CNI Indicators
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TRADE OPENNESS INDICATORS

FUNCEX

CNI
National Confederation of Industry
Brazil
CNI. THE STRENGTH OF THE BRAZILIAN INDUSTRY

Foreign market becomes more important for industry

Foreign markets have become more important for the Brazilian industry, particularly for the Other transport equipment[1], Tobacco, Wood products, Motor vehicles, trailers and semi-trailers, Machinery and equipment, Basic metals, and Pulp and Paper sectors.

The share of production that is exported – export to output ratio – rose from 14.3% in 2015 to 16.3% in 2016 (at constant prices). The indicator is up by 4.2 percentage points from 2014, when it reached its lowest level since the series started in 2003.

The increase in the export to output ratio is explained by a rise in export volumes coupled with a decline in domestic sales. A lower domestic consumption stimulates companies to seek foreign markets as a way to prevent an even more significant fall in production. Export volumes edged up by 6.6% between 2015 and 2016, while the industrial production value (in 2007 prices) fell by 6.3%.

The continuous depreciation in the Brazilian currency (real) observed since 2012 – particularly in 2015, when the real depreciated by 17% against a basket of currencies – has led to competitiveness gains. The effects on exports and on the export to output ratio took a while to appear, but are strongly reflected in the figures for 2015 and 2016.

KEY POINTS

1. Share of production exported grows for second year in a row.

2. Share of imports in the domestic market keeps falling.

3. Industry is replacing imported inputs with domestic inputs.

4. Industry is exporting more than it imports.

Trade Openness Indicators

Manufacturing
In %

INDICATORS	CURRENT PRICES			CONSTANT PRICES		
	2014	2015*	2016*	2014	2015*	2016*
Export to output ratio	14.3	18.9	19.3	12.1	14.3	16.3
Import penetration ratio	19.2	21.7	19.1	17.8	17.3	16.9
Imported input share**	27.3	28.8	24.8	25.8	24.7	23.3
Net export to output ratio	0.2	4.1	7.4	-0.4	2.2	5.0

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

[1] *Other transport equipment is a heterogeneous sector that tends to show marked changes, so interpretations should be made with caution. See the Technical Note at the end of the document.*

Constant prices and current prices

Using constant prices is more appropriate in the case of the export to output ratio, import penetration ratio, and imported input share, as the effects of inflation and nominal exchange rate changes are removed from the nominal values of the variables. As a result, one can obtain the change in terms of quantity. With regard to the net export to output ratio, given that the focus is on revenues and expenditure, using current prices is more appropriate.

A depreciated real also impacts on import volumes, as shown by the import penetration ratio at constant prices. The indicator, which measures the share of imports in the domestic market, has been trending downward since 2014, albeit at a relatively moderate pace. It dropped from 17.3% in 2015 to 16.9% in 2016. Compared with 2013, the indicator is down by 1.3 percentage points. The decline in the indicator is attributed to the fact that import volumes fell more than domestic consumption.

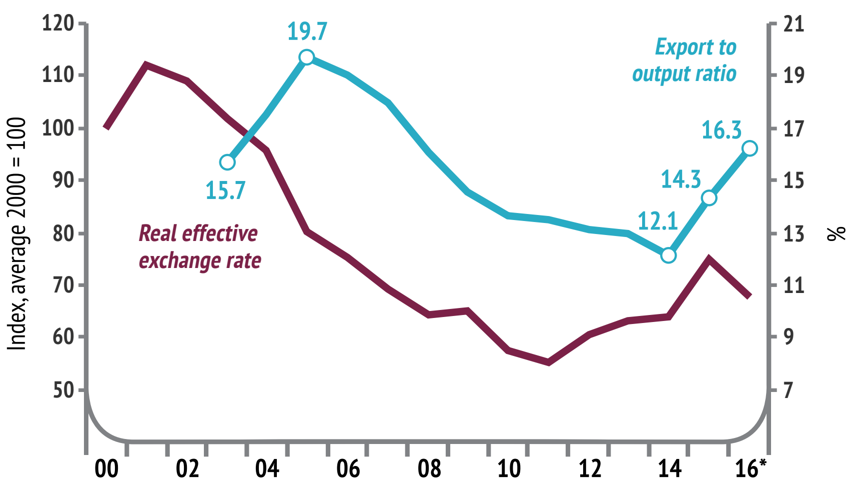
Both consumers and industry have reduced their purchases of imported products. In the case of industry, the share of imported industrial inputs in total industrial inputs – indicator of imported input share – dropped from 24.7% in 2015 to 23.3% in 2016 (at constant prices). The indicator is down for the third consecutive year and accumulates a 2.6-percentage point decline as compared to 2013.

