
# Brazil activity

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# Brazil - activity (February 3, 2022)

Overview

What happened in 2021

Market expectation for 2022

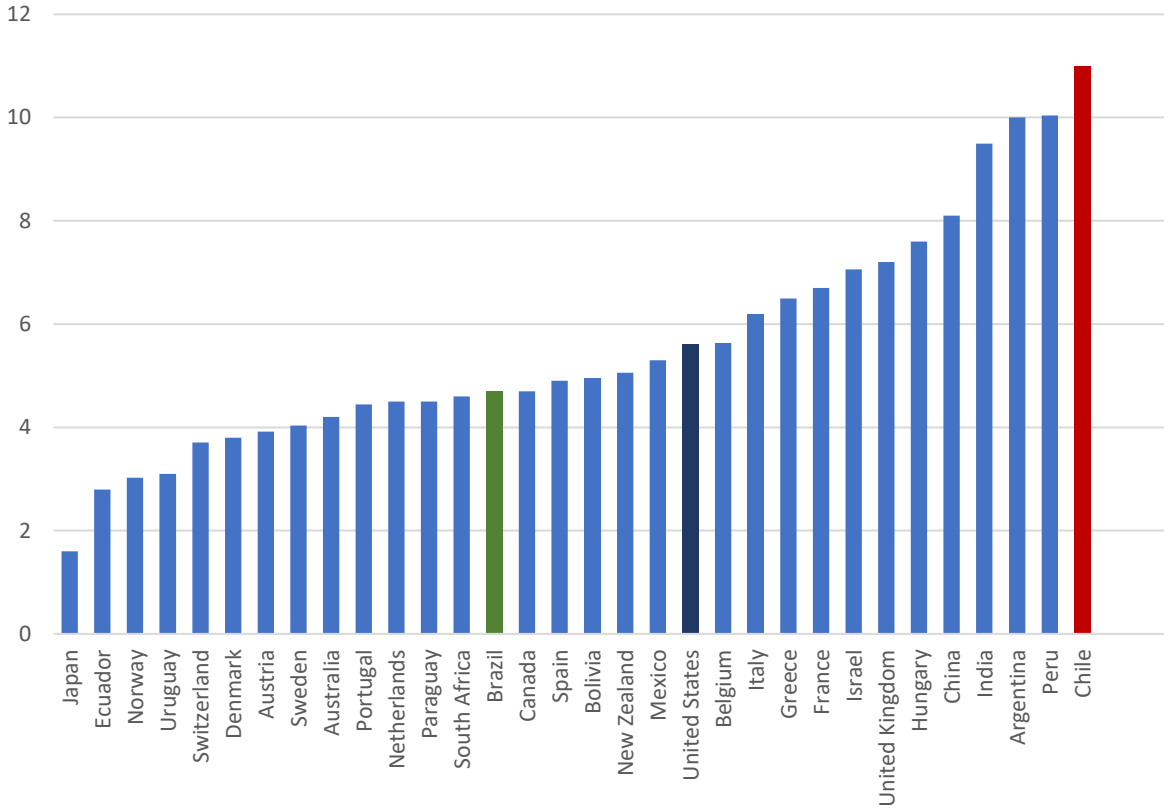
Mar Asset Vision for 2022

# Overview

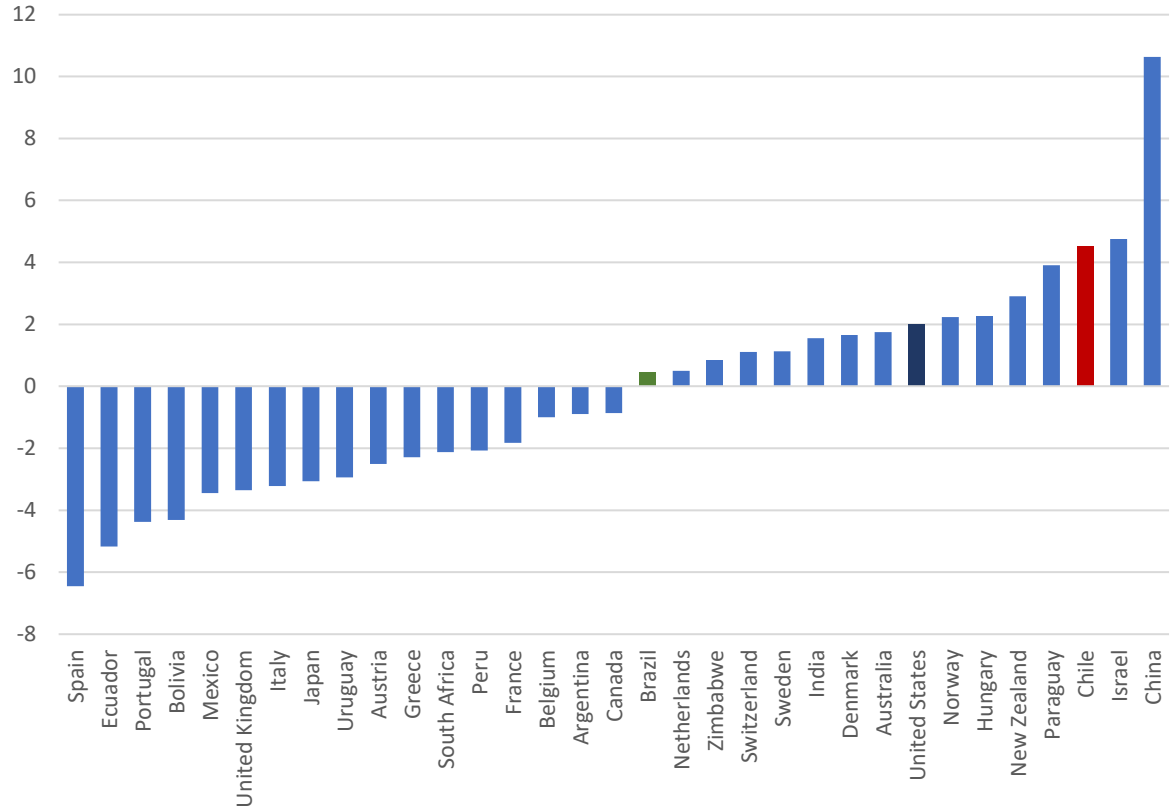
# Median growth of Brazil compared to peers

- Brazillian GDP has probably grown close to 4.7% in 2021. If that is the case indeed, this will be the largest growth among several emerging and developed countries.
- Brazil will come out of the crisis with a GDP very close to the pre-crisis levels. In the 2020-2021 biennium, only China (10.6%) and Israel (4.8%) will grow more than Chile (4.5%). Brazil's growth will be close to zero.

**GDP growth in 2021 ( %, yoy)**




**GDP growth in the 2020-21 biennium (%)**

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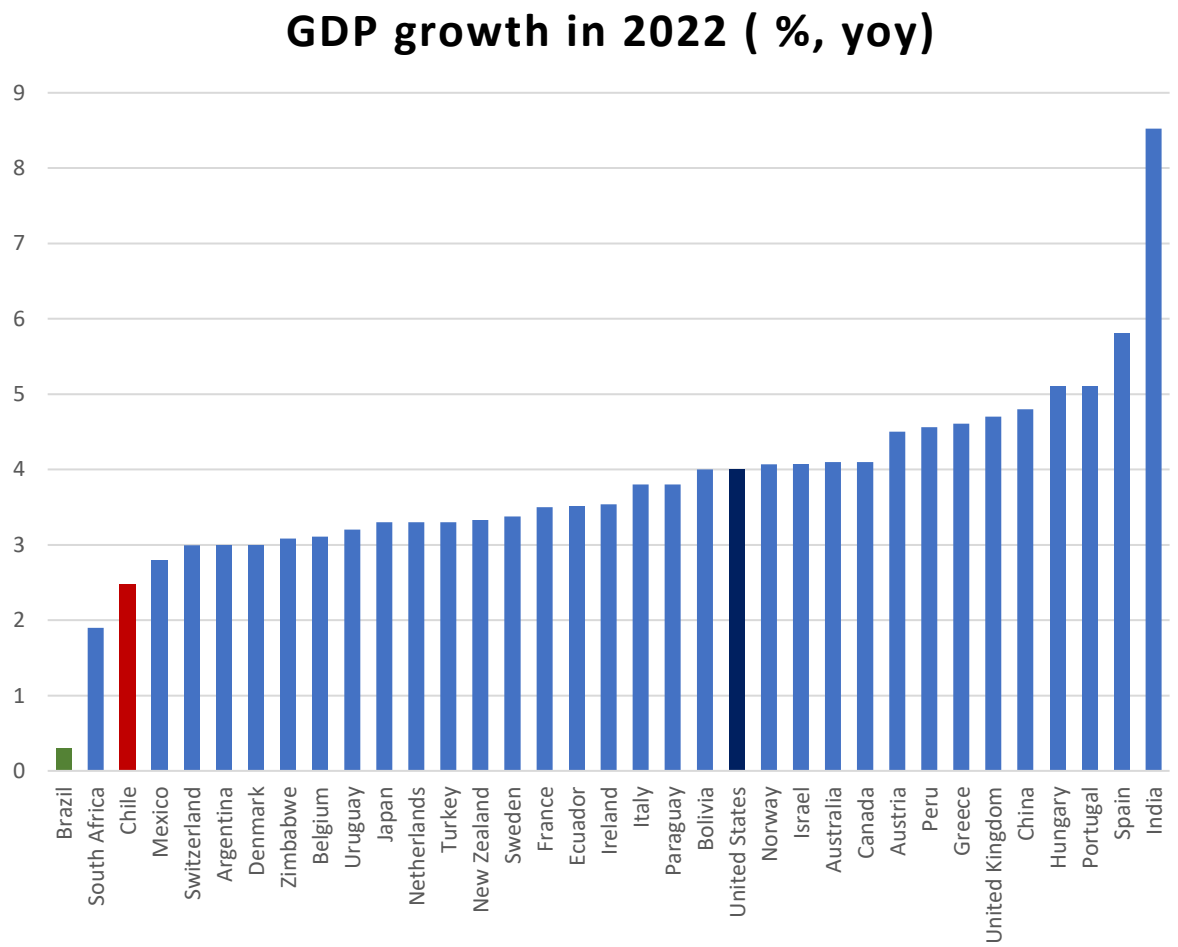
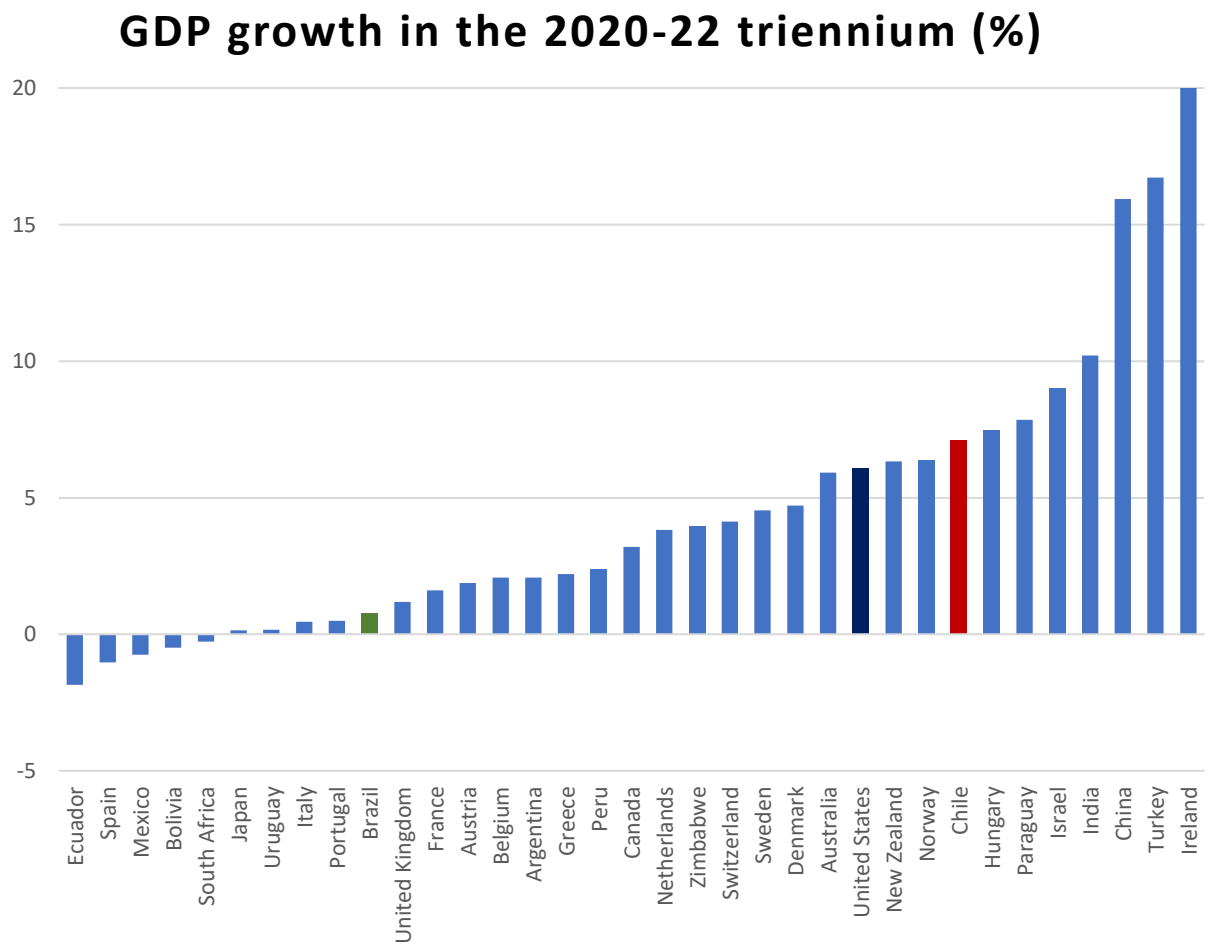
Source: IMF, Mar Asset Management

# In 2022, Brazil is expected to lag behind

- In 2022, Brazil is expected to have one of the lowest GDP growths. According to IMF projections, few countries will grow below 3%. Brazil would emerge from the crisis at practically the same GDP level at the end of 2022 as in 2019.

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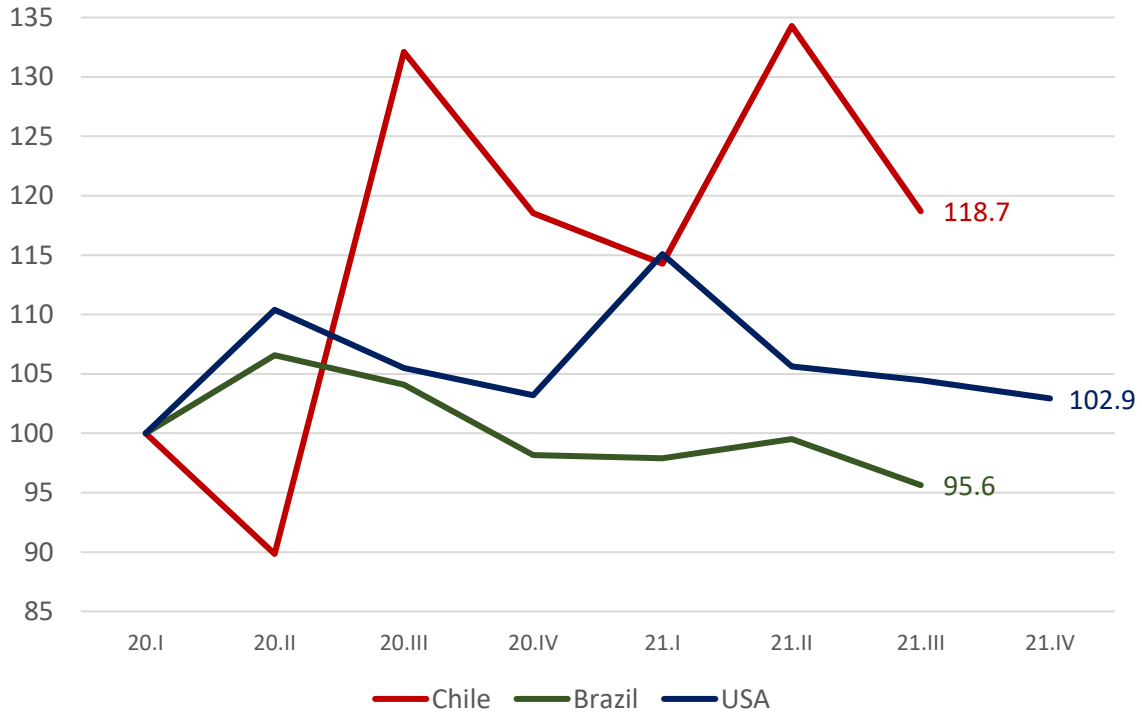
Source: IMF, Mar Asset Management

# Disposable income in Brazil well below USA and Chile

- The increase in liquidity for Brazilian families was much smaller than in the USA and Chile, two countries with very generous support packages.
- As a result, the increase in consumption in Brazil was also lower, especially in 2022. In 3Q21, household consumption in the USA was 5.0% above the pre-crisis. In Chile, consumption was almost 20% above.

**Household disposable income in the USA, Chile and Brazil (index number, 1Q20=100)**



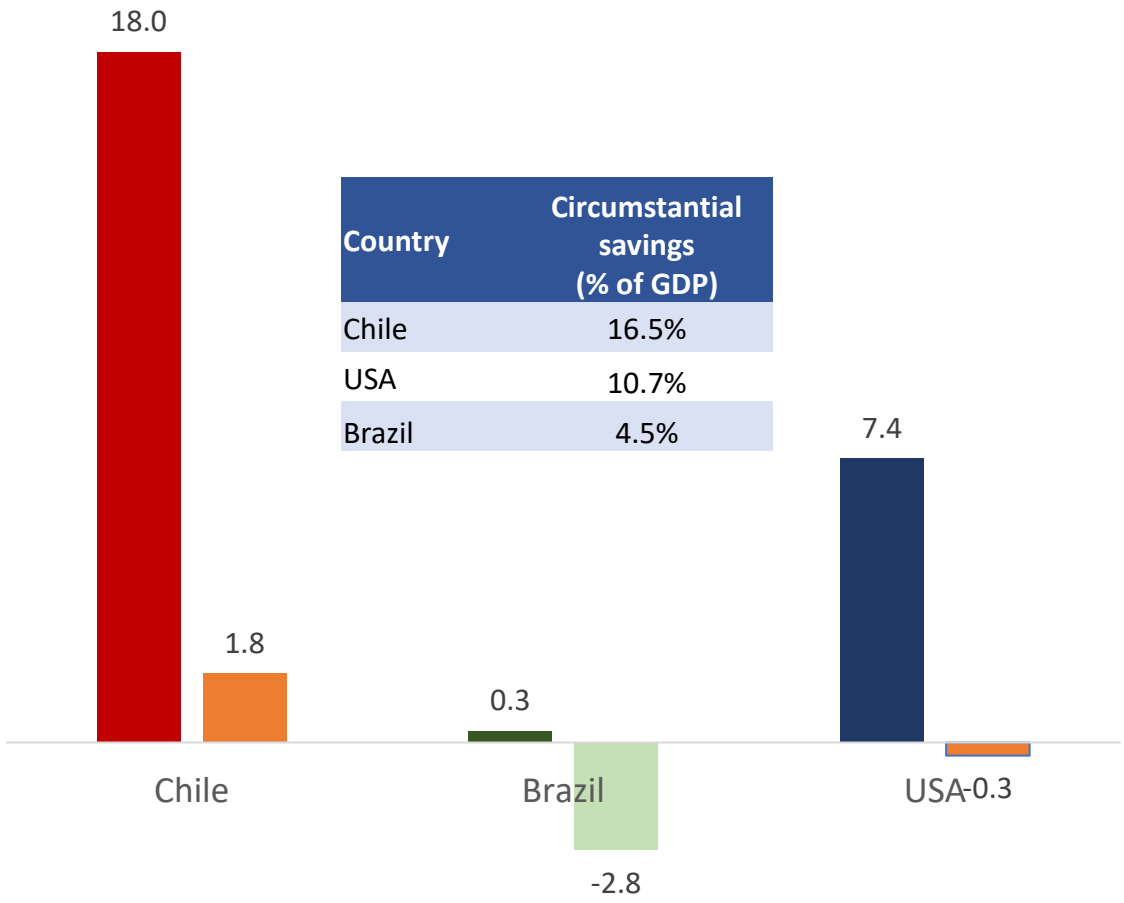

**Household consumption in the USA, Chile and Brazil (index number, 1Q20=100)**


Source: BCB, IBGE, BEA, BCCh, Mar Asset Management

# Circumstantial savings of 16.5% of GDP in Chile

- Between the second quarter of 2020 and the third quarter of 2021, the Available Income of Chilean families was, on average, 18% above the pre-crisis level. In the same period, consumption increased on average by only 1.8%.
- In comparison, the average disposable income in Brazil during this period was 0.7% above pre-crisis. Consumption, on the other hand, contracted by 2.8% in relation to the pre-crisis level. In the USA, one of the countries with the greatest stimulus to combat the economic effects of the Covid-19 outbreak, disposable income was 7.6%, on average, above the pre-crisis level during this period. Average consumption was stable.
- The increase in liquidity for households in a much larger proportion than the increase in consumption has enabled the formation of a very high circumstantial savings in Chile. We estimate that the circumstantial savings in Chile of 16.5% of GDP compared to 10.7% in the USA and 5.0% in Brazil.
- This exacerbated liquidity generates a much higher-than-normal uncertainty when we project growth over the medium term. With the end of income support programs and withdrawals from pension funds, we will see a significant shrinkage in household income flow. Maintaining consumption at a high level will depend on the speed at which they will use the resources saved in recent quarters. As we will see in the next slides, our hypothesis is that the speed at which savings will be deployed generates very different results for 2022 GDP.

**Average gap in disposable income 2Q20 and 3Q21 vs. pre-crisis**



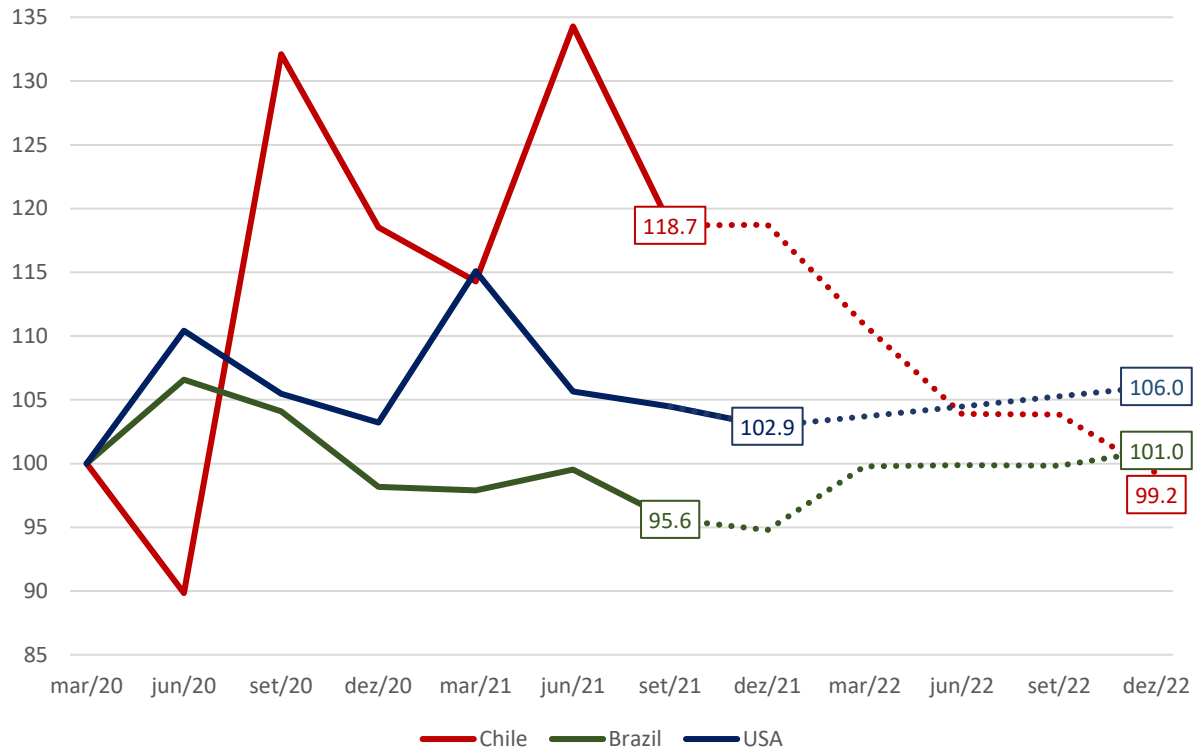

| Country | Circumstantial savings (% of GDP) |
|---|---|
| Chile | 16.5% |
| USA | 10.7% |
| Brazil | 4.5% |

Source: BCB, IBGE, BCCh, BEA, Mar Asset Management

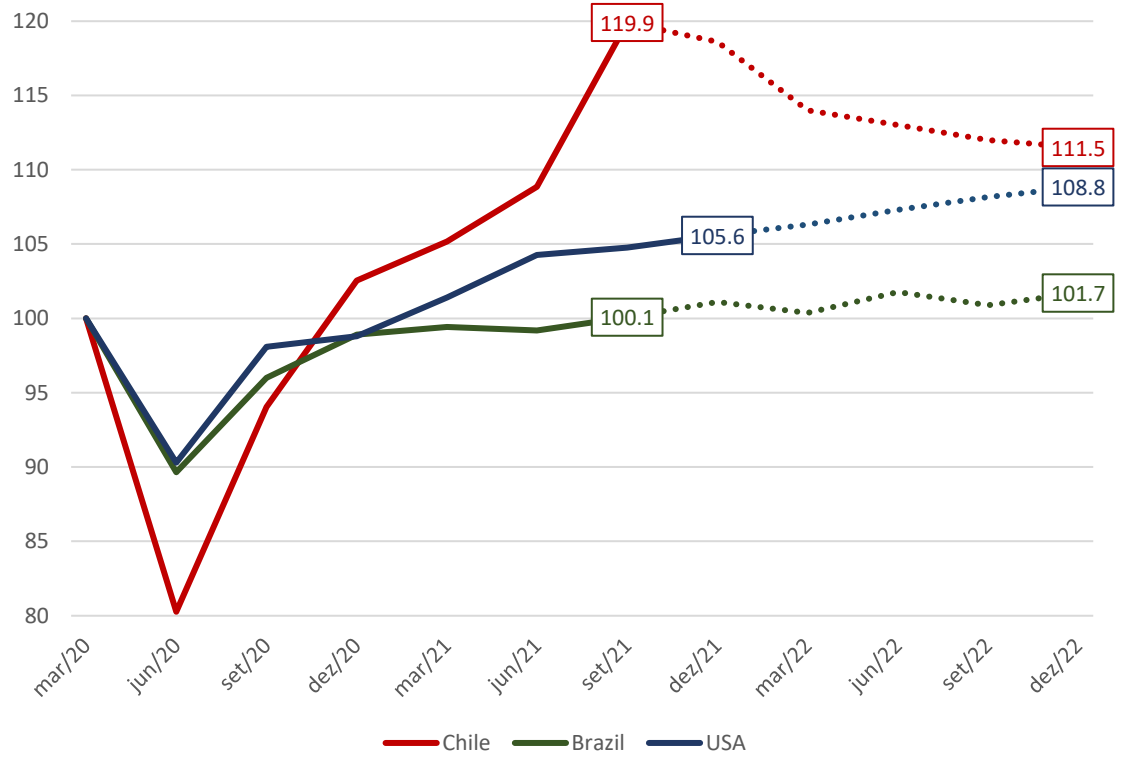
# Available income in Brazil well below USA and Chile 2

- The three countries have very different situations in relation to the balance between consumption/income expected for 2022.
  - The USA is in balance and is expected to show similar growth in 2022.
  - Chile has a very high level of consumption which is not sustainable in 2022 with the end of government transfers.
  - Brazil's consumption expectation close to stability requires a recovery in the wage bill during 2022.

