The effects of transit trade on measuring real effective exchange rates

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Abstract

Effective exchange rates (EERs) are attracting increasing attention as a measure of international competitiveness. Trade weights are one of the factors used in the calculation of these indicators. Hence, the quality of trade data influences the behaviour of EERs. This paper aims to adjust for the effects of "transit trade" on the weights used in the calculation of the EERs of the euro. We analyse these effects using data on the total trade of euro area countries vis-à-vis their trading partners. As trade data are not harmonised across sources, we assess the quality of different data sources and fine-tune the calculation of the trade weight data underlying the EERs accordingly. We conclude that our adjustments slightly decrease the overall euro EER trade weights of other European non-euro area countries and somewhat increase the weights of Asian and American countries. However, the impact of these changes on the overall trade weights is minimal in terms of the behaviour of the real EERs of the euro.

Keywords: Competitiveness, effective exchange rates (EERs), trade weights

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1. Introduction

This study was carried out primarily to facilitate the consistency check of trade flows and prices between the euro area and the rest of the world. The trade consistency check is a necessary component of the Eurosystem Projection Exercises and takes into account, among other variables, the effective exchange rates (EERs) of the euro (Hubrich and Karlsson, 2010). As EERs are based on a weighted index of bilateral exchange rates, it is clear that the weights of these bilateral exchange rates play an essential role in the calculation of EERs. The weights are generally determined by the trade flows of a country (or economic area) vis-à-vis its most important trading partners.

One of the main aims of a real[2] EER is to provide a measure of international competitiveness. Therefore, it is important to base the calculation of the trade weights data underlying the EERs on "genuine trade flows", i.e. trade flows driven by domestic demand/supply (Klau and Fung, 2006). In this context, the concept of the "transit trade" effect becomes significant. This effect, which is also known as the "entrepôt" effect, can be interpreted as the movement of goods through an economy without being driven by domestic demand/supply. From this perspective it is clear that this "transit trade" effect has an impact on the trade weights used to calculate the EERs. Note that we define "transit trade" in this context as a generic term which encompasses three facets of trade: re-exports, "simple" transit trade and quasi-transit trade.

Re-exports are transactions in goods which are imported into the reporting economy by a resident and then re-exported. Because they imply a change in ownership, re-exports are included in the foreign trade statistics (FTS), balance of payments (b.o.p.) and national accounts (NA) of the reporting economy (UNECE, 2011).

"Simple" transit trade is the physical shipment of goods across the territory of a given economy on the way to their final destination. These goods do not undergo any physical change, nor do the transit trade countries acquire ownership of the goods. As a consequence, transit trade is excluded from the FTS, b.o.p. and NA of the reporting economy (UNECE, 2011).

Quasi-transit trade occurs when goods are imported into the reporting economy by a non-resident entity, and then re-exported to a third country within the same economic union (UNECE, 2012). The non-resident entity does not acquire ownership of the goods; he normally provides a service, clearing the goods for free circulation within the economic union, and finally dispatching them to another member country.[3] Quasi-transit trade flows are not mentioned in the international manuals because they do not involve a change of ownership of the goods, which is the principle underlying the recording of trade transactions.

We group re-exports, "simple" transit trade and quasi-transit trade together because they have a common element: in all three cases the domestic supply of goods in the compiling economy is not increased, even if the goods are physically present there (UNECE, 2011). This implies that ideally, all three of those trade flows need to be adjusted for in the total trade flows to construct trade weights on the basis of which EERs that accurately portray international competitiveness can be determined.

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[2] Real effective exchange rates (REERs) are geometrically weighted averages of bilateral nominal exchange rates which are deflated using a relative price or cost measure (Lauro and Schmitz, 2012).

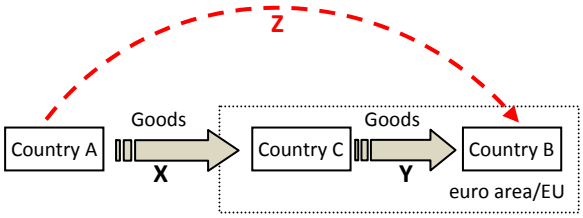
[3] This kind of trade is also known as "disguised transit trade", to be distinguished from goods in "simple transit", where no administrative clearance takes place.

