



Trade Distortions and the EU

Some debates about Britain's relationship with the European Union depend on the volume of trade with Europe and with the rest of the world. It is not the only issue in these debates. Other issues centre on how to maximize the trade and to work towards a trade surplus for Britain. Nevertheless all these questions may be answered better if the overall volume of trade is properly understood.

There are two phenomena in particular which interfere with EU trade patterns, namely the Rotterdam-Antwerp Effect and the Netherlands Distortion. Whilst academics from all sides of the EU debate have accepted these anomalies have an influence on EU trade movements there is no agreed understanding as to just how much deviation from the official trade statistics they really cause. By researching the trade and financial patterns around these distortions this paper builds a clearer picture of the real volumes of trade moving around the EU.

(For a simple overview of the discussion below please see our Trade Distortions in Brief.)

Rotterdam-Antwerp Effect

Official statistics follow agreed conventions, designed to make them appropriate to as many enquiries as possible. For international trade, the convention is that the first country of unloading, for exports, or the last country of loading, for imports, is considered the trading partner. For debates that hinge on the country of residence of the customers buying UK goods, the first country of unloading is less helpful than the final destination of the goods. As Rotterdam and Antwerp are two key ports where many goods are unloaded and reloaded, although this is not their final destination, the difference has become known as the Rotterdam-Antwerp effect.

First Estimate

Two things matter in determining the quantity. The first is the proportion of goods whose first destination is different from their final destination. The second is the proportion of affected goods that travel beyond the EU.

The Rotterdam-Antwerp effect begins with the principle that some goods are transhipped. That is to say that their first export does no more than unload them from one ship to put them onto another. The port of Rotterdam is a major European part of this business. Some shipping routes, such as the OOCL Transatlantic Express Shuttle, call at no UK ports. High-value goods travelling from a small UK port could be loaded onto the Shuttle at Rotterdam and travel to the United States. It is reasonable to consider most transhipped cargo as destined for beyond the EU. For closer destinations, there are more cost-effective routes than changing ships at Rotterdam. To get an estimate of how much trade is affected a starting assumption is that the majority of UK exports to the Netherlands pass through Rotterdam.

The next assumption is that most of the value of those exports travels in containers. This is an exaggeration, so will need to be adjusted later in the calculation. Refinements will provide for the



export of large volumes of crude oil and liquid fuels to Rotterdam, which are the other classes of substantial value.

The Port of Rotterdam publishes information about transshipment as it affects containers. The next assumption is that UK exports are transhipped at the same rate as all other container traffic. This may also be an exaggeration and will be revisited later.

The unadjusted estimate of the transshipment of British goods to the world beyond the EU passing through the Netherlands is therefore:

UK exports to Netherlands × Proportion of value in containers (assumed 1) × Rotterdam container transshipment rate.

Similar assumptions are possible for Belgium and Antwerp.

UK exports to Belgium × Proportion of value in containers (assumed 1) × Antwerp container transshipment rate.

The sum of these two products becomes a first, crude estimate of the size of the Rotterdam-Antwerp effect. This needs a sequence of upward and downward refinements.

First Refinements

Other Container Ports

Rotterdam and Antwerp are responsible for approximately half the container transshipment in large Northern European ports, known as the Hamburg-Le Havre Range. The estimate should be scaled up to approximate double its starting value.

Unitised Traffic

By volume, approximately half of UK “unitised” exports to North Europe travel ro-ro not lo-lo, that is roll-on-roll-off, with trailers or lorries instead of lift-on-lift-off as containers on ships. Shipping a lorry with the cargo is usually economic only if the road journey is not vastly greater than the sea leg, so ro-ro cargoes may be assumed to be destined for the EU. The estimate may be halved again.

Further Refinements

Further refinements allow for air freight, values of different modes of travel and oil trading.

Air Freight

Air freight may be discounted. It constitutes only a small proportion of trade with the EU, even by value. If air freight made up a substantial proportion, it would tend to reduce the size of the adjustment. The existence of Heathrow as a major hub airport, comparable in size to Frankfurt and Schiphol, means that as much EU trade may be routed through the UK to further afield as UK trade there is routed through the EU.