**Household disposable income in the USA, Chile and Brazil (index number, 1Q20=100)**




**Household consumption projection in the USA, Chile and Brazil (index number, 1Q20=100)**

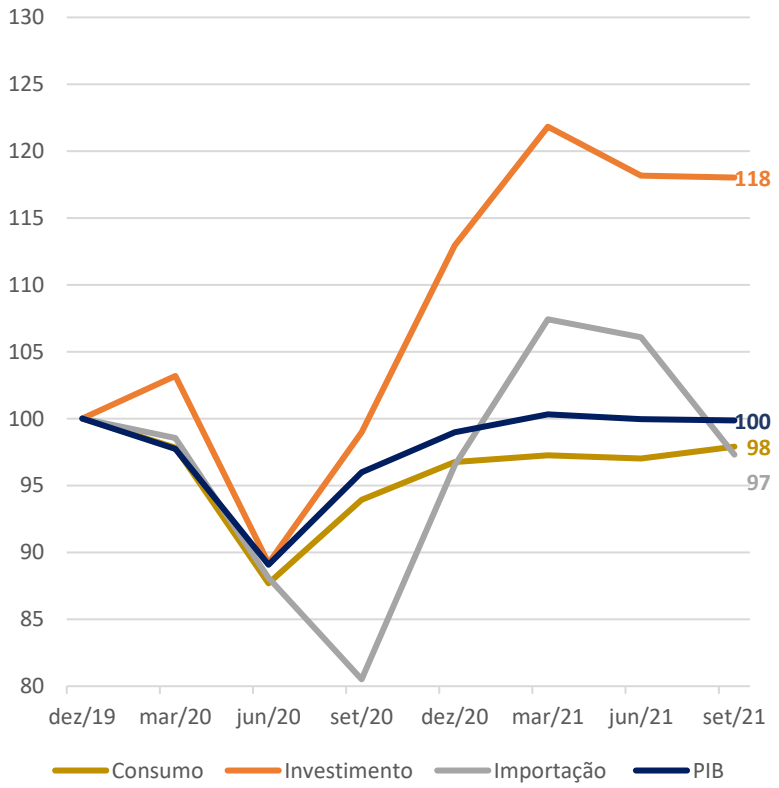



Source: BCB, IBGE, BEA, BCCh, Mar Asset Management

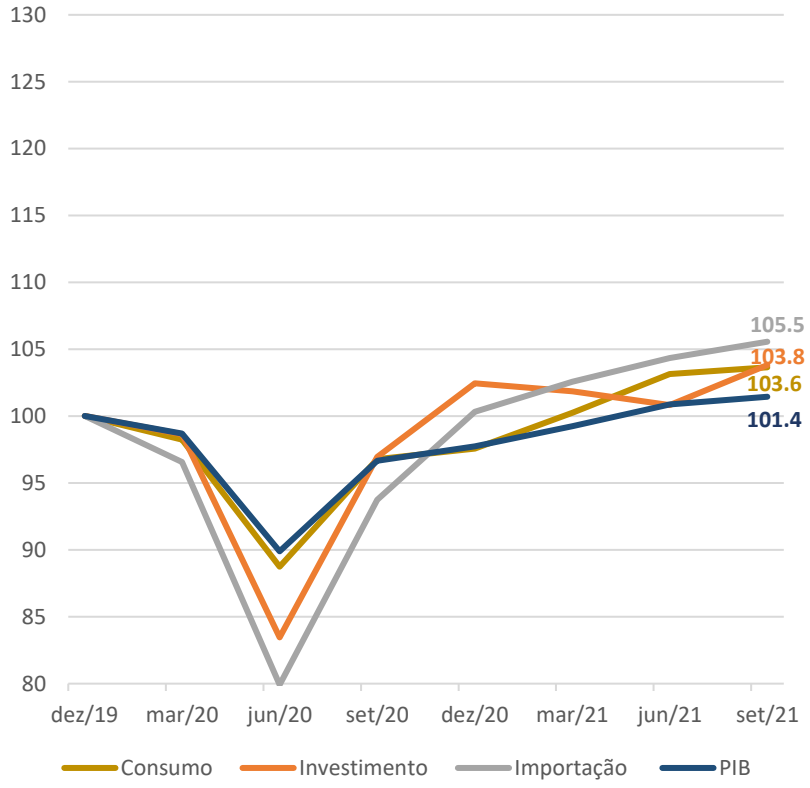
# Brazil's GDP stagnated at pre-crisis level

- In Brazil, GDP was at the same level as in the pre-crisis in 3Q21. Between 4Q20 and 3Q21, Brazil's GDP was close to the pre-crisis level. There was a change on the demand side with the loss of investment momentum being offset by a still shy increase in household consumption.

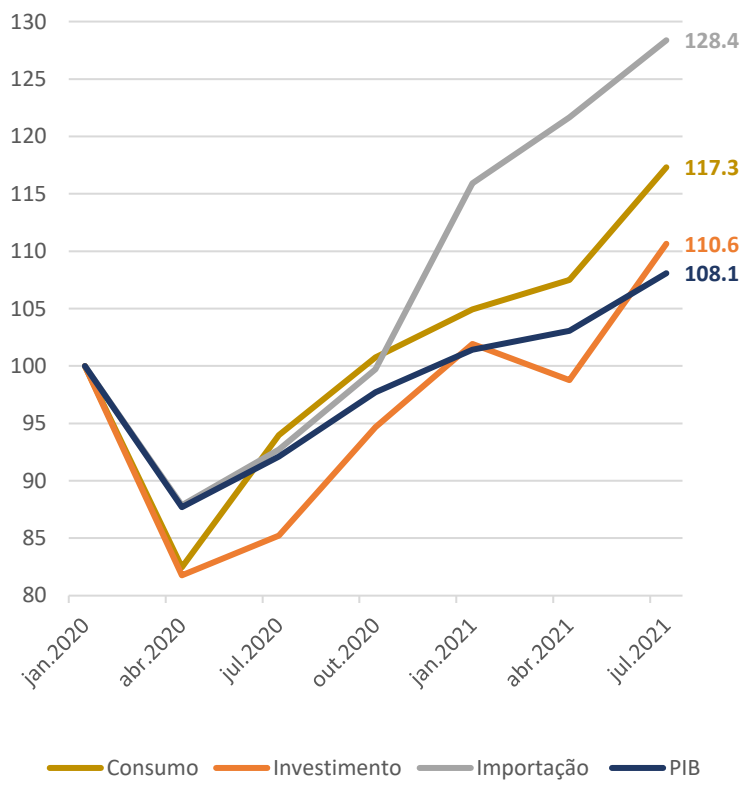
**GDP on the demand side – Brazil (Index number, 4Q19=100)**




**GDP on the demand side – USA (Index number, 1Q20=100)**




**GDP on the demand side – Chile (Index number, 1Q20=100)**

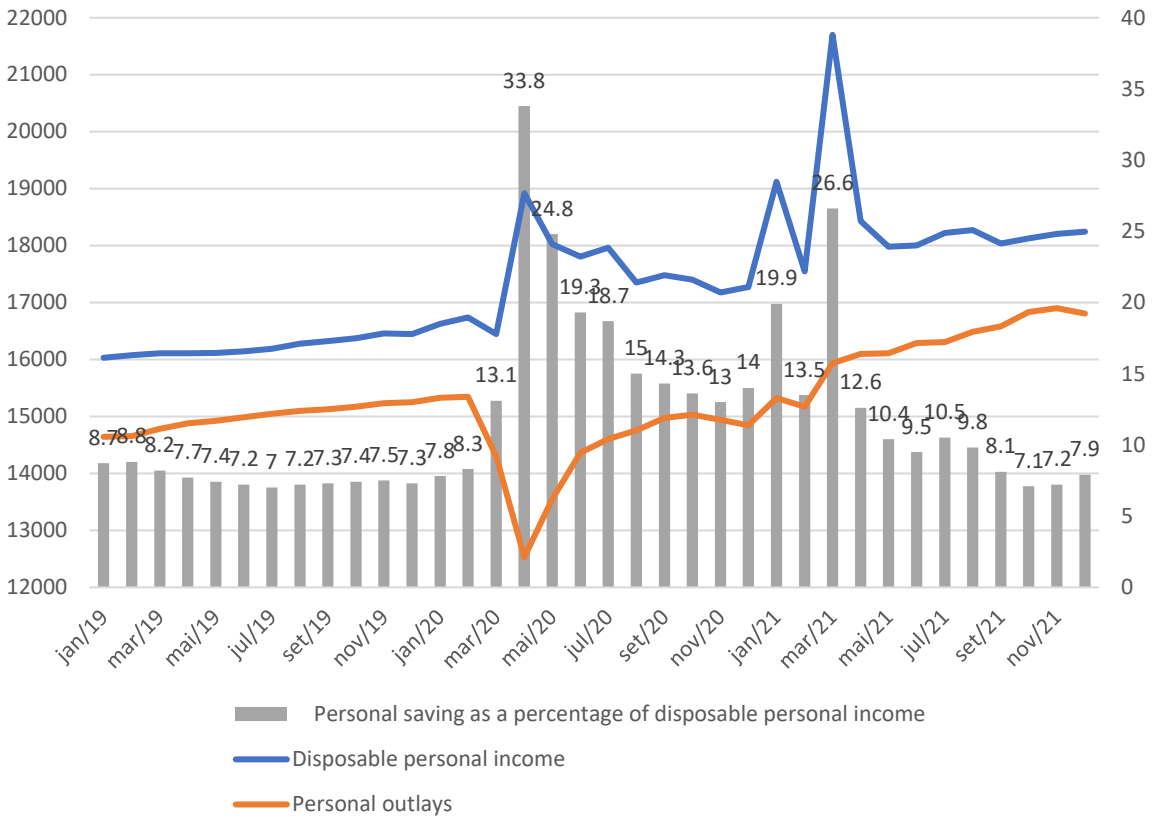



Source: IBGE, BCCh, BEA, Mar Asset Management

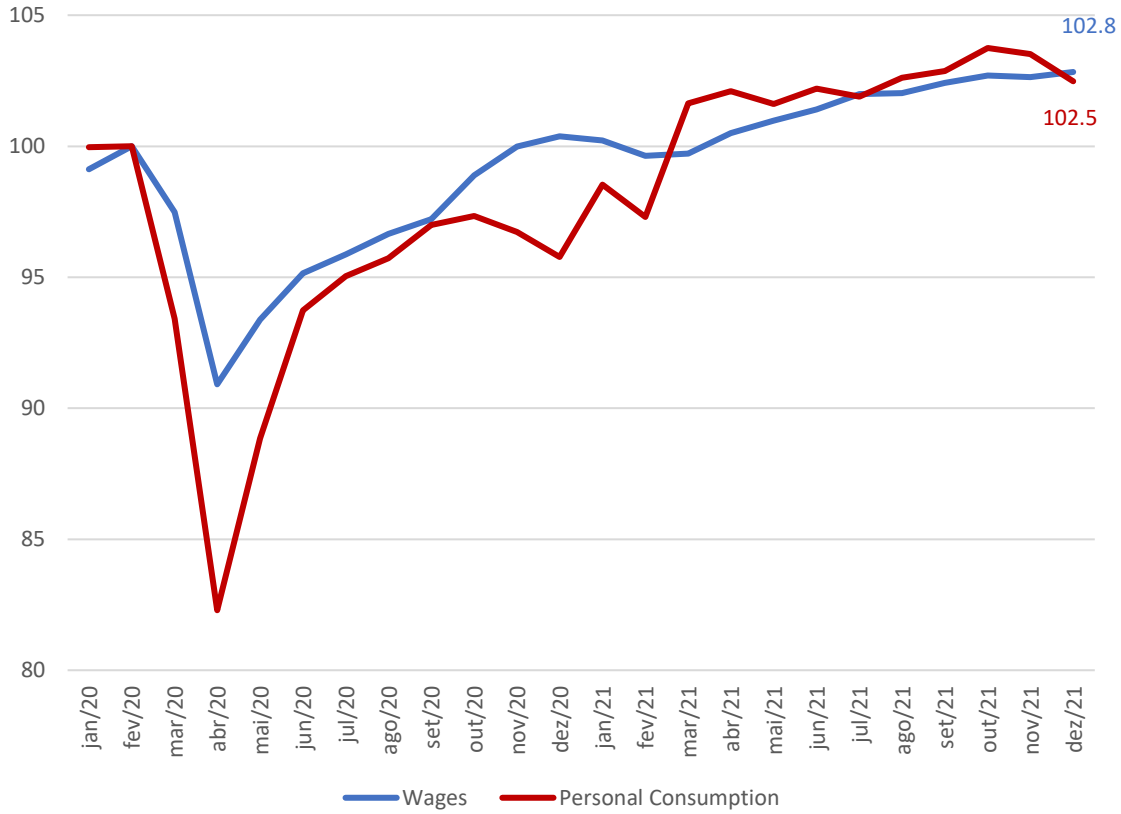
# USA - balanced consumption and income from work

- Household consumption is in line with wage growth. This is reflected in the savings rate, which is at a very similar level to that of the pre-crisis.

**Available income, consumption and household savings rate in the USA**




**Actual wage bill from work and household consumption (index, Feb-2020 = 100)**

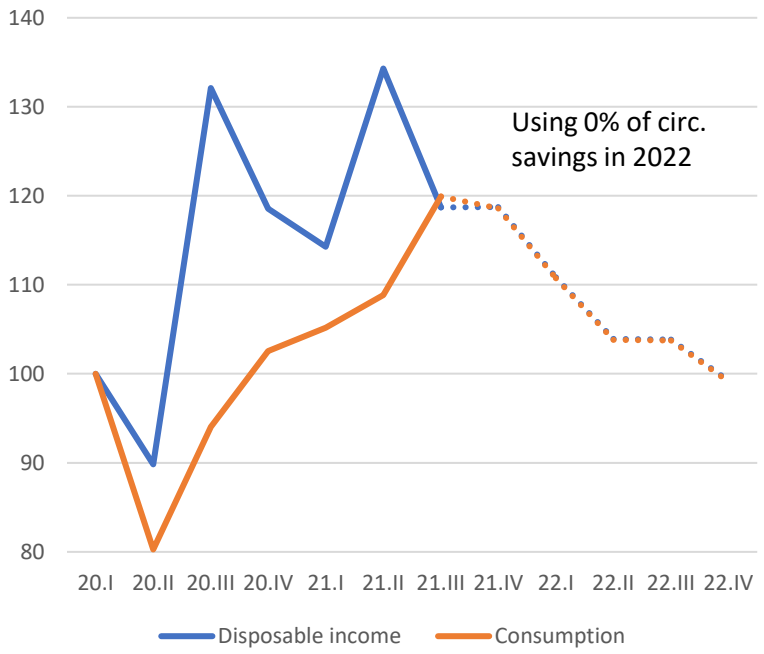



Source: BEA, Mar Asset Management

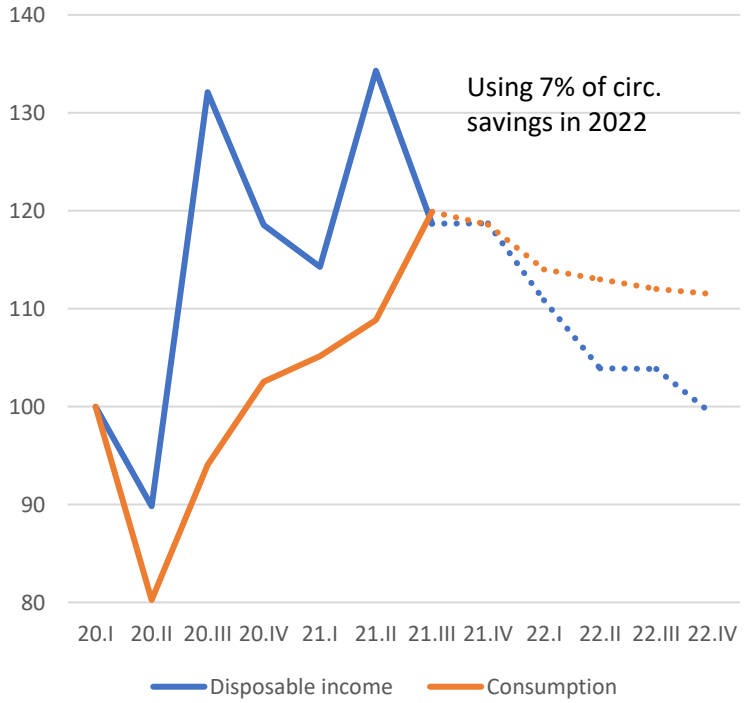
# Chile – consumers rely on savings to keep 2021 standards

- A consumption contraction of -0.2% in 2022 is a conservative scenario, but not out of reality. This scenario requires, for example, the usage of 30% of the circumstantial savings formed in recent quarters to sustain consumption at a higher level. It would be compatible with consumption 10% above the pre-crisis level.
- An aggressive scenario, in which the level of consumption remained constant at the level of 3Q21 would lead to a growth of 5.7% year over year in 2022. This scenario requires the usage of about 60% of the savings.

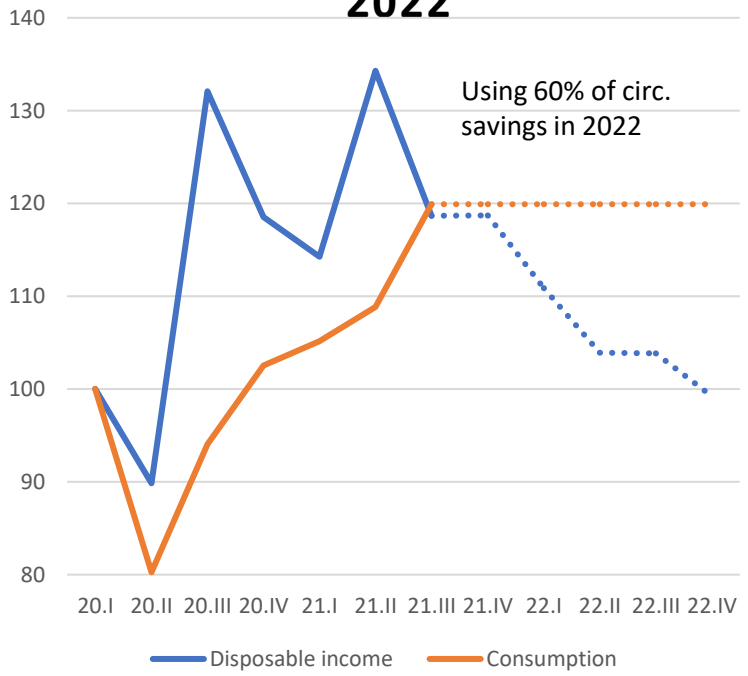
**Using 0% of savings - consumption contracts -6.0% in 2022**




**Using 30% of savings - consumption reduces -0.2% in 2022**




**Using 60% of savings - consumption expands by 5.7% in 2022**



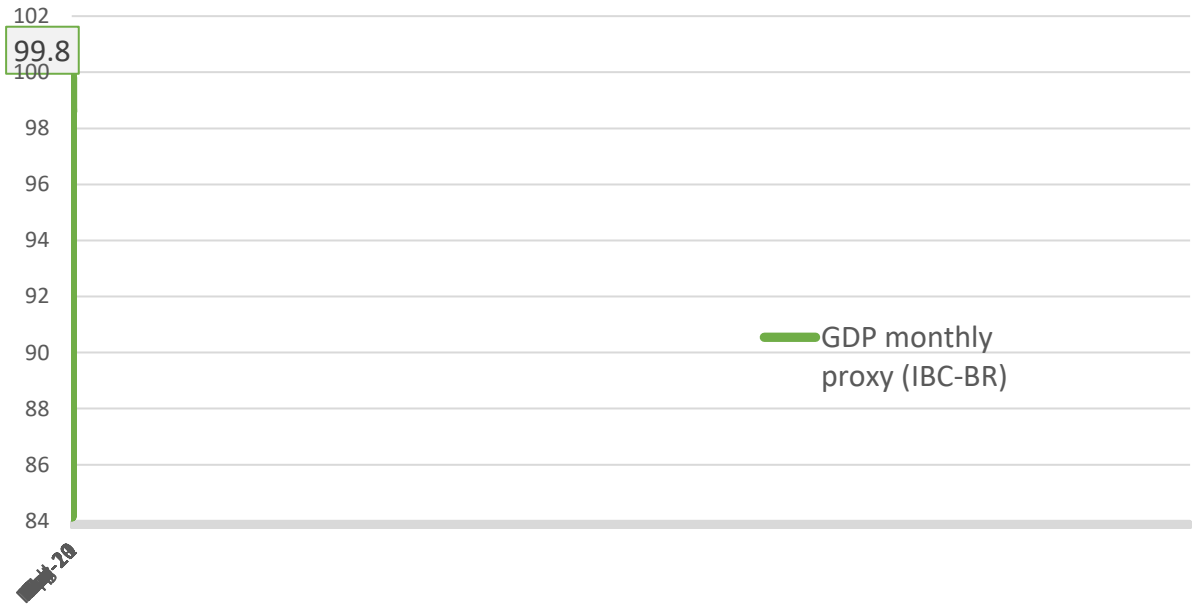

Source: BCCh, Mar Asset Management

# What happened in 2021?

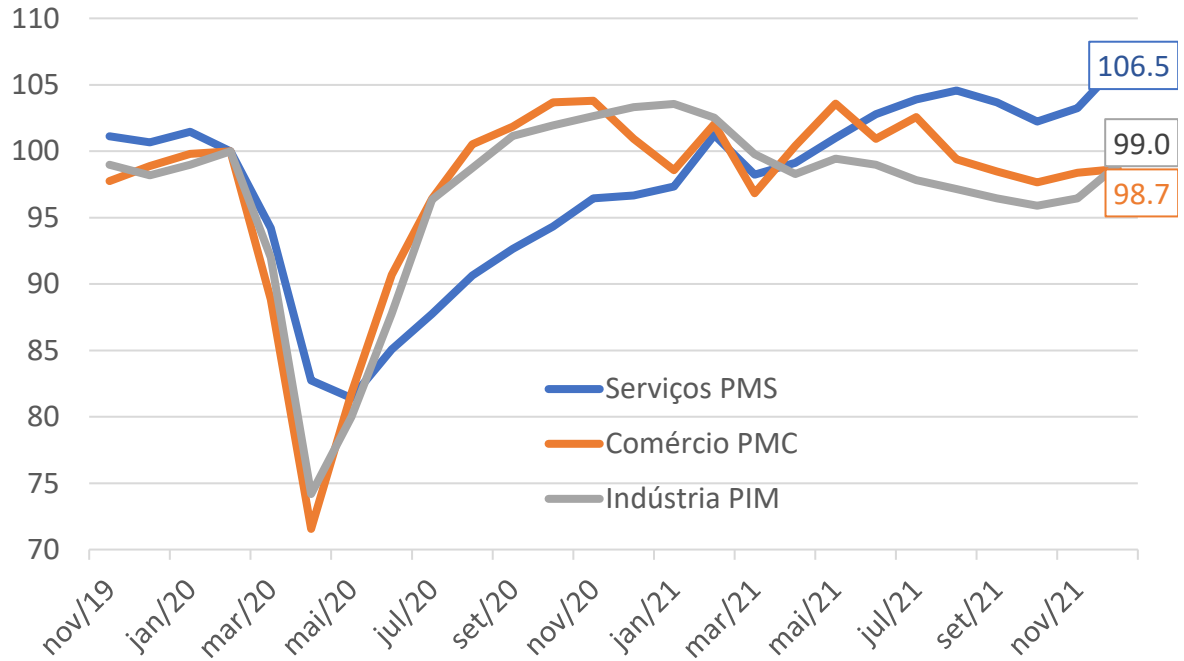
# GDP recovery lost momentum in the 2H21

- The recovery of Brazil's economy was much faster than initially expected. The GDP contraction in 2020 was -4.1%. In the first months of the pandemic, the market projected a contraction of close to 10% in the year. At the beginning of 2021, IBC-BR already pointed to activity higher than in the previous Covid-19 crisis. The activity lost momentum in the second half of the year.
- The composition of the activity in recent months is quite different from the beginning of the recovery process. Today, services are 6.5% above the level of Feb-20, while trade and industry have shown consecutive contractions that have taken them below pre-crisis levels.

**Proxy of Central Bank monthly GDP – IBC-BR (index number, Feb-20=100)**




**Dynamics of different sectors of the economy (number index, fev-20=100)**

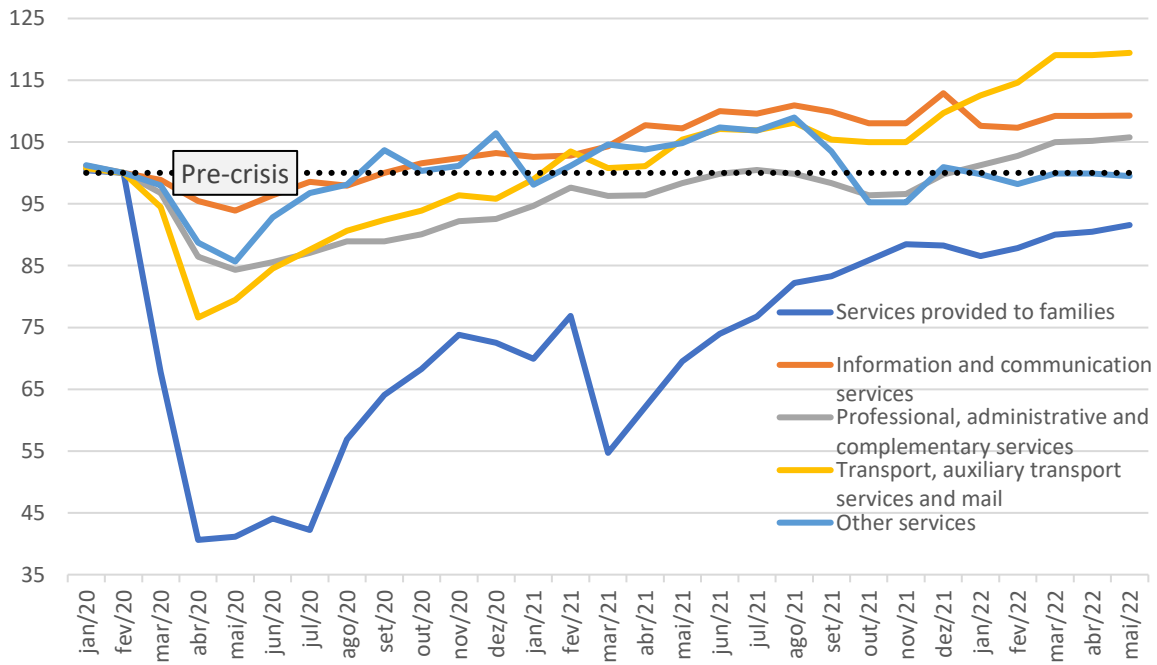



Source: BCB, IBGE, Mar Asset Management

# Services: dispersion between components

- The contraction of services occurred in all components. The services most related to direct contact were those that suffered the most initially and are still below the pre-crisis level. Information, communication, transport and postal services, on the other hand, have shown a fairly rapid recovery and are above the pre-crisis level.
- The room for activity recovery by the normalization of mobility is slim. Holding all else constant, the return of the other components to the pre-crisis level would add 2.0 p.p. to the total services. However, their recovery would probably be related to a worse performance of the rest of the GDP components.

**Dynamics of different service components (index number, Feb-20=100)**




**Dynamics of different service components (index number, Feb-20=100)**

**Comparison to pre-crisis (%)**

| | Peso | Apr-20 | Sep-20 | Dec-20 | Mar-21 | Jun-21 | Sep-21 | Dec-21 |
|---|---|---|---|---|---|---|---|---|
| Services purchased by families | **8.1** | -61.7 | -35.9 | -28.4 | -45.1 | -22.5 | -15.9 | -11.3 |
| Information and communication services | **30.8** | -5.4 | -0.5 | 2.1 | 4.3 | 9.3 | 9.6 | 12.0 |
| Professional, administrative and complementary services | **22.9** | -14.3 | -11.5 | -8.4 | -4.1 | -1.4 | -2.0 | -1.0 |
| Transport, auxiliary transport services and mail | **31.2** | -23.3 | -7.0 | -4.5 | 1.4 | 7.4 | 5.8 | 9.8 |
| Other services | **7.1** | -10.2 | 5.1 | 7.1 | 5.9 | 8.1 | 3.4 | 2.1 |
| PMS | **100** | -17.3 | -7.3 | -3.3 | -1.8 | 2.8 | 3.7 | 6.5 |

**Contribution to total PMS (p.p.)**

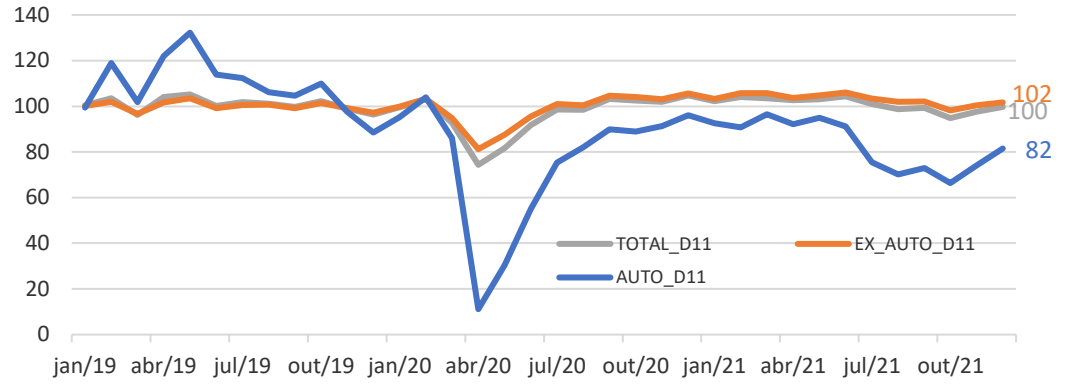
| | Peso | Apr-20 | Sep-20 | Dec-20 | Mar-21 | Jun-21 | Sep-21 | Dec-21 |
|---|---|---|---|---|---|---|---|---|
| Services purchased by families | **8.1** | -5.0 | -2.9 | -2.3 | -3.7 | -1.8 | -1.3 | -0.9 |
| Information and communication services | **30.8** | -1.7 | -0.1 | 0.6 | 1.3 | 2.9 | 2.9 | 3.7 |
| Professional, administrative and complementary services | **22.9** | -3.3 | -2.6 | -1.9 | -0.9 | -0.3 | -0.5 | -0.2 |
| Transport, auxiliary transport services and mail | **31.2** | -7.3 | -2.2 | -1.4 | 0.4 | 2.3 | 1.8 | 3.1 |
| Other services | **7.1** | -0.7 | 0.4 | 0.5 | 0.4 | 0.6 | 0.2 | 0.1 |
| PMS | **100** | -17.3 | -7.3 | -3.3 | -1.8 | 2.8 | 3.7 | 6.5 |

Source: IBGE, Mar Asset Management

# Industry: ex-vehicles at the same level as pre-crisis

- Industrial production has lost momentum in recent months. PIM was 3% below the pre-crisis level in November 2021. Excluding vehicles and parts, however, the PIM would be in the same level of February of 2020.
- PIM's composition is quite different today. Capital goods production was 40.8% above the 2019 level in December. In contrast, consumer goods production was -10.1% below.

