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## **Vývoj indexů cen v zahraničním obchodě - 4. čtvrtletí 2015**

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## ANALYSIS

16 February 2016

### External Trade Price Indices Development in Q4 2015 and in the Year 2015

Export prices in Q4 2015, compared to Q3 2015, decreased by 0.9%, import prices declined by 1.5% and terms of trade reached 100.6%. Compared year-on year (y-o-y), export prices in Q4 2015 decreased by 3.2%, import prices fell by 3.8%, and terms of trade reached the value of 100.6%. On average for the whole year 2015 exports prices decreased by 1.7% and import prices fell by 1.9%, both compared to those for 2014, and terms of trade attained 100.2%.

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

**Export prices** in Q4 2015, compared to Q3 2015, decreased by 0.9% (in Q3 2015 they fell by 1.6%). The more important price decreases were observed in 'crude materials, inedible, except fuels' by 5.6%, 'chemicals and related products' by 4.2%, 'manufactured goods classified chiefly by material' by 1.4%, and in 'machinery and transport equipment' by 0.2%. The prices of 'miscellaneous manufactured articles' grew by 0.3%.

**Import prices** in Q4 2015, compared to Q3 2015, fell by 1.5% (in Q3 2015 they decreased by 1.9%). Among import prices of important groups of goods price decreases were recorded, from the highest one, for 'mineral fuels, lubricants and related materials' by 10.7%, 'chemicals and related products' by 3.4%, and 'manufactured goods classified chiefly by material' by 1.7%. The prices of 'machinery and transport equipment' grew by 0.6%.

The **terms of trade** figures in Q4 2015, compared to Q3 2015, reached the value of 100.6% (in Q3 2015 they were 100.3%). The positive values of terms of trade were recorded namely in 'mineral fuels, lubricants and related materials' (107.5%), 'food and live animals' (101.0%), and in 'manufactured goods classified chiefly by material' (100.3%). Negative values of terms of trade were recorded especially, from the lowest one, in 'crude materials, inedible, except fuels' (96.9%), 'chemicals and related products' (99.2%), and in 'machinery and transport equipment' (99.2%).

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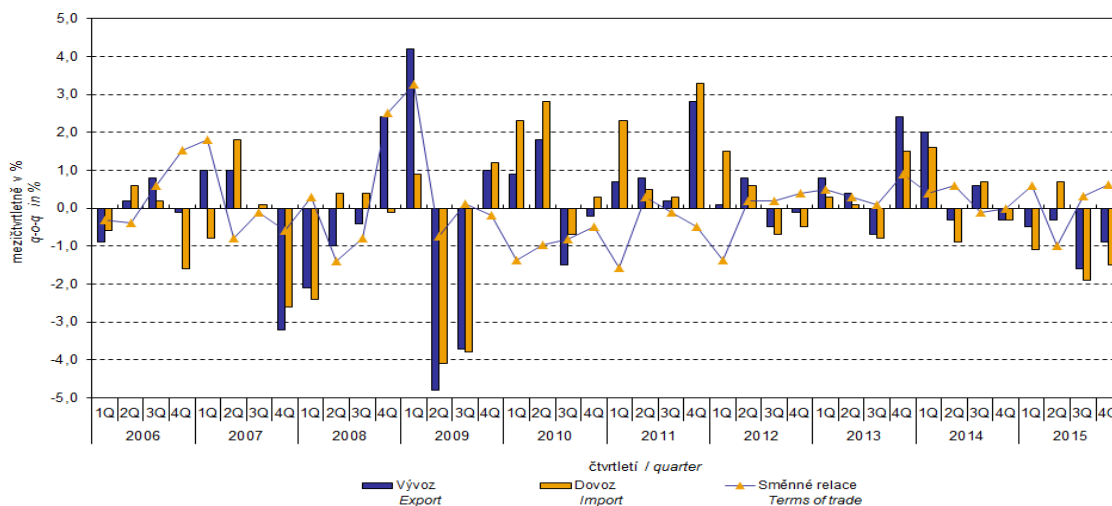
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## ANALYSIS

