

## ANALYSIS

16 May 2016

### External Trade Price Indices Development in Q1 2016

**Export prices in Q1 2016, compared to Q4 2015, decreased by 1.4%, import prices declined by 3.0% and terms of trade reached 101.6%. Compared year-on-year (y-o-y), export prices in Q1 2016 decreased by 4.2%, import prices fell by 5.6%, and terms of trade reached the value of 101.5%.**

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

**Export prices in Q1 2016, compared to Q4 2015, decreased by 1.4%** (in Q4 2015 they fell by 0.9%). More important price decreases were observed in 'mineral fuels, lubricants and related materials' by 12.1%, 'chemicals and related products' by 2.7%, 'manufactured goods classified chiefly by material' by 2.2%, and in 'machinery and transport equipment' by 0.4%. The prices of 'beverages and tobacco' grew by 3.1%.

**Import prices in Q1 2016, compared to Q4 2015, fell by 3.0%** (in Q4 2015 they decreased by 1.5%). Among import prices of important groups of goods price decreases were recorded, from the highest one, for 'mineral fuels, lubricants and related materials' by 20.2%, 'manufactured goods classified chiefly by material' by 2.9%, 'chemicals and related products' by 1.8%, and of 'machinery and transport equipment' by 0.8%. The only prices that grew were those of 'beverages and tobacco' by 1.1%.

The **terms of trade** figures in **Q1 2016, compared to Q4 2015, reached the value of 101.6%** (in Q4 2015 they were 100.6%). The positive values of terms of trade were recorded namely in 'mineral fuels, lubricants and related materials' (110.2%), 'manufactured goods classified chiefly by material' (100.7%), and in 'machinery and transport equipment' (100.4%). The two lowest negative values of terms of trade were recorded in 'food and live animals' (98.0%) and in 'crude materials, inedible, except fuels' (98.6%).

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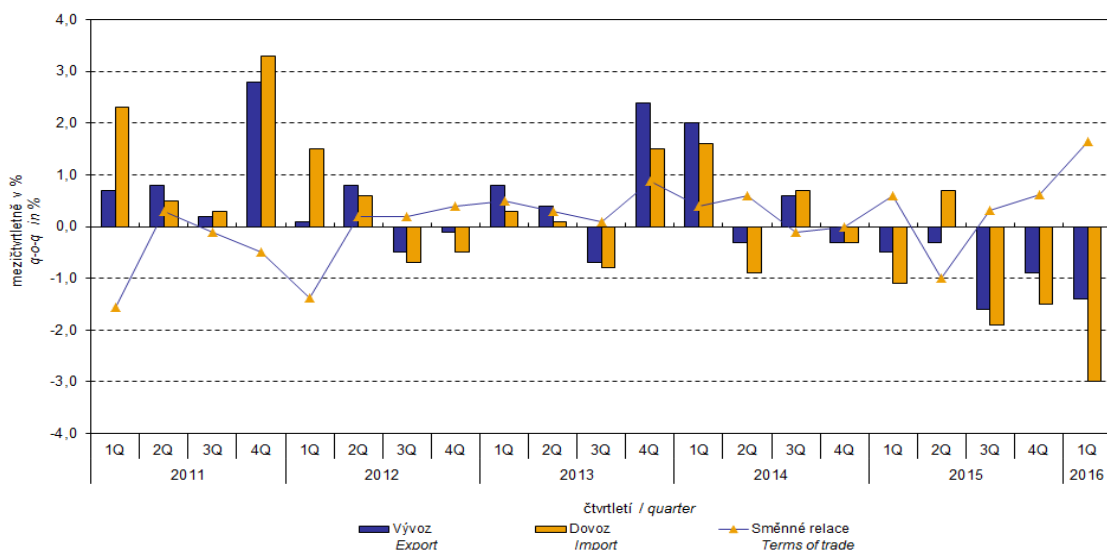
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Graf č. 1  
Graph No. 1

