



Foreign Flag Registration of Ships

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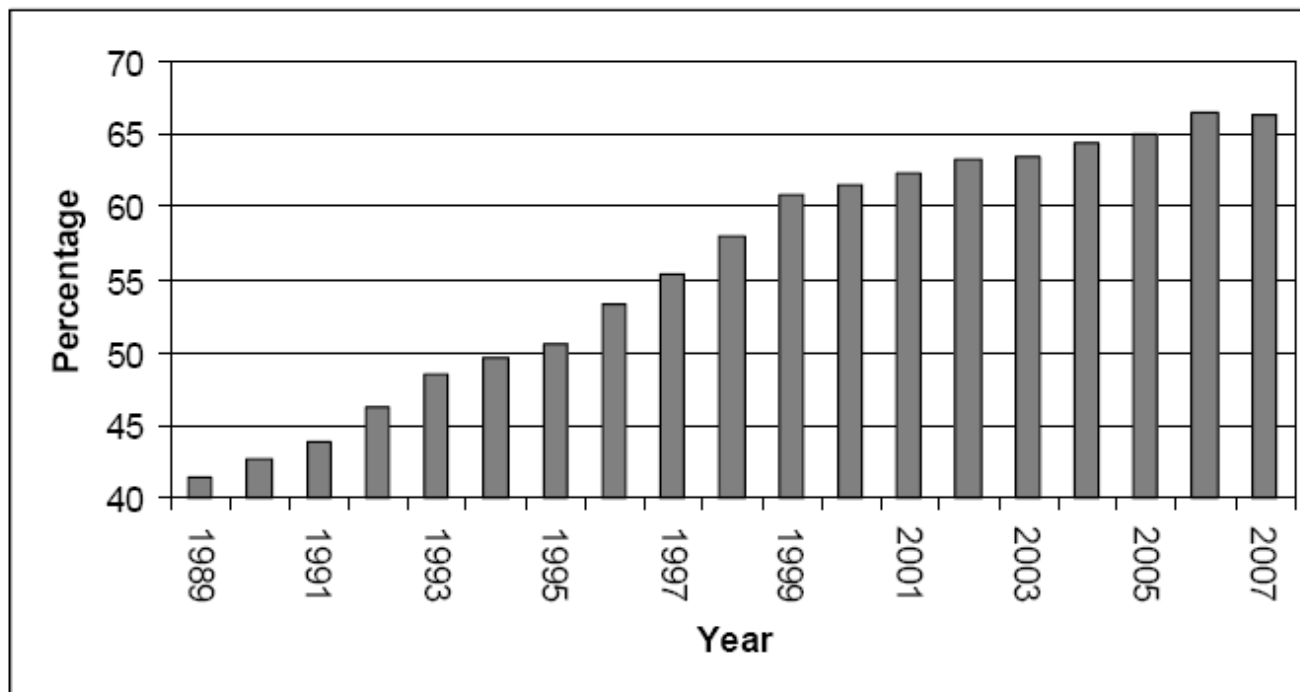


Introduction

- **Open registry**: flag of convenience (**FOC**)
- A FOC ship is one that flies the flag of a country **other than** the country of **ownership**
- Today, **more than half** of the world's merchant ships are registered under FOCs

Introduction

Figure 1 Share of foreign-flagged deadweight tonnage, 1989-2007



An enormous **increase of Share of foreign-flagged deadweight tonnage (1989-2007)**



Introduction

- Previous research on flag choice mostly discusses from the **ship companies**' position in the commercial sense
- The flag choice of individual ship companies may not be the same as their **collective behaviour**.
- This study is concerned not with the shipping companies but with the **flag states**



Objectives

- To analyse the factors influencing flag choice **in the macro sense**
- To understand why certain **flag state** is more popular
- Flag registration policy making
 - Traditional maritime nations
 - FOC countries



Literature Review

- *Bergantino and Marlow (1998)*
 - UK shipping industry
- *Goulielmos (1998)*
 - Flagging out and Flagging-in in Greece
- *Chung, Hwang and Wong (2007)*
 - Flagging out in Taiwan
- *Hoffmann, Sanchez and Talley (2005)*



Literature Review

- Flag choice determinants
 - **Operating cost** and economic constraints
 - **Characteristics** of the shipping companies and of the ships
- Finance related literatures: **foreign listing**
- **Methodology** used in flag choice analysis:
 - **Qualitative** analysis
 - Empirical study by collecting data via **questionnaire and interviews**



Research Questions

- Foreign flags versus National flag
 - Rather than which flag
- Country
 - rather than shipping companies
- Socio-economic data
 - rather than questionnaire based data



Research Methodology

- **Panel data** analysis
 - Pooled Regression
 - Fixed Effects
- To allow great flexibility in modeling differences in behaviour across individuals



Data description

- **32 countries** with the largest controlled fleets under national or foreign flag registration (1997 to 2006)
- Represent approximately **80 percent of world fleet** (source: UNCTAD Review of Maritime Transport)