Graf č. 1  
Graph No. 1

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



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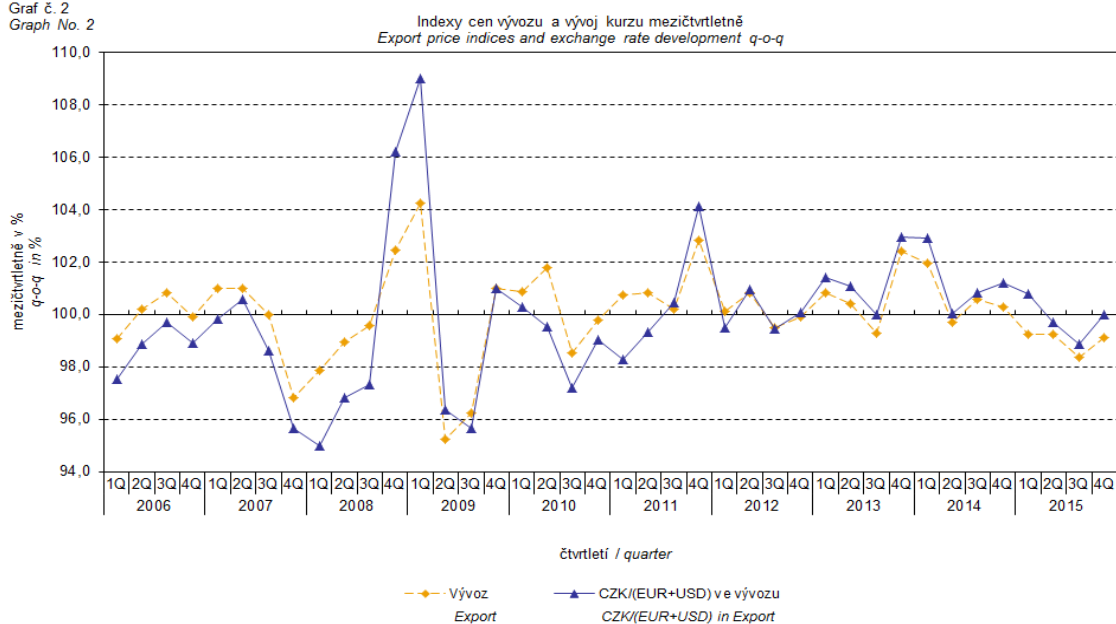
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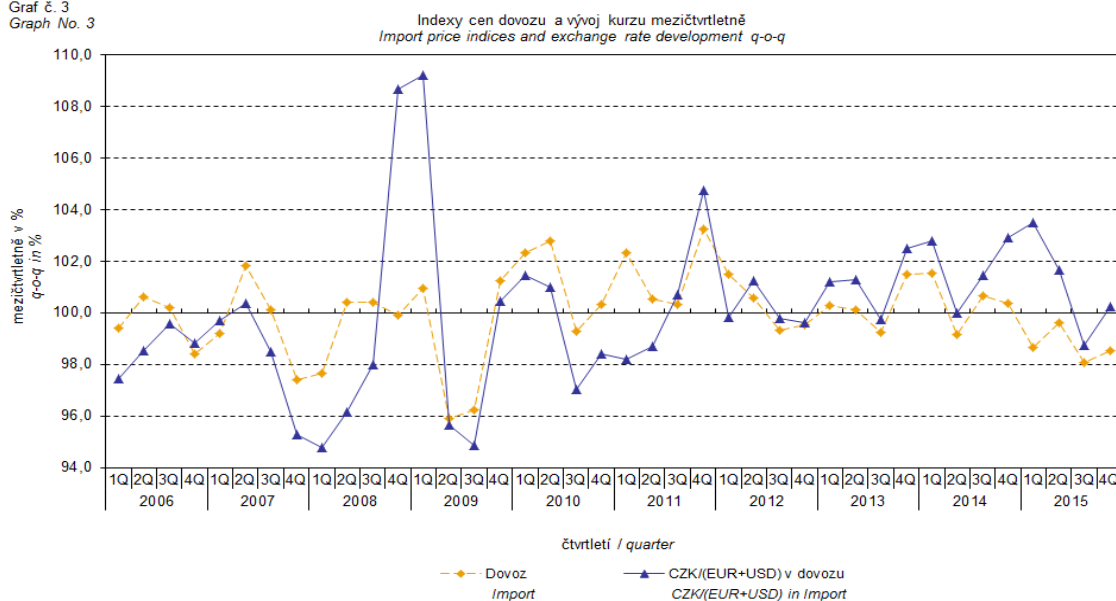
## ANALYSIS

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.

Graf č. 2  
Graph No. 2



Graf č. 3  
Graph No. 3



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## ANALYSIS

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 **Q4 2015** decreased by 3.2% (in Q3 2015 they fell by 2.7%), year-on-year. Among more important groups of goods, the highest drop was reported for prices of 'mineral fuels, lubricants and related materials' by 14.4%, then for those of 'crude materials, inedible, except fuels' by 12.4%, 'chemicals and related products' by 7.0%, and 'machinery and transport equipment' by 1.8%. The prices growing were namely those of 'beverages and tobacco' by 2.6%.

