

## ANALYSIS

16 August 2017

### External Trade Price Indices Development in Q2 2017

Export prices and import prices in Q2 2017, compared to Q1 2017, decreased by 1.7% and by 2.1%, respectively, and terms of trade reached 100.4%. Compared year-on-year (y-o-y), in Q2 2017 export prices increased by 1.0%, import prices grew by 2.9%, and terms of trade reached the value of 98.2%.

#### Quarter-on-quarter (q-o-q) comparison

**Export prices** in Q2 2017, compared to Q1 2017, decreased by 1.7% (in Q1 2017 they grew by 2.1%). Price decreases were observed in 'mineral fuels, lubricants and related materials' by 13.1%, 'machinery and transport equipment' by 1.6%, 'miscellaneous manufactured articles' by 1.4%, and in 'chemicals and related products' by 1.3%. A price increase was recorded solely in 'beverages and tobacco' by 0.5%.

**Import prices** in Q2 2017, compared to Q1 2017, decreased by 2.1% (in Q1 2017 they increased by 2.4%). The deepest price decreases were recorded for 'mineral fuels, lubricants and related materials' by 9.2%, 'machinery and transport equipment' by 2.4%, and for 'miscellaneous manufactured articles' by 1.9%. A price increase was recorded in 'crude materials, inedible, except fuels' by 4.1%.

The **terms of trade** figures in Q2 2017, compared to Q1 2017, reached the value of 100.4% (in Q1 2017 they stayed at 99.7%). Among the more important groups of goods higher positive values of terms of trade were recorded in 'machinery and transport equipment' (100.8%), 'food and live animals' (100.6%), and 'miscellaneous manufactured articles' (100.5%). Negative values of terms of trade were recorded in 'crude materials, inedible, except fuels' (95.5%), 'mineral fuels, lubricants and related materials' (95.7%), and in 'chemicals and related products' (99.2%).

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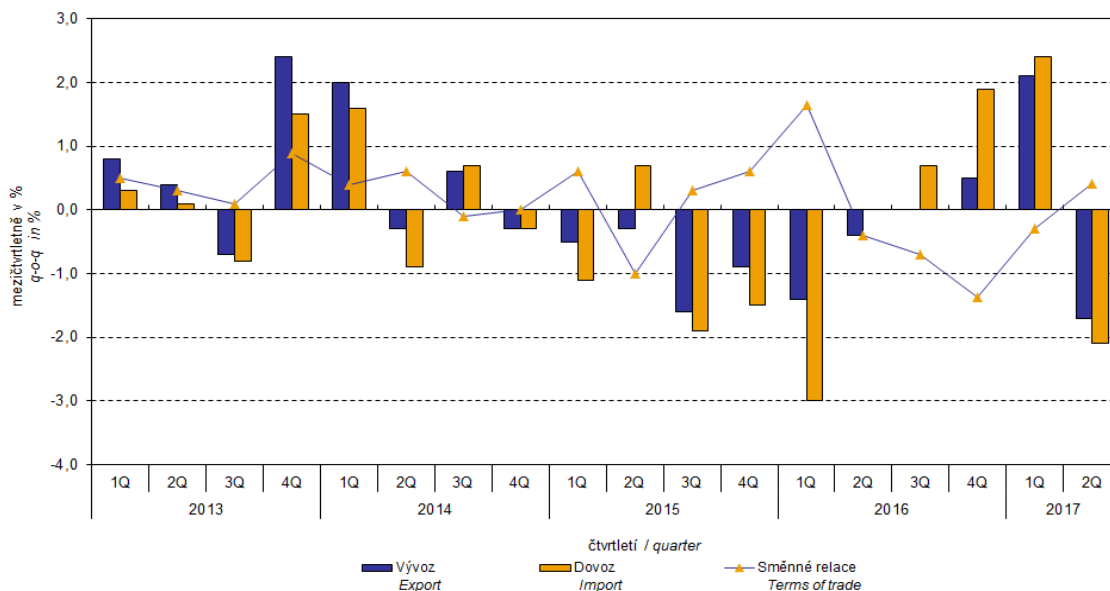
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## ANALYSIS

