

ANALYSIS

13 May 2019

External Trade Price Indices Development in Q1 2019

In Q1 2019, compared to Q4 2018, export prices and import prices decreased by 0.4% and 1.1%, respectively. The terms of trade reached the value of 100.7%. Compared year-on-year, in Q1 2019 export prices and import prices grew by 3.0% and 2.8%, respectively, and the terms of trade reached the value of 100.2%.

Quarter-on-Quarter Comparison

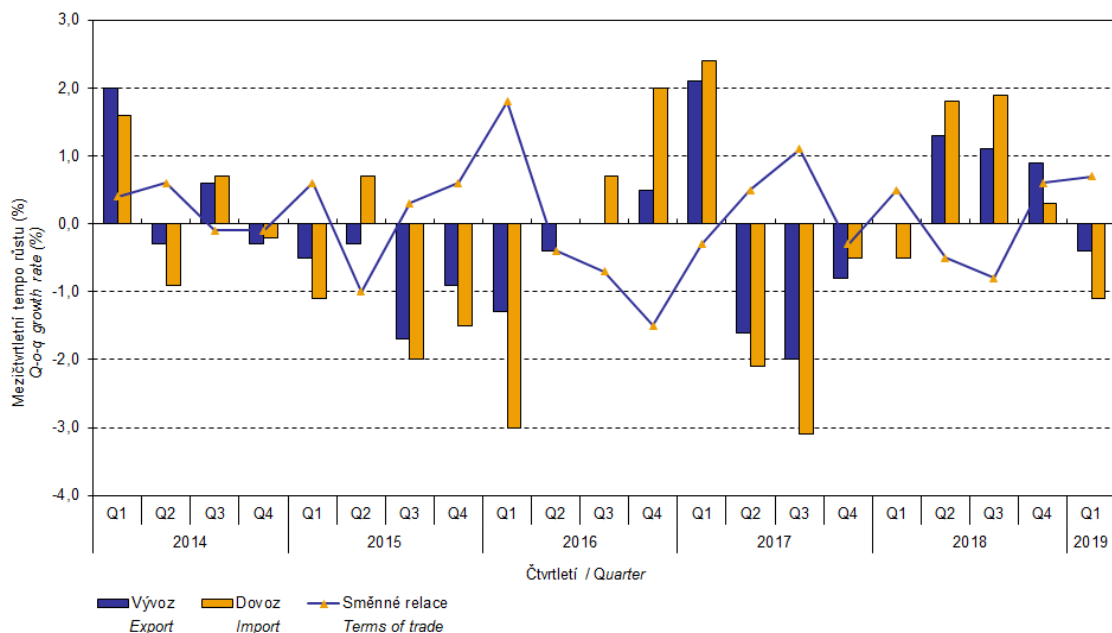
Export prices in Q1 2019, compared to Q4 2018, decreased by 0.4%, quarter-on-quarter (q-o-q). The deepest decline was recorded for prices of 'mineral fuels, lubricants and related materials', followed by those of 'chemicals and related products', and 'crude materials, inedible, except fuels', by 4.5%, 2.1%, and 1.4%, respectively. Prices of 'miscellaneous manufactured articles' remained unchanged. Prices of 'machinery and transport equipment' grew by 0.1%.

Import prices in Q1 2019, compared to Q4 2018, decreased by 1.1%, q-o-q. Prices for 'mineral fuels, lubricants and related materials', 'chemicals and related products', 'miscellaneous manufactured articles', and 'machinery and transport equipment' declined by 8.3%, 1.7%, 0.9%, and 0.1%, respectively. The only growing prices were those for 'crude materials, inedible, except fuels' and 'food and live animals' by 2.8% and 0.2%, respectively.

The terms of trade in Q1 2019, compared to Q4 2018, reached the value of 100.7%. Positive values of the terms of trade were recorded especially for 'mineral fuels, lubricants and related materials' (104.1%), 'miscellaneous manufactured articles' (100.9%), and 'machinery and transport equipment' (100.2%). The lowest negative values of the terms of trade were recorded for 'crude materials, inedible, except fuels' (95.9%) and for 'chemicals and related products' (99.6%).

