Motorways of the Sea: The conditions for Success -Session 1

Improved and Innovative Tools to Finance MoS

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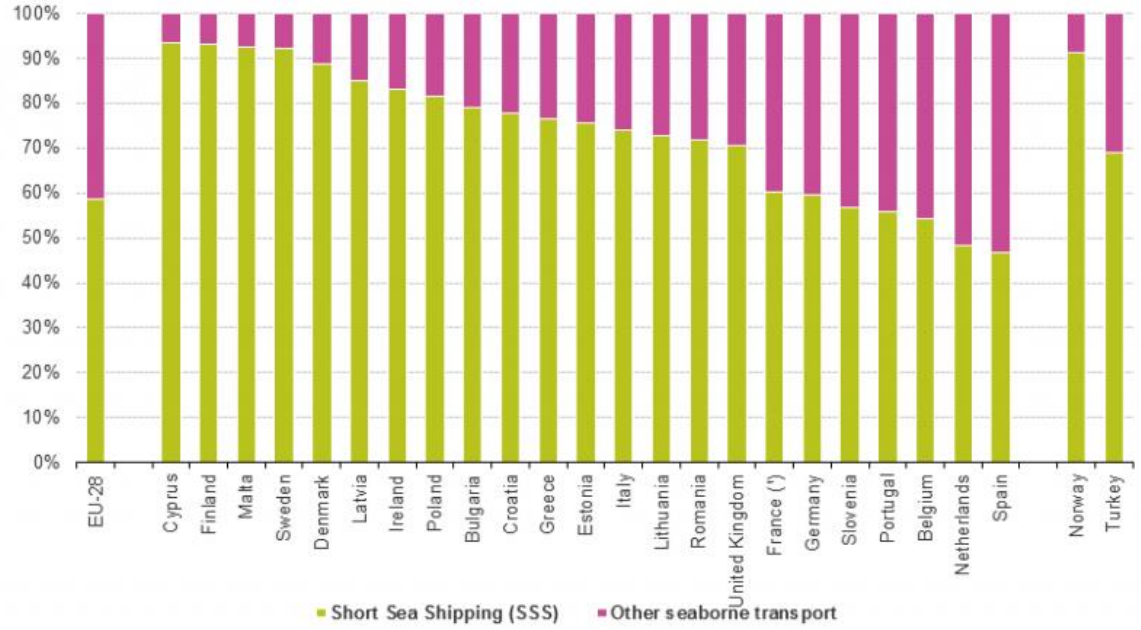
- In Europe, shipping accounts for 37% of intra-EU trade. Road transport counts for 45%, while rail comes much lower, with just above 10%. Inland waterways and transportation by pipeline each account for a little less than 5% and air transport is the least solicited means of intra-EU freight transportation.

- A 2015 Oxford Economics study on the economic value of the EU shipping industry found that for every €1 the European shipping industry contributes to GDP itself, it creates another €1.6 elsewhere in the European economy.

- Short sea shiping is an important source of revenue for Europe. Part of the fleet is built and equipped in Europe, sustaining a much larger network of naval yards and SMEs.

Share of Short Sea Shipping of goods in total sea transport in 2015 (in % of total gross weight of goods transported)

