Ownership Principle in the Foreign Trade Statistics: Czech Approach

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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 strategic geographical location of the Czech Republic, which is an important factor explaining why a lot of this "quasi-transit" trade is being operated. 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.

Keywords

Globalisation, foreign trade statistics, balance of payments, quasi-transit, commodity flows

JEL code

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INTRODUCTION

The surplus of the balance of trade according to the foreign trade statistics in the Czech Republic has been gradually increasing since joining the EU in 2004. This trend coincided to the effect of the rapid growth of foreign direct investment to manufacturing sector in the preceding years. However, such a development was in contrast to the balance of payment. Moreover, a growing discrepancy has been observed between supply- and use-side of certain commodities during the compilation of the supply and use tables mainly due to exports and imports from the foreign trade statistics. Exports even exceeded production in some of these commodities. So it seemed that exports were overestimated and imports underestimated or both

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exports and imports in the foreign trade statistics far exceeded the real economic inputs and outputs of the domestic economy.

The alleged positive balance was actually caused by the value added generated by non-residents and as such it cannot be included in the value added of domestic economy. To this end a new national concept of foreign trade in the Czech Republic was drawn up and corresponding methodology of adjustment of traditional foreign trade data was developed. This phenomenon can be associated with two different but complementary issues. First, an increasing influence of non-residents over the flows of goods across the borders of the Czech Republic and, secondly, an increasing number of movements of goods across the national borders without changing ownership (mainly due to the convenient location of the Czech Republic and sufficient storage facilities that encourage extensive flows of goods across the borders that can be considered only as re-export or quasi-transit trade).

This article describes the separation between foreign trade statistics and change of ownership principle within the EU due to the VAT registered non-residents and introduces the Czech approach to follow the concept of change of ownership related to exports and imports in National Accounts and Balance of Payment.

1 DEFINITION OF FOREIGN TRADE

There are two main approaches to capture commodity transactions in international trade. One is based on the principle of movement of goods across the borders, which is consistent with traditional Foreign Trade Statistics (FTS), the other is based on the change of ownership principle and is consistent with standards on Balance of Payment (BoP) and National Accounts (NA).[4] The cross-border movements used to be considered as an acceptable proxy for the change of ownership. However, globalization in trade[5] led to the separation of these concepts as it extended the variety of transactions when movements of goods are not followed by the change of ownership.

So far, most European countries have considered this separation to be related solely to the trade with non-EU countries (so-called quasi-transit). However, this issue has to be extended also to the trade within the EU as the system of collecting data (Intrastat) instructs not only residents but also non-residents to report their transactions across the borders of domestic economy to its national statistics. This results in inclusion of non-resident transactions in exports and imports of any domestic economy according to the compilation rules of the FTS.

Table 1 Definitions of certain transactions in foreign trade relations

Transactions	Description
Simple transit trade	Transactions in goods which cross the reporting economy on the way to their final destination. They are excluded from the FTS, BoP and NA of the reporting economy.
Re-export	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, BoP and NA of the reporting economy.
Merchanting	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 unless the goods entered the reporting economy.
Quasi-transit trade	Transactions in goods which are imported into the reporting country by a non- resident, 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).

Source: UNECE, 2010

[4] More information can be found in Hronová, Hindls, Fischer, Sixta, 2009. See also IMF, 1993.

[5] Discussion about the statistical impacts of globalisation can be found in Fischer, 2007.

The international trade traditionally occurs when delivery of goods from country A to country B is associated with a change of ownership. However, there are also transactions that are associated either solely with movement of goods or only with the change of ownership that has to be treated differently and can have a different impact on macroeconomic statistics (see Table 1). 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.

2 NON-RESIDENTS' TRANSACTIONS IN INTRASTAT

Intrastat is closely related to the system of value added tax (VAT) in the EU. All VAT registered entities in a country A (above the threshold) are obliged to report their transactions across the borders of the country A to Intrastat in the country A. However, VAT registered entities are not only residents of the country A.

According to the VAT legislation harmonized across the EU, non-resident traders are obliged to register for VAT in any country where they realized any taxable transaction. These taxable transactions include supply of goods (e.g. sales of goods on internal national market or dispatch of goods to other member states and also any transfer of own goods for business purposes across the borders to the country) or the intra-EU acquisition of goods (also any transfer of goods for business purposes across the borders from the country). In all these cases non-resident traders have to register for the VAT and consequently they become respondents to Intrastat in the country where they are not seated and do not have even any physical representation (in tax terminology: "VAT-only").

The reasons behind the business transactions carried out by non-residents are summarized in Table 2. Most of these transactions take place between related companies and the motivation can be of a different nature. There can be also logistical reasons, when the country has a geographically strategic location and serves as an import / export gateway to other countries (mainly countries at the external frontier of the EU, but also Central European countries like the Czech Republic). But it may also involve processing operations and strategy of multinational companies in the distribution market. However, most of these transactions are motivated by the cost reduction and tax optimization.

As for the Czech Republic, two prevailing issues concerning non-resident activities essential for the FTS are recorded. Firstly, there are significant flows of goods imported to the Czech Republic by non-residents that are re-exported without any change of ownership to resident (Figure 1). The core of these transactions is the same as in case of quasi-transit (Table 1) even though they are related mostly to the trade

Table 2 Types of business activities and motivations for transactions carried out by non-resident units

Activities	Motivation
Distribution activities — — rental of warehouses, logistic operations, purchasing, import / export, domestic sales	Logistics
Sales Channels — — "Export / Import Gateway" (e.g. from the West to the East of Europe or vice versa)	Internal / cost reduction Tax benefits
Inward processing — — import / export, purchase processing services at home	Cost reduction
Mediation between residents — — from residents to purchase processing, sale to residents (no imports)	Mastering market / agreements between foreign companies

