



# Prices and Price Formation in IWT – a first overview

**Workshop on Price formation models in inland navigation freight transport**  
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# 01

## Different forms of price formation in IWT



# Different forms of price formation

Price formation includes different schemes:

## 1) Spot market ....

- high earning possibilities during boom times,
- but high volatility in income and therefore less stability.

## 2) Time charter and long-term contracts ....

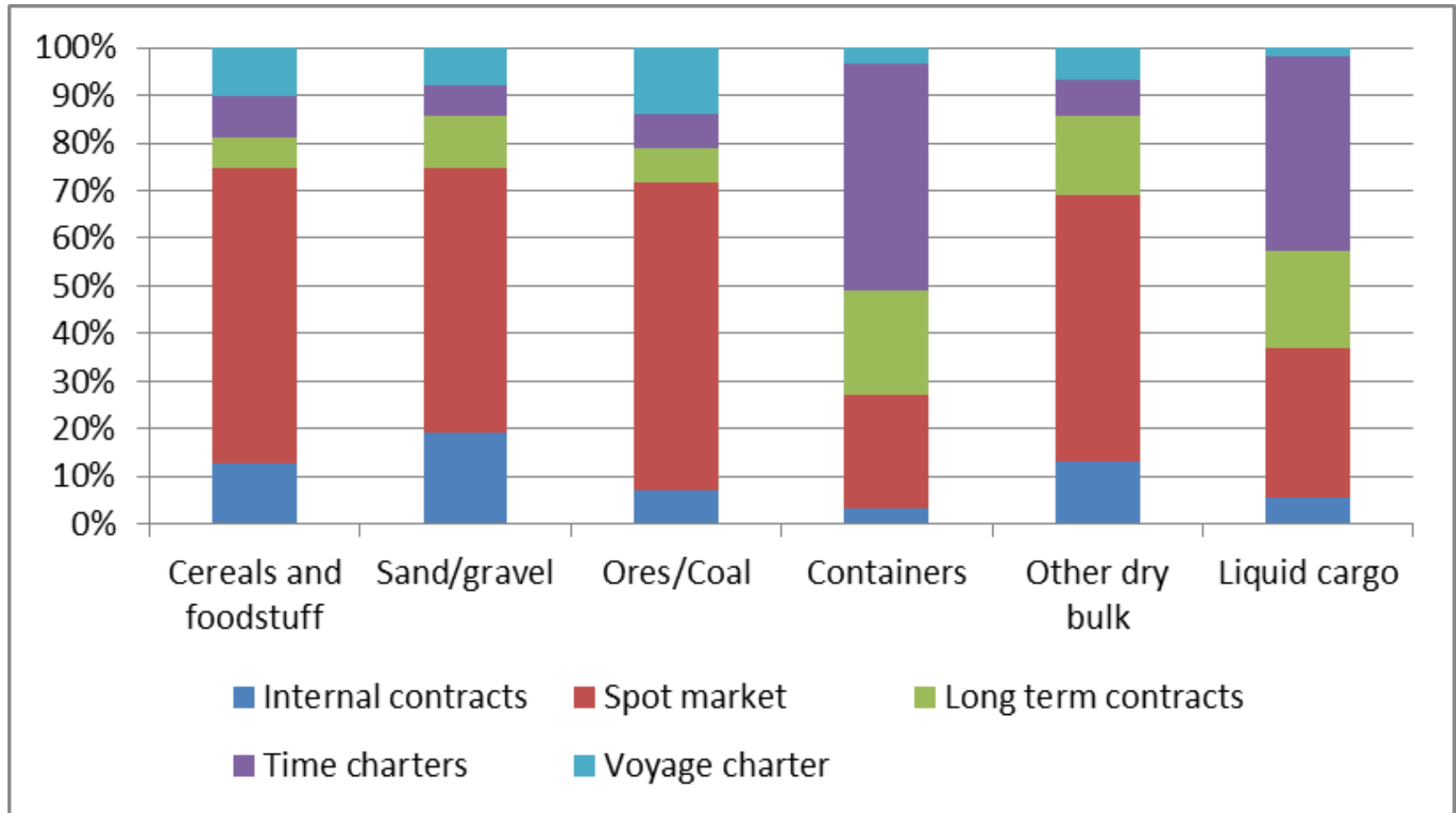
- income is more predictable and more stable
- more attractive for financing by banks
- often present in container and liquid cargo transport.

## 3) Voyage charter ....

- involves the leasing of the vessels for a single or more (consecutive) voyage(s).
- the charter price is often in the form of calculated daily rates, which may depend on particular circumstances (for example fluctuations of prices and currencies in particular operating areas).