**Import prices** in **Q4 2015** decreased by 3.8% (in Q3 2015 they fell by 2.6%), year-on-year. The highest decline in prices was recorded for 'mineral fuels, lubricants and related materials' by 26.6%, then for 'crude materials, inedible, except fuels' by 9.0%, and for 'chemicals and related products' by 6.0%. Prices of 'machinery and transport equipment' grew by 1.3%, those of 'miscellaneous manufactured articles' rose by 1.1%.

**Terms of trade** in **Q4 2015** increased year-on-year to reach the value of 100.6% (in Q3 2015 they were 99.9%) and thus they moved into positive values – see Graph No. 4 below. Among more important groups of goods a positive value of terms of trade was recorded solely for 'mineral fuels, lubricants and related materials' (116.6%). Negative values of terms of trade were recorded namely for 'food and live animals' (96.0%), 'machinery and transport equipment' (96.9%), 'miscellaneous manufactured articles' (97.6%), and for 'chemicals and related products' (98.9%).

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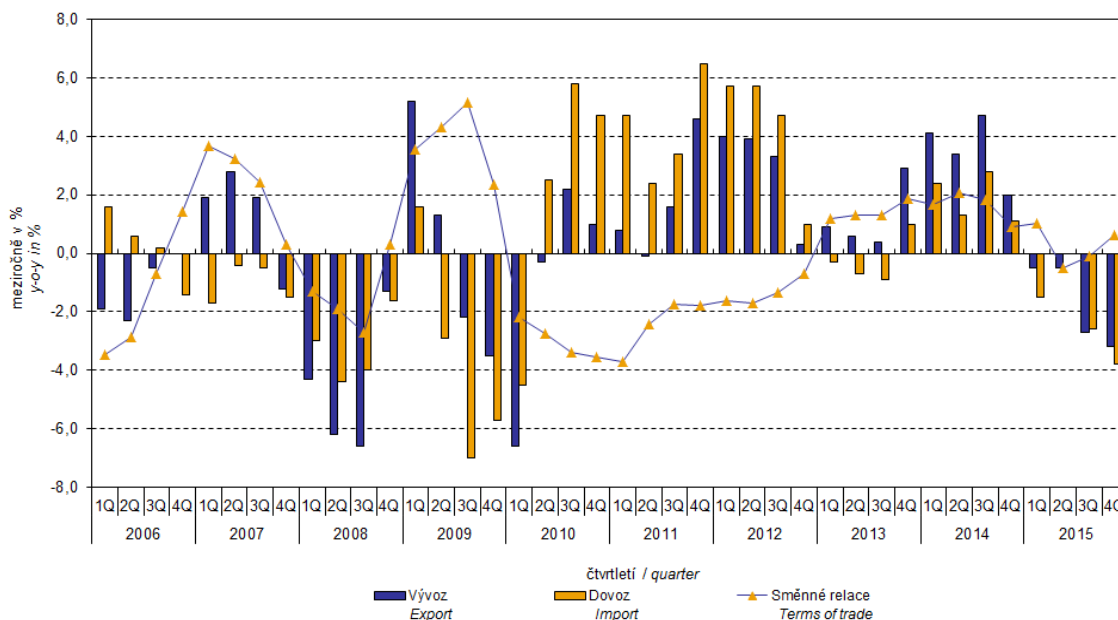
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## ANALYSIS

Graf č. 4  
Graph No. 4

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



### Price development in 2015

**On average over the whole year 2015 export prices** decreased by 1.7% (in 2014 they rose by 3.5%). **Import prices** fell by 1.9% (in 2014 they increased by 1.9%).

In **export prices** decreases were noticed, first of all, in groups of 'mineral fuels, lubricants and related materials' by 12.6%, 'chemicals and related products' by 4.7%, 'manufactured goods classified chiefly by material' by 1.6%, and in 'machinery and transport equipment' by 0.4%. The only growing prices were those for 'beverages and tobacco' by 3.1%.

In **import prices** important price significant decreases were recorded in 'mineral fuels, lubricants and related materials' by 23.8%, 'crude materials, inedible, except fuels' by 9.2%, and in 'chemicals and related products' by 3.1%. Prices of 'miscellaneous manufactured articles' grew by 3.6% and those of 'machinery and transport equipment' increased by 2.8%.