Graf č. 1  
Chart No. 1

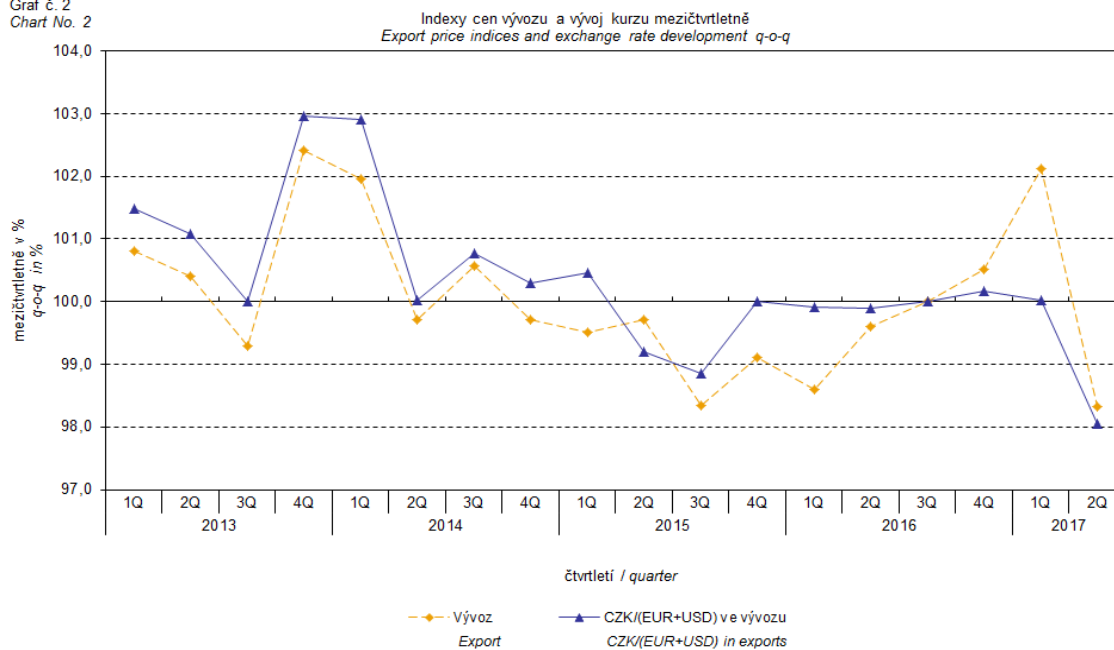
Vývoj cen v zahraničním obchodě mezičtvrtletně  
Price trend in external trade q-o-q



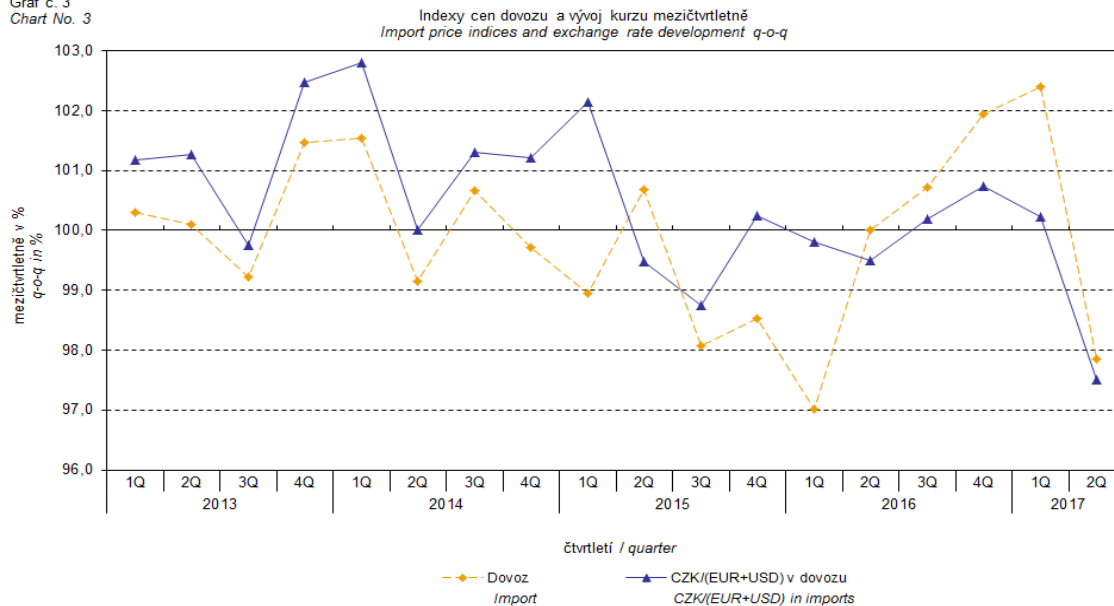
The external trade price development was also significantly affected by the CZK exchange rate to the major foreign currencies. The q-o-q exchange rate index includes two most important currencies from the Czech Republic's external trade point of view, i.e. EUR and USD. Q-o-q indices of the CZK exchange rate to these currencies were weighted by the weight, which pertains to those foreign currencies in the export price index and import price index, respectively.

