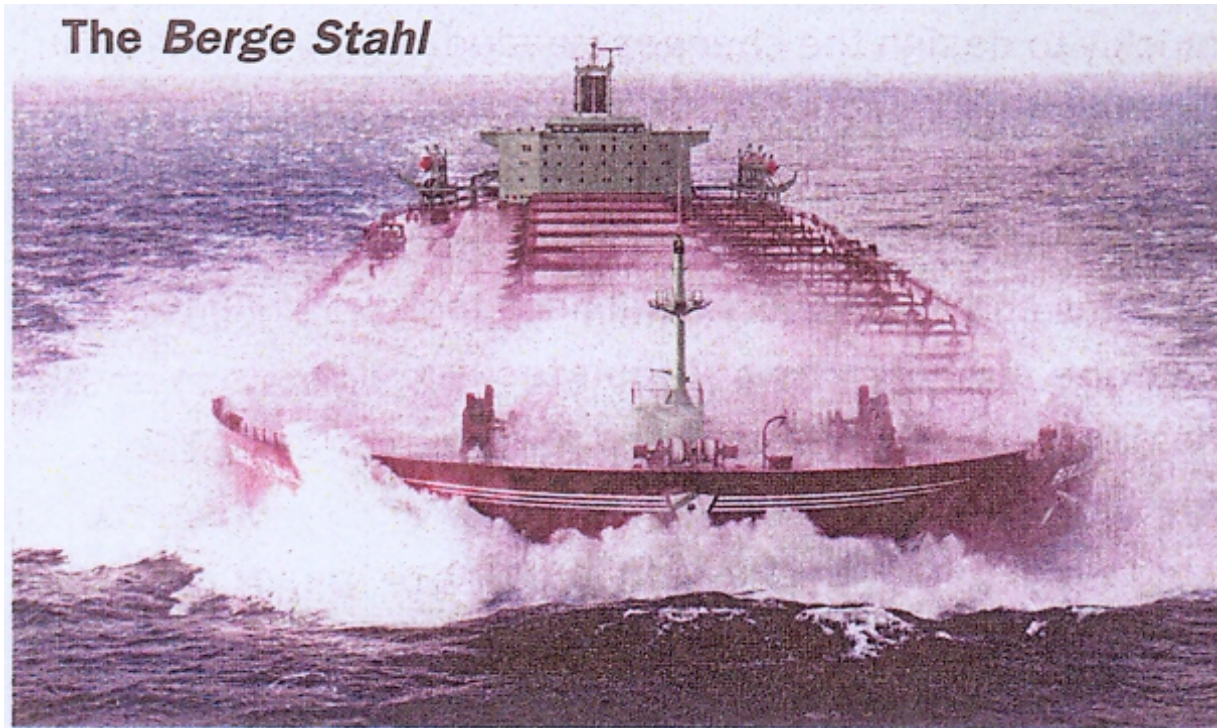


Capesize ~170,000dwt

Capesize Dimensions

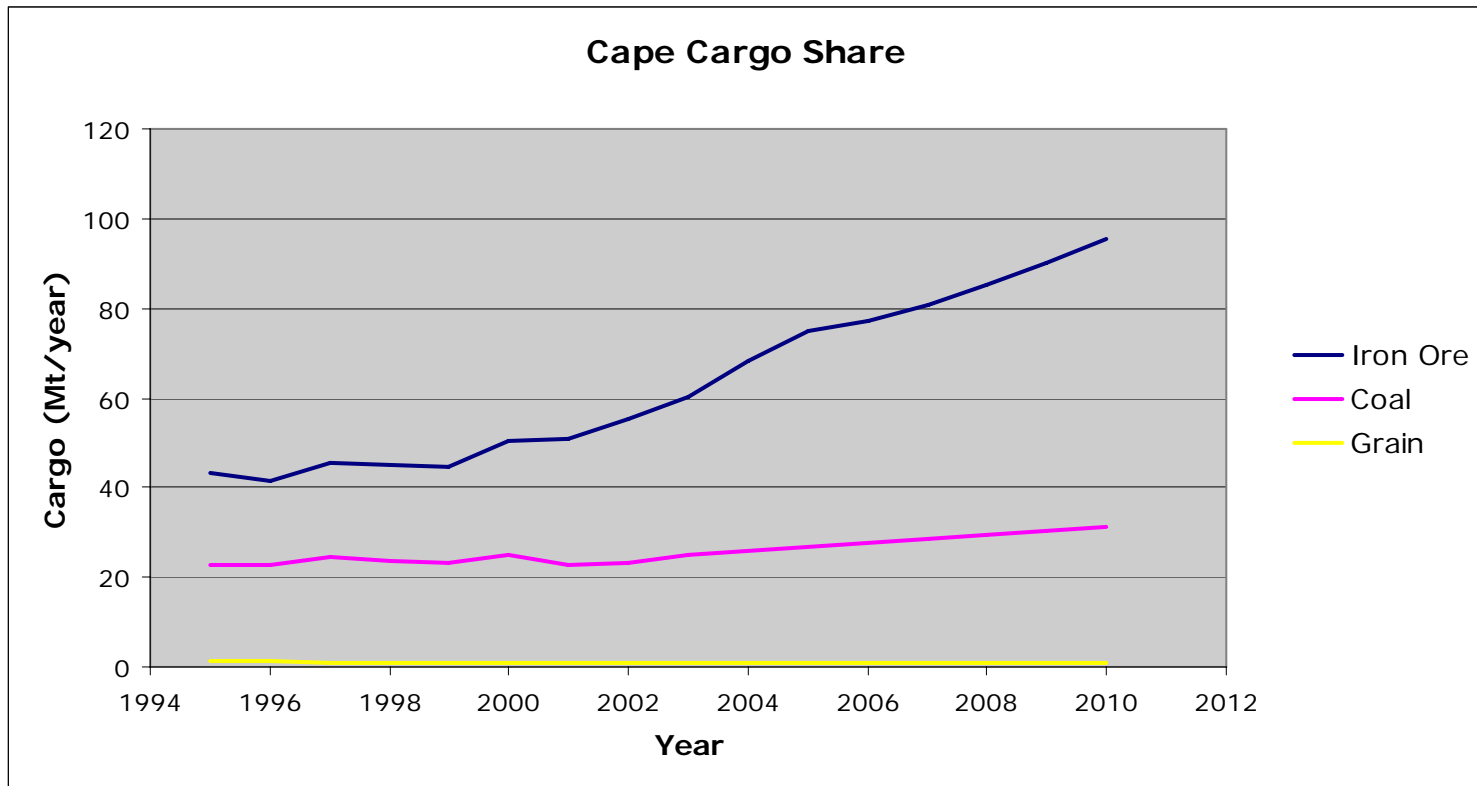
- DWT ~ 170,000t
- LOA ~ 300m ~ 1,000ft
- Beam ~ 45m ~ 150ft
- Cargo Holds: 9