**Terms of trade** reached in total in 2015 the value of 100.2% (they were 101.6% in 2014).

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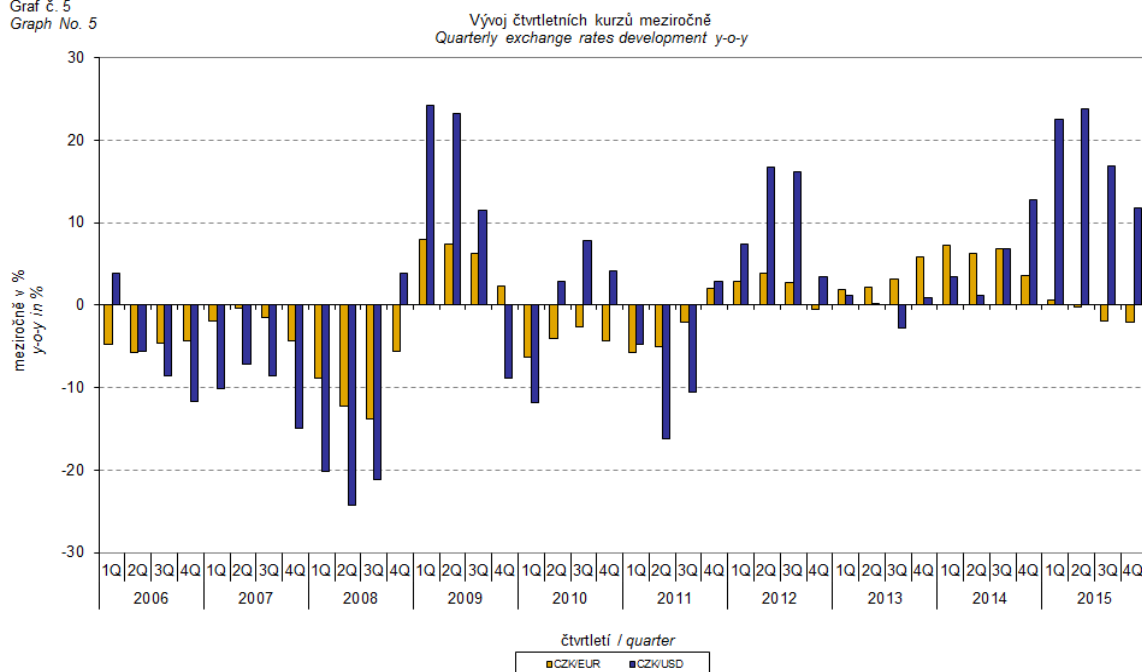
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## ANALYSIS

Graf č. 5  
Graph No. 5



### 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 **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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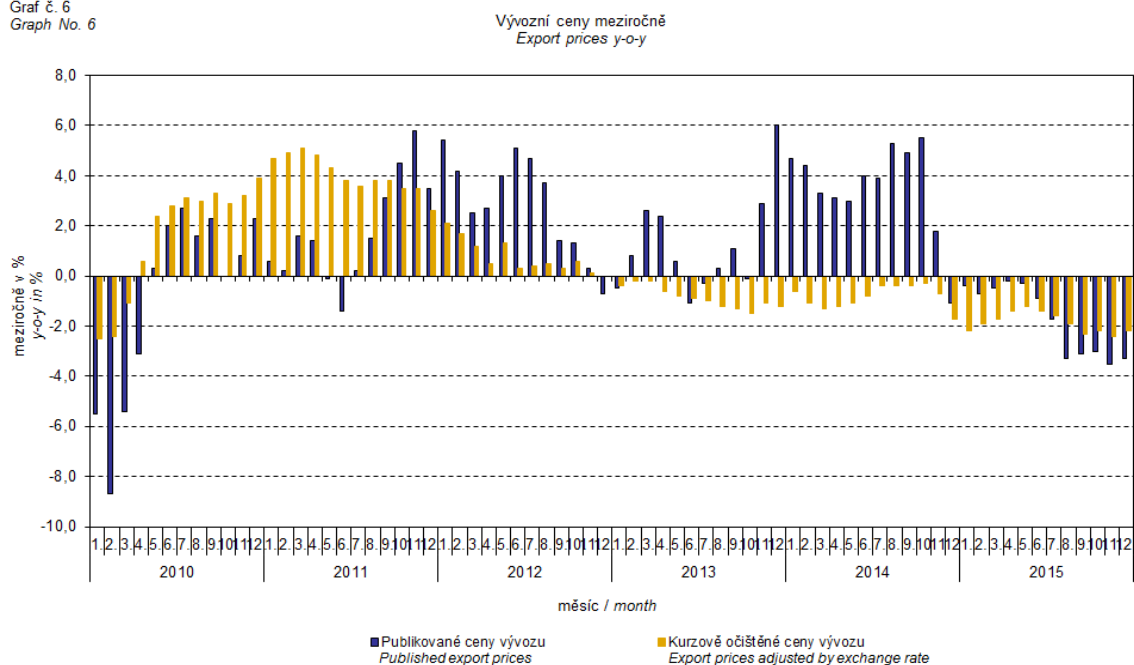
## ANALYSIS

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.

