

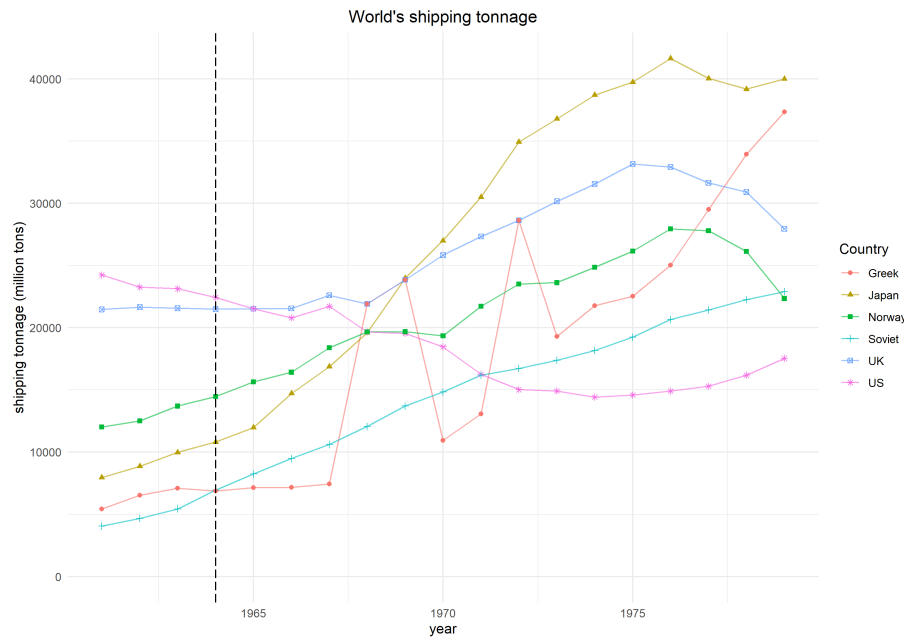
# Construct and describe share data

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## 0.1 Trend of world's shipping tonnage

- Gross Tonnage of Japanese Merchant Vessels from [http://www.mlit.go.jp/hakusyo/transport/index1\\_.htm](http://www.mlit.go.jp/hakusyo/transport/index1_.htm)
- Gross Tonnage of top6 countries from <http://www.mlit.go.jp/hakusyo/transport/shouwa41/ind060101/frame.html> and Loyd statistics (missing 1961-1963 now)



**Figure 1: The trend of world's shipping gross tonnage(mill tons):** *Source:* [?] which borrows the data of Statistical Tables in Lloyd's Statistics. The data contains only ships whose tonnage sizes are at least 100 ton.

## 0.2 Trend of world's freight movement tonnage

- shipping\_quantity\_japan is from book3
  - Ministry of Transport Shipping Bureau (missing 1961-1965 now)
  - [http://www.mlit.go.jp/hakusyo/transport/index1\\_.htm](http://www.mlit.go.jp/hakusyo/transport/index1_.htm)

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### 0.3 Trends of the number of shipping firms in Japan

### 0.4 planned shipbuilding

The payment of planned shipbuilding is needed for calculation of the estimated amount of financial support.

\* [https://www.mlit.go.jp/hakusyo/transport/shouwa39/ind060103/001.html#tabII-\(I\)-12](https://www.mlit.go.jp/hakusyo/transport/shouwa39/ind060103/001.html#tabII-(I)-12)