The World's Largest BC MV Berge Stahl

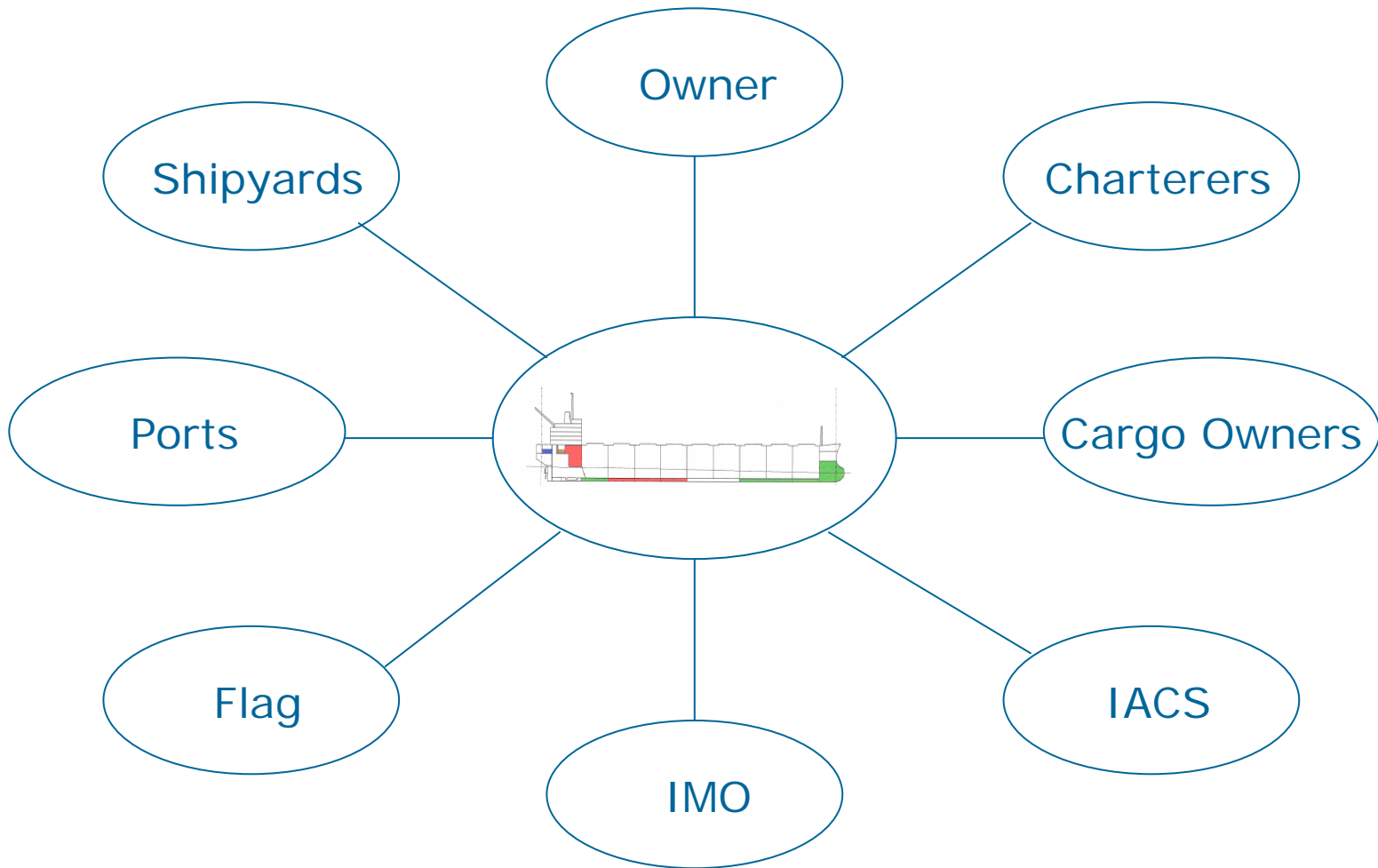


- DWT: 364,767 t
- LOA: 343m (1125ft)