Data description

Dependent
variable

Independent
variables

| Variables | Observations | Description |
|------------------------------|--------------|--|
| FOCRATIO ⁽¹⁾ | 288 | Share of foreign flags (% of total DWT) |
| GDP ⁽²⁾ | 288 | Billion US\$ |
| LABOURRATE ⁽²⁾ | 288 | General Labour force participation rate (% of total population ages 15-64) |
| LABOURPAY ⁽²⁾ | 271 | Workers' remittances and compensation of employees (US\$) |
| BULKRATIO ⁽⁴⁾ | 320 | Share of Bulk carriers in total fleet (% of total DWT) |
| TANKERRATIO ⁽⁴⁾ | 320 | Share of Oil tankers in total fleet (% of total DWT) |
| <i>Dummy variable</i> | | |
| AREA_AMERICA ⁽¹⁾ | 320 | 1 (America) or 0 (other areas) |
| AREA_ASIA ⁽¹⁾ | 320 | 1 (Asia) or 0 (other areas) |
| AREA_ATLANTIC ⁽¹⁾ | 320 | 1 (Atlantic) or 0 (other areas) |
| AREA_EUROPE ⁽¹⁾ | 320 | 1 (Europe) or 0 (other areas) |
| DEVELOPED ⁽³⁾ | 320 | 1 (Developed country) or 0 (developing country) |



Model Development

- **Basic Model**
 - GDP, LABORRATE, LABORPAY, DEVELOPED
- **Geographic Effect**
 - AREA-AMERICA, ASIA, ATLANTIC, EUROPE
- **Ship Type Effect**
 - BULKRATIO, TANKERRATIO
- **Geographic and Ship Type Effects**
- **Interaction Effect**
 - LABORRATE*DEVELOPED, LABORPAY*DEVELOPED



| <i>Variables</i> | | <i>Models</i> | | | | |
|------------------------------|---------------------------|---------------------|---------------------|----------------------|-----------------------|-----------------------|
| | | (1) | (2) | (3) | (4) | (5) |
| Dependent variable: FOCRATIO | | | | | | |
| Basic model | LOG(GDP) | 0.46** (2.02) | 2.56*** (10.42) | 1.20*** (5.44) | 2.26*** (9.64) | 3.26*** (13.76) |
| | LABOURRATE | -0.002 (-0.07) | -0.05 (-1.19) | -0.17*** (-4.39) | -0.27*** (-7.09) | -0.69*** (-15.96) |
| | LOG(LABOURPAY) | 3.26*** (18.06) | 3.66*** (21.08) | 3.90*** (22.15) | 4.43*** (26.00) | 5.37*** (29.77) |
| | DEVELOPED | 11.26*** (18.38) | 1.54** (2.05) | 9.49*** (15.81) | 3.58*** (4.95) | -- |
| Interaction effect | DEVELOPED *LABOURRATE | -- | -- | -- | -- | 0.67*** (19.64) |
| | DEVELOPED *LOG(LABOURPAY) | -- | -- | -- | -- | -5.66*** (-18.03) |
| Geo-graphical effect | AREA_ASIA | -- | 1.28 (1.20) | -- | -5.91*** (-5.60) | -11.78*** (-10.91) |
| | AREA_ATLANTIC | -- | -8.24*** (-4.92) | -- | -20.22*** (-12.22) | -29.85*** (-17.80) |
| | AREA_EUROPE | -- | 17.36*** (15.36) | -- | 8.38*** (7.28) | 3.53*** (3.09) |
| Ship type effect | BULKRATIO | -- | -- | -0.09*** (-7.75) | 0.02 (1.38) | 0.05*** (4.24) |
| | TANKERRATIO | -- | -- | -0.37*** (-29.68) | -0.33*** (-26.13) | -0.38*** (-29.68) |
| | C ₀ | 22.97*** (7.67) | 6.74** (2.00) | 40.51*** (13.87) | 34.83*** (10.17) | 57.68*** (15.98) |
| | R-squared | 0.16 | 0.25 | 0.24 | 0.31 | 0.34 |



Panel Data Test Results

- Foreign flag share is higher in countries with higher crew cost and lower labour rate
- Developed countries especially in European region have higher shares of foreign flag than developing countries
- Oil tankers show less interests in flagging out compared to bulk carriers



Conclusions

- This study is concerned not with the shipping companies but with the **flag states**
- **Salary level, crew supply** and **regulation** are still the most important determinants of flag choice in the macro sense



Conclusion

- Share of flagging out is higher in countries with higher crew cost and lower labour rate so that **operational cost and constraints** can be reduced
- **Developed countries** especially in **European** region have **stricter restriction** on shipping registry, thus their share of foreign flag are relatively higher than developing countries
- **Oil tankers** have less interests in flagging out compared to bulk carriers because of the **security and prestige issues**



Policy Implications

- **Traditional** maritime countries
 - Relax many of the financial and crewing structures to attract more national registries
- **FOC** countries
 - Take more responsibility for their actions while retain these favorable conditions
- **Differentiate** policies to different **trade areas** and **ship types**
- **Collaboration** and communication among different flag states



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