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Graf č. 2  
Chart No. 2



Graf č. 3  
Chart No. 3



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It can be seen from the aforementioned Graphs Nos. 2 and 3 that in both cases of imports and exports external trade prices have a strong relation to exchange rate impacts. Contracts with foreign entities are, as a rule, signed for a longer period of time and the longer the contract period is, the stronger the relation to exchange rates is.

### Year-on-year (y-o-y) comparison

**Export prices** in **Q2 2017** increased by 1.0% (in Q1 2017 they grew by 2.2%), year-on-year. The growing prices were namely those of 'mineral fuels, lubricants and related materials' by 16.8%, 'crude materials, inedible, except fuels' by 11.1%, and 'food and live animals' by 4.1%. Prices of 'machinery and transport equipment' declined by 1.3%.

**Import prices** in **Q2 2017** grew by 2.9% (in Q1 2017 they increased by 5.1%), year-on-year. Prices grew most for 'crude materials, inedible, except fuels' by 21.8%, 'mineral fuels, lubricants and related materials' by 17.5%, 'manufactured goods classified chiefly by material' by 6.7%, and for 'food and live animals' by 5.9%. Prices that declined were those for 'machinery and transport equipment' by 1.2% and for 'miscellaneous manufactured articles' by 0.5%.

**Terms of trade** in **Q2 2017** increased year-on-year to reach the value of 98.2% (in Q1 2017 they were 97.2%) and thus they stayed in negative values in the third consecutive quarter, see Graph No. 4 below. Rather important negative values of terms of trade were recorded for 'crude materials, inedible, except fuels' (91.2%), 'manufactured goods classified chiefly by material' (96.3%), 'food and live animals' (98.3%), and for 'machinery and transport equipment' (99.9%). A positive value of terms of trade was recorded for 'miscellaneous manufactured articles' (100.9%).

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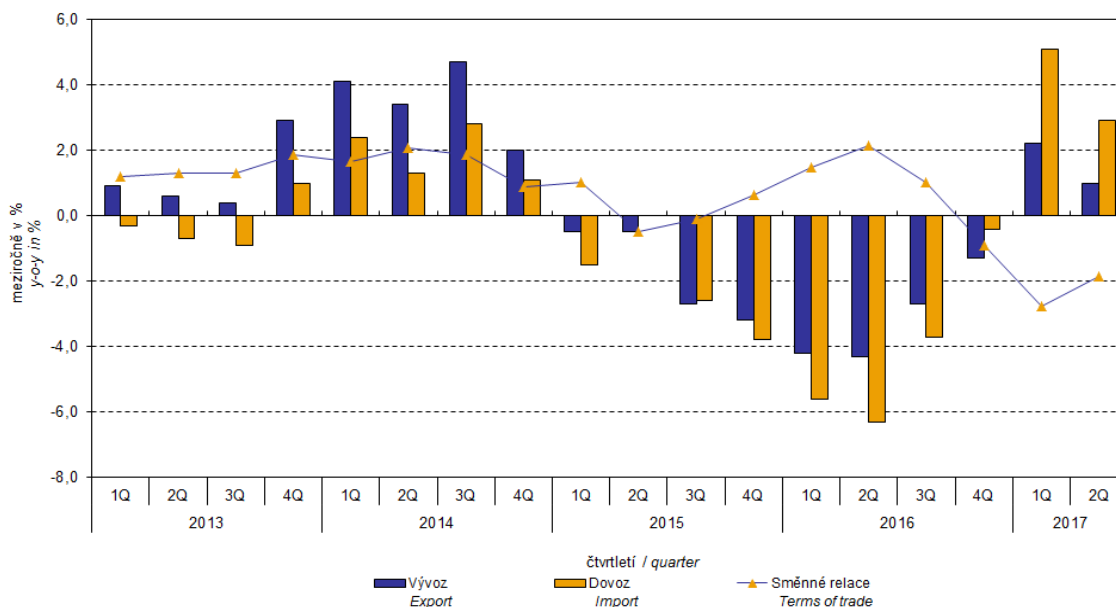
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Graf č. 4  
Chart No. 4

Vývoj cen v zahraničním obchodě meziročně  
Price trend in external trade y-o-y



### External trade price indices adjusted y-o-y for exchange rate influence

The CZSO also carries out calculations of year-on-year external trade price indices adjusted for effects of exchange rate. The method is prices in foreign currencies reported in the current month are **converted** into Czech crowns by the **exchange rate** of the same month of the **last year**. Then they are used for the weighted mean calculation along with prices reported in CZK. The year-on-year adjusted price index for a month is then calculated the way that this exchange rate adjusted base price index of a month is related to the non-adjusted base price index of the same month of the last year. Adjusted quarter-on-quarter price indices are calculated in an analogous way since 2017. **Differences among adjusted and non-adjusted price indices may be substantial.** They can be clearly seen in Graphs Nos. 6 and 7 for Q3 2014, for instance.