ANALYSIS

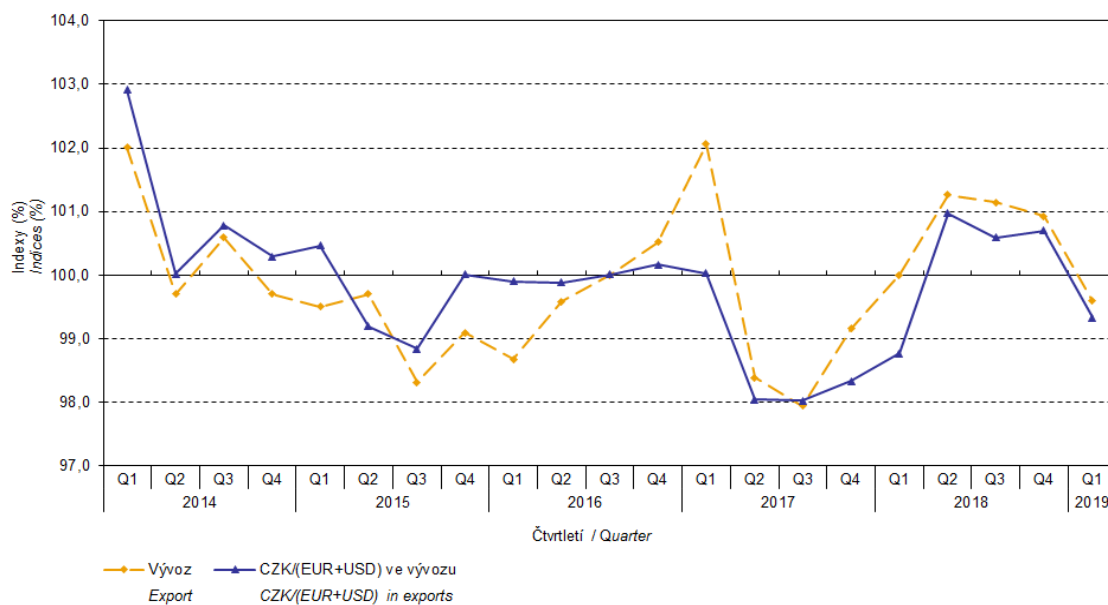
Graf č. 1 Vývoj indexů cen v zahraničním obchodě mezičtvrtletně
Graph No 1 Trend of price indices in external trade q-o-q



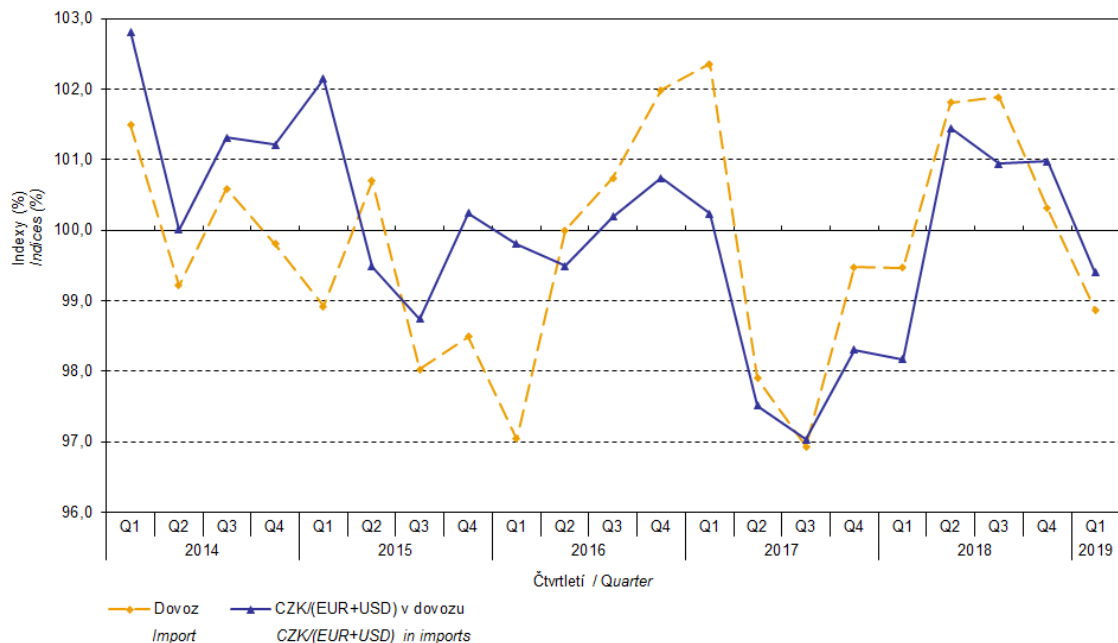
The external trade price development was also significantly affected by the CZK exchange rate to the major foreign currencies. The q-o-q exchange rate index includes two most important currencies from the Czech Republic's external trade point of view, i.e. EUR and USD. Q-o-q indices of the CZK exchange 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.

ANALYSIS

Graf č. 2 Indexy cen vývozu a vývoj kurzu mezičtvrtletně
Graph No 2 Export price indices and exchange rate development q-o-q



Graf č. 3 Indexy cen dovozu a vývoj kurzu mezičtvrtletně
Graph No 3 Import price indices and exchange rate development q-o-q



It can be seen from the aforementioned Graphs No 2 and 3 that in both cases of imports and exports, external trade prices have a strong relation to exchange rate impacts. Contracts

ANALYSIS

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.

