CNI Indicators
ISSN 2317-708X • Year 9 • Number 1

TRADE OPENNESS INDICATORS

FUNCEX

CNI
Brazilian National Confederation of Industry
THE FUTURE OF INDUSTRY

Imports gain ground in domestic market

The Brazilian industry has lost share to foreign competitors in the domestic market. The **import penetration ratio,** which measures the share of imports in domestic consumption, posted its second consecutive annual increase in 2018.

The 1.3-percentage point increase (from 17.1% in 2017 to 18.4% in 2018) brought the indicator closer to its historical peak in the series at constant prices. This marked the second highest level in the indicator since 2003, second only to the 18.8% figure registered in 2011.

The import penetration ratio grew in spite of the recent devaluation of the Brazilian currency. This behavior can be explained by the usual lagged response of import volumes to the exchange rate.

In a similar trend, use of imported industrial inputs by industry also grew for the second consecutive year. This evolution was also accompanied by an increase in domestic production. However, demand for imported industrial inputs outpaced demand for domestic inputs.

The **imported input share,** which measures the share of imported inputs in total industrial inputs used by manufacturing, increased from 22.1% in 2016 to 23.1% in 2017 and to 24.3% in 2018.

The **export to output ratio,** which measures the importance of the external market for industry, has held steady over the last two years, confirming that the rebound started in 2015 has come to a stop.

Trade openness indicators in Manufacturing

In %

INDICATORS	CURRENT PRICES			CONSTANT PRICES		
	2016	2017*	2018*	2016	2017*	2018*
Export to output ratio	19.0	18.3	**20.1**	15.9	15.7	**15.8**
Import Penetration ratio	18.8	18.2	**22.4**	16.5	17.1	**18.4**
Imported Input share[1]	24.0	23.5	**27.0**	22.1	23.1	**24.3**
Net export to output ratio	7.3	6.5	**5.0**	4.9	4.0	**3.3**

*Estimate. For more details, please see the methodology.
1 - Only inputs from Mining and quarrying and Manufacturing are considered.

Exports have continued to grow in the last two years, but their share in production remained relatively stable as growth was accompanied by an increase in domestic demand. After rising by 3.7 percentage points from 2014 to 2016, the export to output ratio at constant prices remained around 15.8% in the 2016-2018 period.

Export growth has been hindered by a weak performance of world trade and by the exchange rate. While the Brazilian currency has depreciated against the currencies of the country's main trading partners over the last two years, the effect of the exchange rate on export volumes is lagged and the impact on foreign sales has not yet been felt.

EXPORT TO OUTPUT RATIO

Share of exports in industrial production holds virtually steady

The export to output ratio for manufacturing edged up from 15.7% in 2017 to 15.8% in 2018, showing relative stability. The indicator is 3.6 points above its all-time low observed in 2014 and 3.9 points below its all-time high registered in 2005, considering the series started in 2003.

The export to output ratio measures the share of manufacturing production sold to other countries. After growing from 12.2% in 2014 to 15.9% in 2016, the indicator held relatively steady in the following two years (15.7% in 2017 and 15.8% in 2018).

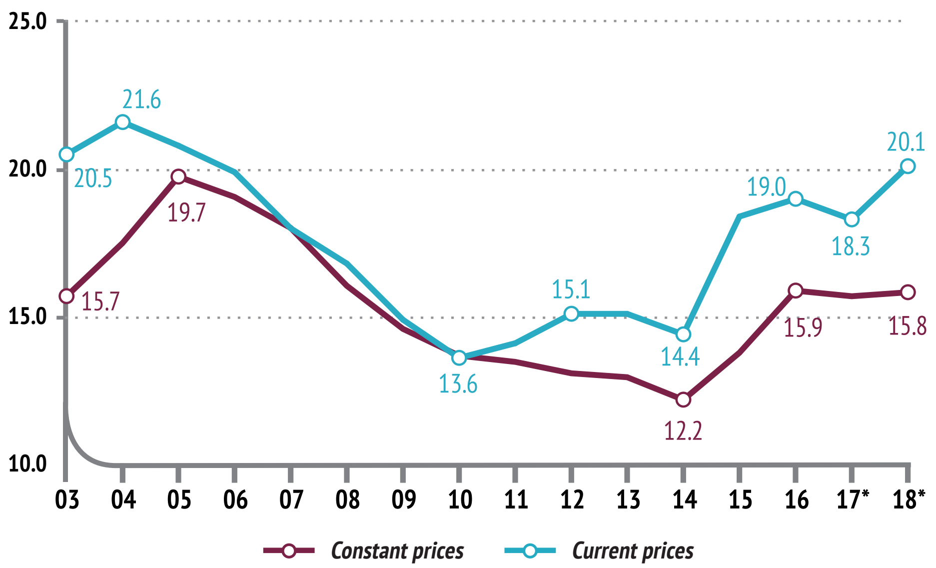
This behavior is explained mainly by the rebound in domestic production, which virtually accompanied the increase in exports – both at constant prices – in 2017 and 2018.