The method employed does not enable, for many practical reasons, to carry out 100% exchange rate adjustment because all trade transactions concluded in foreign currencies are not reported in foreign currencies. This share is up to 30%. It follows from the aforementioned, that **at the full exchange rate adjustment differences** in between the price indices published and the exchange rate adjusted price indices would be **even larger**.

The aforementioned exchange rate adjusted indices can be used to form the exchange rate adjusted breakdown of price indices increments. Table 1, last but one page, gives the **published and exchange rate adjusted breakdowns of increments** of export and import price indices, expanded to the most important two-digit code groups of the SITC 7. These breakdowns illustrate, in a good manner, how many percentage points each of the groups “exchange rate contributed” to the index.

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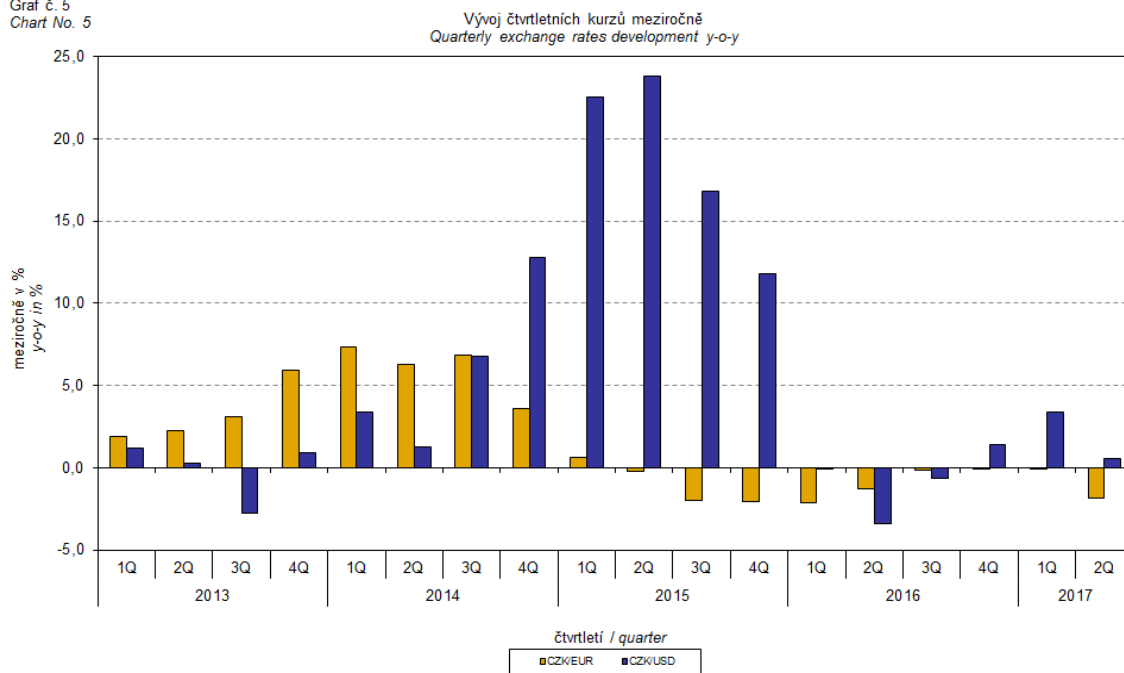
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It holds in general, that the effects of exchange rate decrease the value of price indices in external trade if CZK is strengthening to foreign currencies in total. Conversely, the effects of exchange rate push the price indices up if CZK is weakening to foreign currencies in total.