Unitised Traffic by Value

Roll-on-roll-off freight is typically more valuable than lift-on-lift-off containers. Although it is approximately equal in volume to the container trade, ro-ro is approximately three times the value.¹ The rudimentary estimate assumed that half the total exports to Belgium and the Netherlands were subject to transshipment at the average rate and that the total for Northern Europe was double that. By value, only a quarter of the exports should be subject to transshipment. The rudimentary estimate should be halved once more, now half of the starting value.

Oil and Fuel

Also subject to a different form of transshipment is oil. A large slice of UK exports to the Netherlands are in the form of oil. Crude oil is much greater in volume than refined liquid fuels, whose unit price is considerably greater. The port of Rotterdam records show almost no crude oil leaving Rotterdam by ship. The Dutch Central Bureau of Statistics offers that one sixth of Dutch refined petrol exports (liquid fuels) are re-exported.²

Liquid fuels off-loaded in Rotterdam are either purchased by Dutch traders or stored on behalf of UK sellers or overseas purchasers, pending the arrival of a tanker to take a full load further afield. Of these cases, purchase should not be subject to an adjustment at all, whereas storage could justify an adjustment. If UK fuel is re-exported in the same proportion as other importers, then the British component of the re-exported fuel will be the same proportion as the component of British fuel in the imports. Of fuels leaving Rotterdam, the majority are destined for outside the EU. Gibraltar is the nearest major destination, with the special status of being within the EU but outside the Customs Union. The effect on the estimate is to take the oil component out of the goods subject to container transshipment but add an element for the UK share of Dutch fuel re-exports.

Lower Rates of UK Export Transshipment

Transhipped containers in Rotterdam come less from the UK than from other European nations. Many inter-continental trading routes call three or four times in Northern Europe, often including ports in the UK. Although UK feeder routes undoubtedly sail to Rotterdam, there is more scope for British freight to join the ships at Tilbury, Southampton and especially Felixstowe than applies to freight from, say Denmark, Poland or Sweden. Port of Rotterdam statistics also show a disturbing imbalance of loaded containers destined for the UK rather than in the opposite direction. In 2009, UK ports sent the equivalent of over a quarter of a million empty twenty-foot containers to Rotterdam and received a greater number back full.³ This single statistic suggests that the Rotterdam-Antwerp effect serves principally to under-estimate the level of UK imports from beyond the EU.

¹ Table 3.4 in UK Port Demand Forecasts, <http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/consultations/archive/2006/ppr/ukportdemandforecaststo2030.pdf>

² <http://www.cbs.nl/en-GB/menu/themas/internationale-handel/publicaties/artikelen/archief/2006/2006-2036-wm.htm>

³ Port of Rotterdam, TEU'S Grouped By Origin And Destination 2009, http://www.portofrotterdam.com/en/Port/port-statistics/Documents/teu%27s_by_origin_and_destination_2009.pdf



Other Assumptions

There are several more assumptions built into this estimate. Their existence demonstrates that it remains an estimate, always capable of refinement in the presence of better assumptions or more accurate data. Further assumptions are:

- Little UK trade with Switzerland or other non-EU countries in mainland Europe is unloaded in Belgium or the Netherlands.
- Categories of exported goods beside oil and containerised freight are too low in value to affect the estimate materially.
- Only small quantities are transhipped in UK ports.

Estimates

Following all these assumptions and adjustments, estimates of the Rotterdam-Antwerp effect are shown in the table below. Full calculations and sources are given in the appendix.

£1,000,000,000s	2004	2005	2006	2007	2008	2009	2010
Estimate of UK export container transshipment in Hamburg-Le Havre range	2.2	2.3	3.0	2.5	4.3	3.9	3.6
Estimate of UK export fuel transshipment in Rotterdam	0.4	0.5	0.5	0.7	1.1	0.8	1.2
Estimate of Rotterdam-Antwerp effect on exports	2.5	2.8	3.5	3.2	5.4	4.7	4.8

Imports

Oil and liquid fuels are less important regarding UK import trade from the Netherlands than regarding export. It is assumed that negligible amounts are transhipped. Instead, similar assumptions are made about the treatment of containers.

£1,000,000,000s	2004	2005	2006	2007	2008	2009	2010
Estimate of Rotterdam-Antwerp effect on imports	1.6	1.8	2.0	2.0	3.2	2.9	2.9

Alternatives

This method of estimating the effect works out smaller for imports than for exports. A greater proportion of imports are transported by Roll-on-Roll-off means, which are assumed to come from the EU.

