

Incentives and quality in shipping

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Questions and motivation

- How may incentives facilitate quality assessment in shipping services?
- Motivation
 - Environmental concerns
 - Demand for high quality transport services
 - Punctuality, frequency, efficiency and incidents
- Can the market create such incentives ?

Intence environmental concerns

Shipping produces

- Emissions to air
- Spills into the sea

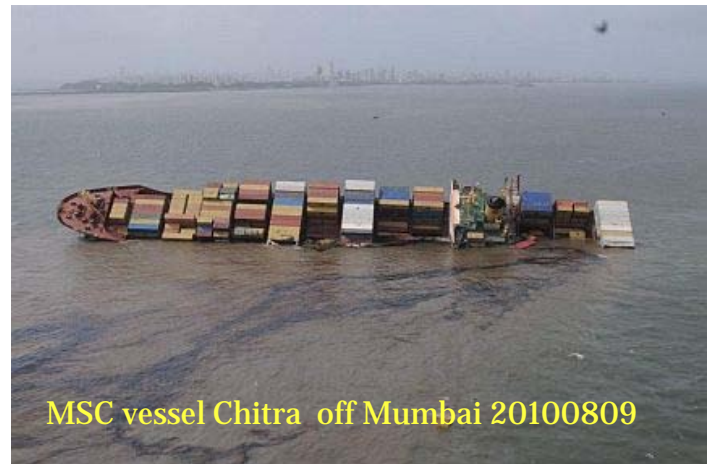
- International shipping

- Emitter of 3,5 per cent or 1,12 bill tonnes CO2 per year
- 3-4 incidents per year, each spilling 700 tons or more

Veteran steamer DS Stord outside Bergen 2009



MSC vessel Chitra off Mumbai 20100809



Reduction in oil spills since mid 1980s



<http://www.itopf.com/information-services/data-and-statistics/statistics/>

Emissions to air increase with rising transport activity

Service quality

- Value of cargo rises and strengthens quality requirements:
 - Punctuality
 - Frequency
 - Efficiency
 - Incidents



October 1998 losses exceeded USD 100 mill



Traditional quality assurance in shipping

- Self regulation
 - Classification and certificates
 - Brokers and class are middlemen
 - Firms build reputation
- Challenge for all:
 - **credibility**





Creditability problems raise quality assessment costs

- Regulatory activity
 - IMO
 - Flag state control
 - Port state control
- Regulators set minimum standards
- Inspections by
 - Class, insurance, bank
 - States, shippers,....
 - Increasing number and costs; time and money



Source www.elcoship.com

- Inefficient quality assessment



Clarkson 1991 VLCC quality survey - a critique of age as criterion

- Assessing 449 VLCCs
 - Quality range A-E
 - D & E not acceptable
- 324 VLCCs above 15 years
 - 197 old VLCCs in classes B & C
 - 7 newer VLCCs in classes D & E
- Conclusion:
 - Maintenance is more important than age for quality

Year of build	Total dwt	No of vessels					Total
		A	B	C	D	E	
1987-91	14.1	12	33	5	0	0	50
1982-86	4.1	1	16	1	0	0	18
1977-81	18.4	2	28	20	6	1	57
1972-76	77.7	0	76	121	79	34	308
1969-71	3.6	0	0	1	4	11	16
All	117.9	15	153	148	87	46	449

Source: Clarkson, 1991 and own calculations

Table X: The tanker age and quality dilemma illustrated by the 1991 VLCC fleet

Create incentives for quality

- With minimum standard requirements intermediary quality is not documented
- Preventive action to remain at "new vessel quality" is not cost efficient
- Alternative: Create incentives for shipowners to "flag" above minimum quality
- Why shipowners?
 - Owners have better assess for assessing ship and management quality



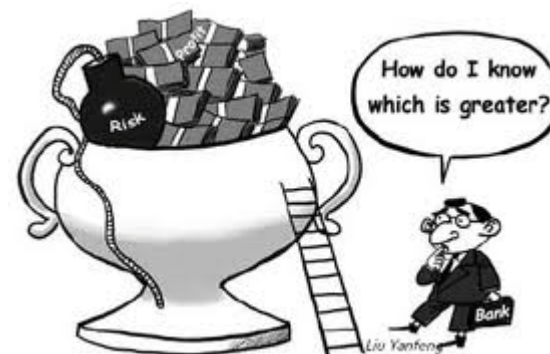
Quality incentives

- Requires
 - differentiated pay for differing qualities
 - higher pay for higher quality; economic incentives
 - costly to wrongly signal high quality
 - to render it unprofitable for owners of low quality vessels
 - Class not an credible signal for above minimum quality
 - differentiation between minimum and above minimum is required



