Construct and describe share data

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0.1 Trend of world's shipping tonnage
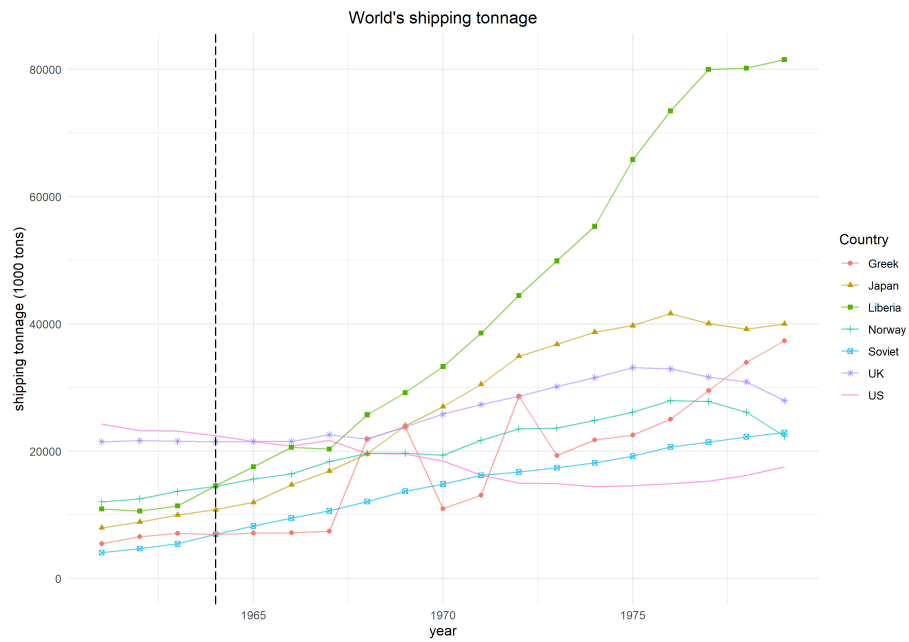

Figure 1: The trend of world's shipping gross tonnage (1000 tons): *Source*: [**?**] which borrows the data of Statistical Tables in Lloyd's Statistics. The data contains ships whose tonnage sizes are at least 100 ton and includes fishing vessel. The dotted vertical line divides the periods before and after mergers of my interest.

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1 Descriptive data

1.1 Descriptive summary

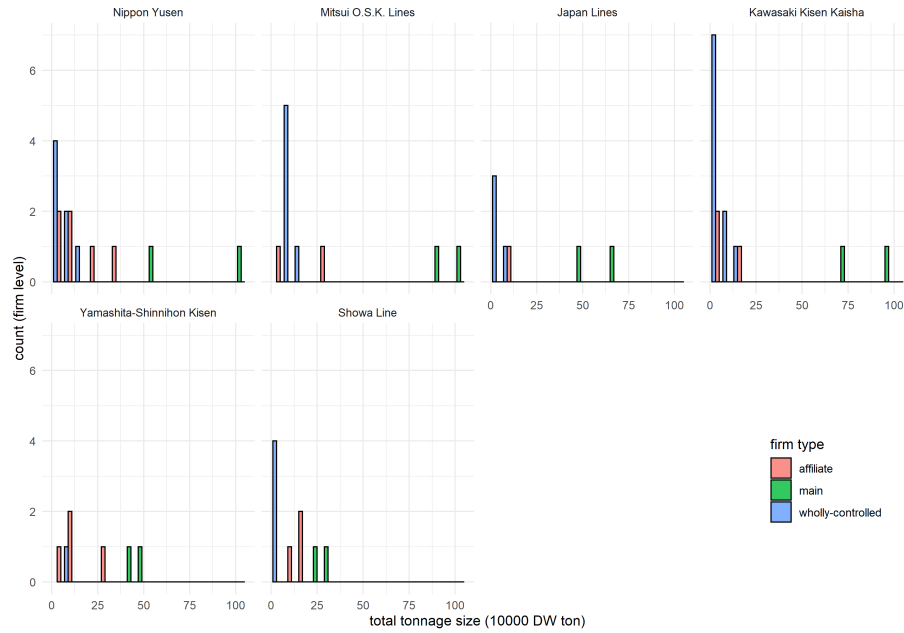# 2 type-based histogram

2.1 Groupby histogram

Figure 2: Distribution of tonnage size for each firm type. Observation unit: the firm-level tonnage size for each firm type of each group after mergers.