**PIM growth by group**




**PIM growth per group (% compared to 2019)**

| | Weight | Feb-20 | Apr-20 | Sep-20 | Dec-20 | Mar-21 | Jun-21 | Sep-21 | Dec-21 | Mar-22 | May-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Capital goods | **8.3** | 1.5 | -52.4 | 1.9 | 27.0 | 23.7 | 18.6 | 15.5 | 40.8 | 29.8 | 11.1 |
| 110 Capital goods, except industrial transport equipment | **5.3** | 0.9 | -33.1 | 9.9 | 27.8 | 22.2 | 15.2 | 19.0 | 33.0 | 25.3 | 10.8 |
| 120 Industrial transport equipment | **3.0** | 2.7 | -85.4 | -11.0 | 25.4 | 26.8 | 24.7 | 9.4 | 57.2 | 38.8 | 11.7 |
| 2 Intermediate goods | **59.7** | 2.7 | -22.3 | 6.0 | 5.9 | 8.4 | 4.9 | 2.1 | 3.9 | 6.4 | 0.2 |
| 210 Basic foods and beverages, primarily intended for industry | **0.0** | -20.3 | -0.4 | 7.6 | -15.7 | 20.6 | 12.5 | -15.5 | 3.9 | 25.9 | 14.8 |
| 220 Prepared foods and beverages, mainly intended for the industry | **5.7** | 10.7 | 9.0 | 30.6 | -5.0 | 7.0 | -2.6 | -0.6 | 3.2 | 3.3 | -2.2 |
| 230 Basic industrial inputs | **7.5** | -20.7 | -29.2 | -18.5 | -22.6 | -5.5 | -1.4 | -0.5 | 8.2 | -4.9 | -1.1 |
| 240 elaborate industrial inputs | **28.5** | 2.6 | -23.5 | 3.1 | 14.7 | 11.3 | 8.2 | 5.6 | 6.9 | 6.1 | 0.5 |
| 250 Basic fuels and lubricants | **3.9** | 8.9 | 6.2 | 16.4 | -3.6 | 7.6 | 10.1 | -2.8 | -12.6 | 11.9 | -5.0 |
| 260 Prepared fuels and lubricants - except gasoline for automobiles | **7.0** | 21.8 | -12.5 | 19.4 | 14.6 | 12.3 | 8.4 | 6.6 | 5.0 | 15.7 | 15.7 |
| 270 Parts and accessories for capital goods | **1.9** | -6.2 | -39.0 | 10.2 | 28.3 | 19.8 | 22.6 | 14.3 | 33.2 | 21.1 | 8.1 |
| 280 Parts and accessories for transport equipment | **5.1** | 4.0 | -79.6 | -2.7 | 16.0 | 2.1 | -8.9 | -16.2 | -10.1 | -0.6 | -17.2 |
| 3 Consumer goods | **30.6** | 1.5 | -40.0 | 5.5 | 5.5 | -1.4 | -5.3 | -7.5 | -5.6 | -4.9 | -10.4 |
| 31 Durable consumer goods | **7.3** | 0.9 | -84.8 | 11.0 | 16.0 | 0.8 | -14.1 | -21.5 | -4.9 | -12.2 | -25.6 |
| 311 Consumer durables - except passenger cars and non-industrial transport equipment | **2.8** | 3.3 | -60.2 | 39.8 | 30.1 | 24.8 | 9.3 | -2.1 | -10.0 | -8.0 | -12.0 |
| 312 Passenger cars | **4.0** | -2.3 | -99.9 | -10.8 | 5.2 | -20.9 | -35.3 | -39.7 | -2.2 | -21.2 | -38.9 |
| 313 Non-industrial transport equipment | **0.5** | 14.1 | -97.0 | 33.4 | 20.3 | 40.4 | 62.3 | 13.0 | 9.7 | 40.6 | 23.6 |
| 32 Semi-durable and non-durable consumer goods | **23.3** | 1.7 | -26.5 | 4.1 | 3.0 | -2.0 | -3.1 | -3.7 | -5.8 | -2.8 | -5.8 |
| 321 Semi-durable consumer goods | **4.6** | -0.6 | -65.6 | 2.0 | 22.0 | -4.1 | -16.9 | -15.3 | -14.8 | -12.4 | -20.2 |
| 322 Non-durable consumer goods | **5.4** | -1.9 | -12.3 | -1.5 | -2.4 | 7.0 | 0.7 | 3.6 | -9.0 | -3.3 | -4.0 |
| 323 Basic foods and beverages, intended primarily for domestic consumption | **10.6** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 324 Prepared foods and beverages, intended primarily for domestic consumption | **0.0** | 4.9 | -18.0 | 8.2 | 2.5 | -2.9 | 2.9 | -3.3 | -3.9 | 3.4 | -2.3 |
| 325 Gasoline for automobiles (motor spirit) | **2.7** | -1.7 | -27.3 | 2.9 | -8.8 | -15.6 | -9.9 | -0.8 | 4.6 | -15.5 | -1.9 |
| 9 Goods not previously specified | **1.4** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Source: IBGE, Mar Asset Management

# Market expectation for 2022

# GDP growth consensus of 0.5% in 2022

- The market consensus GDP growth, according to Bloomberg, is 0.5% in 2022. The lowest growth would be generalized, if analyzed from the demand perspective. Household Consumption, Investments and net exports will contribute to lower GDP growth this year. Government consumption would be the only component with stable growth.
- Judging by the latest data and the Focus survey movement, we will most likely have downward revisions in the next weeks. In fact, BCB's focus survey already points to a growth of 0.3% and 1.5%, respectively, for 2022 and 2023.
- In our view, the risk is of greater growth due to the recovery of household and government consumption.

**Composition of Brazil's GDP growth on the demand side (%, per year)**

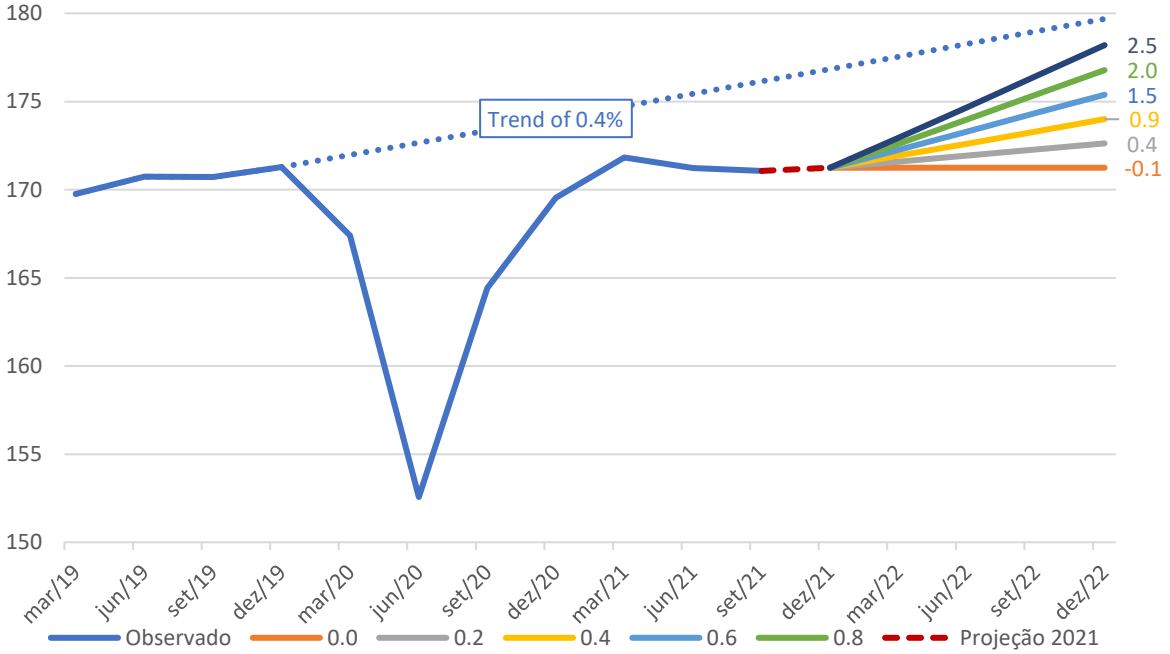
| Weight | Components | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021e | 2022e | 2023e |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **100%** | **GDP** | **0.5** | **-3.5** | **-3.3** | **1.3** | **1.8** | **1.4** | **-3.9** | **4.8** | **0.5** | **2.1** |
| 65% | Household Consumption | 2.3 | -3.2 | -3.8 | 2.0 | 2.4 | 1.9 | -5.5 | 3.6 | 1.0 | 2.1 |
| 20% | Government Consumption | 0.8 | -1.4 | 0.2 | -0.7 | 0.8 | -0.5 | -3.9 | 1.0 | 1.2 | 0.6 |
| 15% | Investment | -4.1 | -14.0 | -11.9 | -2.5 | 5.2 | 3.1 | -5.2 | 16.0 | -2.0 | 3.8 |
| 15% | Export | -1.3 | 6.9 | 1.3 | 5.0 | 4.3 | -2.1 | -1.4 | 6.0 | 2.8 | 2.8 |
| 14% | Import | -2.2 | -14.0 | -10.0 | 6.8 | 7.7 | 2.7 | -9.6 | 13.6 | 2.0 | 4.6 |

Source: IBGE, Bloomberg, Mar Asset Management

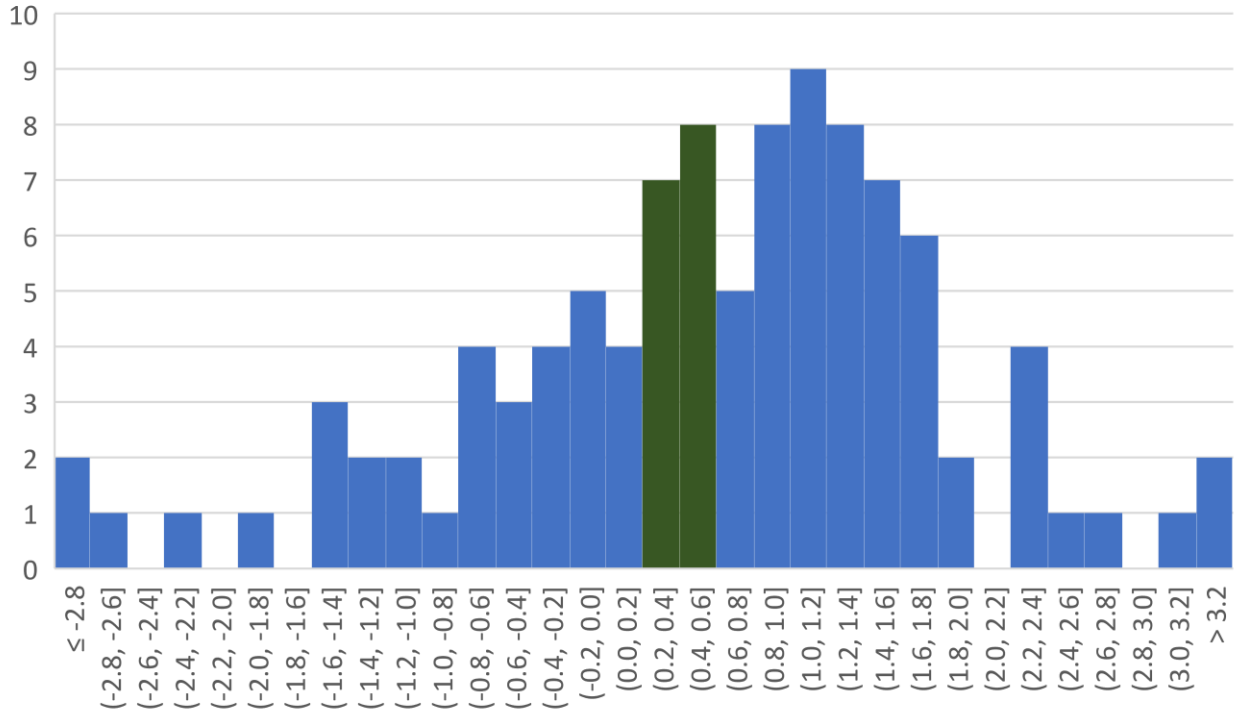
# GDP statistical carry-over for 2022 will be negative

- The GDP slowdown in the second quarter of 2021 will leave a negative impact on the 2022 GDP. If our expected contraction of -0.1% for 4Q21 comes to pass, the statistical carry-over will be -0.2%.
- Considering the carry-over effect as given, we simulated different trajectories for GDP in 2022 under different quarterly growth hypotheses. The market scenario is compatible with an average quarterly growth close to 0.3% qoq. It is a growth rate slightly below the median observed in the last 25 years and would put GDP at the end of 2022 virtually at the same level as in the pre-crisis.

**Simulations for growth in 2022 for different growth scenarios qoq (1995=100)**




**Distribution of qoq growth of Brazil's GDP between 1996 and 2021 (%)**

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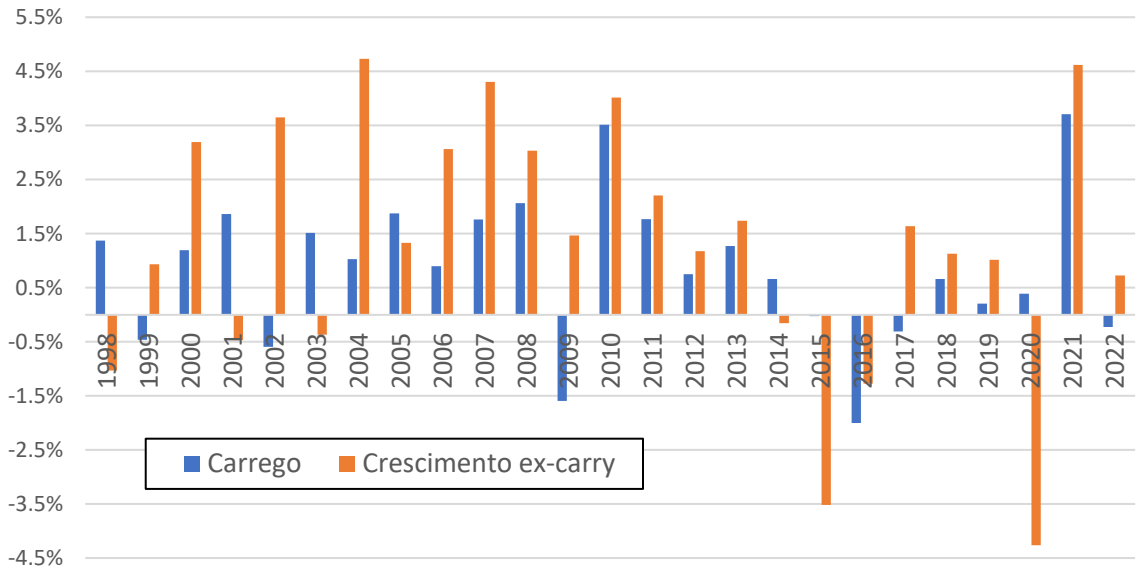
Source: IBGE, Mar Asset Management

# Growth in 2022 would be one of the lowest since 1997

- The market expects growth in 2022 to be one of the lowest since 1997. In years of economic crisis, growth was similar to or below -0.5%.
- One difficulty for 2022 will be the statistical carry-over, which will be negative for the first time since 2017. Nevertheless, a GDP growth of 0.5% for 2022 would be compatible with one of the smallest ex-carry-over growth in the historical series.

**Carry-over effect and ex-carry-over effect growth (%, p.a.)**




**Composition of GDP growth (%)**

| Period | GDP | Household Consumption | Government Consumption | Gross fixed asset formation | Export | Import |
|---|---|---|---|---|---|---|
| 1997 | 3.4% | 3.0% | 1.2% | 8.4% | 11.0% | 14.6% |
| 1998 | 0.3% | -0.7% | 3.2% | -0.2% | 4.9% | -0.1% |
| 1999 | 0.5% | 0.4% | 1.7% | -8.9% | 5.7% | -15.1% |
| 2000 | 4.4% | 4.0% | -0.2% | 4.8% | 12.9% | 10.8% |
| 2001 | 1.4% | 0.8% | 2.6% | 1.3% | 9.2% | 3.3% |
| 2002 | 3.1% | 1.3% | 3.8% | -1.4% | 6.5% | -13.3% |
| 2003 | 1.1% | -0.5% | 1.6% | -4.0% | 11.0% | -0.5% |
| 2004 | 5.8% | 3.9% | 3.9% | 8.5% | 14.5% | 10.4% |
| 2005 | 3.2% | 4.4% | 2.0% | 2.0% | 9.6% | 7.5% |
| 2006 | 4.0% | 5.3% | 3.6% | 6.7% | 4.8% | 17.8% |
| 2007 | 6.1% | 6.4% | 4.1% | 12.0% | 6.2% | 19.6% |
| 2008 | 5.1% | 6.5% | 2.0% | 12.3% | 0.4% | 17.0% |
| 2009 | -0.1% | 4.5% | 2.9% | -2.1% | -9.2% | -7.6% |
| 2010 | 7.5% | 6.2% | 3.9% | 17.9% | 11.7% | 33.6% |
| 2011 | 4.0% | 4.8% | 2.2% | 6.8% | 4.8% | 9.4% |
| 2012 | 1.9% | 3.5% | 2.3% | 0.8% | 0.7% | 1.1% |
| 2013 | 3.0% | 3.5% | 1.5% | 5.8% | 1.8% | 6.7% |
| 2014 | 0.5% | 2.3% | 0.8% | -4.2% | -1.6% | -2.3% |
| 2015 | -3.5% | -3.2% | -1.4% | -13.9% | 6.8% | -14.2% |
| 2016 | -3.3% | -3.8% | 0.2% | -12.1% | 0.9% | -10.3% |
| 2017 | 1.3% | 2.0% | -0.7% | -2.6% | 4.9% | 6.7% |
| 2018 | 1.8% | 2.4% | 0.8% | 5.2% | 4.1% | 7.7% |
| 2019 | 1.2% | 2.6% | -0.5% | 4.0% | -2.6% | 1.3% |
| 2020 | -3.9% | -5.4% | -4.5% | -0.5% | -1.8% | -9.8% |
| 2021 | 4.4% | 3.4% | 1.7% | 17.5% | 9.1% | 12.6% |
| 2022 | 0.5% | 1.0% | 1.2% | -2.0% | 2.8% | 2.0% |

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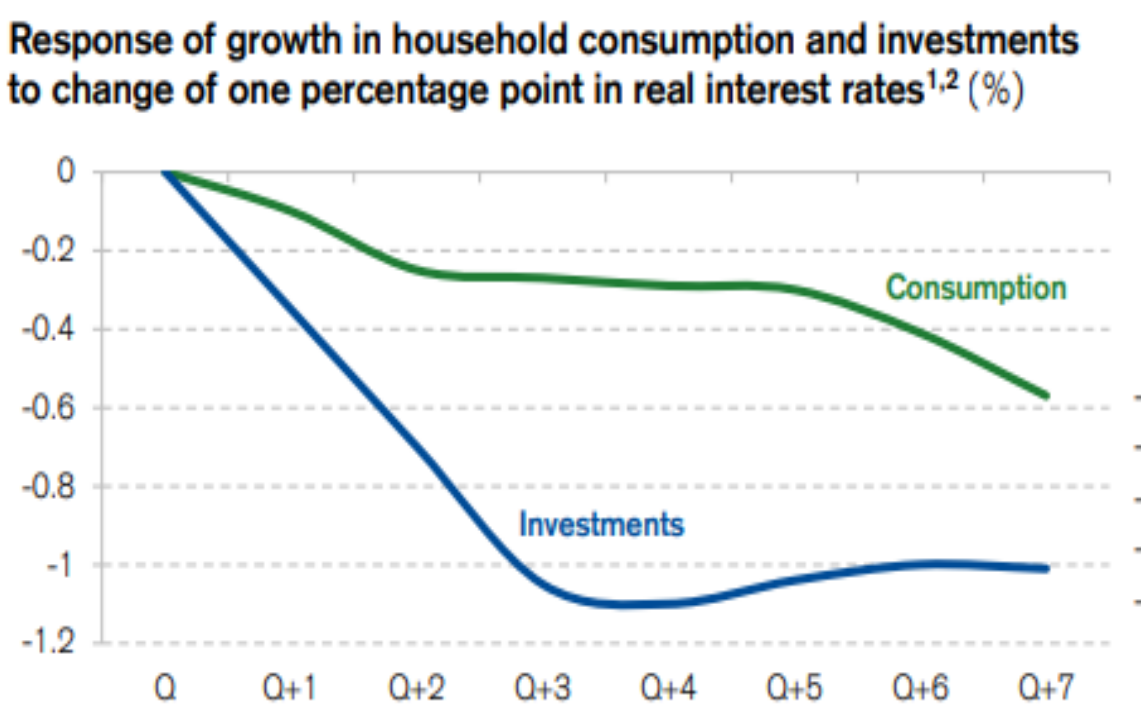
Source: IBGE, Mar Asset Management

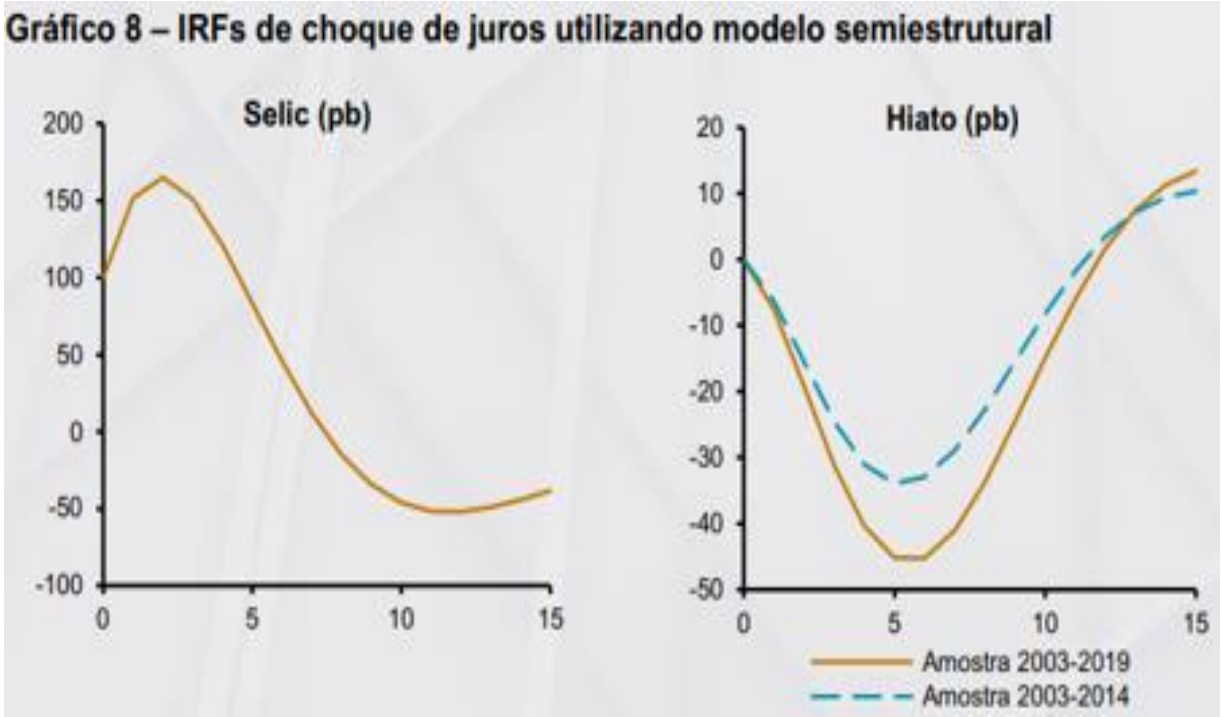
# ↑100bps Selic → ↓0,3pp GDP

- Econometric models estimate that the impact of a 100bps increase in Selic reduces the level of economic activity by approximately 0.3pp of GDP. The biggest impact is on investments, although we also see a negative ratio for household consumption growth as well.

**Credit Suisse's estimate of the impact on consumption and investment after a 1% shock in real interest rate**




**BCB estimates of impact on product hiatus after 1% shock at Selic interest rate**

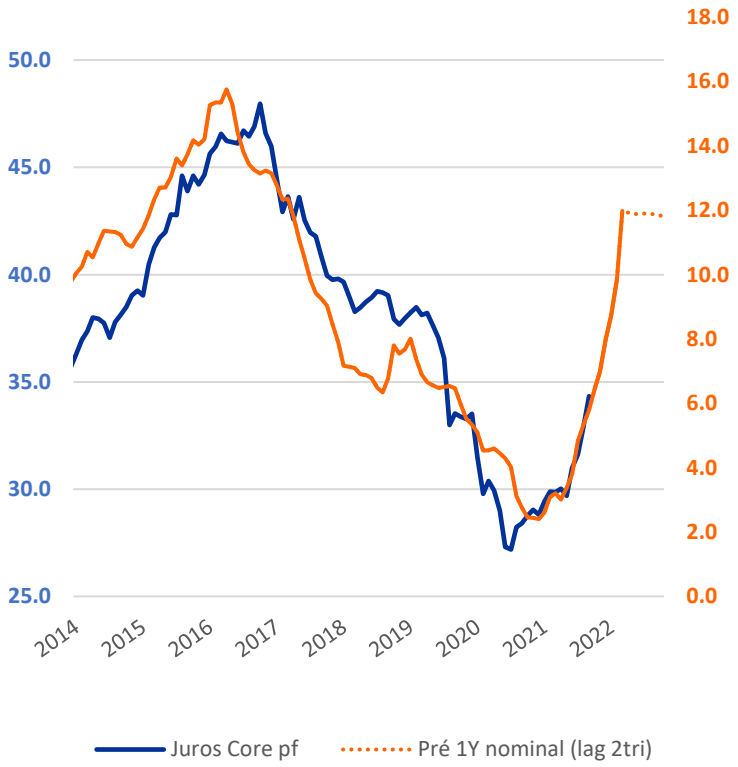



Source: Credit Suisse, BCB, Mar Asset Management

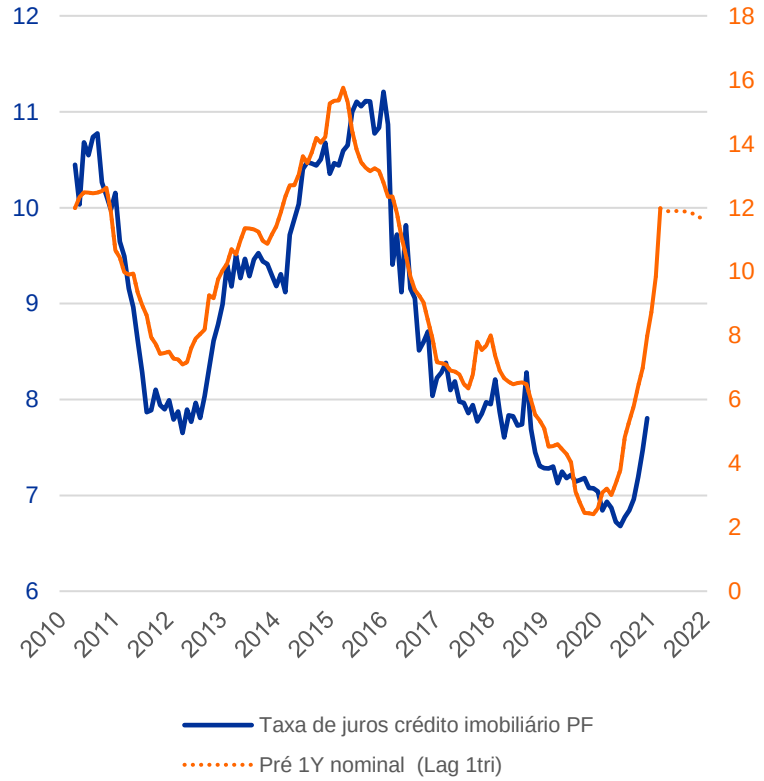
# Strong interest rate increase is a risk for growth

- The central bank's monetary tightening cycle has not yet been fully reflected in the credit market. Interest rates for individuals are lagged and are still expected to increase in the coming quarters.

