

Initial impacts of the floods on the economic activity of Rio Grande do Sul

In May, the state of Rio Grande do Sul (RS) was hit by the biggest flood in its history. Heavy rainfall, mainly concentrated in the hydrographic region of the Guaíba River, caused flooding and destruction in Porto Alegre, in its metropolitan region, and in the Taquari Valley towns.

The floods affected areas of high population density and great importance to the economy of the state. Rio Grande do Sul has an estimated population of 10.9 million people, 5.3% of the Brazilian population. The state's GDP represents 6.5% of the national GDP, with a larger share in agriculture (12.7%) and manufacturing (8.4%).¹ The areas most affected by the rainfall accounts for 48.5% of the population, 53.3% of the state's GDP, 12.5% of agriculture's gross value added (GVA), 57.3%, of industries' GVA, and 61.2% of services' (excluding government services) GVA².

This box assesses the initial impacts of the floods in Rio Grande do Sul on economic activity based on a set of timely indicators.

Retail trade and services to households

The evolution of retail trade and services provided to households³ is analyzed through flows of payments⁴ received by companies domiciled in Rio Grande do Sul via debit card or Pix.⁵

The first exercise based on this data set seeks to measure the number of companies that interrupted activities during the floods. The receipt of a payment by a company indicates that it continued to sell during the period.

At the start of the heavy rainfall, the number of companies that received any payment flow through debit card or Pix (Table 1, week 1) dropped 8.6%. Throughout May and early June, this number fluctuated around -4.3% compared with the base period (average of the weeks of April 17-30). It is noteworthy, however, that in the last week analyzed (June 5-11), the number of companies that received some payment via debit card or Pix exceeded that for the base period, suggesting a relatively quick recovery in sales across most sectors.

The sectoral breakdown suggests that activities with a higher share of companies with no payment flow are in the sectors of lodging, restaurants, drugstores, bookstores, and vehicles. The flows were also analyzed considering the companies' number of employees, but there was no relevant heterogeneity under this data breakdown.

1/ According to the IBGE's 2022 Population Census and the 2021 National Accounts.

2/ Considering the 78 municipalities included in the state of calamity by Decree 57,628 of May 21, 2024.

3/ The exercise considered companies classified under the National Classification of Economic Activities (CNAE) codes covered by the [Monthly Survey of Trade \(PMC\)](#) and the [Monthly Survey of Services \(PMS\)](#) from IBGE (Portuguese only).

4/ For the sake of simplicity, this box uses the terms "payment" [received by companies] and "flows received" without differentiation, although not every flow received by companies corresponds to payments for sales or provision of services. Data may contain operations not related to payments.

5/ The flows received by various means of payment have already been used on other occasions by the BCB to measure the state of the economy. (i) Box [Indicators to monitor the domestic economic outlook during the pandemic](#) of the June 2020 IR; (ii) Box [Emergency aid and debit card purchases](#) of the September 2020 IR; (iii) Box [Closure of companies in the pandemic](#) of the December 2020 IR, and (iv) Section 2.2 "Covid-19 stress test" of the [Financial Stability Report of October 2020](#). In this analysis, flows from credit cards or bank payment slips will not be considered, as they may reflect purchases from previous months, thus impairing the assessment of the impact of May floods. Data excludes Pix received from financial institutions and Pix between accounts of the same company or its subsidiaries.

