

12 February 2024

Development of international trade in goods price indices in the Q4 2023 and in the year 2023

In the Q4 2023, compared to the Q3 2023, export prices increased by 0.6%. In the year-on-year (y-o-y) comparison, export prices decreased by 2.2% in the Q4 2023. Import prices increased by 1.5% in the Q4 2023 compared to the Q3 2023. In the y-o-y comparison, import prices decreased by 6.1% in the Q4 2023. The terms of trade reached the value of 99.1% in the Q4 2023 compared to the Q3 2023. In the year-on-year comparison, the terms of trade reached the value of 104.2% in the Q4 2023. On the average for the whole year 2023, compared to the year 2022, export prices decreased by 0.7%, import prices by 5.7%, and the terms of trade reached the value of 105.3%.

Export prices

Quarter-on-quarter (q-o-q; in the Q4 2023 compared to the Q3 2023), they increased by 0.6%. The following prices increased the most: prices of 'crude materials, inedible, except fuels' by 2.8% (primarily prices of metal scrap and wood), 'chemicals and related products' (especially of organic chemicals and plastics) by 2.3%, and 'miscellaneous manufactured articles' by 1.7% (especially of furniture). The following decreased the most: prices of 'mineral fuels, lubricants and related materials' by 3.4% (prices of electric current, petroleum products, and gas), and prices of 'manufactured goods classified chiefly by material' by 0.6% (mainly of iron and steel).

Year-on-year, in the Q4 2023, they decreased by 2.2% (in the Q3 2023 it was by 4.4%). The biggest price decrease was in 'crude materials, inedible, except fuels' by 14.7% (especially prices of wood), 'mineral fuels, lubricants and related materials' by 13.7% (prices of electric current and petroleum products in particular), and 'chemicals and related products' (mainly prices of inorganic chemicals and plastics) by 7.7%. The highest price increase was in 'beverages and tobacco' by 11.1% and in 'miscellaneous manufactured articles' by 4.1%.

On the average for the whole year 2023, compared to the year 2022, they decreased by 0.7% (for the year 2022 they increased by 12.7%); the following decreased the most: prices of 'crude materials, inedible, except fuels' by 18.6% (primarily prices of wood and metal scrap), 'chemicals and related products' by 7.2% (mainly prices of organic chemicals and plastics), and 'manufactured goods classified chiefly by material' by 3.2% (mainly prices of iron and steel and of manufactures of metals). The following were increasing the most: prices of 'beverages and tobacco' by 16.0%, 'miscellaneous manufactured articles' by 2.6%, and prices of 'machinery and transport equipment' by 2.0% (especially of road vehicles).

Import prices

Quarter-on-quarter (in the Q4 2023 compared to the Q3 2023), they increased by 1.5%. Prices of 'beverages and tobacco' increased by 7.2%, 'mineral fuels, lubricants and related materials' increased by 3.1% (of gas, petroleum and petroleum products, and coal), 'machinery and transport equipment' by 2.1% (mainly prices of road vehicles), and 'chemicals and related



products' by 1.3% (especially prices of plastics and medicinal products). Prices did not decrease in any of the surveyed SITC 1 groups.

Year-on-year, in the Q4 2023, they decreased by 6.1% (in the Q3 2023 they dropped by 11.2%). The biggest price decrease was in 'mineral fuels, lubricants and related materials' by 28.7% (mainly prices of gas and electric current), 'crude materials, inedible, except fuels' by 9.6% (primarily prices of crude rubber), and 'chemicals and related products' by 8.0% (especially prices of plastics). Prices of 'beverages and tobacco' increased by 23.9% (tobacco prices in particular) and prices of 'miscellaneous manufactured articles' by 2.3%.

On the average for the whole year 2023, compared to the year 2022, they decreased by 5.7% (for the year 2022 they increased by 17.2%); the following decreased the most: prices of 'mineral fuels, lubricants and related materials' by 27.7% (prices of petroleum and petroleum products, gas, electric current, and coal), of 'crude materials, inedible, except fuels' by 10.7% (prices of metalliferous ores and metal scrap in particular), and of 'chemicals and related products' by 7.9% (mainly prices of plastics and organic chemicals). The following increased the most: prices of 'beverages and tobacco' by 22.7% (especially of tobacco) and of 'food and live animals' by 6.5% (primarily of vegetables and fruit, meat and meat preparations).