The net export to output ratio, which measures the difference between industry's exports and imports of industrial inputs, edged up from 4.1% in 2015 to 7.4% in 2016 (current prices). The indicator continues on a recovery path and accumulates growth of 7.2 percentage points as compared to 2014, when it reached an all-time low since 1996.

As the Brazilian industry exports more than it imports, the direct and short-term effect of further depreciations on the real is positive. It is worth noting, however, that the effect is not homogeneous across the sectors. Seven out of 19 sectors recorded a negative net export to output ratio, namely: Wearing apparel; Printing and reproduction; Coke, refined petroleum products and biofuels; Chemicals; Pharmaceutical chemicals and pharmaceuticals; Rubber and plastics products, and Computer, electronic and optical products.

Export to output ratio at constant prices and Real effective exchange rate

Manufacturing



** Figures for 2015 and 2016 for the export to output ratio are estimates.*

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EXPORT TO OUTPUT RATIO

Foreign sales gain importance as Brazilian currency depreciates and domestic demand falls

The export to output ratio for manufacturing at constant prices increased from 14.3% in 2015 to 16.3% in 2016. The indicator is up for the second year in a row, accumulating growth of 4.2 percentage points as compared to 2014.

The continuous depreciation in the real observed since 2012 – particularly in 2015, when the real depreciated by 17% against a basket of currencies – has led to competitiveness gains. In the 2014-2016 period, the volumes exported by the Brazilian manufacturing industry edged up by 11.3%.

The greater importance of foreign markets for manufacturing production also reflects the decline in domestic demand. In 2007 prices, the production value edged down by 17% from 2014 to 2016.

Most sectors experienced an increase in the export to output ratio at constant prices between 2015 and 2016. Beverages and Wearing apparel are the exceptions, as their indicators held steady.

It should be stressed that 5 out of 23 sectors recorded a decline in export volumes, but given that production fell even more significantly, the export to output ratio increased. The five sectors are as follows: Tobacco; Textiles; Coke, refined petroleum products and biofuel; Computer, electronic and optical products, and Electrical equipment.

Sectors with the highest variations

SECTORS	2016*/2015* percentage points	2016* (%)
Other transport equipment	20.1	56.2
Tobacco	10.1	55.5
Wood	3.8	26.9
Motor vehicles, trailers and semi-trailers	3.6	15.5
Machinery and equipment	3.0	15.3
Basic metals	2.7	38.5
Pulp and paper	2.5	30.4

** Estimate.*

IMPORT PENETRATION RATIO

Share of imports in the domestic market keeps falling

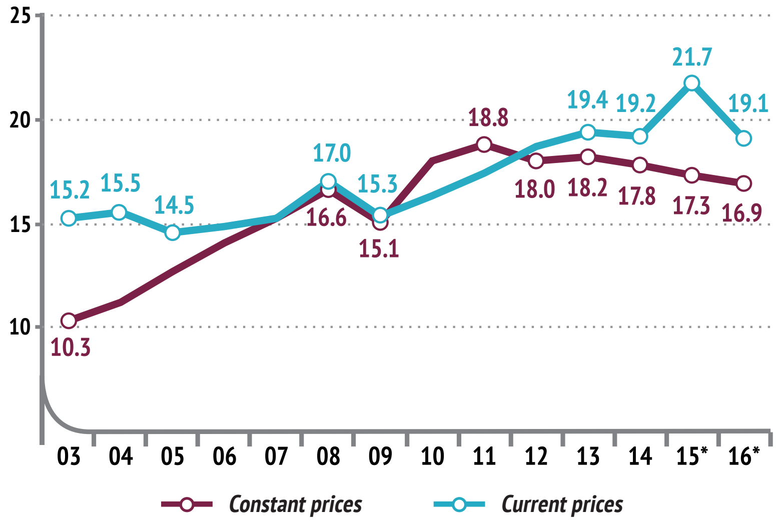
The share of imported manufactured products in the domestic market closed 2016 on a downward path, albeit at a relatively moderate pace, as shown by the import penetration ratio for manufacturing. At constant prices, the indicator fell for the third consecutive year, down from 18.2% in 2013 to 16.9% in 2016.