The most recent estimates of value densities known to the author for different modes of freight were calculated by MDS Transmodal for 2004. If these continue to hold true, then an alternative estimate is possible by multiplying the volumes known to travel in lo-lo containers to or from Belgium and the Netherlands by the value density and applying the same transshipment rates. With an allowance on top for oil exports, the result is a little under £5 billion in each direction. This has been calculated using data from a variety of years but suggests that whereas the export figure appears reasonably accurate, the adjustment for imports may properly be £2 billion higher. Any further data to refine these estimates will be very welcome.



The Netherlands Distortion

The UK derives a surprisingly high proportion of its exports not from trade in goods or services but from investment income. Two EU countries, the Netherlands and Luxembourg, play a special role in arranging investments, with consequences that can exaggerate the apparent amount of trade with the EU, relative to the rest of the world. Under completely legitimate arrangements, companies may choose to make investments through subsidiaries, called Special Purpose Entities. The profits from the investment may then be taxed at the rate of corporation tax prevailing in the subsidiary's country of residence. The subsidiary's role is mostly for accounting purposes. The capital comes from the holding company and is put to use in the final country of investment but present conventions see it reported in trade statistics as investment in the subsidiary's country. As the Netherlands is a major location for Special Purpose Entities, the effect has been termed the "Netherlands Distortion".

The Netherlands distortion is already under general investigation. New OECD conventions will, by around 2014, require reporting that removes the distortion altogether. Only the two ends of the investment chain will be reported, leaving out the Special Purpose Entities (SPEs) in between. That will provide an opportunity to assess the accuracy of the estimate that follows.

How it happens

The distortion affects foreign direct investment (FDI). The method of arranging a company's tax affairs by a chain of subsidiaries requires management control over the subsidiaries, which is the definition of "direct" investment. Luxembourg and the Netherlands (but not Belgium) display a higher proportion of direct investment, relative to the more straightforward portfolio investment, than most European countries. UK investment in either may pass through to a third country. To get the benefit of a Special Purpose Entity, a subsidiary chain does not need to be long. One subsidiary in the Netherlands would be enough to mediate between a UK parent and a US manufacturing subsidiary. The spread of Dutch outward FDI in the Dutch national accounts may be taken as representative of the spread of UK investment that has passed through.

Estimates

In 2008, De Nederlandsche Bank published a figure of 27% for the proportion of foreign inward investment that remained invested in the Netherlands. This draws attention to the level of investment that merely passes through (the majority). Neither the investment nor the investor are Dutch. Only some of the accounting takes place in the Netherlands. The Luxembourg Central Bank also publishes a table of foreign direct investment that makes it possible to derive the proportion involving SPEs, which can be taken as vehicles for investment elsewhere. The next assumption is that the passing-through component takes the same proportions of EU and non-EU countries as the whole of the Netherlands' outward direct investment. As it forms the majority, that is a fair assumption. Income figures for the Netherlands' outward direct investment are hard to find with the required geographical breakdown, so FDI holdings have been used instead. It is hoped that income is similar in proportion to holdings. If it is not, it presents the greatest potential error in this method of estimating the extent of the distortion.



Luxembourg has a higher proportion of SPEs than the Netherlands, but its own outward investment is much more targeted to EU countries.

In each country, the calculation is:

Total FDI income × Proportion passing through × Proportion channelled outside the EU.

£1,000,000,000	2004	2005	2006	2007	2008	2009	2010
Netherlands							
UK FDI income (net) from Netherlands	6.7	5.3	7.3	9.7	9.5	8.4	8.4
Netherlands proportion of inward FDI in SPEs	68%	72%	73%	72%	73%	73%	73%
Proportion of Netherlands holding outside EU	19%	24%	45%	42%	44%	48%	48%
Estimate of Netherlands adjustment	0.8	0.9	2.4	2.9	3.0	2.9	2.9
Luxembourg							
UK FDI income (net) from Luxembourg	2.2	4.0	7.6	8.0	13.2	11.4	11.4
Luxembourg proportion of inward FDI in SPEs	92%	93%	93%	93%	92%	93%	92%
Proportion of Luxembourg holding outside EU	33%	39%	44%	32%	25%	25%	25%
Estimate of Luxembourg adjustment	0.7	1.5	3.1	2.4	3.0	2.7	2.7
Total							
Estimate of total Netherlands distortion	1.5	2.4	5.6	5.3	6.0	5.6	5.6

The reverse effect, of distorted inward investment in the UK from outside EU, is shown below, calculated on the same assumptions.