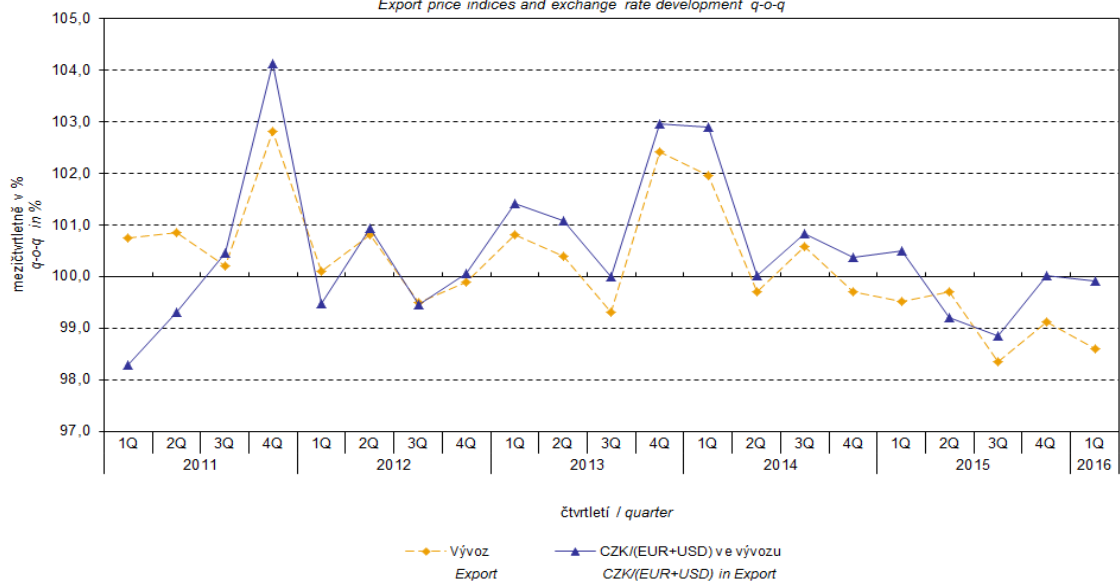
Vývoj cen v zahraničním obchodě mezičtvrtletně  
Price trends in external trade q-o-q



The external trade price development was also significantly affected by the CZK exchange rate to the major foreign currencies. The quarter-on-quarter (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.

Graf č. 2  
Graph No. 2

Indexy cen vývozu a vývoj kurzu mezičtvrtletně  
Export price indices and exchange rate development q-o-q



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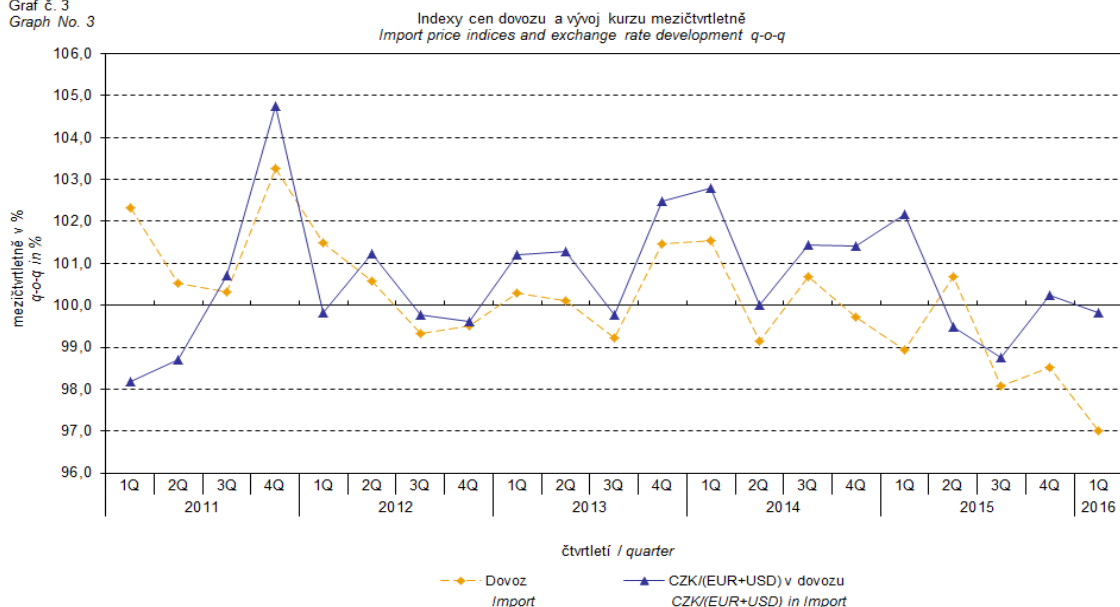
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Graf č. 3  
Graph No. 3



It can be seen from Graphs Nos. 2 and 3 above 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 **Q1 2016** decreased by 4.2% (in Q4 2015 they fell by 3.2%), year-on-year. Among more important groups of goods, the highest drop was reported for prices of 'mineral fuels, lubricants and related materials' by 19.0%, then for those of 'crude materials, inedible, except fuels' by 13.4%, 'manufactured goods classified chiefly by material' by 6.1%, and of 'machinery and transport equipment' by 2.6%. The growing prices were namely those of 'beverages and tobacco' by 1.5%.

