Globalisation Effects on the Trade Flows: Czech Experience

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A phenomenon of globalization of world economy consists in diminishing of the borders between nation states. There is an important role of international trade in this process, whose form and incentives assumes increasingly diverse forms. While the classical theory of foreign trade basically assumed commodity trade with the final products, currently due to fragmentation of production chains is the dominant form of trade in intermediate goods and the trade in services becomes more and more dynamic. Increasing volume of the trade between countries is carried out without changing the ownership of traded goods, and vice versa - changing the ownership of goods without crossing the border of the country. The basic implication of these phenomena is increasingly difficult possibility to capture the statistical data correctly and therefore it is more difficult to obtain objective data on the functioning of the economy for analytical purposes and economic policy.

The first part of this article briefly summarizes the practical business models and changes in growth phenomena of globalization, particularly the influence of multinational companies. These changes are demonstrated on several model examples and indicate the implications for macroeconomic aggregates. The second part of this paper is devoted to the presentation of the data based on "change of ownership" principle (valuation) newly presented by the Czech Statistical Office in March 2011.

Operating of the international trade

"Traditional" model of international trade

Figure 1 shows the traditional model of external trade, in which exporters and importers are currently in the role of buyer and seller and customs documentation shows the flow of goods from one to another. At the same time or shortly before or after delivery of the shipment money is transferred from buyer's to seller's bank account. It is the fundamental principle of economic statistics for the compilation of national accounts and balance of payments, that cross-border transactions are based on economic ownership. In this simple case, the goods are moved from B to A, and simultaneously a flow of money in the opposite direction. The exact time of the change of ownership between A and B depends on the contract and payment agreement. Economic statistics uses a border crossing as an approximation of the point where a change of ownership of the goods is done.
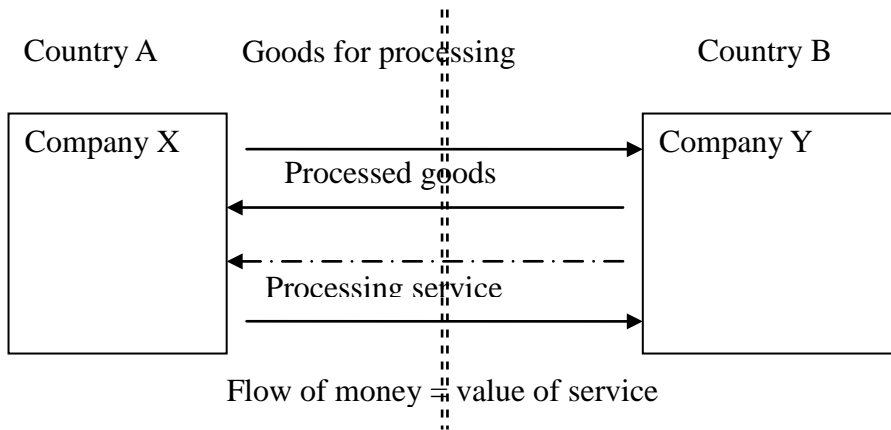
Figure 1: Scheme of the "traditional" model of international trade

Country A   Goods   Country B

| Company X | ◄———————————— | Company Y |
| | ————————————► | |

              Money flow
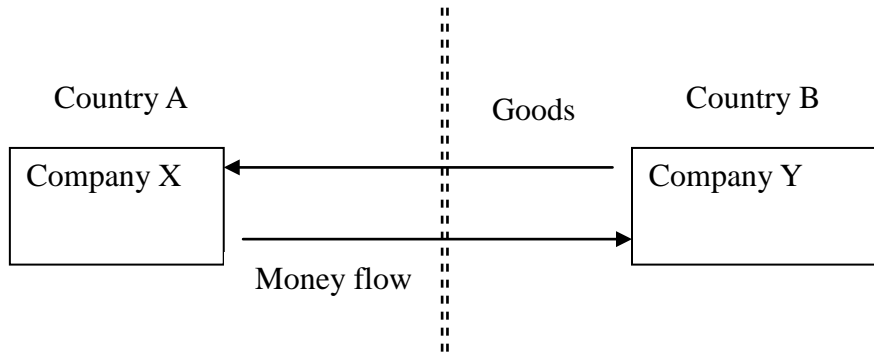
Intra-firm trade and processing operations