Graf č. 5  
Chart No. 5



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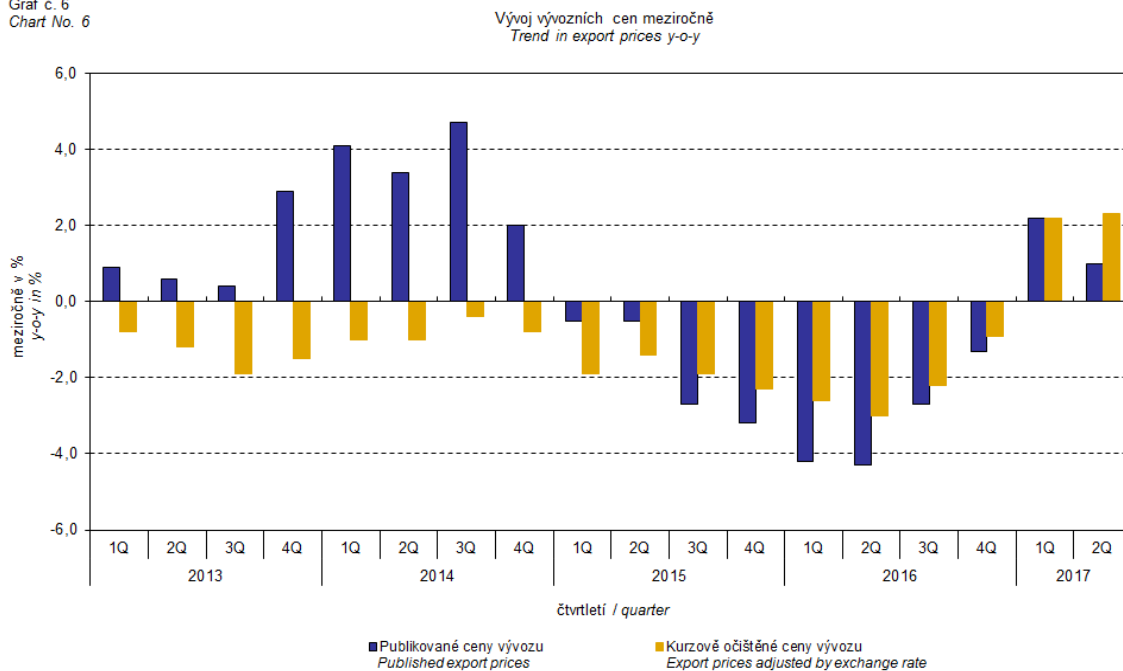
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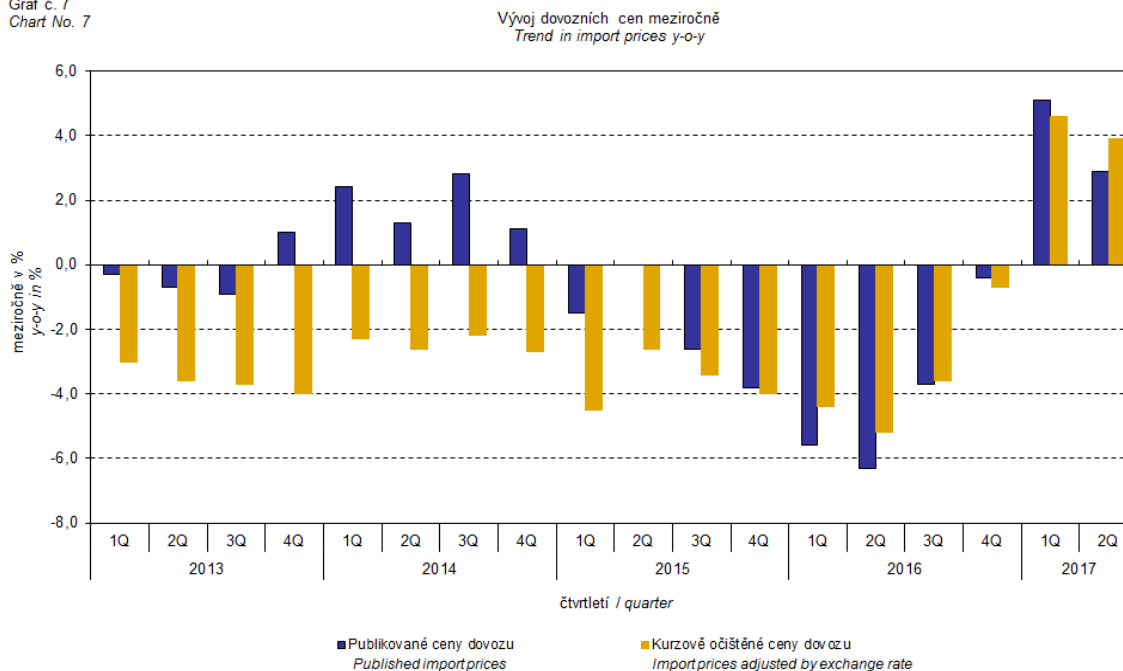
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It is obvious from the following Graphs Nos. 6 and 7, how significant was the exchange rate impact on the value of export and import price indices.