£1,000,000,000	2004	2005	2006	2007	2008	2009	2010
Netherlands							
UK FDI income (net) to Netherlands £M	2.6	2.8	7.3	8.4	- 7.3	- 2.8	- 2.8
Netherlands proportion of inward FDI in SPEs	70%	73%	73%	72%	72%	72%	72%
Proportion of outside EU holding Netherlands	58%	29%	46%	40%	45%	44%	44%
Estimate of Netherlands adjustment	1.0	0.6	2.4	2.4	- 2.4	- 0.9	- 0.9
Luxembourg							
UK FDI income (net) to Luxembourg £M	0.3	0.2	0.1	0.5	0.6	0.5	0.5
Luxembourg proportion of inward FDI in SPEs	92%	93%	93%	93%	92%	93%	92%



Proportion of outside EU holding Luxembourg	27%	21%	19%	21%	20%	19%	19%
Estimate of Luxembourg adjustment	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Total							
Estimate of total Netherlands distortion	1.1	0.6	2.4	2.5	- 2.3	- 0.8	- 0.8

Figures for 2010 are largely estimated by carrying forward data from other years, but it is remarkable that 2008 and 2009 both show a loss for the distortion. It is atypical for direct investment to yield a loss but remains possible. It signifies that some of the UK losses incurred by Dutch investors in the UK were attributable to investors outside the European Union.

In line with OECD standards, (levels of investment are aggregated according to the countries of residence of the immediate parties involved⁴. The fourth edition of the standards, agreed in 2008 and intended for implementation in 2014, uses the countries of the ultimate holding company and the final location of the investment. This will make these adjustments obsolete except as a way of judging the accuracy of this author’s estimates.

Conclusion

Combined, the two distortions for exports have grown from an estimated £4 billion in 2004 to just over £10 billion in 2010. Both have very large margins of error as a result of the sweeping assumptions therein. The most likely inaccuracy is an overestimate in the Rotterdam-Antwerp effect, resulting from exports to the Netherlands that are not subject to the same rates of transshipment as fuels or containerized cargo. As a proportion of UK exports of £5-600 billion, the overall distortion is not great. The two distortions are an illustration that patterns of trade are not uniform. Particular commodities, such as oil and fuel, can have very specific markets. Particular accounting arrangements, such as in Luxembourg, can create a focus for international investment. Relations with one country can have implications beyond the purely bilateral.

⁴OECD Benchmark Definition of Foreign Direct Investment http://www.oecd.org/document/33/0,3746,en_2649_33763_33742497_1_1_1_1,00.html

Appendix A - Exports

Details of calculations and references are given here. Externally sourced figures are shown bold, with as many significant figures as are available. Calculated figures, including the imputed Luxembourg holding of FDI in the UK, are in italics. Figures in normal type have been carried forward or back from adjacent years and may be superseded if better sources of data become available. Values are pounds unless otherwise stated.

Year	2004	2005	2006	2007	2008	2009	2010
Container Transshipment							
UK exports of goods to Netherlands ⁵	12,029,000,000	12,716,000,000	16,522,000,000	15,115,000,000	19,905,000,000	18,136,000,000	18,136,000,000
UK exports of goods to Belgium and Luxembourg ⁶	10,510,000,000	11,394,000,000	15,082,000,000	12,122,000,000	13,619,000,000	11,020,000,000	11,020,000,000
Rotterdam transshipment rate ⁷	0.24	0.24	0.24	0.25	0.28	0.30	0.30
Antwerp transshipment rate ⁷	0.27	0.27	0.27	0.27	0.37	0.37	0.37
Gross estimate of Rotterdam transshipment	<i>2,874,931,000</i>	<i>3,039,124,000</i>	<i>3,948,758,000</i>	<i>3,839,210,000</i>	<i>5,553,495,000</i>	<i>5,440,800,000</i>	<i>5,440,800,000</i>
Gross estimate of Antwerp transshipment	<i>2,837,700,000</i>	<i>3,076,380,000</i>	<i>4,072,140,000</i>	<i>3,272,940,000</i>	<i>5,039,030,000</i>	<i>4,077,400,000</i>	<i>4,077,400,000</i>
Proportion of Hamburg-LeHavre transshipment in Netherlands and Belgium ⁸	0.522	0.522	0.522	0.522	0.451	0.451	0.451

⁵ United Kingdom Balance of Payments (Pink Book) 2010, series QDJP <http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140> . Figures are Crown Copyright.