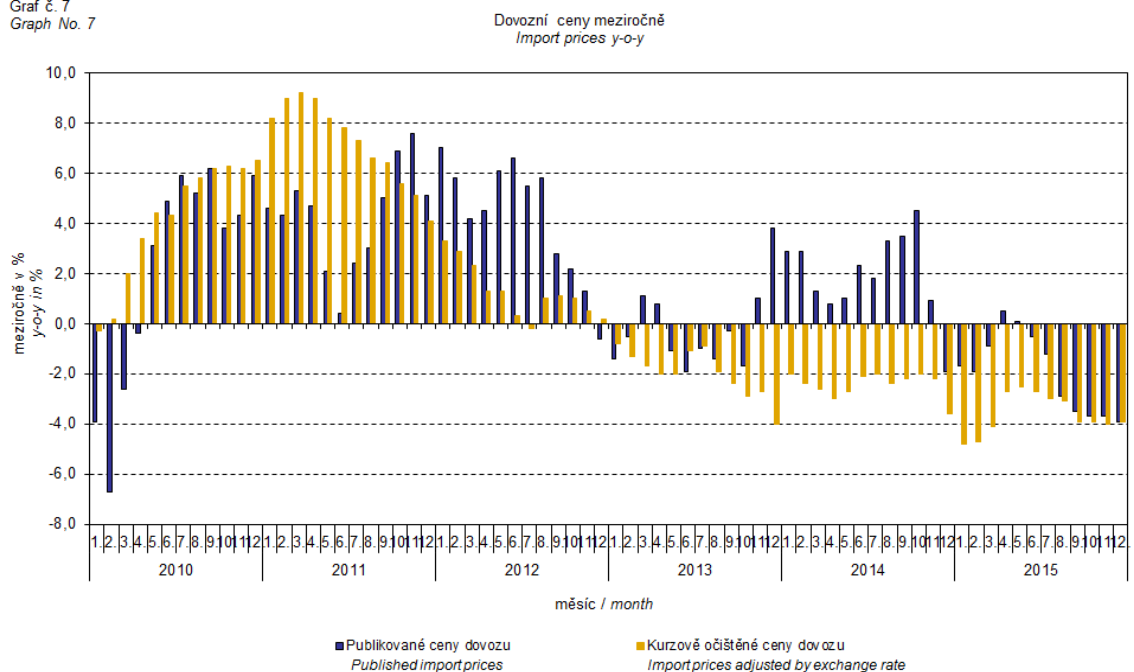


## ANALYSIS

Graf č. 6  
Graph No. 6



Graf č. 7  
Graph No. 7



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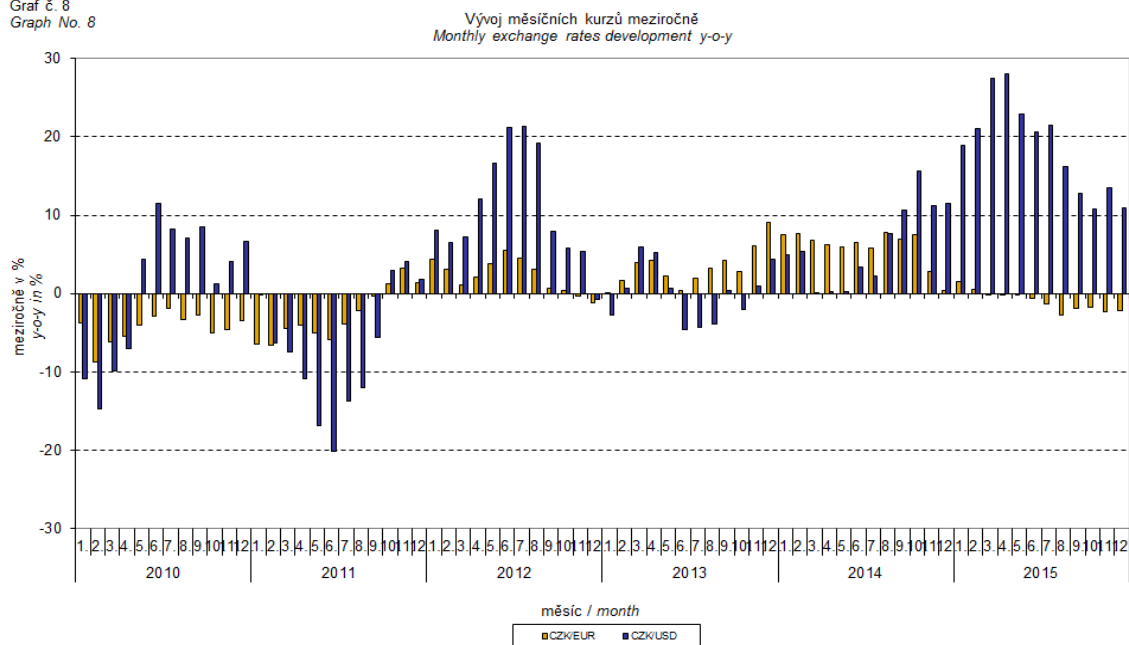
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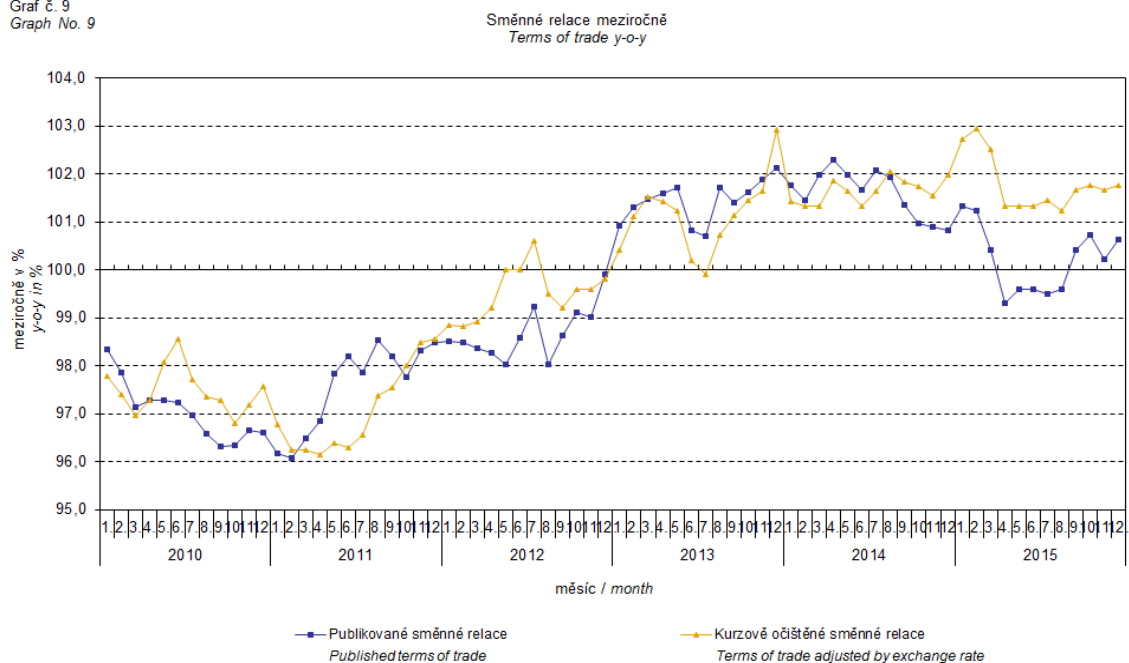