Table 1 – Number of companies receiving payments via debit card or Pix

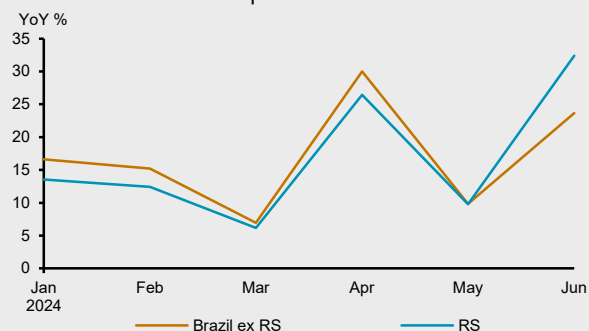
Sector	% change from the base period ¹						
	Week 1 May 1-7	Week 2 May 8-14	Week 3 May 15-21	Week 4 May 22-28	Week 5 May 29 - Jun 4	Week 6 Jun 5-11	Average Weeks 1-6
Total	-8.6	-4.9	-4.9	-6.4	-3.7	2.6	-4.3
Fuel	-0.5	-1.8	-1.8	-2.4	-2.0	-0.6	-1.5
Supermarkets and Related Businesses	-4.2	-5.5	-6.1	-6.1	-4.1	-1.9	-4.7
Textiles, Apparel and Footwear	-11.3	-0.7	0.6	-3.1	-0.3	5.7	-1.5
Furniture and Household Appliances	-10.6	-1.5	1.5	-0.7	-0.2	9.7	-0.3
Drugstores	-9.3	-6.4	-7.6	-8.3	-7.7	-4.6	-7.3
Office, IT, and Communication Equipment	-9.7	-3.1	-2.4	-4.5	-3.8	6.1	-2.9
Books, Newspapers, Magazines, and Stationery	-6.3	-9.5	-6.5	-7.1	-5.5	-1.5	-6.1
Other Personal and Household Items	-9.6	-5.1	-5.2	-6.1	-4.1	1.9	-4.7
Vehicles, Motorcycles, Parts, and Accessories	-13.0	-6.4	-4.4	-5.8	-4.7	1.8	-5.4
Wholesale and Retail of Construction Materials	-9.9	-6.0	-2.9	-4.7	-3.4	2.0	-4.1
Wholesale of Food, Beverages, and Tobacco	-8.4	-4.6	-3.8	-4.0	-4.8	-0.6	-4.4
Lodging	-11.0	-14.5	-15.2	-14.9	-9.8	-4.3	-11.6
Food Services	-11.9	-9.6	-10.9	-9.9	-5.7	-3.4	-8.6
Sports Activities	-5.1	5.8	-1.7	-8.2	-4.3	13.0	-0.1
Personal and Non-Continuing Education Services	-4.0	-0.5	-2.2	-8.1	-1.1	19.9	0.7

Sources: BC (Pix) and Núclea (debit card)

Note: ¹ Base period = Average of April's 17-23 and 24-30 weeks.

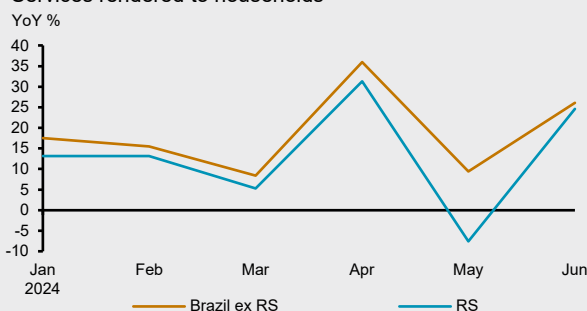
The second exercise measured the amounts received by companies in retail trade⁶ and services provided to households. In general terms, flows received by companies in these sectors in Rio Grande do Sul grew at similar rates to the rest of Brazil in the Jan-Apr 2024 period. In May, when analyzed together, companies of the retail trade and household services segments in that state and in the rest of the country continued to show similar YoY changes (Figure 1). However, the composition varied. The slowdown in payment flows in the segment of services to households in May was higher in Rio Grande do Sul (Figure 2). The opposite occurred in the segment of retail trade (Figure 3), largely influenced by supermarket sales (Figure 4). This suggests that the priority of households in the state was the consumption of basic goods in that month. Moreover, in early June⁷ it is already possible to observe significant increases in payments received by the “furniture and household appliances” and “construction materials” sectors in that state, indicating that households are channeling resources to the refurbishing of their homes (Figures 5 and 6).

Figure 1 – Flows received via debit card or Pix
Retail trade and services provided to households



Sources: BCB and Núclea.

Figure 2 – Flows received via debit card or Pix
Services rendered to households



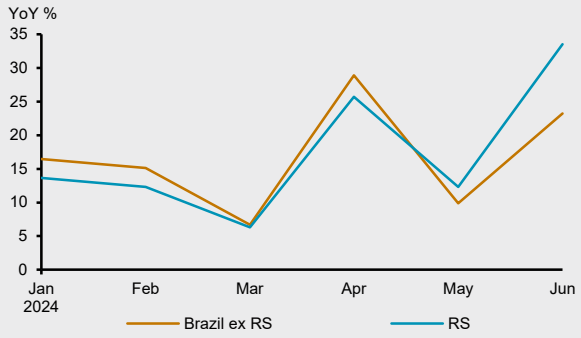
Sources: BCB and Núclea.

6/ Restricted retail trade segments, as classified by the Monthly Survey of Trade (PMC).

7/ For June, variation in flows received up to June 13 compared with the same period in the previous year.

