

PRODUCTIVITY IN INDUSTRY

ECONOMIC INDICATORS **CNI**

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Brazilian National Confederation of Industry
THE FUTURE OF INDUSTRY

Brazil's Productivity Shows One of the Weakest Performances in 2019-2021

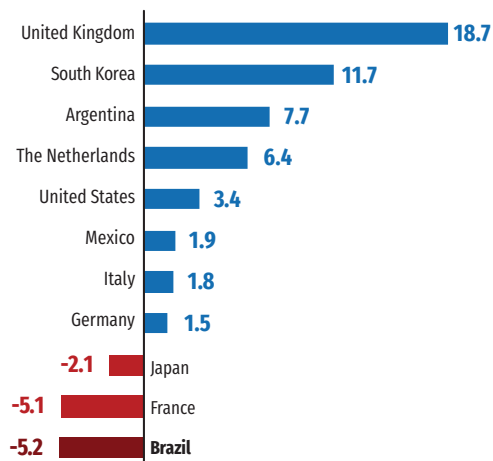
Effective labor productivity – a metric that compares the productivity of the Brazilian industry with the average of its top 10 trading partners¹ – dropped 9.0% between 2019 and 2021². This indicator reversed the growth trajectory observed between 2011 and 2019.

Among the 11 analyzed countries, Brazil showcased the weakest performance, practically tied with France, resulting in a 5.2% decline in productivity over the period. Brazil, France, and Japan are the only countries with productivity levels below those observed before the pandemic.

Since the beginning of the series (2000-2021), productivity within the Brazilian manufacturing industry has expanded by 9.2%, a figure only surpassing the growth witnessed in the Japanese manufacturing sector (4.8%). All 11 countries under analysis demonstrated an increase during

this period. The most significant rises were observed in South Korea and the United Kingdom, which managed to more than double their workers' productivity, with increases of 132.2% and 127%, respectively. Consequently, the effective productivity of the Brazilian industry has declined by 23% since the beginning of the series.

Labor productivity growth, Manufacturing industry
Output per hours worked
Cumulative change between 2019 and 2021 (%)



¹ United States, Argentina, Germany, Mexico, the Netherlands, South Korea, Japan, Italy, France and the United Kingdom. China, Chile, Russia, and India are excluded from consideration due to insufficient data availability. More information is available in the methodology: <http://www.cni.com.br/produktividadenaindustria>.

² Despite the availability of data for Brazil in 2022, the international comparison was conducted using data of 2021 due to the absence of more current information for the other countries.

LABOR PRODUCTIVITY IN BRAZILIAN INDUSTRY

Labor Productivity Declined for the Third Consecutive Year in 2022

In 2022, labor productivity in the manufacturing industry decreased for the third consecutive year, with a decline of 2.8% compared to 2021. This represents the second-largest annual drop in the historical series of the indicator, which started in 2000, only surpassed by the decrease noted in 2021 (-4.7%). Compared to 2019, the pre-pandemic period, the indicator has accumulated a decline of 7.9%.

The decline in labor productivity – measured as the volume produced divided by the hours worked in production –, observed in 2022, reflects a drop of 0.4% in the volume produced, coupled with a 2.7% increase in hours worked in the same basis of comparison. While the hours worked have already exceeded the pre-pandemic level, production remains 0.8% below the level registered in 2019. As a result, productivity reverts to a level close to that registered in 2014.

Throughout the past decade (2012-2022), labor productivity has expanded by 2.1%. This modest growth reflects the weakest performance experienced in recent years (2019-2022), during which productivity fell 7.9%. Over the period from 2012 to 2019, the indicator increased by 10.9%. Across the decade, there was a decline of 16% in the number of hours worked, accompanied by a reduction of 14.2% in the volume produced. Despite the decrease observed in both indicators, the more substantial decline in hours worked means that workers, on average, became more productive, resulting in an improvement in productivity.