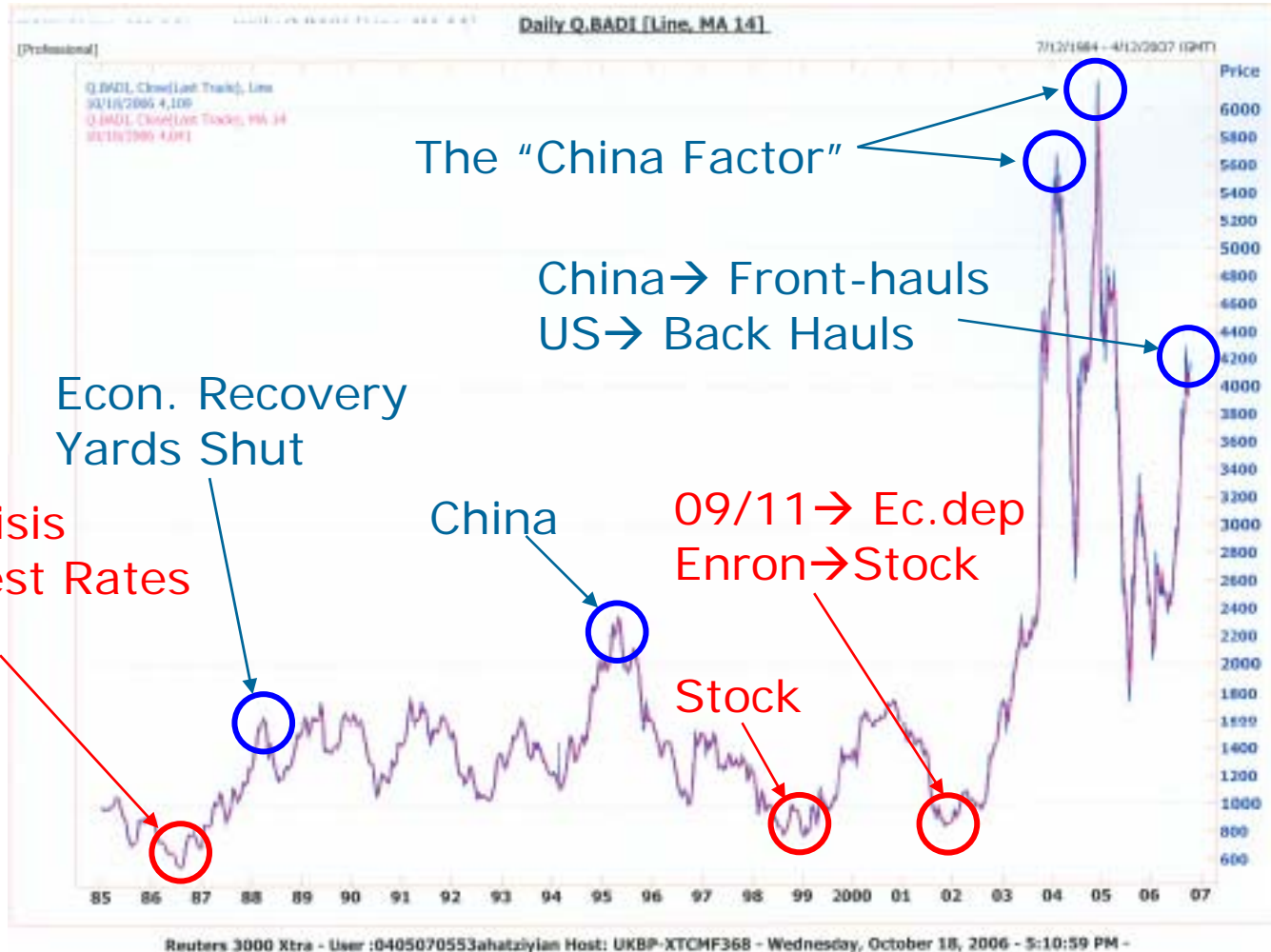
Cargos Transported by Capes



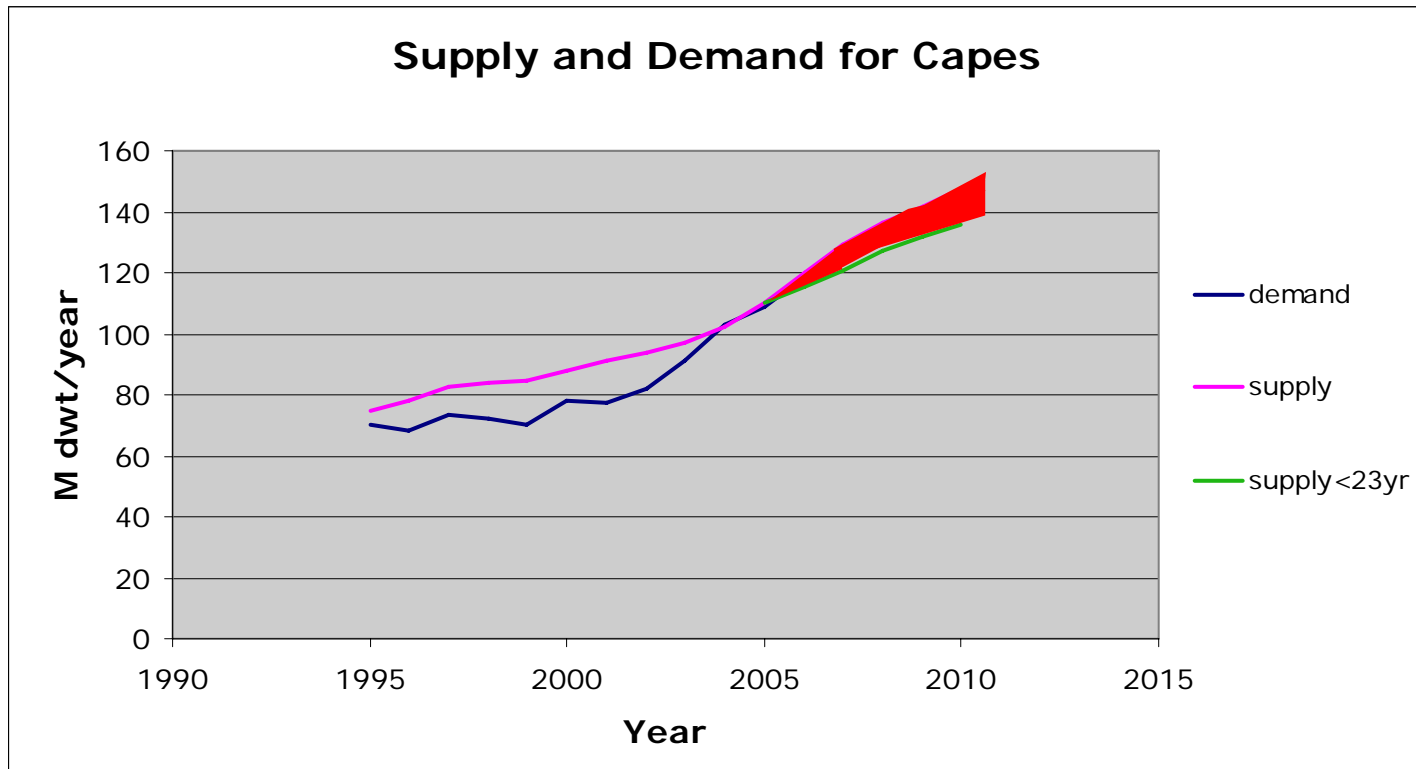
The Maritime Industry