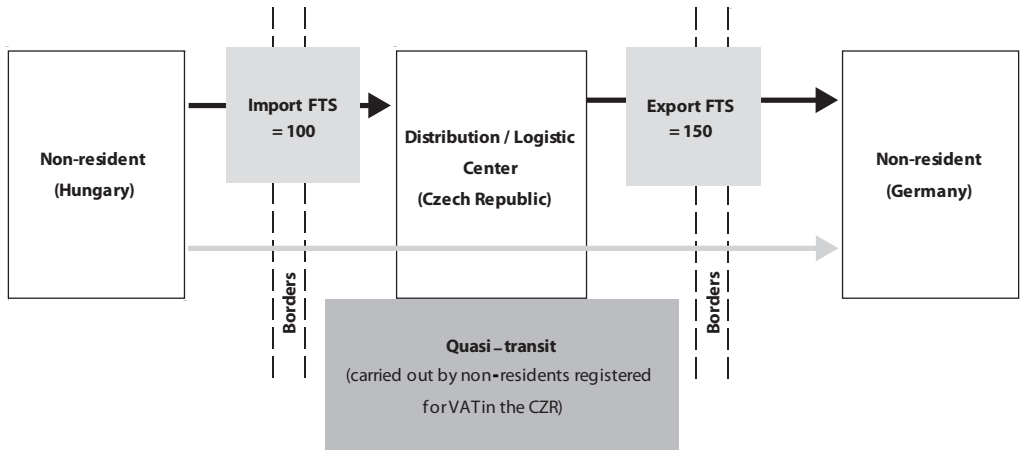
Source: Author's construction

within the EU. As they are not carried out by residents they should not be included in the exports and imports according to the change of ownership principle.

Secondly, there are significant flows of goods across the borders reported by non-residents that are related to their activities on the internal national market: their imports are sold to residents and their exports come from domestic production. Anyway, the value of imports and exports via non-residents reported to the FTS can differ greatly from the value of transactions between them and residents (Figure 2).

In both cases, the balance of exports and imports declared by the FTS is influenced and thus must be adjusted for the value added generated by non-residents if it is to be corresponding to the change of ownership principle.

Figure 1 Illustration of the impact of 'internal' quasi-transit carried out by non-residents on the trade balance



Source: Author's construction

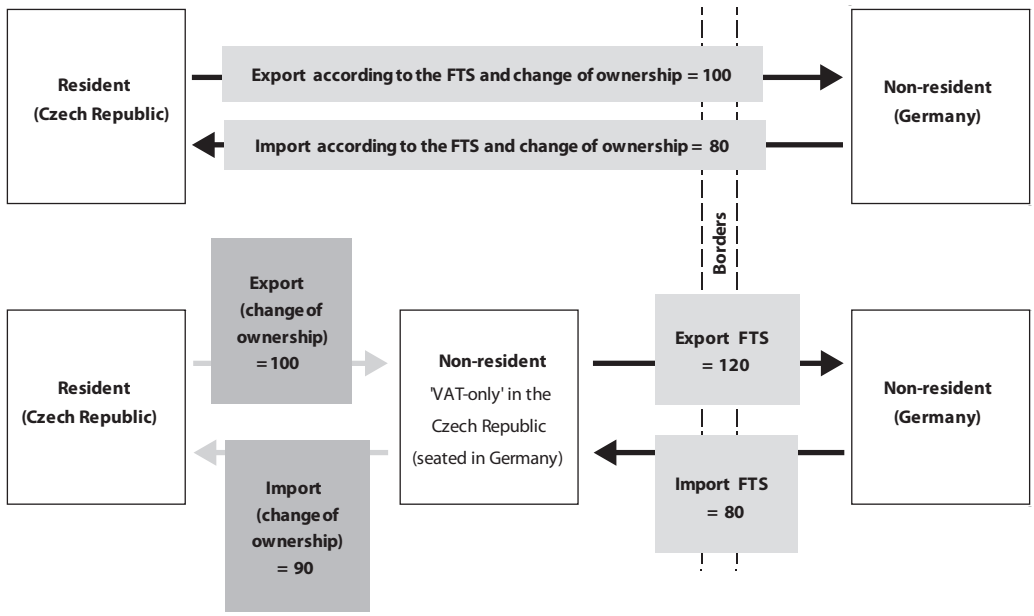
Figure 1: According to the FTS domestic economy imported goods for 100 from Hungary and exported it for 150 to Germany. It seems that the balance of exports and imports of the Czech economy shows surplus (50). Moreover, domestic country shows considerable volumes of imports and exports regardless domestic production or domestic final uses. However, according to the change of ownership there is no import and export because the change of ownership between resident and non-resident did not occur. These transactions should not be recorded as imports and exports in BoP and NA. If the same transaction was carried out by residents of the country, it would be a classical re-export and the value of mediation services (50) will be the value added of domestic traders.

A typical example of quasi-transit is so-called "Rotterdam effect"[6] as described e.g. by the Netherlands or UK (see HM Revenue & Customs, 2005). Increasingly, there can be observed quasi-transit operations

[6] 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 (see HM Revenue & Customs, 2005).

also within European Union (as in the example above). This effect was described by Hungary (see UN-ECE, 2010) and independently this problem has been identified also in 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 related to all cases, where the goods are traded via non-residents (even if the commodities imported are further processed and new products are produced).

Figure 2 The impact of trading carried out by non-residents on the trade balance



Source: Author's construction

Figure 2: 'Direct trade' carried out by residents across the borders can be considered as exports and imports in both cross-border and change of ownership principles (for the first example see Figure 2). The balance of trade shows surplus of 20 which is entirely related to residents' activities (Export = 100 minus Import 80).

However, there is a significant volume of trade in goods carried out 'indirectly' by non-residents across the borders (second example in Figure 2). Unlike the example at Figure 1 the goods traded by non-residents become either final use (in case of imports) or come from domestic production (in case of exports). Non-resident reports to the FTS export of 120 and import of 80 even though the change in ownership between resident and non-resident occurred within the borders for significantly different price (purchase by non-resident for 100 and sale by non-resident for 90).

The balance of trade of the Czech Republic according to the FTS shows alleged surplus of 60 (40 plus the surplus from the direct trade by residents for 20). However, according to the change of ownership principle the balance of trade of the Czech economy amount to 30 (10 for purchase minus sale by non-resident on internal market plus 20 for direct trade by residents).