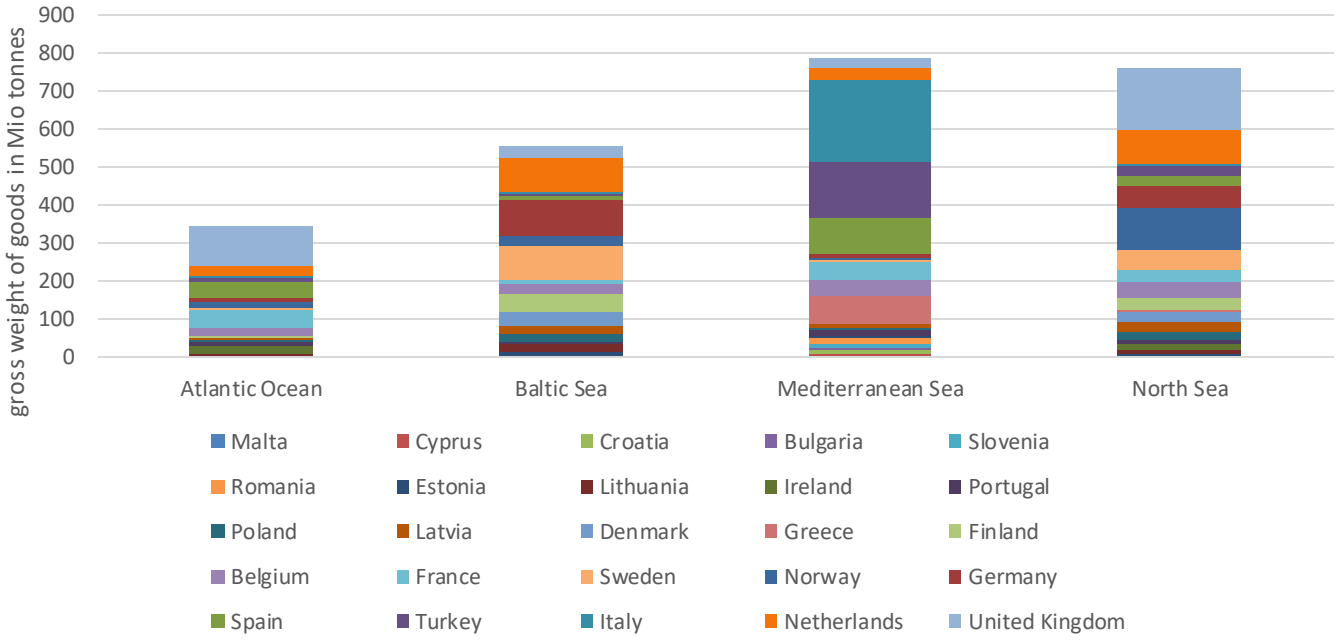


Note: data are not available for Iceland

(*) Partially estimated by Eurostat.

Short sea shipping made up close to 59 % of the total maritime transport of goods to and from the main EU ports in 2015, about the same as in 2014. However, the share of short sea shipping in total maritime transport varies considerably between the reporting countries.

Short Sea Shipping of Goods by reporting Country and Sea Region



Deployment of alternative clean fuels and green shipping

- Conversion and building cost for more climate efficient ships still 10-30% higher than traditional solutions. In addition, the risks to invest in these new technologies, despite the pilot tests results are still high due to, i.a. delivery times, further development and customer demands.

- A new built vessel, using e.g. LNG as fuel, typically costs approximately 25% more compared to a standard designed vessel, but does not have a proportionately increased earning capacity. From a strictly financial perspective, the value of this LNG-vessel has not increased at all. Freight buyers are very rarely willing to pay a higher charter for an obviously more environmentally efficient vessel or a port with expensive equipment.

- The cost becomes 125%, whilst the value of the vessel from a financial perspective as collateral / revenue generation practically remains at only 100% as long as OPEX and fuel cost reduction is not demonstrated.

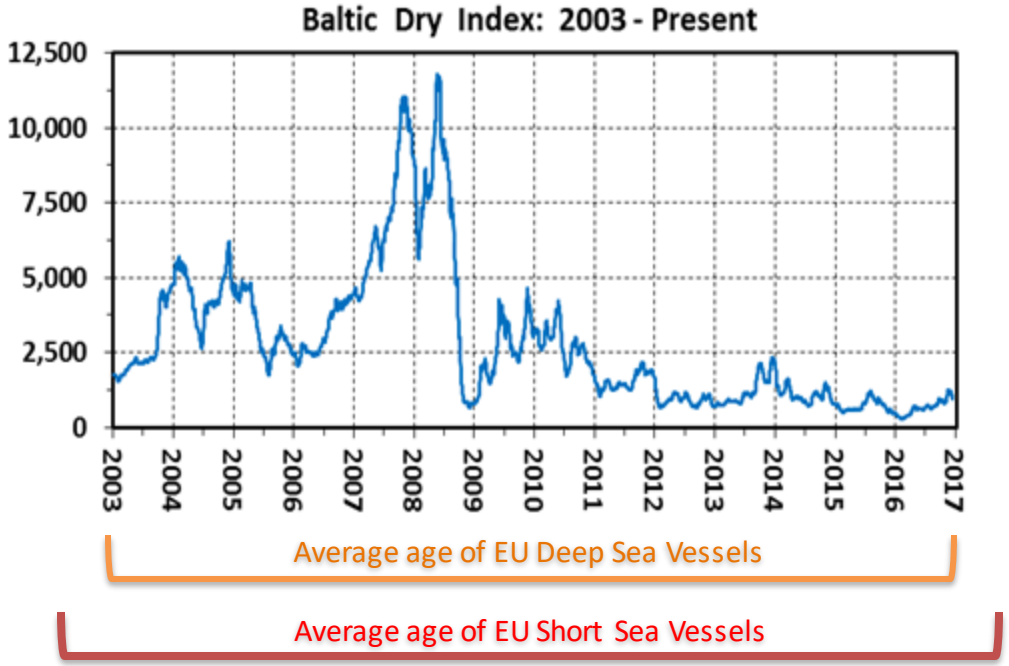
Port Infrastructure Development & Upgrade / Creation of Maritime Links

