Comparative Analysis of The Marine Sector: An Input-Output Analysis of Neighbouring Countries Estonia and Finland

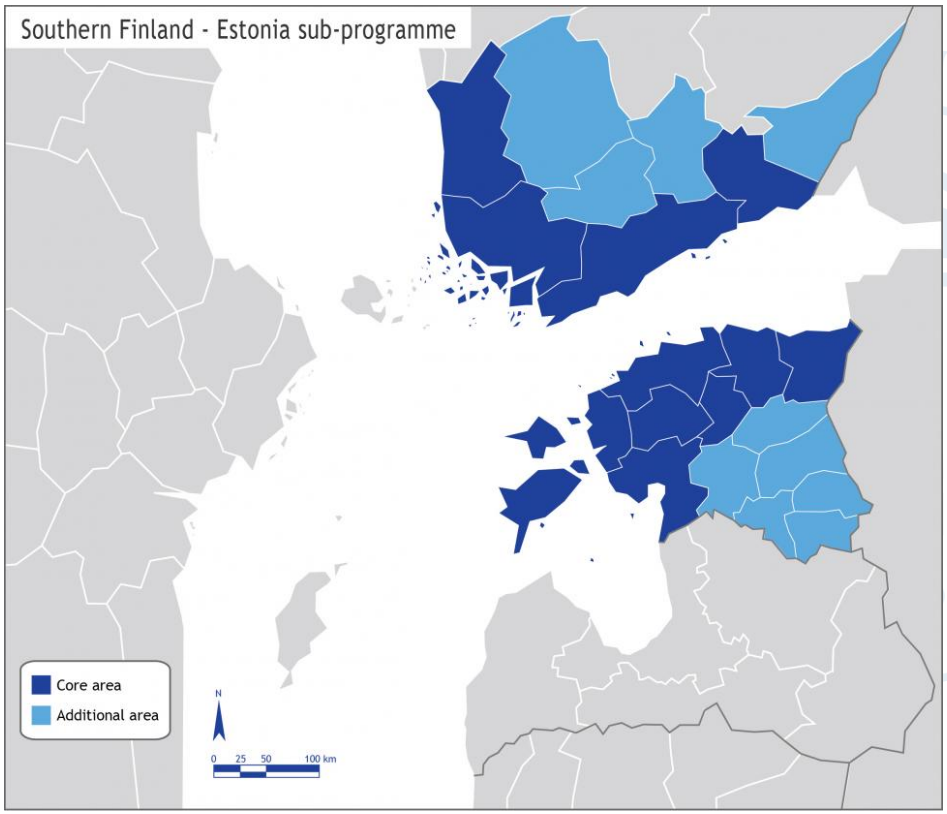
Gaygysyz Ashyrov, Tiiu Paas, Maryna Tverdostup

25th INFORUM World Conference - Riga, Lativa

European Union
European Regional
Development Fund

Investing
in your future

Estonia and Finland



- Trade Partnership
- Sea Transportation: Between Estonia and Finland have carried 8.8 million passengers.
- Estonian fisheries caught 60,440 tonnes of fish from the Baltic Sea, 80 percentage of total. (Statistics Estonia)

- Climate regulations and goals, environmental and economic concerns, and food production: The role of marine resources in economy.
- Historically and cultural close relationship between Estonia and Finland.

Aim of the research

Purpose of the research paper is to investigate the role of the maritime sectors in Estonia and Finland national economies, how much maritime sectors are influenced by other sectors or whether maritime sector has a remarkable impact on the national economy.

Previous Studies

- The economic impacts of alternative levels of timber cuttings in Finland (Rimler et al., 2000),
- The mining sector of Chilean II region (Aroca, 2001),
- The water use in the Spanish economy (Duarte et al.,2002),
- The interdependencies of industries in the Australian economy in terms of environmental pressure and resource depletion (Lenzen, 2003),
- The role of the electric power industries in Korean national economy (Han et al. 2004),
- Structural interdependence of the agricultural sector and energy sectors in Turkey (Karkacier and Goktolga, 2005),
- The mining industry in the European Union (San Cristobal and Biezma, 2006),
- The role of transportation sectors in the Korean national economy (Lee and Yoo, 2016).

Marine sector related studies

Similar methodology has also been applied in some marine sector related studies:

- Kawk et al. (2005) analyse the role of the maritime industry in the Korean economy,
- Morrissey and O'Donoghue, (2013) investigate the role of the marine sector in the Irish national economy by using IO tables and backward-forward linkage measures.

Methodology and Data

Input–output (IO) approach (Leontieff, 1936). Evaluation of the outcomes of backward and forward linkages for the sectors in a particular economy provide a mechanism for identifying "key" or "leading" sectors (Miller and Blair, 1985).

Databases

IO tables have been obtained from Statistics Estonia and Statistics Finland (Tilastokeskus). Year 2010.
Marine sectors:

- In Finland: Fishing and Water transport.
- In Estonia: Fish and other fishing products; aquaculture products and Water transport services.

Inter-sectoral linkage effect analysis

Backward Linkage

Power of dispersion. Production activities of the individual maritime sector may induce greater use of other sectors as an input for maritime production.

Forward Linkage

Sensitivity of dispersion. Maritime production may be used as an input to other sectors for their own production.

Both effects are useful in assessing the impact of the maritime sector on the national economy as a whole.

Preliminary Results

Finland

- The forward linkage effects of the maritime sectors (Fishing and Water Transport) are lower than those of other sectors (43 and 47 out of 96, respectively).
- When economic activities are booming the maritime sectors are less stimulated by overall industrial growth than other sectors.
- The backward linkage effects of maritime sectors are also lower (53 and 18 out of 96, respectively), than those of other sectors.
- This implies that the maritime industry has smaller impacts in terms of investment expenditures on the national economy than other sectors.

Estonia

- The forward linkage effects of the maritime sectors (Fish and other fishing products; aquaculture products and Water Transport) are lower than those of other products (54 and 33 out of 63, respectively).
- The backward linkage effects of maritime sectors are also lower (35 and 49 out of 63, respectively), than those of other sectors.

Leading sectors: Finland

FLE Highest values:

1. Wholesale trade (excl. motor vehicles, etc.)
2. Warehousing and support activities for transportation
3. Land transport

BLE Highest values:

1. Food industry
2. Woodworking industry
3. Paper industry

Leading sectors: Estonia

FLE Highest values:

1. Warehousing and support services for transportation,
2. Real estate services,
3. Electricity, gas, steam and air conditioning.

BLE Highest values:

1. Sewerage; waste management and remediation services,
2. Travel agency, tour operator and other reservation services and related services,
3. Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials.

Conclusions

- The forward linkage effects of the maritime sectors at both countries are lower than those of other sectors. Similar results have been estimated in Korean case as well (Kawk et al., 2005).
- Nevertheless, the backward linkage effects of maritime sectors of two countries are also lower than those of other sectors. Kawk et al. (2005) and Morrissey and O'Donoghue (2013) found higher backward linkages of maritime sectors in their countries.

Thank You For Your Attention!