



## POSITIVE MANUFACTURING RESULT IN MARCH

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- **Industrial production (IP) increased 1.1% MoM-sa (+0.9% YoY) in March**, slightly above market consensus of +0.9% MoM-sa (+0.7% YoY) our forecast of +0.9% MoM-sa (+0.2% YoY). March's result marked the first IP increase after two consecutive monthly contractions at the margin. March's figure also reflected a recovery in manufacturing (+1.4% MoM-sa, after three declines in a row) and a slight decrease in mining (-0.1% MoM-sa).
- **Across major economic categories, mostly positive signals.** Capital goods (+6.3% MoM-sa) and durable goods (+2.5% MoM-sa) were the highlights. Intermediate goods (+0.9% MoM-sa) also contributed positively. However, consumer goods (-1.2% MoM-sa) contracted in the month, influenced mainly by nondurable goods (-0.5% MoM-sa). Construction supplies (also related to investments as capital goods output) had a hefty 1.7% MoM-sa increase.
- **In the breakdown, 16 of 25 industrial activities expanded at the margin, with the diffusion index reaching 64% (from 68% in February).** In terms of contribution, oil and biofuel coke (+0.22 p.p.), machines and equipment (+0.20 p.p.) and computer equipment, electronics and optical products (+0.14 p.p.) contributed the most, while manufacture of clothing and accessories (-0.09 p.p.), furniture (-0.05 p.p.) and wood products (-0.03 p.p.) contributed the least.
- **All in all, March was a month of recovery for IP, with a positive breakdown.** The breakdown shows a positive impact from manufacturing after three contractions in a row, while mining remained virtually flat. The diffusion index remained close to February's level, and negative contributions were relatively small. In quarterly terms, March's result implies a 0.0% QoQ-sa variation for IP in 1Q23 and a +0.7% QoQ-sa carryover to 2Q23. For manufacturing, there was a -0.3% QoQ-sa variation for 1Q23, and we calculate a +0.8% QoQ-sa carryover to 2Q23.
- **Contractionary effects of shaky financial conditions started to materialize in 3Q22, mainly affecting goods-related sectors.** In our view, restrictive financial conditions are likely to continue stifling the performance of industrial output and retail sales in the coming quarters.
- **Our tracking for March's IBC-Br broad activity index is at -3.0% MoM-sa, partially offsetting February's strong increase (+3.3% MoM-sa).** Our 1Q23 GDP tracking was maintained at +1.0% QoQ-sa, following the expected positive contribution from Agriculture. For full-year 2023, we forecast GDP growth at +1.0%, with a significant slowdown in domestic demand and in cyclical supply components, stemming mainly from the expected global recession and the Brazil Central bank's (BCB) tight policy, but we also expect strong growth for non-cyclical farm output, reflecting an all-time high forecast for the grain harvest.