- Short sea shipping has more frequent port calls, which in turn means that the price and quality of all port related services and hinterland connections have a relatively bigger impact than on deep sea operations.
  - Develop port infrastructure, handling facilities, freight terminals, logistic platforms and freight villages together with improved port access
  - Develop reliable short sea shipping transport services integrated within door-to-door logistics chains and connecting core network corridors

- Sea Traffic Management efficiency
  - Establish transparency in the short-sea freight market via an electronic freight marketplace
  - Organize the effort among local companies to coordinate cargo flow / real-time integrated production and logistic planning & optimized just-in-time freight throughout the logistic chain

- Significant port investments
  - Railway connections to ports quays and terminals
  - Alternative fuel re-fuelling facilities for ships (construction of LNG bunkering facility or port reception facilities for scrubber sludge)
  - Equipment to increase terminal handling productivity: reduce turnaround time in ports, maximize cargo space utilization, and secures cargo handling quality
  - Dredging of berths and canals

Price Volatility & Market Risk



On a EU level, the average age of vessels operating in Short Sea is the 20 years, while the average age of vessels operating in Deep Sea is only 14 years.

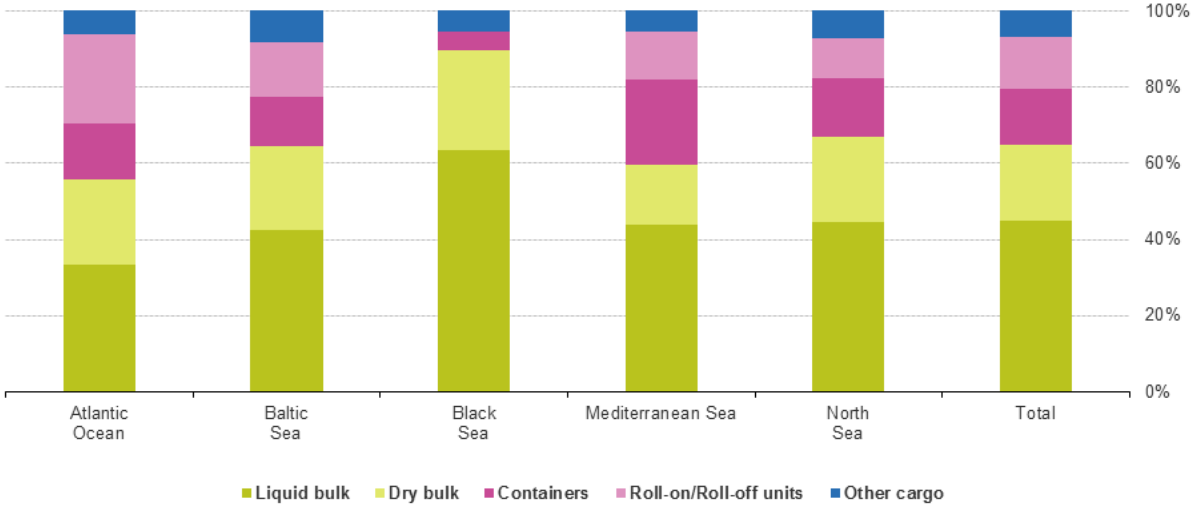
Support new financial instruments through risk reduction mechanisms