The terms of trade

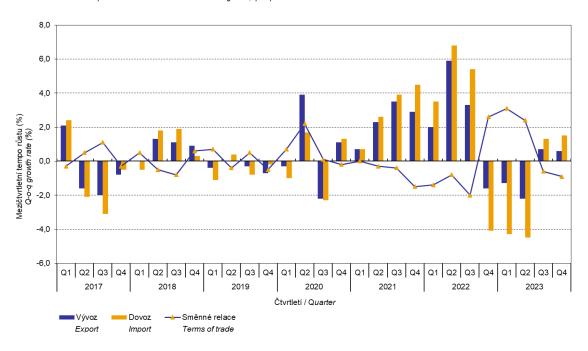
Quarter-on-quarter (in the Q4 2023 compared to the Q3 2023), they reached the value of 99.1%. The lowest negative value of the terms of trade was reached by 'mineral fuels, lubricants and related materials' (93.6%). The highest positive value was recorded by 'crude materials, inedible, except fuels' (101.8%).

Year-on-year, in the Q4 2023, they increased to the value of 104.2% (in the Q3 2023 the value was 107.7%) and for the fourth quarter they remained in the positive values – see the Chart No 2. The highest positive value of the terms of trade was recorded by 'mineral fuels, lubricants and related materials' (121.0%) and the lowest negative value by 'beverages and tobacco' (89.7%).

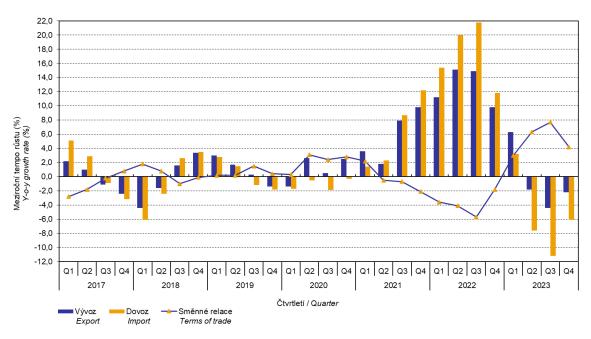
On the average for the whole year 2023, compared to the year 2022, they reached the value of 105.3% (in 2022, they amounted to 96.2%), which was the highest value since the year 1998.



Graf č. 1 Vývoj indexů cen v zahraničním obchodě se zbožím mezičtvrtletně Chart No 1 Trend of price indices in international trade in goods, q-o-q



Graf č. 2 Vývoj indexů cen v zahraničním obchodě se zbožím meziročně Chart No 2 Trend of price indices in international trade in goods, y-o-y

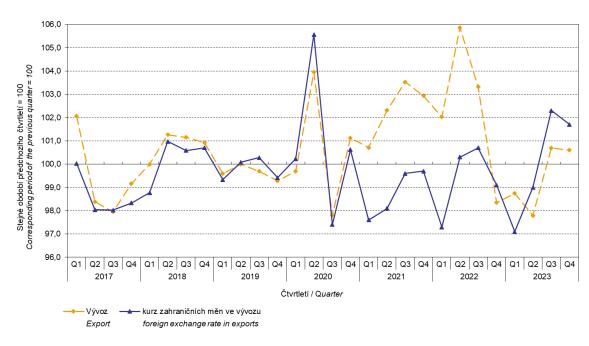


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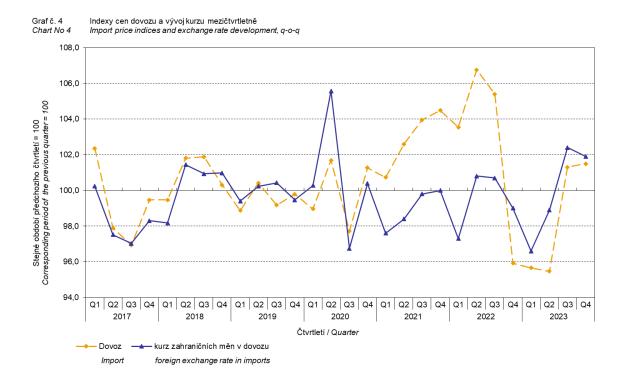


The international trade in goods (change of ownership) price development was also significantly influenced by the CZK exchange rate to the major foreign currencies. All monitored foreign currencies have been included in the **quarter-on-quarter exchange rate index**. Q-o-q indices of the CZK exchange rate to these currencies were weighted by the respective weight, which pertains to those foreign currencies in the export price index and in the import price index (before the Q3 2023, only two most important currencies, i.e. EUR and USD, have been included; since the Q3 2023, the calculation has been refined by including all currencies and it was calculated backwards to the year 2021).