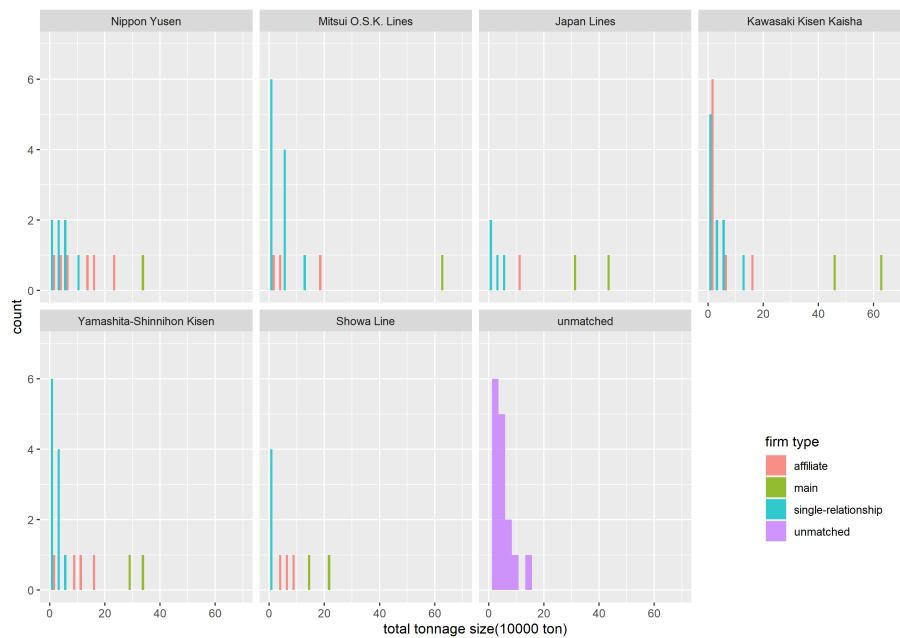
Note that 38 is the dimension

## 1 Descriptive data

### 1.1 descriptive summary

## 2 type-based histogram

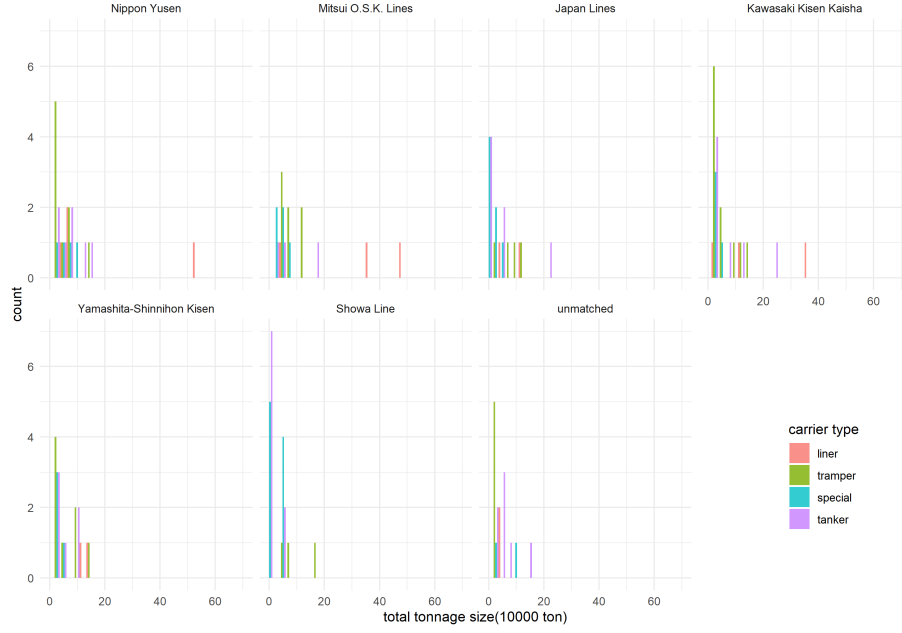
### 2.1 Groupby histogram



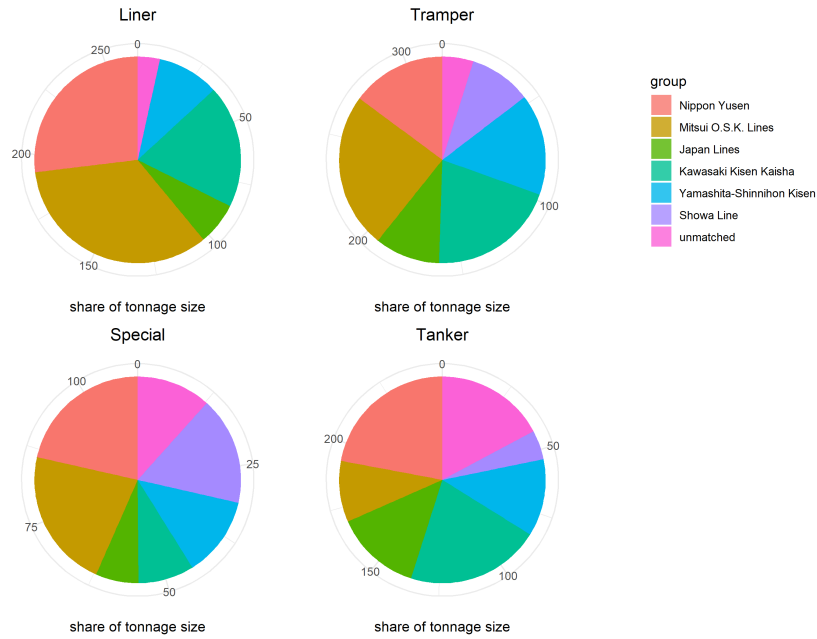
**Figure 2: Distribution of tonnage size for each firm type.** Observation unit: the total tonnage size for each firm type of each group.

### 2.2 pie charts

### 2.3 Regression



**Figure 3: Distribution of tonnage size for each carrier type.** Observation unit: the total tonnage size for each carrier type of each group.



**Figure 4: Shares of each carrier type and each group.** Observation unit: the total tonnage size for each carrier type of each group.