Figure 3 – Flows received via debit card or Pix

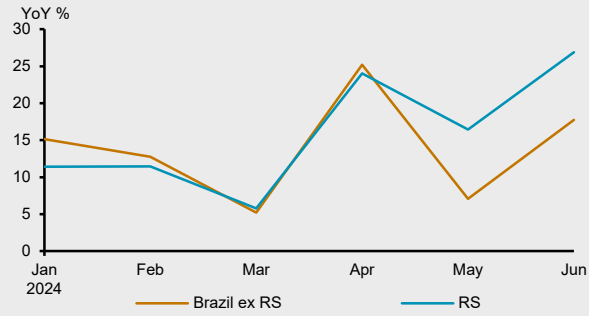
Retail trade



Sources: BCB and Núclea.

Figure 4 – Flows received via debit card or Pix

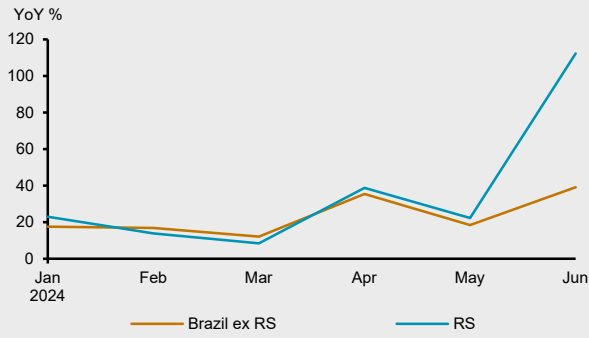
Supermarkets



Sources: BCB and Núclea.

Figure 5 – Flows received via debit card or Pix

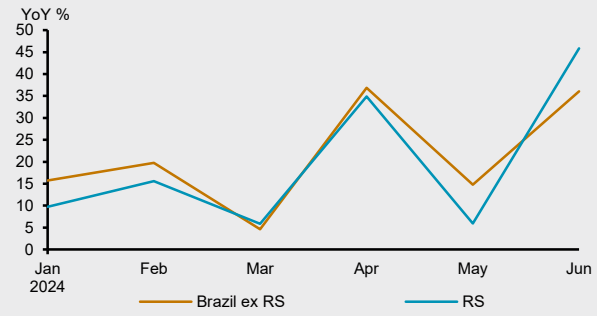
Furniture and appliance retail companies



Sources: BCB and Núclea.

Figure 6 – Flows received via debit card or Pix

Wholesale and retail of construction materials

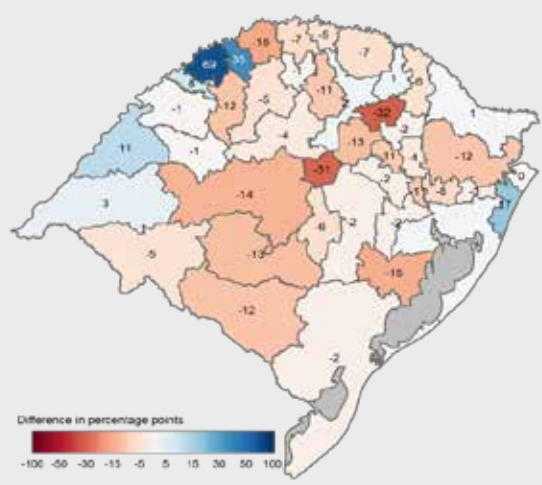


Sources: BCB and Núclea.

The impact of the floods was highly heterogeneous in the state (Map1).⁸ Although, as expected, greater impacts were observed in the areas most affected by the floods, they were not restricted to them. The phenomenon affected much of the state’s infrastructure, which was reflected in spillovers to other regions.

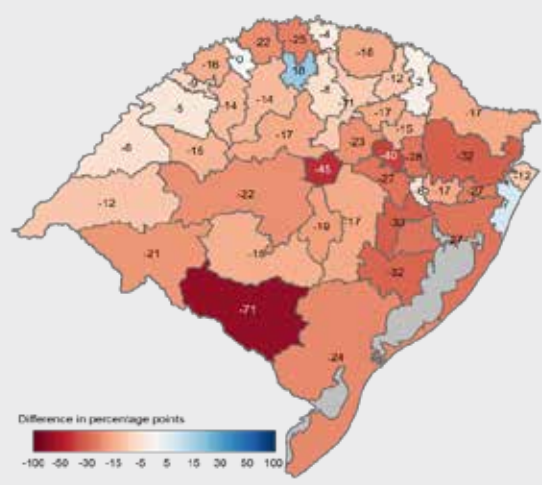
Map 1 – May 2024 change in the YoY growth rate of flows received by companies – by immediate region
Difference between May 2024 YoY rate and the average Jan-Apr 2024 YoY rate.