Graf č. 3 Indexy cen vývozu a vývoj kurzu mezičtvrtletně
Chart No 3 Export price indices and exchange rate development, q-o-q







It is apparent from the Chart No 3 and the Chart No 4 above that in both exports and imports, international trade in goods prices have a relation to exchange rate effects. Contracts with foreign entities are usually concluded for longer periods of time and the longer the contract period is, the stronger the relation to exchange rates is.

International trade in goods price indices, year-on-year, adjusted for exchange rate influence

The Czech Statistical Office (CZSO) also calculates year-on-year international trade in goods price indices adjusted for exchange rate effects. It is carried out as follows: prices in foreign currencies reported in the current month are **converted** to Czech crowns **by the exchange rate** of the same month **of the previous year**. Then they are used for the weighted mean calculation together with prices reported in CZK. This exchange rate adjusted base price index of a month is related to the non-adjusted base price index of the corresponding month of the previous year and thus the year-on-year adjusted price index for a month is calculated.

Since 2017, adjusted quarter-on-quarter price indices have been calculated similarly, too. **Differences between adjusted and non-adjusted price indices may be considerable**. They are obvious in the Chart No 6 and the Chart No 7, for example, in the Q1 2018 and in the Q2 2021.

The method employed does not enable to make a 100% exchange rate adjustment because not all trade transactions made in foreign currencies are also reported in foreign currencies; the proportion does not exceed 30%. From the aforementioned it follows that **at the full exchange**

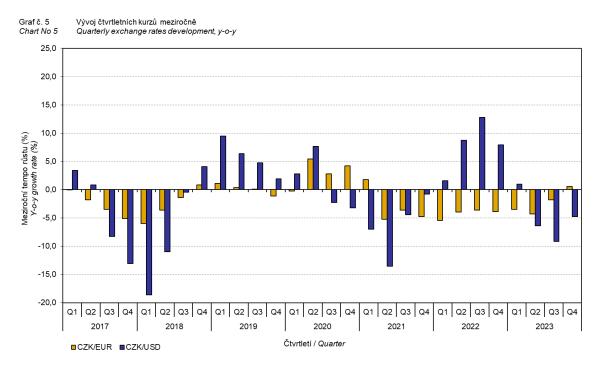


rate adjustment, differences between the published price indices and the exchange rate adjusted price indices would probably further increase.

The exchange rate adjusted indices described above can also be used to make the exchange rate adjusted breakdown of increments of price indices. The Table 1 gives the **published and exchange rate adjusted breakdown of increments** of export and import price indices, supplemented by the most important two-digit code groups of the SITC 7. The breakdown illustrates well how many percentage points each of the groups "exchange rate contributed" to the index.

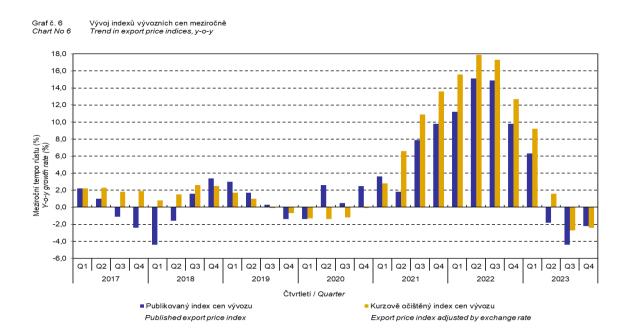
In general, it holds true that the exchange rate effect decreases the value of price indices in international trade in goods if CZK is strengthening to foreign currencies in total. Conversely, the exchange rate effect pushes the price indices up if CZK is weakening to foreign currencies in total.

The Chart No 5 below shows the CZK exchange rate to the two most important foreign currencies, i.e. to EUR and USD.