**Import prices** in **Q1 2016** decreased by 5.6% (in Q4 2015 they fell by 3.8%), year-on-year. A decline in prices was recorded for 'mineral fuels, lubricants and related materials' by 32.6%, then for 'crude materials, inedible, except fuels' by 8.4%, 'manufactured goods classified chiefly by material' by 6.4%, and for 'machinery and transport equipment' by 0.7%. The only growing prices were those of 'animal and vegetable oils, fats and waxes' by 2.9%.

**Terms of trade** in **Q1 2016** increased year-on-year to reach the value of 101.5% (in Q4 2015 they were 100.6%) and so they remained in positive values – see Graph No. 4 below. Among more important groups of goods higher positive values of terms of trade were recorded for 'mineral fuels, lubricants and related materials' (120.2%), 'chemicals and related products' (100.5%), and for 'miscellaneous manufactured articles' (100.4%). Negative values of terms of

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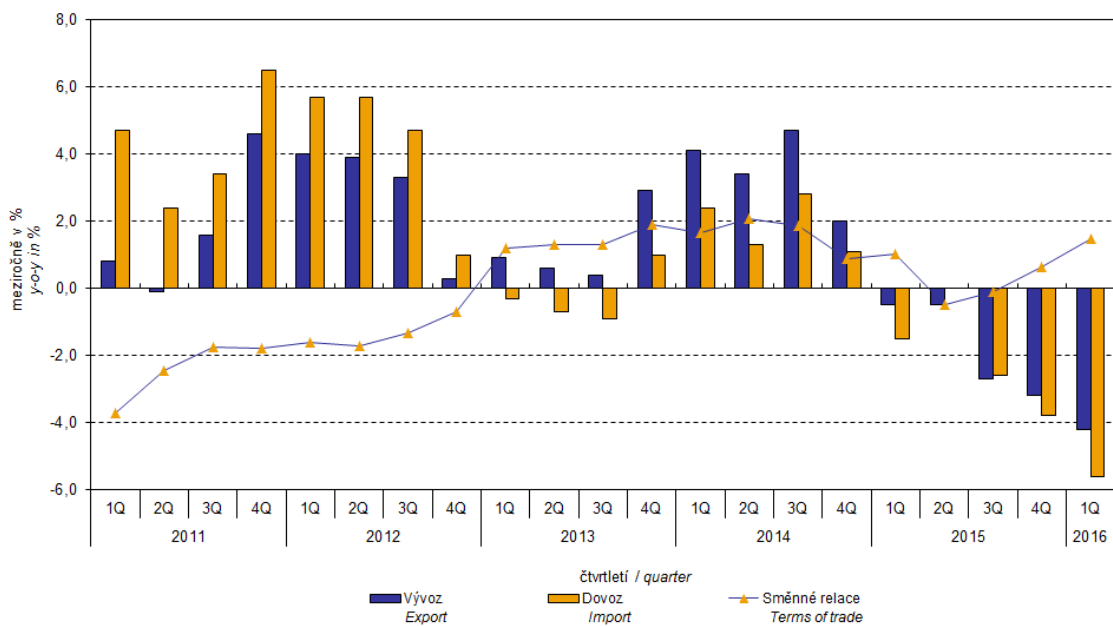
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trade were recorded namely for 'food and live animals' (96.3%) and for 'machinery and transport equipment' (98.1%).