**Table 1: Summary statistics for independent variables.**

|                                      | <i>N</i> | <i>mean</i> | <i>sd</i> | <i>min</i> | <i>q25</i> | <i>q50</i> | <i>q75</i> | <i>max</i> |
|--------------------------------------|----------|-------------|-----------|------------|------------|------------|------------|------------|
| <i>measure of economies of scale</i> |          |             |           |            |            |            |            |            |
| total tonnage size of liner          | 118      | 22334.220   | 82068.002 | 0.000      | 0.000      | 0.000      | 0.000      | 526000     |
| total tonnage size of special        | 118      | 9541.415    | 19479.171 | 0.000      | 0.000      | 0.000      | 7204.500   | 98768      |
| total tonnage size of tanker         | 118      | 20973.136   | 44468.924 | 0.000      | 0.000      | 0.000      | 24776.500  | 250173     |
| total tonnage size of tramper        | 118      | 26962.186   | 38390.142 | 0.000      | 2283.250   | 11189.500  | 30933.750  | 166102     |
| <i>measure of economies of scope</i> |          |             |           |            |            |            |            |            |
| share of liner                       | 118      | 0.105       | 0.239     | 0.000      | 0.000      | 0.000      | 0.000      | 1          |
| share of special                     | 118      | 0.114       | 0.241     | 0.000      | 0.000      | 0.000      | 0.083      | 1          |
| share of tanker                      | 118      | 0.204       | 0.356     | 0.000      | 0.000      | 0.000      | 0.246      | 1          |
| share of tramper                     | 118      | 0.578       | 0.412     | 0.000      | 0.189      | 0.661      | 1.000      | 1          |
| HHI based on carrier types           | 118      | 0.807       | 0.241     | 0.254      | 0.584      | 1.000      | 1.000      | 1          |

**Table 2: Preliminary regression results for predicting matchings.** Observation unit: a one-to-one matching pair. The sample size is determined by all possible matching pairs from 118 firms in my data set.

|   | <i>Dependent variable:</i> |                      |                      |                      |                      |
|---|----------------------------|----------------------|----------------------|----------------------|----------------------|
|   | 1(match)                   |                      |                      |                      |                      |
|   | (1)                        | (2)                  | (3)                  | (4)                  | (5)                  |
| $\log(\text{liner}_b * \text{liner}_t + 1)$                       | −0.002<br>(0.006)          |                      | −0.014<br>(0.010)    | −0.031***<br>(0.011) | −0.004***<br>(0.001) |
| $\log(\text{tramper}_b * \text{tramper}_t + 1)$                   | 0.005*<br>(0.003)          |                      | 0.002<br>(0.005)     | 0.017***<br>(0.006)  | 0.002***<br>(0.001)  |
| $\log(\text{special}_b * \text{special}_t + 1)$                   | −0.009**<br>(0.004)        |                      | −0.003<br>(0.006)    | −0.016**<br>(0.006)  | −0.002***<br>(0.001) |
| $\log(\text{tanker}_b * \text{tanker}_t + 1)$                     | −0.001<br>(0.004)          |                      | −0.016**<br>(0.006)  | −0.023***<br>(0.007) | −0.003***<br>(0.001) |
| $\log(\text{total}_b * \text{total}_t + 1)$                       | −0.026*<br>(0.014)         |                      | −0.007<br>(0.018)    | 0.026<br>(0.019)     | 0.003<br>(0.002)     |
| bank coverage similarity ratio                                    |                            | 1.687***<br>(0.529)  | 2.141***<br>(0.570)  | 0.912<br>(0.611)     | 0.119<br>(0.075)     |
| $\log(\text{HHI}_b * \text{HHI}_t + 1)$                           |                            | 0.543***<br>(0.149)  | 0.371<br>(0.228)     | −0.244<br>(0.240)    | −0.035<br>(0.029)    |
| $\log(\text{share of liner}_b * \text{share of liner}_t + 1)$     |                            | 0.304<br>(0.459)     | 1.144<br>(0.759)     | 2.111***<br>(0.808)  | 0.256***<br>(0.099)  |
| $\log(\text{share of special}_b * \text{share of special}_t + 1)$ |                            | −0.973*<br>(0.537)   | −0.981<br>(0.682)    | −0.555<br>(0.710)    | −0.043<br>(0.074)    |
| $\log(\text{share of tramper}_b * \text{share of tramper}_t + 1)$ |                            | 0.366***<br>(0.093)  | 0.273<br>(0.190)     | −0.578***<br>(0.204) | −0.064***<br>(0.024) |
| $\log(\text{share of tanker}_b * \text{share of tanker}_t + 1)$   |                            | 0.365*<br>(0.198)    | 1.012***<br>(0.311)  | 1.266***<br>(0.329)  | 0.156***<br>(0.040)  |
| same type   |                            |                      |                      | 1.583***<br>(0.052)  | 0.228***<br>(0.007)  |
| Intercept   | −1.176***<br>(0.273)       | −2.066***<br>(0.082) | −1.819***<br>(0.403) | −2.750***<br>(0.430) | 0.037<br>(0.052)     |
| Model   | Logit                      | Logit                | Logit                | Logit                | OLS                  |
| Observations  | 13,806                     | 13,806               | 13,806               | 13,806               | 13,806               |
| Akaike Inf. Crit.   | 12,057.300                 | 12,031.870           | 12,030.990           | 11,064.940           | 10,239.880           |

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01