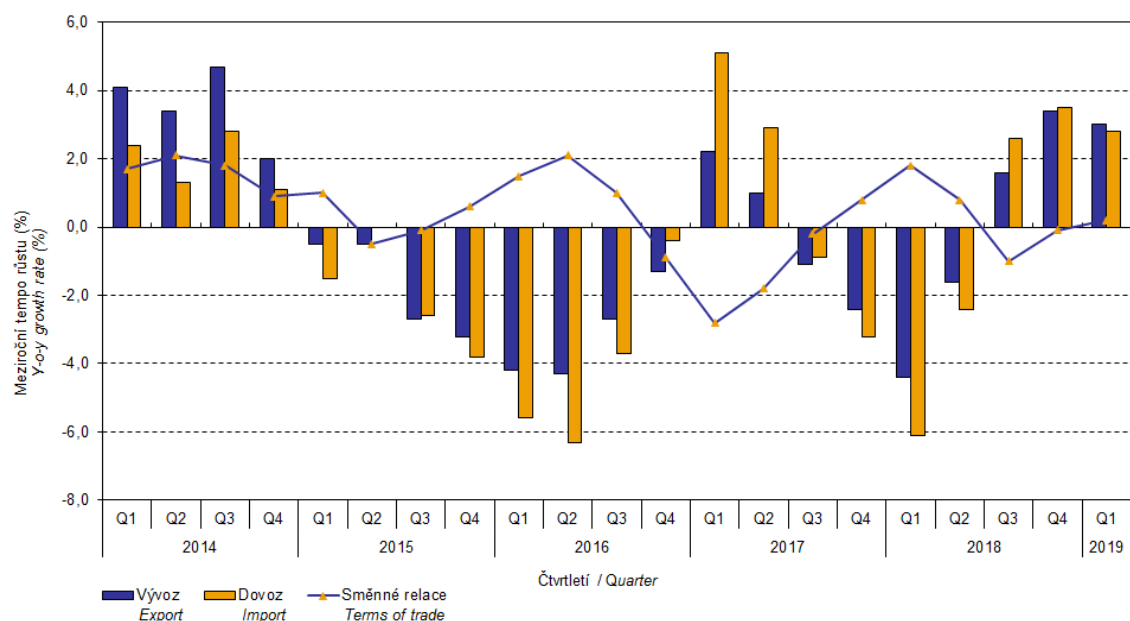
Year-on-Year Comparison

Export prices in Q1 2019 increased by 3.0%, year-on-year (y-o-y) (in Q4 2018 they grew by 3.4%, y-o-y). Prices of 'mineral fuels, lubricants and related materials', 'miscellaneous manufactured articles', 'manufactured goods classified chiefly by material', and 'machinery and transport equipment' increased by 8.9%, 4.3%, 3.9%, and 2.2%, respectively. No decline of prices was recorded in any of the groups measured.

Import prices in Q1 2019 rose by 2.8%, y-o-y (in Q4 2018 they grew by 3.5%, y-o-y). Prices of 'mineral fuels, lubricants and related materials', 'chemicals and related products', 'machinery and transport equipment', and 'manufactured goods classified chiefly by material' increased by 8.0%, 3.6%, 3.3%, and 1.5%, respectively. Prices of 'food and live animals' did not change. The only prices that saw a decline were those for 'beverages and tobacco' by 3.0%.

The terms of trade in Q1 2019 increased year-on-year to reach the value of 100.2% (in Q4 2018 they were at the value of 99.9%) and moved this way into positive values, see Graph No 4 below. Positive values of the terms of trade were recorded namely for 'food and live animals' (104.1%), 'miscellaneous manufactured articles' (103.1%), and 'manufactured goods classified chiefly by material' (102.4%). Negative values of the terms of trade were recorded for 'crude materials, inedible, except fuels' (94.1%), 'chemicals and related products' (97.6%), and 'machinery and transport equipment' (98.9%).

Graf č. 4 Vývoj indexů cen v zahraničním obchodě meziročně
Graph No 4 Trend of price indices in external trade y-o-y



ANALYSIS

External Trade Price Indices, Year-on-Year, Adjusted for Exchange Rate Influence

The Czech Statistical Office (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 No 6 and 7 for Q1 2018, for instance.