2.2 Pie charts

2.3 Regression

Table 1: Summary statistics for independent variables. *Source* : [**?**] and [**?**].

|	N	mean	sd	min	q25	q50	q75	max
Size variables (million D/W)								
total tonnage size	118	0.110	0.207	0.000	0.011	0.026	0.091	1.023
total tonnage size of liner	118	0.031	0.112	0.000	0.000	0.000	0.000	0.721
total tonnage size of special	118	0.015	0.033	0.000	0.000	0.000	0.008	0.177
total tonnage size of tanker	118	0.030	0.071	0.000	0.000	0.000	0.024	0.417
total tonnage size of tramper	118	0.035	0.055	0.000	0.002	0.013	0.034	0.246
Specialization variables (percentage share)								
share of liner	118	0.104	0.235	0.000	0.000	0.000	0.000	1.000
share of special	118	0.117	0.244	0.000	0.000	0.000	0.088	1.000
share of tanker	118	0.192	0.351	0.000	0.000	0.000	0.208	1.000
share of tramper	118	0.587	0.417	0.000	0.135	0.705	1.000	1.000
HHI based on carrier types	118	0.815	0.241	0.258	0.584	1.000	1.000	1.000
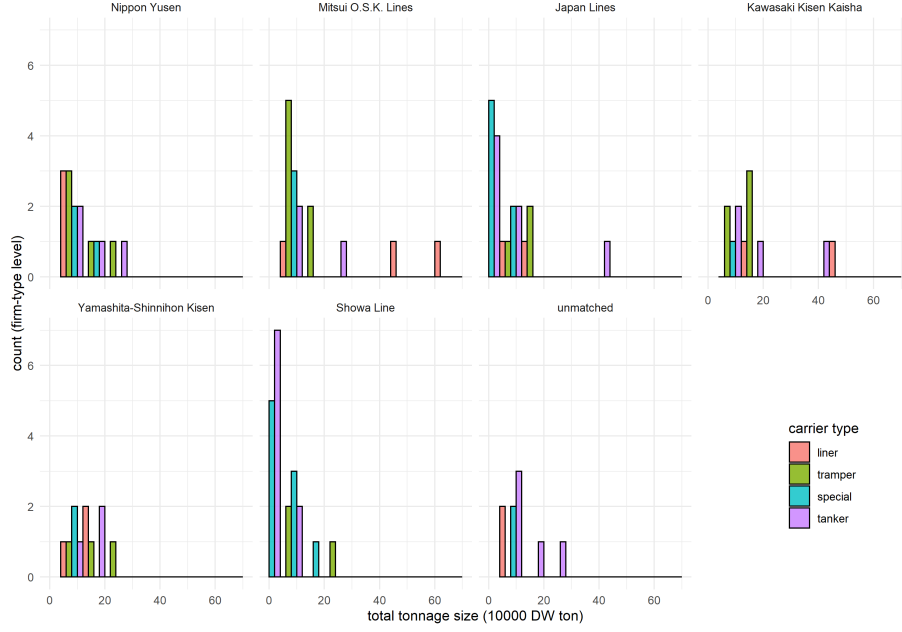
Figure 3: Distribution of tonnage size for each carrier type. Observation unit: firm-level tonnage size for each carrier type of each group after mergers.
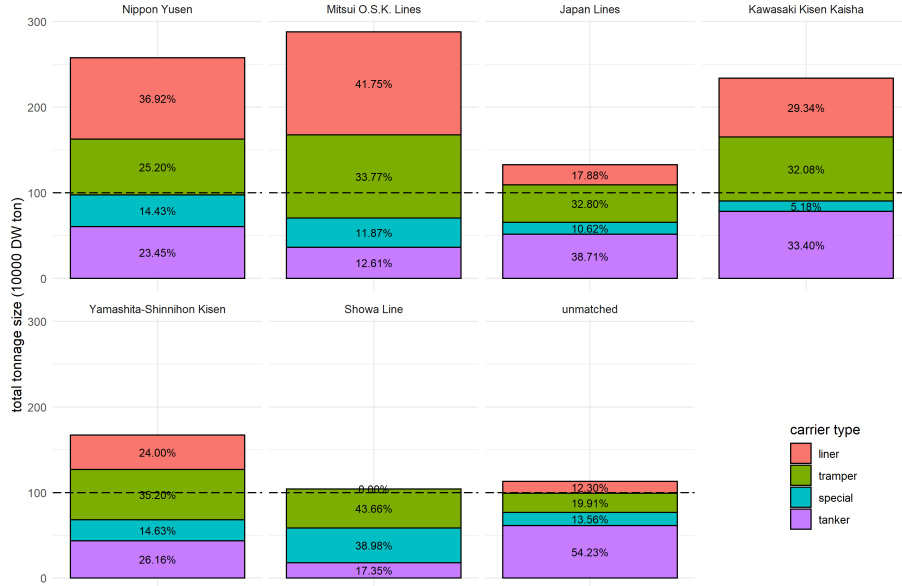