In the real world, it is never so simple; most transactions are conducted through intermediaries. The timing of payments can be very volatile and can occur between buyer and seller that the time of payment follows the time of movement of goods or the payment is prior to delivery. Goods often cross borders, but do not change its owner. A classical example is the so-called **inward processing**, where the goods (components) are exported from one country to another, there are processed and then re-exported (see Figure 2). In fact, only the service is exported, but the statistics on foreign trade involves the importation and exportation of goods crossing the border. In the accounting of the processor (i.e. a company that performs processing), however, only sales for the service provided will be recorded. In terms of capturing the right balance of payments and national accounts, where the change of economic ownership is the key principal, there is a need to quantify the amount of imported components. Subsequently, this value should be (according to the current approach) imputed to the volume of output and intermediate consumption in the domestic economy or (according to the revised standards of national accounts and balance of payments) excluded from the value of imports and exports. This ensures consistency between resources and uses in the economy.

Figure 2: Trade of goods scheme under the "processing regime"

Country A   Goods for processing   Country B

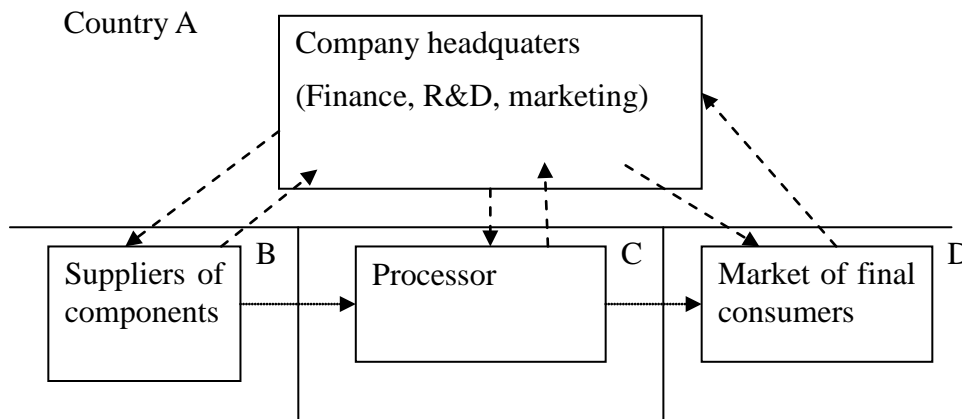| Company X | ————————————► | Company Y |
	Processed goods	
	◄————————————	
	◄—·—·—·—·—·—·—	
	Processing service	
	————————————►	

              Flow of money = value of service

A similar principle that has been described for inward processing is becoming increasingly applicable as an increasing proportion of transactions are carried out within a

multinational group (**intra-firm trade**). In this case, in addition there is a distortion of accounting data, depending on the contractual prices and service fees for use of the allocation of earnings with respect to the tax burden. Individual "players" in the whole process of production and marketing are located in different countries and in those cases the influence of foreign trade statistics (see Figure 3).

Processing fee per transaction (inward processing) occurred in many sectors. There is growing use of outsourcing the manufacturing process or its parts, where one firm contracts another to perform specific operations, but retains ownership of the material processed. A typical example is the electronics industry, but this phenomenon occurs in a large extent also in chemistry, engineering, garment industry and other sectors where there is only the movement of products between plants, but across national borders to the processing and back without a change of ownership.

Figure 3: Scheme of trading among related companies

Country A

Company headquaters
(Finance, R&D, marketing)

B

Suppliers of components

C

Processor

D

Market of final consumers

Incentives to favour "processing fee" is based on reducing costs through specialization. However, this type of transactions between related companies involves the tax consequences. Rules of moving goods from one part of the group to another require evaluation and recognition as revenue. Enforcement of certain recommendations for services is much more problematic, because for some companies the "processing fee" is becoming a tool to move profits into areas with lower rates of taxation.

Trading by non-residents

As mentioned above, there is essentially two-fold approach to capture commodity transactions in international trade. One is based on the principle of movement of goods and captures transactions in which goods cross the border. The other is based on the change of ownership principle and it is consistent with macroeconomic statistics (BoP and NA) standards. A specific problem relies in the trading via non-residents of the exporting/importing country (see Figure 4). In this case, the balance of exports and imports can vary greatly depending on the difference in prices for imported and exported goods declared on the border, and value of transactions between residents and non-residents.