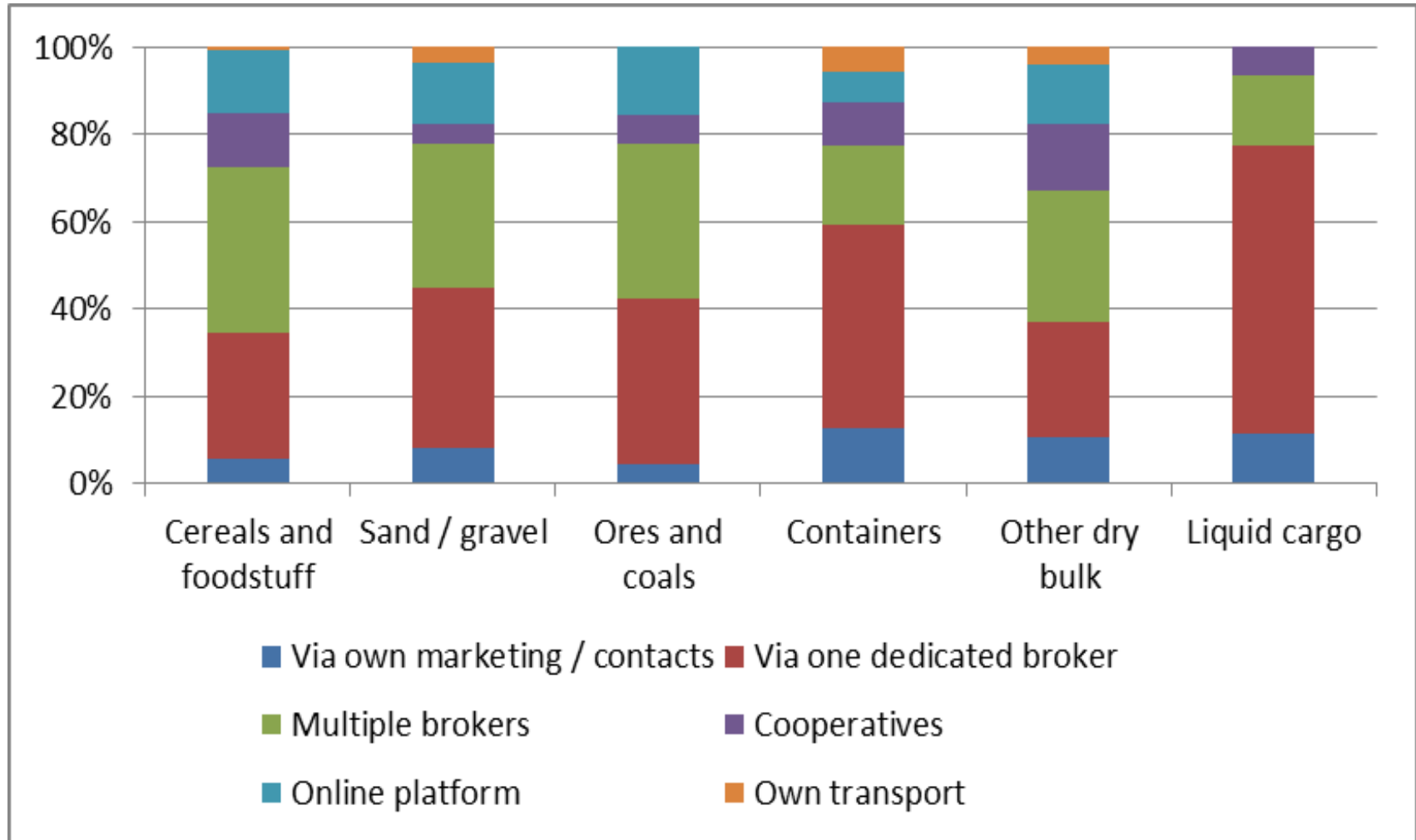


# Market Structure and price formation – types of price formation per cargo segment





# How do vessel owners acquire their transport assignments?

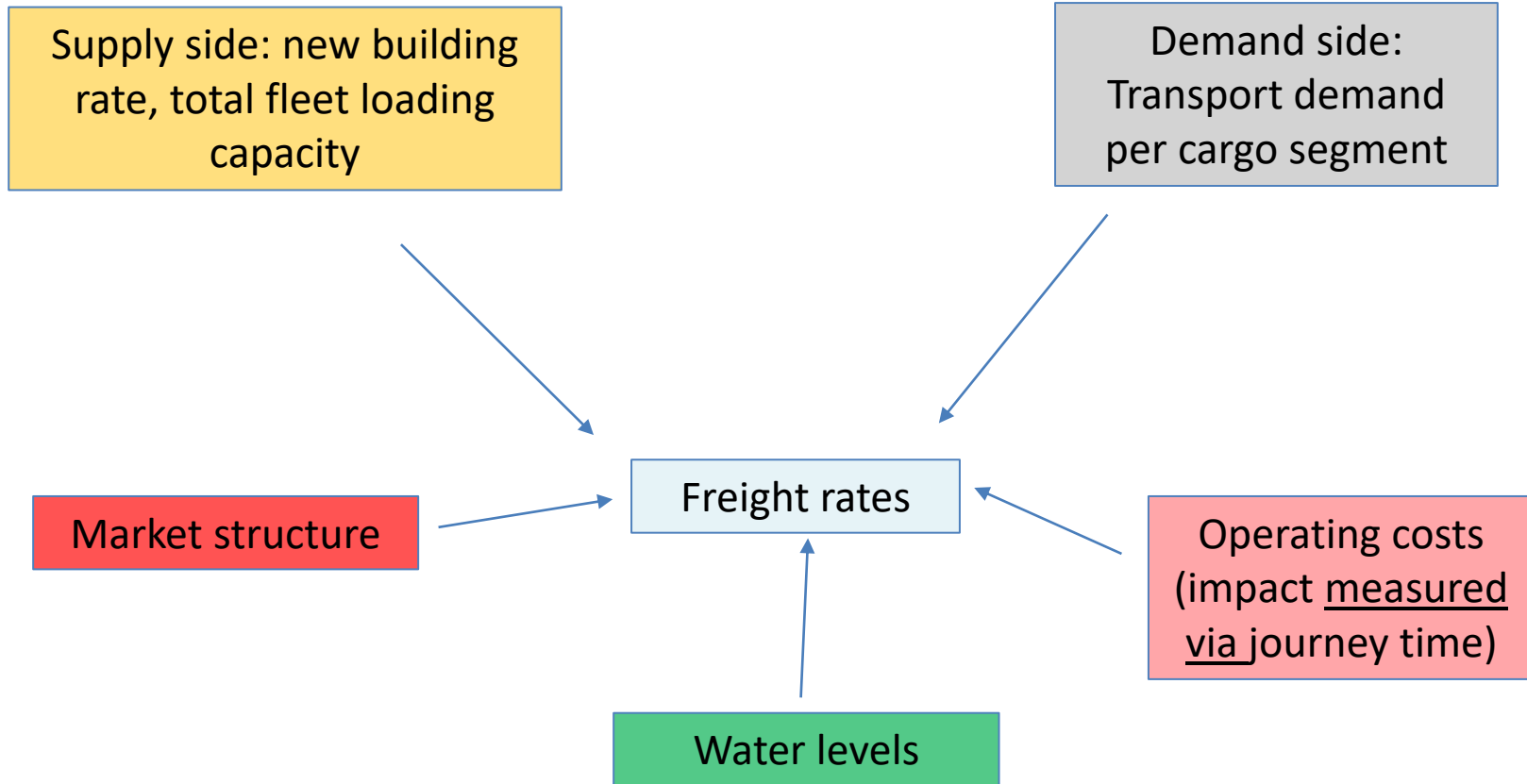


# 02

## Main influencing factors for prices or freight rates



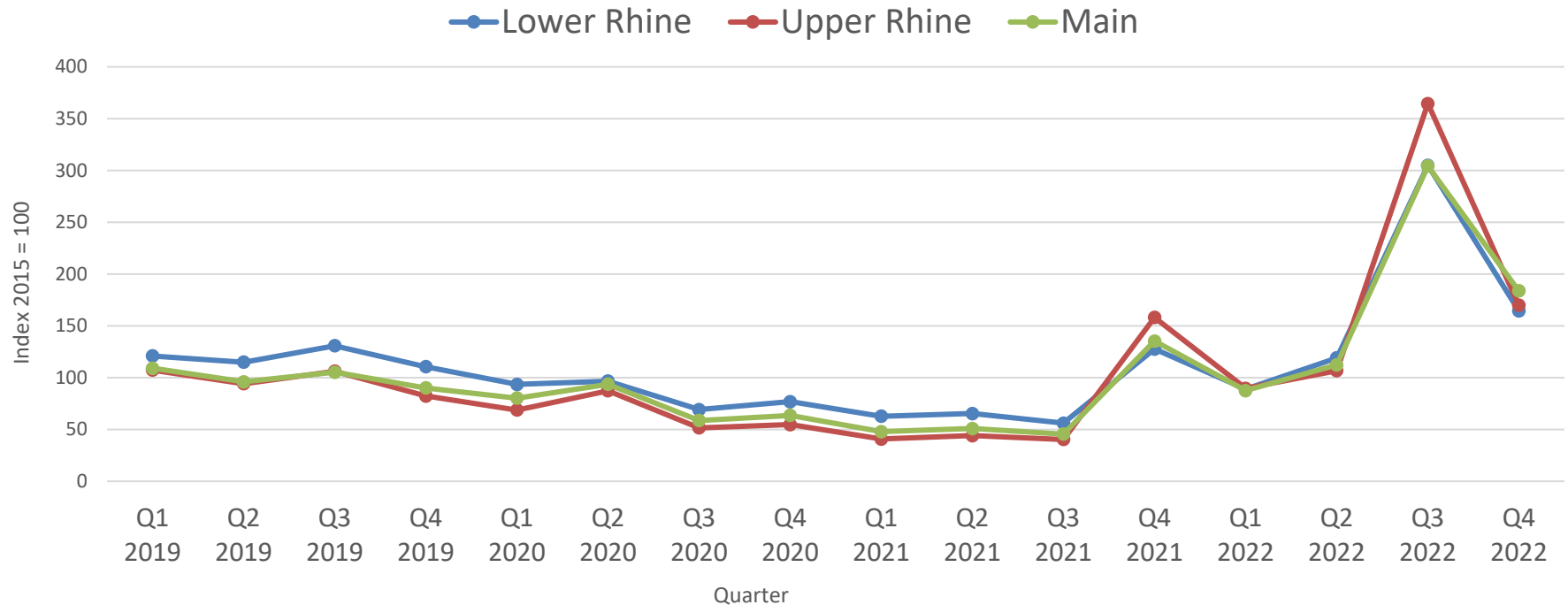