The surplus according to the FTS includes also the value added generated by non-residents and thus for the purpose of BoP and NA it should be excluded from the value added of the Czech economy. Simultaneously, the value added achieved by residents trading with non-residents on the internal market should be included.

The impact of both examples (shown in Figures 2 and 3) on the trade balance in the FTS and the volume of trade in the FTS depends on its share of the transactions carried out and reported by non-residents in the domestic economy.

3 IMPACT OF NON-RESIDENTS' TRADING ON STATISTICS

Generally, there is serious effect of the trading via non-residents on the consistency between supply and use side in the economy. For some commodity groups exports exceed the production or the imports exceed domestic uses. In this case commodity balancing process within supply- and use-tables is very difficult as the data sources are considerably inconsistent (see Eurostat, 2002).

Another problem arises regarding 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). As for the trade carried out 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 the goods and reports to statisticians an entirely different value (usually higher) at which the goods are sold on Western markets. At first sight it seems that the 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.

After the EU accession in 2004 the system of foreign trade statistics based on customs declarations was replaced for the transactions within the EU by the 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 adjust data according to national specifics (called 'national concept'). One of them is "quasi-transit" trade, which was generally considered to be the problem related to the trade between non-EU and EU countries at the external EU border (above mentioned "Rotterdam effect").

The first time when the problems with inconsistency of macroeconomic aggregates in the Czech economy appeared was during the balancing process of commodity flows for year 2007, carried out in 2009. Export of certain commodities many times exceeded their domestic production (see Table 3). This can be described by the following model example (names of the companies and data are fictional):

The company of "Global Toys", registered in the 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 due to this transaction had to registered for VAT in the Czech Republic. Simultaneously, this parent company imports toys from Poland (at the value of CZK 7 million), which are only packed in the CR and then forwarded to the markets in the EU. The overall sales value of the toys exported from the Czech Republic accounts for CZK 16 million.

Company "Global Toys", VAT-only in the CR, reports imports of toys at the value of CZK 7 million to Intrastat. At the same time, it declares "dispatch of goods to other Member State" (export) at the amount of CZK 16 million in Intrastat. In its VAT tax form the company states "received taxable transactions of goods in the CR" at the amount of CZK 5 million (purchased from the company of "Czech Toys"). Therefore value added generated by this non-resident is equal to CZK 16 – 7 – 5 = 4 million (export minus import minus purchase in the CR). The balance of trade according to the cross-border FTS shows the surplus of CZK 9 million. However, 4 million of the surplus belongs to non-resident.

Table 3 Difference between exports and output in 2007 in the Czech Republic (CZK mil.)

CPA		Export FTS[1)]	Output[2)]	Import for inward processing	Difference (Output[2)] — Export[1)])	Ration Export[1)]— Output[2)]
Total		**2 479 234**	**7 446 771**	**117 244**	**–159 695**	
	Including					
182	Other wearing	21 764	18 480	1 361	**–3 284**	**1.18**
193	Footwear	7 484	3 473	348	**–4 011**	**2.15**
245	Glycerol; soap	21 175	21 163	451	**–12**	**1.00**
246	Other chemical prod.	16 615	13 216	323	**–3 399**	**1.26**
274	Basic metals	29 708	23 332	2 858	**–6 376**	**1.27**
300	Office machinery	188 461	128 107	714	**–60 354**	**1.47**
321	Electronic valves	36 205	31 838	3 376	**–4 367**	**1.14**
322	TV and ratio transmitters	41 605	20 647	59	**–20 958**	**2.02**
323	TV and ratio receivers	91 395	76 620	511	**–14 775**	**1.19**
365	Games and toys	22 749	9 876	1 579	**–12 873**	**2.30**

[1)] Export without Import of goods for Inward processing, [2)] Output before compilation of supply–use tables.
Source: Czech Statistical Office

This problem began to be evident also on the quarterly national accounts and balance of payments data in 2009, because of the sharp increase in the year on year surplus in trade balance, without corresponding development in domestic value added and foreign claims. This imbalance, and a solution suggested by the Czech Statistical Office was reported along with the publication of GDP data in March 2010.

In the next twelve months in close cooperation between the Czech Statistical Office and the Czech National Bank a new approach to the foreign trade transactions has been developed called 'national concept'. It follows the change of ownership principle and allows more realistic look at the transactions with the rest of the world and the structure of the Czech economy (see Rojíček, Košťáková, Sixta, 2010 and 2011).

4 POSSIBLE SOLUTIONS OF ADJUSTMENT OF FTS

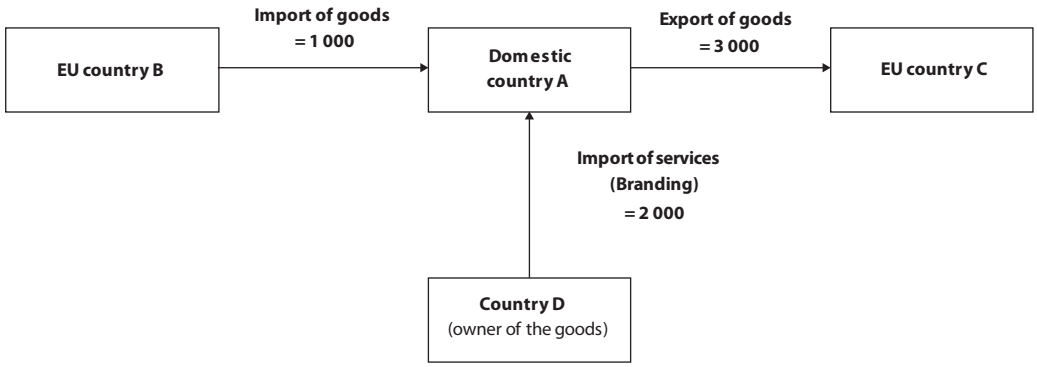
There are two possible ways to solve capturing the inconsistency between the FTS and change of ownership principle within current statistical system: either to impute the difference to the import of services (item called 'branding',[7] see Figure 3) or to adjust data on trade in goods to follow the change of ownership principle. The former solution was applied temporarily to the Czech National Accounts and Balance of Payment at the beginning, when the range of inconsistency had not been thoroughly analyzed.