⁶ United Kingdom Balance of Payments (Pink Book) 2010, series QBSB <http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140> . Figures are Crown Copyright.

⁷ Port of Rotterdam press release, http://www.portofrotterdam.com/en/News/pressreleases-news/Pages/20100624_01.aspx

⁸ Port of Rotterdam press release http://www.portofrotterdam.com/en/News/pressreleases-news/Pages/20100624_01.aspx

Year	2004	2005	2006	2007	2008	2009	2010
UK short-sea Lo-Lo container exports, Belgium, Netherlands, 000 t ⁹	3,256	3,256	3,256	3,256	3,256	3,256	3,256
UK short-sea Ro-Ro exports, Belgium, Netherlands, 000 t ⁹	8,737	8,737	8,737	8,737	8,737	8,737	8,737
Unit value per Lo-Lo ¹⁰	1,703	1,703	1,703	1,703	1,703	1,703	1,703
Unit value per Ro-Ro ¹⁰	5,054	5,054	5,054	5,054	5,054	5,054	5,054
UK exports of oil to Netherlands (Euro) ¹¹	3,230,404,000	3,845,444,000	5,097,323,000	6,397,714,000	7,439,574,000	5,688,203,000	8,233,219,000
Euro exchange rate ¹²	1.4739	1.4629	1.467	1.4619	1.2588	1.1233	1.1664
UK exports of oil to Netherlands (Pounds)	2,191,738,924	2,628,644,473	3,474,657,805	4,376,300,705	5,910,052,431	5,063,832,458	7,058,658,265
Value of Lo-Lo goods in Rotterdam	1,097,492,147	1,125,393,886	1,455,624,232	1,198,060,929	1,561,343,644	1,458,393,867	1,235,841,508
Value of Lo-Lo goods in Antwerp	1,172,546,136	1,271,169,427	1,682,620,440	1,352,388,607	1,519,401,125	1,229,444,188	1,229,444,188
Value transhipped in Rotterdam	262,300,623	268,969,139	347,894,191	304,307,476	435,614,877	437,518,160	370,752,452

⁹DFT Maritime Statistics 2009 p41. <http://www2.dft.gov.uk/adobepdf/162469/221412/221658/223721/669555/maritimestatistics2009.pdf>

¹⁰ MDS Transmodal for DFT, UK Port Demand Forecasts to 2030, Table 3.4,

<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/consultations/archive/2006/ppr/ukportdemandforecaststo2030.pdf>

¹¹ Statistics Netherlands, International Trade, <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLen&PA=7137eng&D1=0-1&D2=99,104-107,109&D3=0,73&D4=116,129,142,155,168,181,194&HD=110614-1219&LA=EN&HDR=G3,T&STB=G1,G2>

¹²Bank of England statistics, Annual average Spot exchange rate, Euro into Sterling,

<http://www.bankofengland.co.uk/mfsd/iadb/index.asp?Travel=NlXlRx&levels=1&G0Xtop.x=22&G0Xtop.y=6&XNotes=Y&C=DMD&XNotes2=Y&Nodes=X3790X3791X3873X33940X3801&SectionRequired=I&HideNums=-1&ExtraInfo=true#BM>