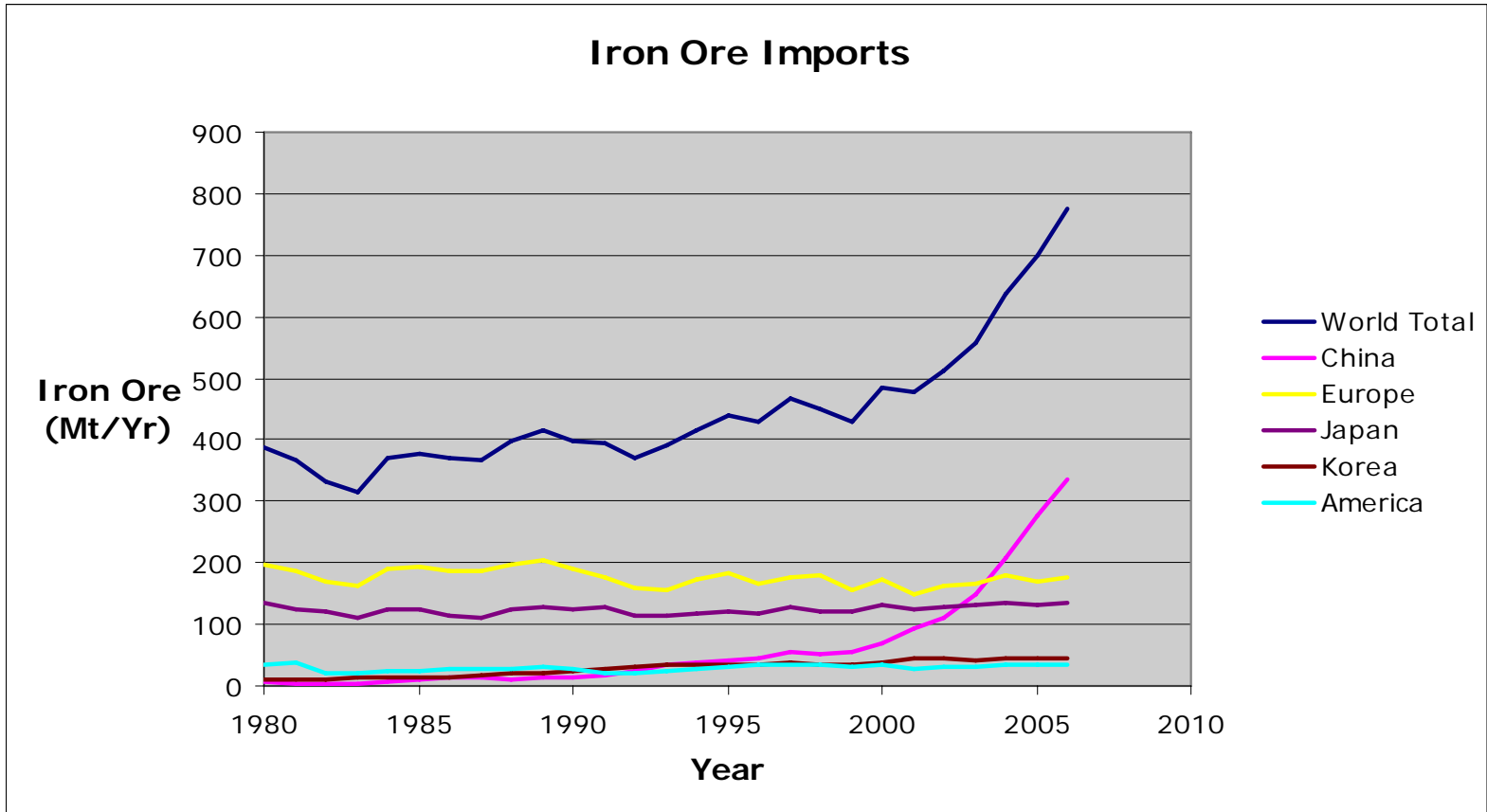
Dry Bulk Market Overview



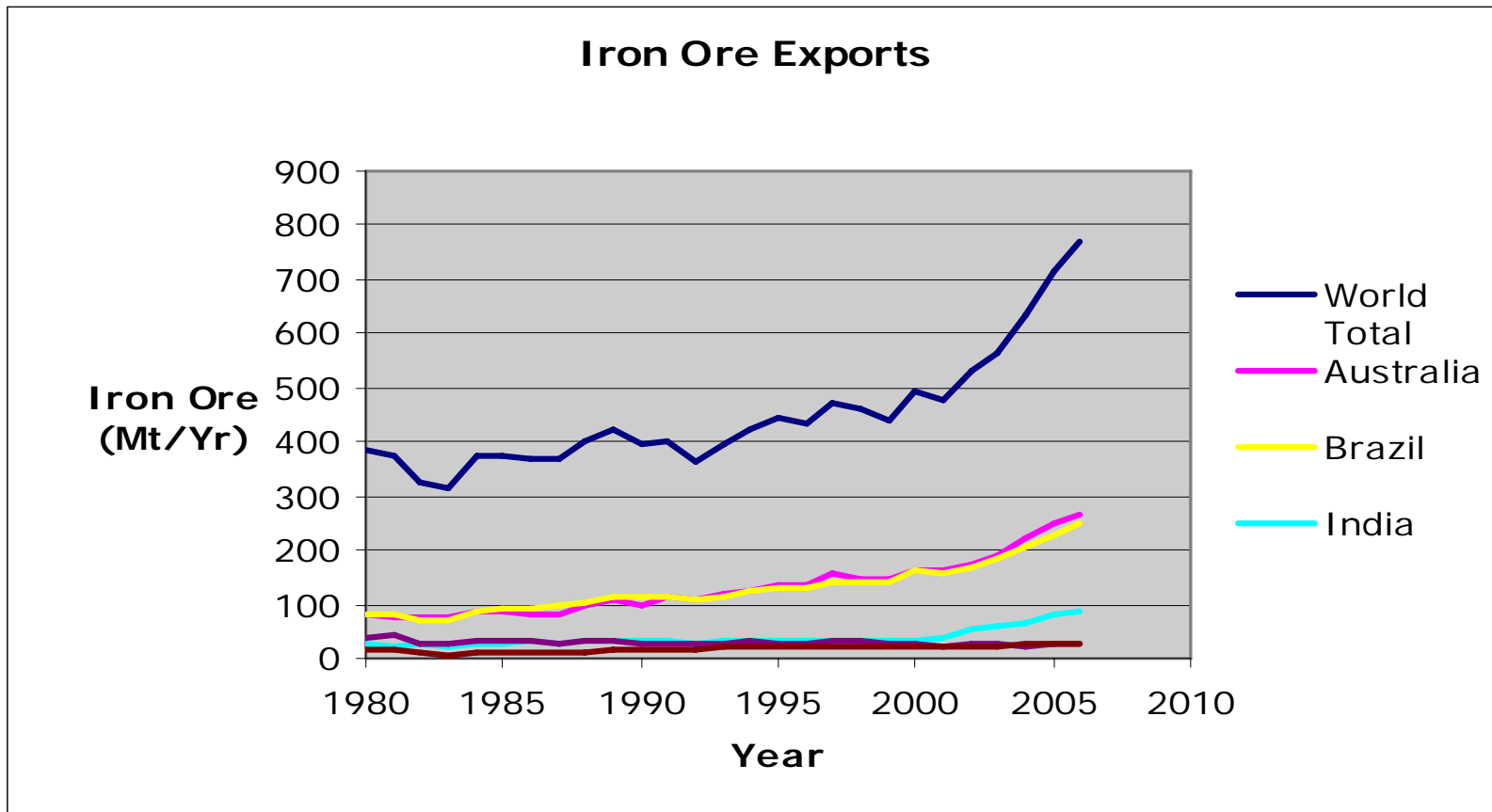
Market Equilibrium

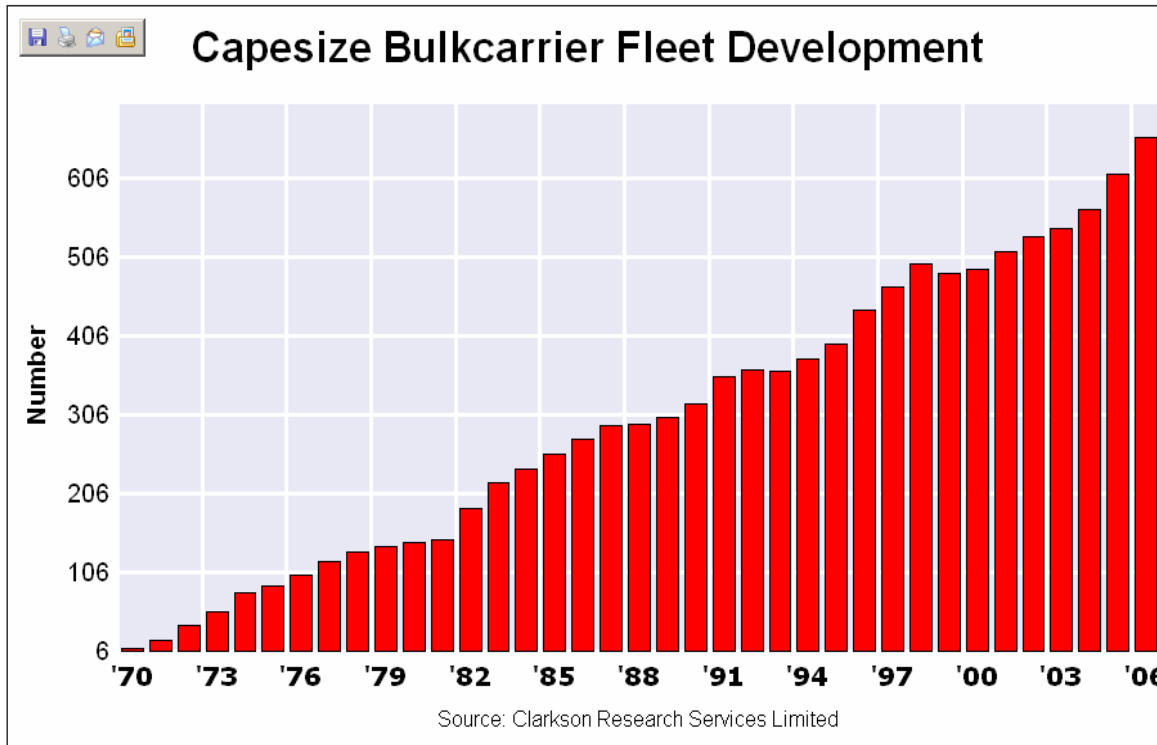