The EU prefers the above-mentioned approach (branding), which ensures the consistency with the community concept of the FTS (FTS data remain unchanged), and the value adjustment is made in the balance of services. However, when the difference is caused not only by selling of imported goods in an internal market or exporting of purchased goods by non-residents but also by goods merely imported-exported by non-residents through the territory of a member state without a change of ownership to resident methodically more correct and for analytical purposes preferable would be the adjustment of the FTS data. Moreover, when the difference shows a significant impact on the balance of trade and

[7] 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).

the value of goods traded as it has in the Czech Republic, the imputation of the difference to the services would deform the whole picture of foreign trade in services. For all these reasons the adjustment of data on trade in goods is preferred by the CZSO and CNB.[8]

Figure 3 Branding and quasi-transit trade



Source: Author's construction

Figure 3: As for the country D where non-resident is seated, the transaction is captured as 'merchanting' (as an export of trading services).

In March 2011, the CZSO published data on foreign trade for the years 2009 and 2010 according to the national concept for the first time. Data on exports and imports according to the FTS is from now on labelled as "cross-border statistics". Since that data on foreign trade in national concept became an integrated part of monthly issued press releases alongside the cross-border statistics data. During the year 2011 foreign trade in national concept replaced formerly used FTS data in the National Accounts and the Balance of Payment in the Czech Republic.

As there was a parallel revision of the trade in services within the revision on National Accounts in the year 2011 (revision of years 1995–2009) more than half of the impact on the current account balance was offset. The change in trade in services consisted mainly of increasing the so-called direct trade costs associated with import and export of goods and removing the "branding" item from the balance of services (as the phenomenon was now treated in goods, not service balance). The total negative impact on the BoP current account balance was about 1.7% of GDP.

So far the national concept can provide data on export, import and the balance of trade yet with some breakdown limitations. This results from the nature of the methodology, because data are first calculated at the macro level and the structure is modelled using cross-border statistics. The largest relative differences between national concept and cross-borders statistics data occur in computers, electrical equipment and other machines, which is also the most involved in global production chains.

5 NATIONAL CONCEPT OF THE FOREIGN TRADE IN THE CZECH REPUBLIC — METHODOLOGY

The adjustment of FTS-exports and imports according to the national concept is divided into two stages. At the Stage 1 — balance of foreign trade in national concept is estimated (regarding the data of non-

[8] This approach is preferred also by Belgium, where FTS data for non-residents are adjusted using information from VAT files (see NBB, 2009–2011).

residents in FTS and using VAT declarations). At Stage 2, assuming that the balance from Stage 1 remains unchanged, the total value of exports and imports is estimated, partly according to the adjusted exports and imports from Stage 1, partly (in commodities CPA 26, CPA 27, CPA 28) on the basis of the production statistics.

Stage 1

The aim of this stage is to estimate the balance of trade in national concept, in other words, to adjust the balance of trade of the FTS in relation to the change of ownership concept. The commodity balances are also estimated.

There are adjusted only exports and imports declared by non-residents at Stage 1. Transactions reported by residents are not a subject matter of the adjustment. Non-residents in the FTS — Intrastat (trade within EU) are distinguished by their specific Tax ID number (beginning "CZ68" with nine digits). To be identified as a non-resident unit they have to meet also other necessary requirements: 1) do not have Czech ID number of economic unit, 2) do not have any affiliate in the Czech Republic and 3) do not pay income tax here. Non-residents in the FTS — Extrastat (trade with countries outside the EU) are distinguished by their specific EORI[9] number which is unique for each entity within the EU, however, can take a various shape.

In general, the total value of exports (and imports) of non-residents is replaced by the total value of purchases (or sales) of non-residents in the Czech Republic according to their VAT declarations, which are identified as well as in FTS — Intrastat (specific VAT number).

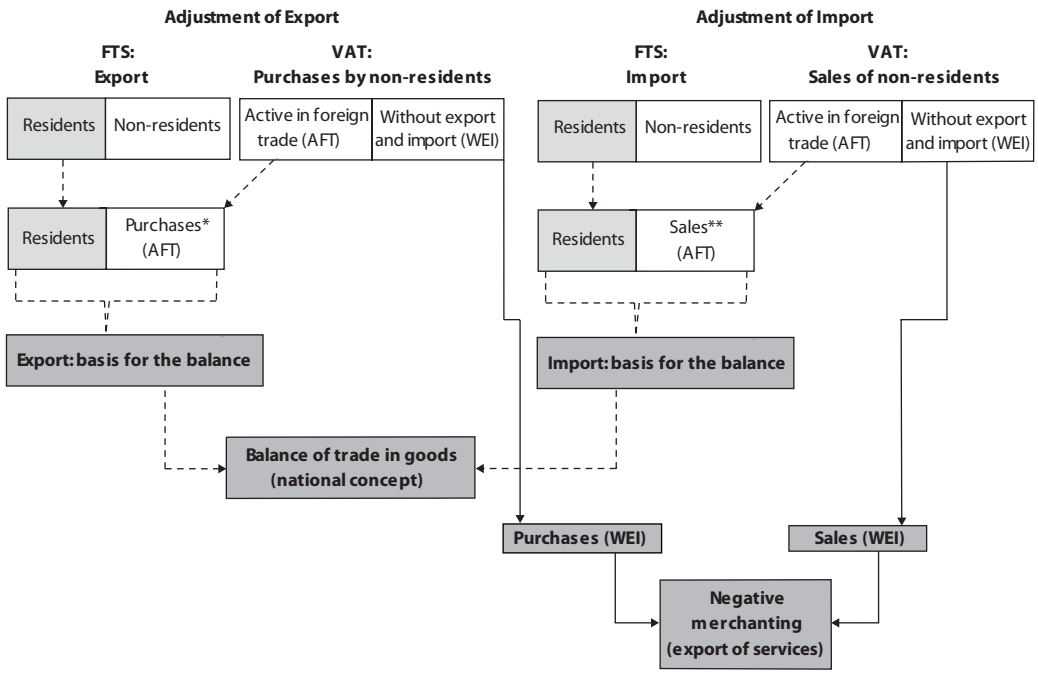
Unfortunately, as each unit identifies itself differently in each data source (Intrastat and VAT-declarations vs. Extrastat) so far it has not been possible to interlink each non-resident individually in all data sources. As a consequence, the computation of foreign trade in national concept is computed in total (for all non-residents together) instead of approaching each non-resident individually (see Figure 5).