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## ANALYSIS

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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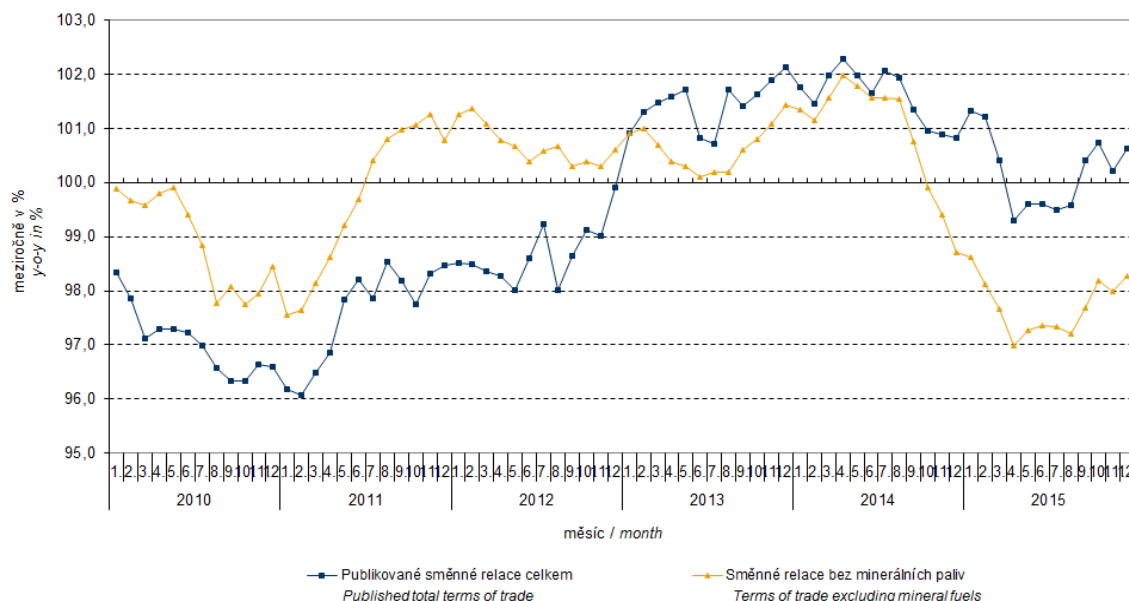
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## ANALYSIS