Year	2004	2005	2006	2007	2008	2009	2010
Value transhipped in Antwerp	316,587,457	343,215,745	454,307,519	365,144,924	562,178,416	454,894,350	454,894,350
Estimate of container transshipment outside EU	1,108,980,996	1,172,767,977	1,536,784,885	1,282,475,862	2,212,401,980	1,978,741,707	1,830,702,444
Fuel Transshipment							
UK crude exports to Netherlands (Euro) ¹³	1,343,946,000	1,468,942,000	2,299,090,000	2,720,984,000	2,780,928,000	2,077,682,000	2,826,121,000
UK oil exports to Netherlands, not crude, pounds	1,279,909,085	1,624,514,321	1,907,452,624	2,515,035,228	3,700,862,726	3,214,209,027	4,635,715,021
UK share of Dutch oil imports (exc crude)	14%	13%	11%	14%	14%	15%	16%
Proportion re-export outside EU	100%	100%	100%	100%	100%	100%	100%
Dutch exports mineral fuels etc, not crude ¹³	22,336,064,000	30,772,663,000	41,307,736,000	42,114,125,000	56,604,236,000	38,215,282,000	50,761,294,000
Proportion of which are re-exports ¹⁴	17%	17%	17%	17%	17%	17%	17%
Estimate of Dutch oil re-exports (euro)	3,722,677,333	5,128,777,167	6,884,622,667	7,019,020,833	9,434,039,333	6,369,213,667	8,460,215,667
Estimate of UK oil transshipment outside EU (pounds)	356,248,943	463,260,211	532,530,228	655,934,213	1,079,194,174	838,828,551	1,189,579,496
Estimate of Rotterdam-Antwerp Effect on Exports	1,465,229,939	1,636,028,188	2,069,315,113	1,938,410,075	3,291,596,154	2,817,570,258	3,020,281,939

¹³ Statistics Netherlands, International Trade, <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLEN&PA=7137eng&D1=0-1&D2=99,104-107,109&D3=0,73&D4=116,129,142,155,168,181,194&HD=110614-1219&LA=EN&HDR=G3,T&STB=G1,G2>

¹⁴ Statistics Netherlands, Web magazine 2006. <http://www.cbs.nl/en-GB/menu/themas/internationale-handel/publicaties/artikelen/archief/2006/2006-2036-wm.htm>

Year	2004	2005	2006	2007	2008	2009	2010
Direct Investment							
UK FDI income (net) from Netherlands £M ¹⁵	6,651	5,344	7,251	9,725	9,460	8,408	8,408
UK FDI income (net) from Luxembourg £M ¹⁵	2,191	4,006	7,626	8,030	13,185	11,420	11,420
Netherlands proportion of inward FDI in SPEs ¹⁶	68%	72%	73%	72%	73%	73%	73%
Luxembourg proportion of inward FDI in SPEs ¹⁷	92%	93%	93%	93%	92%	93%	92%
Netherlands holding of FDI in UK ¹⁸ \$M	82,893	112,291	125,872	138,255	121,718	133,295	133,295
Luxembourg holding of FDI in UK ¹⁸ \$M	3,337	5,109	6,979	12,705	20,303	24,811	24,811
Netherlands holding of FDI in whole world ¹⁸ \$M	587,252	615,727	800,464	942,085	884,195	951,243	951,243
Luxembourg holding of FDI in whole world ¹⁸ \$M	27,883	33,650	43,641	75,886	115,301	131,418	131,418
Netherlands holding of FDI in EU ¹⁸ \$M	493,649	493,649	493,649	606,477	548,856	560,609	560,609
Luxembourg holding of FDI in EU ¹⁸ \$M	19,871	22,462	27,370	55,732	91,553	104,351	104,351
Proportion of Netherlands holding outside EU	19%	24%	45%	42%	44%	48%	48%

¹⁵ Office for National Statistics : Business Monitor MA4 Foreign Direct Investment 2009 http://www.statistics.gov.uk/downloads/theme_economy/ma409.xls Crown copyright.

¹⁶ De Nederlandsche Bank Statistical Bulletin September 2008, tables 12.10 and 12.14 http://www.dnb.nl/en/binaries/sb_tcm47-211516.pdf

¹⁷ Central Bank of Luxembourg, International investment position of Luxembourg: direct investment . http://www.bcl.lu/en/statistics/series/09_iip/09_02_Table.xls

¹⁸ OECD Stat Extract, http://stats.oecd.org/Index.aspx?DatasetCode=FDI_POSITION_PARTNER

Year	2004	2005	2006	2007	2008	2009	2010
Proportion of Luxembourg holding outside EU	33%	39%	44%	32%	25%	25%	25%
Estimate of Netherlands adjustment	836,844,093	936,897,770	2,419,875,390	2,927,356,533	3,022,468,910	2,917,086,931	2,917,086,931
Estimate of Luxembourg adjustment	657,439,448	1,455,300,262	3,135,524,890	2,393,851,744	3,027,493,778	2,699,217,221	2,664,446,711
Estimate of Total Netherlands Distortion	1,494,283,541	2,392,198,032	5,555,400,281	5,321,208,277	6,049,962,689	5,616,304,152	5,581,533,642
Total							
Estimate of Combined Export Distortions	2,959,513,480	4,028,226,220	7,624,715,394	7,259,618,352	9,341,558,843	8,433,874,410	8,601,815,582

Appendix B – Imports

Details of calculations and references are given here. Externally sourced figures are shown bold, with as many significant figures as are available. Calculated figures, including the imputed Luxembourg holding of FDI in the UK, are in italics. Figures in normal type have been carried forward or back from adjacent years and may be superseded if better sources of data become available. Values are pounds unless otherwise stated.