However, there is one exception of inclusion of all non-residents' transactions from the VAT declarations to the adjustment of trade in goods. The sales and purchases of those non-residents that do not carry out any (or almost any) export and import according to their VAT declarations (see Figure 5, Purchases and Sales — WEI) are taken aside and the difference between their sales and their purchases in the Czech Republic is considered as import of intermediation services and is therefore added negatively to export of services (as it is similar to the concept of merchanting).

As for the computation of import in national concept, the value of goods flowing into the Czech Republic across the borders declared by non-residents (imports according to the FTS) is substituted by the value of sales in the Czech Republic by non-residents that take part in foreign trade (these sales are imports according to the national concept as a change of ownership from non-resident to resident occurs). The value of domestic sales is based on realized taxable supplies by non-residents with a place of supply in the Czech Republic. These sales in VAT declarations, however, could include not only goods but also some services provided by non-residents. However, it is impossible to identify these services directly in VAT declarations so they are estimated and excluded subsequently. The estimation of the services provided by non-residents in the Czech Republic that can be declared in their VAT statements is based on the statistical survey of import and export of services held by the Czech Statistical Office (ZO 1-04). These services are related mainly to real estate in the Czech Republic or to cultural, sporting or educational gatherings. The impact of the adjustment for the services is about 1% of the total value of sales.

[9] EORI = Economic Operator Registration and Identification.

Figure 5 Estimation of the trade balance in national concept (Stage 1)



* Purchases including inw ard proccessing services ordered by non-residents registered for VAT.

** Sales after exclusion of services carried out by non-residents registered for VAT.

Source: Author's construction

As for the computation of export in national concept, the value of goods flowing out of the Czech Republic across the borders declared by non-residents (exports according to the FTS) is substituted by the value of purchases of non-residents in the Czech Republic that take part in foreign trade (the purchases are exports according to the national concept as a change of ownership from resident to non-resident occurs). The value of domestic purchases is based on received taxable supplies by non-residents with a place of supply in the Czech Republic. The value of domestic purchases of non-residents does not include the goods sent for inward processing by VAT registered non-residents in the Czech Republic (and ordered services). In order to follow the methodology that requires inclusion of these transactions into the foreign trade aggregates (ESA95), the difference between goods exported after inward processing (declared by non-residents in the FTS) and goods imported for inward processing in the Czech Republic (declared by non-residents in the FTS) is added to the value of purchases of non-residents. The impact of the adjustment of the goods sent for inward processing by VAT-registered non-residents is less than 0.3% of the total value of purchases.

The commodity breakdown of adjusted imports of non-residents that are the basis for the estimation of commodity balances is identical to the commodity breakdown of imports of non-residents according to the FTS. The commodity breakdown of adjusted exports of non-residents that are the basis for the estimation of commodity balances is slightly different from the breakdown according to the FTS due to the commodity balance of the inward processing ordered by VAT-registered non-residents.

The adjusted exports and imports of non-residents (in fact, exports and imports of residents carried out across the borders by non-residents) are added to the exports and imports of residents according to

the FTS and these aggregates are the basis for the estimation of the total balance and commodity balances of foreign trade in national concept.

Stage 2

Regarding the long-term observed inconsistency between the value of exports and the output of certain commodities due to quasi-transit the estimation of the total value of transactions between residents and non-residents according to the national concept in the Czech Republic is as important as the estimation of the balance and must be made in relation to the output performance of the domestic economy. As the inconsistency was observed at the commodity level it is necessary to make the estimation also at the commodity level, especially for those commodities that are most influenced by non-resident transactions across the borders (computers, electronic devices, its parts, other machines etc). The correspondence between the output and estimated export is provided by the balancing process of supply- and use-tables.

For the commodity groups CPA 26, CPA 27 and CPA 28 the estimation is based on the residents' production and the share of direct and indirect export in the domestic production. Additionally, also the import for inward processing in these commodities must be added to such estimated export in order to obtain the total value of exports of the commodities (as it is also imputed to the output). The total value of imports in these commodity groups are subsequently computed according to the total value of exports provided unchanged balances of these commodities (obtained at Stage 1). In other words, the adjustment is done on both sides equally so the total balance of trade and commodity balances remain unchanged (from Stage 1).

This calculation is processed at the 2-digit CPA level because data at more detailed CPA levels shows significant inconsistency between classification used in the FTS (KN8), production and industry statistics (PRODCOM).

The difference between the value of exports according to the national concept (based on output performance) and the value of exports according to the movements across the borders (FTS) in these commodity groups have increased significantly in recent years (see Table 4). This indicates the growing separation of transactions according to the FTS and the real output performance of the domestic economy.

Table 4 Ratio between the value of exports in national concept and exports in FTS in commodity groups CPA26, CPA27, CPA28

	2004	2005	2006	2007	2008	2009	2010
CPA26	0.86	0.84	0.73	0.65	0.60	0.66	0.59
CPA27	0.80	0.78	0.78	0.72	0.70	0.76	0.70
CPA28	0.72	0.71	0.71	0.64	0.64	0.68	0.63

Source: Czech Statistical Office

The ratio shown in Table 4 is used for the estimation of exports in the year following the balancing of supply and use tables. That means that the ratio computed during the balancing process of preliminary supply and use tables for year T is used for monthly computed exports in year T+1 and T+2 until the balancing of preliminary supply and use for year T+1 occurs.

The total value of export and import of commodities other than CPA 26–28 are estimated at Stage 1 (adjusted value by sales and purchases in internal market) as these commodity groups do not indicates significant imbalance caused by quasi-transit through the storage and logistics centres in the Czech Republic. The total value of exports (imports) in national concept is given as a sum of all commodity exports (imports).