The reasons, which are behind the business transactions carried out by non-residents of the country, are summarized in Table 1. Vast majority of these transactions take place between related parties, the motivation can be of various natures. It can be logistical reasons, when the country has a geographically strategic location and serves as an export gateway to other countries (mainly countries at the external frontier of EU, but also the countries of Central Europe including the Czech Republic). It may also involve the above-described cases of processing operations and strategy of multinational firms in the distribution market. Diverse range of themes is, however, based on cost reduction and tax optimization.

Figure 4: Illustration of the impact of trading carried out by non-residents on the trade balance
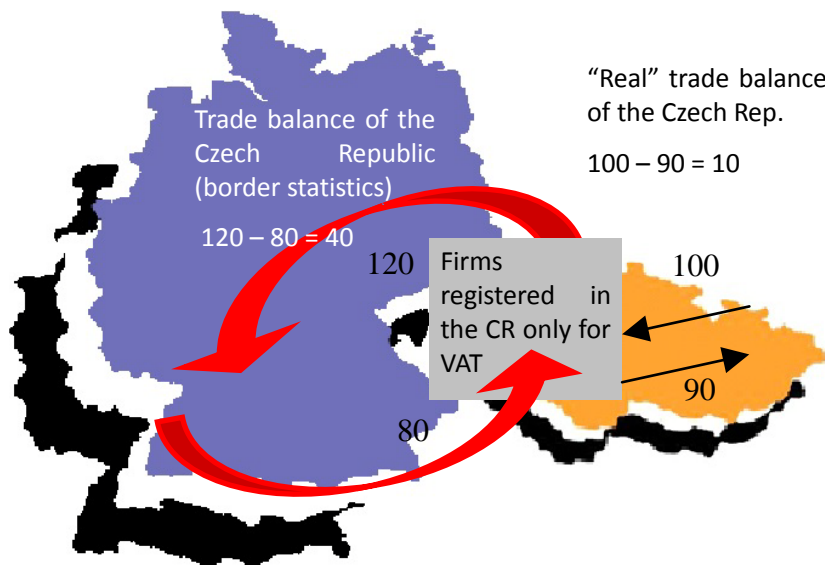
Intermediate country (CZR) then show considerable volumes of imports and exports and the impact on the trade balance depends on its share of the transactions. If trading was carried out by residents of the country, it is a classical re-export and value of mediation services will be the added value of domestic intermediaries. In this case there is no consistency problem between the sources and the uses in the economy. If it is realized through foreign trade companies, which are not residents of country A, the value of mediation will appear in the accounts of country B and leads to inconsistency amount of a foreign country's trade and (by the principle of movement of goods) and the added value achieved in country A. Then we talk about **"quasi-transit"** operations (see box). A typical case is so-called "Rotterdam effect[1]" but increasingly there are

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[1] The 'Rotterdam effect' means that a foreign trade transaction is reported for EU statistics first as the imports from a non-EU country to the EU Member State where the goods crossed the EU border and were released to free circulation. This statistical record is part of Extrastat. The following movement of the goods from this EU Member State to the EU Member State which is the final real importing country is then recorded as a dispatch (export) and arrival (import) between these two EU Member States within Intrastat. The 'Rotterdam effect' exists as well for Community exports, but to a lesser extent. The 'Rotterdam effect' inflates the exports and imports of the EU Member States which are exposed to this phenomenon.

quasi-transit operations also within European Union (including the Czech Republic). Unlike the "pure quasi-transit", where the goods do not change its nature in the "transit" economy, the problem of valuation is wider and is relevant in all cases, where the goods is traded via non-residents (even if the commodities imported are further processed and new products are produced).

Box: Definitions of certain transactions in foreign trade relations

The international trade occurs in addition to traditional delivery of goods from country A to country B associated with a change of ownership of certain operations, which have a different impact on retention in macroeconomic statistics (see UNECE, 2010).

Simple transit trade - describes transactions in goods which cross the reporting economy on the way to their final destination. They are excluded from the foreign trade statistics (FTS), b.o.p. and national accounts of the reporting economy.

Re-export - describes transactions in goods which are imported into the reporting economy by a resident and then re-exported. Re-exports imply a change in ownership and are included in the FTS, b.o.p. and national accounts of the reporting economy.

Merchanting - describes purchases of goods by a resident of the reporting economy from a non-resident and the subsequent resale of the same goods to another non-resident without the goods entering the reporting economy.