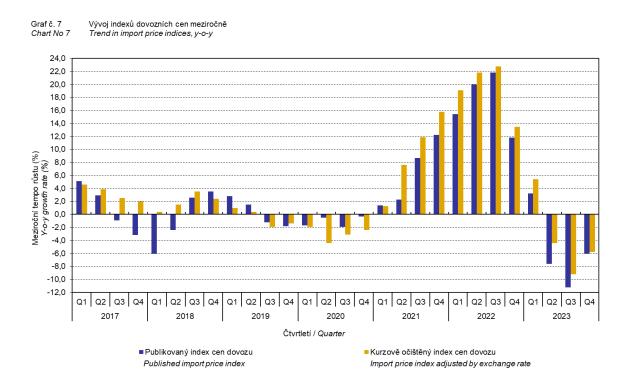


It is apparent from the Chart No 6 and the Chart No 7 below how significant the exchange rate influence of all monitored foreign currencies on the value of the export and import price indices was.

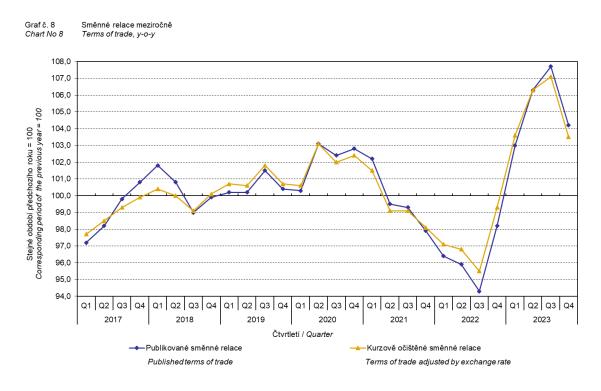








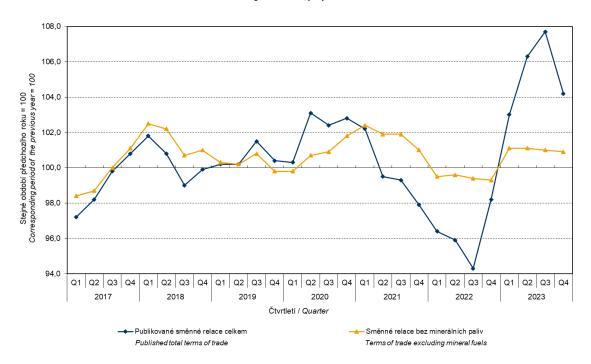
The Chart No 8 shows the exchange rate influence on the value of the year-on-year terms of trade.



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



The Chart No 9 shows the development of the value of the terms of trade when the group of 'mineral fuels, lubricants and related materials' is excluded. In this chart, the effect of 'mineral fuels, lubricants and related materials' can be observed; it has an influence on the total value of the y-o-y terms of trade. Since the Q1 2021, 'mineral fuels, lubricants and related materials' were decreasing the value of the terms of trade; however, in the Q1 2023, there was a turnabout and 'mineral fuels, lubricants and related materials' started to increase the value of the terms of trade. This is, of course, related to the development of prices on world markets, especially of petroleum prices. Import prices, which, compared to export prices, have a higher proportion of crude materials, respond in a more sensitive way to price turbulences. Therefore, the terms of trade are usually increasing when prices of crude materials are decreasing, and, vice versa, when prices of crude materials are increasing, the terms of trade are decreasing.

Final summary

In the Q4 2023, the exchange rate effect moderated the decrease of export prices and deepened the decrease of the import price index, **year-on-year**. Import prices decreased more than export prices and therefore the terms of trade reached positive values, **year-on-year**. After elimination of the exchange rate effect, the terms of trade were lower than the published terms of trade. Values free of the exchange rate effect correspond to the exchange rate adjusted indices – see the Charts Nos. 6, 7, and 8.



Tabulka 1 Rozklad přírůstků publikovaných a kurzově očištěných indexů cen vývozu a dovozu za 4. čtvrtletí 2023

Table 1 Breakdown of increments of export and import price indices - published and exchange rate adjusted for Q4 2023