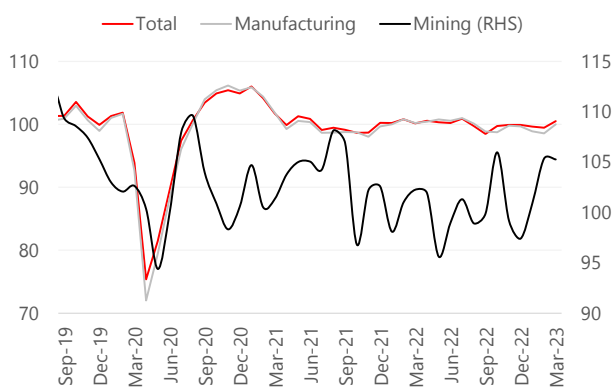


Figure 1 – Monthly Industrial Survey

	Industrial Production Breakdown									
	Weights	% MoM			% YoY			% QoQ		
		Jan-23	Feb-23	Mar-23	Jan-23	Feb-23	Mar-23	Sep-22	Dec-22	Mar-23
<b>Total Industry</b>	<b>100%</b>	<b>-0.3</b>	<b>-0.2</b>	<b>1.1</b>	<b>0.3</b>	<b>-2.4</b>	<b>0.9</b>	<b>-0.7</b>	<b>0.2</b>	<b>0.0</b>
<b>Mining</b>	<b>15%</b>	<b>3.6</b>	<b>4.4</b>	<b>-0.1</b>	<b>2.0</b>	<b>5.1</b>	<b>3.3</b>	<b>1.2</b>	<b>0.8</b>	<b>3.0</b>
<b>Manufacturing</b>	<b>85%</b>	<b>-0.8</b>	<b>-0.3</b>	<b>1.4</b>	<b>-0.1</b>	<b>-3.7</b>	<b>0.5</b>	<b>-0.6</b>	<b>-0.6</b>	<b>-0.3</b>
Capital Goods	6%	-4.1	0.6	6.3	-6.6	-12.4	-0.5	-1.7	-2.9	-1.8
Intermediate Goods	61%	-0.8	0.5	0.9	-1.7	-2.8	-1.1	-1.5	1.3	-0.4
Consumer goods	32%	0.2	-0.4	-1.2	5.8	0.5	5.7	1.3	-1.7	0.7
Durable	4%	-1.2	-1.5	2.5	13.9	2.1	11.1	-1.7	-2.9	-1.8
Non-Durable	27%	0.1	-0.2	-0.5	4.6	0.2	4.7	-1.5	1.3	-0.4
<b>Construction Supplies</b>	<b>-</b>	<b>3.6</b>	<b>0.1</b>	<b>1.7</b>	<b>-2.9</b>	<b>-4.7</b>	<b>-0.9</b>	<b>-2.2</b>	<b>-2.9</b>	<b>1.6</b>

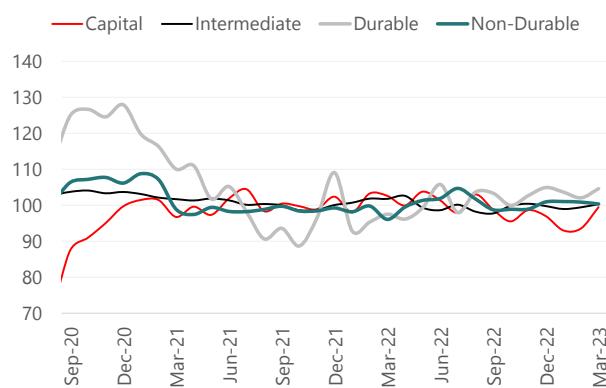
Sources: IBGE, Santander.

Figure 2 – Industrial Production Index (sa, 2022=100)



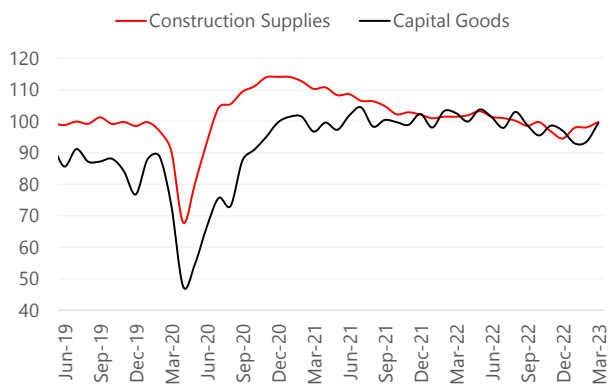
Sources: IBGE, Santander.

Figure 3 – Economic Categories (sa, 2022=100)



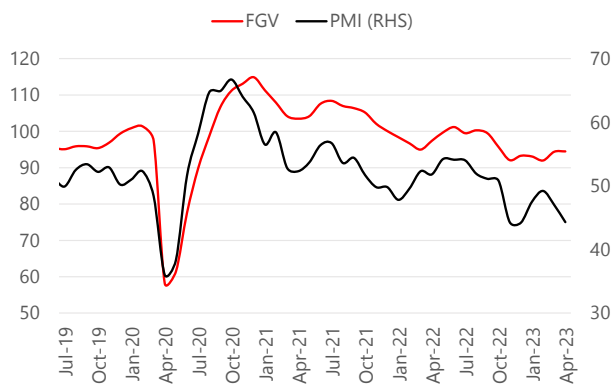
Sources: IBGE, Santander.

Figure 4 – Related to Investment (sa, 2022=100)



Sources: IBGE, Santander.

Figure 5 – Manufacturing Soft Data (sa)\*



Sources: Markit, FGV, Santander.

\* Neutral level: 100 points for FGV and 50 points for PMI.