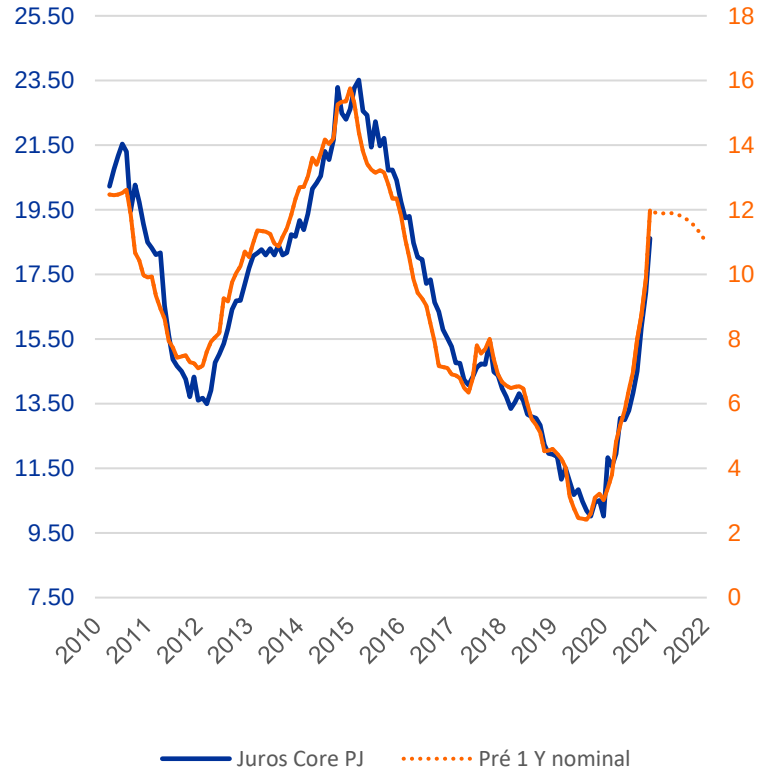
**Core individuals interest rates x Pre 1y Nominal Interest rates (% p.a)**




**Housing interest x Nominal Pre 1y (%, p.a.)**

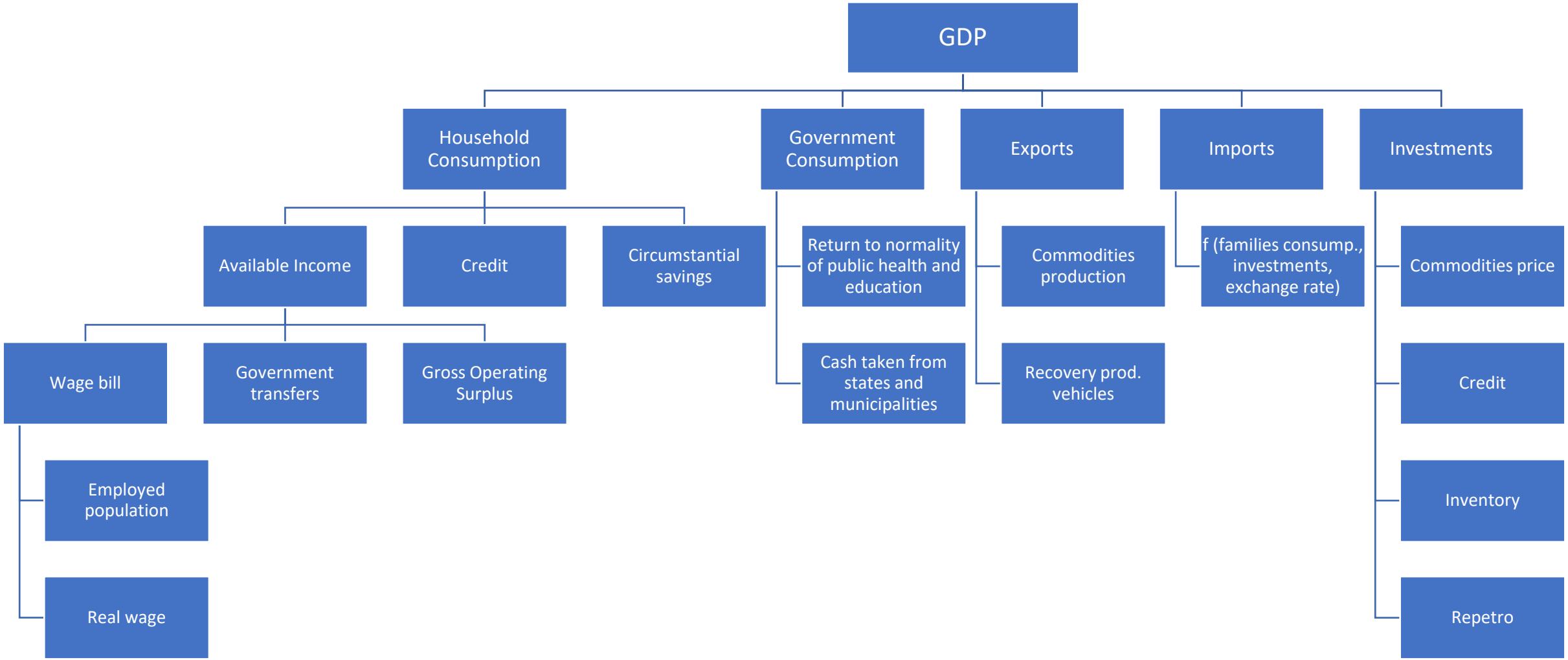



**Core corporate interest rates x Pre 1y Nominal Interest rates( % p.a.)**




Source: Itaú, Mar Asset Management

# Mar Asset 2022 Forecast


GDP
Household Consumption
Government Consumption
Exports
Imports
Investments
Available Income
Credit
Circumstantial savings
Return to normality of public health and education
Cash taken from states and municipalities
Commodities production
Recovery prod. vehicles
f (families consump., investments, exchange rate)
Commodities price
Credit
Inventory
Repetro
Wage bill
Government transfers
Gross Operating Surplus
Employed population
Real wage

# Assumptions for 2022 GDP growth scenario

- Assumptions for government growth and exports are described on the next table. The growth of imports is determined endogenously by household consumption and investments.
- Taking into account the government and export consumption projections, we simulated different scenarios for GDP growth in 2022 under different hypotheses for investments and household consumption. Given its weight, low growth is a fairly weak household consumption.

**GDP growth in 22 due to consumption and investment growth (%)**

| Investment/ Consumption | -10 | -7.5 | -5 | -2.5 | 0 | 2.5 | 5 |
|---|---|---|---|---|---|---|---|
| **-2.0** | -3.2 | -2.4 | -1.7 | -1.0 | -0.3 | 0.5 | 1.2 |
| **-1.5** | -2.8 | -2.1 | -1.4 | -0.6 | 0.1 | 0.8 | 1.5 |
| **-1.0** | -2.5 | -1.7 | -1.0 | -0.3 | 0.4 | 1.2 | 1.9 |
| **-0.5** | -2.1 | -1.4 | -0.7 | 0.1 | 0.8 | 1.5 | 2.2 |
| **0.0** | -1.8 | -1.0 | -0.3 | 0.4 | 1.1 | 1.9 | 2.6 |
| **0.5** | -1.4 | -0.7 | 0.0 | 0.8 | 1.5 | 2.2 | 2.9 |
| **1.0** | -1.1 | -0.3 | 0.4 | 1.1 | 1.8 | 2.6 | 3.3 |
| **1.5** | -0.7 | 0.0 | 0.7 | 1.5 | 2.2 | 2.9 | 3.6 |
| **2.0** | -0.4 | 0.4 | 1.1 | 1.8 | 2.5 | 3.3 | 4.0 |

**GDP Composition and weight of each component on the demand side (%)**

$$PIB = \underset{(66\%)}{Consumo} + \underset{(17\%)}{Investimento} + \underset{(17\%)}{Governo} + \left(\underset{(13\%)}{Exp.} - \underset{(13\%)}{Imp.}\right)$$

## *Hypotheses*

- ***Government:*** *Government consumption in 2022 will return to 2019 level with the end of the pandemic.*
- ***Export:*** *agenda focused on commodities makes exports a function of foreign demand and supply restrictions. We assume growth equal to the market consensus.*
- ***Import:*** *function of growth in household consumption, investment and exports (current trade).*
- ***Household Consumption:*** *very dependent on the wage bill growth. We create scenarios to analyze different trajectories for this component.*
- ***Investment:*** *focused on machinery and equipment. It should show some deceleration in 22, but uncertainty is high.*

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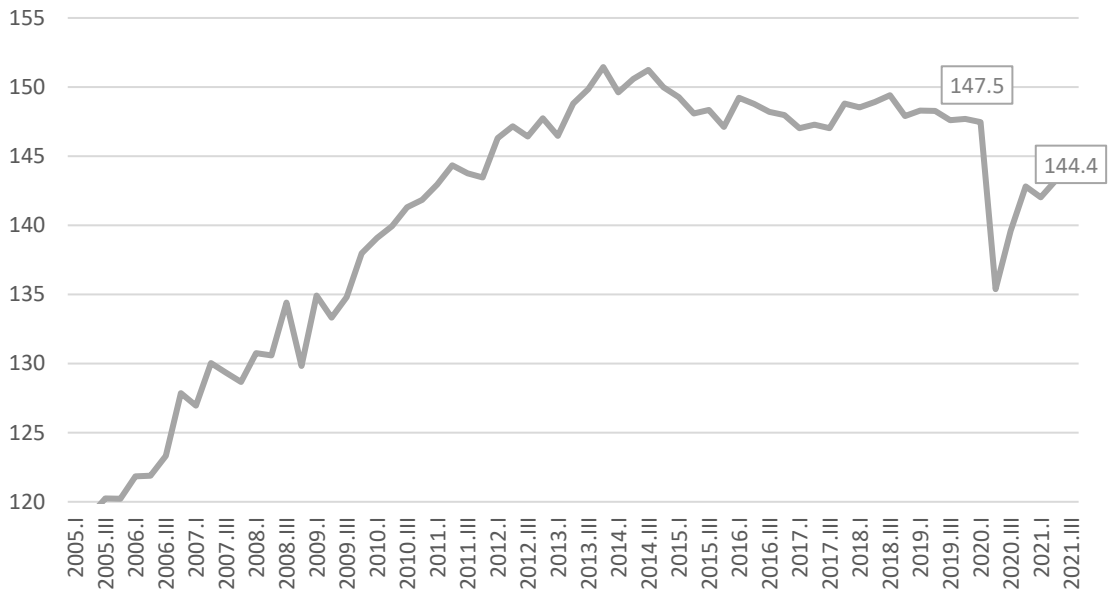
Source: IBGE, Mar Asset Management

# Government Consumption

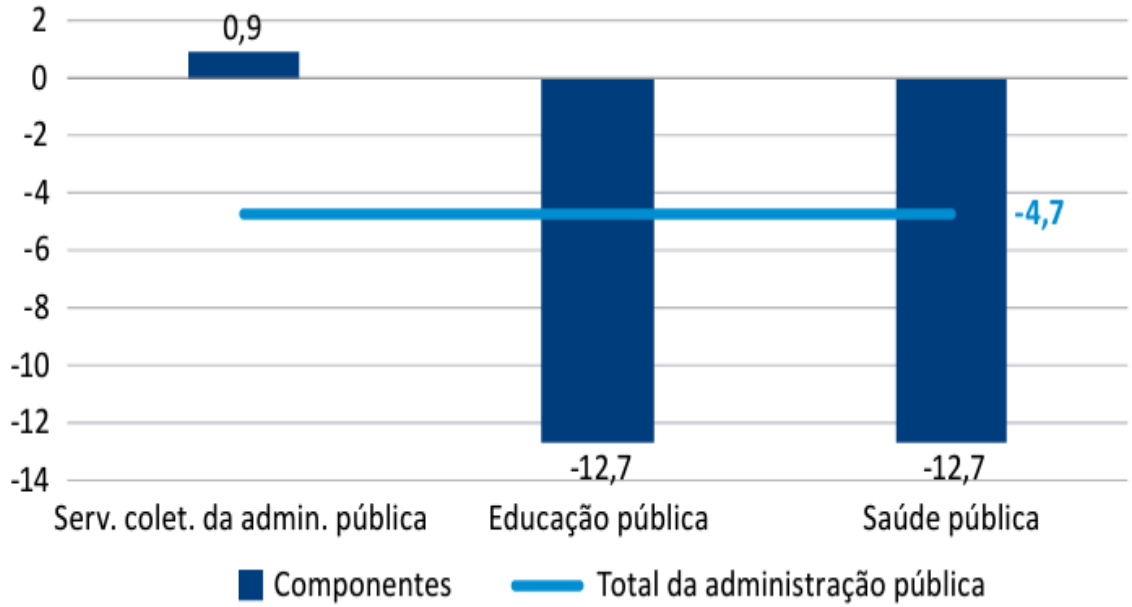
# Government consumption tends to be much higher in 22

- Government consumption was still below the pre-crisis level by the end of 2021. This component, which represents 15% of total GDP, is formed only by spending to meet the government's own needs. It does not consider, for example, transfers. This is different from the fiscal impulse – which takes into account these transfers.
- With the pandemic, there was a strong contraction in the provision of public health and education services (measured by surgical procedures), which led to the contraction of this component. With the economy normalization, we expect a return of government consumption to the pre-crisis level, which implies a 3.3% growth in this component in 2022.

**Government consumption in Brazil (index number, 1995=100)**




**Annual variation in the added value of public administration activities in 2020 (%)**



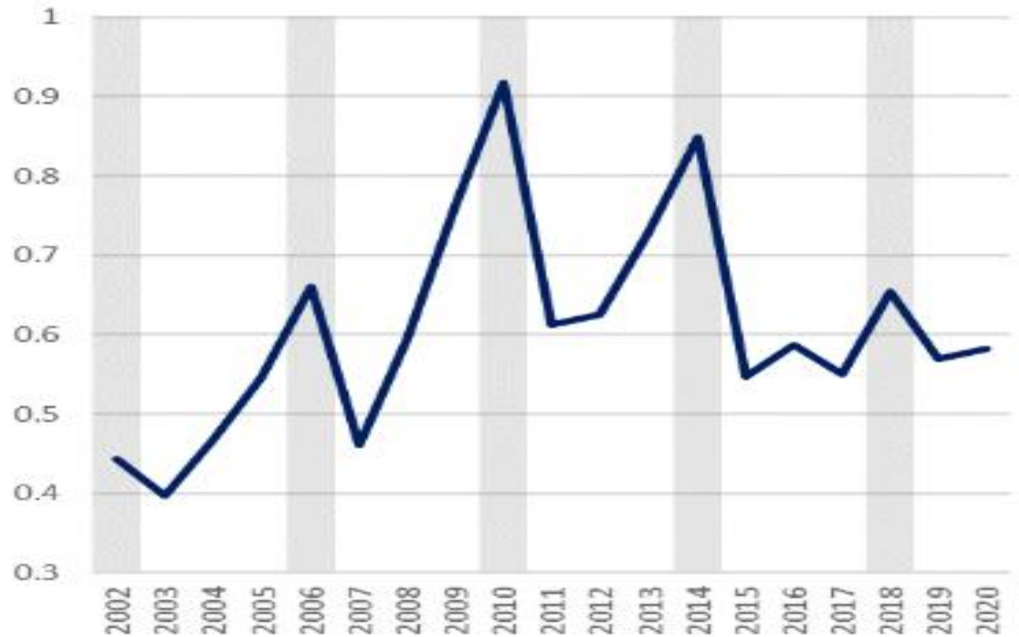

Source: IBGE, FGV, Mar Asset Management

# Regional government spending is a positive risk to GDP

- Regional entities currently have the largest cash balance in the historical series. With the strong increase in revenue and the maintenance of spending at lower levels, the balance in November was R$ 169 billion.
- National entities are not limited by the spending ceiling. This means that they can use (virtually) this balance to increase current spending on investments in the coming months. They will probably do so. In election years such as 2022, regional entities tend to deploy a relatively larger portion of the balances. If the historical pattern is repeated, the impact on GDP would be between 0.4pp-0.6pp. This impact is not being considered in our base scenario for this component.

**Cash balance of regional entities (R$, billions)**


**Annual change in the added value of public administration activities in 2020 (%)**



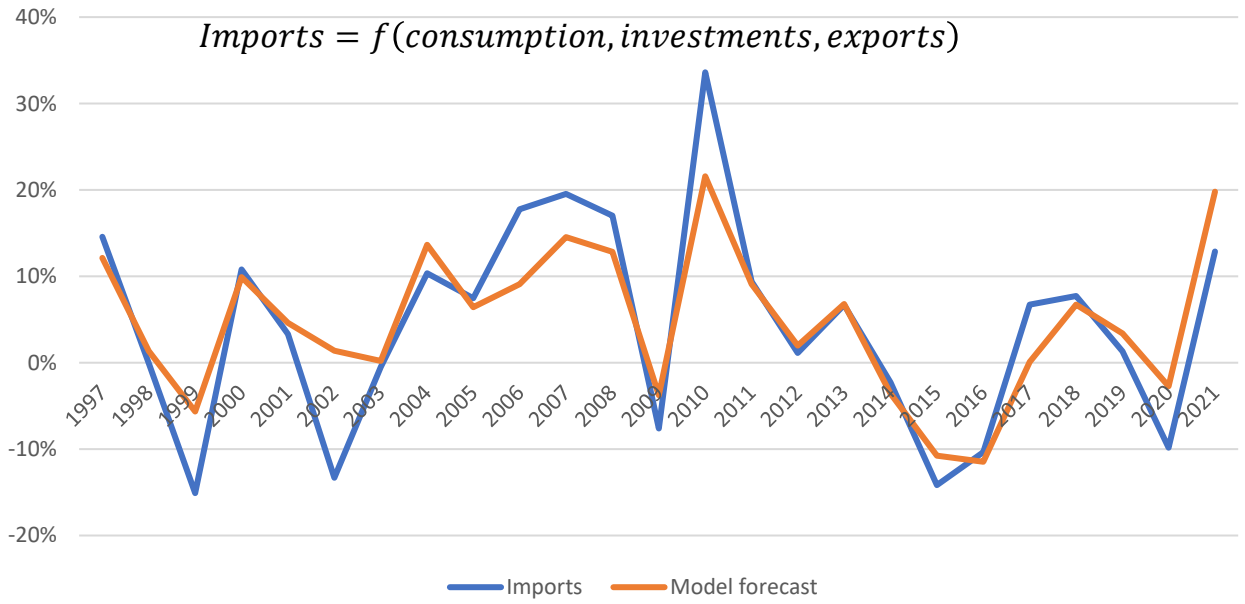

Source: BTG, Mar Asset Management

# Net Export

# Exports follow global demand for commodities

- Brazil's export agenda is very concentrated in commodities. With the surge in commodity prices, the weight of commodities is likely to be even greater today. This composition makes exports more sensitive to offshore commodity prices and domestic supply restrictions.
- We assume that the growth of imports is a function of the growth in consumption, investment and the trade chain. These variables explain much of the historical movement of imports in Brazil.

**Estimated vs. observed import growth (% total)**




**Exports Composition (USD, % total)**

| | US$ bilhões | | | | % da pauta | | | |
|---|---|---|---|---|---|---|---|---|
| | 2000 | 2005 | 2010 | 2017[1] | 2000 | 2005 | 2010 | 2017[1] |
| **Principais produtos** | **38,7** | **87,8** | **164,0** | **173,5** | **70,3** | **74,2** | **81,2** | **80,5** |
| **Commodities** | **25,8** | **64,7** | **134,0** | **145,0** | **46,8** | **54,7** | **66,4** | **67,2** |
| **Principais commodities** | **21,4** | **55,8** | **123,4** | **132,8** | **38,7** | **47,1** | **61,1** | **61,6** |
| Complexo soja | 4,2 | 9,5 | 17,1 | 30,5 | 7,6 | 8,0 | 8,5 | 14,1 |
| Petróleo e derivados | 1,9 | 9,2 | 23,5 | 21,0 | 3,5 | 7,8 | 11,7 | 9,7 |
| Minério de ferro | 3,0 | 7,3 | 28,9 | 19,1 | 5,5 | 6,2 | 14,3 | 8,9 |
| Açúcar | 1,2 | 3,9 | 12,8 | 12,1 | 2,2 | 3,3 | 6,3 | 5,6 |
| Siderúrgicos e metalúrgicos | 4,0 | 9,8 | 9,9 | 11,6 | 7,3 | 8,3 | 4,9 | 5,4 |
| Papel e celulose | 2,5 | 3,4 | 6,8 | 8,1 | 4,6 | 2,9 | 3,4 | 3,8 |
| Metais não ferrosos | 0,9 | 2,1 | 4,6 | 7,4 | 1,6 | 1,7 | 2,3 | 3,4 |
| Frango | 0,8 | 3,5 | 6,3 | 6,8 | 1,5 | 3,0 | 3,1 | 3,2 |
| Café | 1,8 | 2,9 | 5,8 | 5,5 | 3,2 | 2,5 | 2,9 | 2,5 |
| Carne bovina | 0,8 | 2,9 | 4,4 | 5,3 | 1,4 | 2,5 | 2,2 | 2,5 |
| Complexo milho | 0,0 | 0,1 | 2,2 | 3,9 | 0,0 | 0,1 | 1,1 | 1,8 |
| Carne suína | 0,2 | 1,1 | 1,2 | 1,5 | 0,3 | 0,9 | 0,6 | 0,7 |
| **Outras commodities** | **4,4** | **8,9** | **10,6** | **12,2** | **8,0** | **7,5** | **5,3** | **5,7** |
| **Não commodities** | **13,0** | **23,1** | **30,0** | **28,5** | **23,5** | **19,5** | **14,8** | **13,2** |
| Automóveis e motocicletas | 1,8 | 4,7 | 4,6 | 6,7 | 3,4 | 4,0 | 2,3 | 3,1 |
| Veículos de transporte | 1,2 | 3,9 | 3,7 | 5,1 | 2,1 | 3,3 | 1,8 | 2,4 |
| Aviões | 3,6 | 3,3 | 4,4 | 4,1 | 6,5 | 2,8 | 2,2 | 1,9 |
| Peças e partes de veículos | 2,0 | 3,7 | 4,9 | 3,4 | 3,6 | 3,1 | 2,4 | 1,6 |
| Produtos químicos | 1,8 | 3,1 | 5,9 | 3,4 | 3,2 | 2,6 | 2,9 | 1,6 |
| Máquinas pesadas | 0,2 | 0,4 | 0,4 | 2,3 | 0,3 | 0,3 | 0,2 | 1,0 |
| Calçados | 1,6 | 2,0 | 1,6 | 1,3 | 2,9 | 1,7 | 0,8 | 0,6 |
| Farmacêuticos | 0,2 | 0,5 | 1,3 | 1,3 | 0,4 | 0,4 | 0,6 | 0,6 |
| Móveis | 0,4 | 0,5 | 1,8 | 0,6 | 0,7 | 0,4 | 0,9 | 0,3 |
| Aparelhos telefônicos | 0,3 | 1,2 | 1,3 | 0,2 | 0,5 | 1,0 | 0,7 | 0,1 |
| **Demais** | **16,4** | **30,5** | **38,0** | **42,2** | **29,7** | **25,8** | **18,8** | **19,5** |
| **Total** | **55,1** | **118,3** | **201,9** | **215,7** | | | | |

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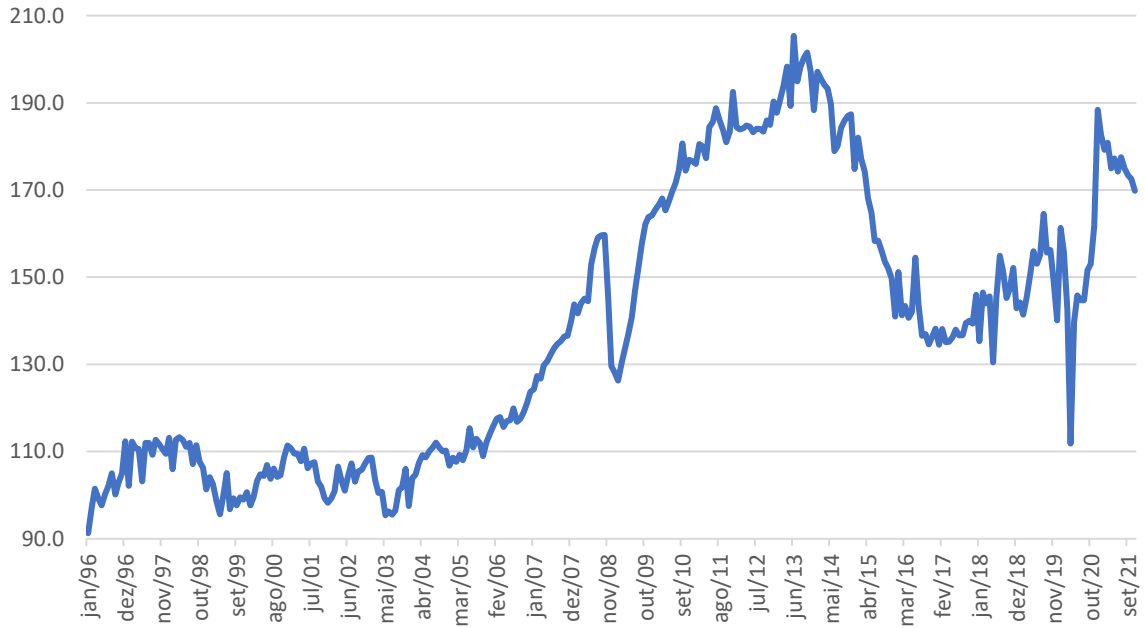
Source: IBGE, MDIC, Credit Suisse, Mar Asset Management

# Investment

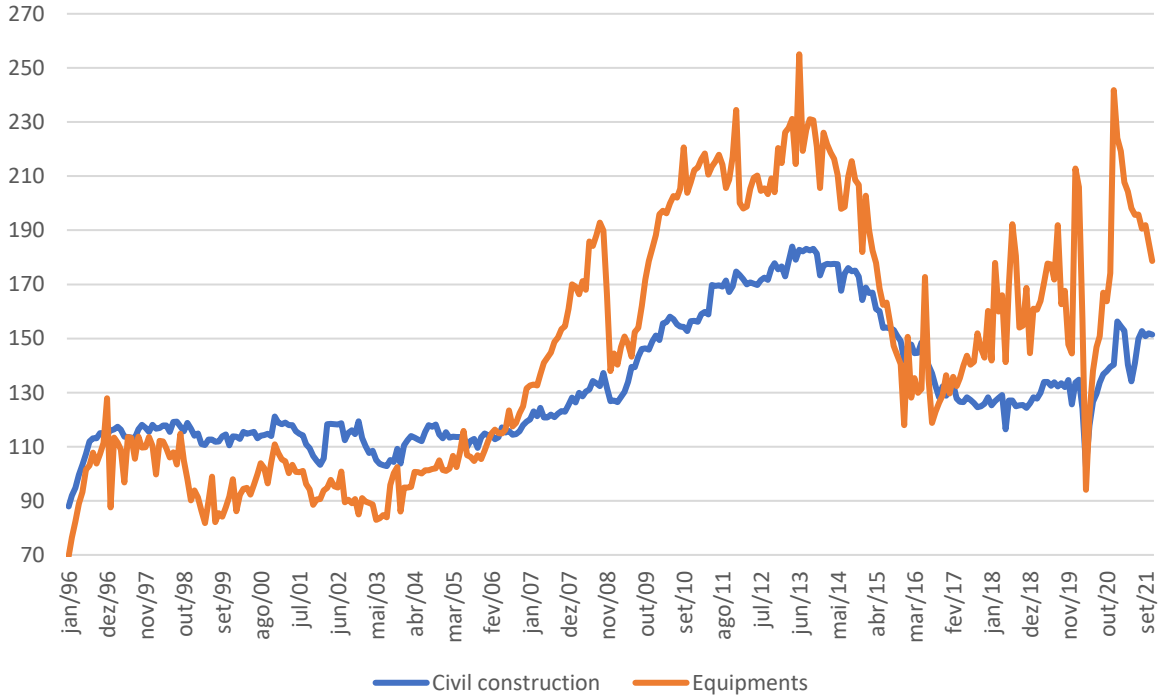
# Investments show reduction in 2H21

- The IPEA indicator of gross fixed capital formation (IPEA GBCF) suggests that investments in Brazil had a very peculiar dynamic. In early 2021, investments showed a strong increase, returning to a level close to the maximum of the historical series. Investments remained at levels well below this level throughout the post-crisis period. Since then, investments have shown a continuous reduction.
- Oscillations occurred mainly in the machines and equipment components. After showing a contraction at the beginning of the pandemic, the need for inventory recomposition and a heated market for commodity/goods production kept demand at a fairly high level throughout the first half.