Quasi-transit trade - concerns transactions in goods which are imported into the reporting country by a non- resident entity, and then re-exported to a third country within the same economic union (a variant being the case in which they are imported into the country and later sold to a resident there, sometimes at a much higher price, without significant change to the goods and without the involvement of any resident to whom the value added reflecting the increase in price might be attributed).

Simple transit trade, quasi-transit trade and re-exports 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. Merchanting is fundamentally different from transit and quasi-transit trade and re-exports, in that the merchanted goods are not physically present in the compiling economy. It is however relevant to this discussion because it is a possible cause of the increase in value of the goods between their import and their export or sale to a final user in the importing country.

Possible solutions to these inconsistencies are essentially twofold. Either is imputed to the import of services item called "branding"[2] or the data on commodity trade between the boundaries are adjusted to the concept of ownership. While officially the EU preferred the first way, which ensures consistency with the commodity trade statistics and value adjustment is made in the balance of services, methodically more correct and for analytical purposes preferable is changing the merchandise trade (especially when this effect is significant).

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[2] Item reflects price differences in the turnover of foreign trade caused by internal cross-border transactions of multinational companies registered as VAT payer in the exporting country (see CNB, 2010).

Table 1: Types of business activities and motivations of non-resident units

Activities	Motivation
Distribution activities - rental of warehouses, logistics operations, purchasing, import / export, domestic sales	Logistics
Sales Channels - "Export Gateway" (eg, from west to east Europe)	Internal / cost reduction Tax benefits
Inward processing - import / export, purchase processing services at home	Cost Reduction
Mediation between residents - from residents to purchase the processing, sale to residents (no imports)	Mastering the market / agreements between foreign companies

Impacts of globalisation on macroeconomic aggregates

The above phenomena of globalization have a strong influence on the measurement of economies at the national level. New types of cross-border transactions have proved difficult to catch and measure. The growing use of electronic transactions plays the role, but the main reason is that national boundaries become irrelevant for corporations operating internationally. Between affiliated companies operating in different countries are often not any standard market relationships. To maintain national statistics, it appears necessary to artificially deconsolidate global corporations and to split data between national boundaries. Although these transactions may be identified on the basis of accounting for individual transactions, the records can be affected by optimization of taxation, and therefore may have limited value. In addition, the affiliated companies are often traded for finished products to the market and their market value is therefore difficult to establish.

Consequently, it is essential that statisticians examine carefully the nature and size of transactions reported by these groups. While globalization is a long process, the discussion about its impact on the distortion of statistical indicators, in principle, has been only started up. The phenomena associated with globalization lead to varying degrees to the problems with statistical comprehensiveness of economic reality. Generally there is a reduction in explanatory power and the mutual consistency of the statistical indicators, the estimation of the real economic development is more difficult, and the trend of economic development is distorted over time and space.

From the perspective of macroeconomic aggregates there is particularly serious **disproportion between the source and use side** in the economy (exports exceed the production of some commodity groups, analogous to the importation of more than domestic use). In this case commodity balancing within supply and use tables is very

difficult, because the data sources are inconsistent. In addition to the impact on the nominal values, which are distorted by these phenomena, there is impact also on the real GDP. It is difficult to estimate the proportion of domestic production for the home, respectively the foreign market. Analogously, it is difficult to estimate the proportion of domestic consumption and imports. There is a distortion of the output deflator, respectively, intermediate and final uses, and thus the overall GDP deflator.

Another problem arises in terms of **consistency of the current and financial account balance.** The balance of payments is based on the monitoring of transactions between resident and non-resident entities, both in real terms (current account) and financial transactions (financial account). In the case of trade caused by residents the balance of real transactions (foreign trade) will be reflected in financial transactions, namely the balance of receivables and liabilities to non-residents. If the balance of foreign trade is carried out by non-resident units, residents' financial claims on non-residents do not arise and there is a disproportion between the current and financial account balance.

Consider the following very common situation where a Czech company (resident) sells to its parent company goods at a fixed price. The parent company (registered for VAT only in the CR) then exports goods and reports to statisticians an entirely different value (usually higher) at which goods are sold on Western markets. At the first look it seems that Czech economy gains high export prices, but subsidiary (resident) has significantly lower yields. At macro level there is a disproportion between the current and financial account balance, the (value of) movement of goods is higher than money transfers.