# Prices or Freight rates – main influencing factors



Other influencing factors are: type of vessel, quality of the vessel, special vessel requirements, origin and destination of the voyage, type of cargo and quantity, expected empty sailing time, rate of inflation, etc.



# Freight rate evolution per quarter – ARA-Rhine transport of liquid bulk



Sources: analysis CCNR based on data from Insights Global

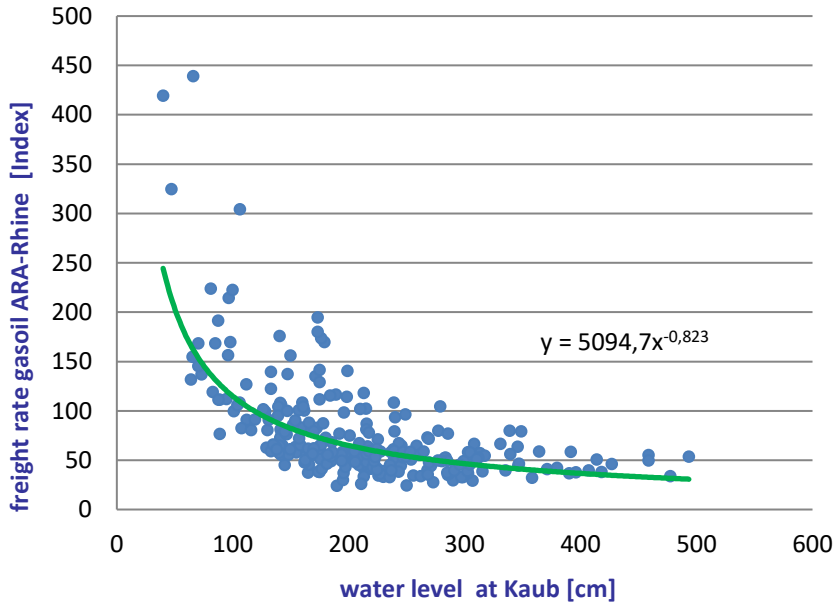
**Liquid bulk freight rates** grew in 2021 and in 2022 mainly due to low waters on the Rhine. Apart from low water effects, the trend was slightly negative in 2019, 2020 and 2021.