Iron Ore Imports



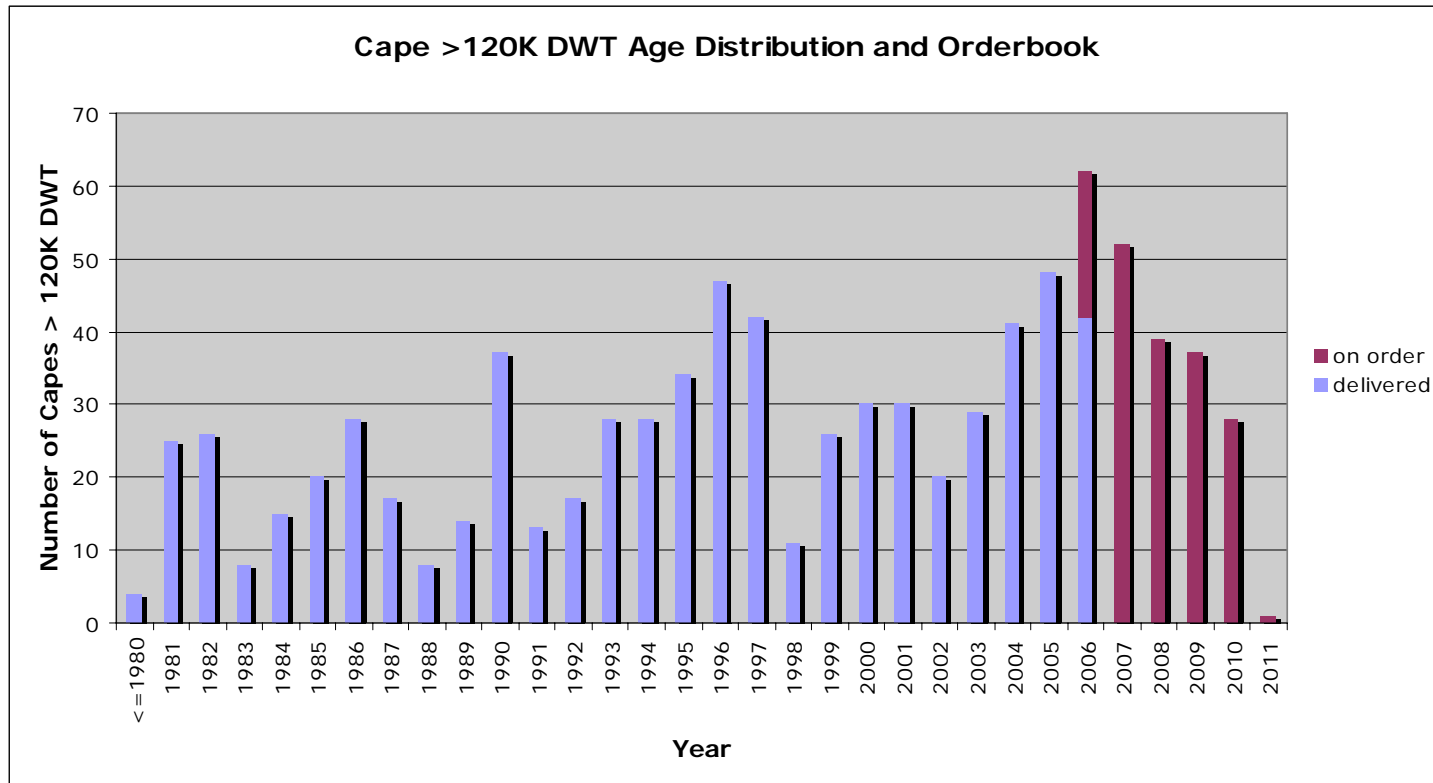
Iron Ore Exports



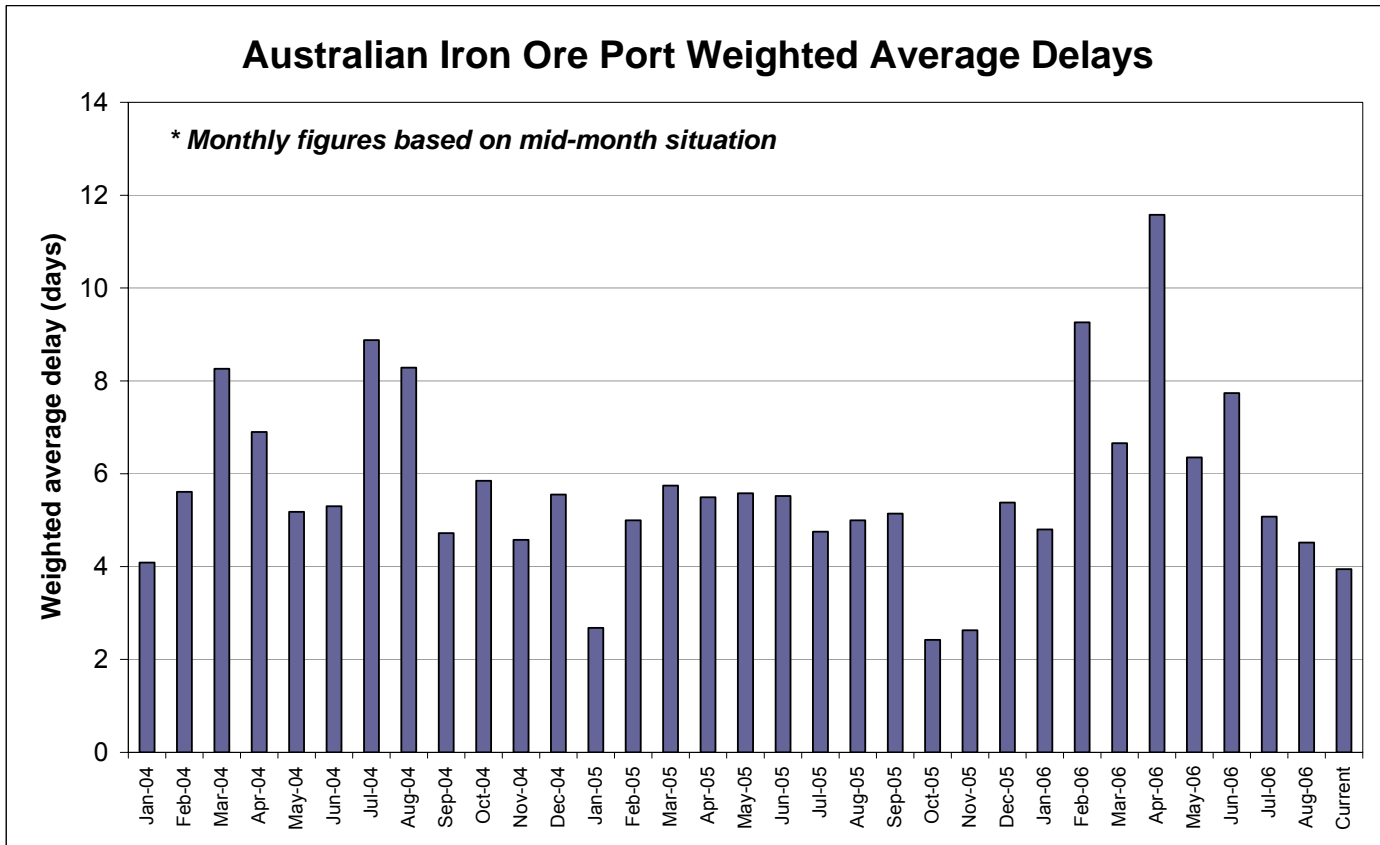


- World fleet: **691**
- DWT capacity: **119.86 Mt**
- Deliveries this year: **42**
- Demolitions so far this year: **1**
- Order book until 2011: **171**