The explanation for this low performance can be attributed largely to the disruptions caused by the pandemic and the conflict in Ukraine. These events have disrupted production chains, posing

Annual labor productivity, Brazilian manufacturing industry

Output per hours worked
Change from the immediately preceding year (%)

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
-0.6	2.7	-0.3	0.3	1.7	4.5	0.8	0.8	-0.5	-4.7	-2.8

Source: Prepared by CNI, based on IBGE and CNI statistics.

Quarterly labor productivity, Brazilian Manufacturing

Output per hours worked
Index, base 2019 = 100



Source: Prepared by CNI, based on IBGE and CNI statistics.

challenges for companies in managing and requiring reductions or even interruptions in production. According to the CNI's Industrial Survey, the main problem highlighted by the Brazilian industry between the third quarter of 2020 and the fourth quarter of 2022 was the lack or high cost of raw materials. Despite these challenges, the expectation of an economic recovery has led companies decide for retaining their workforce and, in some cases, even expanding it, even if this does not result in an increase of production in the short-term.

Across 2022, within the quarterly data, labor productivity only avoided a decline during the second quarter (2.4%), as the remaining periods either experienced a decrease or remained stagnant, based on the seasonally adjusted series. The quarterly indicator exhibited a downward trajectory from the fourth quarter of 2020 to the first quarter of 2022. From the second quarter of 2022 onward, this trend underwent an interruption. It remains uncertain what trajectory the indicator will adopt next, given the outcomes from the third (-2.2%) and fourth (0.4%) quarters.

INTERNATIONAL COMPARISON

The Productivity of the Brazilian Industry Shows One of the Weakest Performances Among 11 Countries During the 2019-2021 Period

The effective productivity of the Brazilian manufacturing industry decreased 9.0%, between 2019 and 2021. This indicator measures the productivity of Brazil's manufacturing sector in comparison to the average productivity of its 10 primary trading partners. This outcome has led the indicator to revert to a level proximate to that documented in 2014.

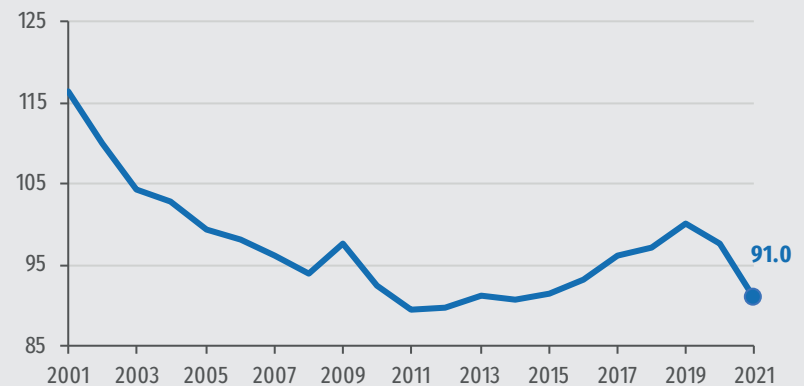
In 2011, the indicator reached its lowest point within the historical series, started in 2000. Subsequently, it embarked on an upward trajectory until 2019. From 2011 to 2019, the indicator experienced an annual average growth of 1.4%, accumulating an overall increase of 11.7%. Nevertheless, the accumulated decline between 2019 and 2021 has reversed much of the progress obtained until 2019.

The outcome of effective productivity is a reflection of Brazil's low performance compared to its trade partners. Brazil had one of the weakest performances among the 11 countries analyzed, practically tied with France, with an accumulated drop of 5.2% in labor productivity, between 2019 and 2021. Productivity losses were recorded only by Brazil (-5.2%), France (-5.1%) and Japan (-2.1%). These are the only countries analyzed that still present productivity below the pre-pandemic level.

During the same period, the most substantial productivity increase occurred in the manufacturing sector of United Kingdom with a rise of 18.7%. Following is South Korea, whose indicator experienced an elevation of 11.7%. The productivity metrics of both these nations are in an upward

Effective productivity (Brazil compared to the average of its main trading partners), manufacturing industry

Output per hours worked
Index, base 2019 = 100



Source: Prepared by CNI, based on statistics from BLS, IBGE, INDEC, INEGI, KOSIS, METI, Ministry of Health, OECD, SECEX, The Conference Board, and CNI.

trajectory. In 2021 the United Kingdom had its fifth consecutive year of productivity expansion. In South Korea, it is the sixth consecutive year of productivity growth.