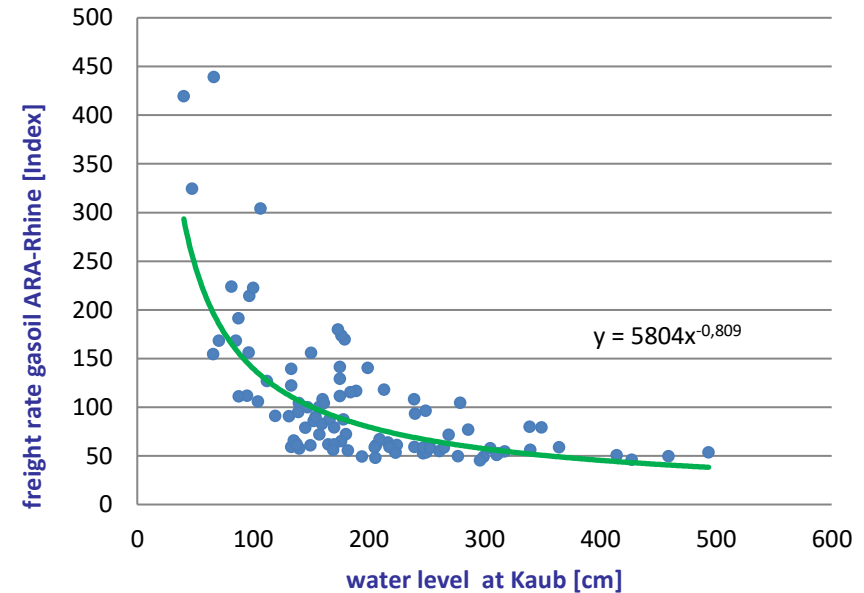


# Water levels have a strong impact on prices/freight rates\*

Monthly data, January 2002-December 2022



Monthly data, January 2015-December 2022



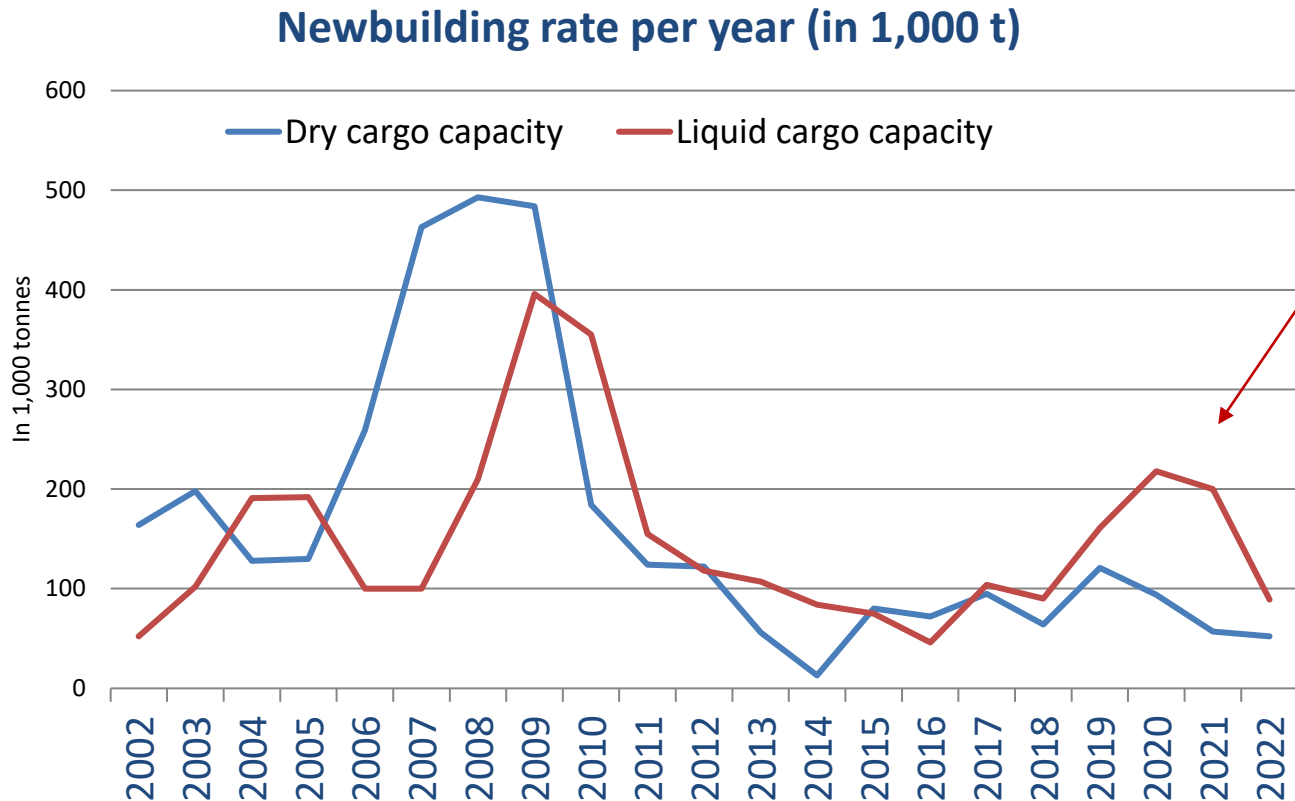
Low water → surcharge on freight rates → transport prices in IWT increase

\* Prices on the spot market for liquid cargo (gasoil) transport ARA-Rhine

In more recent times, the relation between water levels and prices got even stronger