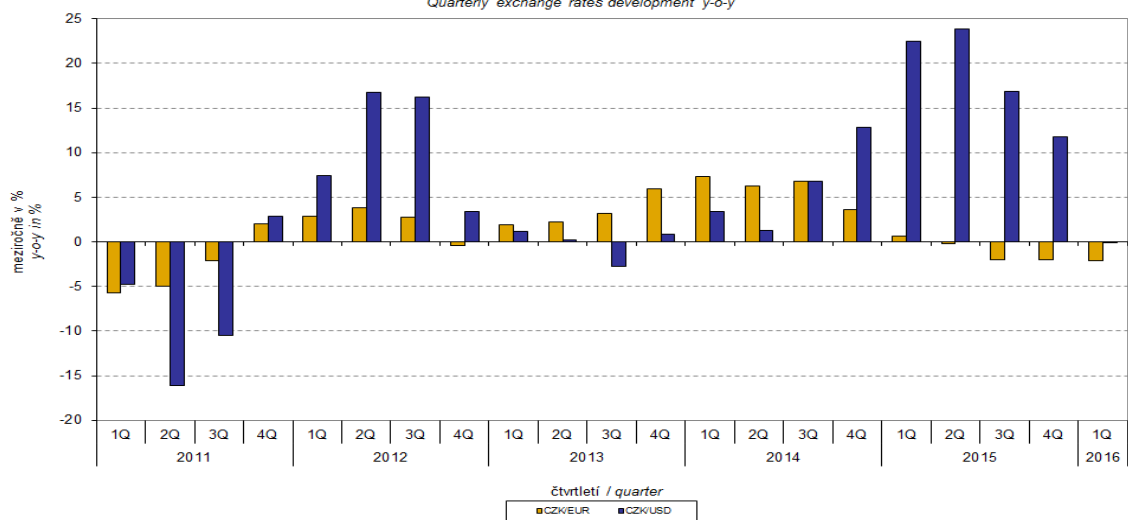
Graf č. 4  
Graph No. 4

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



Graf č. 5  
Graph No. 5

Vývoj čtvrtletních kurzů meziročně  
Quarterly exchange rates development y-o-y



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### 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 is then calculated the way that this exchange rate adjusted base price index is related to the non-adjusted base price index of the same month of the last year. **Differences among adjusted and non-adjusted price indices may be substantial**. They can be clearly seen in Graphs Nos. 6 and 7 for November 2013 and December 2013, for instance.

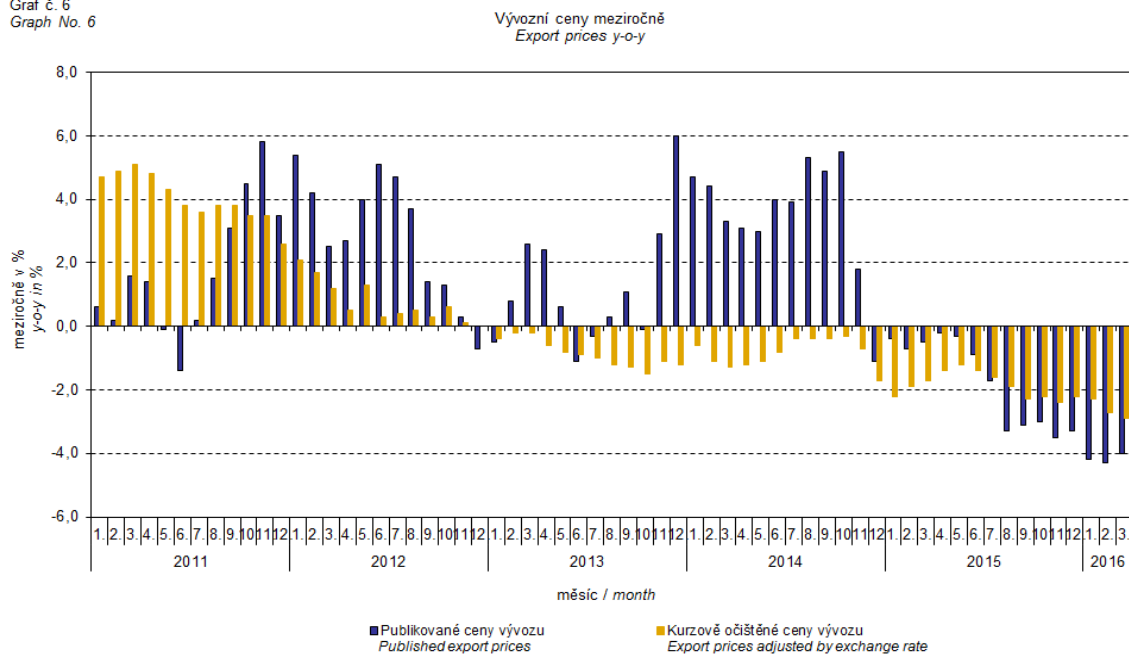
The method employed does not enable, for many practical reasons, to carry out 100% exchange rate adjustment because all trade transactions concluded in foreign currencies are not reported in foreign currencies. This share is up to 30%. It follows from the aforementioned, that **at the full exchange rate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