Figure 4: Configuration of tonnage size for each carrier type. Observation unit: group-level total tonnage size for each carrier type after mergers. The dotted horizontal line indicates the subsidy threshold.

3 Export dataset for maximum rank estimator

4 Sankey diagram based on estimated parameters
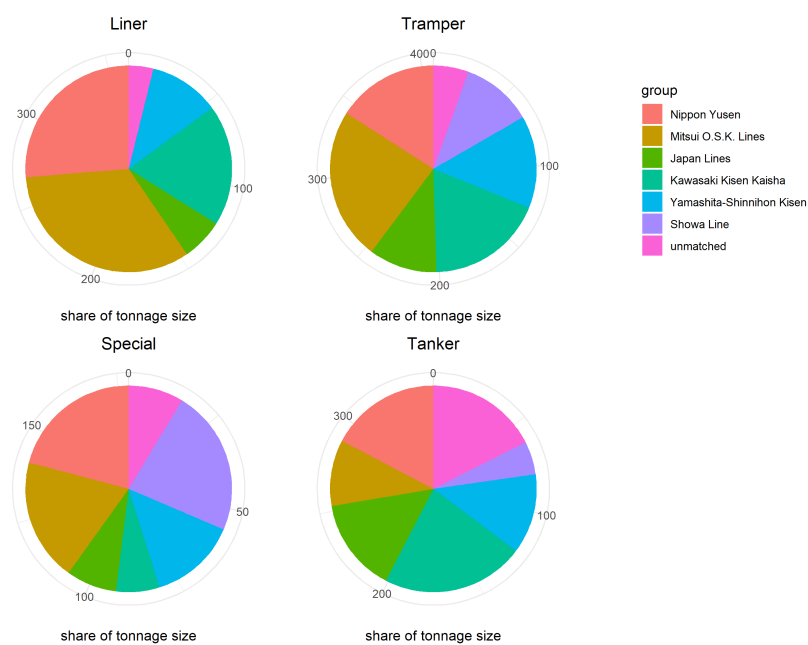
Sankey diagrams need to be exported from a clipboard.

Figure 5: Shares of each carrier type and each group. Observation unit: group-level tonnage size for each carrier type after mergers.

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.