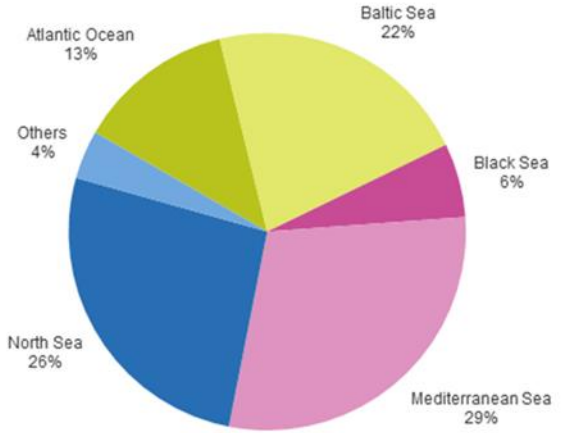
- Advanced blending approach of existing financing tools along the risk / revenue waterfall:
    1. Co-funding CEF / regional resources to take the first loss piece including Financial Instruments(along EU commission communication)
    2. EIB lending/risk sharing mechanisms to take subordinated position backed by EFSI resources (up to 25% on Infrastructure loans and 100% on Equity products through funds) remaining senior over CEF and ESIF resources (e.g the Broadband Fund Initiative scheme)
    3. Public and Private Long term Investors to take Equity and Debt Risk: Integrate institutional investors with a long-term investment perspective in order to reduce the cost of capital reflecting an enhanced / improved level of risk
    4. Favor investments platforms aggregating ports infrastructures and vessels financing to ease the combination of financial instruments

- Create new market oriented public financing tools to support Green investment
    - Green Certificate paying an Eco Bonus indexed over the climate / energy friendly performance and OPEX possible reduction on vessels and port equipment.
    - Provide Long Term Hedging on ship fuel at a reasonable cost
    - Keep world-leading technology providers engaged throughout the lifecycle of climate / energy friendly vessels and port equipment

