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## Brazil Macro | June 2021

### INFLATION

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# Forecasting Accountability

01

## Forecast accountability: underestimation of pandemic-related shocks, again

- IPCA 2021: the shock on commodity prices and the supply chain disruption are being stronger and lasting longer than expected, pushing food-at-home and industrial goods inflation up; also we are seeing some spreading of food-at-home to food-service
- IPCA 2022: food shock spilling-over to the next year, just as in industrials
- Risks are still tilted to the upside; particularly the risk of second-order effects (spreading of primary shocks to general prices)

	old	2021 new	Δ bps
<b>IPCA forecasts % YoY</b>	<b>5.0</b>	<b>5.9</b>	<b>88</b>
<b>Free prices</b>	<b>3.9</b>	<b>5.0</b>	<b>79</b>
Food-at-home	5.1	8.5	52
Industrial goods	4.4	5.1	16
Tradables	4.4	5.1	14
Non-Tradables	4.4	5.1	2
Services	3.1	3.4	11
Food-service	5.6	7.5	11
Airline tickets	15.0	18.3	1
Economic activity	1.9	1.9	0
Education	3.0	3.0	0
Inertial	3.0	2.9	-1
Salaries	2.4	2.3	-1
<b>Regulated</b>	<b>7.9</b>	<b>8.3</b>	<b>9</b>
Gasoline	19.1	25.2	35
Energy	-1.3	0.3	7
Health insurance	13.1	5.0	-32
Bus fares	1.5	1.5	0
Cores	3.8	4.2	40

Sources: Santander

	old	2022 new	Δ bps
<b>IPCA forecasts % YoY</b>	<b>3.7</b>	<b>3.9</b>	<b>25</b>
<b>Free prices</b>	<b>3.3</b>	<b>3.6</b>	<b>23</b>
Food-at-home	2.0	3.5	22
Industrial goods	3.8	3.8	0
Tradables	3.8	3.8	0
Non-Tradables	3.8	3.8	0
Services	3.5	3.5	1
Food-service	5.0	5.0	0
Airline tickets	12.0	12.0	0
Economic activity	2.5	2.5	0
Education	5.0	5.0	0
Inertial	3.1	3.1	0
Salaries	2.5	2.5	0
<b>Regulated</b>	<b>4.8</b>	<b>5.0</b>	<b>3</b>
Gasoline	4.5	4.5	0
Energy	4.0	4.0	0
Health insurance	8.0	9.0	4
Bus fares	6.0	6.0	0
Cores	3.5	3.7	20

Sources: Santander

## High-frequency tracking: even higher inflation

- Since the publishing of our scenario-review in May 20th, new data was released and we updated our high frequency tracking further up
- Basically, we have raised industrial goods inflation for both 2021 and 2022

	old	2021 new	Δ bps
<b>IPCA forecasts % YoY</b>	<b>5.9</b>	<b>6.1</b>	<b>22</b>
<b>Free prices</b>	<b>5.0</b>	<b>5.3</b>	<b>22</b>
Food-at-home	8.5	7.4	-17
Industrial goods	5.1	6.7	37
Tradables	5.1	6.7	32
Non-Tradables	5.1	6.7	5
Services	3.4	3.5	2
Food-service	7.5	8.9	9
Airline tickets	18.3	3.5	-6
Economic activity	1.9	1.9	0
Education	3.0	3.0	0
Inertial	2.9	2.9	0
Salaries	2.3	2.3	0
<b>Regulated</b>	<b>8.3</b>	<b>8.3</b>	<b>0</b>
Gasoline	25.2	29.2	23
Energy	0.3	-2.6	-12
Health insurance	5.0	3.9	-4
Bus fares	1.5	1.5	0
Cores	4.2	4.6	40

Sources: Santander

	old	2022 new	Δ bps
<b>IPCA forecasts % YoY</b>	<b>3.9</b>	<b>4.1</b>	<b>16</b>
<b>Free prices</b>	<b>3.6</b>	<b>3.8</b>	<b>16</b>
Food-at-home	3.5	3.5	0
Industrial goods	3.8	4.5	16
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Inertial	3.1	3.1	0
Salaries	2.5	2.5	0
<b>Regulated</b>	<b>5.0</b>	<b>5.0</b>	<b>0</b>
Gasoline	4.5	4.5	0
Energy	4.0	4.0	0
Health insurance	9.0	9.0	0
Bus fares	6.0	6.0	0
Cores	3.7	3.8	10

Sources: Santander

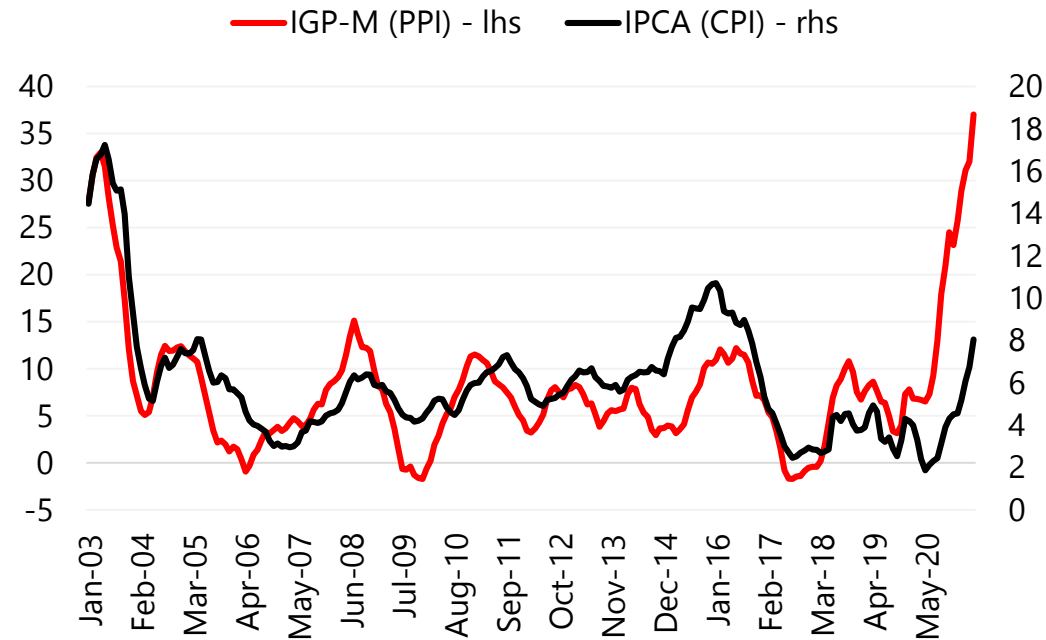
Inflationary pressures pile up  
for industrial goods, food and  
administered prices

02

# Large distortion of relative price between the wholesale and consumer levels

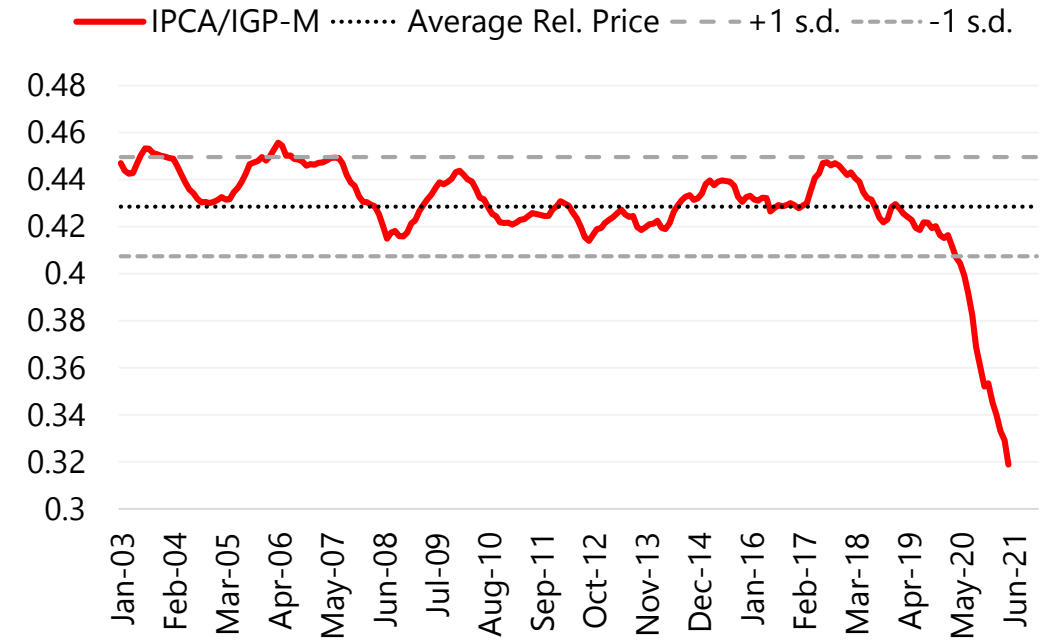
- The commodities shock and disruption in the supply chain are being stronger and lasting longer than expected
- Wholesale prices suffer the direct impact of those issues, but there is a lag until it reaches the consumer level
- **The distortion of relative level price shows there is still a backlog of raises in the wholesale to reach the consumer (IPCA)**