	Dependent variable:				
	1(match)				
	(1)	(2)	(3)	(4)	(5)
$\log(\text{liner}_b\,{}^*\text{liner}_t+1)$	−0.002 (0.006)		−0.013 (0.009)	−0.029*** (0.010)	−0.003*** (0.001)
$\log(\text{tramper}_b\,{}^*\text{tramper}_t+1)$	0.005* (0.002)		0.004 (0.005)	0.018*** (0.006)	0.002*** (0.001)
$\log(\text{special}_b\,{}^*\text{special}_t+1)$	−0.009** (0.004)		−0.002 (0.006)	−0.017*** (0.006)	−0.002*** (0.001)
$\log(\text{tanker}_b\,{}^*\text{tanker}_t+1)$	−0.003 (0.004)		−0.017** (0.007)	−0.026*** (0.007)	−0.003*** (0.001)
$\log(\text{total}_b\,{}^*\text{total}_t+1)$	−0.021 (0.013)		−0.010 (0.017)	0.049*** (0.018)	0.006*** (0.002)
bank coverage similarity ratio		1.598*** (0.525)	2.052*** (0.575)	0.649 (0.617)	0.088 (0.076)
$\log(\text{HHI}_b\,{}^*\text{HHI}_t+1)$		0.525*** (0.148)	0.372* (0.221)	−0.123 (0.231)	−0.019 (0.028)
$\log(\text{share of liner}_b\,{}^*\text{share of liner}_t+1)$		0.334 (0.473)	1.159 (0.739)	2.140*** (0.788)	0.253*** (0.096)
$\log(\text{share of special}_b\,{}^*\text{share of special}_t+1)$		−0.996* (0.519)	−0.990 (0.667)	−0.529 (0.694)	−0.041 (0.072)
$\log(\text{share of tramper}_b\,{}^*\text{share of tramper}_t+1)$		0.308*** (0.091)	0.165 (0.188)	−0.558*** (0.200)	−0.058** (0.024)
$\log(\text{share of tanker}_b\,{}^*\text{share of tanker}_t+1)$		0.257 (0.210)	0.992*** (0.335)	1.311*** (0.354)	0.158*** (0.043)
same type				1.600*** (0.052)	0.229*** (0.007)
Intercept	−1.271*** (0.260)	−2.041*** (0.083)	−1.748*** (0.395)	−3.312*** (0.425)	−0.033 (0.051)
Model	Logit	Logit	Logit	Logit	OLS
Observations	13,806	13,806	13,806	13,806	13,806
Akaike Inf. Crit.	12,056.510	12,037.120	12,034.740	11,053.080	10,230.180

Note: *p<0.1; **p<0.05; ***p<0.01

Table 3: Summary of total tonnage size for each group. *Source* : [**?**] and [**?**].

	firm type	total tonnage	number of firms	total tonnage in a group
Nippon Yusen				
1	(1) main	1509795	2	2577274
2	(2) affiliate	841568	7	
3	(3) wholly-controlled	225911	7	
Mitsui OSK Line				
4	(1) main	1924859	2	2879216
5	(2) affiliate	400530	5	
6	(3) wholly-controlled	553827	20	
Japan Line				
7	(1) main	1122694	2	1328069
8	(2) affiliate	125738	1	
9	(3) wholly-controlled	79637	4	
Kawasaki Kisen Kaisha				
10	(1) main	1658650	2	2338502
11	(2) affiliate	391170	9	
12	(3) wholly-controlled	288682	7	
Yamashita Shinnihon Kisen				
13	(1) main	899033	2	1671590
14	(2) affiliate	601616	5	
15	(3) wholly-controlled	170941	10	
Showa Line				
16	(1) main	549095	2	1041063
17	(2) affiliate	464830	3	
18	(3) wholly-controlled	27138	4	
Unmatched				
19	unmatched	1131211	24	1131211
Total				
20		12966925	118	12966925