**Ipea indicator of FBCF with seasonal adjustment (index number, 1995=100)**




**Composition of Ipea monthly FBCF indicator (Index 1995 = 100)**



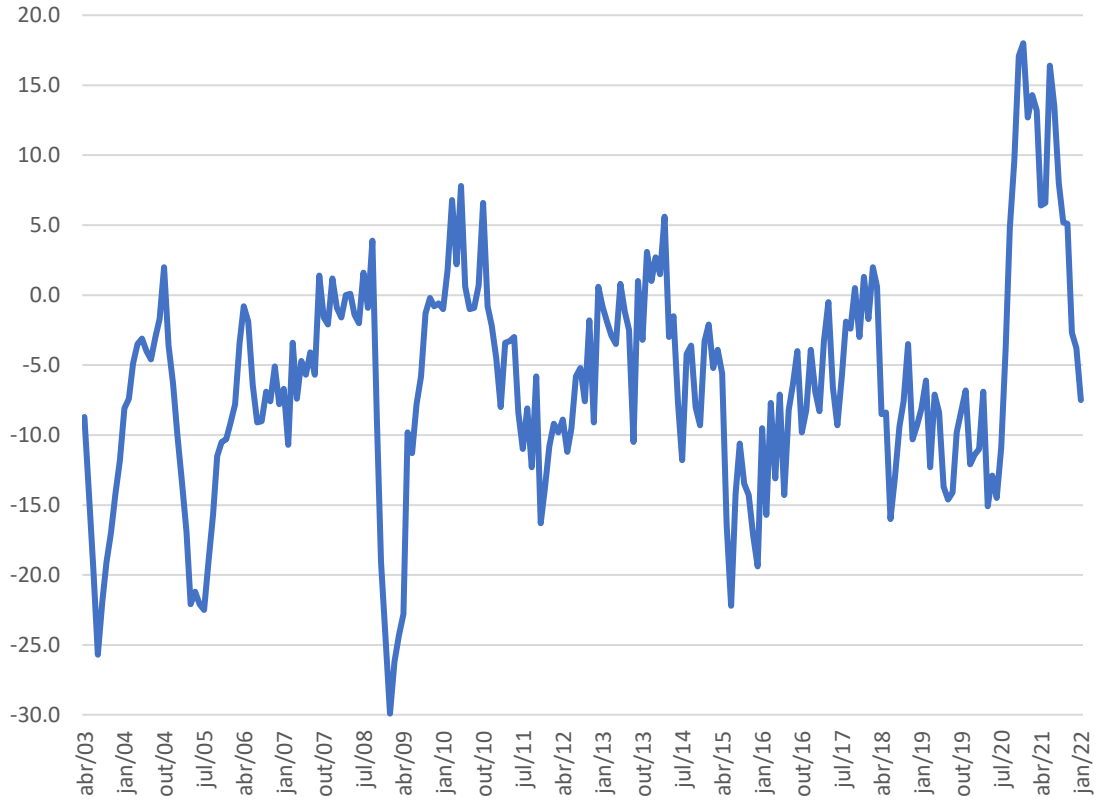

Source: Ipea, Mar Asset Management

# Different perspectives for investment groups

- The sharp rise in commodity prices is expected to sustain investments in machinery and equipment at a high level throughout 2022, despite rising interest rates.
- The return to normality of inventories in the construction sector is an indication that the sector should not show high growth in the coming months.

**Investment in machinery and equipment and CRB (%, yoy)**


**Level of inventory on construction sector (insufficient versus. excesses)**




Source: Ipea, BTG, FGV, Mar Asset Management

# Consumption

# Consumption in 2022

Recomposition of the Wage bill

Government transfers

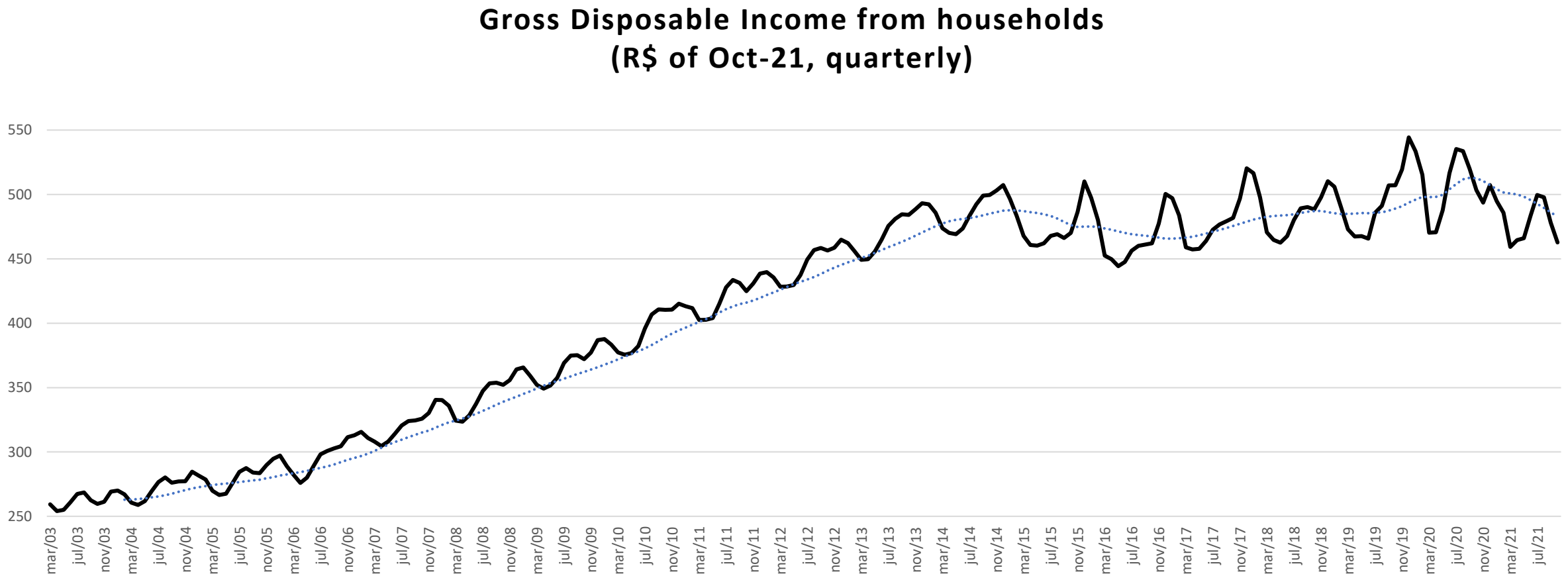
Utilization of Circumstantial Savings

Credit

Scenario simulation

# BCB published the National Gross Disposable Income

- BCB started publishing a monthly series for the gross disposable income of families in Brazil. This series takes into account not only income from work, but also capital income and all government income transfers to families. This series identified a leap in 2020 in household income after the sharp increase in public transfers, mainly from “Auxílio Brasil”.



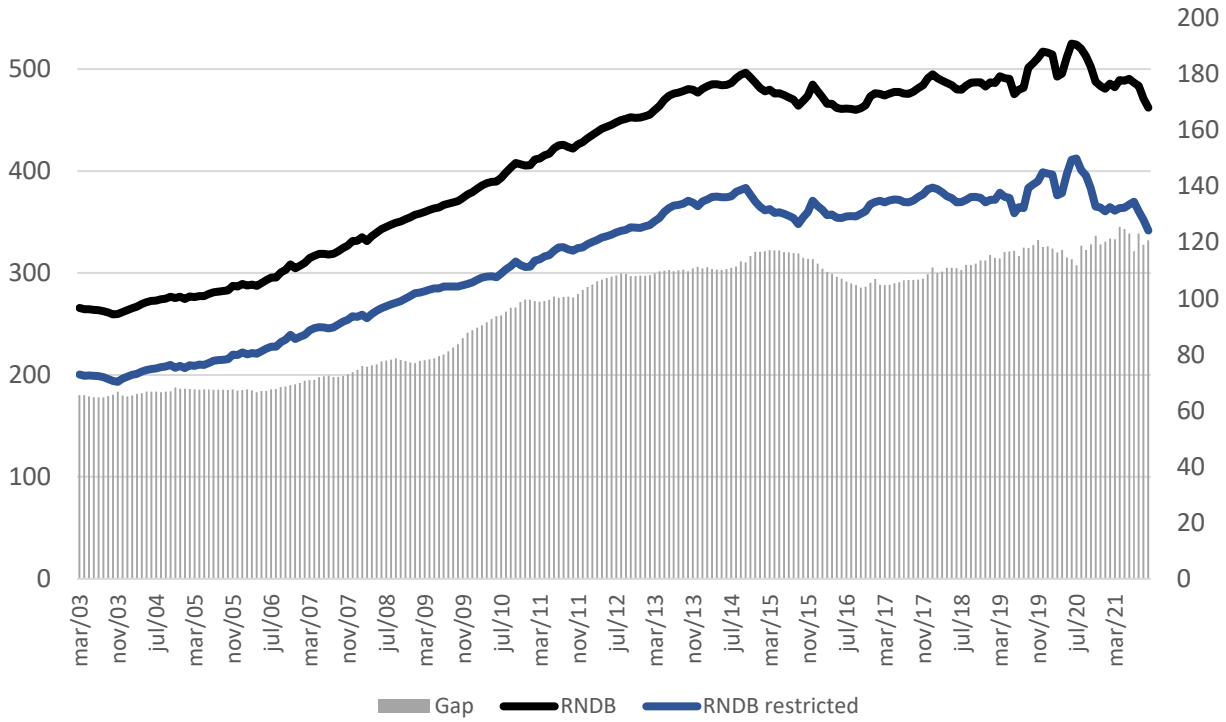

mar asset management

Source: BCB, Mar Asset Management

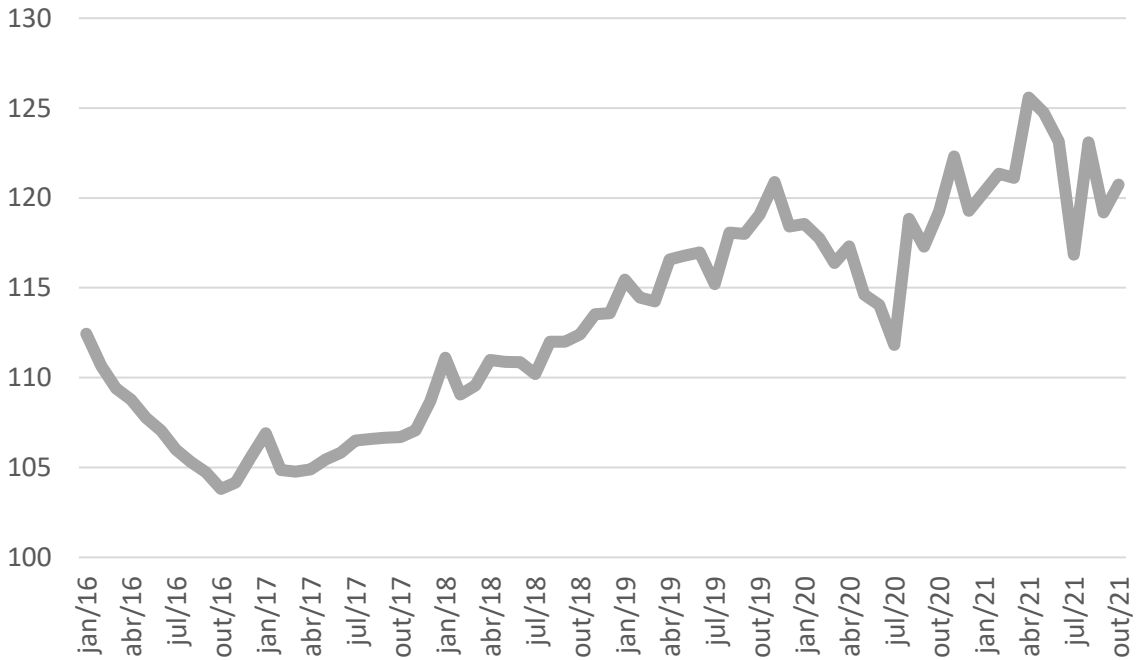
# Wage bill and transferences reduced RNDB

- BCB also discloses a restricted measure of Gross National Income, which excludes gross operating surplus and household property incomes and is conceptually closer to the Expanded Available Wage Mass. Excluded components are portions of income in theory less correlated with the economic cycle or that are not typically destined for immediate consumption.
- The recent RNDB contraction occurred exclusively in the portion related to the restricted RNDB. That is, household income has been decreasing in margin because of contractions in the wage bill or government transfers.

**RNDB growth in relation to Feb-20 in real terms (%, SA and monthly)**




**Gross Operating Surplus and Household Property Income (R$ billion from Sep-21)**

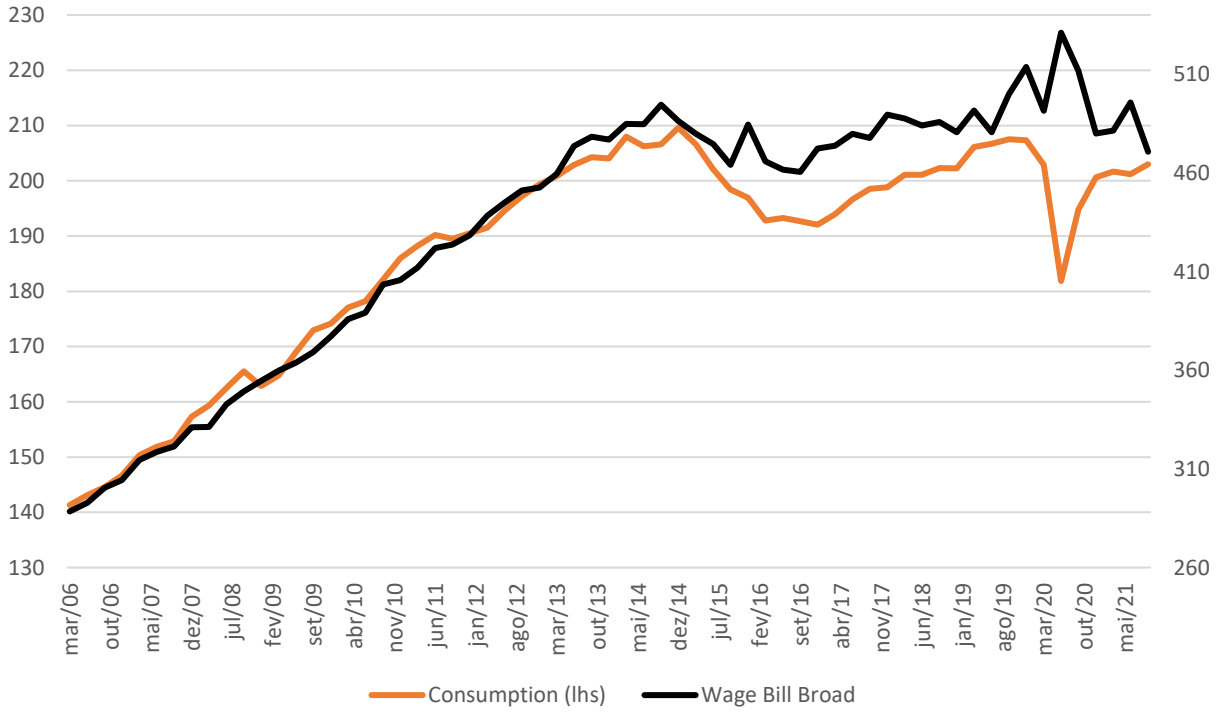



Source: BCB, Mar Asset Management

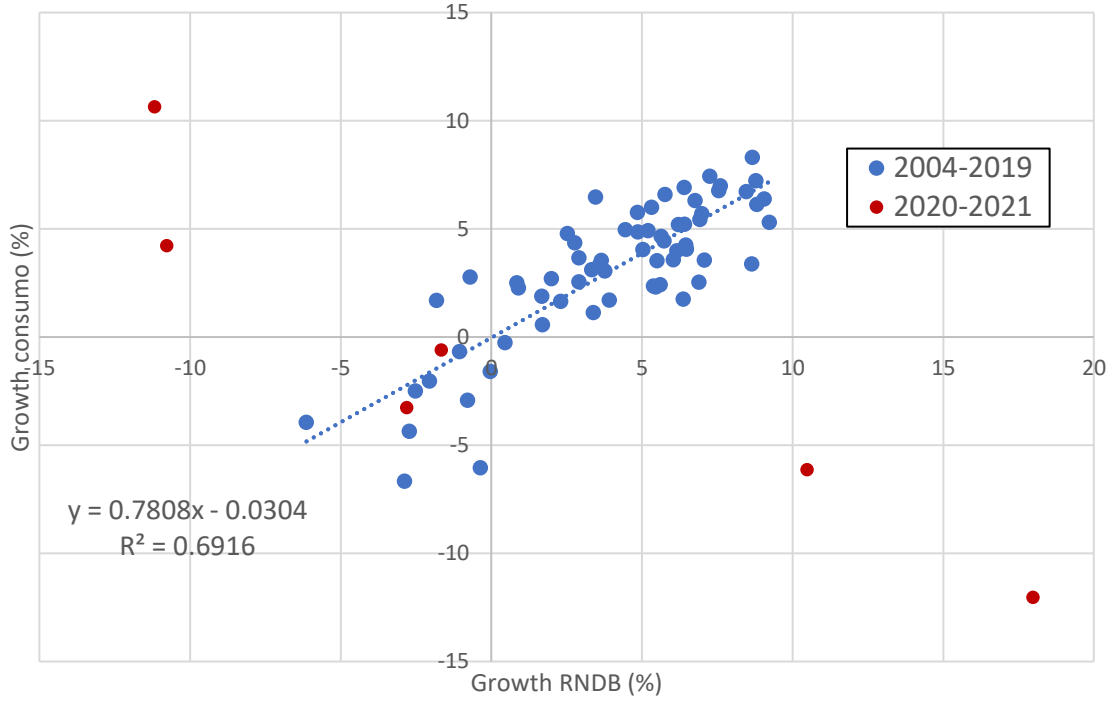
# High correlation between wage and consumption

- There is a close relationship between disposable income and consumption. With the exception of the 2020-2021 period, during the Covid-19 outbreak, the growth of these two variables was very close, as expected in an environment of not very large fluctuations in the savings rate.
- With the economic normalization, the national income growth dynamics were once again the main determinant of consumption growth.

**Consumption and Gross National Disposable Income (quarterly, SA)**




**Consumption growth and RNDB ratio between 2013 (%, yoy)**

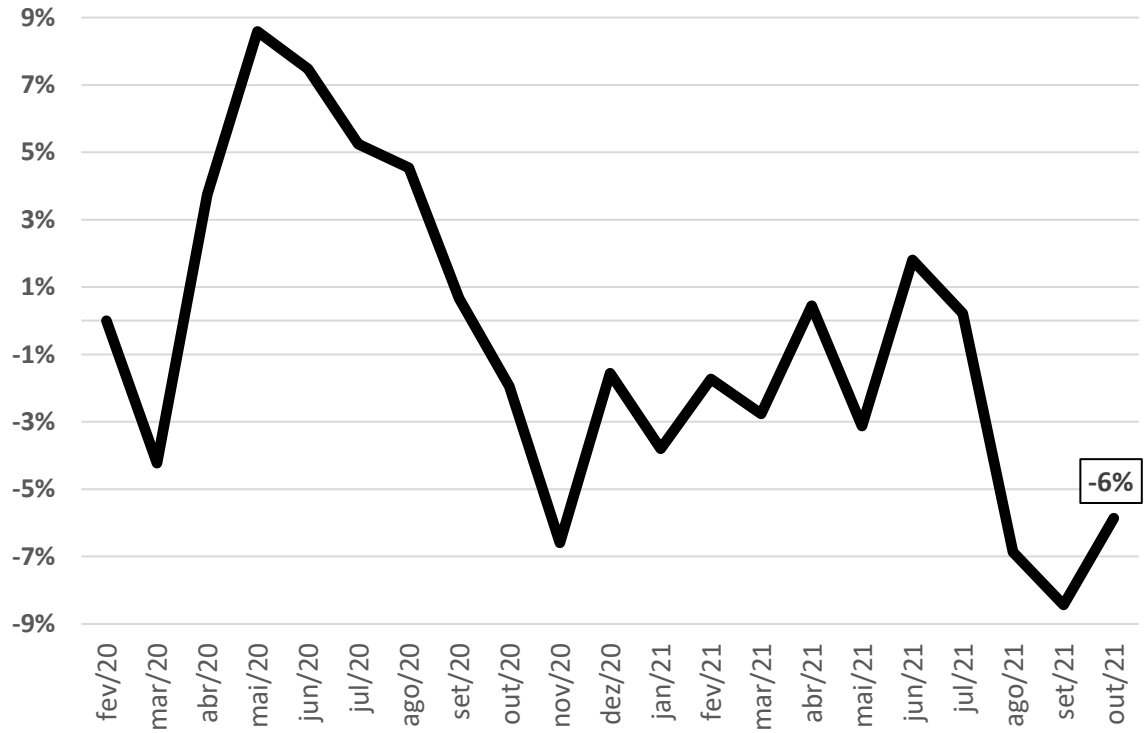



Source: IBGE, BCB, Mar Asset Management

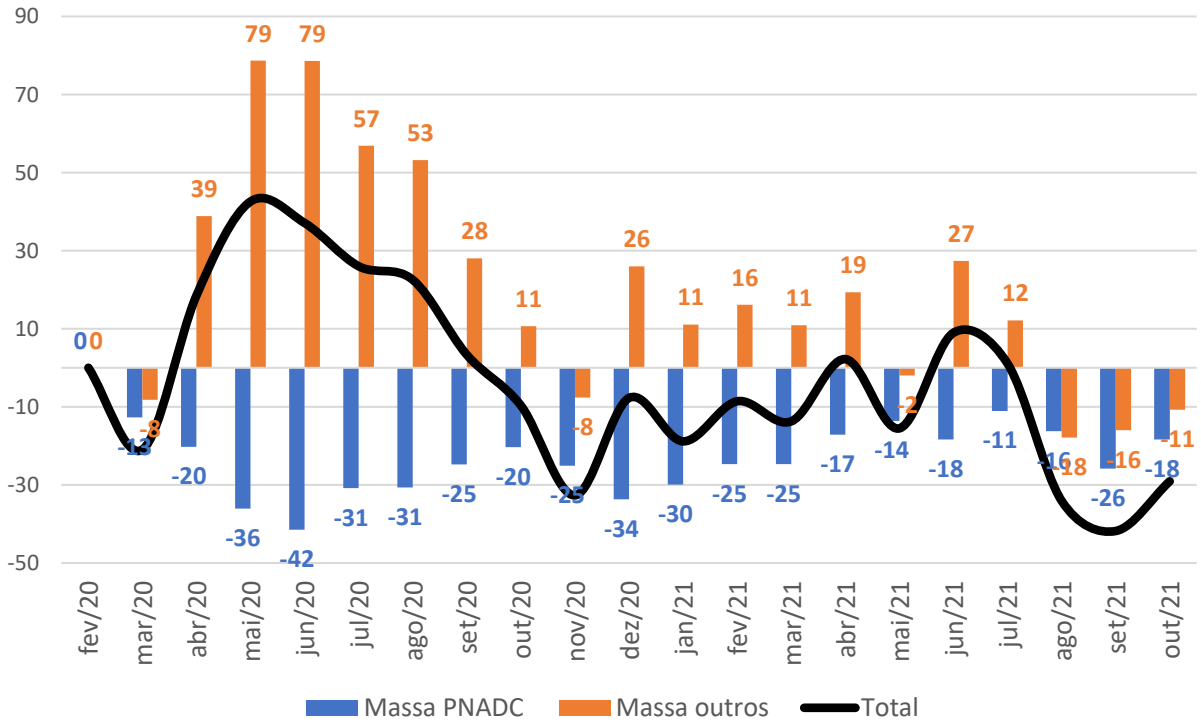
# Sharp reduction in RNDB in the second half of 21

- RNDB was 6% below pre-crisis in October 2021. This is a very different scenario from the one seen until July, income was still higher than the pre-crisis. This was the same period in which we saw a worsening in activity indicators.
- Separating the total income between income from work (PNADC) and the remainder, we see that this reduction in margin occurred mainly in the second group. Other incomes, probably related to the reduced amount of governmental transferences, explained the majority of the marginal income fall.

**RNDB growth in relation to Feb-20 in real terms (%, SA and monthly)**




**Growth compared to Feb-20 (R$, monthly, SA, billions of Sep-21)**



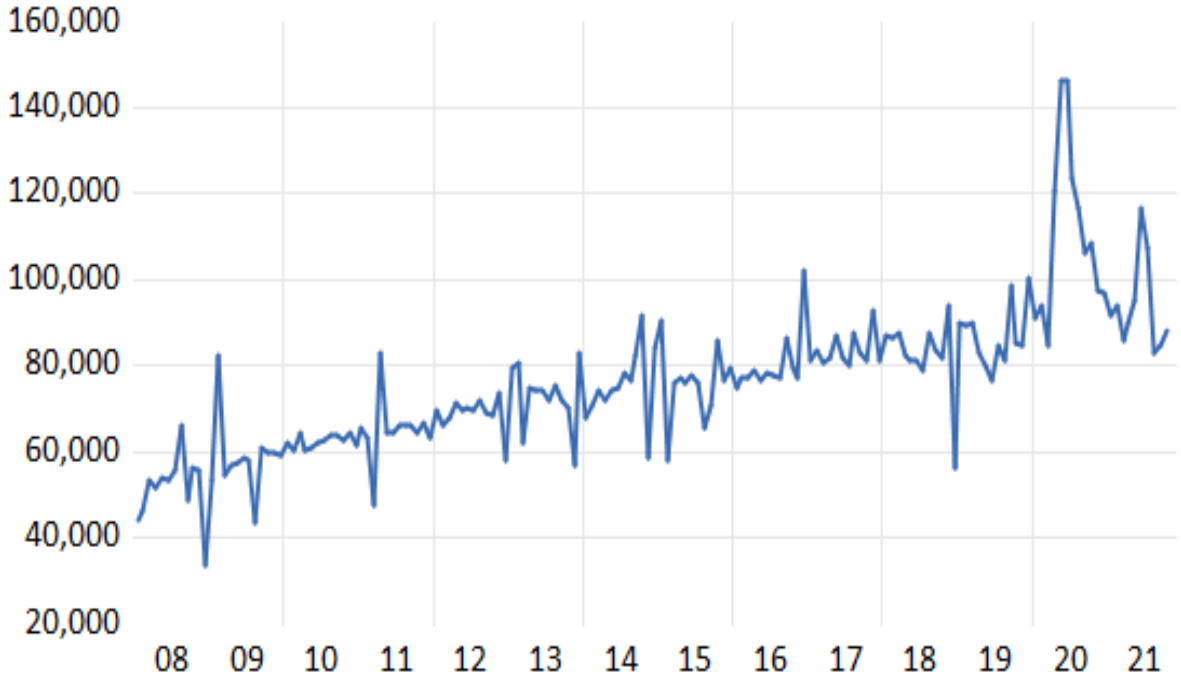

Source: BCB, Mar Asset Management

# Government transfers

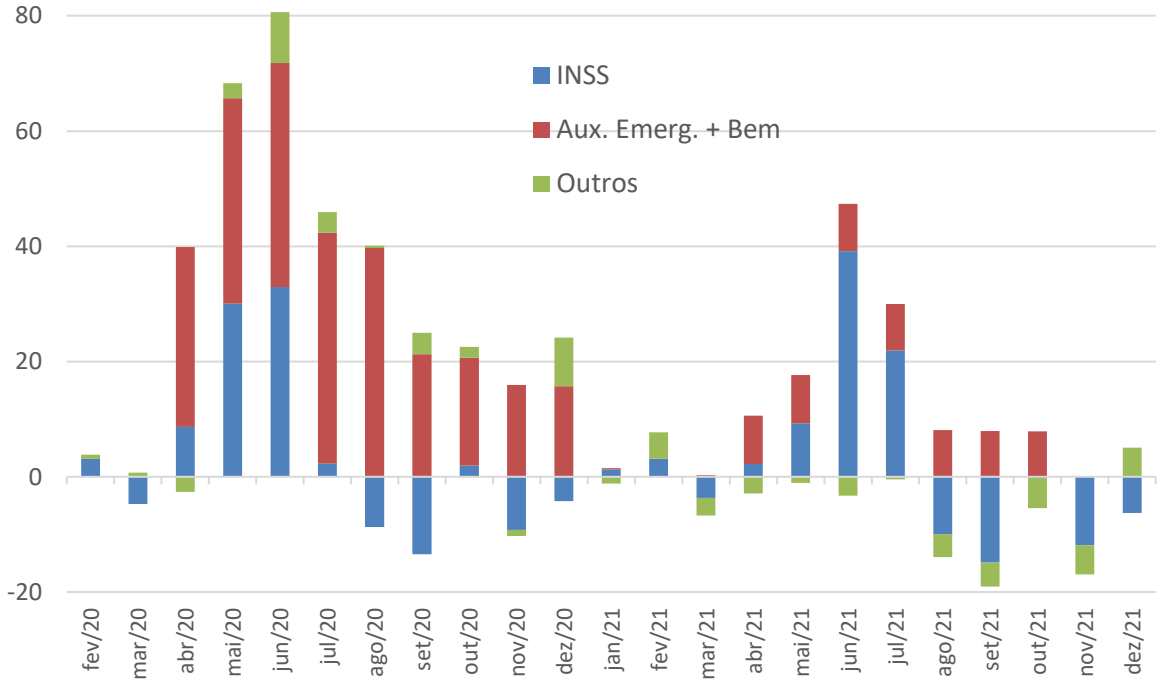
# INSS and AE explain vol. of government transfers

- Government transfers to households have shown higher volatility than usual. Deducting this volatility, the level of the transferences in recent months is close to pre-crisis levels.
- The main sources of volatility are emergency aid payments and anticipation of the thirteenth salary of Social Security Benefits. In June and July, for example, there was an unusual concentration of pension payments, offset by a reduction in subsequent months. This may be behind the latest slowdown in consumption.