Export growth has been hampered by the weak momentum in international trade and by the appreciation of the Brazilian currency (real) between September 2015 and February 2017. During this period, the real effective exchange rate (based on the basket of currencies of Brazil's main trading partners) showed a 31% appreciation in the Brazilian currency.

While the real has since depreciated again, the recent trend was not enough to bring it back to the level seen in the second half of 2015. Moreover, the effect of the exchange rate on export volumes is not instantaneous. Between a greater stimulus from the foreign market and the realization of sales, companies have a long way to go, ranging from the identification of potential clients to the logistics of delivering their merchandise.

Export to output ratio in manufacturing

In %



*Estimate. For more details, please see the methodology.

Out of the 23 sectors considered in the survey, 11 closed 2018 with an increased share of exports in production, 11 showed a decline and, for one sector, the export to output ratio remained unchanged as compared to 2017.

Initially, special mention should be made of the behavior of the indicator for the **Other transport equipment** sector. The sector is very heterogeneous, as it is made up of vessel construction, rail vehicle construction, aircraft manufacturing, manufacturing of military fighting vehicles, and manufacturing of motorcycles, bicycles, tricycles, carts, among others.

Some of these "subsectors" involve high value exports, such as oil rigs. In these cases, production and export accounting records are not always aligned, as production occurs over more than one period while export is recorded in one go, which ultimately imposes a higher volatility on the indicator. In 2018, worthy of note is the increase in exports of vessels and floating structures, which increased from 0.9 billion reals in 2017 to 5.7 billion in 2018, as a result of exports to Panama and Netherlands. The other activities in the sector show lower variations in value and percentage, so the increase in the indicator is strongly associated with these transactions.

The sector with the second highest increase in the export to output ratio is **Coke, refined petroleum products and biofuel,** with a 2.6-point growth as compared to 2017. In this sector, production grew by 1.8%, against a 40.7% increase in exports. The percentage increase was pronounced because it starts from a low base, as exports never exceeded 10% of the sector's production in the series started in 2003. With the increase in the export to output ratio, the sector moved up from 18th to 13th place – when assessed based on the share of exports in production – among the 23 sectors covered by the survey.

The steepest declines in the export to output ratio were observed in the Basic metals (-4.1 points) and Motor vehicles, trailers and semi-trailers (-3.2 points) sectors. Both sectors experienced an increase in production coupled with a decline in exports, suggesting an increased domestic absorption of production.

In the case of Motor vehicles, trailers and semi-trailers, the decline in exports to Argentina deserves special mention. Argentina is the destination of about half of Brazilian vehicle exports and, given the economic crisis facing the country, exports in current US dollars showed a 23% reduction between 2017 and 2018.

Export to output ratio at constant prices

Sectors with the highest variations

Change between 2017 and 2018

SECTORS		INDICATORS 2017*	INDICATORS 2018*	CHANGE (percentage points)
Most significant increases	Other transport equipment	37.7	73.4	35.7
	Coke, refined petroleum products and biofuel	6.8	9.4	2.6
	Tobacco products	40.2	42	1.8
	Wood products	34.5	36.2	1.7
Most significant decreases	Basic metals	37.5	33.5	-4.0
	Motor vehicles, trailers and semi-trailers	15.2	12	-3.2
	Metal products (except machinery and equipment)	7.3	6.6	-0.7
	Leather, travel goods and footwear	20.7	20.1	-0.6

*Estimate. For more details, please see the methodology.