(a) Restricted retail trade



Sources: BCB (Pix) and Núclea (debit card).

(b) Services rendered to households



8/ The IBGE’s concept of “immediate region”, which replaced the concept of micro-regions, was used. Clique [here](#) for further information on this regional division (Portuguese only).

Industry

Data on issuance of invoices compiled by the Secretary of Finance (SEFAZ/RS) of Rio Grande do Sul shows that, in the first fortnight of May, the state's industrial sales dropped 29.8% against the same period of 2023, in real terms (Table 2).⁹ The impact receded throughout the month, so that, in the period from May 1 to June 11, the decline was 12.7%. By sector, the segments that mostly contributed to this fall were metal-mechanical, agribusiness, and agricultural inputs.

SEFAZ/RS also reveals a reduction in the number of companies that issued invoices. In the first half of the month, the most critical period, there was a decline of 37% against the same period in April. In the 28-day period up to June 9, the number of companies that issued invoices was still 8% lower than in the same period in April.¹⁰

Table 2 – Sales of industries in RS

Industrial sector	May 1 - June 11			Biweekly change (% YoY)		
	BRL million	% YoY change	Contribution (p.p.)	May 1-14	May 15-28	May 29 - Jun 11
Total	50,457	-12.7	-12.7	-29.8	-8.5	-1.7
Metal-mechanical	12,969	-21.5	-6.1	-45.3	-8.5	-13.3
Agribusiness	11,446	-9.5	-2.1	-13.2	-10.7	-4.9
Fuel	4,526	-6.0	-0.5	-14.2	-8.2	2.8
Agricultural inputs	2,233	-32.7	-1.9	-56.8	-30.3	-13.5
Leather and footwear	2,028	-12.3	-0.5	-33.5	-8.4	3.9
Food	1,828	-4.1	-0.1	-20.4	3.8	3.9
Tobacco	1,748	10.3	0.3	29.9	12.1	-6.0
Plastics	1,607	-8.1	-0.2	-24.7	-2.1	0.4
Beverage	1,475	1.7	0.0	-23.8	10.2	18.5
Furniture	1,453	9.6	0.2	-14.9	17.8	23.7
Electrical and electronic	1,205	0.4	0.0	-29.3	11.0	14.7
Chemical	1,188	-10.5	-0.2	-36.7	-2.3	3.7
Wood, cement and glass	1,035	-11.8	-0.2	-34.7	-12.5	10.1
Paper	813	13.0	0.2	-28.0	-8.4	73.6
Textiles and clothing	786	-12.1	-0.2	-37.0	-3.7	4.9
Tires and rubber	679	-15.3	-0.2	-38.3	-12.4	3.1
Other industries	3,436	-15.0	-1.0	-39.0	-22.1	16.6

Sources: Prepared by BCB with data from the Secretary of Finance of the state of Rio Grande do Sul

Note: 1/ Data deflated by D-ICMS (24% IPCA + 74% IGP-DI).

Consumer and business confidence

Surveys of consumers and business also reflected the impacts of floods. According to IBRE/FGV data¹¹, consumer confidence in Porto Alegre fell 22.2 points in May compared with April, a much stronger fall than the one observed in the national average (Figure 7). CNI and FIERGS data for industry¹² show a 6.4 points decline in industrial business confidence in Rio Grande do Sul in May, while the national index rose 0.4 point (Figure 8). The drop in industrial business confidence in the state was lower than that observed during the pandemic but slightly higher than that in the truck drivers' strike in 2018.

9/ Data may reflect other economic or seasonal factors in addition to the impacts of flooding.

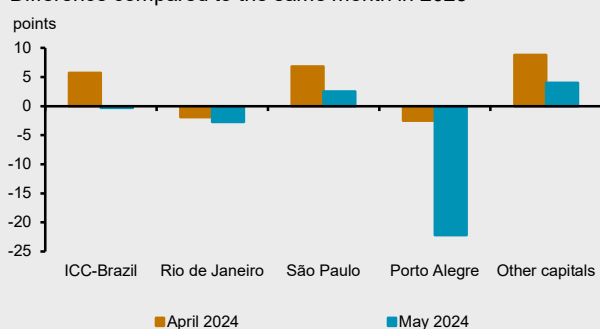
10/ This percentage refers to the NF-e invoice, i.e., it does not include sales to final consumers. Source: Economic-Tax Bulletin, [3rd edition](#) and [4th edition](#) (Portuguese only).

