Statistics on foreign trade in goods: a refined compilation method

1.   Introduction

With effect from the publication on 14 August 2017, with the latest figures for May 2017 and the flash estimates for June 2017, the National Bank of Belgium (NBB) will produce the figures for foreign trade in goods with the aid of a new IT application called "ITGS", which stands for "International Trade in Goods and Services". The monthly figures from January 2014 onwards were also revised on the basis of this new application. From now on this application is used to conduct checks and make any corrections to the goods import and export declarations[1] (primarily[2] customs declarations for extra-Community trade and Intrastat for intra-Community trade), and for the subsequent calculation of the aggregates – including estimates, application of statistical confidentiality, calculation of the national concept etc. The existing data collection system was retained in full so that the reporting obligations are unchanged.

The main reasons for this change concern the efficient use of resources by the NBB. Some processes are now better automated, and in future the declarations will no longer be checked on the basis of the individual data but instead by using statistical tools which are more amenable to a top-down approach (the totals are first calculated and checked for plausibility before any decision on whether to descend to individual declarations which may cause problems at a higher level). This allows the NBB to guarantee at least the same quality while using fewer resources.

The NBB wishes to inform users about these changes, which at first sight appear to be purely technical, internal modifications, because it also took the opportunity to rectify certain anomalies in the methods and to recalculate the previously published figures. In addition, ITGS increases the range of available figures (e.g. more types of goods classifications, use of a statistical value, more detailed price indices, etc.). All these aspects will be explained below.

---

1   The statistics on international trade in services are to be processed via the new ITGS application from 2018.
2   In addition, there are also sources such as specific surveys for specific goods (e.g. gas, electricity) and administrative sources (VAT).

2.   Methodological improvements

2.1   Reshipments

The "national" concept excludes reshipments of goods from the trade figures, in the same way as original shipments which are subsequently reshipped. The reshipments themselves can be recognised from a specific transaction code in the declarations, and are therefore easy to identify and eliminate. However, the original shipments are initially declared as sales or purchases, in the same way as the great majority of the transactions. By the time a reshipment appears in the declarations it is no longer possible to determine which original purchase/ sale is being reshipped. In other words, there is no link between reshipments and original shipments. In practice, the original shipments are therefore eliminated in the same month as the reshipments, in the absence of better information. However, since reshipments often take place months after the original shipments, that approach can lead to negative values for certain combinations in certain months. This negative trade was an anomaly in the old versions of the figures.
In ITGS, this negative trade is put at zero in the calculation of the figures according to the national concept.

2.2   Goods for repair

Goods dispatched or received for repair used to be included in the figures, contrary to the prescribed European methodology. As these data are no longer included in ITGS, the flows are revised downwards. The revision is larger for exports than for imports because the Belgian economy dispatches more goods for repair than it receives for repair.

2.3   Estimates

Like the old application, ITGS has two systems for estimating late declarations and information on trade by firms below the reporting threshold for foreign trade in goods: a method based on VAT returns, and a "constant sample" method for cases where no VAT data are yet available. The VAT method was refined in ITGS. These estimates used to be based on the quarterly VAT data which were then imputed to the individual months via an allocation formula, but the new method makes direct use of the monthly VAT figures for the month in question, so that the estimates are more accurate.

2.4   Statistical value

The European legislation on goods statistics requires the trade value to be expressed as a "statistical value". The value of imported and exported goods therefore has to be adjusted for the transport and insurance costs incurred in respect of the distance up to the Belgian border. The NBB was previously unable to do this for intra-EU trade. However, the impact is small.

2.5   Indices

Several filters are used in calculating the indices for the unit values: certain products are therefore rejected, e.g. because their price movements are too volatile or too extreme. In ITGS these filters were extended so that more products were excluded from the index calculation. For example, a series of composite products was no longer included. No goods nomenclature assigns an individual code to all existing products, nor is that possible: there are just too many products. That is why there are always "residual" codes ("other products of the same kind as "nn"… but other than "nn" …"). Some of those residual codes are so heterogeneous that the movement in prices for trade reported under those codes is too volatile or actually meaningless. This change of method has no effect on the trade totals but does affect the index figures. The base year for the chain indexes was also adjusted: it is now 2010 instead of 2000.