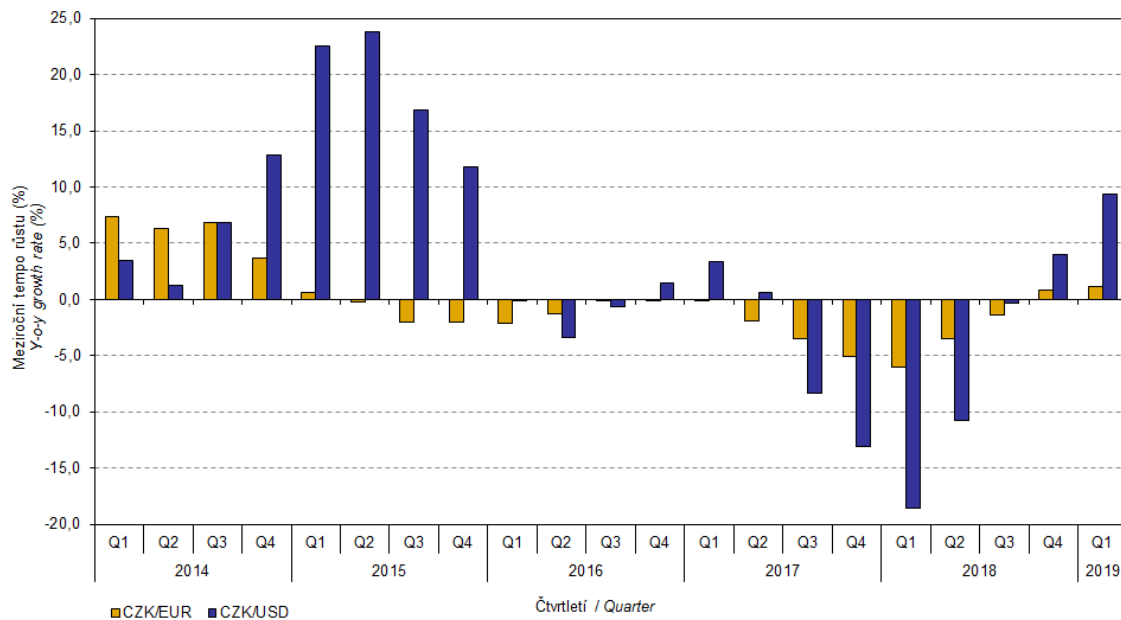
The method employed does not enable, for many practical reasons, to carry out 100% exchange rate adjustment because all trade transactions concluded in foreign currencies are not reported in foreign currencies. This share is up to 30%. It follows from the aforementioned, that **at the full exchange rate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

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.

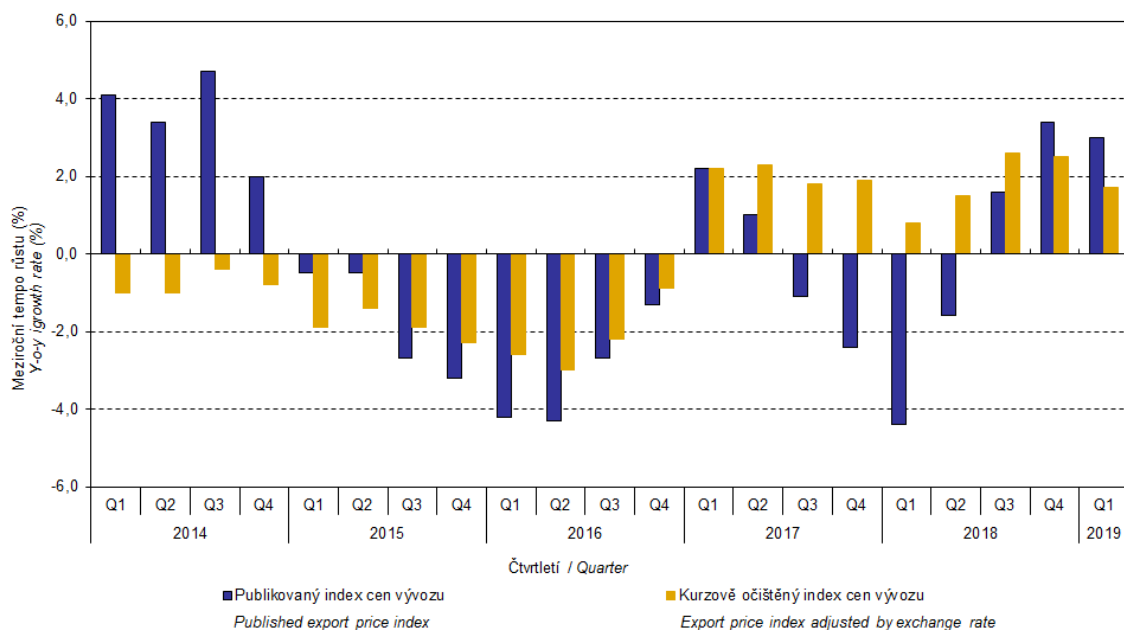
ANALYSIS

Graf č. 5 Vývoj čtvrtletních kurzů meziročně
Graph No 5 Quarterly exchange rates development y-o-y