6 IMPACT OF ADJUSTMENT OF FTS TO NATIONAL CONCEPT IN THE CZECH REPUBLIC

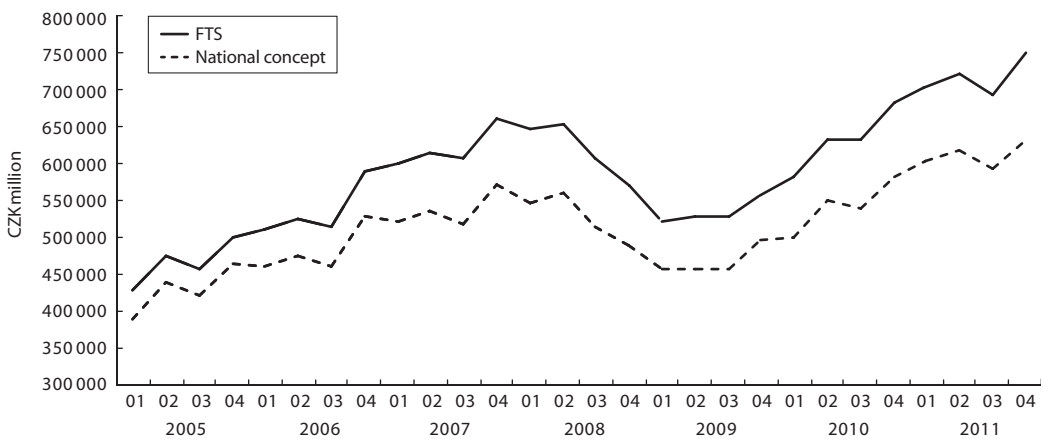
The difference between the two methodologies has been increasing since 2005 when data is available. In the year 2010 the difference amounted to 14.1% of the exports of goods and 9.0% on the import side (see Figures 6 and 7). The impact on the balance was CZK –142 billion resulting in balance of CZK –21 billion according to the national concept (instead of surplus CZK 121 billion in the FTS) — see Figure 7.

In 2011, the relative adjustment in exports and imports was alike, however, the adjustment of the balance increased to CZK –174 billion which was more than 90% of the surplus according to the FTS (CZK 192 billion).

Figure 6 Export in national concept and FTS in the Czech Republic (FOB)

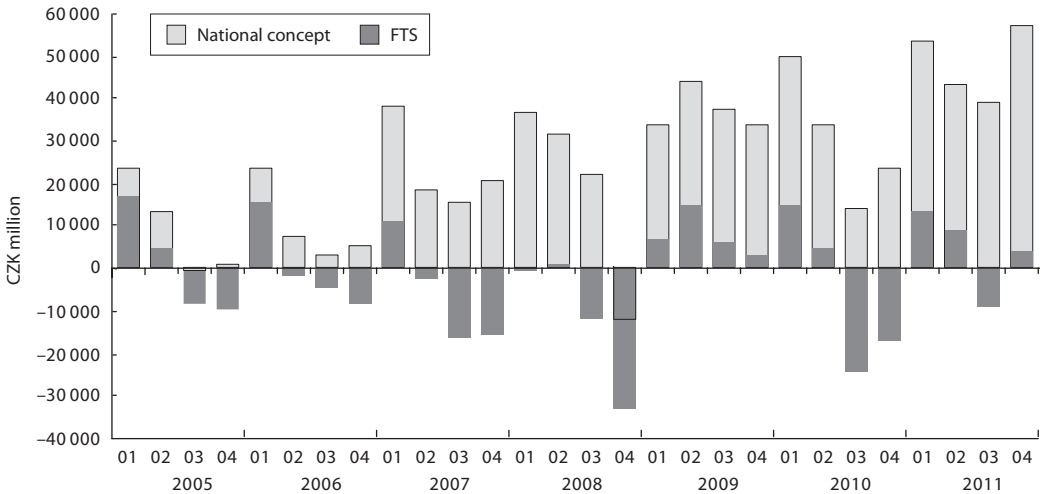
Source: Czech Statistical Office

Figure 7 Import in national concept and FTS in the Czech Republic (CIF)



Source: Czech Statistical Office

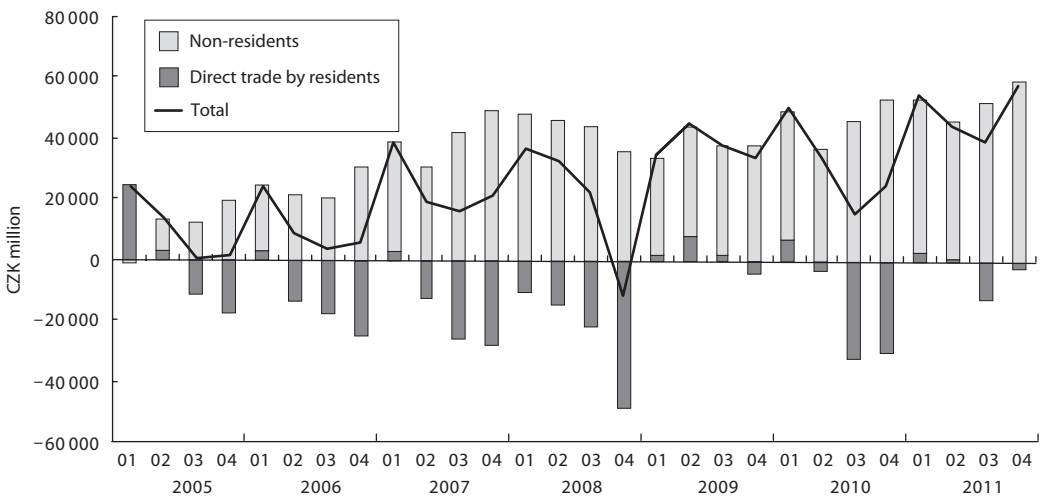
Figure 8 Balance of trade in national concept and FTS in the Czech Republic (CIF / FOB)