3.   Other improvements

Apart from the above methodological improvements, close attention was paid to the relevance of the content of the data and metadata.

3.1   More complete and correct set of declarations

Firms regularly submit declarations after expiry of the deadline. Sometimes the declarations are so late that they can no longer be included in the latest version of the aggregates (usually calculated in the summer of the year following the statistical year). Statisticians also occasionally make corrections to the declarations during the compilation process, after the latest version of the aggregates has been published, either because the declarations are received too late or because the reasons and the nature of the correction are not known in time. Since ITGS uses the latest versions of the declarations, the new aggregates are based on a more complete and correct set of declarations.

3.2   Verification of the metadata

The metadata relating to the basic data were verified. The main adjustments were as follows:

– One important meta datum is the "resident" status of the declaring firms. The (total or partial) inclusion of a company in the figures according to the national concept depends on that status. The status of some firms, such as tax representatives, has been corrected in ITGS.

– Some rules ensuring statistical confidentiality were not always correctly implemented in the past, although confidential data were not disclosed. In the statistics on foreign trade in goods, the principle of passive confidentiality applies: some data which are included in the figures and can be individually identified are only camouflaged at the explicit request of the importers or exporters concerned. However, in the case of the figures published previously, that principle was not always applied correctly in all cases and for all years. For example, some camouflage codes did not have the right structure, and existing goods codes were sometimes used as camouflage codes. This was rectified in ITGS and although that has no impact on the overall totals it may affect the figures at a more detailed level.

– In the old versions of the figures, mistakes were also found in the tables that link various nomenclatures together (known as transcodification tables). While this correction likewise has no impact on the overall totals, it does affect the figures at a more detailed level of aggregation according to certain derived nomenclatures.

4 Comparison of new and old series

Values according to the national concept (in € million)

Period	Imports			Exports			Trade balance			Cumulative difference
	New series (1)	Old series (2)	Difference (3) = (1)-(2)	New series (1)	Old series (2)	Difference (3) = (2)-(1)	New series (1)	Old series (2)	Difference (3) = (2)-(1)	
201401	21.057,9	21.055,9	2,0	19.706,6	19.697,4	9,2	-1.351,3	-1.358,5	7,1	
201402	20.143,4	20.160,3	-16,9	19.872,4	19.868,0	4,4	-271,0	-292,3	21,3	
201403	21.710,2	21.703,4	6,8	20.942,5	20.934,9	7,6	-767,7	-768,5	0,8	
201404	21.071,1	21.082,6	-11,5	20.867,7	20.872,1	-4,4	-203,4	-210,5	7,1	
201405	20.015,7	20.008,6	7,1	20.041,3	20.007,5	33,7	25,6	-1,1	26,6	
201406	20.594,3	20.601,4	-7,1	20.586,5	20.584,6	1,8	-7,8	-16,7	8,9	
201407	20.228,8	20.249,4	-20,5	20.596,4	20.604,3	-7,9	367,6	355,0	12,6	
201408	19.125,1	19.156,5	-31,4	16.954,8	16.962,2	-7,5	-2.170,3	-2.194,3	23,9	
201409	21.987,7	22.019,5	-31,8	21.705,8	21.730,2	-24,4	-281,9	-289,3	7,4	
201410	21.716,9	21.731,4	-14,5	21.784,0	21.784,4	-0,4	67,0	52,9	14,1	
201411	19.766,4	19.786,1	-19,7	19.260,5	19.280,9	-20,3	-505,9	-505,2	-0,7	
201412	19.844,3	19.867,7	-23,4	17.934,5	17.912,7	21,8	-1.909,8	-1.955,0	45,2	174,5
201501	18.985,3	18.985,3	0,0	17.879,8	17.908,4	-28,6	-1.105,5	-1.076,9	-28,5	
201502	19.132,6	19.121,7	10,8	19.461,8	19.509,3	-47,6	329,2	387,6	-58,4	
201503	22.305,3	22.437,3	-131,9	21.157,6	21.193,3	-35,7	-1.147,8	-1.244,0	96,2	
201504	20.102,0	20.272,8	-170,8	20.352,0	20.403,5	-51,5	250,0	130,7	119,3	
201505	19.255,8	19.289,5	-33,6	19.142,1	19.207,4	-65,3	-113,7	-82,0	-31,7	
201506	21.487,5	21.483,1	4,5	21.710,3	21.762,1	-51,8	222,8	279,0	-56,2	
201507	19.631,0	19.596,1	34,8	19.938,6	19.977,5	-38,9	307,6	381,4	-73,7	
201508	17.782,2	17.786,3	-4,0	16.587,0	16.641,1	-54,1	-1.195,2	-1.145,1	-50,1	
201509	19.995,0	19.993,7	1,2	19.938,3	19.985,7	-47,4	-56,7	-8,1	-48,6	
201510	20.499,6	20.494,3	5,4	20.742,3	20.771,9	-29,7	242,6	277,7	-35,0	
201511	19.354,7	19.357,0	-2,3	18.979,7	19.005,9	-26,2	-375,0	-351,1	-23,9	
201512	19.198,0	19.177,1	20,9	18.606,8	18.628,0	-21,2	-591,2	-549,1	-42,1	-232,8