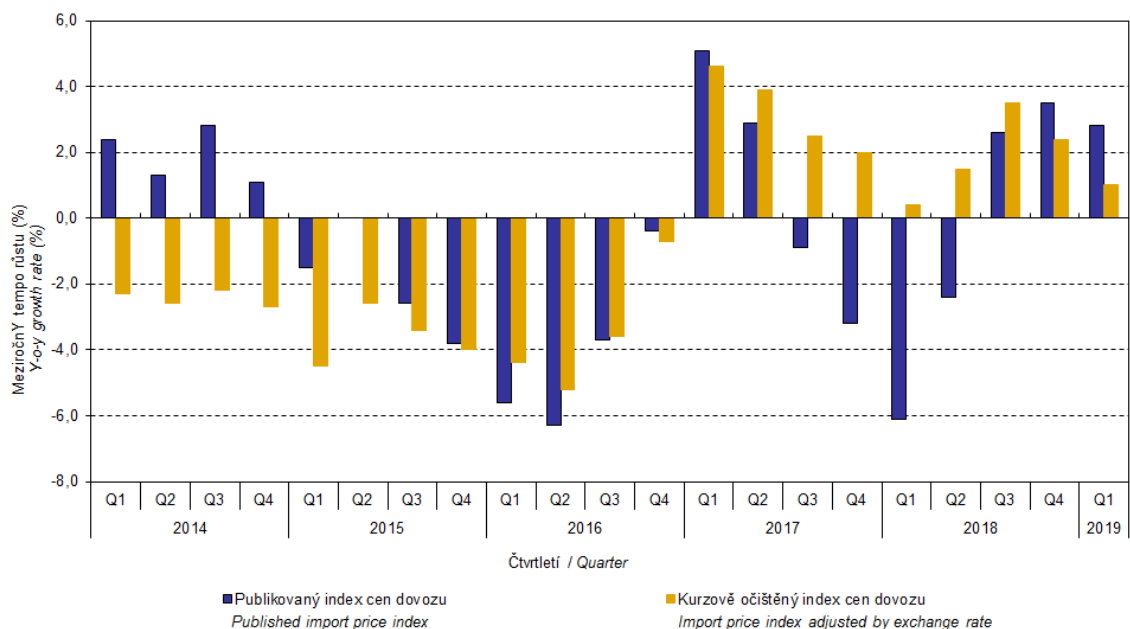
It is obvious from the following Graphs No 6 and 7, how significant was the exchange rate impact on the value of export and import price indices.

Graf č. 6 Vývoj indexů vývozních cen meziročně
Graph No 6 Trend in export price indices y-o-y



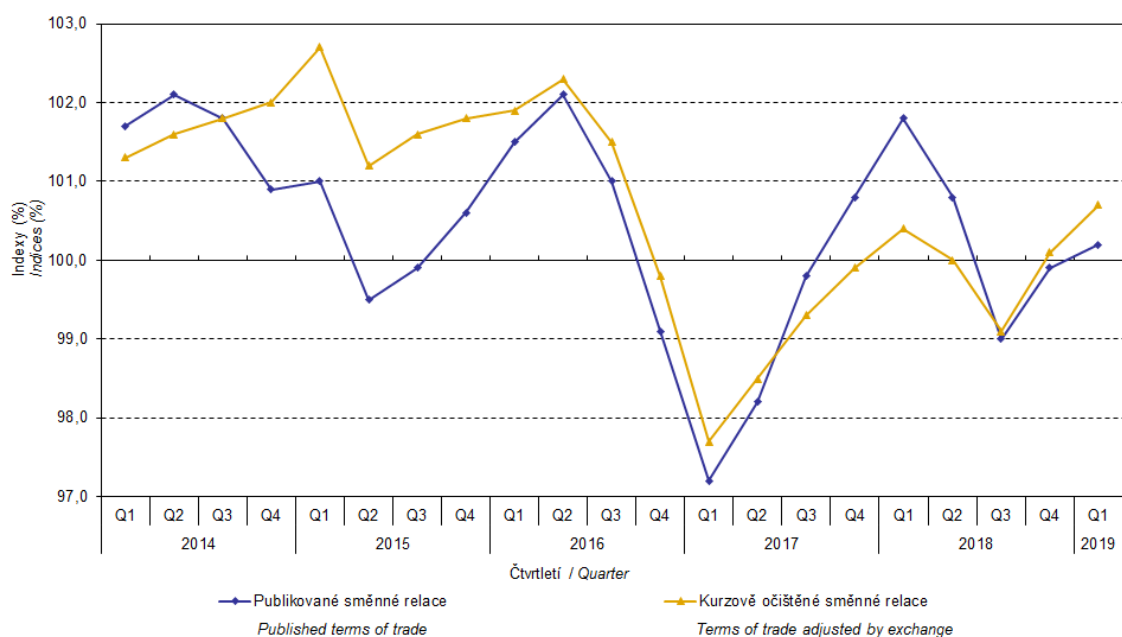
ANALYSIS

Graf č. 7 Vývoj indexů dovozních cen meziročně
Graph No 7 Trend in import price indices y-o-y