Year	2004	2005	2006	2007	2008	2009	2010
Container Transshipment							
UK Imports of Goods from Netherlands ¹⁹	18,196,000,000	20,436,000,000	22,275,000,000	23,079,000,000	25,840,000,000	21,760,000,000	21,760,000,000
UK Imports of Goods from Belgium and Luxembourg ²⁰	12,906,000,000	14,238,000,000	15,558,000,000	15,127,000,000	16,517,000,000	15,134,000,000	15,134,000,000
Rotterdam transshipment rate ²¹	0.24	0.24	0.24	0.25	0.28	0.30	0.30
Antwerp transshipment Rate ⁷	0.27	0.27	0.27	0.27	0.37	0.37	0.37
Gross estimate of Rotterdam transshipment	<i>4,348,844,000</i>	<i>4,884,204,000</i>	<i>5,323,725,000</i>	<i>5,862,066,000</i>	<i>7,209,360,000</i>	<i>6,528,000,000</i>	<i>6,528,000,000</i>
Gross estimate of Antwerp transshipment	<i>3,484,620,000</i>	<i>3,844,260,000</i>	<i>4,200,660,000</i>	<i>4,084,290,000</i>	<i>6,111,290,000</i>	<i>5,599,580,000</i>	<i>5,599,580,000</i>
Proportion of Hamburg-Le Havre transshipment in Netherlands and Belgium ²²	0.522	0.522	0.522	0.522	0.451	0.451	0.451

¹⁹ United Kingdom Balance of Payments (Pink Book) 2010, series QDJQ <http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140> . Figures are Crown Copyright.

²⁰ United Kingdom Balance of Payments (Pink Book) 2010, series QBSC <http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140> . Figures are Crown Copyright.

²¹ Port of Rotterdam press release, http://www.portofrotterdam.com/en/News/pressreleases-news/Pages/20100624_01.aspx

²² Port of Rotterdam press release http://www.portofrotterdam.com/en/News/pressreleases-news/Pages/20100624_01.aspx

Year	2004	2005	2006	2007	2008	2009	2010
UK short-sea Lo-Lo container imports, Belgium, Netherlands 000 t ²³	3,852	3,852	3,852	3,852	3,852	3,852	3,852
UK short-sea Ro-Ro imports, Belgium, Netherlands 000 t ²³	17,792	17,792	17,792	17,792	17,792	17,792	17,792
Unit value per Lo-Lo ²⁴	1,798	1,798	1,798	1,798	1,798	1,798	1,798
Unit value per Ro-Ro ²⁴	3,235	3,235	3,235	3,235	3,235	3,235	3,235
UK imports of oil to Netherlands (Euro) ²⁵	898,936	1,279,704	1,767,487	3,697,262	5,786,701	2,669,753	3,677,317
Euro exchange rate ²⁶	1.4739	1.4629	1.467	1.4619	1.2588	1.1233	1.1664
UK imports of oil to Netherlands (Pounds)	609,903	874,772	1,204,831	2,529,080	4,596,998	2,376,705	3,152,707
Value of Lo-Lo goods in Rotterdam	1,954,303,432	2,194,865,576	2,392,350,706	2,478,563,311	2,774,890,590	2,336,910,484	2,336,827,137
Value of Lo-Lo goods in Antwerp	1,386,188,478	1,529,253,955	1,671,030,554	1,624,738,346	1,774,033,402	1,625,490,192	1,625,490,192
Value transhipped in Rotterdam	467,078,520	524,572,873	571,771,819	629,555,081	774,194,475	701,073,145	701,048,141

²³ DFT Maritime Statistics 2009 p41. <http://www2.dft.gov.uk/adobepdf/162469/221412/221658/223721/669555/maritimestatistics2009.pdf>

²⁴ MDS Transmodal for DFT, UK Port Demand Forecasts to 2030, Table 3.4, <http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/consultations/archive/2006/ppr/ukportdemandforecaststo2030.pdf>