### IPCA and IGP-M % YoY



Sources: IBGE, FGV

### Relative price level: IPCA (CPI) / IGP-M (PPI)

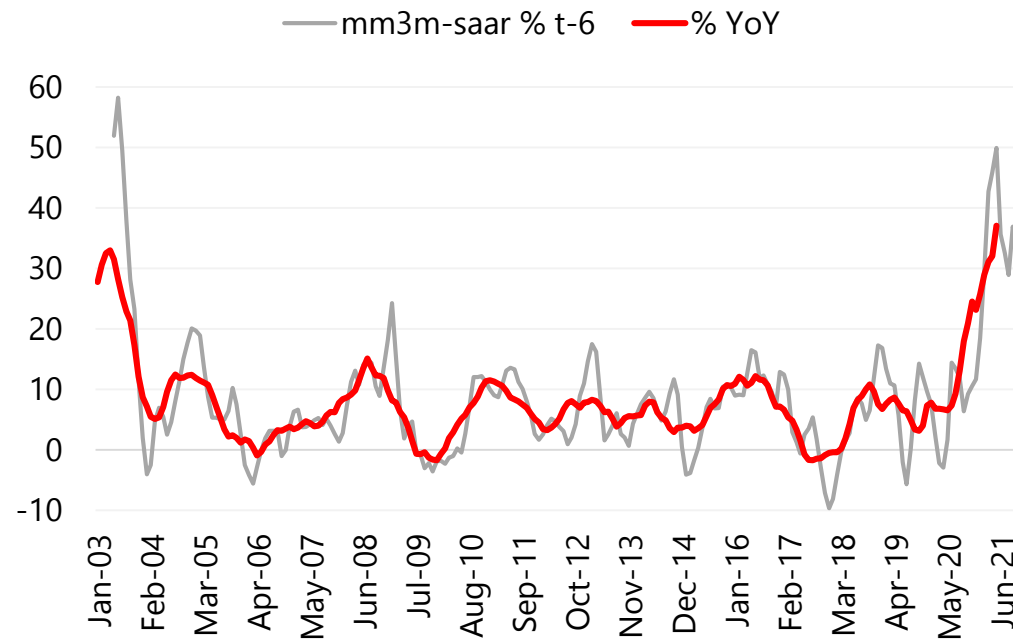


Sources: IBGE, FGV

## And there is no relief in sight for the wholesale level yet

- Before expecting a more clear and robust relief for the consumer, we first need to see a cooling down of prices at the wholesale level and we are not seeing it yet
- IGP-M YoY is at the highest level at least since 2003
- **So, besides the backlog of raises to come to consumers, more upward pressures keep piling up to that backlog**

### IGP-M inflation: 3mma-saar still pointing to upward pressures at the margin



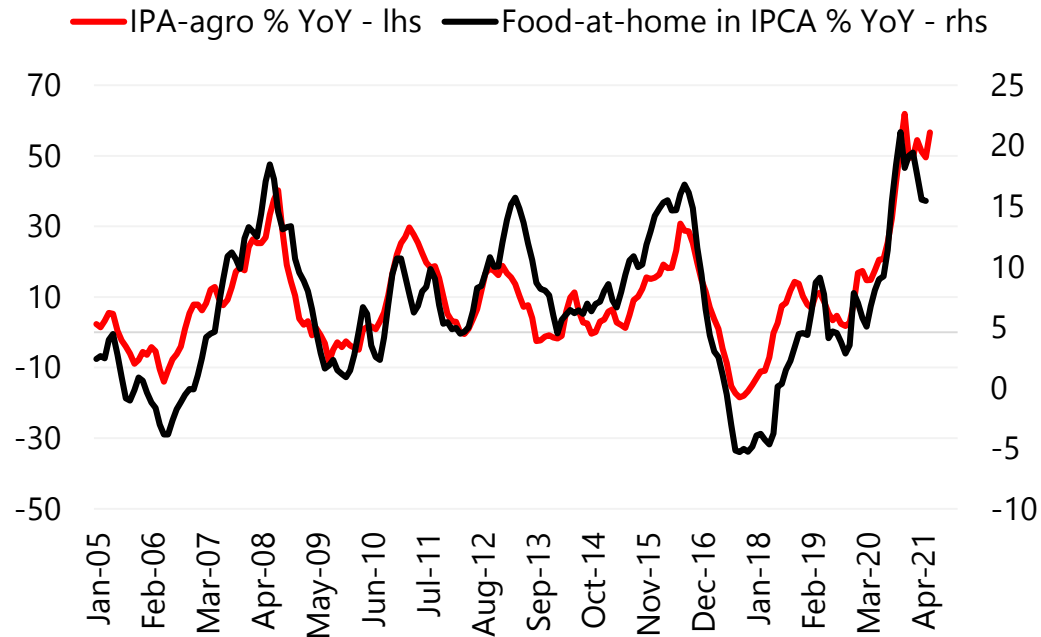
Sources: FGV, Santander



## Part of the distortion comes from food prices

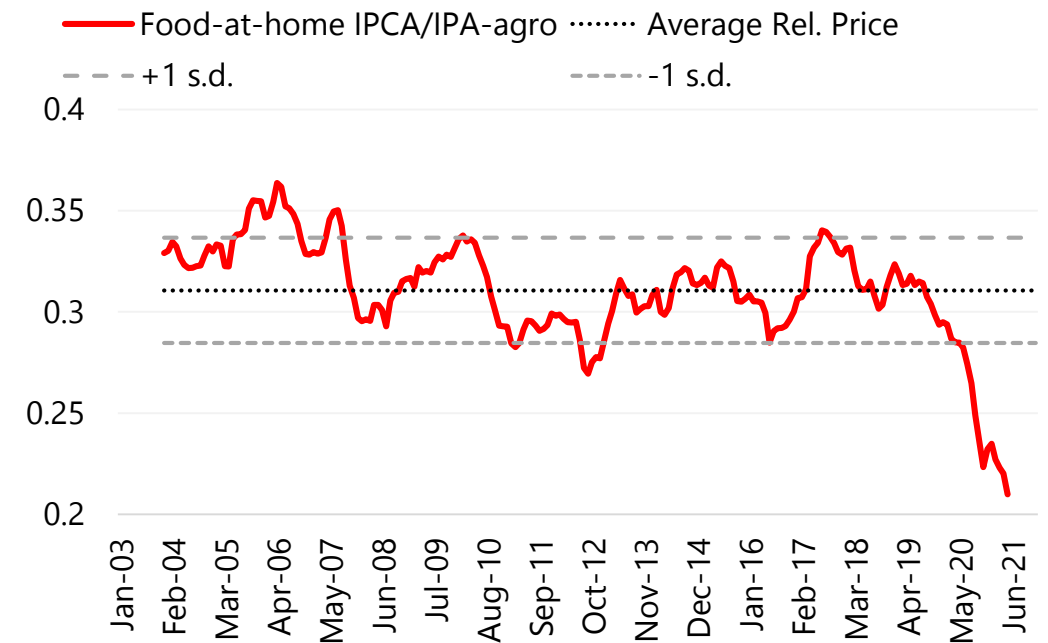
- Agricultural prices at the wholesale level (IPA-agro) tend to cointegrate with food-at-home prices, that is, the relative price tend to hover around a mean, but the recent sharply rise of IPA-agro distorted that relation considerably
- **Even with food-at-home already rising in IPCA, it is still too far from normalizing the relation**

### Wholesale agricultural inflation (IPA-Agro) and Food-at-home inflation in IPCA



Sources: FGV, Santander

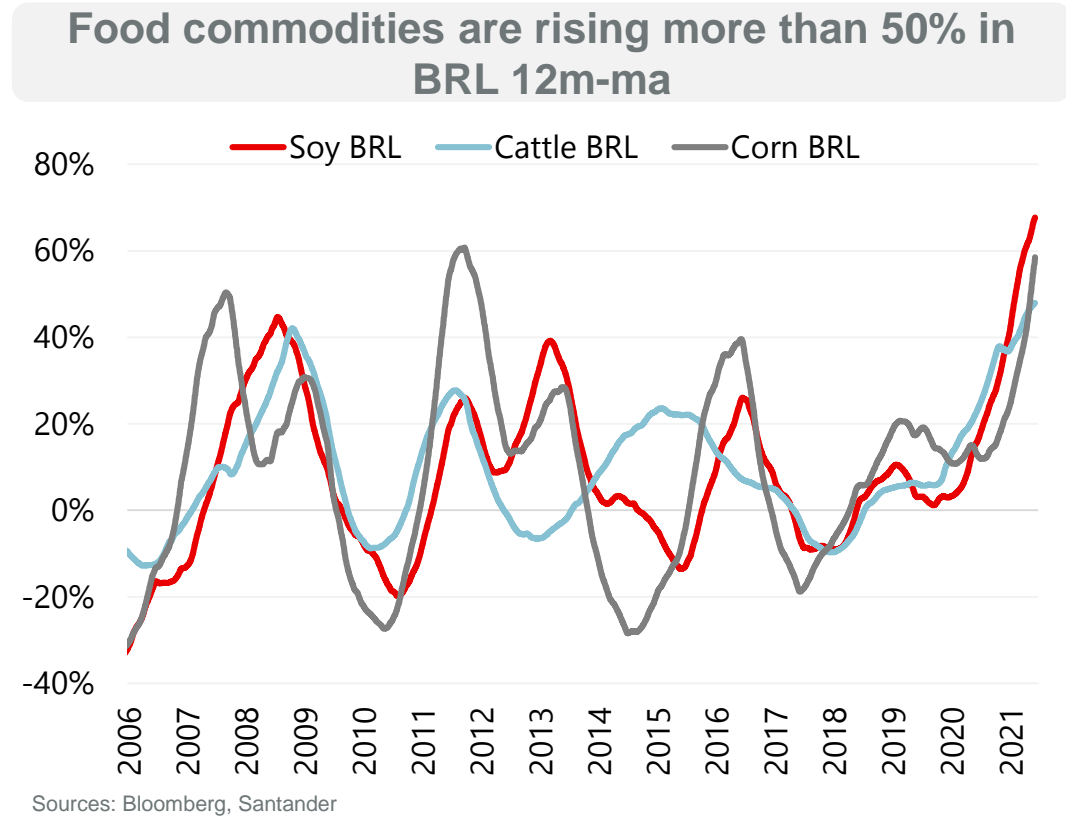
### Relative price level: food-at-home IPCA/Wholesale agricultural IPA-agro