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

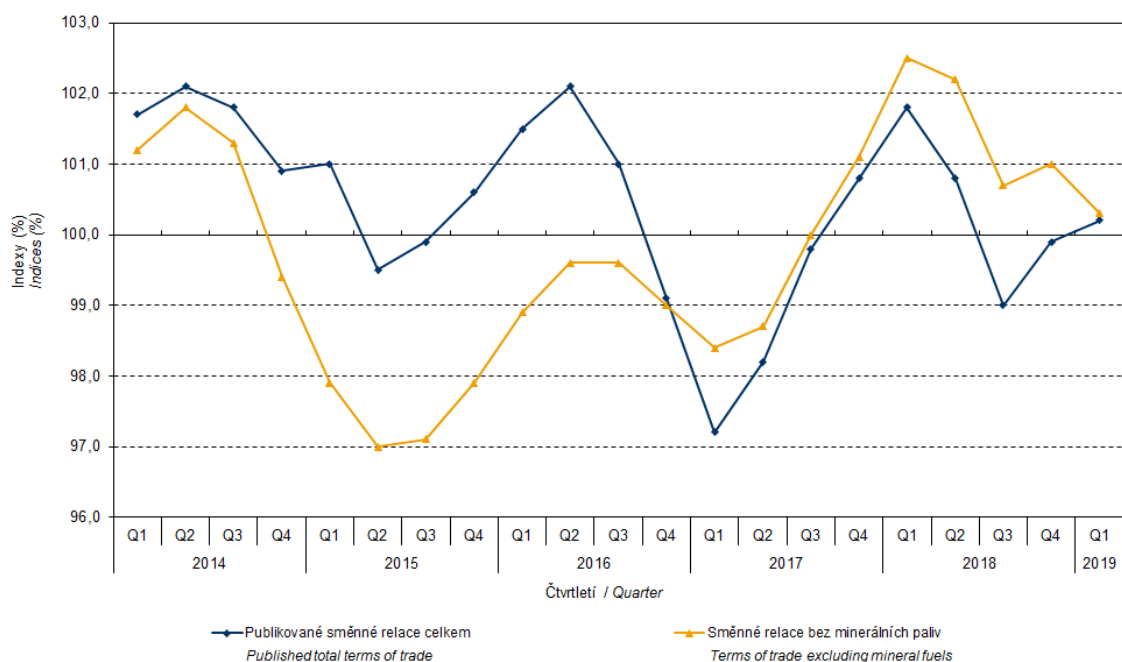
Graf č. 8 Směnné relace meziročně
Graph No 8 Terms of trade y-o-y



ANALYSIS

Graph No 9 demonstrates how the value of the terms of trade would develop if the observed groups of goods would not include that of 'mineral fuels, lubricants and related materials'. It can be observed in the graph that the effects of 'mineral fuels, lubricants and related materials' were increasing the overall value of the 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 the 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, the terms of trade, as a rule, go down, and, conversely, when prices of crude materials fall, the terms of trade grow.

Graf č.9 Publikované směnné relace a směnné relace s vyloučením minerálních paliv meziročně
Graph No 9 Published terms of trade and terms of trade excluding mineral fuels y-o-y



Closing Summary

The exchange rate effects in Q1 2019 boosted a growth in export and import price indices, year-on-year. Export prices grew year-on-year at a pace higher than that of import prices, and therefore the terms of trade attained positive values. If exchange rate unadjusted, the terms of trade would reach a positive value anyway. Values free of the exchange rate effects correspond to exchange rate adjusted indices, see Graphs No 6, 7, and 8.

ANALYSIS

Tabulka 1 Rozklad přírůstků publikovaných a kurzově očištěných indexů cen vývozu a dovozu za 1. čtvrtletí 2019

Table 1 Breakdown of export and import price indices - published and exchange rate adjusted for Q1 2019