²⁵ Statistics Netherlands, International Trade, <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLEN&PA=7137eng&D1=0-1&D2=99,104-107,109&D3=0,73&D4=116,129,142,155,168,181,194&HD=110614-1219&LA=EN&HDR=G3,T&STB=G1,G2>

²⁶ Bank of England statistics, Annual average Spot exchange rate, Euro into Sterling, <http://www.bankofengland.co.uk/mfsd/iadb/index.asp?Travel=NlxlRx&levels=1&G0Xtop.x=22&G0Xtop.y=6&XNotes=Y&C=DMD&XNotes2=Y&Nodes=X3790X3791X3873X33940X3801&SectionRequired=I&HideNums=-1&ExtraInfo=true#BM>

Year	2004	2005	2006	2007	2008	2009	2010
Value transhipped in Antwerp	374,270,889	412,898,568	451,178,250	438,679,354	656,392,359	601,431,371	601,431,371
Estimate of container transshipment outside EU.	1,611,780,477	1,795,922,300	1,959,674,461	2,046,426,120	3,172,032,890	2,888,036,622	2,887,981,180
Estimate of Rotterdam-Antwerp Effect on Imports	1,611,780,477	1,795,922,300	1,959,674,461	2,046,426,120	3,172,032,890	2,888,036,622	2,887,981,180
Direct Investment							
UK FDI income (net) to Netherlands £M ²⁷	2,585	2,800	7,283	8,393	- 7,297	- 2,760	- 2,760
UK FDI income (net) to Luxembourg £M ¹⁵	289	214	79	463	619	547	547
Netherlands proportion of outward FDI in SPEs ²⁸	70%	73%	73%	72%	72%	72%	72%
Luxembourg proportion of outward FDI in SPEs ²⁹	95%	94%	93%	92%	91%	89%	89%
UK holding of FDI in Netherlands ³⁰ \$M	79,446	62,815	80,681	127,225	86,223	81,124	81,124
UK holding of FDI in Luxembourg ³⁰ \$M	12,791	6,550	12,027	17,027	15,392	17,009	17,009
Whole world holding of FDI in Netherlands ³⁰ \$M	477,219	451,234	552,748	766,619	644,041	651,504	651,504

²⁷ Office for National Statistics : Business Monitor MA4 Foreign Direct Investment 2009 http://www.statistics.gov.uk/downloads/theme_economy/ma409.xls Crown copyright.

²⁸ De Nederlandsche Bank Statistical Bulletin September 2008, tables 12.10 and 12.14 http://www.dnb.nl/en/binaries/sb_tcm47-211516.pdf

²⁹ Central Bank of Luxembourg, International investment position of Luxembourg: direct investment . http://www.bcl.lu/en/statistics/series/09_iip/09_02_Table.xls

³⁰ OECD Stat Extract, http://stats.oecd.org/Index.aspx?DatasetCode=FDI_POSITION_PARTNER

Year	2004	2005	2006	2007	2008	2009	2010
Whole world holding of FDI in Luxembourg ³⁰ \$M	49,733	42,601	59,130	81,331	83,567	99,743	99,743
EU holding of FDI in Netherlands ³⁰ \$M	246,421	336,865	336,865	508,173	393,214	399,598	399,598
EU holding of FDI in Luxembourg ³⁰ \$M	39,676	35,128	50,217	68,013	70,195	83,782	83,782
Proportion of Netherlands holding outside EU	58%	29%	46%	40%	45%	44%	44%
Proportion of Luxembourg holding outside EU	27%	21%	19%	21%	20%	19%	19%
Estimate of Netherlands adjustment	1,043,925,466	604,054,511	2,420,376,623	2,442,538,741	- 2,363,495,365	- 878,033,903	- 878,033,903
Estimate of Luxembourg adjustment	74,572,368	41,642,023	13,849,053	88,637,699	110,955,418	94,234,308	94,354,842
Estimate of total Netherlands Distortion	1,118,497,834	645,696,534	2,434,225,676	2,531,176,440	- 2,252,539,947	- 783,799,595	- 783,679,061
Total							
Estimate of Combined Export Distortions	4,015,804,614	5,145,273,691	9,088,484,616	8,481,161,271	11,448,845,266	10,318,602,218	10,345,537,762