Capesize Orderbook



Congestion



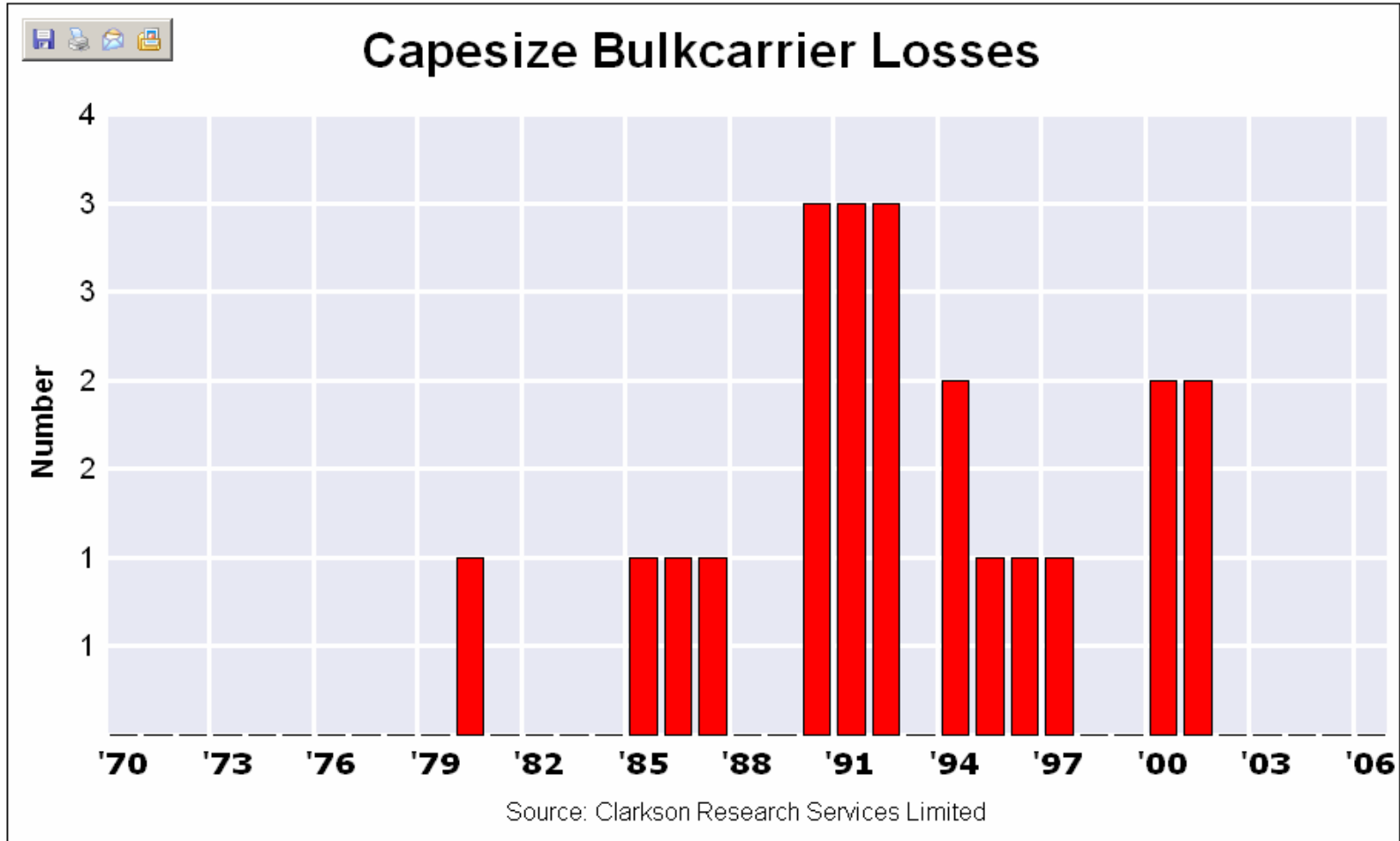
Cargo Operations



- Grab Capacity: $\sim 15\text{m}^3$, $\sim 35\text{tons}$
- Grab operations: $\sim 10,000$ grab movements
 $\sim 1\text{min}$ intervals
- Loading Rates: $\sim 16,000\text{t/hr}$

Bulk Carrier Losses



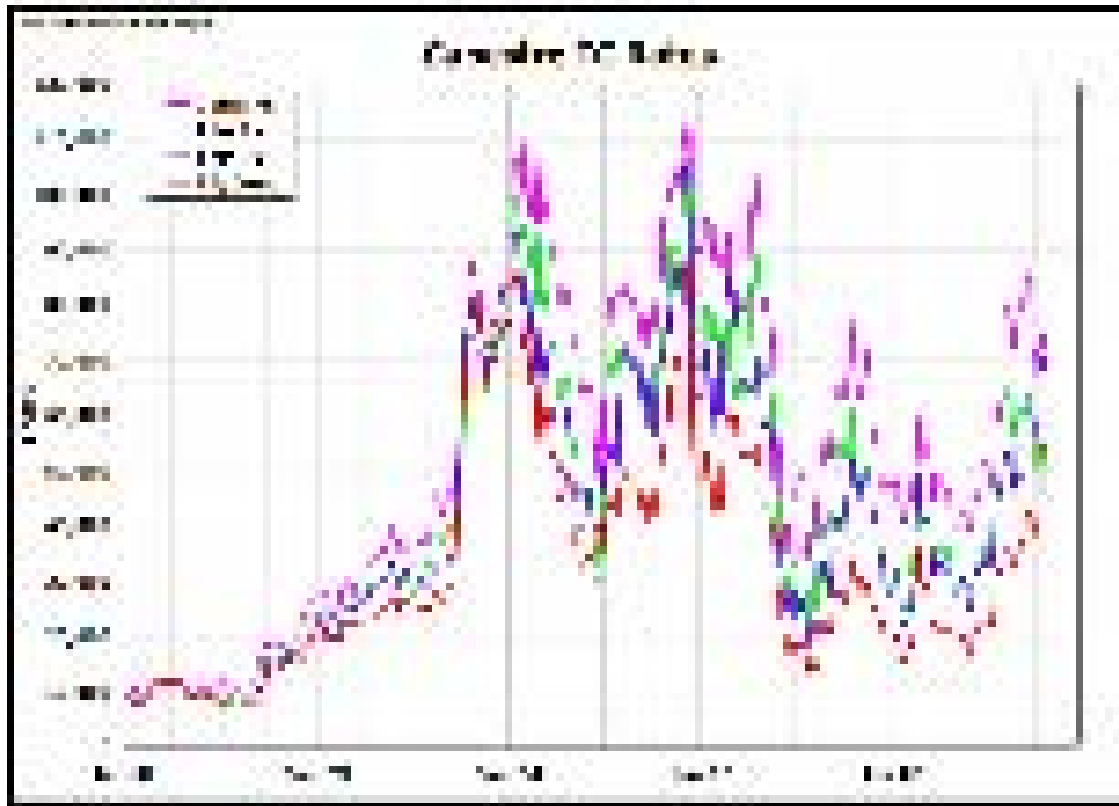


- Exclusive of *MV Alexandros T.* (May 2006)
- Exclusive of *MV Giant Step* (Oct 2006)

Supply

- Congestion: $\Delta S \sim 28\%$ in China
- Shipyard Capacity: 2011 Deliveries
- Iron Ore: 25yr Age Limit
- Crude Oil Prices: Supply + Demand Shift