Sources: FGV, Santander

# Grains and proteins are rising more than 50% at the wholesale level

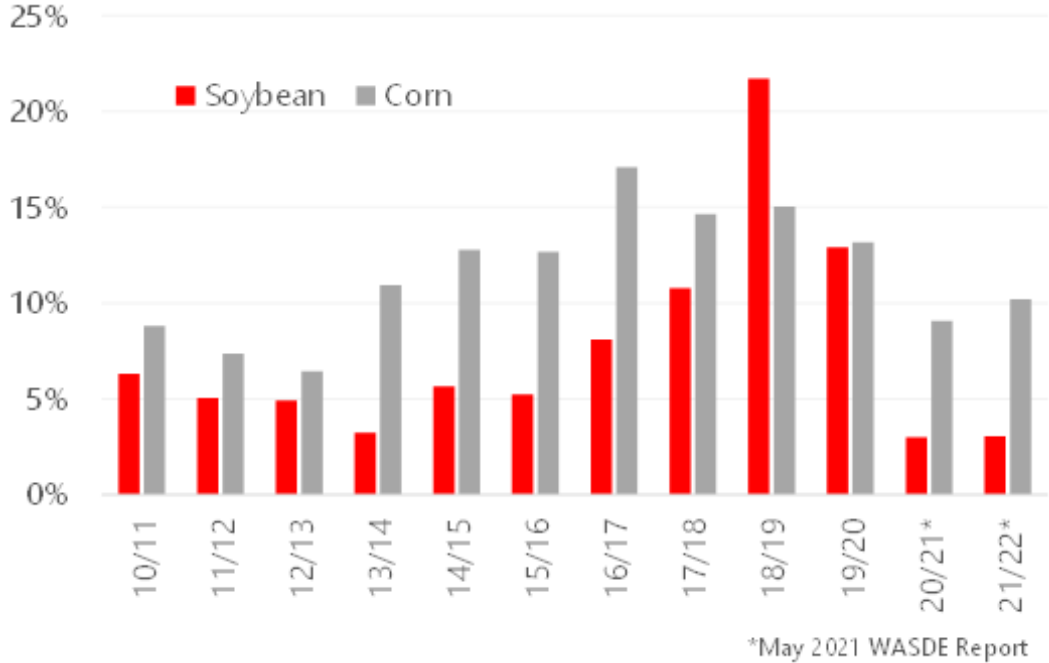
- Strong domestic and external demand, low inventories, weather shocks



# A fragile scenario for agricultural commodities

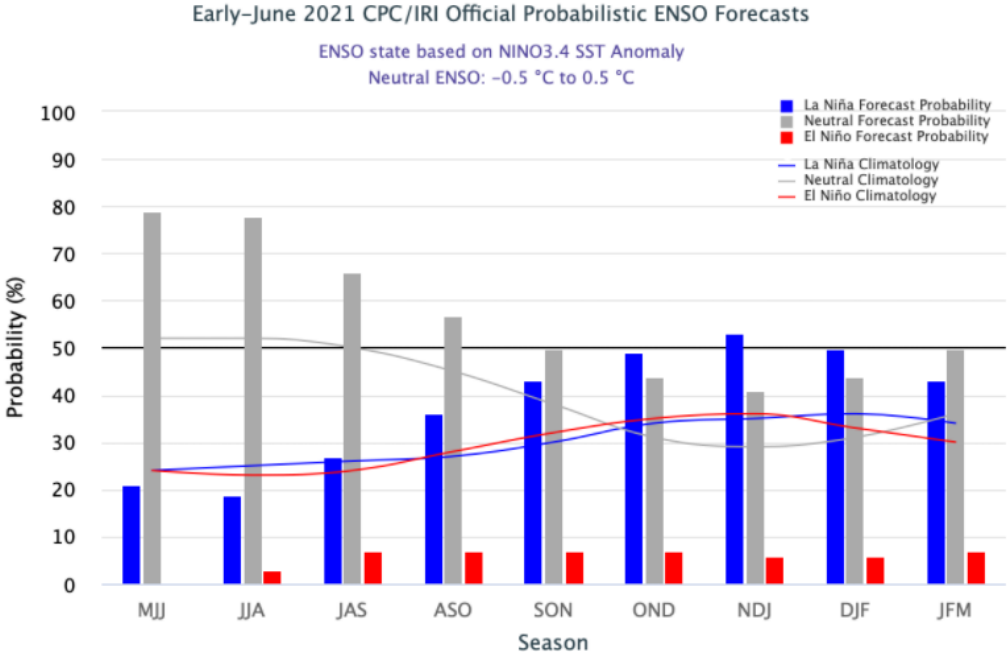
- Very high demand (particularly US and China) and low stock-to-use
- **Any weather shock can have major impact on prices on the next years**

## Very low stock-to-use grains levels in the US



Sources: Wasde

## Probability of La Niña during 4Q21 is increasing

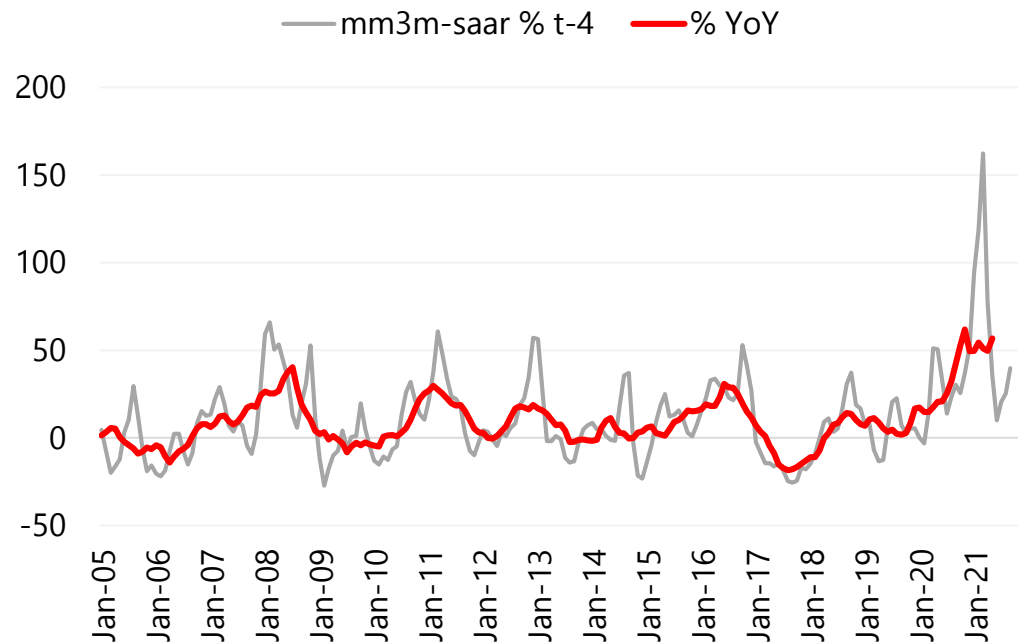


Sources: CPC/IRI

## And there is no clear sign of relief for food yet

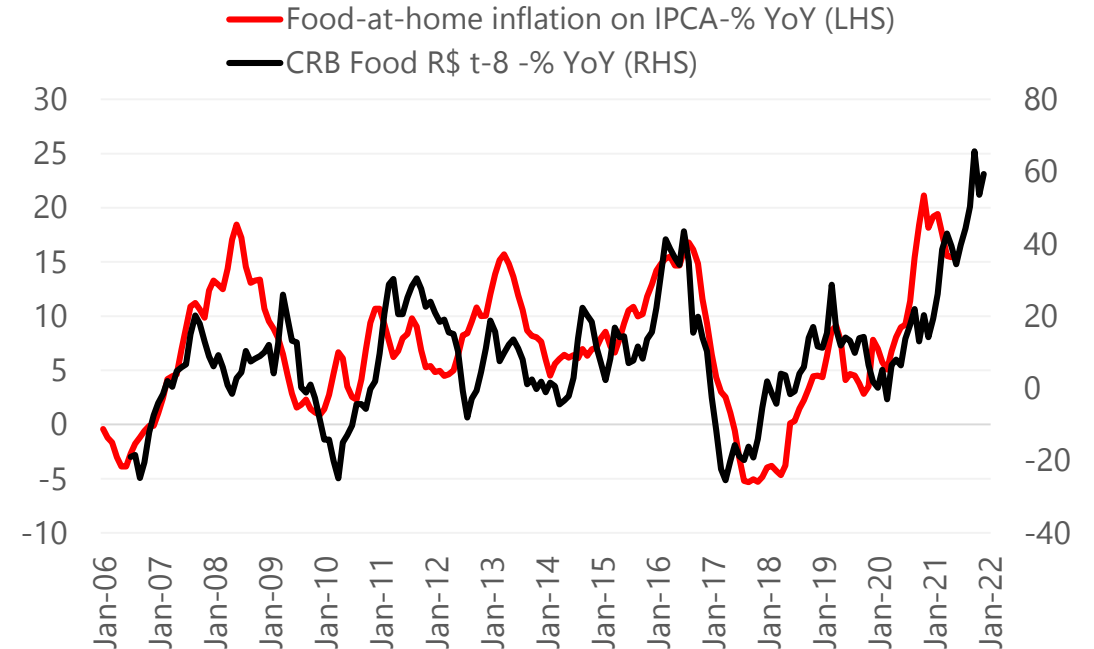
- Despite a recent fall in some agricultural commodities, the recent IPA-agro releases still pointed to a pressured 3mma-saar
- **CRB Food in BRL is a good leading indicator for food-at-home in IPCA and it is still showing an upwardly pressured scenario until year-end**

IPA-agro: after a short-lived relief, the 3mma-saar rebounded a bit and is around 40% again