**Transfers from the Union to families (R$ de Nov-21, SA)**




**Growth compared to the 2018 and 2019 average for the month (R$, billions of Nov-21)**



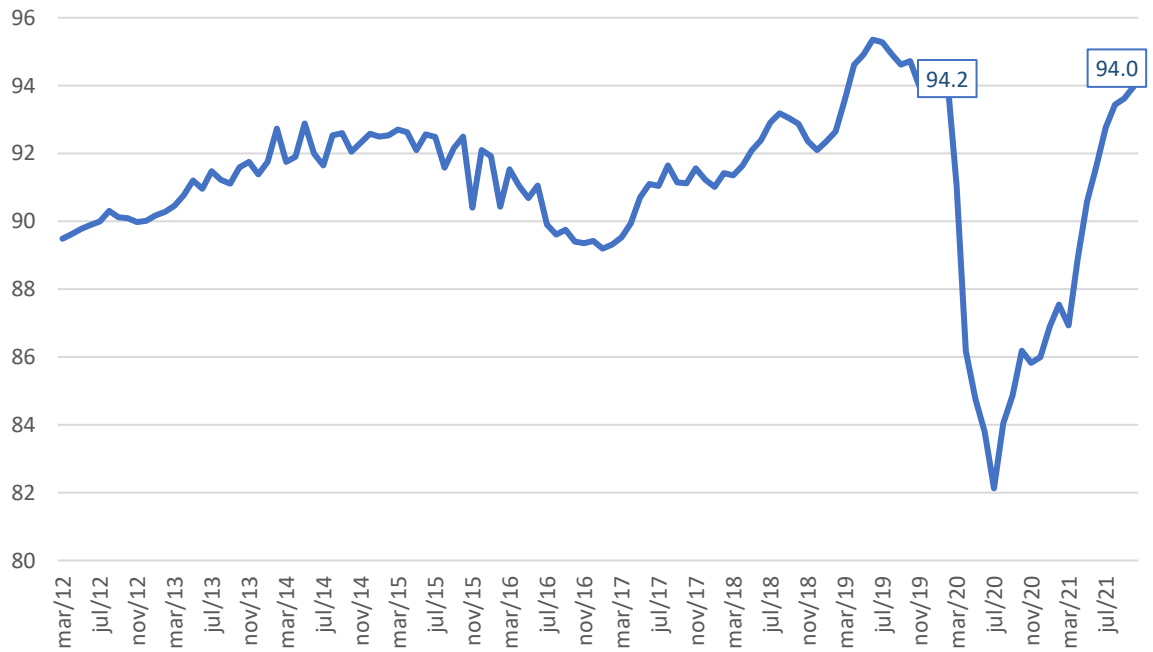

Source: Tesouro Nacional, Mar Asset Management

# Wage bill - Employment

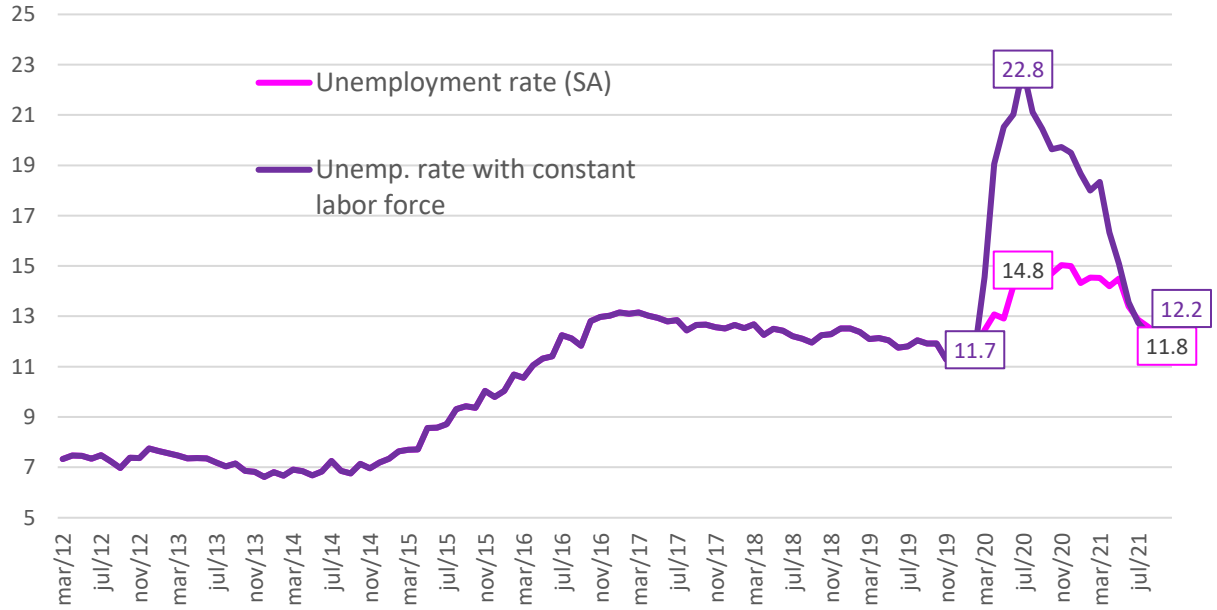
# Employment in Brazil returned to pre-crisis level

- By the end of 2021, Brazil's labor market had returned to the same pre-crisis level. In November, the total employed population was 94 million, a very similar level as fev-20.
- As a result, the unemployment rate also returned quickly. The headline rate was at 11.8% in November. Qualitatively, the result is very similar for when we adjust for the reduction of the workforce. When we consider the constant workforce equal to that of the pre-crisis, the unemployment rate was 12.3%. The discrepancy between the two series is much smaller than in the middle of the crisis.

**Total employed population (million workers)**




**Unemployment rate - headline and with constant workforce at pre-pandemic level (%)**



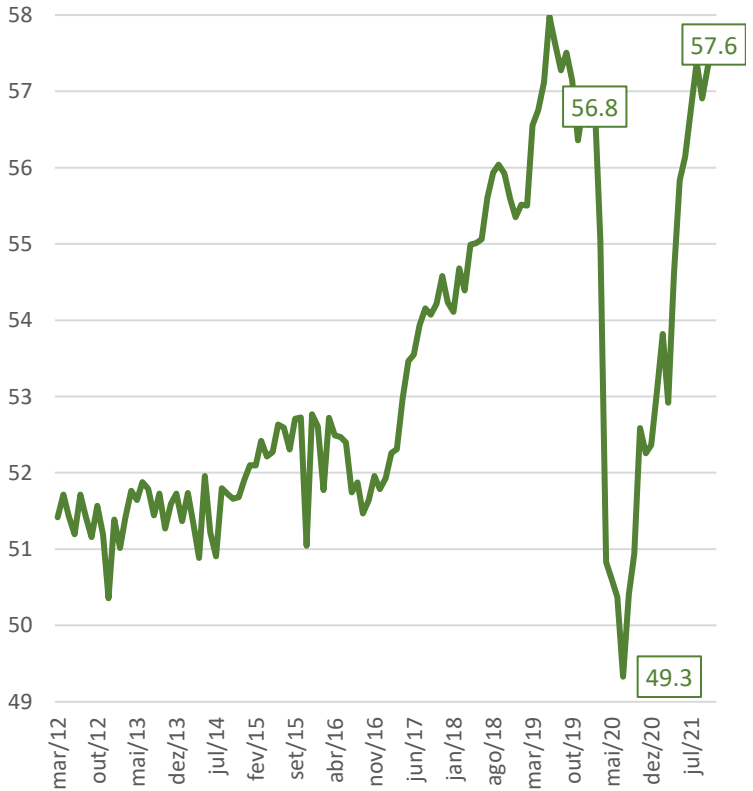

mar asset management

Source: IBGE, Mar Asset Management

# Recovery took place in the formal and informal markets

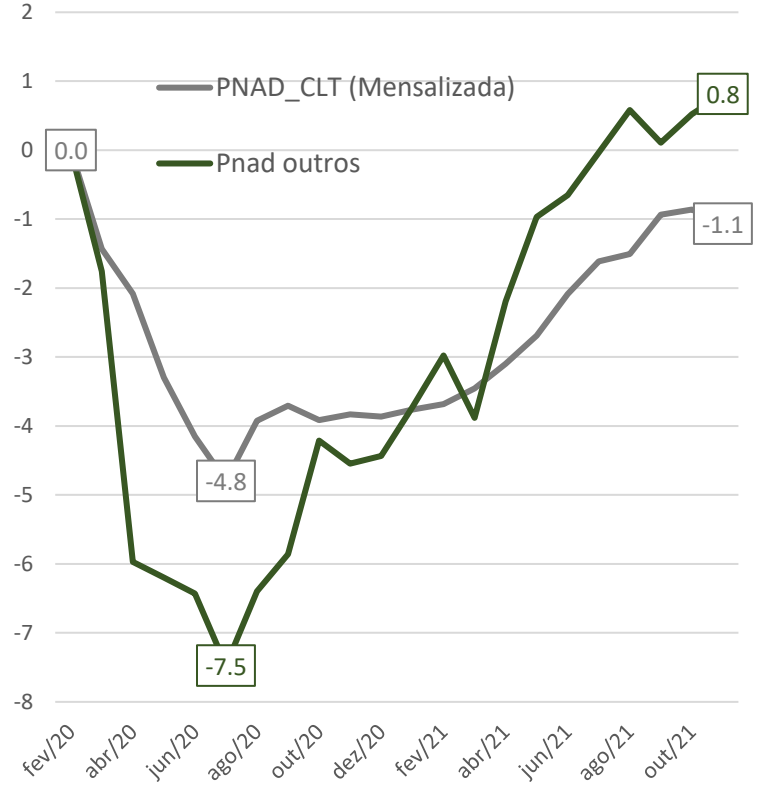
- The recovery took place both in the formal and informal markets. Shortly after the beginning of the pandemic, the employed population with a formal contract decreased from 37.5 million to 32.7. In November 2021, it had already returned to a level very close to the pre-crisis. The rest of the employed population, which is mostly informal, was already above the pre-crisis level on the last survey results.

**Informal employed population (million workers)**




**Formal employed population (million workers)**


**Difference from Feb-20 (million workers)**



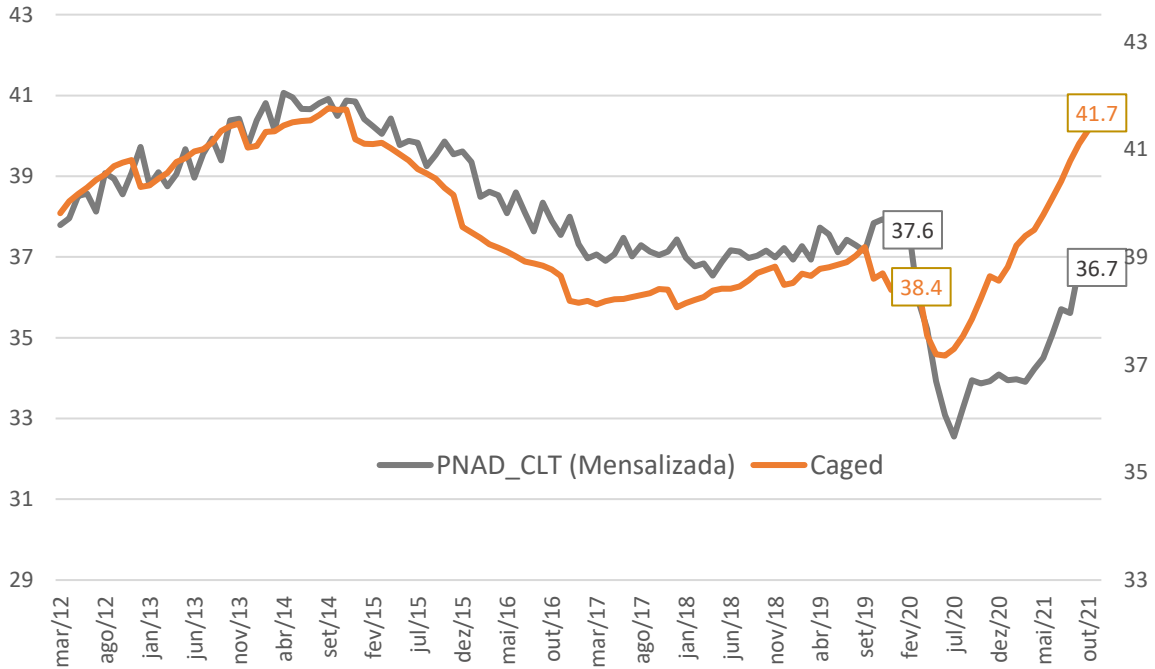

mar asset management

Source: IBGE, Mar Asset Management

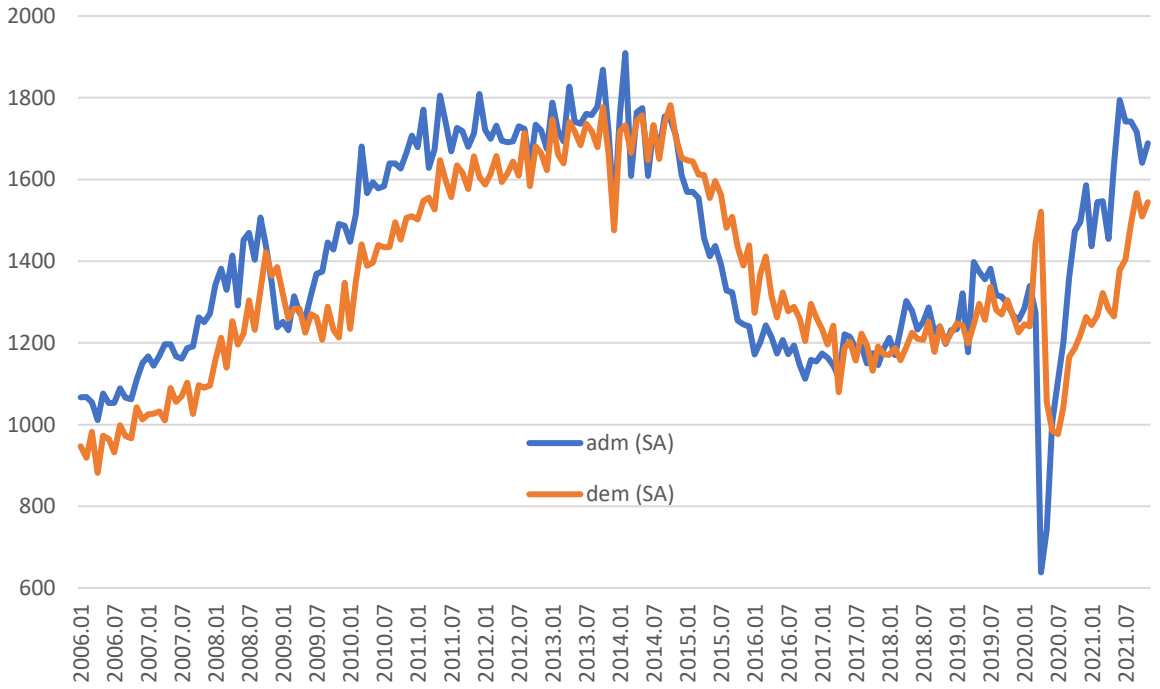
# Formal market may be even better

- Caged's research shows a much more positive scenario for the formal labor market in Brazil. According to this survey, the total occupied population with a formal contract had already fully recovered from the contraction after the beginning of the Covid-19 outbreak by the end of 2020. In addition, the research suggests that the current number of workers is similar to the maximum observed in 2014.
- Analysts pointed out that the underreporting of layoffs would be inflating the number of employees in Caged. Initially, this could be the case because dismissals did not seem to follow admissions, as is the case historically. However, (i) current data already shows the closure of this discrepancy and (ii) the number of layoffs in Caged is compatible with other indicators, such as unemployment claims

**PNAD formally Occupied Population vs. Caged (millions of workers)**




**Admissions and layoffs in Caged research (millions, SA)**



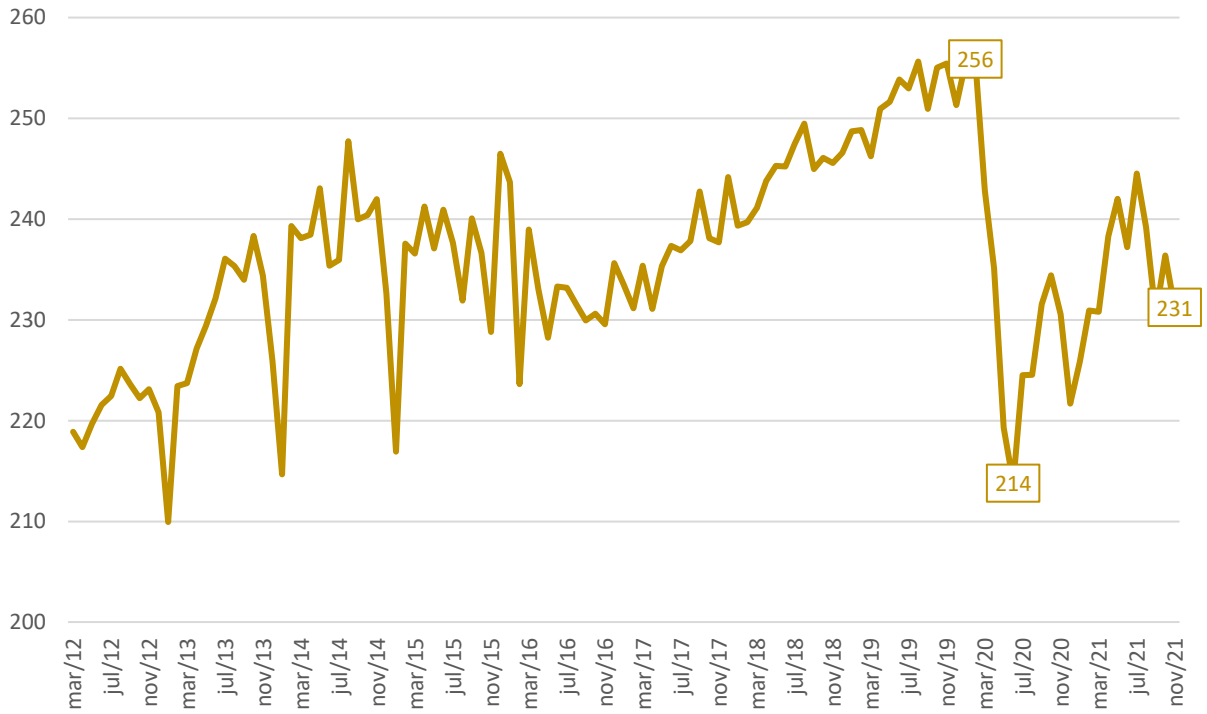

Source: IBGE, Ministry of Economy, Mar Asset Management

# Wage bill - Wage

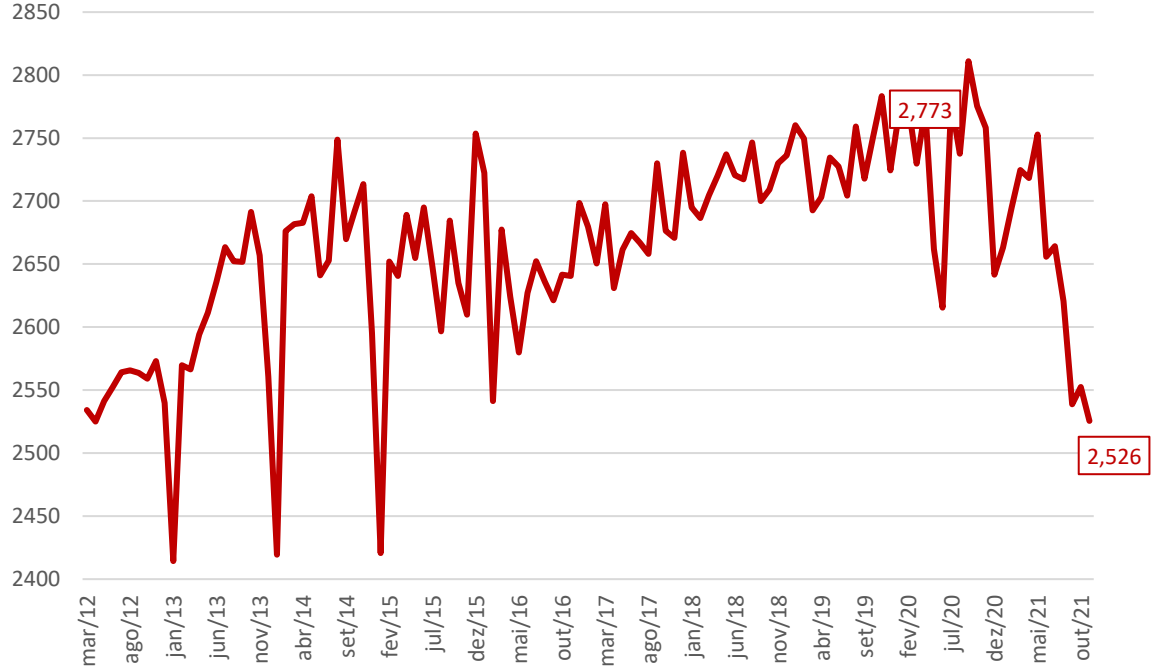
# Wage bill still well below pre-crisis levels

- Despite the full recovery of the employed population, workers purchasing power is still much lower than the pre-pandemic period. The real wage bill was still -9.0% below the pre-pandemic level, recovering just over half of the contraction seen in the first months of the outbreak.
- As the employed population has already returned to the pre-pandemic levels, this gap is explained solely by a reduction in workers' average wage in real terms. In fact, the real average wage is close to the level of 2012.

**Actual effective wage bill (R$, billions)**




**Actual average income (R$, billions)**

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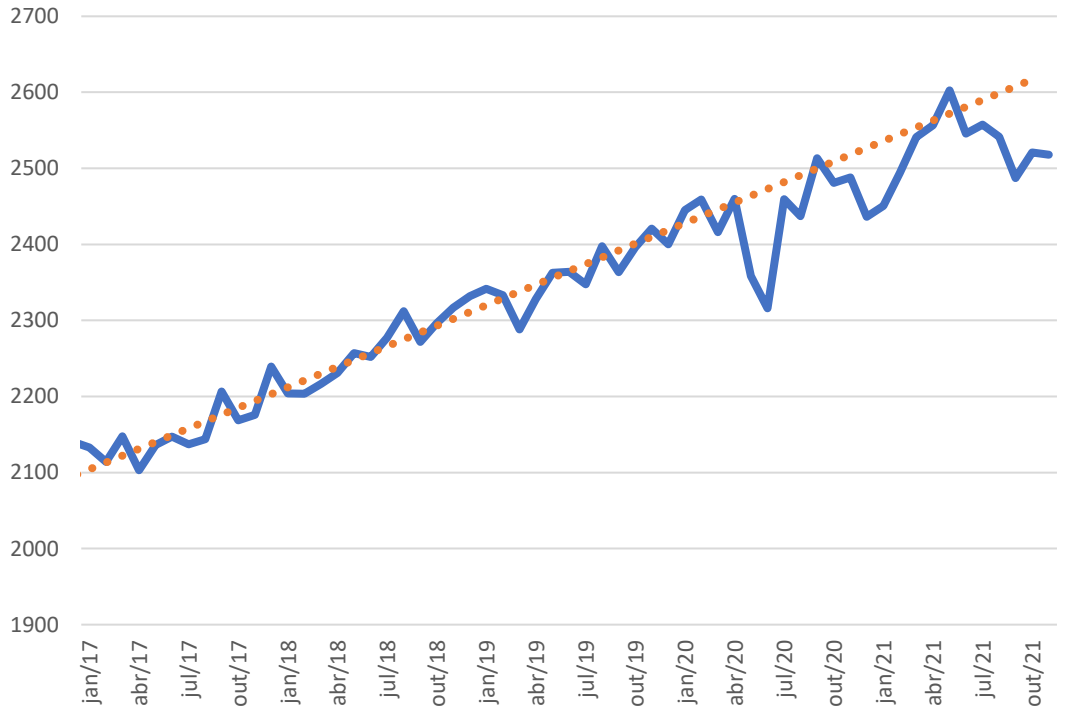
Source: IBGE, Mar Asset Management

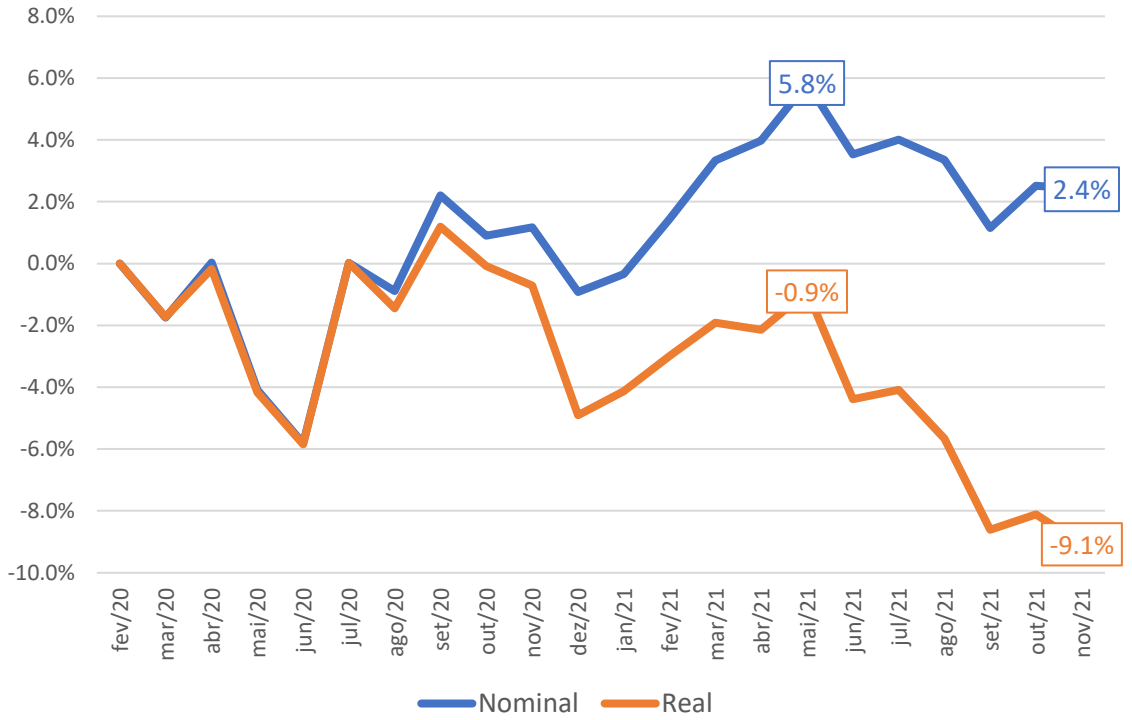
# High inflation explains reduction in real wages

- The nominal workers income is 2.4% above the pre-crisis, according to the PNADC. The real wage contraction was due to the strong inflation acceleration throughout 2022, especially in the second half of the year.
- The last few months have also seen a reduction in average nominal income. Between May and November, there was a reduction of -3.4% in nominal wage. With the concomitant strong inflation, real wages decreased further in the same period, by 8.2%.