In this paper we construct the trade weights used in the calculation of the EERs of the euro[4] based on data that are, as well as possible, depurated for these three effects. We modify data for European countries to account for "simple" and quasi-transit trade, as explained in Section 2. European export data are further corrected for the trade flows to China affected by re-exports through Hong Kong, as described in Section 3. In Section 4, we analyse the impact of these corrections on the overall trade weights used in the calculation of the EERs of the euro. In Section 5 we present our conclusions.

2. The "national principle" versus the "community principle"

It is well known that several European countries are affected by transit trade; both "simple" transit trade and quasi-transit trade. The statistical treatment of transit trade in national FTS or b.o.p. statistics differs with respect to community statistics collected by Eurostat and the European Central Bank (ECB) for the purpose of aggregating data at the EU/euro area level. This difference in treatment is necessary to avoid the double counting of the import value of goods; that is, both in the recording of the importing country and in the recording of the final destination country. FTS do capture transit trade, but exclude it from import and export data compiled according to the national principle. Transit trade is, however, relevant when reporting data according to the community principle as Chart 1 shows.

Chart 1: Schematic overview of transit trade



Source: Van der Helm (2012), UNECE (2011)

Imports (X) from non-EU/euro area country A are recorded in Extrastat[5] statistics by reporting country C. When the goods are released for free circulation in the EU, they are reported according to the community principle as an import by country C. Subsequently, they are recorded by country C as a "dispatch" or export (Y) to the country of destination, country B. This is recorded in Intrastat[6] statistics. Country B records the arrival of the goods (Y) on the basis of Intrastat, not Extrastat, data; it records flow Z, an import from country A, if it compiles data according to the national principle (NP).

The effects of transit trade and quasi-transit trade are visible especially for those countries that are known to act as an entrepôt in the Eurozone, i.e. Belgium and the Netherlands. This effect is quantified in considerably lower import trade flows recorded according to the national principle for Belgium and the Netherlands, as highlighted in red in Table 1.

Trade data recorded according to the national principle are best suited to be used in determining the trade weights underlying the EERs, because they are corrected for transit trade. Ideally though, those trade weights should be based on trade data that are also adjusted for re-exports. A consistent adjustment for re-exports is unfortunately not possible due to the lack of publicly available, detailed data on re-exports compiled by country of origin.

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[4] For the methodology used in the calculation of the effective exchange rates of the euro, see Schmitz et al., (2012).

[5] Extrastat is the European system for recording trade with countries outside the European Union using customs documentation.

[6] Intrastat is, since 1993, the European system for recording cross-border movements of goods within the European Union on the basis of surveys.

Table 1: Relative differences between import data recorded in national principle (NP) statistics versus community principle (CP) statistics for selected euro area countries vis-à-vis major non-euro area trading partners (in percentages of CP statistics)

	AT	BE	DE	ES	FI	FR	IE	NL	PT
CH	-16%	-18%	4%	-12%	50%	-12%	3%	-12%	-5%
CN	75%	-51%	23%	21%	50%	66%	50%	-41%	-1%
GB	3%	-15%	6%	-4%	3%	-8%	-14%	-16%	-5%
HK	55%	-4%	2%	44%	53%	45%	78%	-15%	-2%
IN	49%	-27%	13%	13%	37%	23%	21%	-14%	-2%
JP	100%	-25%	24%	31%	98%	69%	35%	-18%	-4%
RU	-78%	-10%	-31%	1%	0%	3%	10%	-32%	0%
US	53%	-47%	42%	27%	58%	30%	3%	-8%	-1%

Sources: NP statistics: OECD total import trade data. Data for Belgium, which in the OECD database are not consistent with NP statistics, have been collected through BELGOSTAT. CP statistics: Eurostat total import trade data. ECB calculations. Reporting countries in columns. Data refer to 2009 total import trade.