Creditability problem from asymmetric information

- Asymmetric information exists when seller and buyer have different information about the quality of the good or service being offered in the market
- Asymmetric information hampers higher pay for higher quality
- A well known example: the used car market
 - “lemons” (low quality cars) dominate – good used cars are withdrawn
- **Self selection** is a potential remedy to asymmetric information



Self selection when

- Shipowners “flag” the quality of the vessel and transport service by choosing from a menu of charter contracts
- Freight rate and conditions differ among contracts
 - Higher pay against full responsibility in case of incidents
 - Lower pay against no responsibility for incidents



Self selection is established in other industries

- Car insurance
 - Owners choose among contracts
 - Low premium / high “own” pay in case of an accident
 - High premium / low “own” pay
- By selecting the contract the driver “signal” his drivers style
- Passenger airlines
 - Sell seats at widely different fares
 - “Quality destruction” to differentiate the service
 - No refund, no flexibility
 - Pay for food etc
 - Passengers signal willingness to pay each time they book
 - Differentiation increased airline profits substantially



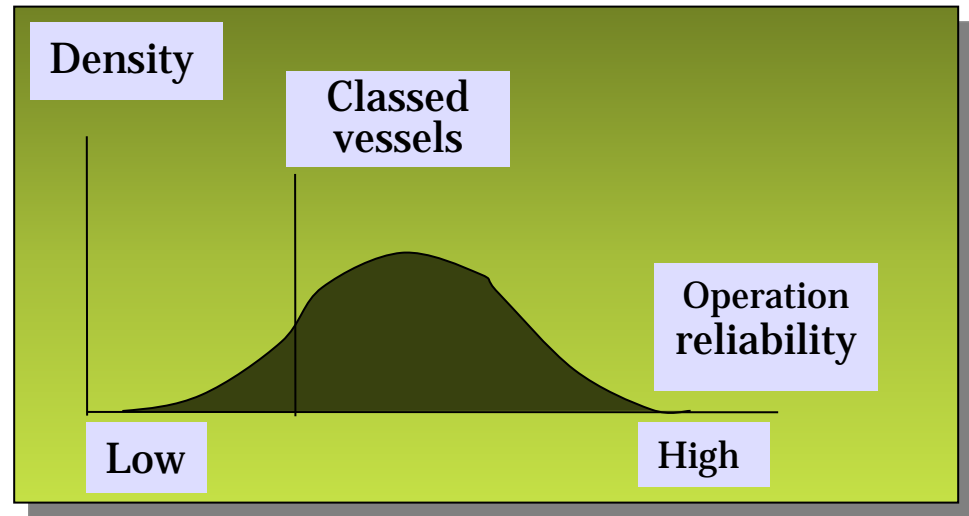
Menu of contracts in shipping?

- Shipowners may offer
 - guarantee delivery and quality of cargo against a higher freight rate
 - No guarantees at lower rate
- Cargo owners may offer
 - higher freight rates for shipowners willing to compensate discrepancy to the contract
 - Lower freight rate if some risk stays with the cargo owner
- Ports may offer reduction in charges for ship owners accepting to cover cost consequences of any incident



Pricing such contracts is not straight forward

- Experimenting?
 - To few fixtures per owner
 - Each fixture represents a large share of revenues
- Benchmarking
 - no open information on ship owning firms' relative position
- When pricing different contracts
 - Ship-owners needs to know their relative quality before pricing the contract they offer
 - Shippers need information on the distribution of quality among ship owners



Sources for information on relative quality

- Classification societies
- Insurance companies
- Key performance indicators (KPI)
- Detention in port statistics



Analysis of detention in port – some preliminary results

Measuring:	Frequency of detention for a vessel relative to the chance of detention for a modern tanker flying white-listed flag
Vessel age:	Higher probability for vessels above 15 years
Type of vessel:	Higher probability for bulk vessels
Name change:	Significantly higher probability for vessels with 6 or more name changes
Overdue for class:	No significant effect on probability of detention
Management:	We find different probability for detention of vessels operated by different managers

The analysis explains 26 % of detentions
i.e. more analyses are needed.

Lein og Bø (2003)

Summary

- How may incentives facilitate quality assessment in shipping services?
 - self selection to signal quality
- Can the market create such incentives ?
 - Introduce menus of freight contracts and port charge schemes for ship owner or shippers among which shipowners select
- Pricing the different contracts is an unresolved issue



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Takk for oppmerksomheten!



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