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 **Q4 2015** caused a year-on-year decrease in export prices got deeper, the same way as in Q3 2015, and, at the same time, a decline in import prices was getting slower. The external trade export price fall would be less deep and the decline in import prices would be faster without exchange rate effects. Export prices decreased less than import ones, year-on-year, and therefore terms of trade moved into 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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## ANALYSIS

**Tabulka 1: Rozklad přírůstků publikovaných a kurzově očištěných indexů cen vývozu a dovozu za prosinec 2015**  
**Table 1: Breakdown of export and import price indices - published and exchange rate adjusted for December 2015**

SITC	Název Name	Publikované Published				Očištěné Adjusted			
		Meziměsíční M-o-m	Meziroční Year-on-year			Meziměsíční M-o-m	Meziroční Year-on-year		
		12/2015	10/2015	11/2015	12/2015	12/2015	10/2015	11/2015	12/2015
Rozklad přírůstků indexů vývozních cen Breakdown of export price indices									
	Celkem Total	-0,4	-3,0	-3,5	-3,3	-0,2	-2,2	-2,4	-2,2
0	Potraviny a živá zvířata Food and live animals	0,0	-0,2	-0,1	-0,1	0,0	-0,1	-0,1	0,0
1	Nápoje a tabák Beverages and tobacco	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	Suroviny nepoživatelné, s výjimkou paliv Crude materials, inedible, except fuels	0,0	-0,4	-0,4	-0,3	0,1	-0,4	-0,4	-0,3
3	Minerální paliva, maziva a příbuzné materiály Mineral fuels, lubricants and related materials	-0,2	-0,5	-0,5	-0,5	-0,2	-0,5	-0,5	-0,5
4	Živočišné a rostlinné oleje Animal and vegetable oils, fats and waxes	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
5	Chemikálie a příbuzné výrobky Chemicals and related products	0,0	-0,5	-0,5	-0,4	0,0	-0,5	-0,4	-0,3
6	Tržní výrobky tříděné hlavně podle materiálu Manufactured goods classified chiefly by material	-0,1	-0,6	-0,8	-0,9	-0,1	-0,4	-0,6	-0,7
7	Stroje a dopravní prostředky - z toho: Machinery and transport equipment - thereof:	-0,1	-0,7	-1,0	-1,0	0,0	-0,3	-0,4	-0,4
74	Stroje a zařízení všeobecně užívané v průmyslu, j.n. General industrial machinery and equipment, n.e.s.	0,0	-0,1	-0,2	-0,1	0,0	0,0	0,0	0,1
77	Elektrická zařízení, přístroje a spotřebiče, j.n. Electrical machinery, apparatus and appliances, n.e.s.	0,0	-0,3	-0,4	-0,4	0,0	-0,2	-0,3	-0,3
78	Silniční vozidla Road vehicles (including air-cushion vehicles)	0,0	-0,4	-0,4	-0,4	0,0	-0,2	-0,1	-0,1
8	Průmyslové spotřební zboží Miscellaneous manufactured articles	0,0	-0,1	-0,2	-0,1	0,0	0,0	0,0	0,0
Rozklad přírůstků indexů dovozních cen Breakdown of import price indices									
	Celkem Total	-1,2	-3,7	-3,7	-3,9	-1,0	-3,9	-4,0	-3,9
0	Potraviny a živá zvířata Food and live animals	0,0	0,1	0,0	0,0	0,0	0,1	0,0	0,0
1	Nápoje a tabák Beverages and tobacco	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2	Suroviny nepoživatelné, s výjimkou paliv Crude materials, inedible, except fuels	0,0	-0,2	-0,2	-0,2	0,0	-0,2	-0,2	-0,2
3	Minerální paliva, maziva a příbuzné materiály Mineral fuels, lubricants and related materials	-0,9	-3,0	-2,8	-2,8	-0,8	-3,2	-3,1	-3,0
4	Živočišné a rostlinné oleje Animal and vegetable oils, fats and waxes	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
5	Chemikálie a příbuzné výrobky Chemicals and related products	-0,1	-0,7	-0,7	-0,6	-0,1	-0,6	-0,6	-0,5
6	Tržní výrobky tříděné hlavně podle materiálu Manufactured goods classified chiefly by material	-0,1	-0,5	-0,7	-0,8	-0,1	-0,3	-0,4	-0,5
7	Stroje a dopravní prostředky - z toho: Machinery and transport equipment - thereof:	-0,1	0,5	0,6	0,4	0,0	0,3	0,3	0,3
74	Stroje a zařízení všeobecně užívané v průmyslu, j.n. General industrial machinery and equipment, n.e.s.	0,0	-0,1	-0,2	-0,2	0,0	-0,1	-0,1	-0,1
75	Office machines and automatic data-processing machines	0,0	0,3	0,4	0,4	0,0	0,1	0,2	0,2
77	Elektrická zařízení, přístroje a spotřebiče, j.n. Electrical machinery, apparatus and appliances, n.e.s.	0,0	0,1	0,0	0,0	0,0	0,1	0,0	0,0
78	Silniční vozidla Road vehicles (including air-cushion vehicles)	0,0	0,1	0,0	0,0	0,0	0,2	0,2	0,1
8	Průmyslové spotřební zboží Miscellaneous manufactured articles	0,0	0,1	0,1	0,1	0,0	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 ve 4. čtvrtletí 2015**