| SITC | Název Name | Publikované Published | | | | | Očištěné Adjusted | | | | |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------|---------|---------|---------|---------|---------------------------|---------|---------|---------|---------|
| | | Meziroční Year-on-year | | | | | Meziroční Year-on-year | | | | |
| | | Q4/2018 | 01/2019 | 02/2019 | 03/2019 | Q1/2019 | Q4/2018 | 01/2019 | 02/2019 | 03/2019 | Q1/2019 |
| Rozklad přírůstků indexů vývozních cen <i>Breakdown of export price indices</i> | | | | | | | | | | | |
| | Celkem <i>Total</i> | 3,4 | 2,8 | 3,4 | 2,6 | 3,0 | 2,5 | 1,9 | 1,7 | 1,5 | 1,7 |
| 0 | Potraviny a živá zvířata <i>Food and live animals</i> | 0,1 | 0,2 | 0,2 | 0,2 | 0,2 | 0,1 | 0,1 | 0,1 | 0,2 | 0,1 |
| 1 | Nápoje a tabák <i>Beverages and tobacco</i> | 0,1 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | Suroviny nepoživatelné, s výjimkou paliv <i>Crude materials, inedible, except fuels</i> | 0,1 | 0,0 | 0,0 | 0,1 | 0,0 | 0,0 | -0,1 | 0,0 | 0,0 | 0,0 |
| 3 | Minerální paliva, maziva a příbuzné materiály <i>Mineral fuels, lubricants and related materials</i> | 0,5 | 0,4 | 0,3 | 0,1 | 0,3 | 0,5 | 0,4 | 0,3 | 0,1 | 0,3 |
| 5 | Chemikálie a příbuzné výrobky <i>Chemicals and related products</i> | 0,2 | 0,0 | 0,1 | 0,1 | 0,1 | 0,1 | 0,0 | 0,0 | 0,0 | 0,0 |
| 6 | Tržní výrobky tříděné hlavně podle materiálu <i>Manufactured goods classified chiefly by material</i> | 1,1 | 0,9 | 0,9 | 0,5 | 0,8 | 1,0 | 0,7 | 0,6 | 0,4 | 0,6 |
| 7 | Stroje a dopravní prostředky - z toho: <i>Machinery and transport equipment - thereof:</i> | 1,0 | 0,9 | 1,4 | 1,2 | 1,2 | 0,5 | 0,5 | 0,4 | 0,5 | 0,4 |
| 74 | Stroje a zařízení všeobecně užívané v průmyslu, j.n. <i>General industrial machinery and equipment, n.e.s.</i> | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,1 | 0,2 | 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 | -0,1 | 0,0 | 0,1 | 0,0 | -0,1 | -0,2 | -0,1 | 0,0 | -0,1 |
| 78 | Silniční vozidla <i>Road vehicles (including air-cushion vehicles)</i> | 0,5 | 0,6 | 0,8 | 0,7 | 0,7 | 0,3 | 0,5 | 0,4 | 0,5 | 0,4 |
| 8 | Průmyslové spotřební zboží <i>Miscellaneous manufactured articles</i> | 0,3 | 0,4 | 0,5 | 0,4 | 0,4 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| Rozklad přírůstků indexů dovozních cen <i>Breakdown of import price indices</i> | | | | | | | | | | | |
| | Celkem <i>Total</i> | 3,5 | 2,4 | 3,3 | 2,8 | 2,8 | 2,4 | 1,0 | 1,0 | 0,8 | 1,0 |
| 0 | Potraviny a živá zvířata <i>Food and live animals</i> | -0,1 | 0,0 | 0,0 | 0,0 | 0,0 | -0,1 | -0,1 | 0,0 | 0,0 | 0,0 |
| 1 | Nápoje a tabák <i>Beverages and tobacco</i> | 0,1 | 0,0 | 0,0 | 0,0 | 0,0 | 0,1 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | Suroviny nepoživatelné, s výjimkou paliv <i>Crude materials, inedible, except fuels</i> | 0,2 | 0,1 | 0,1 | 0,2 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 |
| 3 | Minerální paliva, maziva a příbuzné materiály <i>Mineral fuels, lubricants and related materials</i> | 1,6 | 0,5 | 0,6 | 0,5 | 0,6 | 1,5 | 0,3 | 0,2 | 0,2 | 0,2 |
| 5 | Chemikálie a příbuzné výrobky <i>Chemicals and related products</i> | 0,7 | 0,5 | 0,5 | 0,3 | 0,4 | 0,6 | 0,4 | 0,3 | 0,1 | 0,3 |
| 6 | Tržní výrobky tříděné hlavně podle materiálu <i>Manufactured goods classified chiefly by material</i> | 0,4 | 0,3 | 0,3 | 0,3 | 0,3 | 0,2 | 0,2 | 0,0 | 0,0 | 0,1 |
| 7 | Stroje a dopravní prostředky - z toho: <i>Machinery and transport equipment - thereof:</i> | 0,6 | 0,9 | 1,6 | 1,4 | 1,3 | 0,1 | 0,1 | 0,4 | 0,5 | 0,3 |
| 74 | Stroje a zařízení všeobecně užívané v průmyslu, j.n. <i>General industrial machinery and equipment, n.e.s.</i> | 0,1 | 0,1 | 0,2 | 0,1 | 0,2 | 0,1 | 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> | 0,0 | 0,1 | 0,2 | 0,2 | 0,2 | -0,1 | -0,1 | -0,1 | 0,0 | -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 | 0,4 | 0,3 | 0,0 | 0,0 | 0,2 | 0,1 | 0,1 |
| 78 | Silniční vozidla <i>Road vehicles (including air-cushion vehicles)</i> | 0,2 | 0,2 | 0,4 | 0,3 | 0,3 | 0,2 | 0,1 | 0,2 | 0,3 | 0,2 |
| 8 | Průmyslové spotřební zboží <i>Miscellaneous manufactured articles</i> | 0,0 | 0,1 | 0,2 | 0,1 | 0,1 | -0,1 | 0,0 | 0,0 | -0,1 | 0,0 |