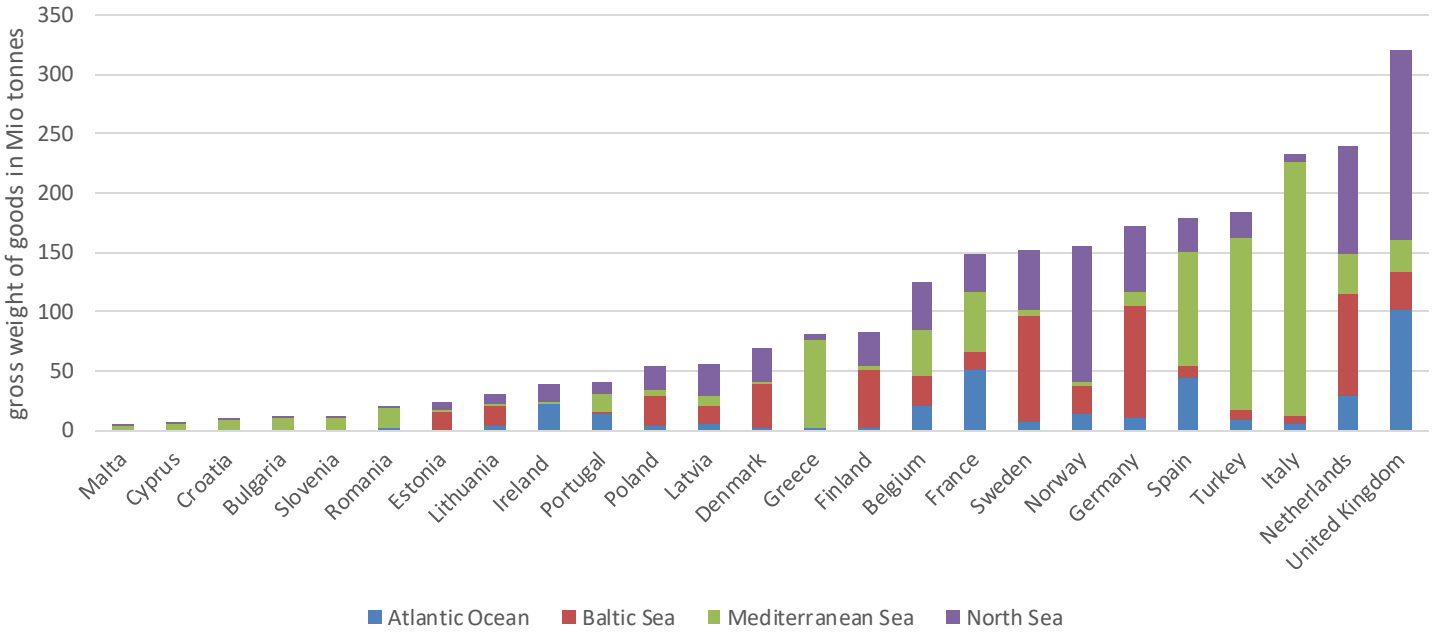
Appendix

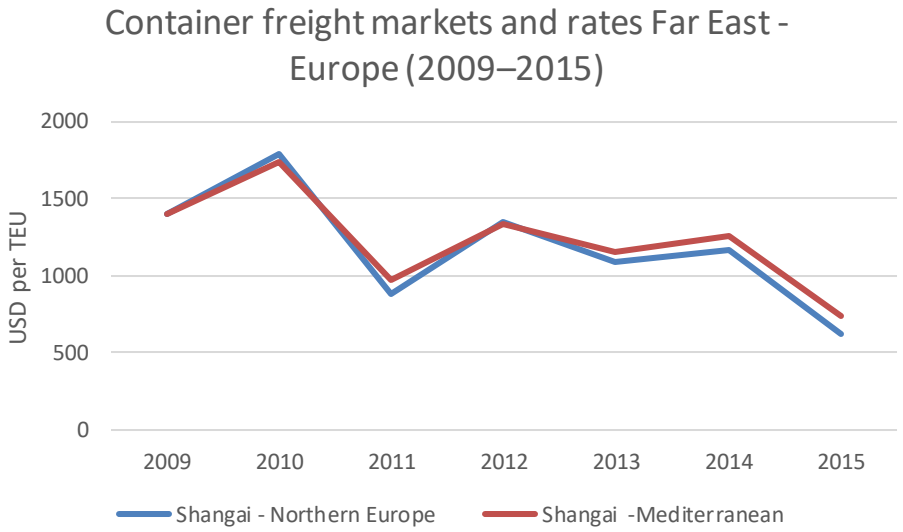
EU-28 Short Sea Shipping Goods by type of cargo & Sea Region / Partner Ports 2015 (in % of total gross weight of goods transported)





Short Sea Shipping of Goods by reporting Country and Sea Region




Container freight markets and rates Far East - Europe (2009–2015)
2000
1500
1000
500
0
USD per TEU
2009
2010
2011
2012
2013
2014
2015
Shangai - Northern Europe
Shangai -Mediterranean

Brief Analysis of the Implementation of Motorways of the Sea Concept in China (Li Wua, Jiaqi Yang School of Transportation, Wuhan University of Technology) -

Advantages of the MoS	Problems faced by the implementation of MoS concept
Improve transportation efficiency, establish efficient logistics channel	Management & Marketplace Issues / highly dependent on weather and climate conditions
Improve the ability of rapid response and recover of the traffic system Enhance national security in case of natural disaster or war	Market problems and price high volatility

EU-28 Top 20 Short Sea Shipping ports in 2015 (gross weight of goods in Mio tonnes)

The figures present the handling of short sea shipped goods in the main EU ports (inward movements plus outward movements in the ports, except for transport movements within the same statistical port,

The top 20 ports accounted for 37 % of the total short sea shipped goods handled in the main EU-28 ports in 2015. Rotterdam in the Netherlands remained the largest EU port for short sea shipping, handling a total of 204 million tonnes of short sea shipped goods in 2015.