**Average nominal income (monthly, sa)**




**Change in nominal and real income compared to Feb-2020 (monthly, sa, %)**

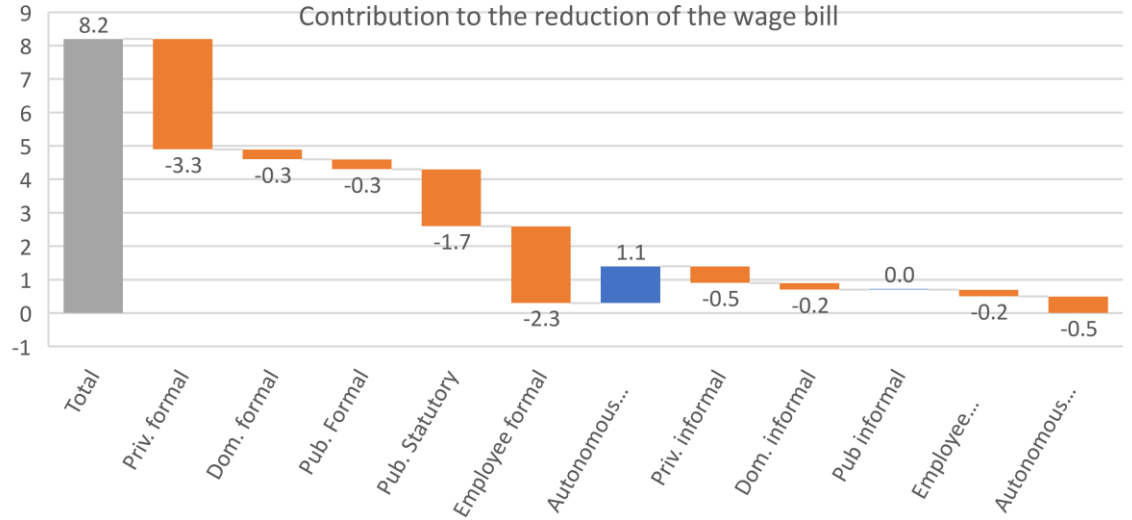



mar asset management

Source: IBGE, Mar Asset Management

# Real income shrunk in all categories

- The reduction in the wage bill occurred virtually in all groups. The largest contributions to the reduction of the wage bill came from the formal sector – workers with a formal contract, serv. Statutory public and employer with CNPJ (Corporate Tax ID).
- In terms of reducing the employed population, the sectors that are still further from the pre-crisis are domestic workers and the public sector without a license and employees with CNPJ.
- Most reduction was not due to compositional effect. **Maintaining the ratio of employed population prior to the Covid outbreak, the average income today would be -5.6% lower.**




| | População ocupada | | | Rendimento médio | | | Massa salarial | | | Contribuição para redução |
|---|---|---|---|---|---|---|---|---|---|---|
| | Nov-19 | Nov-21 | Δ (%) | Nov-19 | Nov-21 | Δ (%) | Nov-19 | Nov-21 | Δ (%) | |
| **Total** | **95.5** | **94.9** | **-0.6** | **2,560** | **2,373** | **-7.3** | **244.5** | **225.3** | **-7.9** | **-7.9** |
| Employee | 64.8 | 63.3 | -2.3 | 2,503 | 2,338 | -6.6 | 162.2 | 148.0 | -8.8 | -5.8 |
| Employed in the private sector, excluding domestic worker | 47.2 | 46.4 | -1.7 | 2,268 | 2,132 | -6.0 | 107.1 | 98.9 | -7.6 | -3.3 |
| Employee in the private sector, excluding domestic worker - with a formal contract | 35.0 | 34.2 | -2.1 | 2,490 | 2,343 | -5.9 | 87.0 | 80.2 | -7.9 | -2.8 |
| Employee in the private sector, excluding domestic worker - without a formal contract | 12.3 | 12.2 | -0.6 | 1,630 | 1,537 | -5.7 | 20.0 | 18.7 | -6.3 | -0.5 |
| domestic worker | 6.2 | 5.6 | -9.1 | 1,028 | 933 | -9.2 | 6.3 | 5.2 | -17.5 | -0.5 |
| Domestic worker - with a formal contract | 1.7 | 1.4 | -21.0 | 1,442 | 1,345 | -6.7 | 2.5 | 1.8 | -26.4 | -0.3 |
| Domestic worker - without a formal contract | 4.4 | 4.2 | -4.5 | 866 | 800 | -7.6 | 3.9 | 3.4 | -11.8 | -0.2 |
| Employee in the public sector | 11.4 | 11.3 | -1.2 | 4,270 | 3,883 | -9.1 | 48.7 | 43.8 | -10.2 | -2.0 |
| Employee in the public sector, exclusive military and statutory civil servant - with a formal contract | 1.2 | 1.2 | 5.2 | 4,481 | 3,645 | -18.7 | 5.3 | 4.5 | -14.4 | -0.3 |
| Employee in the public sector, exclusive military and statutory civil servant - without a formal contract | 2.5 | 2.4 | -2.8 | 2,193 | 2,247 | 2.5 | 5.5 | 5.5 | -0.4 | 0.0 |
| Employee in the public sector - military and statutory civil servant | 7.7 | 7.6 | -1.7 | 4,904 | 4,442 | -9.4 | 37.9 | 33.8 | -11.0 | -1.7 |
| Employer | 4.4 | 3.9 | -12.0 | 6,782 | 6,110 | -9.9 | 29.8 | 23.6 | -20.7 | -2.5 |
| Employer with CNPJ | 3.6 | 3.1 | -13.6 | 7,329 | 6,672 | -9.0 | 26.4 | 20.7 | -21.4 | -2.3 |
| Employer without CNPJ | 0.8 | 0.8 | -4.7 | 4,298 | 3,796 | -11.7 | 3.4 | 2.9 | -15.8 | -0.2 |
| own account | 24.3 | 25.8 | 6.2 | 1,952 | 1,901 | -2.6 | 47.5 | 49.1 | 3.4 | 0.7 |
| Own account with CNPJ | 5.1 | 6.4 | 26.0 | 3,535 | 3,236 | -8.5 | 17.9 | 20.6 | 15.3 | 1.1 |
| Own account without CNPJ | 19.3 | 19.5 | 1.0 | 1,536 | 1,463 | -4.8 | 29.6 | 28.5 | -3.8 | -0.5 |

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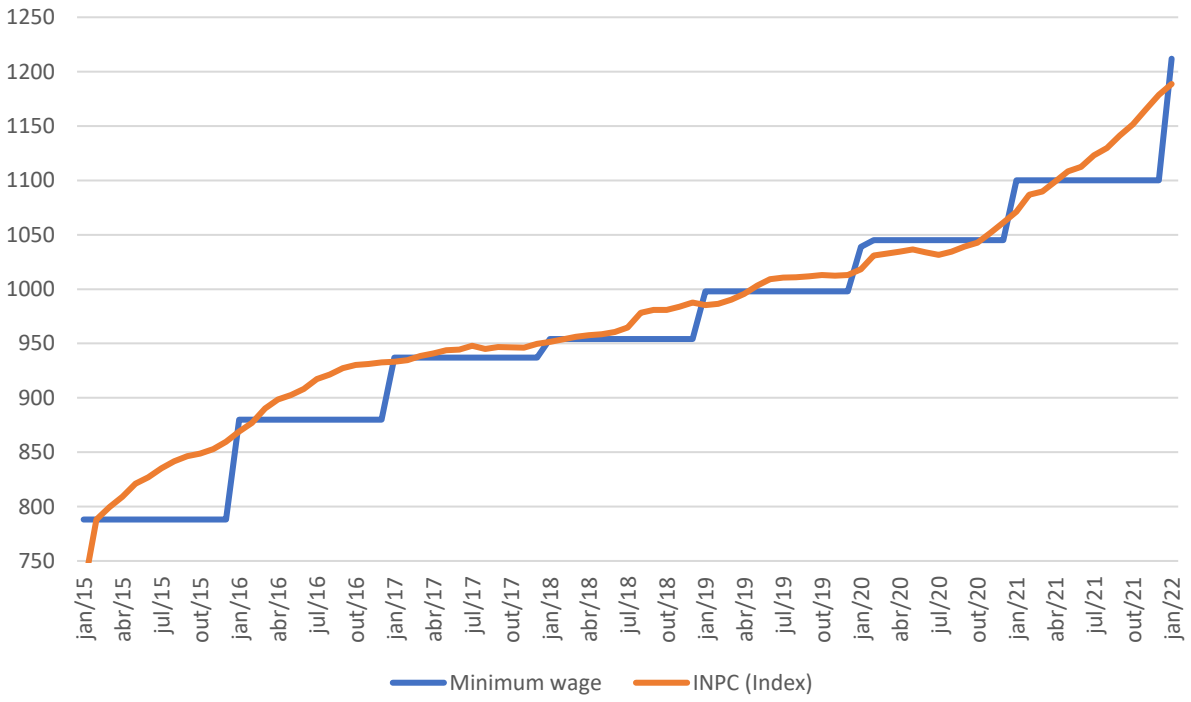
Source: IBGE, Mar Asset Management

# Wages adjustments have been recomposing inflation losses

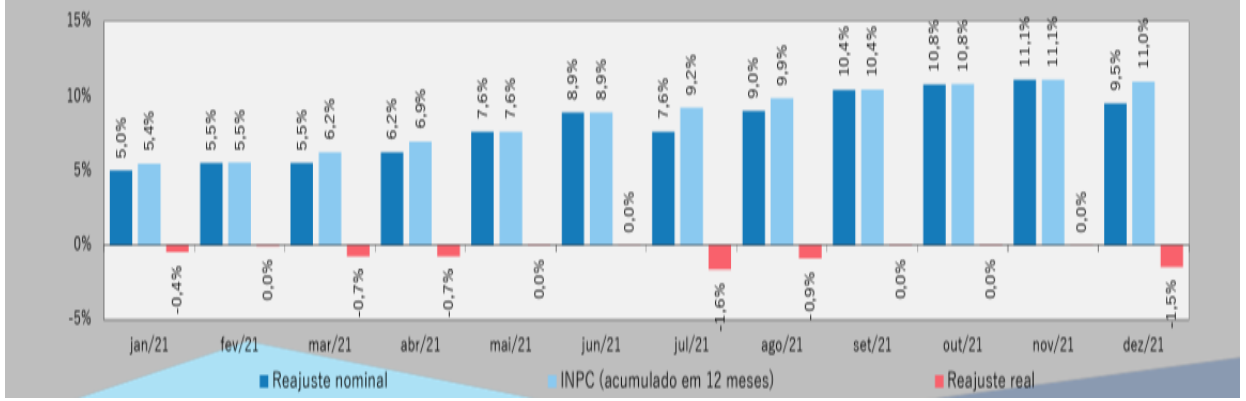
- Workers and pensioners who received a minimum wage had a strong purchasing power loss throughout 2021. This was due to the strong inflation seen, mainly, in the second half of the year. In January, the minimum wage was adjusted by 10.2% which will help restore workers real income.
- Moreover, sectorial researches suggest that the wage resetting in collective bargainings has been almost integral. As the adjustments are annual and 12-month inflation will remain high for much of 2022, employees income tends to increase in the coming months.

**Minimum Wage and INPC (R$, billions)**




**Wage readjustments in collective bargainings (R$, billions)**

| Indicador/Reajuste | | jan/21 | fev/21 | mar/21 | abr/21 | mai/21 | jun/21 | jul/21 | ago/21 | set/21 | out/21 | nov/21 | dez/21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INPC acumulado (12 meses) - % | | 5,4% | 5,5% | 6,2% | 6,9% | 7,6% | 8,9% | 9,2% | 9,9% | 10,4% | 10,8% | 11,1% | 11,0% |
| Reajuste mediano negociado (%) | Total | 5,0% | 5,5% | 5,5% | 6,2% | 7,6% | 8,9% | 7,6% | 9,0% | 10,4% | 10,8% | 11,1% | 9,5% |
| | Acordos | 5,3% | 5,5% | 5,5% | 6,2% | 7,6% | 8,9% | 7,0% | 8,7% | 10,4% | 10,8% | 11,1% | 8,3% |
| | Convenções | 4,8% | 5,5% | 6,0% | 6,2% | 7,6% | 8,9% | 9,2% | 9,9% | 10,4% | 10,8% | 11,1% | 10,3% |
| | Total (real) | -0,4% | 0,0% | -0,7% | -0,7% | 0,0% | 0,0% | -1,6% | -0,9% | 0,0% | 0,0% | 0,0% | -1,5% |



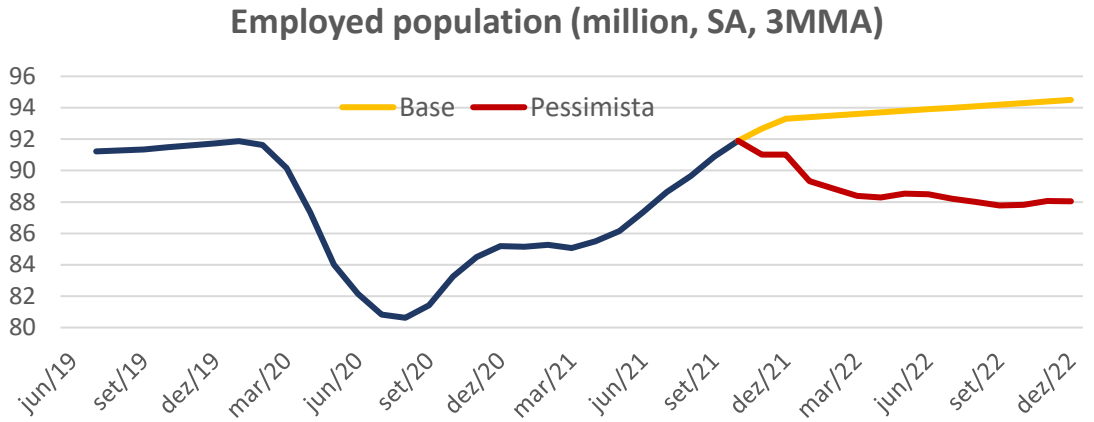

Source: IBGE, FIPE, Mar Asset Management

# Wage bill - Scenarios

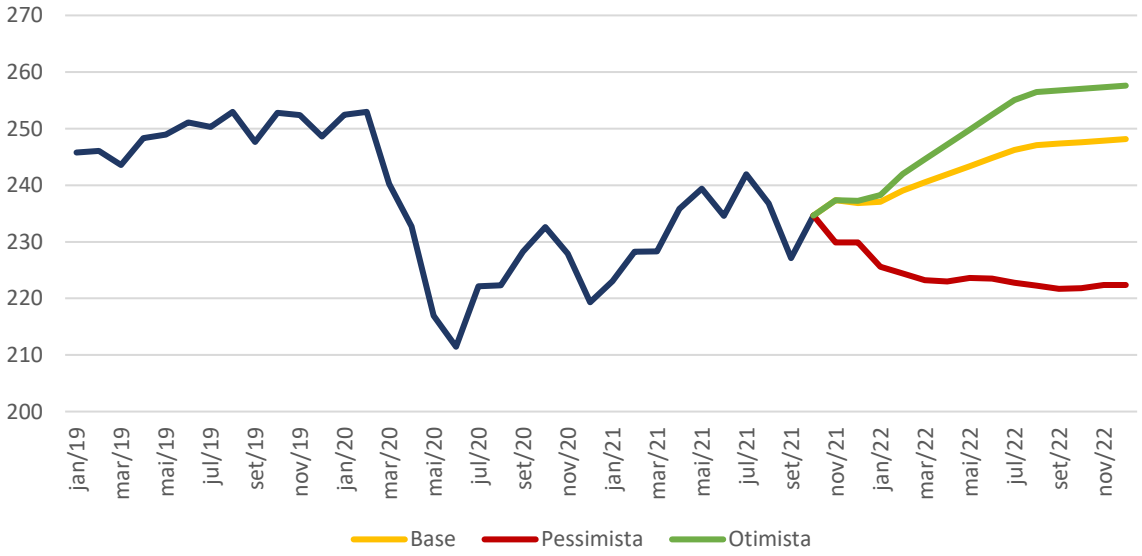
# Wage bill will depend on EP and real income

- We considered two scenarios for the EP dynamics and three scenarios for the average real income of workers. For the EP, we consider a return to trend growth from 2022 (Base) and a pessimistic scenario, in which there is a reduction in the employed population.
- For the average income, our base case scenario takes into account the wage and price inflation projections for 2022. In the pessimistic scenario, the yield is stable at the current level and, in the optimistic one, it quickly returns to the pre-crisis level.

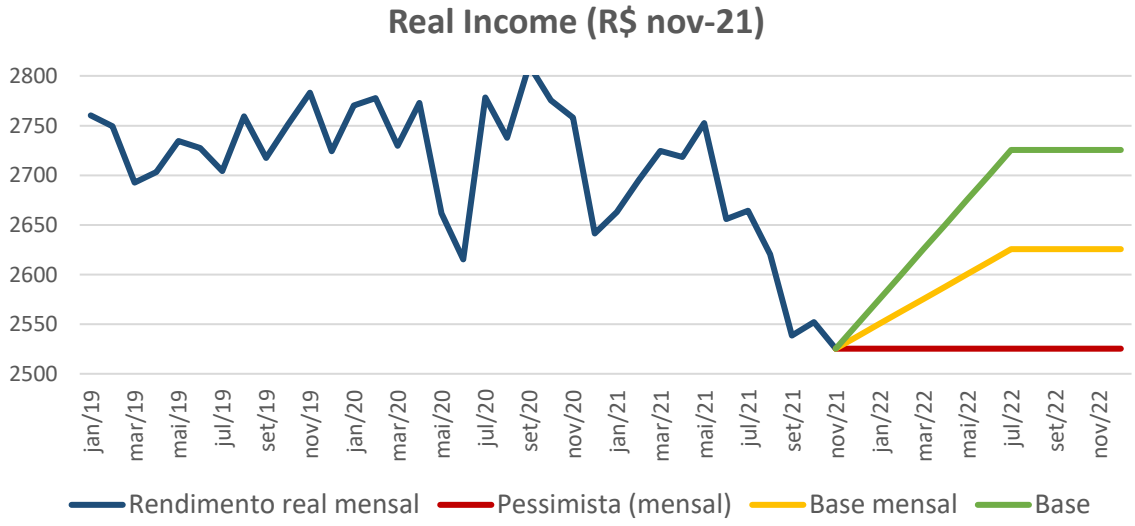
**Scenarios for EP and real income**




**Scenarios for real wage bill (R$, Nov-21)**




**Real Income (R$ nov-21)**

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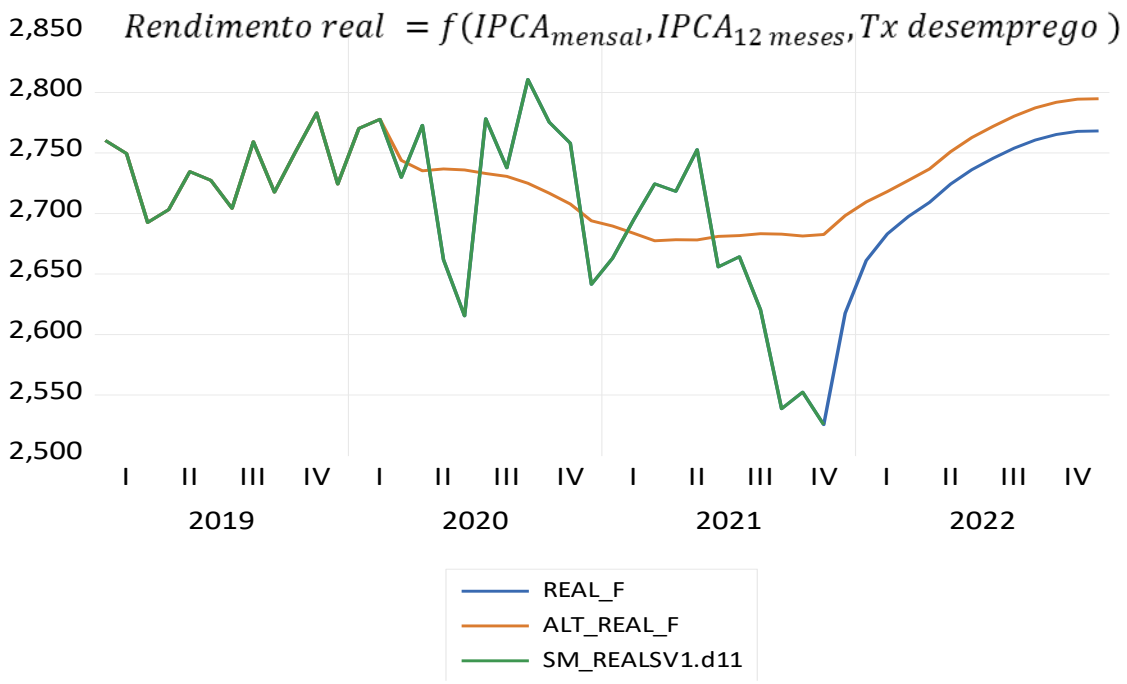
Source: IBGE, FIPE, Mar Asset Management

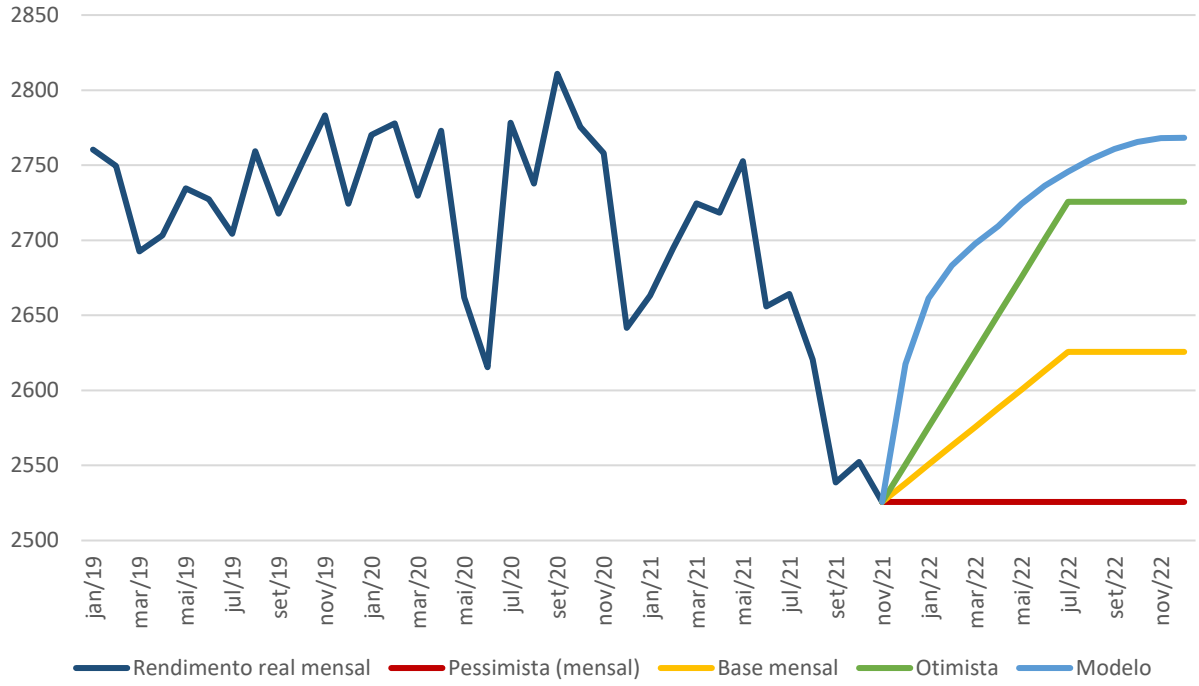
# 2021 drop in real income was non-standard

- The reduction in real income in recent months has been very intense and unprecedented in the (short) historical series. In fact, an econometric model that related real wages to unemployment rates, past inflation (short and long) among other variables shows a trajectory quite compatible with reality until May. Since June, there is a detachment between the observed and the estimated (orange line), which has only become even more evident in recent months.
- A return to the more usual relationship between these variables is an important high risk for wage bill (consumption). In fact, the model projected trajectory is above the optimistic scenario considered for the recovery of real income.

**Counterfactual real income, observed and projected (R$, Nov-21)**




**Scenarios for PNADC real income (R$of Nov-21)**

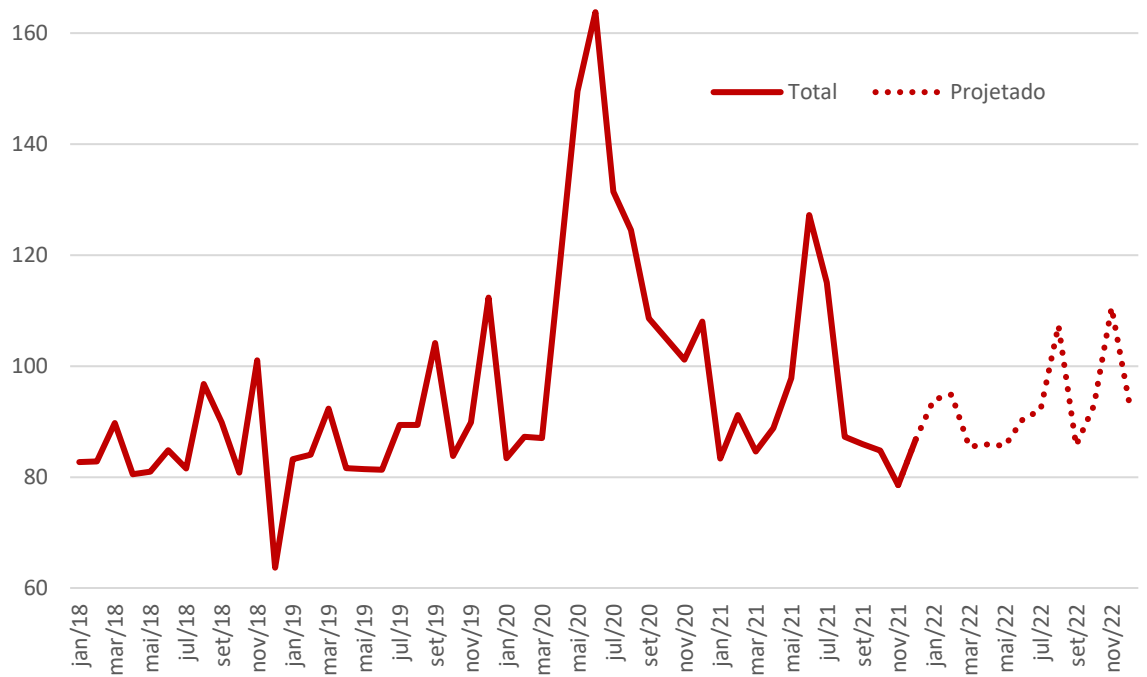



Source: Tesouro Nacional, Mar Asset Management

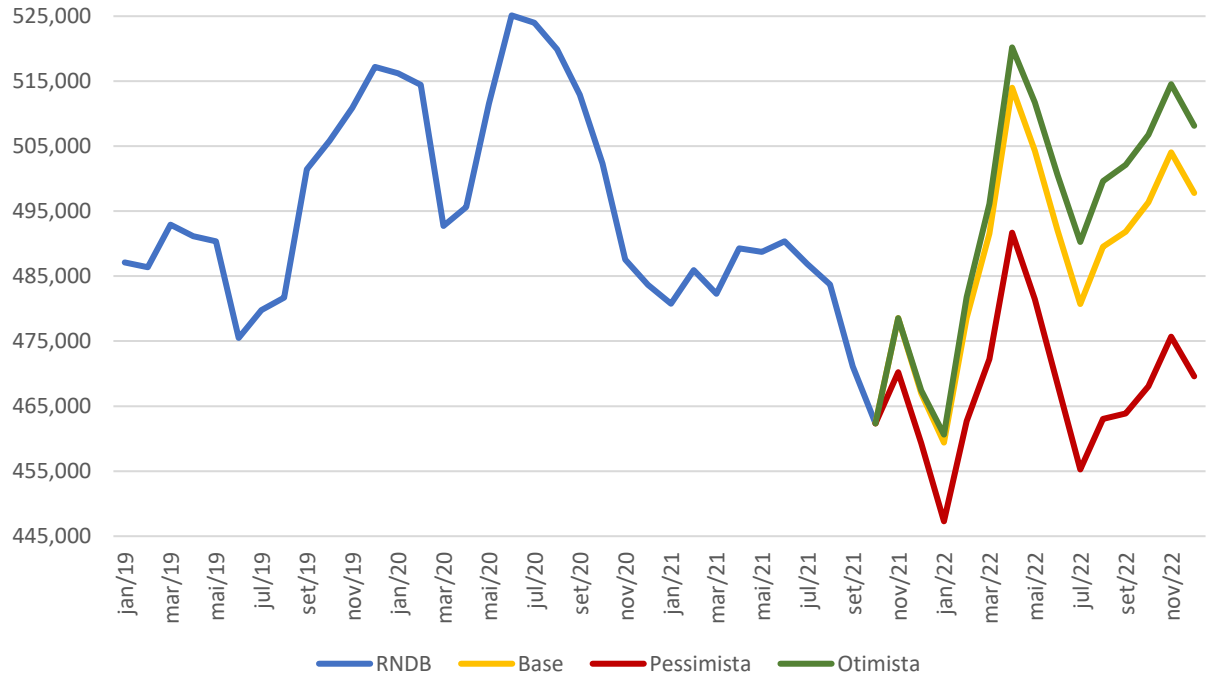
# INSS and AE explain vol. of government transfers

- Government transfers to households have shown higher than usual volatility. Deducting this volatility, the level of transferences in recent months is close to pre-crisis levels.
- The main sources of volatility are emergency aid payments and anticipation of the thirteenth salary of Social Security Benefits. In June and July, for example, there was an unusual concentration of pension payments, offset by a reduction in subsequent months. This may be behind the latest slowdown in consumption.

