Towards a New Model for the Estimation of Sea Transport Services

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Objective

Develop a new model for the estimation of BOP items related to shipping activity (H5000), based on administrative data, international databases, collaboration with experts and sound econometric techniques.

Three steps:

- Define the cluster, the main counterparts and the types of BOP transactions that take place
- Define the population (legal owner companies, operator/ship-manager companies and the vessels to be taken into account)
- Estimate all BOP transactions of these vessels on a monthly basis

Source: Eurostat
Case B: Standard Bareboat Charter Agreement (Barecon 2001)
Case C: Standard Ship Management Agreement (Shipman 98, 2009)
Main Data Sources

- **Ministry of Maritime**: A yearly report on the management companies established in the country along with the vessels they manage.

- **IHS Maritime and Trade & Lloyd’s List intelligence**: Detailed data (on a vessel basis) for various types of ownership, vessel characteristics, new deliveries/deaths, port movement, crew, consumption, speed, draft etc. (Subscription fee required).

- **Clarksons Shipping Intelligence Network**: Detailed monthly freight rate data by type of vessel (tanker, bulker, etc.), deadweight and year built. (Subscription fee required).

- **Contacts with Experts in the Shipping Industry**: We have made numerous meetings to acquire know-how on BOP items related to the shipping industry.

- **Banking data, DIREQT**: Analysing correlations and trends among BOP
• **Define the population. Granular level approach/vessel by vessel characterization.**
  • The legal owner of the vessel is legally registered in Greece.
  • Based on the list of management companies provided by the Ministry of Maritime, we identify the vessels operated by Greece by applying few additional criteria (mainly, on data availability and logical coherence between the 2 international databases).

• **Main BOP items to estimate:**
  • Freight revenues, Bunkers/fuel cost, Crew wages
  • Repair/maintenance costs
  • Insurance costs
  • Port expenses and other operational costs
The Greek Shipping Estimation Model in practice (under development)

Freight revenues (Calculation Main Algorithm):

- Port Movement + Draft = the vessel is hired

For the hired vessel, depending on its vessel type & deadweight & year built, use the respective, monthly Clarksons’ sub-index to get the average $earnings/day. Then, estimate the sea transport expected revenues for the vessel. Sum-up for all ships.

Bunkers/fuel cost: Regression estimation consumption model:

Consumption = f(vessel type, deadweight, speed, draft, engine power, year built)

Use available data from international databases. Then, use the variable observed speed and draft to estimate expected consumption. Finally, calculate Consumption cost per day using world bunker prices.
Crew wages:

- International databases provide on a vessel by vessel basis, the number of crew, by type (i.e. officers) and nationality.
- Crew cost is then estimated taking into account International Transport Workers' federation collective agreements and market data.

Repair / Maintenance costs:

- International databases provide an indication of whether a vessel is under repair.
- Also there are market data of the average maintenance cost per vessel type/dead-weight/year built.
Port expenses:

- Port tariffs and charges are publicly available for major international ports.
- Communication with large domestic ports to acquire insights on port pricing.
- On basis of international databases one can identify the main ports visited on a vessel basis.
The Greek Shipping Estimation Model in practice. Challenges!

- Estimate consistently all BOP shipping related items.
- Multi territory Management Companies.
- Listed Companies in Foreign Stock Exchanges (NYSE, NASDAQ, ...)
- Precise geographical allocation is challenging.
- Costly procedure (needs subscription to 3 international databases).
- Heavy workload (requires many man hours, expertise).