Sources: FGV, Santander

CRB Food is rising 60% YoY and it anticipates IPCA's food-inflation

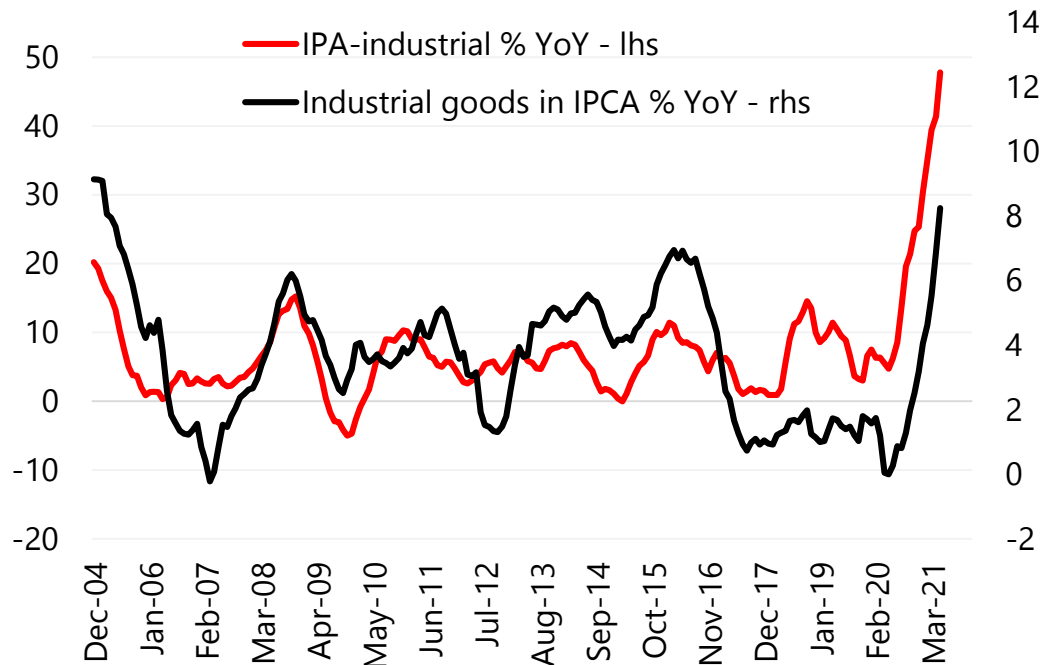


Sources: Bloomberg, IBGE, Santander

## Other part of the distortion comes on industrial goods

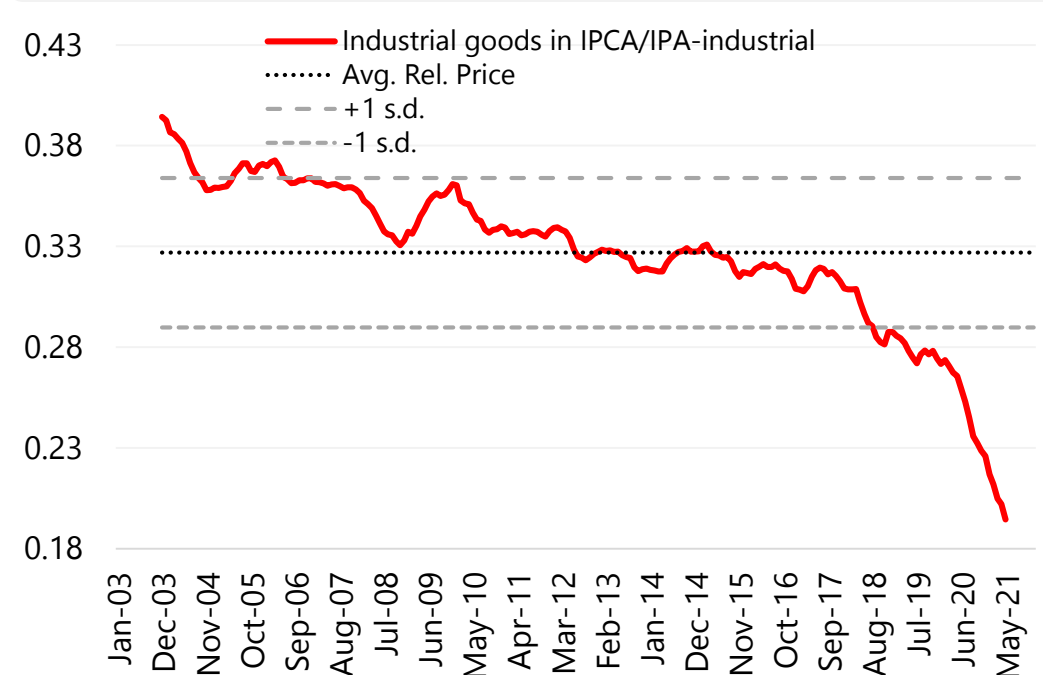
- Although not directly comparable (some items in IPA-industrial do not appear in IPCA), there is a long term relationship between industrial goods on IPCA and on IGP-M (IPA-industrial) and it also got majorly distorted recently
- **IPA-industrial had a sharp acceleration and, although industrial goods on IPCA also rose, it is still lagging considerably**

Industrial goods in IPCA and wholesale industrial goods (IPA-industrial)



Sources: FGV, IBGE

Relative price level: industrial goods IPCA/wholesale industrial IPA-industrial



Sources: FGV, IBGE

## Industrial goods: supply chain disruption

- Part of the explanation for the rise in industrial goods is the pandemic-related supply chain disruption: first there were problems because of a limitation of operations in the manufacturing sector due to social isolation measures, but now the disruption seems to be also impacted by a shortage of inputs given the sharp global V-shaped recovery

### Shortage of essential inputs for the manufacturing sector

#### Global shortage of computer chips could last two years, says IBM boss

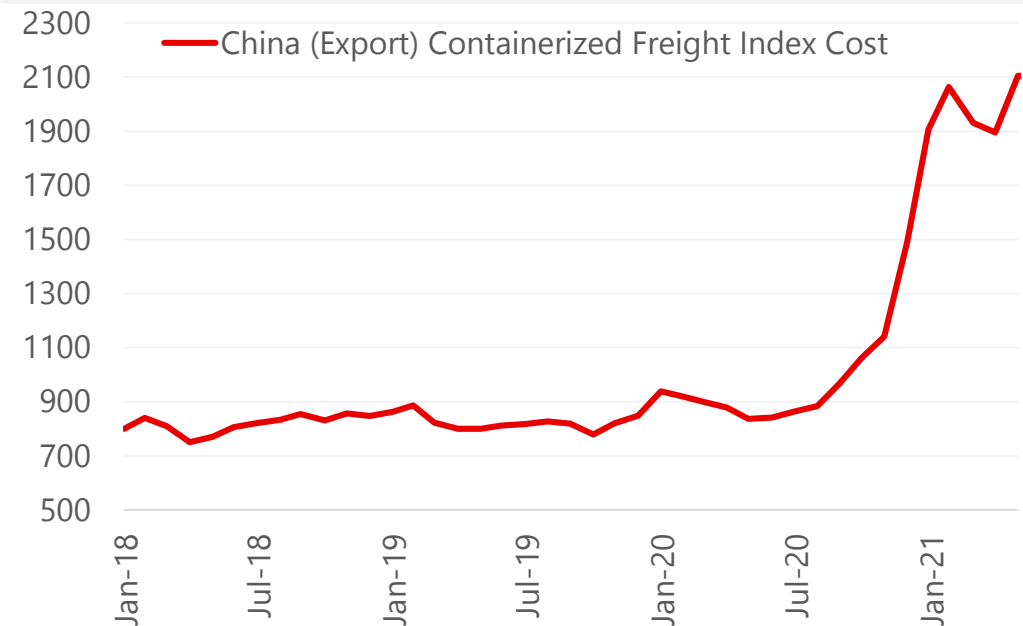
Tech industry struggles to keep up with demand brought on by the reopening of the world economy

#### Brasil tem 29 fábricas de veículos paradas: 'Crise sem precedentes'

Thais Carrança  
Da BBC News Brasil em São Paulo

4 abril 2021  
Atualizado 5 abril 2021

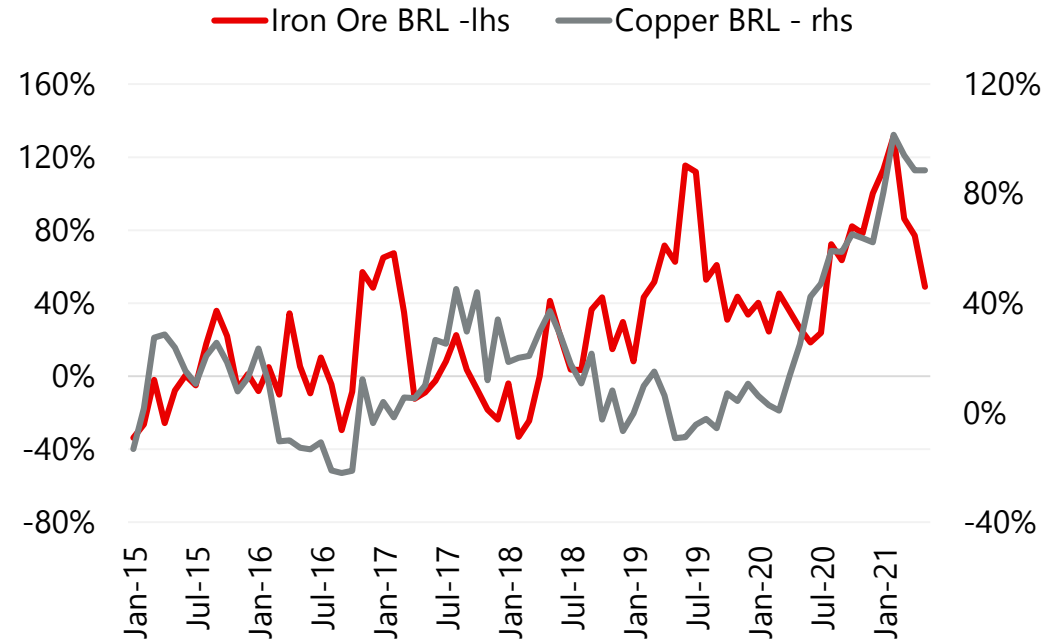
### Freight costs skyrocketing



Sources: Bloomberg

# Industrial goods: metals prices are rising sharply

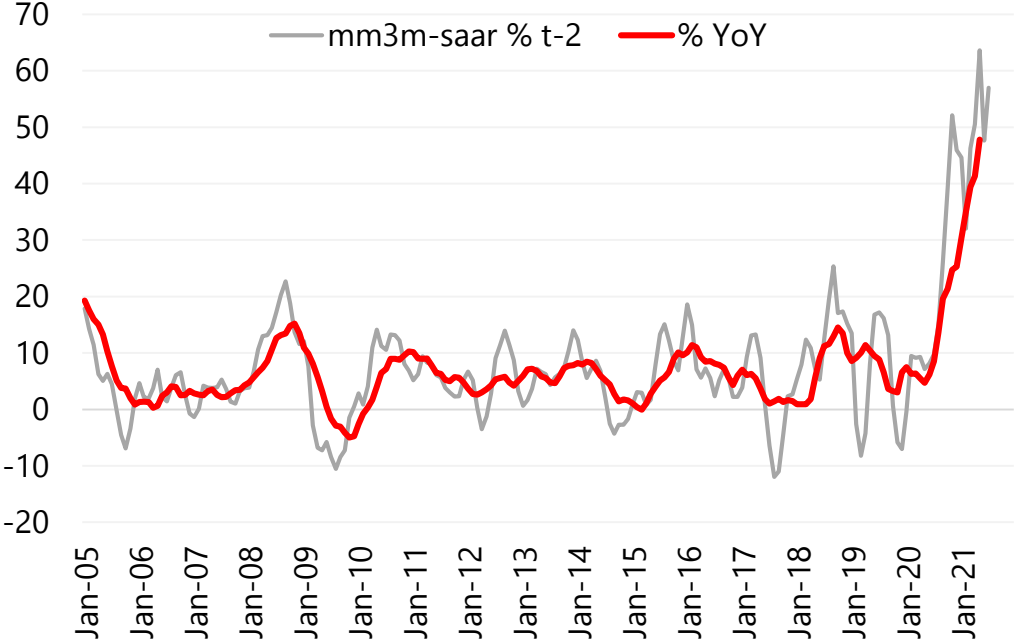
Copper is rising around 90%YoY and, even after a relief, iron ore is rising 50%