Graf č. 6  
Chart No. 6



Graf č. 7  
Chart No. 7



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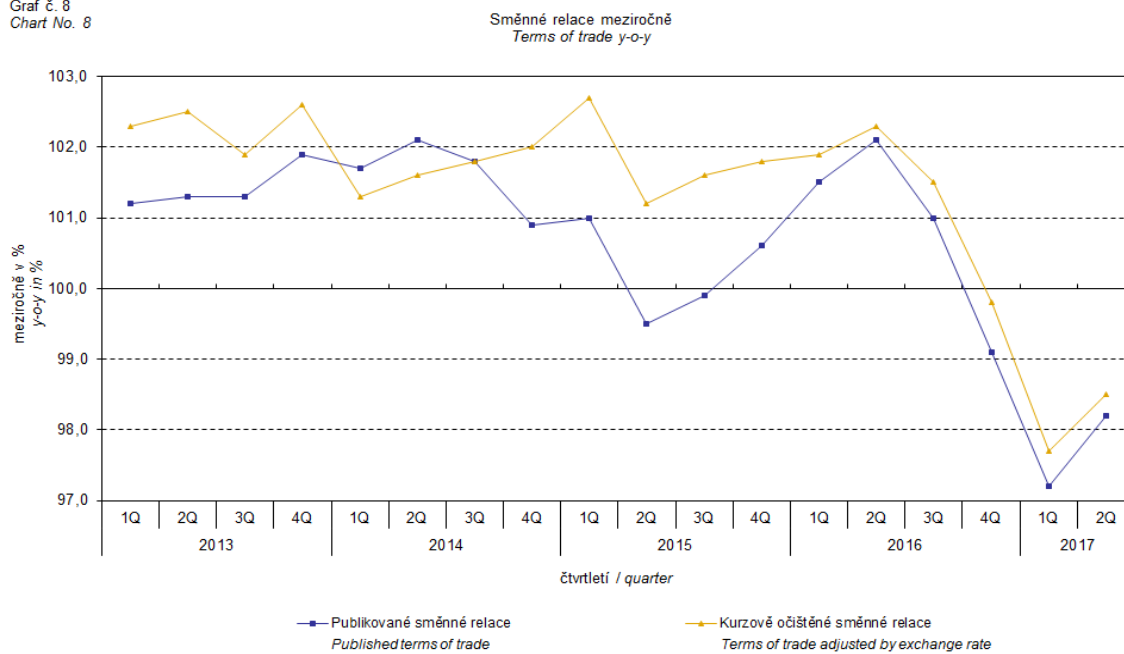
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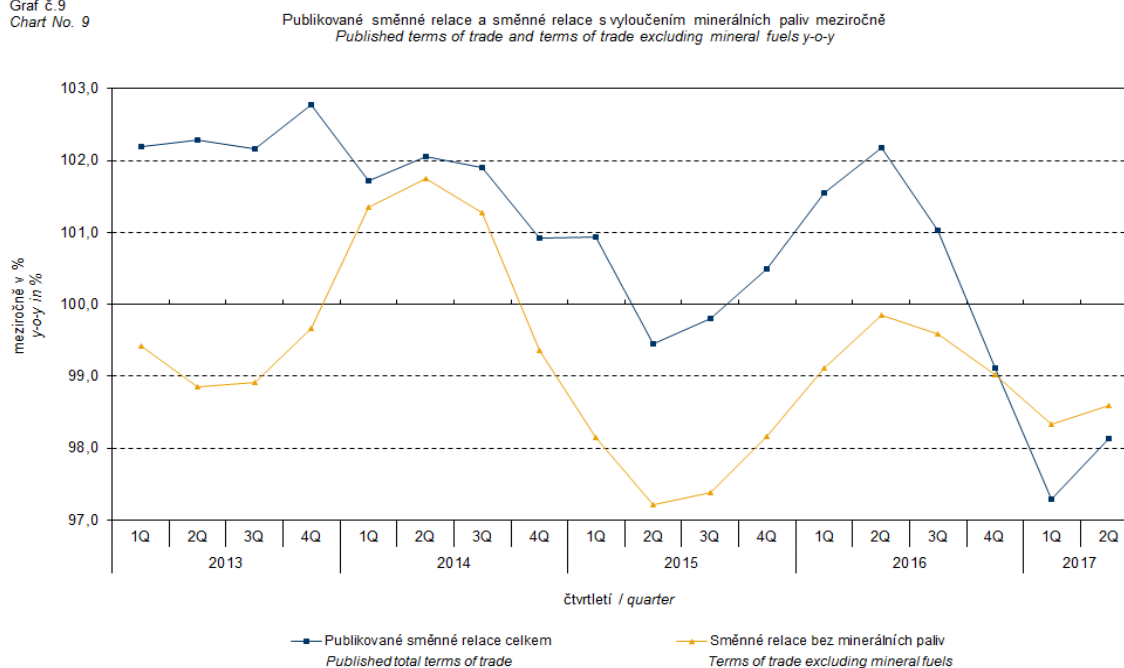
Graph No. 8 shows exchange rate influence on the value of year-on-year terms of trade.

Graf č. 8  
Chart No. 8



Graph No. 9 demonstrates how the value of terms of trade would develop if the observed groups of goods would not include that of 'mineral fuels, lubricants and related materials'.