IMPORT PENETRATION RATIO

Import penetration ratio hits all time-high since 2011

The import penetration ratio edged up from 17.1% in 2017 to 18.4% in 2018. As a result of the 1.3-percentage point increase, the indicator reached its highest point since 2011, when it amounted to 18.8%, making the current result the second highest level in the series started in 2003. The rise in the indicator reflects an increased share of imported goods in the Brazilian consumer market during 2018.

The import penetration ratio measures the share of imported goods in apparent consumption (the sum of domestic production value for the domestic market and imports). From 2017 to 2018, imports of manufactured goods rose by 11.0%, while apparent consumption recorded a 3.2% increase.

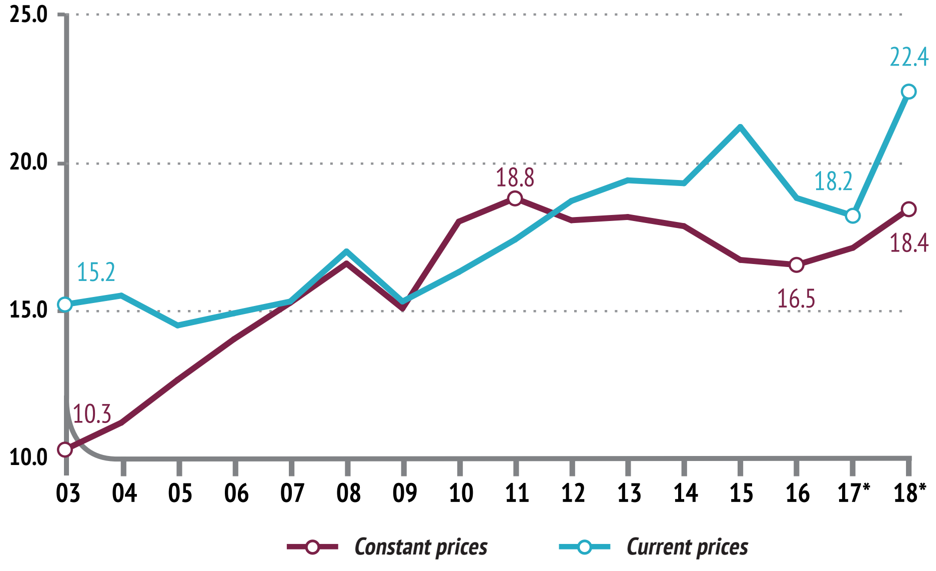
The import penetration ratio increased in spite of the depreciation of the real during the period, which makes imported products more expensive than domestic goods. This behavior can be explained by the usual lagged response of import volumes to the exchange rate. This lagged response can be influenced, for example, by uncertainties around the maintenance of the exchange rate or by difficulties in replacing external suppliers with domestic producers in view of contractual terms, among other factors.

Only 3 of the 23 manufacturing sectors considered in the survey showed a decline in the import penetration ratio and gained share in the domestic consumer market between 2017 and 2018. The import penetration ratio for **Coke, refined petroleum products and biofuel** fell by 2.1 points, while those for **Pulp and paper** and **Beverages** fell respectively by 0.4 points and 0.3 points. All three sectors experienced a decline in imports, with production increasing in the **Coke, refined petroleum products and biofuel** and **Pulp and paper** sectors and holding steady in the **Beverages** sector.

Three other sectors also showed a decrease in imports, but recorded an increase in the import penetration ratio as domestic production posted an even higher decline. These sectors are **Tobacco, Food,** and **Printing and reproduction.**

Import penetration ratio in Manufacturing

In %



*Estimate. For more details, please see the methodology.

Other transport equipment was the sector that experienced the highest increase in the import penetration ratio, with an increase of 48.3 points. The data for this sector, however, is influenced by the fact that oil rigs have been returned due to changes in the REPETRO regime.

The old regime provided incentives for oil rigs that were manufactured in Brazil and remained here to be exported to foreign-based companies and later leased to Brazil, in the so-called "temporary admission" modality. As a result, these oil rigs remained the property of foreign companies and were not accounted for as imports in the trade balance.

The change made in the REPETRO regime sought to address this situation and has been causing these oil rigs to be effectively imported and become the effective property of Brazilian companies. This trend involving high value assets has not only distorted the sector's foreign trade statistics, but also impacted the investment calculation. This accounting adjustment in the sector is expected to end by 2020.