Figure 6 - Industrial Production by Activity

	Industrial Activities Breakdown									
	Weights	% MoM			% YoY			% QoQ		
		Jan-23	Feb-23	Mar-23	Jan-23	Feb-23	Mar-23	Oct-22	Jan-23	Mar-23
Mining	14.6%	3.6	4.4	-0.1	2.0	5.1	3.3	1.2	0.8	3.0
Food products	15.1%	-2.9	-1.0	0.1	4.6	-3.8	0.7	0.7	13.5	1.5
Oil and biofuel coke	13.5%	-1.5	0.5	1.7	-2.1	1.6	11.2	-6.2	-2.7	-0.8
Vehicles	6.2%	-5.8	0.0	0.2	2.2	-6.1	-0.1	7.0	-4.1	-6.1
Metallurgy	4.9%	-0.8	0.8	0.3	-3.4	-4.8	-5.4	-2.1	0.0	-3.7
Chemical products	7.4%	-1.5	-1.9	0.6	-2.6	-8.0	-9.5	-2.8	-2.6	-2.6
Machines and equipments	3.8%	0.5	-0.7	5.1	-0.6	-9.0	-1.3	-1.8	-4.7	-0.1
Metallic products except machines and equipments	3.0%	-3.6	-1.4	-1.0	-1.7	-4.9	-1.3	-3.3	1.1	-1.2
Non-metallic minerals	2.7%	2.4	0.6	1.2	-10.6	-11.3	-7.3	-2.0	-6.0	-0.3
Rubber and plastic products	3.4%	1.5	0.4	0.5	5.6	1.5	4.4	-1.0	-0.3	2.4
Beverages	3.0%	1.4	3.7	0.5	4.8	8.2	2.0	-4.9	0.3	5.4
Cellulose,paper and paper-based products	3.7%	-1.3	-0.5	-0.5	-0.5	1.5	-1.4	-0.3	-1.5	-1.4
Machines, equipments and electric material	2.3%	-3.3	-3.5	1.1	-5.5	-12.6	-3.8	-4.2	-2.4	-4.7
Computer equipments, electronics and optical products	2.0%	-2.3	1.8	6.7	-12.6	-11.8	0.3	-7.1	-2.7	2.1
Pharmaceuticals	2.4%	-12.9	-4.1	3.2	34.1	6.7	15.7	5.7	12.5	-2.9
Manufacture of clothing and accessories	2.0%	0.8	0.7	-4.7	-8.5	-10.9	-7.3	-5.1	-3.2	6.2
Leather, travel items and footwears	1.4%	0.5	0.9	2.8	-0.1	-1.9	-1.4	-8.1	-5.5	5.1
Textile products	1.3%	3.3	1.5	0.1	-2.6	-2.6	1.4	-7.3	-2.0	4.5
Other transport equipments, except motor vehicles	1.1%	2.6	0.3	4.8	27.0	-2.2	22.3	4.0	2.5	5.8
Repair of machines and equipments	1.6%	0.6	-1.8	0.6	-2.4	-4.8	-3.1	-4.5	-1.9	1.2
Furniture	1.2%	2.1	0.4	-4.3	9.2	-0.7	4.2	-7.1	6.5	7.3
Wood products	1.1%	3.2	3.2	-2.5	-21.5	-17.1	-15.5	-14.1	-0.3	7.8
Printing and playback of recordings	0.6%	-10.3	12.1	-0.8	-21.2	6.9	17.5	-3.4	-3.0	-1.8
Miscellaneous	1.2%	10.8	4.0	0.0	-6.2	-8.3	-1.8	-3.9	-4.5	5.9
Tobacco products	0.4%	7.9	6.9	-4.2	3.8	18.1	-1.9	3.3	-2.0	5.9

Sources: IBGE, Santander.

Figure 7 - Heatmap Showing Industrial Production by Activity (% MoM-sa)