3. Correction of Hong Kong and China export trade weights due to re-exports

Hong Kong is an active trading partner of European countries. Unadjusted euro area exports to Hong Kong amounted to 1.13% of total euro area exports in 2009. However a substantial portion of exports to Hong Kong are re-exported to China. We assume that these re-exports from Hong Kong to China inflate data on exports to Hong Kong and undervalue exports to China. This assumption is supported by the data: when we compare European exports to China with China's imports from Europe, the latter are significantly higher.

Since Hong Kong re-export data by country of origin are not readily available, we perform a very basic correction of data on European exports to both China and Hong Kong. Basically, we consider that the gap between European exports to China and China's imports from the EU, that is, the difference between the mirror data, corresponds to Hong Kong's re-exports to China of goods originating from Europe[7]. The correction of data on exports to China consists of replacing each European country's export flow to China with the corresponding mirror data; that is, China's imports from the same trading partner. The basis of this adjustment is the well-established fact that the country of origin of imports is usually known, whereas the final destination country of exports is not[8] (Fung et al., 2006). At this point the corrected data on exports to China include the amount of re-exports from Hong Kong. In order to avoid a double counting of these re-exports, we need to subtract them from the data on European exports to Hong Kong.

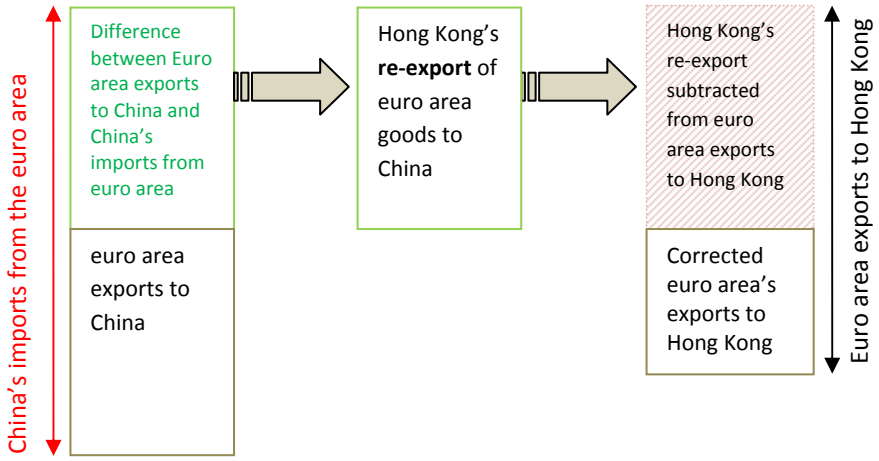
The drawback of this simple model is that it does not correct for pure re-export mark-ups. Hong Kong traders often apply a pure mark-up to the goods they export; net of customs, insurance and freight charges, goods are often much more expensive when they leave Hong Kong than when they enter. These high mark-ups on the value of re-exports could be larger than a European country's total exports to Hong Kong; which, in certain periods, turns the corrected trade flows of a few European countries to Hong Kong into negative values. However, in the calculation of the overall trade weights underlying the euro EERs, this negative sign has a very limited impact as it is compensated for by the

[7] This assumption, however, is a simplification of reality, since it does not take into account that countries other than Hong Kong may act as an entrepôt for re-exports to China. Furthermore, asymmetries between mirror data are not only a result of re-exports, but may be due to measurement errors as well.

[8] This is also why we only correct the European export trade weights and not the import trade weights.

inclusion of import trade weights and the so-called "third market effect".[9] The following diagram illustrates the adjustments to China's and Hong Kong's export trade weights:

Chart 2: Simplified adjustment model for exports to Hong Kong and China



4. Impact of data adjustments on overall trade weights underlying the euro EERs

After adjusting trade flows for the "transit trade" effect as explained in the previous sections, we calculate the trade weights used to determine the EERs of the euro.[10] The impact these corrected trade flows have on the overall trade weights used to calculate the euro EERs is very limited. The shift from community principle to national principle trade data accords a slightly higher weight to Asian and American trading partners and a somewhat lower one to other European countries. The effects of the corrections of data on European exports to Hong Kong and China on the overall trade weights, highlighted in red in Table 2, are also very minor.