# Freight rates are also influenced by the supply side



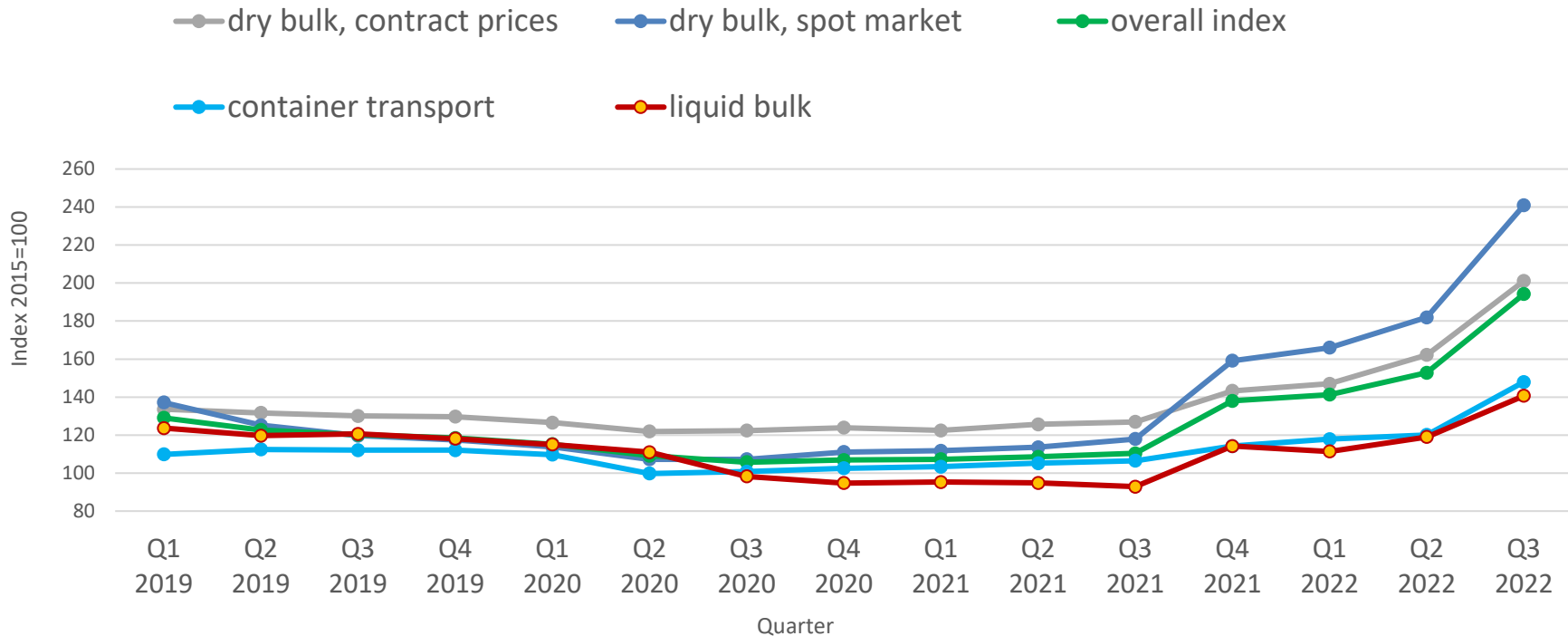
New building activity for liquid cargo vessels was rather high in 2019, 2020 and 2021 = explanation for freight rate evolution

Sources: analysis CCNR based on IVR data

Liquid cargo segment showed a higher newbuilding rate, which explains also the development of freight rates



# Freight rates are also triggered by the demand side: CBS freight rates index per market segment



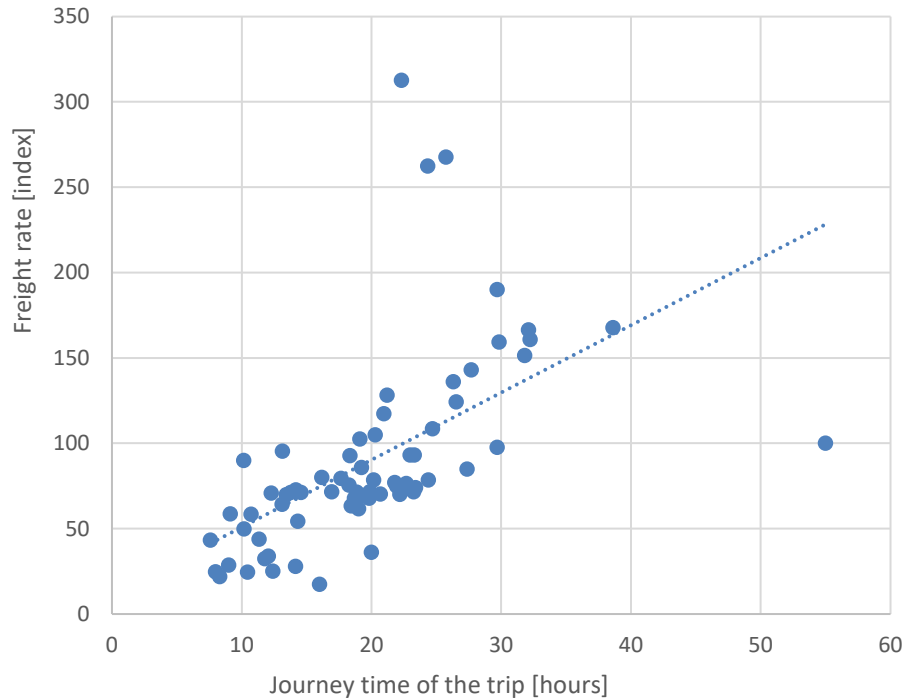
Sources: analysis CCNR based on data from CBS