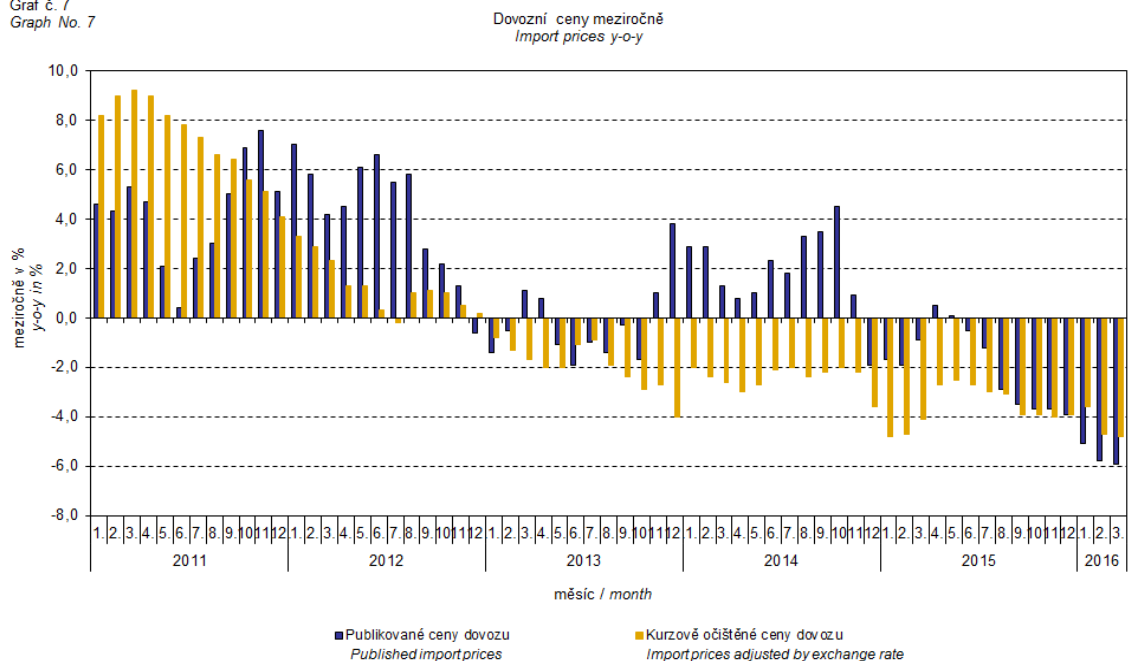
It holds in general that the effects of exchange rate decrease the value of price indices in external trade if CZK is strengthening to foreign currencies in total. Conversely, the effects of exchange rate push the price indices up if CZK is weakening to foreign currencies in total. It is obvious from following Graphs Nos. 6 and 7, how significant was the exchange rate impact on the value of export and import price indices.