The 1.3-percentage point decline in the indicator in the 2013-2016 period is explained by the fact that import volumes fell more than the value of apparent consumption (the sum of production value for the domestic market and imports), clearly showing a trend toward replacing imported products with local products. In 2007 prices, apparent consumption is down by 22.3%.

At current prices, the import penetration ratio reversed the upward trend observed since 2010, shrinking from 21.7% in 2015 to 19.1% in 2016 and returning to 2014 levels. Until 2015, the decline in import volumes had not been enough to offset the exchange rate effect on imports' prices measure in reals, which pushed up the value of imports in reals. In 2016, the real depreciated by 4.8% in nominal terms against the US dollar, while import volumes fell by 10.8% in the same year.

Most manufacturing sectors experienced a decline in the import penetration ratio at constant prices from 2015 to 2016. Out of 23 sectors, seven showed an increase in the indicator: Food; Beverages; Tobacco; Coke, refined petroleum products and biofuel; Chemicals; Pharmaceutical chemicals and pharmaceuticals; and Other transport equipment. In the Machinery and equipment sector, the penetration ratio remained virtually unchanged.

Import penetration ratio
Manufacturing
In % - at current prices and at constant prices



** Figures for 2015 and 2016 are estimates.*

Sectors with the highest variations

	SECTORS	2016*/2015* percentage points	2016* (%)
Most significant increases	Other transport equipment	8.0	41.7
	Coke, refined petroleum products and biofuel	3.4	23.3
	Tobacco	1.9	2.9
	Pharmaceutical chemicals and pharmaceuticals	1.9	40.5
Most significant decreases	Wearing apparel	-4.5	6.0
	Basic metals	-2.6	17.2
	Electrical equipment	-2.2	24.8
	Leather and footwear	-1.3	4.0
	Printing and reproduction	-1.2	2.9
	Textiles	-1.1	16.6

Estimate.

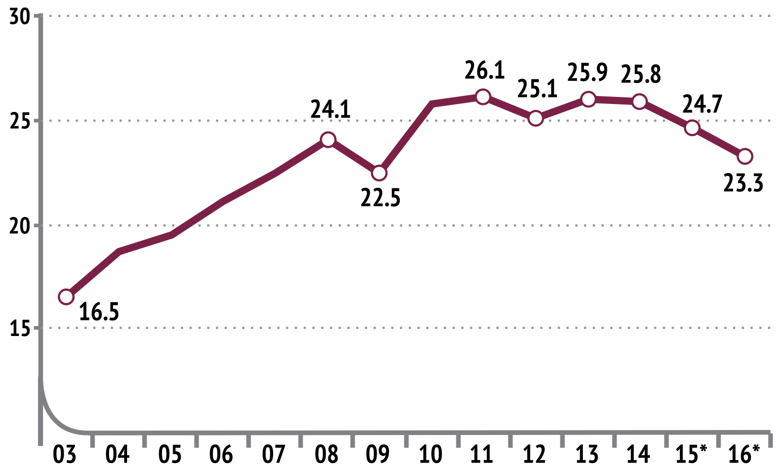
IMPORTED INPUT SHARE

Industry reduces use of imported inputs

The imported input share for manufacturing at constant prices reinforced its downward trend in 2016: down from 24.7% in 2015 to 23.3% in 2016. In the 2013-2016 period, the indicator accumulated a 2.6-percentage point decline.

Imported input share

Manufacturing
In % - at constant prices



Figures for 2015 and 2016 are estimates.

The lower share of industrial imported inputs in total industrial inputs used by industry reflects the response of import volumes to a depreciated real, i.e. to an increase in cost of imported inputs.

The sectoral results show differences in terms of how easy it is to replace imported inputs with domestic production. Out of 23 sectors, three recorded growth in the imported input share between 2015 and 2016: Chemicals, Pharmaceutical chemicals and pharmaceuticals, and Non-metallic mineral products. The indicator for the Rubber and plastics products sector held steady.