11/ Consumer Confidence Index (ICC).

12/ Industrial Entrepreneur Confidence Index (ICEI).

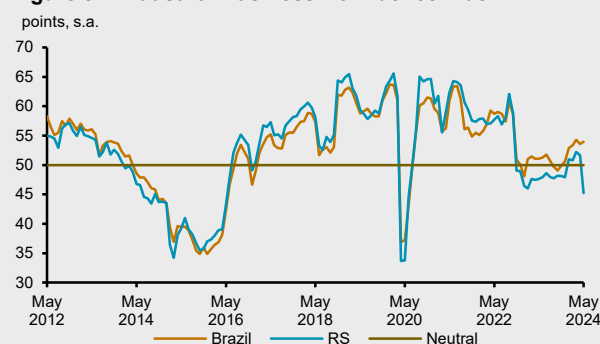
Figure 7 – Consumer Confidence Index

Difference compared to the same month in 2023



Source: Macro Bulletin June 2024, 156 - FGV

Figure 8 – Industrial Business Confidence Index



Sources: CNI and FIERGS

Agriculture

Rio Grande do Sul is an important agricultural producer, accounting for 12.7% of the national grains production. The state concentrates, in particular, 70% of the domestic production of rice and 40% of wheat.¹³

The projection for the harvest of grains in the state was revised downward after the floods (Table 3). In May, the IBGE reduced by 5.4% the estimated harvest of grains in the state, while Conab reduced by 4.2% the projection for the grain production in this year's harvest. Nonetheless, the IBGE and Conab still project a two digit growth for the state's harvest of grains (+38.5 and +36.4%, respectively).

The IBGE reduced its projection for soybeans, corn, and rice in the state by 6.7%, 6.6%, and 1.6%, respectively, while Conab's reductions were more moderate (5.8%, 4.2%, and 2.6%). Emater/RS, in turn, estimates a more negative impact of the floods on the productivity of these crops, with respective declines in production of 11.4%, 6.8%, and 8.7%.¹⁴

Table 3 – Agricultural production

May 2024 forecasts

Region and crop	IBGE-LSPA estimated production			Conab estimated production		
	Crop 2023 million tons	% change of current forecast compared with:		Crop 22/23 million tons	% change of current forecast compared with:	
		2023	April's forecast		Crop 22/23	April's forecast
Brazil						
Grains	296.8	-5.9	-0.9	297.5	-7.0	0.7
Soybean	146.7	-3.5	-1.1	147.4	-4.7	-0.2
Corn	114.5	-12.7	-1.1	114.1	-13.5	2.2
Rice	10.5	2.3	0.3	10.4	3.6	-0.9
Wheat	9.6	23.8	-2.5	9.1	12.0	-0.2
State of Rio Grande do Sul						
Grains	37.6	38.5	-5.4	37.6	36.4	-4.2
Soybean	20.3	59.8	-6.7	20.2	55.1	-5.8
Corn	4.7	18.1	-6.6	4.9	31.7	-4.2
Rice	7.3	2.6	-1.6	7.1	2.1	-2.6
Wheat	4.2	61.0	-6.4	4.2	44.5	0.0

Sources: IBGE and Conab

13/ See [Radiografia da Agropecuária Gaúcha](#) 2023, of the Agriculture, Livestock, Sustainable Production, and Irrigation of the Rio Grande do Sul (Portuguese only).

14/ [Relatório Conjuntural of June 13, 2024](#), from Emater/RS (Portuguese only).

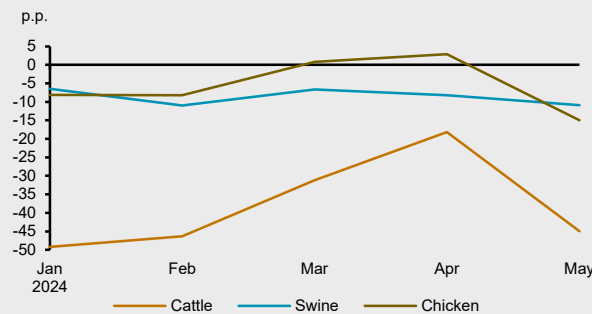
In winter crops – which include wheat – the excessive rainfall flooded areas that had already been sowed, caused erosion in the cultivated areas, and delayed the sowing and harvest schedule. The IBGE expects a production of wheat 6.4% lower than in the previous estimate. Conab, in turn, has kept its projection unchanged. As these crops were not harvested yet, the next surveys of these institutions may provide a relevant updating.