**Dry bulk spot market freight rates** went up steeply in 2021 and 2022 due to the **boom in coal transport (demand factor)** and the **transfer of vessel capacity** from the Rhine to the Danube region (3% of Rhine dry cargo fleet capacity). The last-mentioned factor is a **supply-side factor**.

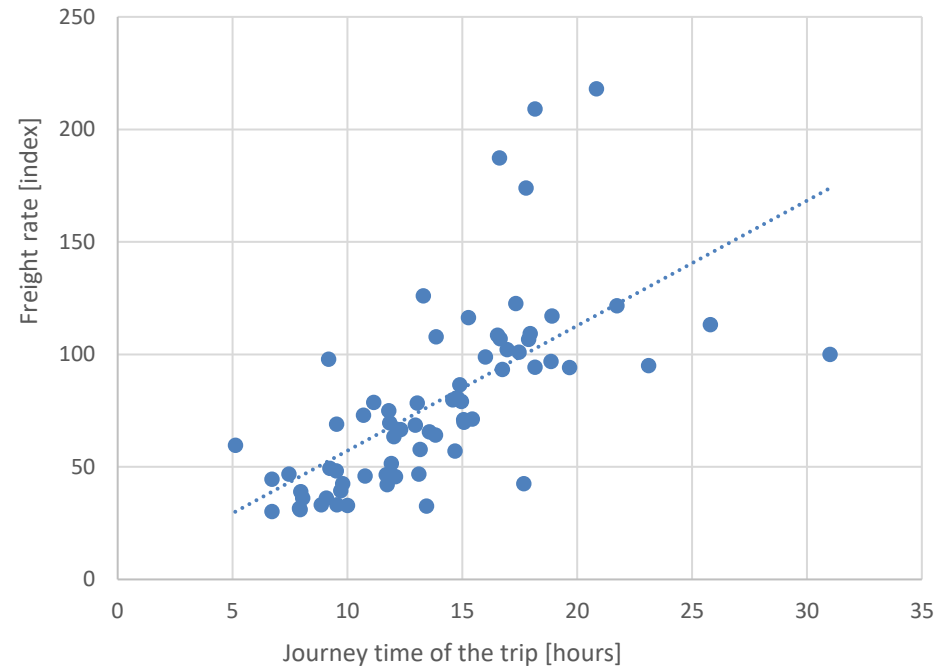


# Freight rates are influenced by operating costs – measured by journey time

Relation between journey time and freight rates – CITBO data for Gasoline and components



Relation between journey time and freight rates – CITBO data for Gasoil and components