**Table 2: Export and import price indices in Q4 2015**

Table 2. Export and import price indices in Q4 2015						
SITC	Název Name	Stejně období předchozího roku = 100 Corresponding period of previous year = 100				
		3Q/2015	10/2015	11/2015	12/2015	4Q/2015
Indexy vývozních cen Export price indices						
	<b>Celkem</b> <i>Total</i>	97,3	97,0	96,5	96,7	96,8
0	<b>Potraviny a živá zvířata</b> <i>Food and live animals</i>	93,3	95,5	96,3	97,2	96,3
1	<b>Nápoje a tabák</b> <i>Beverages and tobacco</i>	101,1	102,1	105,5	100,5	102,6
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> <i>Crude materials, inedible, except fuels</i>	89,9	86,7	86,9	89,3	87,6
3	<b>Minerální paliva, maziva a příbuzné materiály</b> <i>Mineral fuels, lubricants and related materials</i>	87,7	86,1	85,5	85,1	85,6
4	<b>Živočišné a rostlinné oleje</b> <i>Animal and vegetable oils, fats and waxes</i>	98,8	99,3	99,9	101,5	100,2
5	<b>Chemikálie a příbuzné výrobky</b> <i>Chemicals and related products</i>	95,4	92,3	92,9	94,0	93,0
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> <i>Manufactured goods classified chiefly by material</i>	97,3	96,8	95,9	95,1	95,9
7	<b>Stroje a dopravní prostředky</b> <i>Machinery and transport equipment</i>	98,6	98,7	97,9	98,1	98,2
8	<b>Průmyslové spotřební zboží</b> <i>Miscellaneous manufactured articles</i>	98,9	98,9	98,5	98,7	98,7
Indexy dovozních cen Import price indices						
	<b>Celkem</b> <i>Total</i>	97,4	96,3	96,3	96,1	96,2
0	<b>Potraviny a živá zvířata</b> <i>Food and live animals</i>	99,7	101,4	100,0	99,6	100,3
1	<b>Nápoje a tabák</b> <i>Beverages and tobacco</i>	99,2	97,0	96,2	96,1	96,5
2	<b>Suroviny nepoživatelné, s výjimkou paliv</b> <i>Crude materials, inedible, except fuels</i>	93,2	91,9	90,2	90,9	91,0
3	<b>Minerální paliva, maziva a příbuzné materiály</b> <i>Mineral fuels, lubricants and related materials</i>	75,8	73,7	74,1	72,3	73,4
4	<b>Živočišné a rostlinné oleje</b> <i>Animal and vegetable oils, fats and waxes</i>	108,2	106,5	107,3	106,3	106,7
5	<b>Chemikálie a příbuzné výrobky</b> <i>Chemicals and related products</i>	96,9	93,8	93,9	94,3	94,0
6	<b>Tržní výrobky tříděné hlavně podle materiálu</b> <i>Manufactured goods classified chiefly by material</i>	98,6	97,2	96,4	95,8	96,5
7	<b>Stroje a dopravní prostředky</b> <i>Machinery and transport equipment</i>	101,9	101,3	101,4	101,2	101,3
8	<b>Průmyslové spotřební zboží</b> <i>Miscellaneous manufactured articles</i>	102,9	101,0	101,3	101,2	101,1

**Developed by:** Vladimír Klimeš, Prices Statistics Department

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