Source: Czech Statistical Office

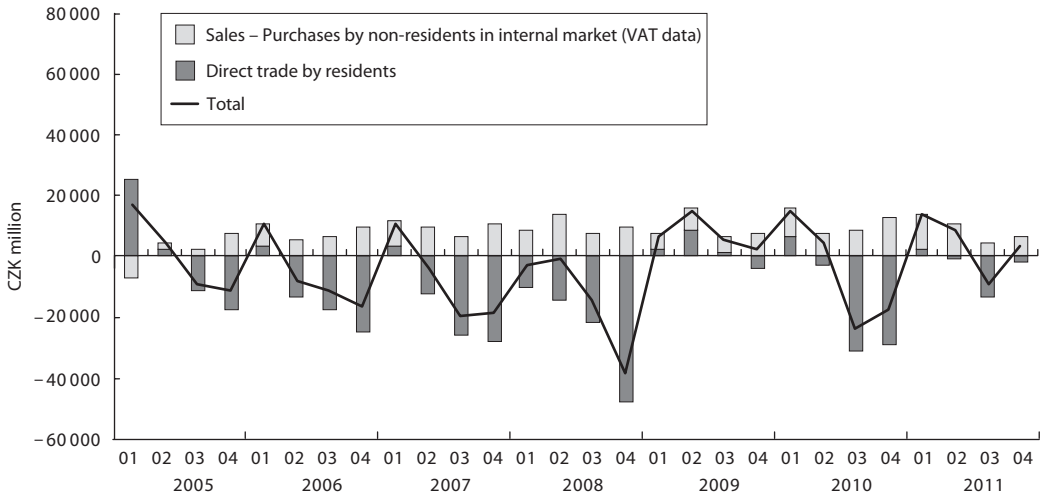
Although the contribution of non-residents to the total exports was 23% in 2011 (19% on imports), in fact they are creating the whole trade surplus (see Figures 8 and 9). On the other hand, resident's trading resulted in deficit (with exception of the year 2009, when the oil prices sharply decreased).

Figure 9 Balance of trade in FTS: non-residents and direct trade by residents (FOB / CIF)



Source: Czech Statistical Office

Figure 10 Balance of trade in national concept: non-residents' transactions in internal trade and direct trade by residents (FOB / CIF)



Source: Czech Statistical Office

Table A3 (see the Annex) illustrates that almost two thirds of the difference of trade balance between cross-border statistics and national concept are in commodity groups CPA 26–28. These are the commodities that represent most of the trade across the borders by non-residents in the Czech Republic and are influenced in the FTS greatly by quasi-transit transactions related to the storage facilities in the country. The differences in all other commodity groups are related only to the transactions in the internal market. Commodities that are not traded by non-residents across the borders are not adjusted (e.g. coal, crude petroleum and natural gas).

CONCLUSION

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 an important factor why a lot of this "quasi-transit" trade is being operated. The overvaluation of the trade balance is concentrated in several commodity groups, among them especially computers and electric equipment are significant. The revision of the foreign trade data, whose aim was to follow more consistently the ownership approach, significantly changed the picture of the Czech economy, specifically the role of external demand to the economic growth. It had also an impact on the structure of the input-output tables, especially the division of the domestic and foreign part of the supply and use matrices.

The national concept of foreign 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 the 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 has to be seriously discussed. Supply and use tables serve as an important tool in this process. The next efforts will focus on the improvements of linkage between Custom declarations and Intrastat and, moreover, the knowledge of connection between resident enterprises and VAT-registered non-residents. 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).

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ANNEX

Table A1 Commodity structure of export of goods in FTS (residents and non-residents) and national concept in 2010 (CZK million)

Code	Commodity group	Cross-border statistics					National concept	
		Total	Including		Commodity stucture (%)		Adjust-ment	Total
			Residents	Non-residents	Residents	Non-residents		
Total		**2 532 797**	**1 980 347**	**552 449**	**100**	**100**	**–357 954**	**2 174 842**
	Including							
01	Products of agriculture	**23 382**	22 775	607	1.2	0.1	–48	**23 335**
05	Coal and lignite	**20 889**	20 889	0	1.1	0.0	0	**20 889**
06	Crude petroleum, natural gas	**12 929**	12 929	0	0.7	0.0	0	**12 929**
10	Food products	**62 278**	59 096	3 182	3.0	0.6	–256	**62 024**
12	Tobacco products	**7 762**	3 389	4 373	0.2	0.8	–321	**7 441**
13	Textiles	**42 655**	36 456	6 199	1.8	1.1	–468	**42 187**
14	Wearing apparel	**24 397**	13 629	10 768	0.7	1.9	–934	**23 463**
15	Leather and related products	**12 991**	7 110	5 881	0.4	1.1	–524	**12 467**
17	Paper and paper products	**39 465**	33 213	6 252	1.7	1.1	–727	**38 739**
19	Coke and refined petroleum	**30 107**	29 909	198	1.5	0.0	–16	**30 090**
20	Chemicals, chemical products	**117 177**	96 213	20 964	4.9	3.8	–2 120	**115 059**
21	Basic pharmaceutical products	**32 889**	25 798	7 091	1.3	1.3	–550	**32 340**
22	Rubber and plastics products	**118 430**	107 502	10 928	5.4	2.0	–769	**117 661**
23	Other non-metallic mineral pr.	**54 401**	49 779	4 622	2.5	0.8	–339	**54 060**
24	Basic metals	**113 876**	108 809	5 067	5.5	0.9	–458	**113 419**
25	Fabricated metal products	**139 355**	130 148	9 207	6.6	1.7	–1 754	**137 603**
26	Computer, electronic, optical pr.	**427 915**	165 667	262 248	8.4	47.5	–173 437	**254 478**
27	Electrical equipment	**215 262**	165 591	49 671	8.4	9.0	–65 505	**149 757**
28	Machinery and equipment n.e.c.	**281 622**	223 666	57 956	11.3	10.5	–103 237	**178 385**
29	Motor vehicles, trailers	**463 767**	430 020	33 747	21.7	6.1	–2 487	**461 281**
30	Other transport equipment	**31 359**	29 876	1 483	1.5	0.3	–204	**31 155**
32	Other manufactured goods	**67 030**	35 461	31 569	1.8	5.7	–2 766	**64 263**
35	Electricity, gas, steam, air cond.	**27 756**	27 756	0	1.4	0.0	0	**27 756**
58	Publishing services	**33 610**	18 533	15 077	0.9	2.7	–632	**32 978**