The COVID-19 pandemic caused high variability in the productivity indicator between 2019 and 2021, impacting countries heterogeneously. The cyclical influences arising from supply chain interruptions and labor restrictions strongly influenced the indicator's dynamics, particularly evident in Brazil's performance, which exhibited one of the lowest outcomes.

Over the past decade (2011-2021), productivity within the Brazilian manufacturing industry expanded by 4.5%, positioning the country as the seventh out of the eleven examined nations. The United Kingdom stands as the leading performer (35.5%), followed by the Netherlands (18.9%) and Italy (12.9%). The weakest performances throughout the decade occurred in Argentina (-3.7%), Mexico (-3.2%), and the United States (-2.7%). These three countries were the only ones, among the 11 analyzed, that showed a drop in productivity in the decade.

These outcomes have translated into a cumulative increase of 1.7% in the effective productivity of the Brazilian industry – the one that measures Brazil's outcomes to the average of its trading partners – over the decade. Despite being positive, this result indicates that the effective productivity grew, on average, just by 0.2% per year.

The performance registered between 2011 and 2019 contributed to avoiding an even weaker result. Brazil was the fifth country with the biggest productivity gain in the period, accumulating an increase of 10.3%. The top four positions in the ranking belong to the United Kingdom (14.2%), France (13.1%), the Netherlands (11.7%), and Italy (10.9%), respectively. Mexico (-5.0%), the United States (-5.9%), and Argentina (-10.6%) were the countries with the biggest losses of productivity.

Labor productivity of Brazil and its main trading partners and effective labor productivity, Manufacturing industry

Output per hours worked

Cumulative change (%)

Year	Brazil	United States	Argentina	Germany	Mexico	The Netherlands	South Korea	Japan	Italy	France	United Kingdom	Effective labor productivity
Annual												
2015	0.3	-1.8	1.3	0.3	-1.1	0.9	-3.4	-1.8	2.7	2.0	0.6	0.9
2016	1.7	-0.1	-3.5	4.1	-2.9	1.2	2.9	-0.2	1.2	1.4	-0.7	1.9
2017	4.5	-1.2	3.2	3.5	-1.8	5.7	3.2	1.9	2.3	4.0	0.6	3.1
2018	0.8	0.2	-3.2	-0.1	-1.8	2.4	1.1	0.7	0.3	1.0	3.6	0.9
2019	0.8	-2.4	-5.7	-0.9	-0.6	-2.0	0.4	-1.8	0.1	-0.9	1.6	3.1
2020	-0.5	0.9	9.5	-2.1	-1.5	1.7	4.5	-6.6	-1.1	-3.3	15.1	-2.3
2021	-4.7	2.5	-1.6	3.7	3.5	4.6	6.9	4.8	2.9	-1.9	3.1	-6.9
Cumulative change (%)												
2011-2021	4.5	-2.7	-3.7	9.7	-3.2	18.9	11.6	0.3	12.9	7.4	35.5	1.7
2019-2021	-5.2	3.4	7.7	1.5	1.9	6.4	11.7	-2.1	1.8	-5.1	18.7	-9.0

Source: Prepared by CNI, based on statistics from BLS, IBGE, INDEC, INEGI, KOSIS, METI, Ministry of Health, OECD, SECEX, The Conference Board, and CNI.

Note: The calculation of Brazil's main partners' annual labor productivity and effective productivity underwent revision, involving a shift in the base year from 2000 to 2019, updating weights for calculating effective productivity from 2012 onwards, and transitioning to SECEX as the data source for weights calculation based on the ISIC classification. These adjustments had minimal impact on the effective productivity series, resulting in variances of -0.3% to 0.3% when compared to the previous edition. Please see further details in the research methodology.



Learn More

More information such as previous editions, English version, survey methodology and historical series at:

www.cni.com.br/e_produtividadenaindustria

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