	Název Name			Published				Exchar	ige rate adj	usted		
			Meziroční					Meziroční□ Veza sa vezas				
		Year-on-year Q3/2023 10/2023 11/2023 12/2023 Q4/2023				Year-on-year Q3/2023 10/2023 11/2023 12/2023 Q4/202						
		Rozklad přírůstků indexů vývozních cen Breakdown of increments of export price indices										
	Celkem			Di	eardowno	merement	3 Or export	price maic	-	I		
	Total	-4,4	-2,2	-2,1	-2,4	-2,2	-2,7	-1,9	-2,3	-3,1	-2,	
	Potraviny a živá zvířata Food and live animals	-0,2	-0,3	-0,3	-0,4	-0,3	-0,2	-0,3	-0,4	-0,4	-0,	
	Nápoje a tabák Beverages and tobacco	0,1	0,0	0,1	0,1	0,1	0,1	0,1	0,0	0,0	0,	
	Suroviny nepoživatelné, s výjimkou paliv Crude materials, inedible, except fuels	-0,7	-0,5	-0,4	-0,3	-0,4	-0,7	-0,5	-0,4	-0,3	-0,4	
	Minerální paliva, maziva a příbuzné materiály Mineral fuels, lubricants and related materials	-1,8	-0,6	-1,0	-1,9	-1,2	-1,6	-0,6	-1,0	-1,9	-1,	
	Chemikálie a příbuzné výrobky Chemicals and related products	-0,9	-0,6	-0,5	-0,4	-0,5	-0,7	-0,5	-0,5	-0,4	-0,	
6	Tržní výrobky tříděné hlavně podle materiálu Manufactured goods classified chiefly by material	-1,6	-1,6	-1,5	-1,2	-1,5	-1,3	-1,7	-1,5	-1,3	-1,	
7	Stroje a dopravní prostředky - z toho: Machinery and transport equipment - thereof:	0,6	1,1	1,1	1,3	1,2	1,4	1,2	1,1	0,8	1,	
74	Stroje a zařízení všeobecně užívané v průmyslu, j.n. General industrial machinery and equipment, n.e.s.	0,1	0,2	0,2	0,1	0,2	0,2	0,1	0,1	0,1	0,	
77	Elektrická zařízení, přístroje a spotřebiče, j.n. Electrical machinery, apparatus and appliances, n.e.s.	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,0	0,0	0,0	
78	Silniční vozidla Road vehicles (including air-cushion vehicles)	0,4	0,8	0,8	1,0	0,9	0,8	0,7	0,7	0,5	0,	
8	Průmyslové spotřební zboží Miscellaneous manufactured articles	0,1	0,3	0,4	0,4	0,4	0,3	0.4	0,4	0,4	0,	
		Rozklad přírůstků indexů dovozních cen Breakdown of increments of import price indices								-,,		
	Celkem Total	-11,2	-6,5	-5,7	-6,2	-6,1	-9,2	-5,7	-5,3	-6,4	-5,8	
	Potraviny a živá zvířata Food and live animals	0,1	0,1	0,1	0,0	0,1	0,2	0,1	0,1	0,0	0,	
	Nápoje a tabák Beverages and tobacco	0,1	0,2	0,1	0,1	0,1	0,2	0,2	0,2	0,2	0,:	
	Suroviny nepoživatelné, s výjimkou paliv Crude materials, inedible, except fuels	-0,4	-0,3	-0,2	-0,2	-0,2	-0,3	-0,2	-0,2	-0,1	-0,:	
	Minerální paliva, maziva a příbuzné materiály Mineral fuels, lubricants and related materials	-7,8	-4,3	-3,6	-4,7	-4,2	-7,7	-4,1	-3,6	-4,8	-4,	
9	Chemikálie a příbuzné výrobky Chemicals and related products	-1,4	-1,1	-0,9	-0,8	-0,9	-1,2	-1,1	-0,9	-0,9	-1,	
	Tržní výrobky tříděné hlavně podle materiálu Manufactured goods classified chiefly by material	-1,4	-1,3	-1,2	-1,1	-1,2	-1,1	-1,2	-1,2	-1,2	-1,	
	Stroje a dopravní prostředky - z toho: Machinery and transport equipment - thereof:	-0,6	0,0	-0,1	0,3	0,1	0,2	0,3	0,1	0,2	0,:	
	Stroje a zařízení všeobecně užívané v průmyslu, j.n. General industrial machinery and equipment, n.e.s.	-0,3	-0,2	-0,1	-0,1	-0,1	-0,2	-0,1	-0,1	-0,1	-0,	
75	Kancelářské stroje a zař. k automat. zpracování dat Office machines and automatic data-processing											
77	machines Bektrická zařízení, přístroje a spotřebiče, j.n.	-0,4	-0,3	-0,3	-0,2	-0,3	-0,2	-0,2	-0,2	-0,1	-0,	
78	Electrical machinery, apparatus and appliances, n.e.s. Silniční vozidla	0,0	0,2	0,1	0,2	0,1	0,2	0,2	0,1	0,1	0,	
8	Road vehicles (including air-cushion vehicles) Průmyslové spotřební zboží Miscellaneous manufactured articles	0,3	0,3	0,2	0,3	0,4	0,3	0,3	0,3	0,2	0,	