Table 2: Overall trade weights for the most prominent trading partners of the euro area + Hong Kong according to the community principle (CP) and the national principle (NP), and the data corrected for Hong Kong and China.

	Overall trade weights: CP	Overall trade weights: NP	Overall trade weights: NP + data corrected for HK and CN
GB	13.28%	12.78%	12.77%
US	12.68%	13.23%	13.22%
CN	10.65%	11.14%	11.36%
RU	7.19%	6.61%	6.61%
CH	5.33%	5.28%	5.28%
PL	4.72%	4.65%	4.65%
JP	4.08%	4.43%	4.41%
KR	2.33%	2.45%	2.45%
IN	2.07%	2.15%	2.14%
BR	2.03%	2.07%	2.07%
HK	0.79%	0.80%	0.68%

Sources: CP weights: Eurostat total trade data. NP weights: OECD total trade data. Data for Belgium, which in the OECD database are not consistent with NP statistics, have been collected through BELGOSTAT. ECB calculations. Data refer to 2009 total trade.

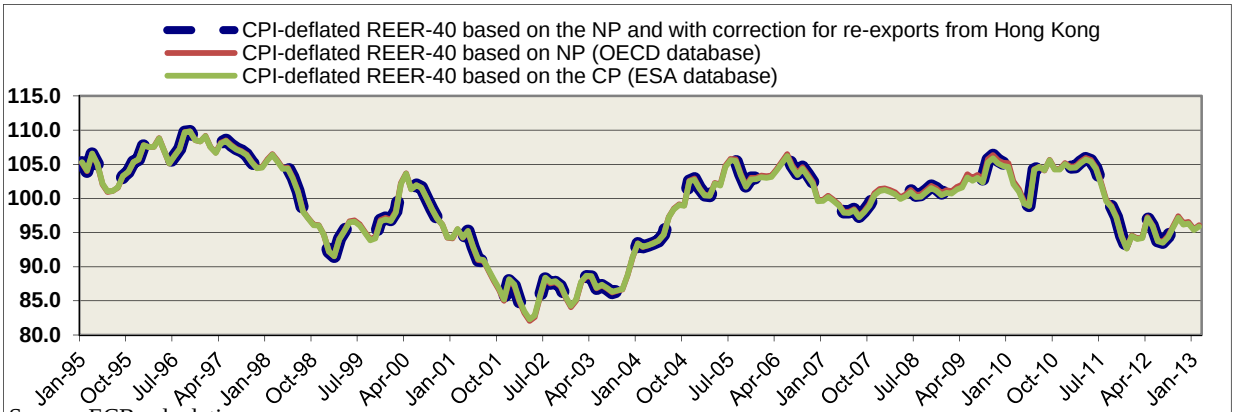
[9] See Turner and Van't dack, 1993, for a description of the general methodology, and Schmitz et al., 2012, for the application of this methodology to the EERs of the euro.

[10] We compute overall trade weights for the calculation of the EERs of the euro vis-à-vis 40 trading partner countries; see Schmitz et al., 2012.

5. Conclusions

It is important to base the calculation of the trade weights data underlying the EERs on "genuine trade flows", i.e. trade flows driven by domestic demand/supply, which exclude the effect of "transit trade". As a result of the reduced level of trade flows recorded in transit trade European countries when collecting data according to the NP and after correcting NP data for re-exports of European goods from Hong Kong to China; the overall trade weights calculated for the EERs of the euro show a general decrease in the weight of other European non-euro area countries and an increased weight of Asian and American countries. However, the impact of these changes on the overall trade weights is minimal in terms of the behaviour of the real EER index, as illustrated in Chart 3. This outcome indicates the robustness of the REERs of the euro as a measure of competitiveness for the euro area.

Chart 3: REERs based on the CP, NP and NP with correction for Hong Kong's re-exports



Source: ECB calculations.

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