Graf č. 9  
Chart No. 9



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It can be observed in Graph No. 9 that the effects of 'mineral fuels, lubricants and related materials' were increasing the overall value of y-o-y terms of trade till Q4 2016. In Q1 2017 the situation began to reverse and 'mineral fuels, lubricants and related materials' have had a downward effect on the value of terms of trade. It is, of course, related to the world market price development, especially in crude oil. Import prices, which, compared to export prices, include a higher proportion of crude materials, respond in a more sensitive way to price turbulences and therefore when prices of crude materials go up, terms of trade, as a rule, go down, and, conversely, when prices of crude materials fall, terms of trade grow.

### Closing summary

The exchange rate effects in **Q2 2017** reduced the growth in export and import prices **year-on-year**. Export prices were growing slower than import prices, year-on-year, and therefore terms of trade remained in negative values. If exchange rate unadjusted, terms of trade would remain negative as well. Values free of the exchange rate effects correspond to exchange rate adjusted indices, see Graphs Nos. 6, 7, and 8.

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**Tabulka 1: Rozklad přírůstků publikovaných a kurzově očištěných indexů cen vývozu a dovozu za 2. čtvrtletí 2017**  
**Table 1: Breakdown of export and import price indices - published and exchange rate adjusted for 2Q 2017**

SITC	Název Name	Publikované Published				Očištěné Adjusted			
		Meziroční Year-on-year				Meziroční Year-on-year			
		04/2017	05/2017	06/2017	2Q/2017	04/2017	05/2017	06/2017	2Q/2017
<b>Rozklad přírůstků indexů vývozních cen</b> <i>Breakdown of export price indices</i>									
	<b>Celkem</b> <i>Total</i>	2,3	1,0	-0,4	1,0	2,7	2,3	1,9	2,3
0	<b>Potraviny a živá zvířata</b> <i>Food and live animals</i>	0,1	0,1	0,1	0,1	0,1	0,2	0,2	0,2
1	<b>Nápoje a tabák</b> <i>Beverages and tobacco</i>	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> <i>Crude materials, inedible, except fuels</i>	0,5	0,2	0,3	0,3	0,4	0,3	0,3	0,4
3	<b>Minerální paliva, maziva a příbuzné materiály</b> <i>Mineral fuels, lubricants and related materials</i>	0,7	0,5	0,3	0,5	0,7	0,5	0,3	0,5
4	<b>Živočišné a rostlinné oleje</b> <i>Animal and vegetable oils, fats and waxes</i>	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
5	<b>Chemikálie a příbuzné výrobky</b> <i>Chemicals and related products</i>	0,3	0,2	0,0	0,2	0,3	0,2	0,2	0,2
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> <i>Manufactured goods classified chiefly by material</i>	0,7	0,6	0,2	0,5	0,8	0,8	0,6	0,7
7	<b>Stroje a dopravní prostředky - z toho:</b> <i>Machinery and transport equipment - thereof:</i>	-0,1	-0,7	-1,3	-0,7	0,2	0,1	0,1	0,1
74	Stroje a zařízení všeobecně užívané v průmyslu, j. n. <i>General industrial machinery and equipment, n. e. s.</i>	-0,1	-0,2	-0,2	-0,2	-0,1	0,0	0,1	0,0
77	Elektrická zařízení, přístroje a spotřebiče, j. n. <i>Electrical machinery, apparatus and appliances, n. e. s.</i>	0,2	0,1	0,0	0,1	0,3	0,2	0,1	0,2
78	Silniční vozidla <i>Road vehicles (including air-cushion vehicles)</i>	-0,2	-0,4	-0,7	-0,4	0,0	0,0	-0,1	-0,1
8	<b>Průmyslové spotřební zboží</b> <i>Miscellaneous manufactured articles</i>	0,1	0,1	0,0	0,1	0,2	0,2	0,2	0,2
<b>Rozklad přírůstků indexů dovozních cen</b> <i>Breakdown of import price indices</i>									
	<b>Celkem</b> <i>Total</i>	5,1	3,2	0,5	2,9	4,8	4,1	2,9	3,9
0	<b>Potraviny a živá zvířata</b> <i>Food and live animals</i>	0,3	0,4	0,3	0,3	0,3	0,4	0,4	0,4
1	<b>Nápoje a tabák</b> <i>Beverages and tobacco</i>	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> <i>Crude materials, inedible, except fuels</i>	0,6	0,5	0,3	0,5	0,6	0,5	0,4	0,5
3	<b>Minerální paliva, maziva a příbuzné materiály</b> <i>Mineral fuels, lubricants and related materials</i>	1,9	1,3	0,4	1,2	1,8	1,4	0,6	1,3
4	<b>Živočišné a rostlinné oleje</b> <i>Animal and vegetable oils, fats and waxes</i>	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
5	<b>Chemikálie a příbuzné výrobky</b> <i>Chemicals and related products</i>	0,4	0,3	0,1	0,3	0,4	0,4	0,3	0,4
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> <i>Manufactured goods classified chiefly by material</i>	1,5	1,3	0,9	1,2	1,6	1,5	1,3	1,4
7	<b>Stroje a dopravní prostředky - z toho:</b> <i>Machinery and transport equipment - thereof:</i>	0,2	-0,6	-1,3	-0,6	0,0	-0,1	-0,1	-0,1
74	Stroje a zařízení všeobecně užívané v průmyslu, j. n. <i>General industrial machinery and equipment, n. e. s.</i>	0,0	0,0	-0,1	0,0	0,0	0,1	0,1	0,0
75	Kancelářské stroje a zař. k automat. zpracování dat <i>Office machines and automatic data-processing machines</i>	0,1	-0,1	-0,2	-0,1	0,0	-0,1	-0,1	0,1
77	Elektrická zařízení, přístroje a spotřebiče, j. n. <i>Electrical machinery, apparatus and appliances, n. e. s.</i>	0,0	-0,2	-0,4	-0,2	0,0	-0,1	-0,1	0,0
78	Silniční vozidla <i>Road vehicles (including air-cushion vehicles)</i>	0,1	0,0	0,0	0,0	0,1	0,1	0,2	0,1
8	<b>Průmyslové spotřební zboží</b> <i>Miscellaneous manufactured articles</i>	0,1	0,0	-0,2	0,0	0,1	0,0	0,0	0,0