The closing table gives published non-adjusted international trade in goods price indices. Tabulka 2 Indexy cen vývozu a dovozu ve 4. čtvrtletí 2023 Table 2 Export and import price indices in Q4 2023

SITC	Název	Stejné období předchozího roku = 100 Corresponding period of the previous year = 100						
SIIC	Name	Q3/2023	10/2023	11/2023	12/2023	Q4/202		
		Indexy vývozních cen				Q 11202		
		Export price indices						
	Celkem			•				
	Total	95,6	97,8	97,9	97,6	97		
0	Potraviny a živá zvířata							
Ū	Food and live animals	94,7	93,7	92,6	91,7	92		
1	Nápoje a tabák							
	Beverages and tobacco	114,7	112,3	110,5	110,6	111		
2	Suroviny nepoživatelné, s výjimkou paliv							
	Crude materials, inedible, except fuels	77,0	82,7	85,3	88,1	8		
3	Minerální paliva, maziva a příbuzné materiály							
	Mineral fuels, lubricants and related materials	81,2	92,6	88,5	78,1	8		
5	Chemikálie a příbuzné výrobky							
	Chemicals and related products	86,6	91,1	92,3	93,5	9		
6	Tržní výrobky tříděné hlavně podle materiálu							
	Manufactured goods classified chiefly by material	92,6	92,4	92,9	94,4	9		
7	Stroje a dopravní prostředky		,	,	,			
	Machinery and transport equipment	101,5	102,6	102,7	102,9	10		
74	Stroje a zařízení všeobecně užívané v průmyslu, j.n.		400 -	400 -	400 -			
	General industrial machinery and equipment, n.e.s.	101,1	102,3	102,5	102,0	10		
77	Elektrická zařízení, přístroje a spotřebiče, j.n.		400 =	400.0	400.0			
78	Electrical machinery, apparatus and appliances, n.e.s.	99,3	100,7	100,3	100,0	10		
	Silniční vozidla	400.0	4040					
	Road vehicles (including air-cushion vehicles)	102,6	104,3	104,6	104,7	10		
8	Průmyslové spotřební zboží	400.0	400.0	404.0	404.4	40		
	Miscellaneous manufactured articles	100,9	103,9	104,0	104,4	10		
		Indexy dovozních cen Import price indices						
	Celkem		imp	ort priod man				
	Total	88,8	93,5	94,3	93,8	9		
0	Potraviny a živá zvířata	,	·	,	, ,			
	Food and live animals	103,1	102,3	102,7	100,0	10		
1	Nápoje a tabák	,	·	,	, ,			
	Beverages and tobacco	120,9	123,7	123,9	124,1	12		
	Suroviny nepoživatelné, s výjimkou paliv			-				
	Crude materials, inedible, except fuels	82,8	87,4	91,0	93,0	9		
3	Minerální paliva, maziva a příbuzné materiály							
	Mineral fuels, lubricants and related materials	55,3	71,6	74,7	67,5	7		
5	Chemikálie a příbuzné výrobky							
	Chemicals and related products	88,0	91,0	92,1	92,9	9		
6	Tržní výrobky tříděné hlavně podle materiálu							
	Manufactured goods classified chiefly by material	92,9	93,8	94,1	94,5	9		
7 74	Stroje a dopravní prostředky							
	Machinery and transport equipment	98,1	100,0	99,8	101,2	10		
	Stroje a zařízení všeobecně užívané v průmyslu, j.n.			·				
	General industrial machinery and equipment, n.e.s.	94,3	96,9	98,2	99,0	9		
75 77	Kancelářské stroje a zař. k automat. zpracování dat							
	Office machines and automatic data-processing machines	89,7	92,3	91,4	95,5	9		
	⊟ektrická zařízení, přístroje a spotřebiče, j.n.							
''	Electrical machinery, apparatus and appliances, n.e.s.	100,0	102,1	100,6	102,0	10		
78	Silniční vozidla							
	Road vehicles (including air-cushion vehicles)	103,2	104,1	103,4	104,1	10		
8	Průmyslové spotřební zboží		,	,	,			
	Miscellaneous manufactured articles	103,8	103,1	101,5	102,2	10		

Note: For internal reasons, the Czech decimal comma is used instead of the English decimal point as a decimal separator in tables and charts of this analysis.



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