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Graf č. 6  
Graph No. 6



Graf č. 7  
Graph No. 7



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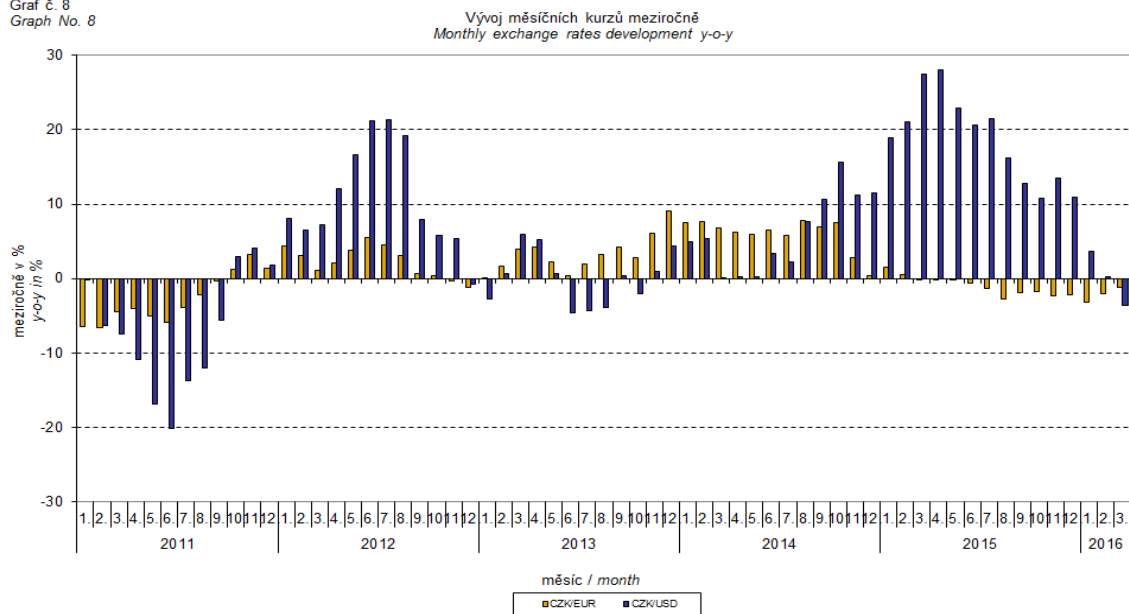
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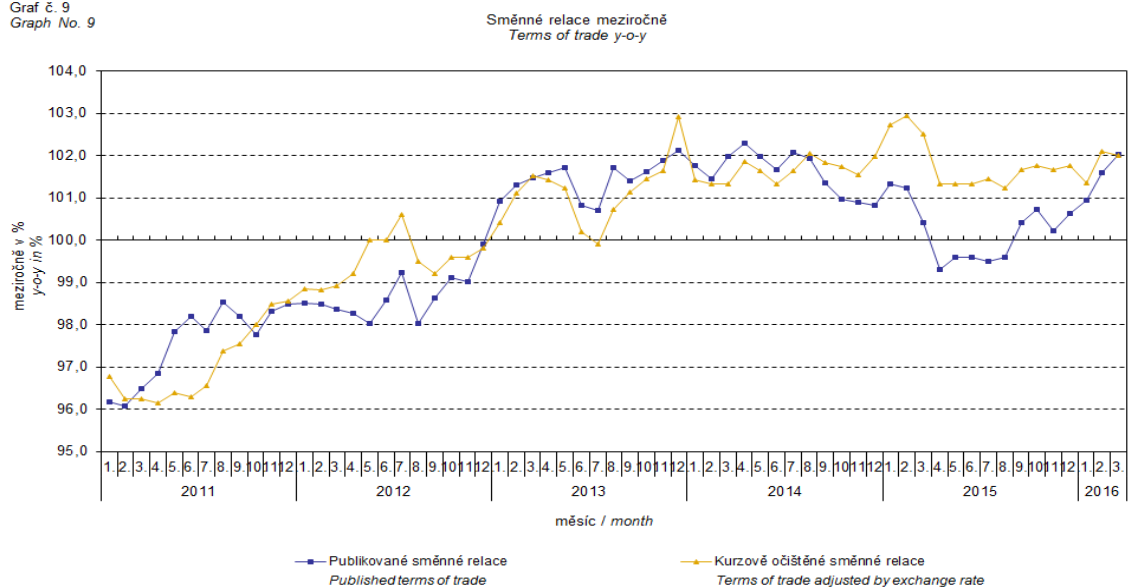
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Graf č. 8  
Graph No. 8



Graf č. 9  
Graph No. 9



It can be seen from Graph No. 9 how the exchange rate influences the value of the year-on-year terms of trade.

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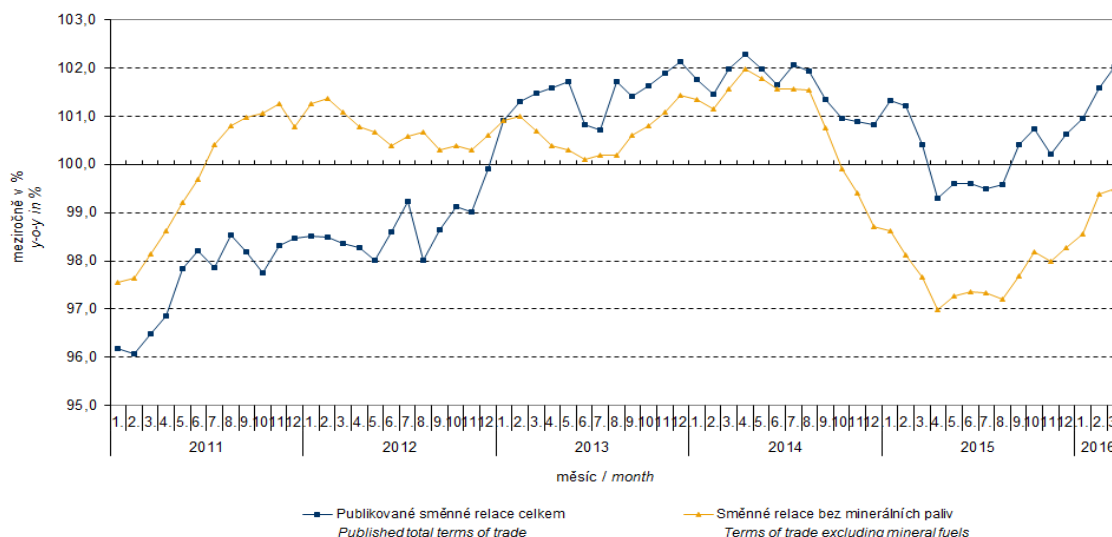
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Graph No. 10 demonstrates how the value of terms of trade would develop if the observed groups would not include that of 'mineral fuels, lubricants and related materials'.