Rank 2015	Ports	*	Total SSS	Growth 2014-2015 (%)	Share of EU-28 SSS (%)	Other seaborne transport
1	Rotterdam (NL)	=	203.7	+4.4	8.2	233.2
2	Antwerpen (BE)	=	97.3	+2.9	3.9	92.8
3	Hamburg (DE)	=	49.5	-6.8	2.0	70.6
4	Amsterdam (NL)	+2	43.7	+1.5	1.8	55.1
5	Marseille (FR)	=	43.5	+1.6	1.8	33.9
6	Immingham (UK)	-2	43.4	+1.0	1.7	15.7
7	Trieste (IT)	=	43.4	+12.7	1.7	5.8
8	Algeciras (ES)	+5	37.1	+8.2	1.5	42.2
9	London (UK)	-1	37.0	+1.9	1.5	8.4
10	Genova (IT)	+1	36.0	+4.2	1.5	7.4
11	Riga (LV)	+1	36.0	+1.9	1.4	3.4
12	Le Havre (FR) (*)	-3	33.9	+1.4	1.4	29.0
13	Goteborg (SE)	-3	32.9	+0.9	1.3	4.9
14	Tees & Hartlepool (UK)	+3	28.3	+2.3	1.1	7.5
15	Valencia (ES)	+1	28.3	+1.9	1.1	29.2
16	Dover (UK)	-2	27.1	-0.8	1.1	0.2
17	Gdansk (PL)	-2	26.5	+10.6	1.1	5.2
18	Piraeus (GR)	+15	25.5	-6.5	1.0	12.9
19	Constanta (RO)	+6	24.0	+1.7	1.0	12.3
20	Wilhelmshaven (DE)	-2	23.3	+19.3	0.9	4.1
Total top 20			**920.5**	**+2.5**	**37.0**	**674.0**
Total handled in main EU-28 ports (²)			**2 484.8**	**+1.1**	**100.0**	**1 275.5**

Note: (*) column indicates number of positions lost or gained compared to 2014.

(*) 2014: partially estimated by Eurostat.

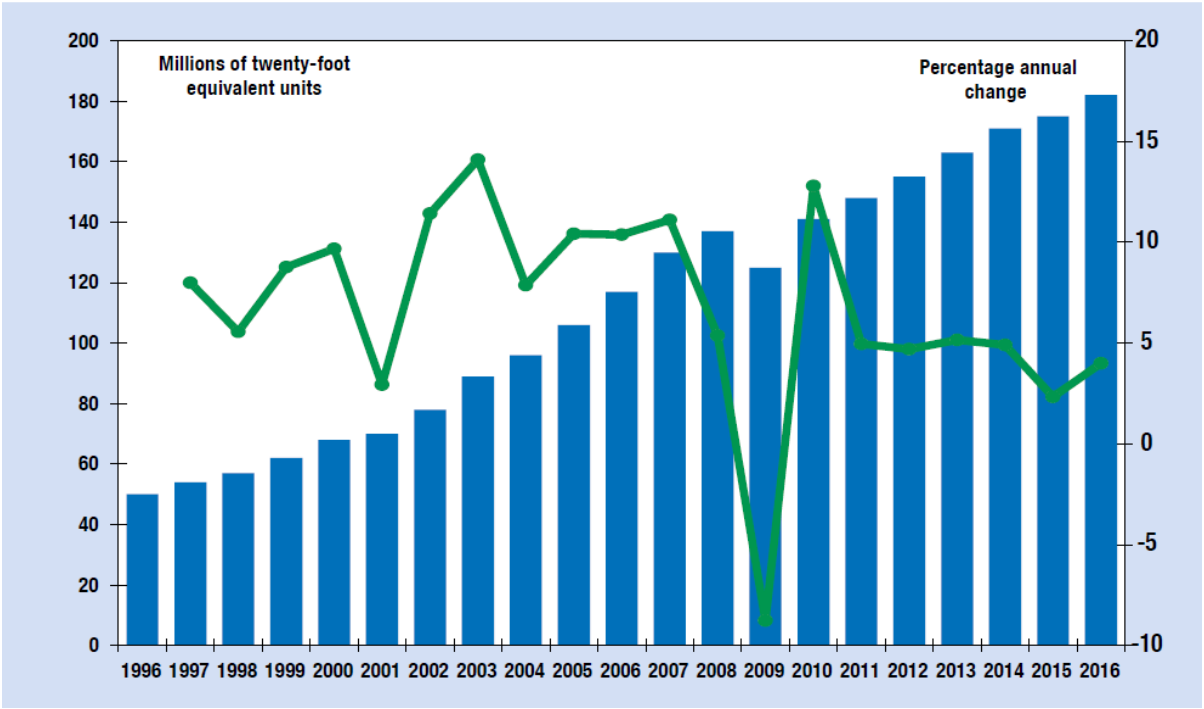
(²) The sum of inward and outward movements of short sea shipping in main EU-28 ports (no elimination of double counting between ports), except for transport movements within the same statistical port (only inward movements used, see methodological notes).