Sources: Bloomberg

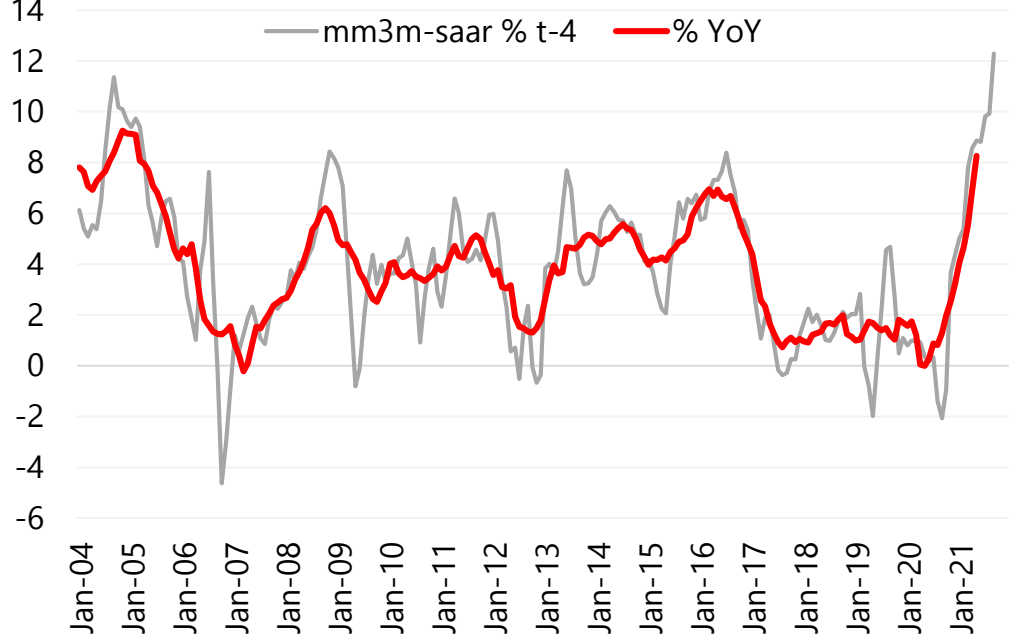
# And there is no clear sign of relief for industrial goods yet

**IPA-industrial: the 3mma-saar remain sustained at incredibly high level**



Sources: FGV, Santander

**Industrial goods IPCA: 3mma-saar still accelerating and is at 12%**



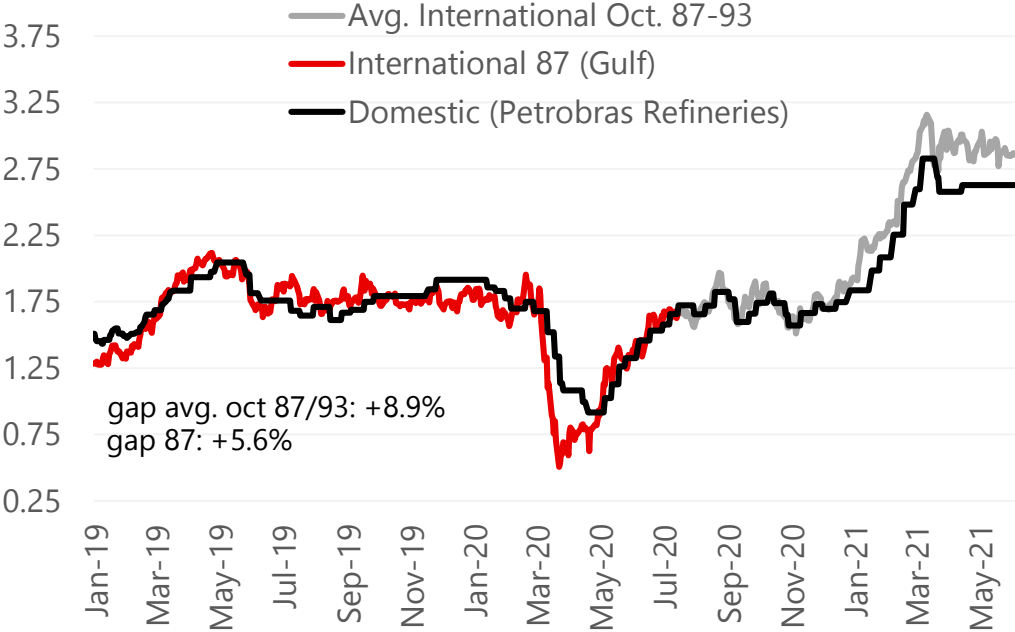
Sources: IBGE, Santander



# Administered prices: commodities shock weighing on fuels

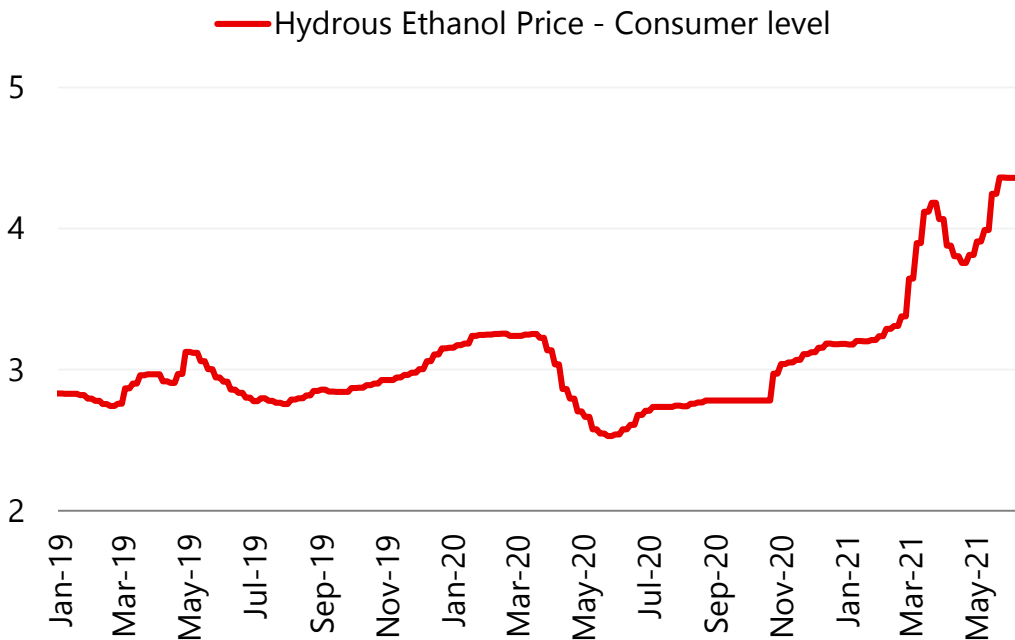
- The sugar cane harvest loss also impacted gasoline, via ethanol

**Gasoline price R\$/L International x Domestic**



Sources: Bloomberg, Santander

**Hydrous Ethanol Rose Sharply**



Sources: Bloomberg, Santander

## Administered prices: lower health insurance for 2021, higher for 2022

- On the medicine price adjustments, there is a proposal at the Congress to postpone the adjustment to 2022, but it has not passed yet

	Formula	2019	2020	2021E
VDA (Variation of Assistance Expenditure)	(a)	11.1%	11.9%	-8.6%
FGE (Efficiency Gain Factor)	(b) = a * 8.87%	1.0%	1.1%	-0.8%
VFE (Revenue Variation by Age Group)	(c)	1.6%	1.6%	1.6%
IVDA (Assistance Expenses Value Index)	(d) = (1 + a - b) / (1 + c) - 1	8.3%	9.1%	-9.2%
IPCA adjusted (i.e. ex. medical plans)	(e)	3.4%	4.1%	4.5%
<b>Price increase</b>	<b>(f) = d * 80% + e * 20%</b>	<b>7.4%</b>	<b>8.1%</b>	<b>-6.5%</b>

Notes: The VDA is the weighted average annual medical cost variation of capita of operators, based on the calendar year of last two years (e.g. for the 2021 price increase, the numbers are based on the costs of 2020 vs. 2019). Our 2021E VDA calculation is detailed below in Figure 6. The FGE of 8.87% of VDA was set by ANS for the period 2019-2022. We assumed the same VFE of 2020.

Sources: ANS and Santander.