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Closing table gives published external trade price indices **without adjustment**.

Tabulka 2: Indexy cen vývozu a dovozu v 1. čtvrtletí 2017

Table 2: Export and import price indices in Q1 2017

SITC	Název Name	Stejně období předchozího roku = 100 Corresponding period of previous year = 100				
		4Q/2016	1/2017	2/2017	3/2017	1Q/2017
<b>Indexy vývozních cen</b> Export price indices						
	<b>Celkem</b> Total	98,7	101,5	102,5	102,6	102,2
0	<b>Potraviny a živá zvířata</b> Food and live animals	99,1	102,4	103,2	104,0	103,2
1	<b>Nápoje a tabák</b> Beverages and tobacco	97,6	98,1	97,6	97,1	97,6
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> Crude materials, inedible, except fuels	101,1	110,6	116,2	118,9	115,2
3	<b>Minerální paliva, maziva a příbuzné materiály</b> Mineral fuels, lubricants and related materials	98,7	132,4	141,2	134,4	135,9
4	<b>Živočišné a rostlinné oleje</b> Animal and vegetable oils, fats and waxes	109,3	113,7	112,2	108,1	111,3
5	<b>Chemikálie a příbuzné výrobky</b> Chemicals and related products	96,6	99,7	103,1	105,5	102,8
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> Manufactured goods classified chiefly by material	98,3	101,3	102,7	102,9	102,3
7	<b>Stroje a dopravní prostředky</b> Machinery and transport equipment	98,7	99,6	99,8	99,9	99,8
8	<b>Průmyslové spotřební zboží</b> Miscellaneous manufactured articles	99,9	101,3	101,8	101,6	101,6
<b>Indexy dovozních cen</b> Import price indices						
	<b>Celkem</b> Total	99,6	104,2	105,8	105,3	105,1
0	<b>Potraviny a živá zvířata</b> Food and live animals	102,8	107,7	107,6	104,7	106,7
1	<b>Nápoje a tabák</b> Beverages and tobacco	103,3	103,5	103,6	103,5	103,6
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> Crude materials, inedible, except fuels	103,2	112,0	117,2	122,2	117,1
3	<b>Minerální paliva, maziva a příbuzné materiály</b> Mineral fuels, lubricants and related materials	98,5	131,4	140,3	133,8	135,1
4	<b>Živočišné a rostlinné oleje</b> Animal and vegetable oils, fats and waxes	99,3	99,4	98,6	99,6	99,2
5	<b>Chemikálie a příbuzné výrobky</b> Chemicals and related products	98,8	101,2	103,5	104,6	103,1
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> Manufactured goods classified chiefly by material	100,1	105,6	107,9	108,0	107,1
7	<b>Stroje a dopravní prostředky</b> Machinery and transport equipment	99,1	99,9	100,9	100,6	100,5
8	<b>Průmyslové spotřební zboží</b> Miscellaneous manufactured articles	99,3	100,1	100,6	100,7	100,5

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