		By Activity (% MoM sa)												
		Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
14.6%	Mining	1.23	-0.34	-6.19	3.50	2.38	-2.36	0.98	6.08	-6.39	-1.80	3.59	4.40	-0.08
15.1%	Food products	-3.49	-8.15	-4.17	-0.76	2.57	-1.43	-2.62	7.48	7.10	4.38	-2.86	-1.00	0.06
13.5%	Oil and biofuel coke	-6.04	12.85	5.09	-0.74	4.74	-5.49	-4.43	-1.67	0.94	-0.70	-1.51	0.53	1.66
6.2%	Vehicles	2.35	-2.79	0.16	5.34	-6.55	13.30	0.43	-9.42	7.13	-3.87	-5.77	0.03	0.15
4.9%	Metallurgy	1.54	-0.88	0.03	-2.65	2.19	0.70	-7.44	5.26	4.48	-7.10	-0.83	0.76	0.32
7.4%	Chemical products	3.19	0.71	-2.80	2.49	-4.61	1.20	-0.43	-4.02	1.31	-0.75	-1.50	-1.86	0.61
3.8%	Machines and equipments	1.36	-0.78	2.18	-0.48	-4.35	4.46	-2.83	-3.41	0.26	-2.87	0.53	-0.69	5.12
3.0%	Metallic products except machines and equipments	-1.76	1.26	3.33	-0.98	-4.77	-0.67	2.11	-1.24	-1.88	6.65	-3.55	-1.39	-0.96
2.7%	Non-metallic minerals	-0.06	-0.38	-0.68	-1.52	-1.21	2.31	-3.35	-2.23	-1.33	-4.35	2.43	0.55	1.22
3.4%	Rubber and plastic products	-0.64	2.12	1.23	-0.07	-0.52	0.92	-0.85	-3.03	1.64	-0.14	1.50	0.38	0.47
3.0%	Beverages	6.60	4.28	-0.29	-2.23	-1.14	2.24	-5.27	-6.37	7.43	-1.56	1.37	3.67	0.51
3.7%	Cellulose,paper and paper-based products	2.29	1.31	-3.44	5.97	1.94	-1.70	-1.83	-1.60	0.47	0.29	-1.29	-0.47	-0.53
2.3%	Machines, equipments and electric material	-4.19	1.83	7.31	-2.39	-5.05	1.31	-0.71	-2.44	-0.01	0.92	-3.30	-3.54	1.05
2.0%	Computer equipments, electronics and optical products	2.23	-0.03	3.25	-4.04	-4.13	-1.28	-2.40	-0.57	-2.58	2.82	-2.28	1.76	6.68
2.4%	Pharmaceuticals	-5.47	-3.29	2.04	3.19	5.10	5.33	-6.33	1.01	7.17	17.48	-12.86	-4.12	3.16
2.0%	Manufacture of clothing and accessories	-1.99	-1.37	-0.82	3.36	-6.91	4.31	-3.76	-9.46	-2.98	11.84	0.77	0.70	-4.67
1.4%	Leather, travel items and footwears	5.38	2.15	8.25	-1.72	-9.55	3.46	-1.37	-10.42	-1.41	5.42	0.46	0.93	2.76
1.3%	Textile products	-2.16	4.17	2.12	0.04	-1.34	-5.88	-1.46	0.97	-5.05	2.86	3.33	1.52	0.09
1.1%	Other transport equipments, except motor vehicles	-10.83	-6.12	8.39	4.18	-3.74	2.68	3.75	-0.04	-1.43	2.77	2.56	0.28	4.79
1.6%	Repair of machines and equipments	2.55	-1.92	5.15	0.45	-4.60	1.79	-2.77	-4.47	0.46	2.18	0.57	-1.81	0.63
1.2%	Furniture	-1.81	2.91	1.44	-0.89	-5.43	-0.30	-0.74	-7.39	7.41	5.92	2.13	0.42	-4.29
1.1%	Wood products	0.02	-3.81	2.72	-5.01	-4.91	0.57	-10.18	-10.95	11.29	-0.48	3.18	3.19	-2.46
0.6%	Printing and playback of recordings	-10.84	25.13	2.51	-9.95	2.83	1.00	-5.13	2.36	-1.37	3.11	-10.35	12.15	-0.81
1.2%	Miscellaneous	-1.14	-3.91	5.29	-2.70	-2.98	5.79	-5.73	-8.35	10.45	-14.20	10.78	3.99	-0.01
0.4%	Tobacco products	15.43	-6.26	-2.02	-1.70	-3.55	2.04	9.22	-4.95	1.09	-7.49	7.87	6.95	-4.23

Sources: IBGE, Santander.



Figure 8 - Heatmap Showing Industrial Production by Activity (contribution)