Sources: Santander

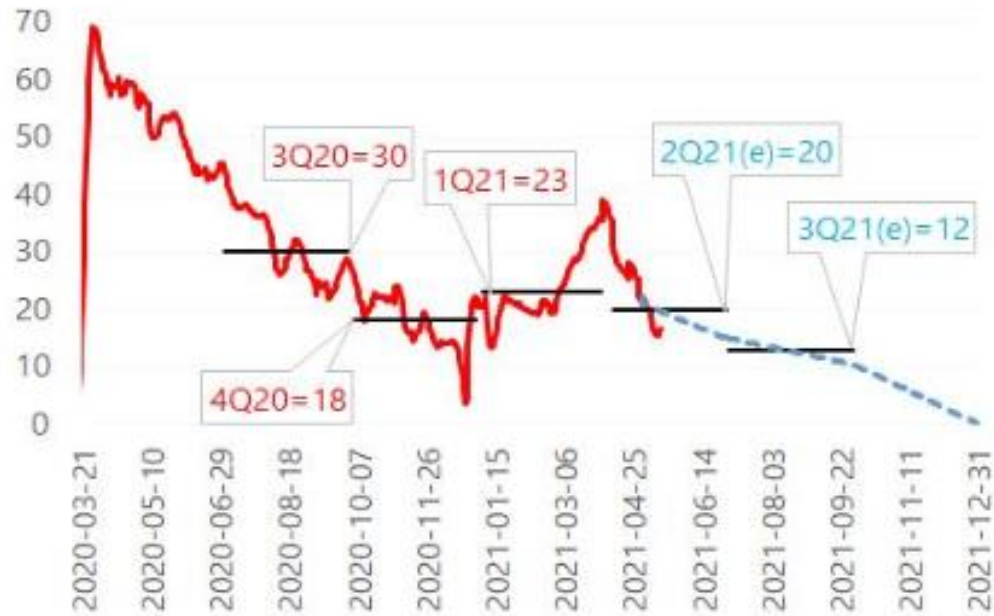
Services: a brightside for now,  
but probably not for so long

03

## Services inflation: the brightside, but for how long?

- The economy is reopening and it should put pressures on some services prices that are indirectly suffering the impact of primary shocks

Mobility is recovery rapidly



Sources: Google, Santander

The high-frequency economic activity index is also recovering at the margin

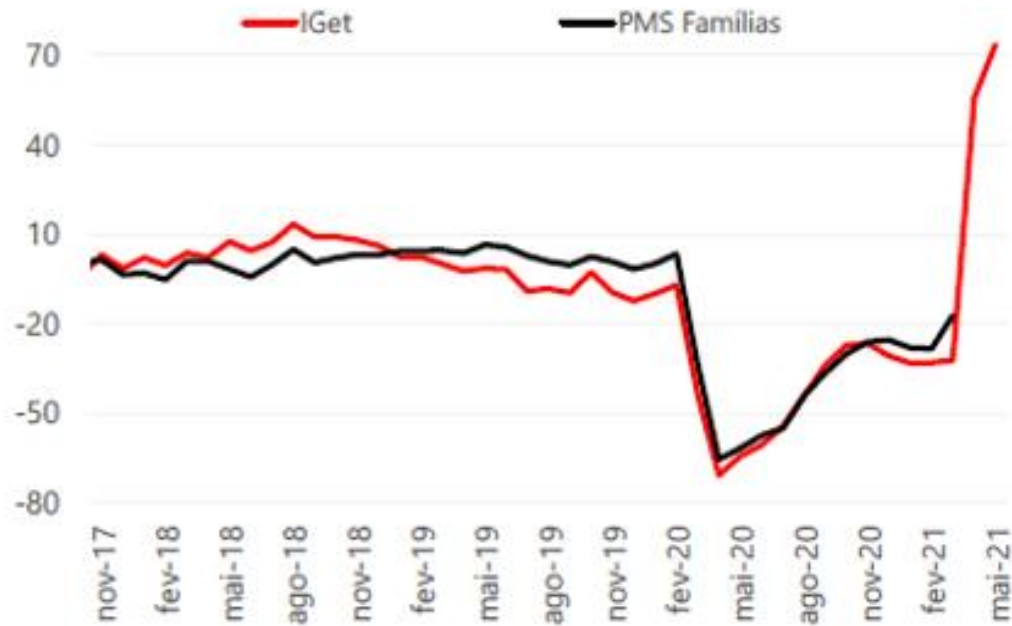


Sources: Santander

# Core services inflation is already back to pre-pandemic levels

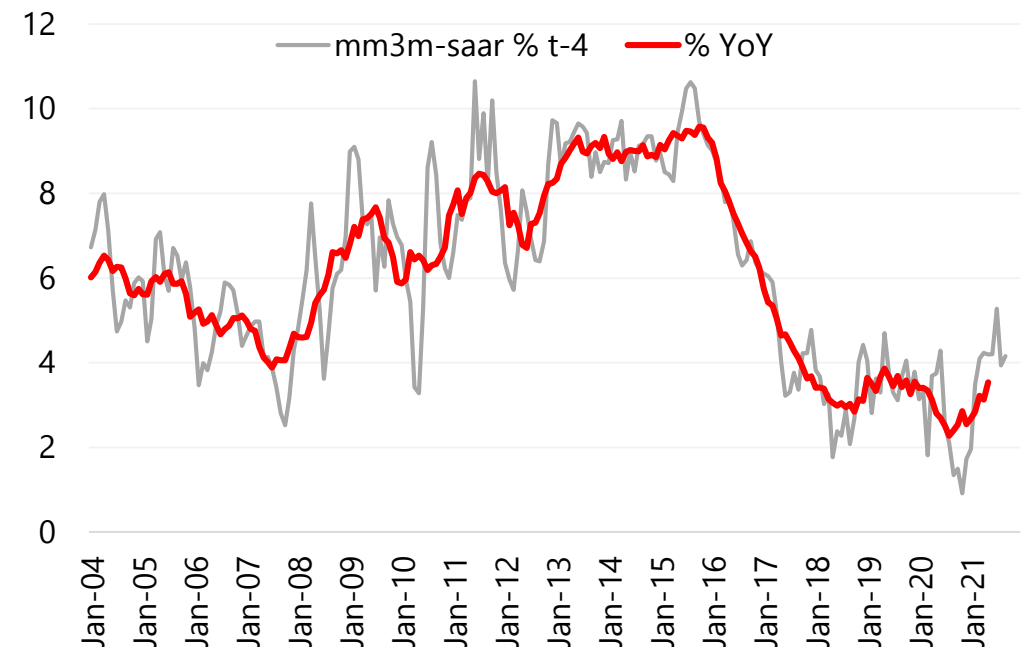
- And proprietary high frequency data shows services to households are accelerating

Our proprietary index for services to households show sharp rise at the margin



Sources: Santander

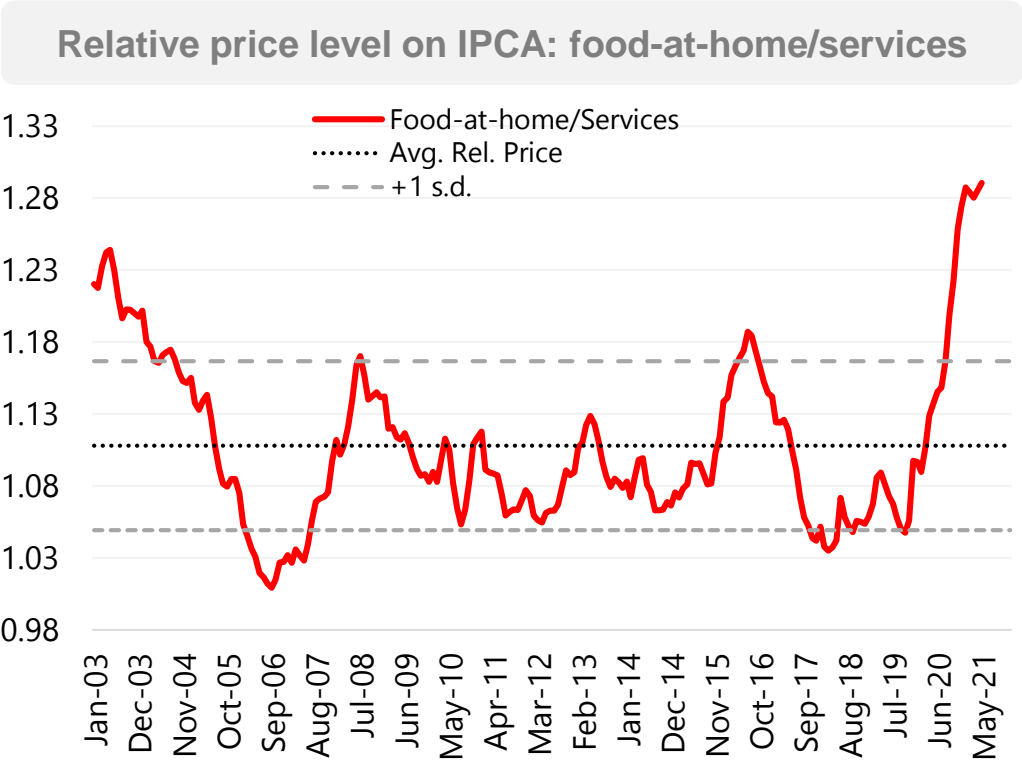
Core services inflation is already hovering above 4% for seven months now



Sources: IBGE, Santander

# The relative price between food-at-home and services is distorted

- This intra-IPCA relative price also tends to be stable around a mean but food-at-home rose sharply, while services are at a very low level
- As we do not believe food-at-home will deflate soon, then services should accelerate to correct the relative price