Import penetration ratio at constant prices
Sectors with the highest variations

Change between 2017 and 2018

SECTORS		INDICATORS		CHANGE (percentage points)
		2017*	2018*	
Most significant increases	Other transport equipment	19.2	67.5	48.3
	Other manufacturing	30.2	32.1	1.9
	Basic metals	17.6	19	1.4
	Wearing apparel	8.3	9.6	1.3
Most significant decreases	Coke, refined petroleum products and biofuel	29.6	27.5	-2.1
	Pulp and paper	5.8	5.4	-0.4
	Beverages	4.5	4.2	-0.3

*Estimate. For more details, please see the methodology.

IMPORTED INPUT SHARE

Increased use of imported inputs in industry

Use of imported inputs by the manufacturing industry grew from 23.1% in 2017 to 24.3% in 2018, representing an increase of 1.2 percentage points. As a result, the share of imported inputs hit its highest point since 2014, when they accounted for 25.9% of total inputs used by Brazilian industry.

The indicator of imported industrial inputs measures the share of imported inputs in total inputs used by industry. Between 2017 and 2018, use of imported inputs grew by 9.1%, while use of domestic inputs recorded growth of 2.2%.

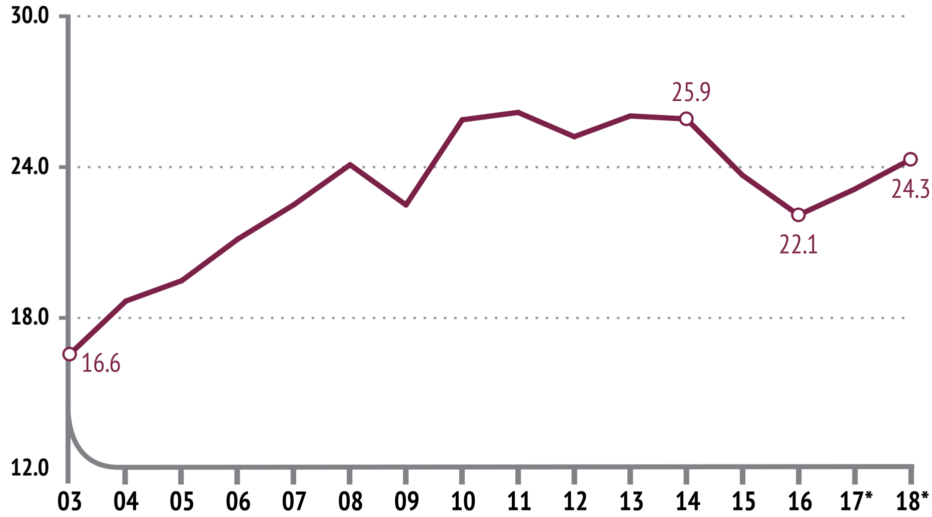
Of the 19 sectors considered in the survey, only three showed a decline in the share of imported inputs in production in 2018, namely, **Basic metals, Printing and reproduction,** and **Chemicals.** Even these three sectors experienced an increase in consumption of imported intermediate goods, and the indicator decreased because consumption of domestic intermediate products grew at a higher rate.

The sectors that showed the highest increases in the imported input share were **Other transport equipment,** with a 21.9-point growth, **Coke, petroleum products and biofuels,** and **Pharmaceutical chemicals and pharmaceuticals,** both with a 1.8-point increase in relation to 2017.

Also in the case of the imported input share, accounting imports of oil rigs inflate data as the sector consumes inputs imported from itself.

Imported input share in Manufacturing

In % - constant prices



*Estimate. For more details, please see the methodology.

Imported input share at constant prices

Sectors with the highest variations

Change between 2017 and 2018

SECTORS		INDICATORS 2017*	INDICATORS 2018*	CHANGE (percentage points)
Most significant increases	Other transport equipment	20.0	41.9	21.9
	Coke, refined petroleum products and biofuel	14.4	16.2	1.8
	Pharmaceutical chemicals and pharmaceuticals	43.7	45.5	1.8
Most significant decreases	Basic metals	31.2	30.8	-0.4
	Printing and reproduction of recorded media	16.9	16.7	-0.2
	Chemicals	40.3	40.2	-0.1

*Estimate. For more details, please see the methodology.