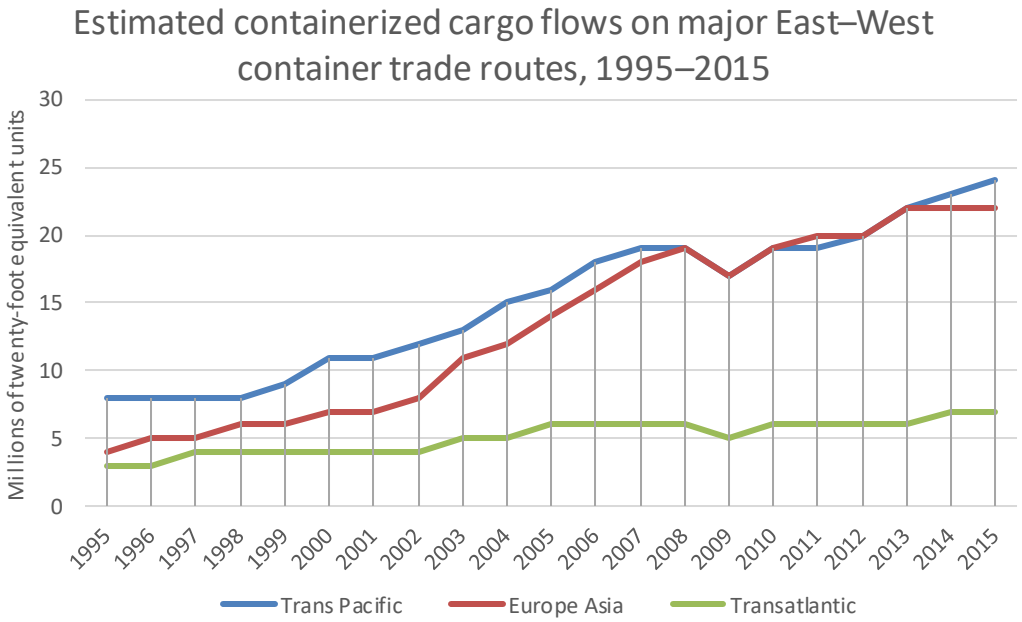
Short Sea Shipping of containers by reporting country, 2005-2015 (volume of containers in 1000 TEUs)