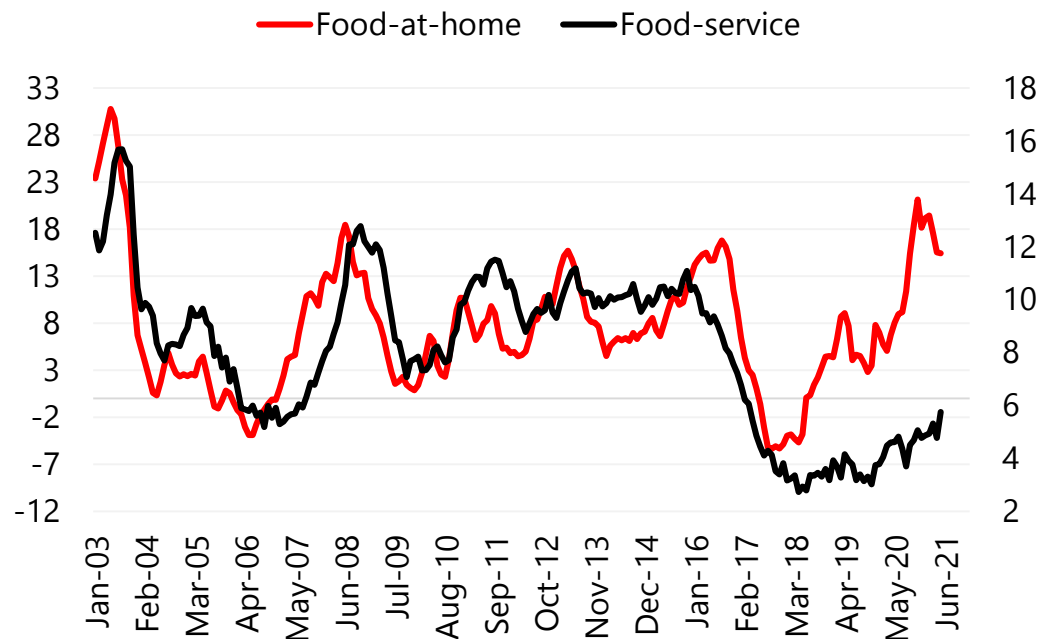


Sources: IBGE, Santander

## We are particularly concerned with food-service

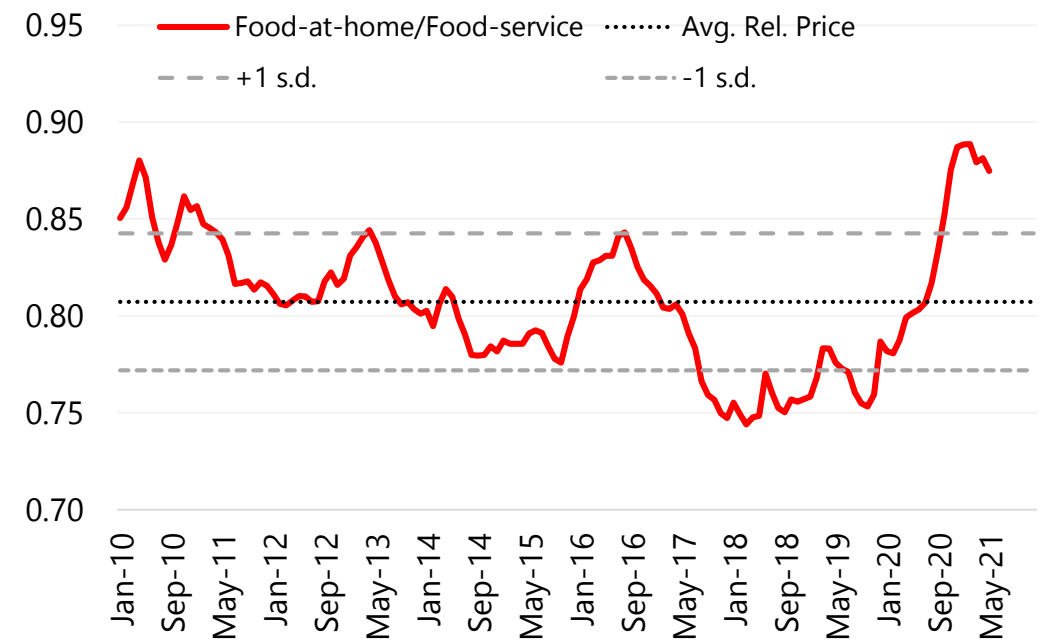
- This sector is the one more directly linked to the food shock and the relative price between food-at-home and food-service is also distorted
- As we do not expect food-at-home to deflate soon, then food-service should accelerate

### Food-at-home and food-service % YoY



Sources: IBGE, Santander

### Relative price level on IPCA: food-at-home/food-service



Sources: IBGE, Santander

Risks

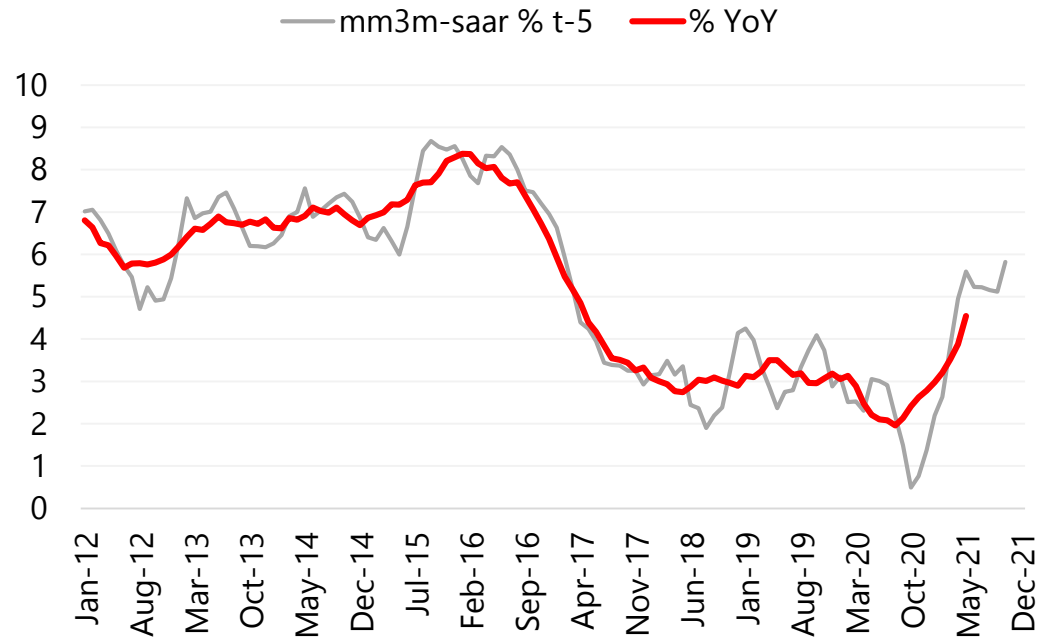
03



## Risks are tilted to the upside: signs of spreading of primary shocks to general prices

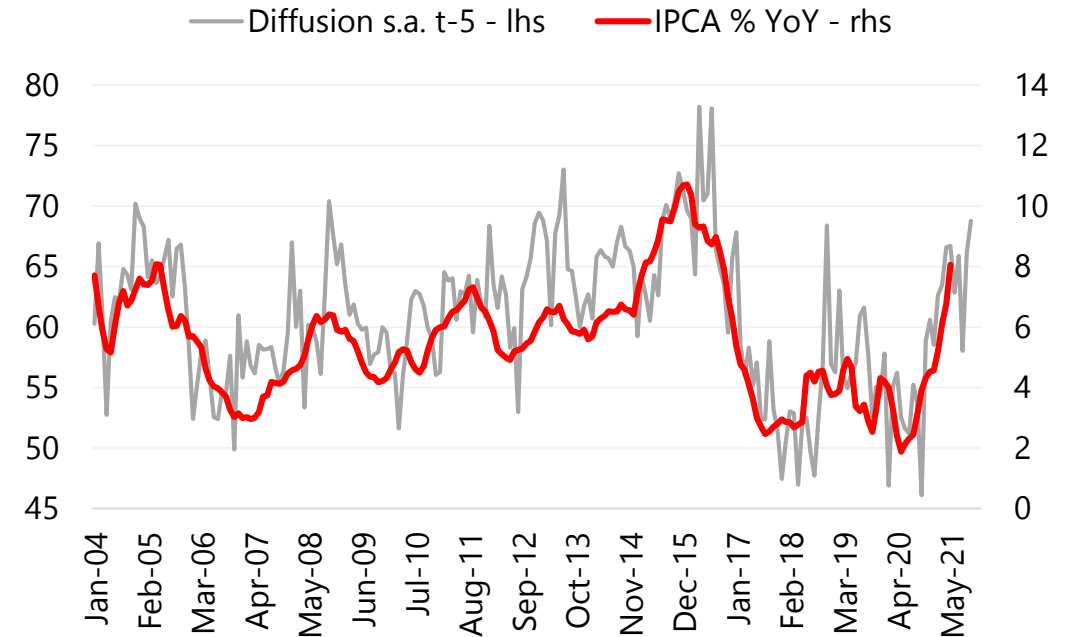
- We are more biased to 6.5% than to 5.5% for IPCA 2021 and more biased towards 4.5% than to 3.5% for IPCA 2022
- Core measures are running persistently high and the diffusion index is rising further, both showing signs of a spreading of inflation
- The recovery of the economy could worsen that scenario, with services and industrial goods rising further

Average of cores is hovering above 5% for eight months



Sources: IBGE, Santander

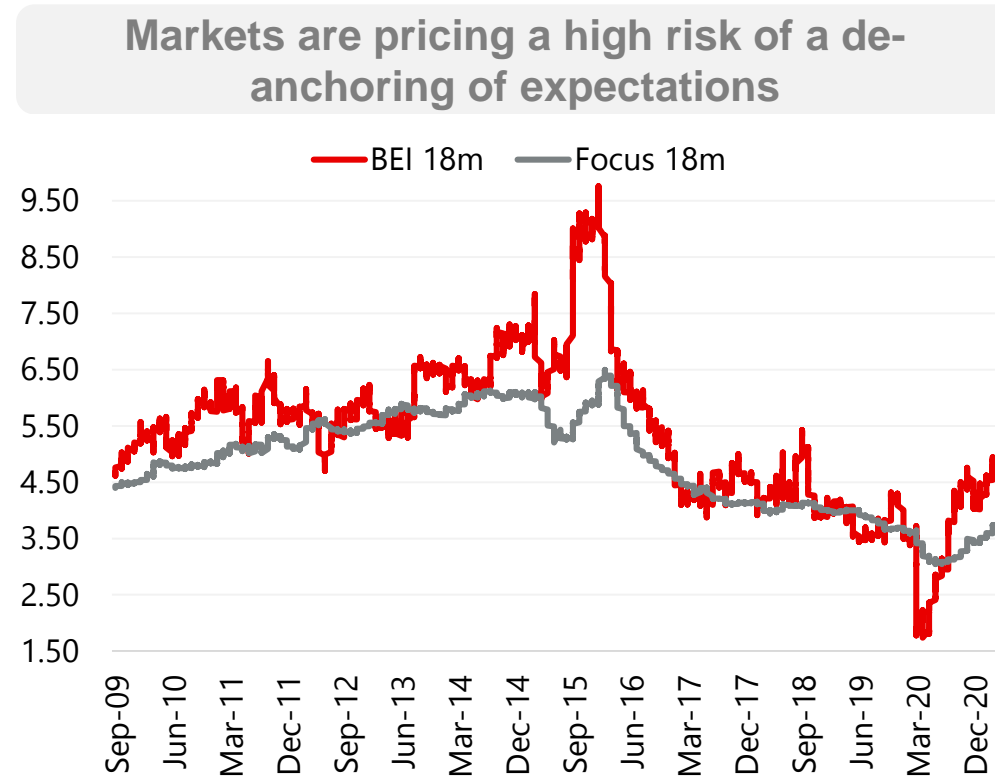
Diffusion is rising, pointing to higher inflation further ahead