		By Activity (Contribution p.p, sa)													
		Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	
<b>14.6%</b>	Mining	0.18	-0.05	-0.90	0.51	0.35	-0.34	0.14	0.89	-0.93	-0.26	0.52	0.64	-0.01	
<b>15.1%</b>	Food products	-0.53	-1.23	-0.63	-0.11	0.39	-0.22	-0.40	1.13	1.07	0.66	-0.43	-0.15	0.01	
<b>13.5%</b>	Oil and biofuel coke	-0.82	1.74	0.69	-0.10	0.64	-0.74	-0.60	-0.23	0.13	-0.09	-0.20	0.07	0.22	
<b>6.2%</b>	Vehicles	0.15	-0.17	0.01	0.33	-0.41	0.82	0.03	-0.58	0.44	-0.24	-0.36	0.00	0.01	
<b>4.9%</b>	Metallurgy	0.08	-0.04	0.00	-0.13	0.11	0.03	-0.37	0.26	0.22	-0.35	-0.04	0.04	0.02	
<b>7.4%</b>	Chemical products	0.24	0.05	-0.21	0.19	-0.34	0.09	-0.03	-0.30	0.10	-0.06	-0.11	-0.14	0.05	
<b>3.8%</b>	Machines and equipments	0.05	-0.03	0.08	-0.02	-0.17	0.17	-0.11	-0.13	0.01	-0.11	0.02	-0.03	0.20	
<b>3.0%</b>	Metallic products except machines and equipments	-0.05	0.04	0.10	-0.03	-0.14	-0.02	0.06	-0.04	-0.06	0.20	-0.11	-0.04	-0.03	
<b>2.7%</b>	Non-metallic minerals	0.00	-0.01	-0.02	-0.04	-0.03	0.06	-0.09	-0.06	-0.04	-0.12	0.06	0.01	0.03	
<b>3.4%</b>	Rubber and plastic products	-0.02	0.07	0.04	0.00	-0.02	0.03	-0.03	-0.10	0.06	0.00	0.05	0.01	0.02	
<b>3.0%</b>	Beverages	0.20	0.13	-0.01	-0.07	-0.03	0.07	-0.16	-0.19	0.22	-0.05	0.04	0.11	0.02	
<b>3.7%</b>	Cellulose,paper and paper-based products	0.08	0.05	-0.13	0.22	0.07	-0.06	-0.07	-0.06	0.02	0.01	-0.05	-0.02	-0.02	
<b>2.3%</b>	Machines, equipments and electric material	-0.10	0.04	0.17	-0.05	-0.11	0.03	-0.02	-0.06	0.00	0.02	-0.07	-0.08	0.02	
<b>2.0%</b>	Computer equipments, electronics and optical products	0.05	0.00	0.07	-0.08	-0.08	-0.03	-0.05	-0.01	-0.05	0.06	-0.05	0.04	0.14	
<b>2.4%</b>	Pharmaceuticals	-0.13	-0.08	0.05	0.08	0.12	0.13	-0.15	0.02	0.17	0.42	-0.31	-0.10	0.08	
<b>2.0%</b>	Manufacture of clothing and accessories	-0.04	-0.03	-0.02	0.07	-0.14	0.09	-0.08	-0.19	-0.06	0.24	0.02	0.01	-0.09	
<b>1.4%</b>	Leather, travel items and footwears	0.08	0.03	0.12	-0.02	-0.14	0.05	-0.02	-0.15	-0.02	0.08	0.01	0.01	0.04	
<b>1.3%</b>	Textile products	-0.03	0.05	0.03	0.00	-0.02	-0.07	-0.02	0.01	-0.06	0.04	0.04	0.02	0.00	
<b>1.1%</b>	Other transport equipments, except motor vehicles	-0.12	-0.07	0.10	0.05	-0.04	0.03	0.04	0.00	-0.02	0.03	0.03	0.00	0.05	
<b>1.6%</b>	Repair of machines and equipments	0.04	-0.03	0.08	0.01	-0.07	0.03	-0.04	-0.07	0.01	0.03	0.01	-0.03	0.01	
<b>1.2%</b>	Furniture	-0.02	0.03	0.02	-0.01	-0.06	0.00	-0.01	-0.08	0.09	0.07	0.02	0.00	-0.05	
<b>1.1%</b>	Wood products	0.00	-0.04	0.03	-0.05	-0.05	0.01	-0.11	-0.11	0.12	-0.01	0.03	0.03	-0.03	
<b>0.6%</b>	Printing and playback of recordings	-0.07	0.15	0.02	-0.06	0.02	0.01	-0.03	0.01	-0.01	0.02	-0.06	0.07	0.00	
<b>1.2%</b>	Miscellaneous	-0.01	-0.05	0.06	-0.03	-0.04	0.07	-0.07	-0.10	0.13	-0.17	0.13	0.05	0.00	
<b>0.4%</b>	Tobacco products	0.06	-0.03	-0.01	-0.01	-0.01	0.01	0.04	-0.02	0.00	-0.03	0.03	0.03	-0.02	

Sources: IBGE, Santander.



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