Sectors with the highest variations

	SECTORS	2016*/2015* percentage points	2016* (%)
Most significant increases	Chemicals	1.5	36.8
	Pharmaceutical chemicals and pharmaceuticals	1.1	43.1
Most significant decreases	Coke, refined petroleum products and biofuel	-7.8	24.4
	Other transport equipment	-1.8	30.5
	Printing and reproduction	-1.6	16
	Machinery and equipment	-1.6	20.3
	Furniture and other manufacturing	-1.5	19.7
	Metal products	-1.3	11.6
	Wearing apparel	-1.2	18.3
	Electrical equipment	-1.2	24.6
	Motor vehicles, trailers and semi-trailers	-1.2	22.8

** Estimate.*

NET EXPORT TO OUTPUT RATIO

Industry’s export revenues exceed spending on imported inputs

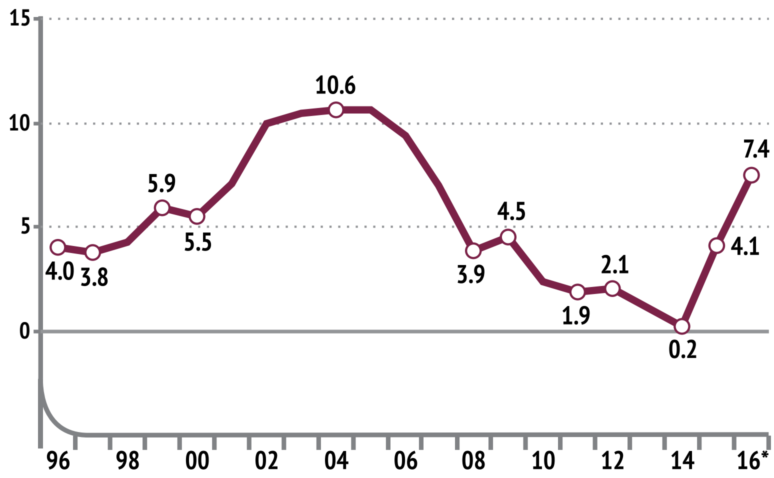
The net export to output ratio for manufacturing at current prices increased from 4.1% in 2015 to 7.4% in 2016. The indicator continued on a path of recovery and accumulated an increase of 7.2 percentage points as compared to 2014.

A positive ratio means that export revenues exceeded spending on imported industrial inputs – both measured relative to production value. When it is positive, the direct and short-term effect of depreciation is positive. This is because any depreciation immediately increases the value in reals of both exports and imports. As export revenues exceed spending on imported industrial inputs, the impact on manufacturing is positive.

Pulp and paper was the only sector for which a reduction in the net export to output ratio at current prices was registered between 2015 and 2016. Despite the increase in the indicator, it remained negative in 7 out of 19 sectors in 2016, meaning that expenditure on imported industrial

Net export to output ratio

Manufacturing
In % - at current prices



** Figures for 2015 and 2016 are estimates.*

inputs exceeded export revenues. The sectors are as follows: Wearing apparel; Printing and reproduction; Coke, refined petroleum products and biofuel; Chemicals; Pharmaceutical chemicals and pharmaceuticals; Rubber and plastics products, and Computer, electronic and optical products.

It is worth noting that the indicators for the Electrical equipment, Motor vehicles, trailers and semi-trailers and Furniture and other manufacturing sectors, which had been posting negative results since 2010 (since 2009 in the case of Motor vehicles, trailers and semi-trailers), turned positive in 2016.

Sectors with the highest variations

SECTORS		2016*/2015* percentage points	2016* (%)
Most significant increases	Other transport equipment	40.2	72.2
	Coke, refined petroleum products and biofuel	12.7	-7.7
	Motor vehicles, trailers and semi-trailers	6.0	2.1
	Computer, electronic and optical products	4.3	-41.8
	Machinery and equipment	3.7	12.4
	Printing and reproduction	3.5	-20.3
	Chemicals	3.5	-11.6
	Basic metals	3.1	24.6
	Furniture and other manufacturing	2.7	0.6
	Electrical equipment	2.0	0.3
Decline	Pulp and paper	-2.2	24.8

** Estimate.*

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Technical notes

1 - The Producer Price Index (IPA), which is used to calculate the trade openness indicators, has been disseminated with a new composition since June 2016. As a result, the indicators for the Food, Chemicals, Computer, electronic and optical products, and Manufacturing as a whole were reviewed. The impact on the other sectors was nil.

2 - The indicators for the Other transport equipment sector tend to vary sharply and interpretations should be made with caution. It is a heterogeneous sector that includes bicycles, motorcycles, planes, helicopters, vessels, and oil drilling and exploration platforms, among others. The high volatility of the indicators is explained by the fact that products like aircrafts, ships and oil platforms have a high value and are produced and exported in a discontinuous manner. In addition, exports are accounted for at once – in a single year – while the production value is accounted for discontinuously in time – in more than one year. This affects the export to output ratio, net output to export ratio, and import penetration ratio (as it includes the export value in the denominator).

Learn more

For more information, including the methodology and data tables, kindly visit: www.cni.org.br/e_cac

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