ANALYSIS

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

Tabulka 2 Indexy cen vývozu a dovozu v 1. čtvrtletí 2019
Table 2 Export and import price indices in Q1 2019

| SITC | Název Name | Stejně období předchozího roku = 100 Corresponding period of previous year = 100 | | | | |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|--------|--------|---------|
| | | Q4/2018 | 1/2019 | 2/2019 | 3/2019 | Q1/2019 |
| Indexy vývozních cen Export price indices | | | | | | |
| | Celkem Total | 103,4 | 102,8 | 103,4 | 102,6 | 103,0 |
| 0 | Potraviny a živá zvířata Food and live animals | 102,7 | 104,0 | 104,2 | 104,2 | 104,1 |
| 1 | Nápoje a tabák Beverages and tobacco | 103,1 | 100,9 | 103,4 | 103,0 | 102,4 |
| 2 | Suroviny nepoživatelné, s výjimkou paliv Crude materials, inedible, except fuels | 102,8 | 98,8 | 101,6 | 101,9 | 100,8 |
| 3 | Minerální paliva, maziva a příbuzné materiály Mineral fuels, lubricants and related materials | 116,7 | 112,9 | 109,4 | 104,4 | 108,9 |
| 5 | Chemikálie a příbuzné výrobky Chemicals and related products | 103,2 | 100,5 | 101,6 | 101,1 | 101,1 |
| 6 | Tržní výrobky tříděné hlavně podle materiálu Manufactured goods classified chiefly by material | 105,4 | 104,4 | 104,5 | 102,8 | 103,9 |
| 7 | Stroje a dopravní prostředky Machinery and transport equipment | 101,8 | 101,7 | 102,7 | 102,3 | 102,2 |
| 74 | Stroje a zařízení všeobecně užívané v průmyslu, j.n. General industrial machinery and equipment, n.e.s. | 102,4 | 103,2 | 103,1 | 102,6 | 103,0 |
| 77 | Elektrická zařízení, přístroje a spotřebiče, j.n. Electrical machinery, apparatus and appliances, | 99,6 | 98,4 | 100,3 | 100,9 | 99,9 |
| 78 | Silniční vozidla Road vehicles (including air-cushion vehicles) | 102,3 | 102,7 | 103,5 | 103,0 | 103,1 |
| 8 | Průmyslové spotřební zboží Miscellaneous manufactured articles | 103,5 | 104,1 | 104,8 | 104,1 | 104,3 |
| Indexy dovozních cen Import price indices | | | | | | |
| | Celkem Total | 103,5 | 102,4 | 103,3 | 102,8 | 102,8 |
| 0 | Potraviny a živá zvířata Food and live animals | 98,6 | 99,3 | 100,9 | 99,9 | 100,0 |
| 1 | Nápoje a tabák Beverages and tobacco | 106,0 | 99,1 | 96,2 | 95,7 | 97,0 |
| 2 | Suroviny nepoživatelné, s výjimkou paliv Crude materials, inedible, except fuels | 105,4 | 105,6 | 107,5 | 108,1 | 107,1 |
| 3 | Minerální paliva, maziva a příbuzné materiály Mineral fuels, lubricants and related materials | 123,1 | 107,6 | 108,6 | 107,8 | 108,0 |
| 5 | Chemikálie a příbuzné výrobky Chemicals and related products | 105,7 | 104,5 | 104,0 | 102,3 | 103,6 |
| 6 | Tržní výrobky tříděné hlavně podle materiálu Manufactured goods classified chiefly by material | 101,9 | 101,6 | 101,6 | 101,2 | 101,5 |
| 7 | Stroje a dopravní prostředky Machinery and transport equipment | 101,6 | 102,2 | 104,0 | 103,6 | 103,3 |
| 74 | Stroje a zařízení všeobecně užívané v průmyslu, j.n. General industrial machinery and equipment, n.e.s. | 102,0 | 102,2 | 103,0 | 102,3 | 102,5 |
| 75 | Kancelářské stroje a zař. k automat. zpracování dat Office machines and automatic data-processing | 101,0 | 102,7 | 103,8 | 104,6 | 103,7 |
| 77 | Elektrická zařízení, přístroje a spotřebiče, j.n. Electrical machinery, apparatus and appliances, | 100,8 | 101,9 | 104,4 | 103,8 | 103,3 |
| 78 | Silniční vozidla Road vehicles (including air-cushion vehicles) | 102,3 | 101,4 | 103,4 | 103,2 | 102,7 |
| 8 | Průmyslové spotřební zboží Miscellaneous manufactured articles | 100,0 | 101,0 | 101,5 | 101,1 | 101,2 |

Note: In tables and graphs the publication uses the Czech decimal comma, instead of the English decimal point, as decimal separator for internal reasons.

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