	2005		2006	2007	2008	2009	2010	2011	2012	2013	2014		2015		Growth rate 2014-2015 (%)		Growth rate 2005-2015 (%)	
	Total	of which empty	Total	Total	Total	Total	Total	Total	Total	Total	Total	of which empty	Total	of which empty	Total	of which empty	Total	of which empty
EU-28	**21 672**	**4 919**	**22 872**	**25 044**	**25 308**	**21 647**	**24 069**	**26 677**	**27 520**	**28 599**	**30 828**	**6 864**	**30 258**	**6 773**	**-1.8**	**-1.3**	**+39.6**	**+37.7**
Belgium	2 283	403	2 587	3 320	3 973	3 860	4 440	4 011	3 843	3 949	4 288	565	**3 988**	**552**	**-7.0**	**-2.3**	+74.7	+37.0
Bulgaria	105	28	111	118	184	132	140	119	164	174	194	41	**200**	**42**	**+3.0**	**+0.8**	+91.4	+50.1
Denmark	544	122	601	696	664	571	665	625	590	593	630	176	**609**	**173**	**-3.4**	**-1.7**	+12.0	+41.7
Germany	4 686	943	5 407	5 800	5 863	4 218	4 421	5 401	5 632	5 905	5 921	1 133	**5 744**	**1 104**	**-3.0**	**-2.6**	+22.6	+17.1
Estonia	127	26	152	177	180	129	152	198	228	254	261	59	**209**	**42**	**-19.8**	**-28.9**	+65.3	+59.7
Ireland	989	208	1 097	1 159	1 037	806	752	713	705	701	758	160	**854**	**201**	**+12.7**	**+25.4**	-13.7	-3.6
Greece	1 152	180	1 087	1 154	655	771	801	1 257	1 961	2 225	2 478	538	**2 545**	**515**	**+2.7**	**-4.3**	+120.9	+185.7
Spain	3 743	952	4 026	4 257	4 050	3 582	3 975	4 391	4 599	4 513	5 124	1 361	**5 181**	**1 329**	**+1.1**	**-2.3**	+38.4	+39.6
France (*)	1 272	348	1 254	1 440	1 485	1 241	1 205	1 258	1 128	1 164	1 346	398	**1 434**	**476**	**+6.5**	**+19.5**	+12.7	+36.7
Croatia	46	17	53	90	138	129	109	111	103	85	95	13	**123**	**37**	**+29.3**	**+171.9**	+169.8	+121.4
Italy	4 361	765	4 258	4 637	4 533	3 992	4 205	4 184	4 794	4 764	5 396	467	**5 487**	**308**	**+1.7**	**-34.0**	+25.8	-59.7
Cyprus (²)	128	31	127	104	120	99	103	245	267	243	273	96	**290**	**103**	**+6.2**	**+7.2**	+127.6	+232.1
Latvia	162	41	192	233	231	181	256	306	366	385	392	71	**358**	**78**	**-8.6**	**+10.8**	+121.2	+90.2
Lithuania	214	64	231	321	372	248	295	382	381	403	449	90	**350**	**83**	**-21.9**	**-7.8**	+63.8	+28.4
Malta	65	14	60	59	70	74	79	83	82	86	77	29	**67**	**22**	**-13.5**	**-24.8**	+2.3	+50.7
Netherlands	3 527	834	3 796	4 062	3 736	3 227	4 090	3 256	2 811	2 720	2 569	985	**2 603**	**1 010**	**+1.3**	**+2.6**	-26.2	+21.2
Poland	492	100	576	762	856	660	850	1 047	1 256	1 494	1 676	423	**1 311**	**277**	**-21.8**	**-34.4**	+166.7	+178.4
Portugal	719	179	796	870	960	919	953	1 110	1 056	1 206	1 252	317	**1 289**	**284**	**+2.9**	**-10.4**	+79.4	+58.7
Romania (²)	212	44	169	59	390	166	158	197	208	241	460	176	**492**	**188**	**+7.0**	**+7.2**	+131.7	+332.7
Slovenia	180	28	185	207	225	234	308	339	346	397	437	72	**535**	**108**	**+22.6**	**+49.8**	+196.7	+292.3
Finland	1 297	271	1 391	1 560	1 599	1 120	1 229	1 110	1 189	1 227	1 220	287	**1 223**	**356**	**+0.2**	**+23.9**	-5.7	+31.5
Sweden	962	222	1 027	1 114	1 129	1 056	1 203	1 336	1 277	1 243	1 284	280	**1 174**	**261**	**-8.5**	**-6.7**	+22.0	+17.6
United Kingdom	3 027	985	2 950	3 244	3 172	2 694	2 875	3 029	3 320	3 445	3 803	1 266	**4 219**	**1 486**	**+10.9**	**+17.4**	+39.4	+50.9
Iceland	:	:	:	:	:	:	:	:	:	:	:	:	**:**	**:**	**:**	**:**	:	:
Norway	508	142	533	567	563	531	601	625	650	664	704	215	**699**	**229**	**-0.6**	**+6.6**	+37.6	+61.5
Turkey	:	:	:	:	:	:	4 897	5 445	5 976	6 514	6 835	1 664	**6 673**	**1 581**	**-2.4**	**-5.0**	:	:

Note: The total figures exclude double counting of the same goods being reported as outward movements by one port and as inward movements by another. EU-28 totals may therefore differ from the sum of EU country totals (see methodological notes). (:) not available.
(*) 2009-2015: partially estimated by Eurostat.
(²) The data reported contain a significant share of declarations to and from unknown ports (see methodological notes).

Global containerized trade, 1996–2016




Estimated containerized cargo flows on major East–West container trade routes, 1995–2015
Millions of twenty-foot equivalent units
30
25
20
15
10
5
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Trans Pacific
Europe Asia
Transatlantic