Sources: IBGE, Santander

## Market-based expectations are much above the BCB's target already

- Survey-based expectations (Focus) are also rising a bit
- The risk of a de-anchoring of expectations has risen

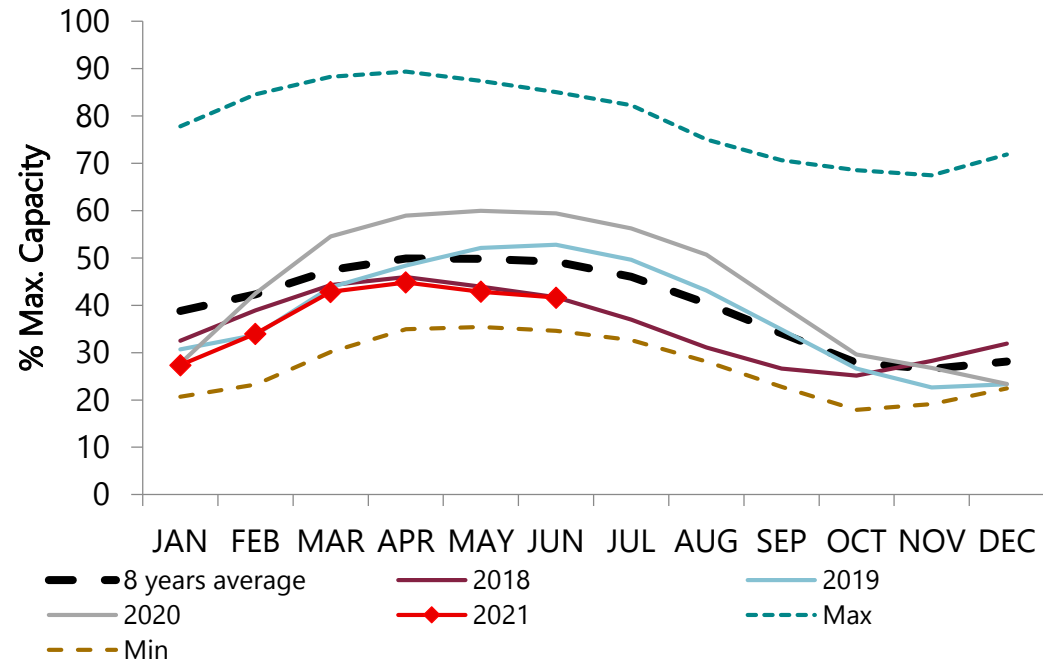


Sources: Anbima, BCB, Santander

# Administered prices: energy prices is a high upward risk

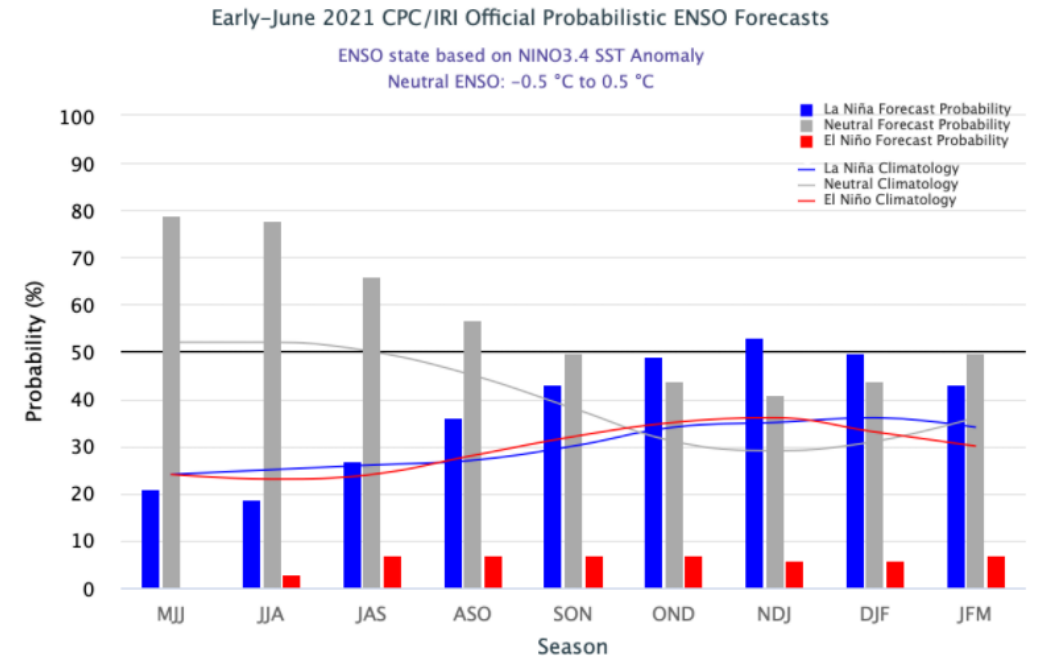
- Very low levels of water dams and increasing probability of La Niña
- Risk of a higher flag for Dec-21 and piling up pressures for 2022 tariff adjustments

## Reservoir Levels are way below the average



Sources: ONS, Santander

## Probability of La Niña during 4Q21 is increasing

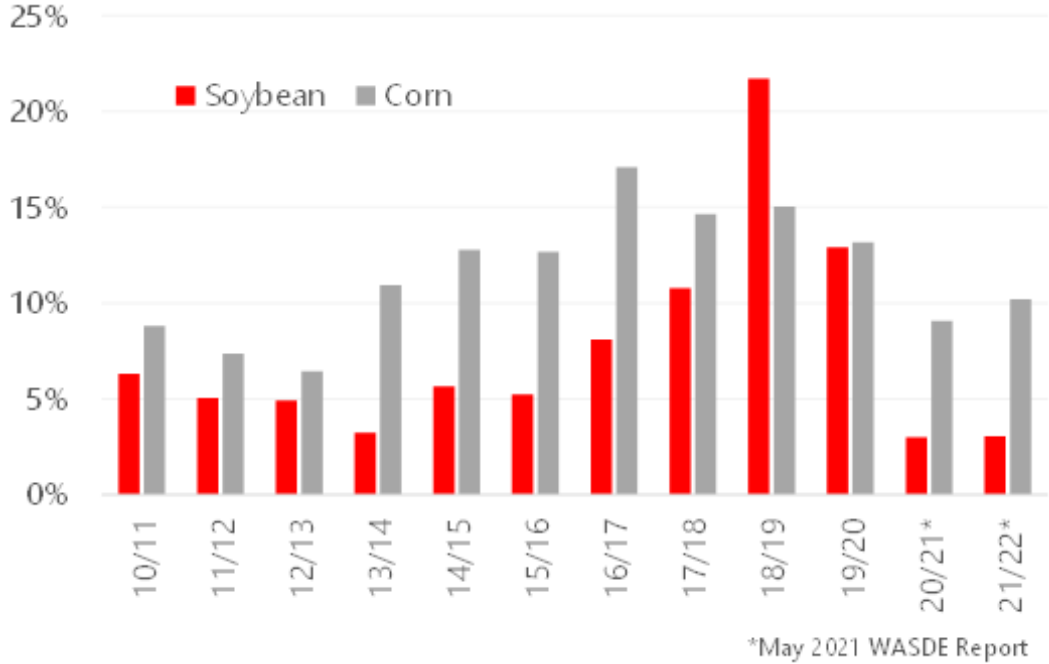


Sources: CPC/IRI

# A weather shock on grains is also an upside risk

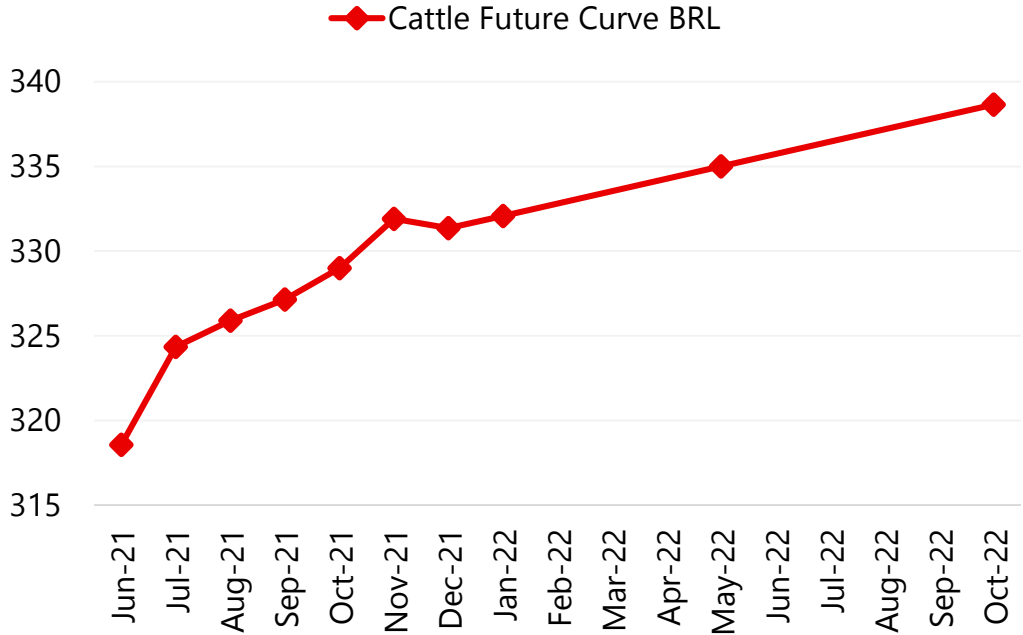
- Protein prices could rise more

**Very low stock-to-use grains levels in the US**



Sources: Wasde

**Cattle futures curve is pointing higher prices**



Sources: Bloomberg

# Brazil Macroeconomic Research Team

# Thank you.

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Our culture is based on believing that everything we do should be:

## Simple Personal Fair



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