Trading by non-residents in the Czech Republic

After EU accession in 2004 the system of border statistics based on customs declarations was replaced for the transactions within EU by the statistical data collection called "Intrastat". The structure of data and rules for their declarations are consistent with international manuals of merchandise statistics (IMTS) and are strictly regulated by EU Regulations (data reported to Eurostat). It is nonetheless allowed to adjusted data according to national specifics. One of them is "quasi-transit" trade, which was genrally considered to be only problem for the trade between non-EU and EU countries at the external EU border (above mentioned "Rotterdam effect"). It was described by Hungary, that similar problem can arise also in the trade within EU (see UNECE, 2010). Independently this problem has been identified also in the Czech Republic.

The first signs of problems with consistency of macroeconomic aggregates in the Czech economy appeared during the balancing process of commodity flows for 2007, carried out in 2009. Export of certain commodities many times exceeded their domestic production. This can be described by the following model example (see figure 5 – the names of companies and data are fictional):

The company of „Global Toys", registered in Great Britain, is the owner of the Czech toy producer „Czech Toys". This manufacturer produces toys for CZK 5 million and exports them (to the EU countries) through its parent company, which had to get registered in the CR as a VAT payer for this reason. Simultaneously, this parent company imports toys from China (at the value of CZK 7 million), which are only packed in the CR and are

forwarded to markets in the EU. The overall sales value of the toys exported from the CR is CZK 16 million.

Company „Global Toys", registered as a VAT payer in the CR, declares imports of toy of the value of CZK 7 million in the custom declaration form. At the same time, it declares „sending of goods to other Member State" (export) at the amount of CZK 16 million in Intrastat. In its VAT tax form the company states „commissioning of goods in the CR" at the amount of CZK 5 million (purchase from the company of „Czech Toys"). Therefore value added of this non-resident is equal to $16 - 7 - 5 = 4$ million CZK (export minus import minus purchase in the CR).

Figure 5: Difference of capturing by border statistics and national concept of external trade
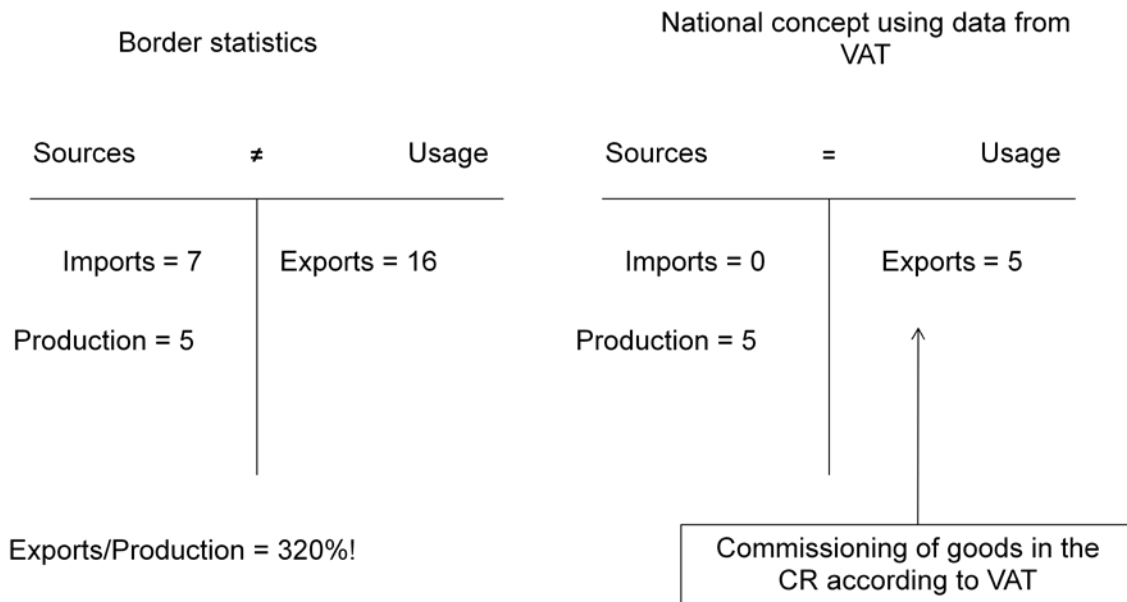
In the same year this problem began to be evident on the quarterly national accounts and balance of payments data, because of the sharp increase in the year on year surplus in trade balance, without being responsible development of domestic value added and foreign claims. The existence of this imbalance, and a solution prepared by the Czech Statistical Office was reported simultaneously with the publication of GDP data in March 2010. In the next twelve months it has been prepared in close cooperation of the Czech Statistical Office and the Czech National Bank a significant change in the capture of foreign trade transactions in order to better reflect the principle of national concepts and allow for a realistic look at the structure of the Czech economy.