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NET EXPORT TO OUTPUT RATIO

Net export to output ratio falls for second consecutive year

In 2017 and 2018, the net export to output ratio edged down from 6.5% to 5.0% at current prices. This marked the second consecutive annual decline in the indicator, reflecting the balance, in reals, between export revenue and spending on imported industrial inputs (both measured as a share of production value).

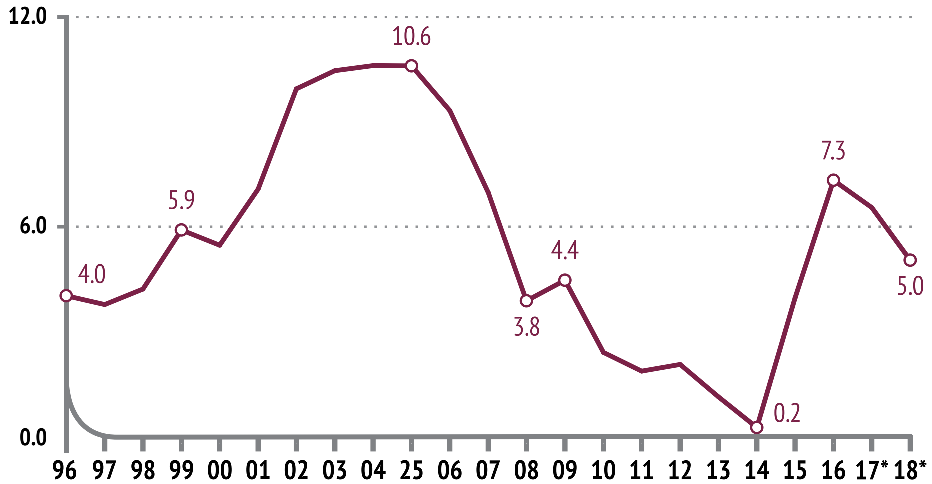
Exports at current prices increased by 19.5% in 2018 as compared to 2017. Despite the increase in export value, imports at current prices recorded growth of 39.4%. The increase in foreign trade values, including both exports and imports, can be partly explained by a price effect. The depreciation of the real in the period led to an increase in export revenues and in import costs when measured in domestic currency terms. At constant prices, exports grew by 2.6%, while imports edged up by 11.0%.

The **Other transport equipment, Tobacco products, Wood products,** and **Pulp** and paper sectors continued to show the highest net export to output ratios. All four sectors moved further away from the other sectors after experiencing an increase in the indicator between 2017 and 2018.

The sectors with the lowest indicators are Computers, electronics and optical products, Printing and reproduction; Chemicals; and Pharmaceutical chemicals and pharmaceuticals.

Net export to output ratio in Manufacturing

In % - current prices



*Estimate. For more details, please see the methodology.

Net export to output ratios at current prices
Sectors with the highest variations

Change between 2017 and 2018
Current prices

SECTORS		INDICATORS 2017*	INDICATORS 2018*	CHANGE (percentage points)
Most significant increases	Other transport equipment	52.0	58.9	6.9
	Pulp and paper	25.2	31.4	6.2
	Wood products	34.2	39.8	5.6
	Textiles products	1.0	1.2	0.2
Most significant decreases	Computers, electronics and optical products	-36.9	-43.5	-6.6
	Motor vehicles, trailers and semi-trailers	5.0	0.4	-4.6
	Pharmaceutical chemicals and pharmaceuticals	-10.4	-14.7	-4.3
	Leather, travel goods and footwear	17.0	12.8	-4.2

*Estimate. For more details, please see the methodology.

Learn more

For more information, including sectoral results, previous editions, methodology and historical series, visit: www.cni.com.br/e_cac

TRADE OPENNESS INDICATORS | English version of "Coeficientes de Abertura Comercial Ano 9 Número 1" | Bi-annual publication of the National Confederation of Industry - CNI | www.cni.om.br | Policy and Strategy Directorate - DIRPE | Research and Competitiveness Unit - GPC | Executive manager: Renato da Fonseca | Team: Maria Carolina Marques and Henry Pourchet (Funcex) | Editing Unit | Coordinator: Carla Gadelha | Graphic Design: Simone Marcia Broch | Customer Service - Phone: +55 (61) 3317-9992 - email: sac@cni.om.br. This publication may be reproduced, provided that the source is mentioned. Document prepared on April 15, 2019.