In addition to the impact on the grain crops, the floods also negatively affected the production of fruits and vegetables. Impacts on their prices were already felt in the May's IPCA. Emater/RS reports, for example, the poor quality of harvested potatoes and the loss of fertility in some orchards (due to erosion) or the increased occurrence of pests.¹⁵ Most of these impacts, however, are likely to be felt in the short-term only.

Livestock

Rio Grande do Sul concentrates 4.1%, 11.9%, and 17.1% of Brazil's cattle, chicken, and swine slaughtering, respectively. Data from the Federal Inspection System (SIF)¹⁶ suggest that, even before the floods, slaughters in the state were declining for all meat categories¹⁷, with worse performance than in the other country's regions. In May, this decline was stronger and the gap in relation to Brazil widened. It should be noted, however, that the impact on livestock is not expected to be restricted to May. There was loss of livestock, destruction of machinery and structures, as well as difficulties in feeding the animals during the most critical period¹⁸. As a result, the production of meat, eggs, and milk might still be marginally affected in the following months.

Figure 9 – Interannual evolution of slaughters
Difference between RS and the rest of Brazil



Sources: SIF and BCB. Data can be reviewed by respondents

Foreign trade

Floods in Rio Grande do Sul also affected the state's logistics infrastructure. Roads were blocked, the Salgado Filho International Airport in Porto Alegre was closed¹⁹, while port terminals were operating below capacity.

15/ *Ibid.*

16/ Data available at [MAPA - Ministério da Agricultura, Pecuária e Abastecimento](#) (Portuguese only). Data are updated daily and can be revised by the respondents themselves (slaughtering companies). The number of animals slaughtered under federal SIF inspection accounts for 36.7% of cattle, 93% of swine, and 97% of chickens slaughtered according to the IBGE figures.

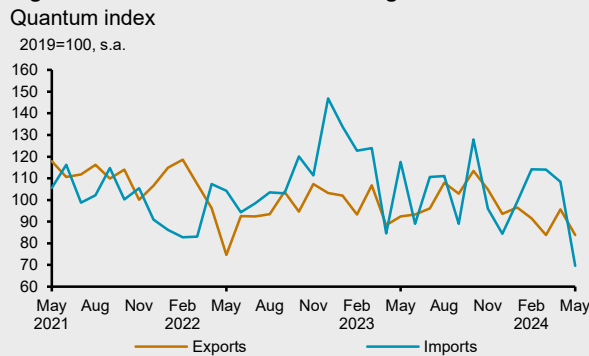
17/ The IBGE'S Quarterly Survey of Animal Slaughter also showed a YoY decline in the state's figures in 2024Q1 for all types of meat.

18/ The National Confederation of Municipalities estimated in its [Report of June 14, 2024](#) (Portuguese only), that the floods caused losses of BRL 372.1 million to farmers.

19/ Salgado Filho International Airport was particularly affected, but it only accounts for around 1% of the state's trade flow. Therefore, its prolonged closure is expected to have a limited effect on the state's trade balance.

This was reflected in foreign trade reduction. The largest impact was on imports, whose quantum index reached the lowest value since May 2020, in the context of the pandemic (Figure 10). This decline may reflect both the direct impact on the interruption of logistics in the region and a possible reduction in certain types of orders. For exports, in turn, the decline was relatively small, compatible with ordinary changes in this category, indicating a limited impact.

Figure 10 – Rio Grande do Sul's foreign trade



Conclusion

This box presented the evolution of a set of indicators related to the economic activity in Rio Grande do Sul during the floods that occurred last May. These indicators allow a more timely assessment of the impact of this tragedy on the state's economy than is possible by considering the traditional indicators used in conjuncture analysis. Evidence indicates a sharp local activity decline in May, with high heterogeneity across sectors and segments, and signs of ongoing recovery. The May's BCB Regional Economic Activity Index for Rio Grande do Sul (IBCR-RS), to be released in July, will soon provide an initial assessment of the decline in the state's economy in aggregate terms.²⁰

20/ IBCR-RS may be found in the Time Series Management System (SGS), with the codes 25401 (not seasonally adjusted) and 25404 (seasonally adjusted). Methodological informations about the IBCR may be found in metadata available in the SGS itself or in the box [Atualização dos indicadores usados no cálculo do Índice de Atividade Econômica Regional \(IBCR\)](#), released in the February 2022 Regional Bulletin (Portuguese only).