Note: Figures can differ from the published data due to different rounding.
Source: Czech Statistical Office

Table A2 Commodity structure of import of goods in FTS (residents and non-residents) and national concept in 2010 (CZK million)

Code	Commodity group	Cross-border statistics					National concept	
		Total	Including		Commodity stucture (%)		Adjust-ment	Total
			Residents	Non-residents	Residents	Non-residents		
Total		**2 411 556**	**2 038 334**	**373 223**	**100**	**100**	**–216 149**	**2 195 421**
	Including							
01	Products of agriculture	**40 795**	37 152	3 643	1.8	1.0	956	**41 750**
05	Coal and lignite	**5 761**	5 761	0	0.3	0.0	0	**5 761**
06	Crude petroleum, natural gas	**161 835**	161 835	0	7.9	0.0	0	**161 835**
10	Food products	**93 018**	88 776	4 242	4.4	1.1	1 106	**94 123**
12	Tobacco products	**3 501**	3 501	0	0.2	0.0	0	**3 501**
13	Textiles	**36 685**	34 776	1 909	1.7	0.5	501	**37 188**
14	Wearing apparel	**34 878**	28 176	6 702	1.4	1.8	1 709	**36 587**
15	Leather and related products	**21 555**	17 390	4 165	0.9	1.1	1 107	**22 661**
17	Paper and paper products	**45 180**	38 667	6 513	1.9	1.7	1 709	**46 889**
19	Coke and refined petroleum	**41 135**	40 957	178	2.0	0.0	44	**41 180**
20	Chemicals, chemical products	**167 688**	149 487	18 201	7.3	4.9	4 717	**172 405**
21	Basic pharmaceutical products	**73 462**	67 132	6 330	3.3	1.7	1 692	**75 155**
22	Rubber and plastics products	**112 203**	97 671	14 532	4.8	3.9	3 810	**116 013**
23	Other non-metallic mineral pr.	**33 528**	31 848	1 680	1.6	0.5	443	**33 971**
24	Basic metals	**181 568**	164 981	16 587	8.1	4.4	4 431	**186 000**
25	Fabricated metal products	**99 643**	93 296	6 347	4.6	1.7	1 568	**101 210**
26	Computer, electronic, optical pr.	**473 776**	274 319	199 457	13.5	53.4	–101 760	**372 016**
27	Electrical equipment	**166 167**	140 252	25 915	6.9	6.9	–53 985	**112 182**
28	Machinery and equipment n.e.c.	**196 897**	171 880	25 017	8.4	6.7	–92 613	**104 284**
29	Motor vehicles, trailers	**227 727**	214 748	12 979	10.5	3.5	3 397	**231 123**
30	Other transport equipment	**24 015**	22 074	1 941	1.1	0.5	599	**24 613**
32	Other manufactured goods	**50 486**	42 299	8 187	2.1	2.2	2 086	**52 572**
35	Electricity, gas, steam, air cond.	**20 843**	20 843	0	1.0	0.0	0	**20 842**
58	Publishing services	**17 711**	14 276	3 435	0.7	0.9	975	**18 687**

Note: Figures can differ from the published data due to different rounding.
Source: Czech Statistical Office

Table A3 Commodity structure of balance of trade in FTS (residents and non-residents) and national concept in 2010 (CZK million)

Code	Commodity group	Cross-border statistics			National concept	
		Total	Including		Adjustment	Total
			Residents	Non-residents		
Total		**121 239**	**–57 987**	**179 226**	**–141 818**	**–20 579**
	Including					
01	Products of agriculture	**–17 413**	–14 377	–3 036	–1 002	**–18 415**
05	Coal and lignite	**15 128**	15 128	0	0	**15 128**
06	Crude petroleum, natural gas	**–148 906**	–148 906	0	0	**–148 906**
10	Food products	**–30 740**	–29 680	–1 060	–1 359	**–32 099**
12	Tobacco products	**4 261**	–112	4 373	–321	**3 940**
13	Textiles	**5 970**	1 680	4 290	–971	**4 999**
14	Wearing apparel	**–10 481**	–14 547	4 066	–2 643	**–13 124**
15	Leather and related products	**–8 564**	–10 280	1 716	–1 630	**–10 194**
17	Paper and paper products	**–5 715**	–5 454	–261	–2 435	**–8 150**
19	Coke and refined petroleum	**–11 028**	–11 048	20	–62	**–11 090**
20	Chemicals, chemical products	**–50 511**	–53 274	2 763	–6 835	**–57 346**
21	Basic pharmaceutical products	**–40 573**	–41 334	761	–2 242	**–42 815**
22	Rubber and plastics products	**6 227**	9 831	–3 604	–4 579	**1 648**
23	Other non-metallic mineral pr.	**20 873**	17 931	2 942	–784	**20 089**
24	Basic metals	**–67 692**	–56 172	–11 520	–4 889	**–72 581**
25	Fabricated metal products	**39 712**	36 852	2 860	–3 319	**36 393**
26	Computer, electronic, optical pr.	**–45 861**	–108 652	62 791	–71 677	**–117 538**
27	Electrical equipment	**49 095**	25 339	23 756	–11 520	**37 575**
28	Machinery and equipment n.e.c.	**84 725**	51 786	32 939	–10 624	**74 101**
29	Motor vehicles, trailers	**236 040**	215 272	20 768	–5 882	**230 158**
30	Other transport equipment	**7 344**	7 802	–458	–802	**6 542**
32	Other manufactured goods	**16 544**	–6 838	23 382	–4 853	**11 691**
35	Electricity, gas, steam, air cond.	**6 913**	6 913	0	1	**6 914**
58	Publishing services	**15 899**	4 257	11 642	–1 608	**14 291**

Note: Figures can differ from the published data due to different rounding.
Source: Czech Statistical Office