Period	Imports			Exports			Trade balance			Cumulative difference
	New series (1)	Old series (2)	Difference (3) = (1)-(2)	New series (1)	Old series (2)	Difference (3) = (2)-(1)	New series (1)	Old series (2)	Difference (3) = (2)-(1)	
201601	18.532,1	18.375,4	156,7	18.513,7	18.472,1	41,6	-18,4	96,6	-115,1	
201602	20.247,0	20.165,0	81,9	20.370,8	20.305,9	64,9	123,8	140,8	-17,0	
201603	21.312,4	21.138,7	173,7	21.078,8	20.960,4	118,4	-233,6	-178,2	-55,4	
201604	21.555,7	21.414,3	141,4	21.137,1	21.110,9	26,2	-418,6	-303,4	-115,2	
201605	20.899,9	20.799,2	100,7	21.116,3	21.097,0	19,3	216,4	297,8	-81,4	
201606	22.911,0	22.773,6	137,4	22.814,5	22.772,4	42,1	-96,5	-1,2	-95,3	
201607	19.863,9	19.747,2	116,7	20.242,2	20.242,1	0,1	378,3	494,9	-116,6	
201608	20.096,1	19.910,7	185,4	19.655,9	19.550,1	105,8	-440,2	-360,6	-79,6	
201609	22.199,3	22.051,7	147,6	22.230,6	22.133,1	97,5	31,2	81,4	-50,2	
201610	22.261,9	22.084,2	177,7	21.778,9	22.243,3	-464,5	-483,0	159,1	-642,2	
201611	22.774,5	23.321,8	-547,2	23.143,8	23.571,4	-427,6	369,3	249,6	119,6	
201612	21.652,7	22.335,9	-683,2	21.097,9	21.697,4	-599,6	-554,9	-638,5	83,7	-1.164,5
201701	22.888,6	22.764,8	123,8	21.188,5	21.371,4	-182,9	-1.700,1	-1.393,4	-306,7	
201702	22.364,4	22.398,9	-34,5	22.111,1	22.443,2	-332,0	-253,3	44,2	-297,5	
201703	26.244,1	25.402,3	841,7	26.087,1	25.906,5	180,6	-157,0	504,1	-661,1	
201704	21.307,4	21.746,9	-439,5	20.965,5	21.351,5	-386,0	-341,9	-395,5	53,6	-1.211,8

We find that the difference in value between the new and old series for imports and exports is small in 2014 and 2015. It increases from 2016 onwards. That is due mainly to two factors. First, the values from 2016 onwards in the old series do not include the latest available data, unlike the new series. Also, the estimates in the old series proved less accurate for some recent months.