Capesize Earnings

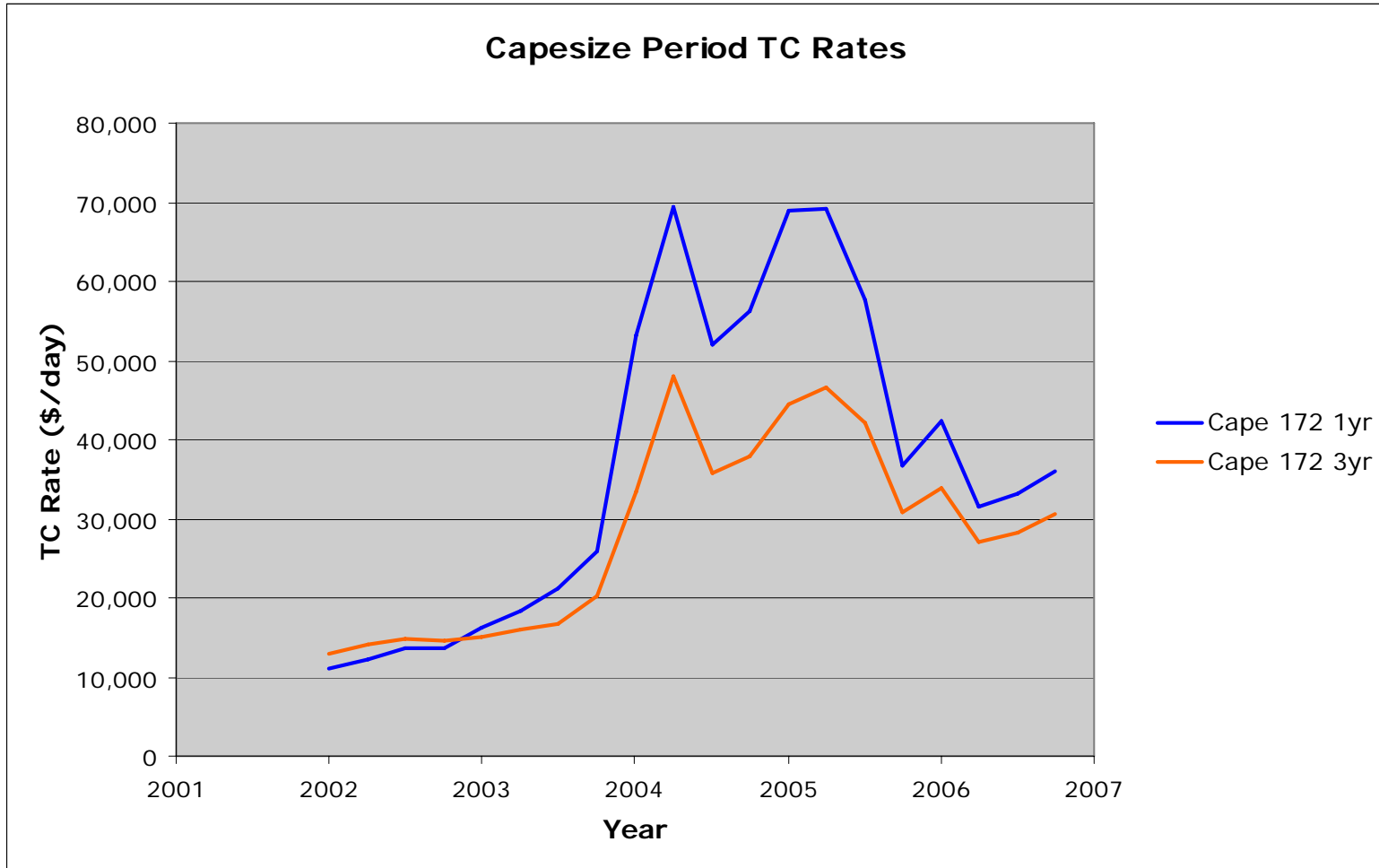


- Closing gap between front/back-hauls

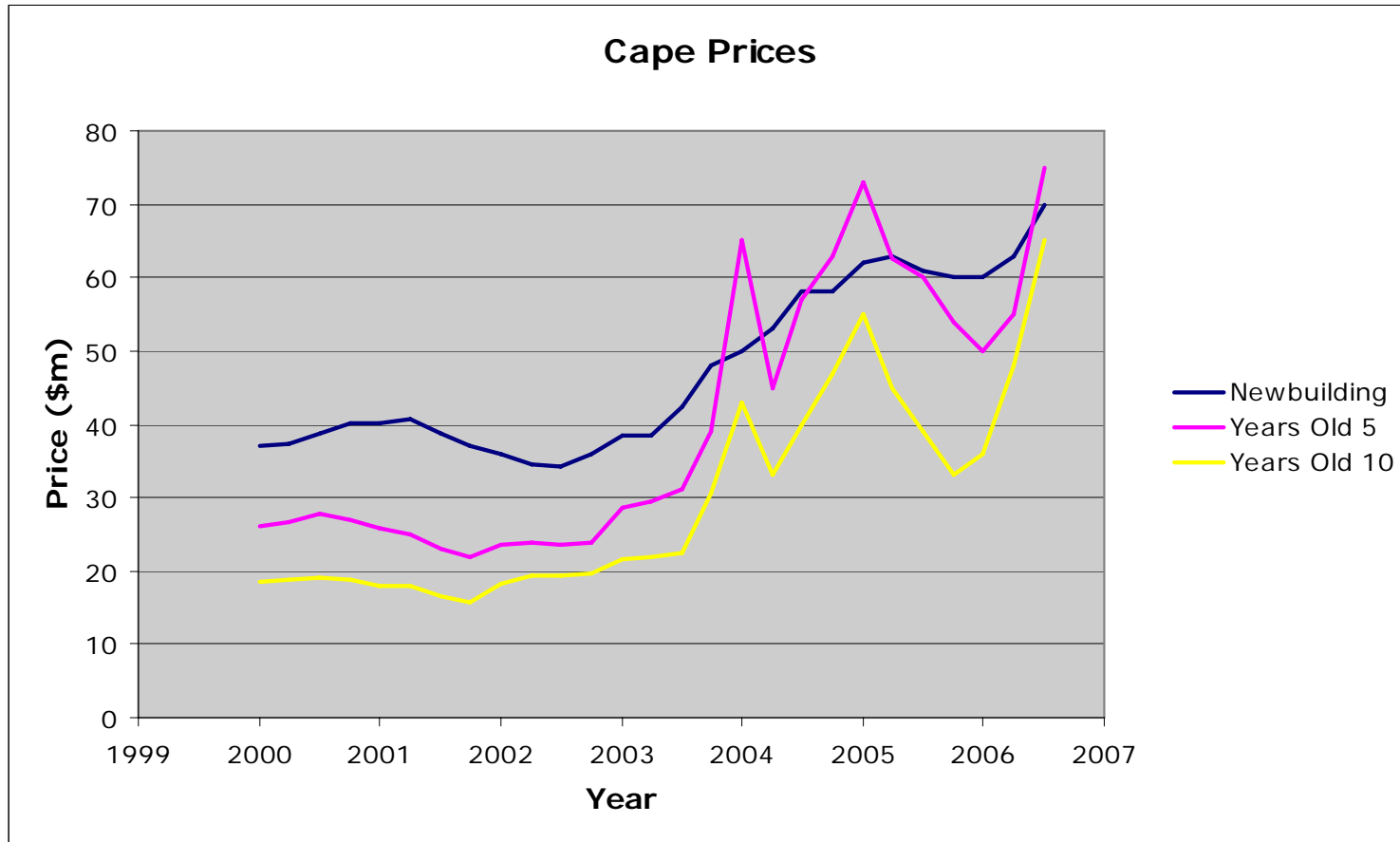
Broken Records Last Week

- **Product Tanker scrapped for \$481/ltd**
(Previously: \$475ltd the week before)
- **Japan quoted \$70m for 2010 deliveries**

Time Chartering



Capesize Values



Recent Cape Transactions

- Resale - Delivery Dec. 2006: \$91m
- Resale - Delivery Nov. 2007: \$81.5m
- Order - Delivery 2010: \$61m

Conclusions

- Boom more significant for Capes
- Inelastic Supply
- Record high prices and rates
- Value of next few years >> long term
 - Second hand Price > Newbuilding Price
 - Narrow price gap between new and old vessels
 - Spot rates > t/c rates > Long period t/c rates
- Cape prices will not drop in the near future

PRESENTATION REFERENCES

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QUESTIONS???