Graf č. 10  
Graph No. 10

Publikované směnné relace a směnné relace s vyloučením minerálních paliv meziročně  
Published terms of trade and terms of trade excluding mineral fuels y-o-y



It can be observed in Graph No. 10 that the effects of 'mineral fuels, lubricants and related materials' decreased the overall value of y-o-y terms of trade till Q4 2012. In Q1 2013 the situation began to reverse and 'mineral fuels, lubricants and related materials' have had again an upward 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 **Q1 2016** caused year-on-year decreases in export as well as import prices got deeper, unless there were no exchange rate effects the decline in export and import prices would be slower. The export price fell less than the import prices and therefore the terms of trade remained in positive values. Yet if exchange rate non-adjusted, terms of trade would be positive anyway. Values free of the exchange rate effects correspond to exchange rate adjusted indices – see Graphs Nos. 6, 7, and 9.

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**Tabulka 1: Rozklad přírůstků publikovaných a kurzově očištěných indexů cen vývozu a dovozu za březen 2016**  
**Table 1: Breakdown of export and import price indices - published and exchange rate adjusted for March 2016**

SITC	Název Name	Publikované Published				Očištěné Adjusted			
		Meziměsíční M-o-m	Meziroční Year-on-year			Meziměsíční M-o-m	Meziroční Year-on-year		
		03/2016	01/2016	02/2016	03/2016	03/2016	01/2016	02/2016	03/2016
<b>Rozklad přírůstků indexů vývozních cen</b> <i>Breakdown of export price indices</i>									
	<b>Celkem</b> <i>Total</i>	-0,1	-4,2	-4,3	-4,0	-0,2	-2,3	-2,7	-2,9
0	<b>Potraviny a živá zvířata</b> <i>Food and live animals</i>	0,0	-0,1	-0,2	-0,2	0,0	-0,1	-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>	0,0	-0,4	-0,4	-0,4	0,0	-0,4	-0,4	-0,4
3	<b>Minerální paliva, maziva a příbuzné materiály</b> <i>Mineral fuels, lubricants and related materials</i>	0,0	-0,5	-0,8	-0,6	0,0	-0,4	-0,7	-0,6
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>	0,0	-0,3	-0,2	-0,3	0,0	-0,2	-0,1	-0,2
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> <i>Manufactured goods classified chiefly by material</i>	0,0	-1,2	-1,2	-1,0	0,0	-0,8	-0,9	-0,9
7	<b>Stroje a dopravní prostředky - z toho:</b> <i>Machinery and transport equipment - thereof:</i>	-0,1	-1,5	-1,3	-1,3	-0,2	-0,4	-0,4	-0,6
74	Stroje a zařízení všeobecně užívané v průmyslu, j.n. <i>General industrial machinery and equipment, n.e.s.</i>	0,0	-0,2	-0,2	-0,1	0,0	0,0	0,0	0,0
77	Elektrická zařízení, přístroje a spotřebiče, j.n. <i>Electrical machinery, apparatus and appliances, n.e.s.</i>	0,0	-0,4	-0,4	-0,3	0,0	-0,3	-0,3	-0,2
78	Silniční vozidla <i>Road vehicles (including air-cushion vehicles)</i>	0,0	-0,5	-0,5	-0,3	0,0	0,0	-0,1	0,0
8	<b>Průmyslové spotřební zboží</b> <i>Miscellaneous manufactured articles</i>	0,0	-0,2	-0,2	-0,2	0,0	0,0	0,0	0,0
<b>Rozklad přírůstků indexů dovozních cen</b> <i>Breakdown of import price indices</i>									
	<b>Celkem</b> <i>Total</i>	0,2	-5,1	-5,8	-5,9	0,2	-3,6	-4,7	-4,8
0	<b>Potraviny a živá zvířata</b> <i>Food and live animals</i>	0,0	-0,1	-0,1	-0,1	0,0	0,0	0,0	-0,1
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>	0,0	-0,2	-0,2	-0,2	0,0	-0,2	-0,2	-0,2
3	<b>Minerální paliva, maziva a příbuzné materiály</b> <i>Mineral fuels, lubricants and related materials</i>	0,0	-2,8	-3,2	-3,2	0,0	-2,7	-3,2	-3,1
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>	0,0	-0,6	-0,5	-0,5	0,0	-0,4	-0,4	-0,4
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> <i>Manufactured goods classified chiefly by material</i>	0,1	-1,2	-1,2	-1,1	0,1	-0,8	-1,0	-0,9
7	<b>Stroje a dopravní prostředky - z toho:</b> <i>Machinery and transport equipment - thereof:</i>	0,1	-0,1	-0,4	-0,5	0,1	0,6	0,2	0,0
74	Stroje a zařízení všeobecně užívané v průmyslu, j.n. <i>General industrial machinery and equipment, n.e.s.</i>	0,0	-0,2	-0,1	0,0	0,0	0,0	0,0	0,0
75	Kancelářské stroje a zař. k automat. zpracování dat <i>Office machines and automatic data-processing machines</i>	0,1	0,2	0,0	0,0	0,1	0,2	0,1	0,1
77	Elektrická zařízení, přístroje a spotřebiče, j.n. <i>Electrical machinery, apparatus and appliances, n.e.s.</i>	0,0	-0,1	-0,2	-0,3	0,0	0,1	-0,1	-0,2
78	Silniční vozidla <i>Road vehicles (including air-cushion vehicles)</i>	0,0	0,0	0,0	0,1	0,0	0,2	0,1	0,1
8	<b>Průmyslové spotřební zboží</b> <i>Miscellaneous manufactured articles</i>	0,0	-0,1	-0,2	-0,3	0,0	-0,1	-0,1	-0,1