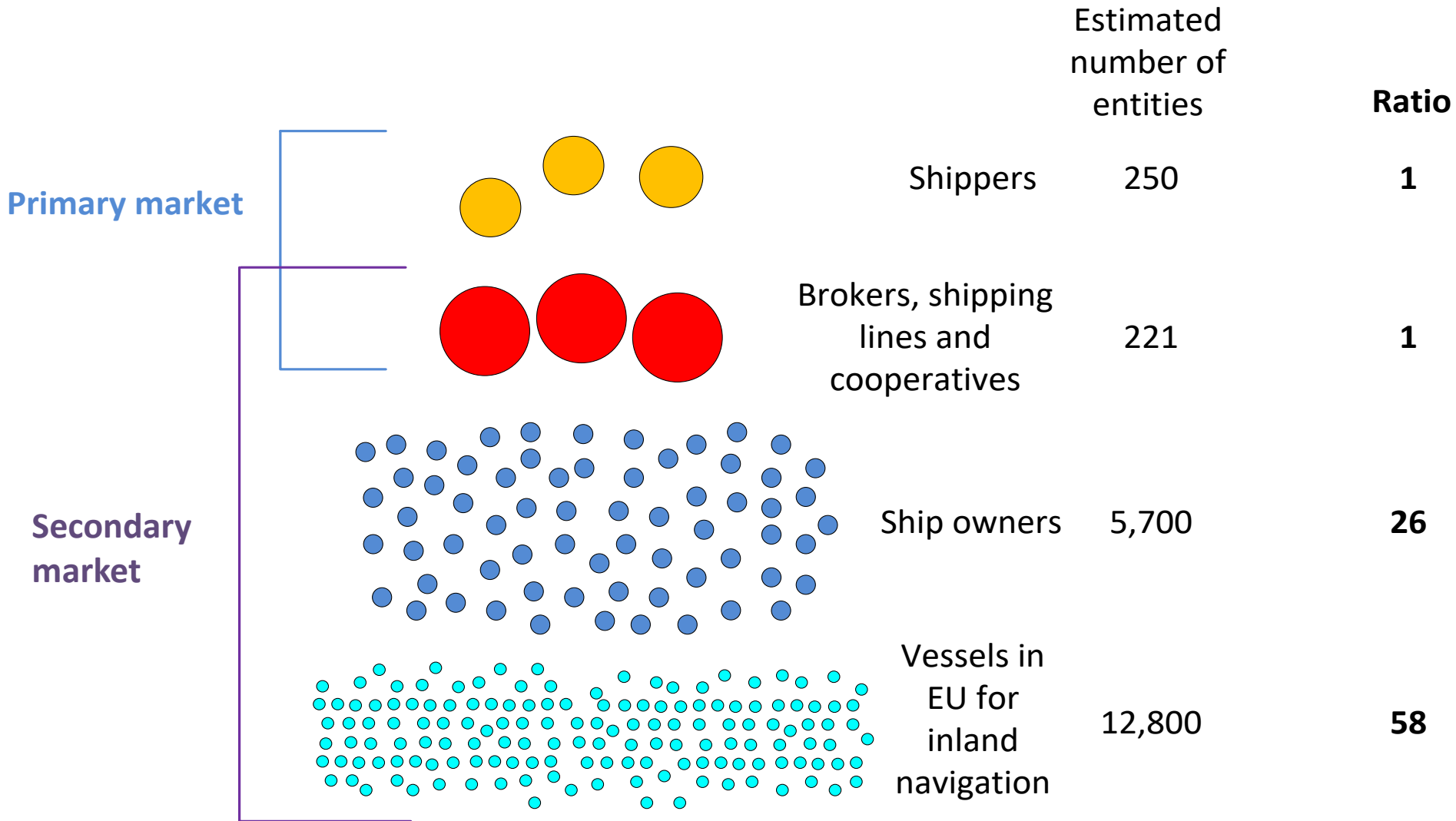


Sources: analysis CCNR based on CITBO data

CITBO spot market freight rate data were analyzed according to different variables. The journey time in hours was found to be an indication for the length of a trip and related costs. The longer the trip, the higher the costs and the higher the freight rate level.



# Market Structure in the IWT sector





# Market Structure and price formation

➡ Price formation strongly linked with the market structure.

In the dry bulk sector in Western Europe, it is characterized by a high degree of fragmentation.

➡ Atomistic market structure leading to asymmetric distribution of market and bargaining power:

- low market power of the individual vessel owner and,
- very high market power of the shippers and freight forwarders

➡ Cooperatives: a possible solution for solving the asymmetric distribution of market power. They enable the individual vessel owners to:

- form larger entities,
- realize savings in operating costs and
- develop more professional administrative company structures.



# Market Structure and price formation



Company succession is also affected by market structure.



Most IWT companies in western Europe are very small barge owner companies with only one vessel. They often face more financial risks and more difficult access to loans.



The liquid cargo market has companies of a larger size, providing more incentives for company succession.

Overall, the market shows a bit more consolidation than before (e.g., a single ship owner starts to own two, a three ship owners acquires two more and now has five vessels).



THANK YOU VERY MUCH FOR YOUR ATTENTION

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# Price formation models in inland waterway freight transport

Context: market observation, CCNR in partnership with European Commission.

Objective of the workshop:

- understand how price is formed and identify the different schemes of price formation in inland navigation freight transport (IWT);
- Look into evolution of freight rates over time;
- address the different factors influencing price formation (supply and demand, water levels, market structure, type of contracting ...);
- assess the impacts of price formation schemes for the IWT sector and its performance;
- discuss the possible trends that might affect such schemes in the future and how they might have an impact on the competitiveness of IWT;
- support policy makers in assessing the impact of their policies on IWT prices.