In March 2011, the CZSO published the first data on foreign trade for the years 2009 and 2010, which reflected changes in the methodology of property designated as a "**national concept**". These data are published simultaneously with the data in the so far published methodology is now labelled as "border statistics". The difference between the two methodologies in 2009 amounted to 4.9% of the exports and 1.2% on the import side, which meant the balance of 128 billion CZK. In 2010, the relative difference in exports and imports alike, the difference on the balance of the year compounded. The impact on the current account balance, however, was more than by half offset by revisions to trade

in services. It consisted mainly of increasing the so-called direct trade costs associated with import and export of goods and removing the "branding" item from the service balance (this phenomenon is now treated in goods, not service balance). The difference in the total balance of goods and services for the year 2009 was a previously published figures CZK 61 billion (1,7 % GDP).

So far published in the national concept are only data on total imports, exports and trade balance and its territorial structure within the balance of payments. This follows from the nature of this methodology, where the data are first calculated at the macro level and the structure is modelled using border statistics. Based on preliminary calculations it is clear that the largest relative differences in comparison with the merchandise statistics data are electrical products, which is also the most involved in global production chains.

Future development of "national concept" of external trade statistics

The national concept of merchandise trade based on the change of ownership principle is consistent with the methodology of Balance of Payments and National accounting. While in the global context most attention is devoted to the problem of recording "processing" operations, for countries within EU the problem of quasi-transit trade and the role of non-resident units seems to be very topical. We expect that in the next years this issue have to be seriously discussed. At present the Czech Statistical Office is working on the commodity structure modelling. Supply and use tables serve as an important tool in this process. The next efforts will focus on the improvements of connection among resident enterprises, VAT-registrations and Custom declarations. One of the tools for improving quality and detail of foreign trade data is comparison to industrial statistics (surveys on production and direct and indirect exports).

Conclusion

A related phenomenon of globalization of world economy is diminishing of the borders between nation states. There is an important role of international trade in this process, whose form and incentives assumes increasingly diverse forms. While the classical theory of foreign trade basically assumed commodity trade with the final products, currently due to fragmentation of production chains is the dominant form of trade in intermediate goods and the trade in services becomes more and more dynamic. Increasing volume of the trade between countries is carried out without changing the ownership of traded goods, and vice versa - changing the ownership of goods without crossing the border of the country. The basic implication of these phenomena is increasingly difficult possibility to capture the statistical data correctly and therefore it is more difficult to obtain objective data on the functioning of the economy for analytical purposes and economic policy.

It may be necessary to accept the fact that the reflection of economic phenomena in the form of statistics will always lag behind the rapidly evolving reality. Yet it is necessary to strive for continuous tightening of this gap, especially greater coordination of individual statistics, collecting information and compiling partial picture of the activity companies, their mutual relationships. The inevitable trend is more frequent using of modelling instead of simply summing up the collected data.

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Yi, K.: Can Vertical Specialization Explain the Growth of World Trade? *Journal of Political Economy*, 2003, Vol. 11(1), s. 52–102.

Abstract:

The Czech Republic is a small open economy, which is vitally dependent on its export performance. In the period after EU accession the intensity of international cooperation grew rapidly in all the Central European countries, which is mostly the result of the huge FDI inflow at the beginning of the decade. In this context one significant problem for the Czech Republic and some other countries of the region appeared: the valuation of the trade flows based on the cross-border measuring overestimates the country's trade balance in comparison with its value added created. This is the case of trade declared by non-resident units, which is more and more common within the European Union. This phenomenon is even enhanced by the strategic geographical location of the Czech Republic, which is important factor why a lot of this "quasi-transit" trade is being operated. The overvaluation of the trade balance is divided into exports (which are over-valuated) and imports (which are under-valuated). It is concentrated in several commodity groups, among them especially computers and electric equipment are significant. The revision of the foreign trade data, which aim is to follow more consistently the ownership approach, significantly changes the picture of the Czech economy, specifically the role of external demand to the economic growth. It will have also impact on the structure of the input-output tables, especially the division of the domestic and foreign part of the supply and use matrices.

Keywords:

International trade, Globalisation, Intra-firm trade, Balance of Payments, Quasi-transit, Supply and use tables.

JEL classification:

F10, F15, F23,