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

Tabulka 2: Indexy cen vývozu a dovozu v 1. čtvrtletí 2016

Table 2: Export and import price indices in Q1 2016

SITC	Název Name	Stejně období předchozího roku = 100 Corresponding period of previous year = 100				
		4Q/2015	1/2016	2/2016	3/2016	1Q/2016
<b>Indexy vývozních cen</b> Export price indices						
	<b>Celkem</b> Total	96,8	95,8	95,7	96,0	95,8
0	<b>Potraviny a živá zvířata</b> Food and live animals	96,3	95,1	94,5	94,6	94,7
1	<b>Nápoje a tabák</b> Beverages and tobacco	102,6	100,5	101,6	102,4	101,5
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> Crude materials, inedible, except fuels	87,6	86,9	87,0	85,8	86,6
3	<b>Minerální paliva, maziva a příbuzné materiály</b> Mineral fuels, lubricants and related materials	85,6	84,7	77,6	80,9	81,0
4	<b>Živočišné a rostlinné oleje</b> Animal and vegetable oils, fats and waxes	100,2	101,1	102,5	105,5	103,0
5	<b>Chemikálie a příbuzné výrobky</b> Chemicals and related products	93,0	95,3	96,4	95,2	95,6
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> Manufactured goods classified chiefly by material	95,9	93,7	93,8	94,3	93,9
7	<b>Stroje a dopravní prostředky</b> Machinery and transport equipment	98,2	97,1	97,5	97,6	97,4
8	<b>Průmyslové spotřební zboží</b> Miscellaneous manufactured articles	98,7	97,9	98,1	98,4	98,1
<b>Indexy dovozních cen</b> Import price indices						
	<b>Celkem</b> Total	96,2	94,9	94,2	94,1	94,4
0	<b>Potraviny a živá zvířata</b> Food and live animals	100,3	98,7	97,8	98,3	98,3
1	<b>Nápoje a tabák</b> Beverages and tobacco	96,5	98,2	99,3	99,3	98,9
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> Crude materials, inedible, except fuels	91,0	91,3	92,0	91,6	91,6
3	<b>Minerální paliva, maziva a příbuzné materiály</b> Mineral fuels, lubricants and related materials	73,4	70,5	65,7	65,9	67,4
4	<b>Živočišné a rostlinné oleje</b> Animal and vegetable oils, fats and waxes	106,7	103,1	104,0	101,6	102,9
5	<b>Chemikálie a příbuzné výrobky</b> Chemicals and related products	94,0	94,6	95,5	95,3	95,1
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> Manufactured goods classified chiefly by material	96,5	93,5	93,3	94,1	93,6
7	<b>Stroje a dopravní prostředky</b> Machinery and transport equipment	101,3	99,9	99,1	98,9	99,3
8	<b>Průmyslové spotřební zboží</b> Miscellaneous manufactured articles	101,1	98,4	97,5	97,2	97,7

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