**Transfers from the Union to families (R$, Dec-21, SA)**




**Scenarios for RNDB (R$, billions of Oct-21)**

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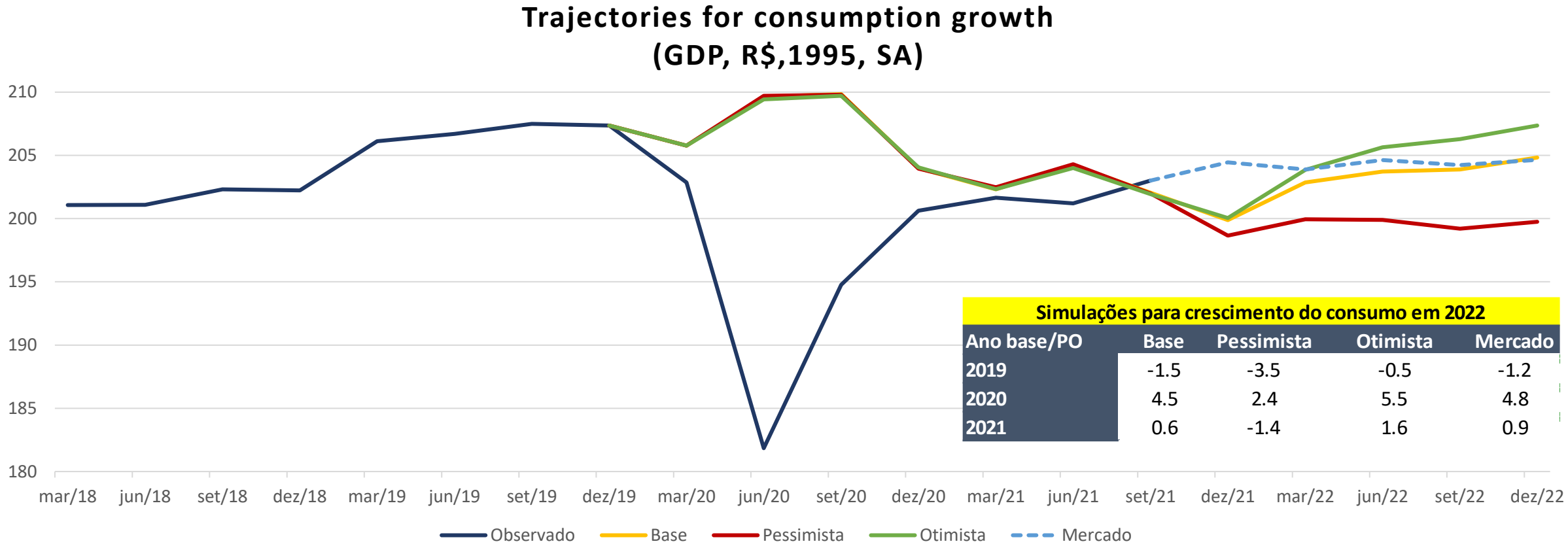
Source: Tesouro Nacional, Mar Asset Management

# Base scenario is in line with market expectations

- Assuming that the relationship between consumption and RNDB returns to normal in 2022, we calculated what would be the trajectory of household consumption for the different scenarios considered for recovery of the labor market and government transfers.
- In the base scenario, consumption would increase by 0.6% compared to 2021, but would still be -1.5% below the 2019 level. This scenario is very similar to the market expectation from BBG, which expects growth of 0.9% compared to 2021. That is, the market consensus is compatible with a trajectory of recovery of real income in the medium term.




| Simulações para crescimento do consumo em 2022 | | | | |
|---|---|---|---|---|
| Ano base/PO | Base | Pessimista | Otimista | Mercado |
| 2019 | -1.5 | -3.5 | -0.5 | -1.2 |
| 2020 | 4.5 | 2.4 | 5.5 | 4.8 |
| 2021 | 0.6 | -1.4 | 1.6 | 0.9 |

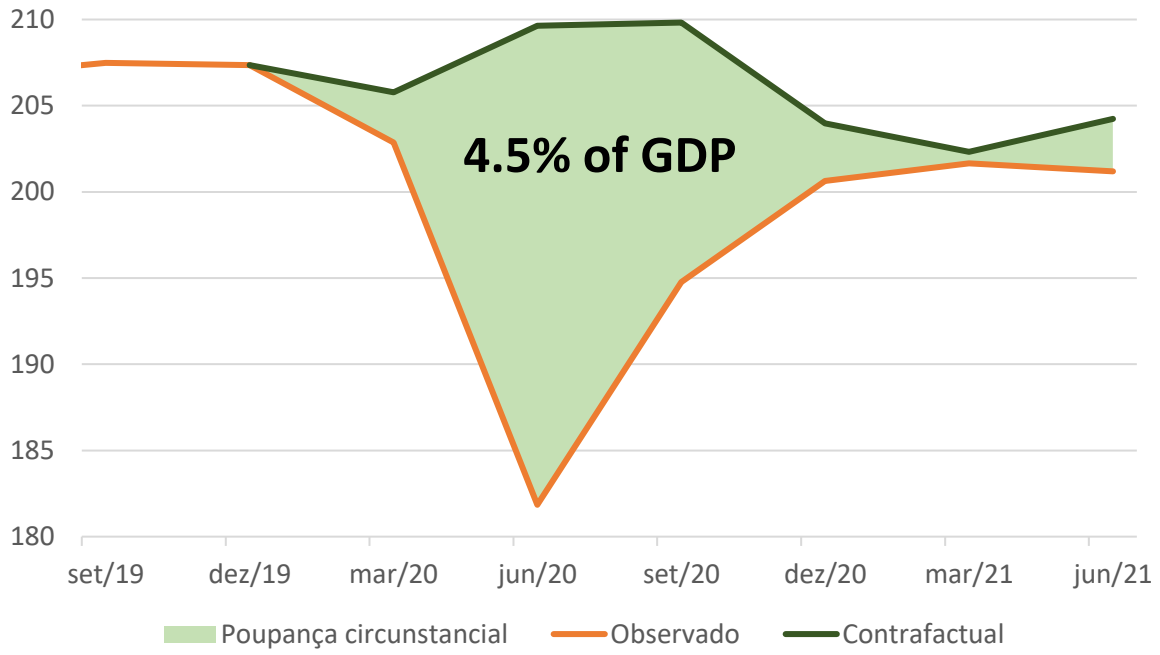
Source: Tesouro Nacional, Mar Asset Management

# Circumstantial savings

# Use of circumstantial savings is a positive risk

- As in other countries, the increase in household liquidity in a much larger proportion than the increase in consumption has enabled the formation of a very high circumstantial savings in Brazil. We estimate circumstantial savings of 4.5% of GDP.
- This saving is calculated as follows: we calculated what the trajectory of consumption would have been if the historical relationship between consumption and RNDB had been maintained throughout 2020 and 2021 – counterfactual consumption. Circumstantial saving is the difference between this counterfactual consumption and that actually observed.
- This exacerbated liquidity generates a much higher than normal uncertainty when we project growth in the medium term, as we do not know at what speed households will deploy circumstantial savings to maintain a higher level of consumption.
- The table on the side shows consumption growth for 2022 under different hypotheses for the behavior of RNDB and deployment of circumstantial savings. In the base scenario for household income growth, consumption growth would be 2.0% if 20% of the circumstantial savings are used.
- Each 10% use of circumstantial savings is equivalent to approximately 0.7pp more consumption growth in 2022.

**Observed consumption, counterfactual and circumstantial savings (R$1995, SA)**




**Simulations for consumption growth in 2022**

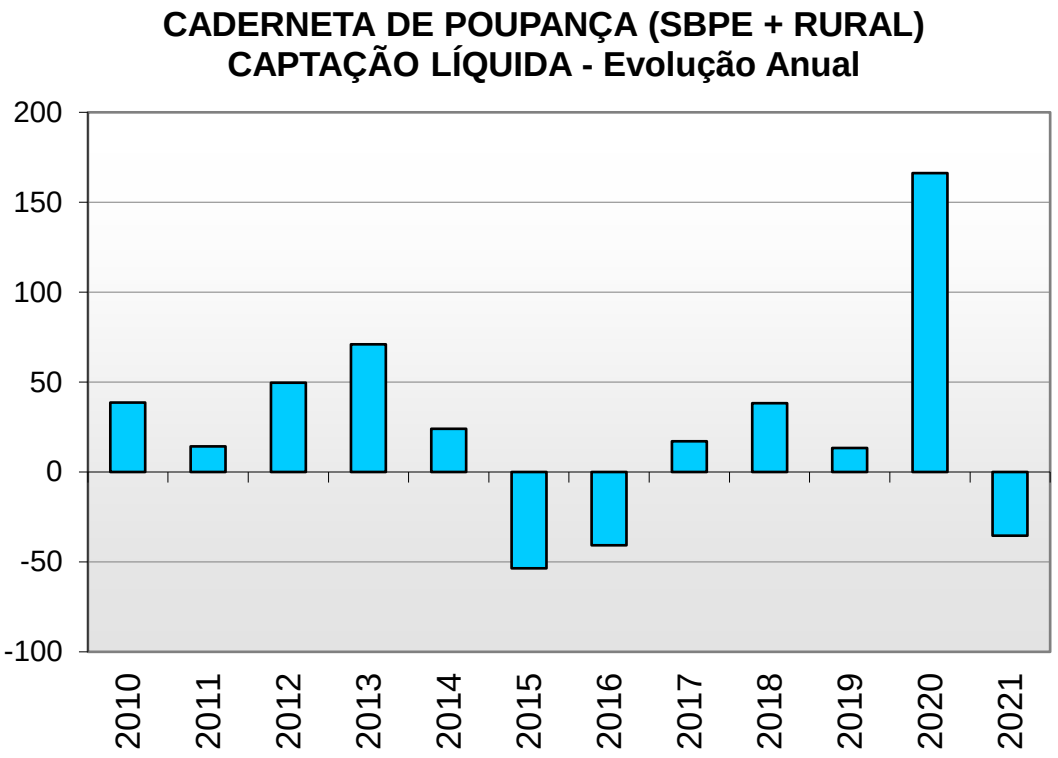
| PO/Despoupança | 0 | 10 | 20 | 30 | 40 | 50 |
|---|---|---|---|---|---|---|
| Pessimista | -1.4 | -0.7 | 0.0 | 0.7 | 1.3 | 2.0 |
| Base | 0.6 | 1.3 | 2.0 | 2.7 | 3.4 | 4.1 |
| Otimista | 1.6 | 2.3 | 3.0 | 3.7 | 4.4 | 5.0 |

Source: IBGE, Mar Asset Management

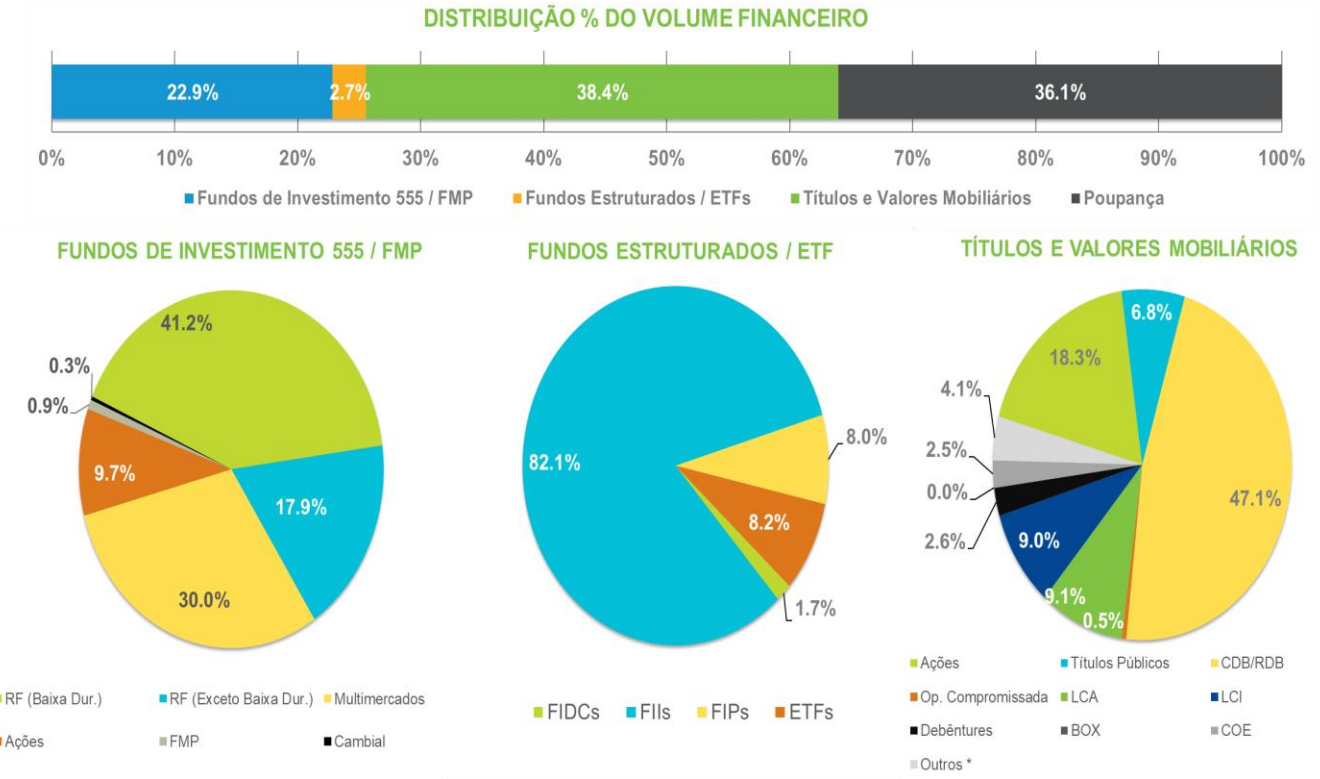
# Increase in the savings balance of 1.5% of GDP in 2020 and 21

- A relevant part of the circumstantial savings is still invested in the savings account. The net balance of savings in the 2020-21 biennium was R$130 billion (1.5% of GDP). As savings account for 36% of retail clients' investments, this increase in savings is quite compatible with our estimate of circumstantial savings of 4.5% of GDP.

**Net savings inflow (R$, billions)**




**Distribution of Brazilian investments within the retail network (%)**

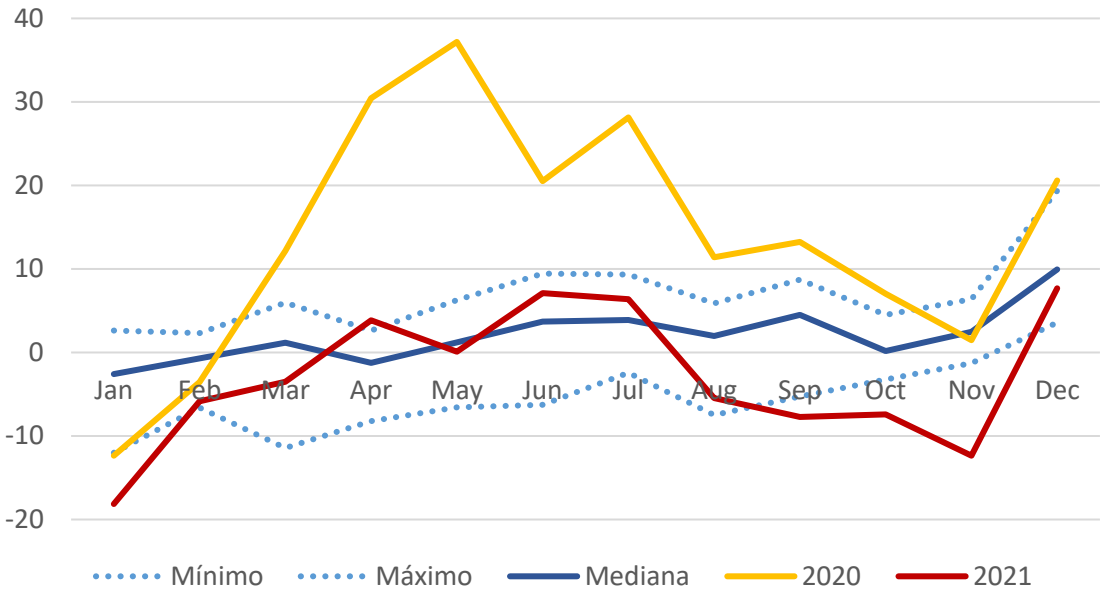



Source: BCB, Anbima, Mar Asset Management

# Net savings outflow - second half of 21

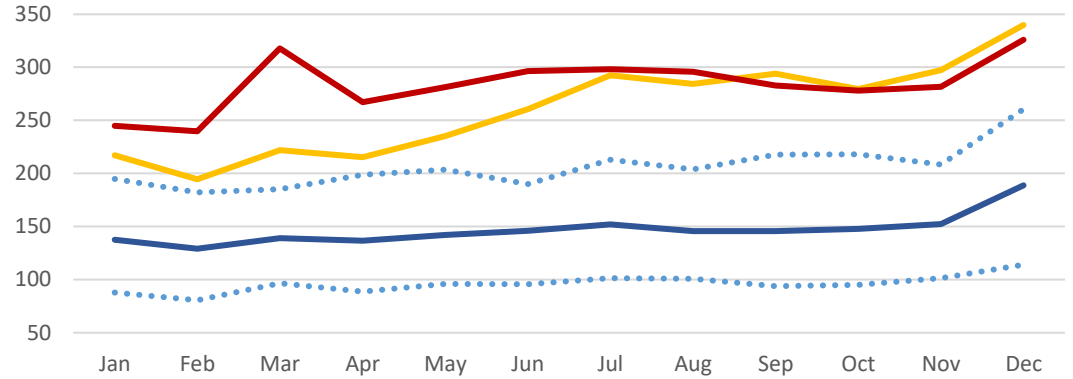
- The monthly dynamics of savings account inflow are in line with our estimate of circumstantial savings. There was a very significant increase in the balance during March and October 2020, a time with the greatest negative effects of the crisis.
- As of August 2021, there was a net outflow of savings, indicating that part of it is being used to keep consumption at a higher level.

**Monthly net savings inflow (R$, billions)**

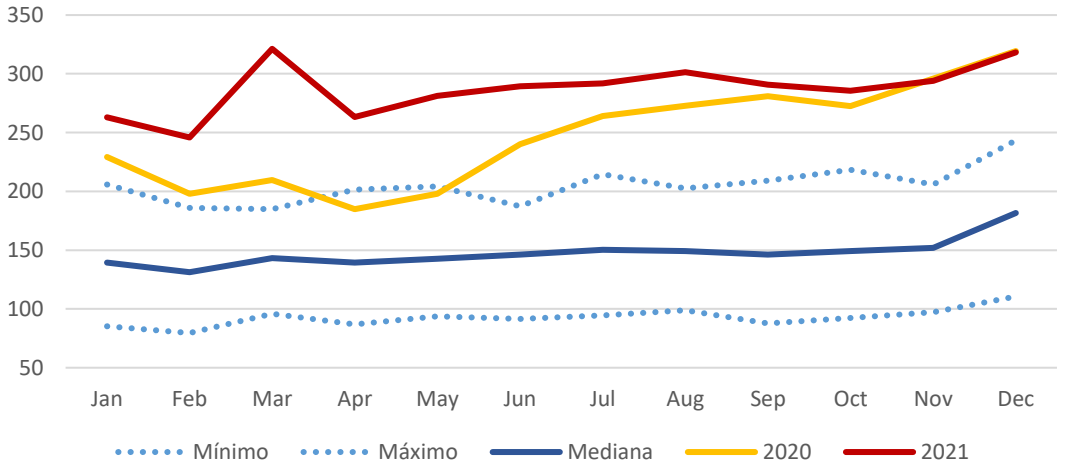



**Deposits and withdrawals from savings account (R$, billions)**

Deposits




Withdraw



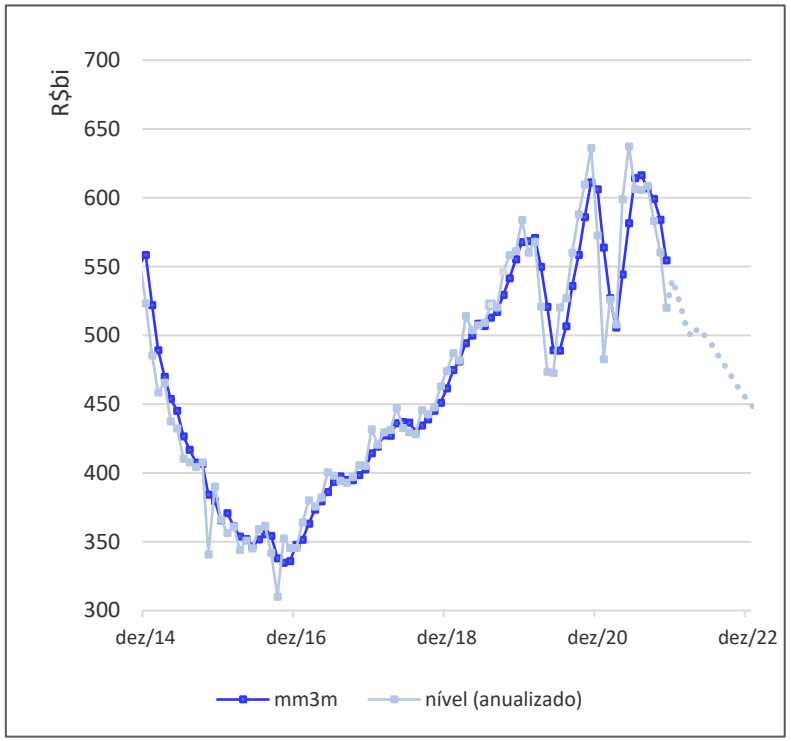

Source: BCB, Mar Asset Management

# Credit

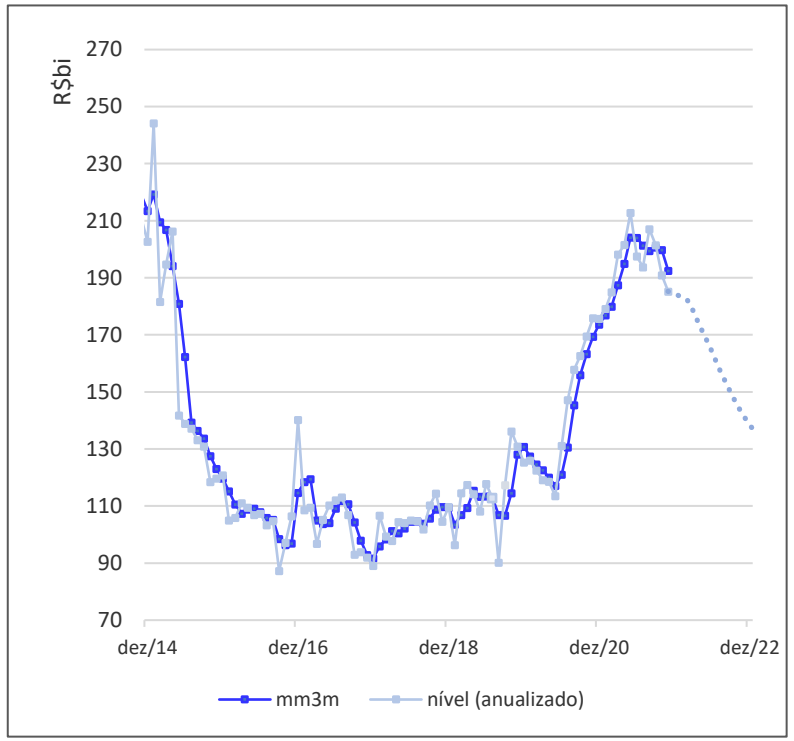
# Credit slowdown is negative risk

- A fairly intense credit contraction is a negative risk for the 2022 growth projections. Itaú, for example, estimates that concessions will shrink about R$100 billion between credit to individuals and legal entities. If we assume a direct impact on consumption, this contraction would reduce GDP by about 1.0% and would cancel out, for example, the use of 20% of circumstantial savings.

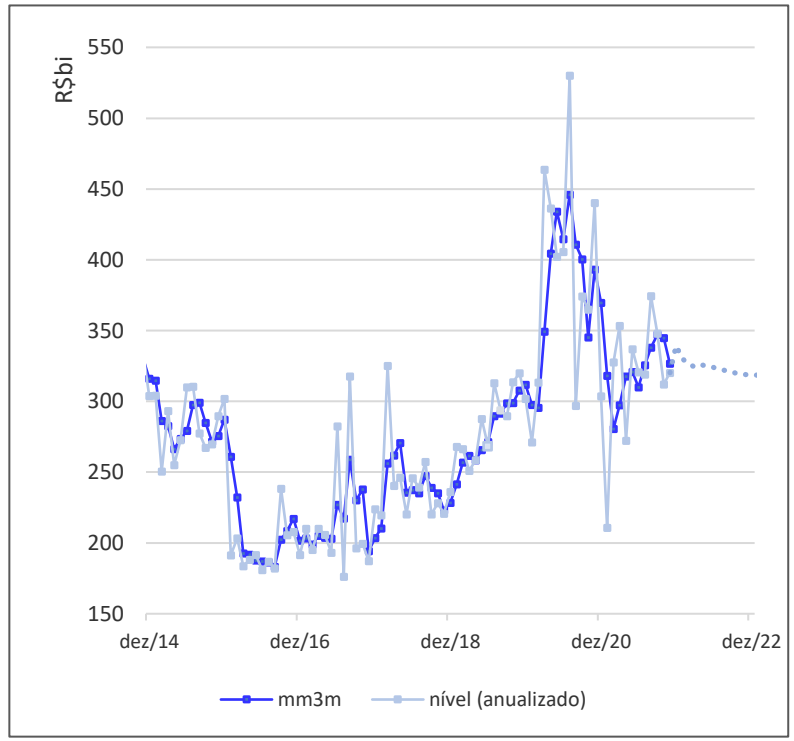
**Concessions - Core Individuals (Annualized real with seasonal adjustment, R$ billion)**




**Concessions - Housing (Annualized real with seasonal adjustment, R$ billion)**




**Concessions - Core Corporate (Annualized real with seasonal adjustment, R$ billion)**




mar asset management

Source: Itaú, BCB, Mar Asset Management

# Credit contraction is not a consensus

- However, a credit crunch is not a consensus. Especially not in a similar magnitude to that expected by Itaú. The Central Bank, for example, estimates an increase in the credit balance of 11.7% for individuals. Bradesco and Santander estimate credit growth of 4.7% and 7.5%, respectively.

**Projection for credit growth - Central Bank of Brazil (%p.a.)**

Variação % em 12 meses

| | Ocorrido | | | Proj. 2021 | | Proj. 2022 | |
|---|---|---|---|---|---|---|---|
| | 2019 | 2020 | Out 2021 | Anterior | Atual | Anterior | Atual |
| Total | 6,5 | 15,6 | 16,0 | 12,6 | 14,6 | 8,5 | 9,4 |
| Livres | 14,0 | 15,4 | 18,8 | 15,7 | 17,7 | 11,1 | 12,5 |
| PF | 16,5 | 10,8 | 21,3 | 18,0 | 20,0 | 12,0 | 13,0 |
| PJ | 11,0 | 21,2 | 15,9 | 13,0 | 15,0 | 10,0 | 12,0 |
| Direcionados | -2,4 | 15,9 | 12,3 | 8,3 | 10,5 | 4,8 | 4,8 |
| PF | 6,6 | 11,7 | 17,8 | 14,0 | 17,0 | 10,0 | 10,0 |
| PJ | -14,0 | 22,8 | 4,2 | 0,0 | 1,0 | -4,0 | -4,0 |
| Total PF | 11,9 | 11,2 | 19,7 | 16,2 | 18,6 | 11,1 | 11,7 |
| Total PJ | -0,1 | 21,8 | 11,4 | 8,0 | 9,6 | 5,0 | 6,3 |

**Projection for credit growth - Bradesco and Santander (%p.a.)**

Santander Macroeconomic Research

Brasil - Variáveis Econômicas

| | | | | | Projeções | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Crescimento Crédito (%) | -0.4 | 5.1 | 6.5 | 15.6 | 14.7 | 4.7 | 3.3 | 9.8 | 9.7 |
| Crédito (%PIB) | 47.2 | 46.6 | 46.9 | 54.0 | 52.8 | 51.6 | 51.2 | 53.3 | 55.5 |

bradesco

| | 2018 | 2019 | 2020 | 2021 | 2022* | 2023* |
|---|---|---|---|---|---|---|
| CRÉDITO | | | | | | |
| Crédito Geral (Cresc. em % aa.) | 5.1 | 6.5 | 15.6 | 16.5 | 7.5 | 6.5 |
| Crédito Livres total (Cresc. em % aa.) | 10.9 | 14.0 | 15.4 | 20.7 | 9.0 | 8.0 |

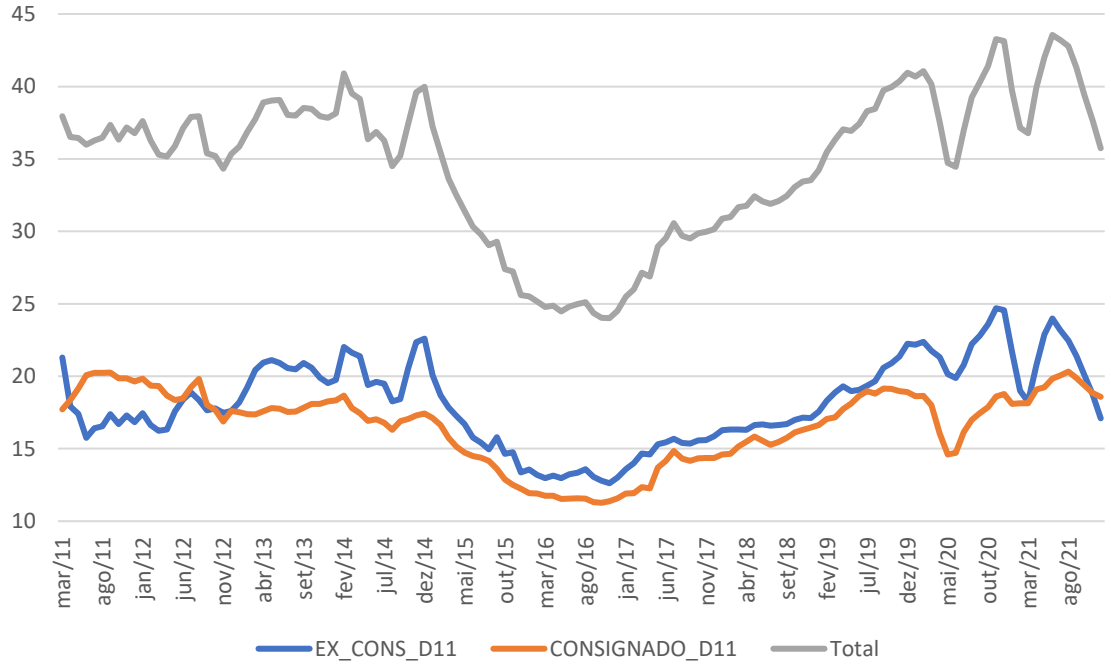
mar asset management

Source: BCB, Santander, Bradesco, Mar Asset Management

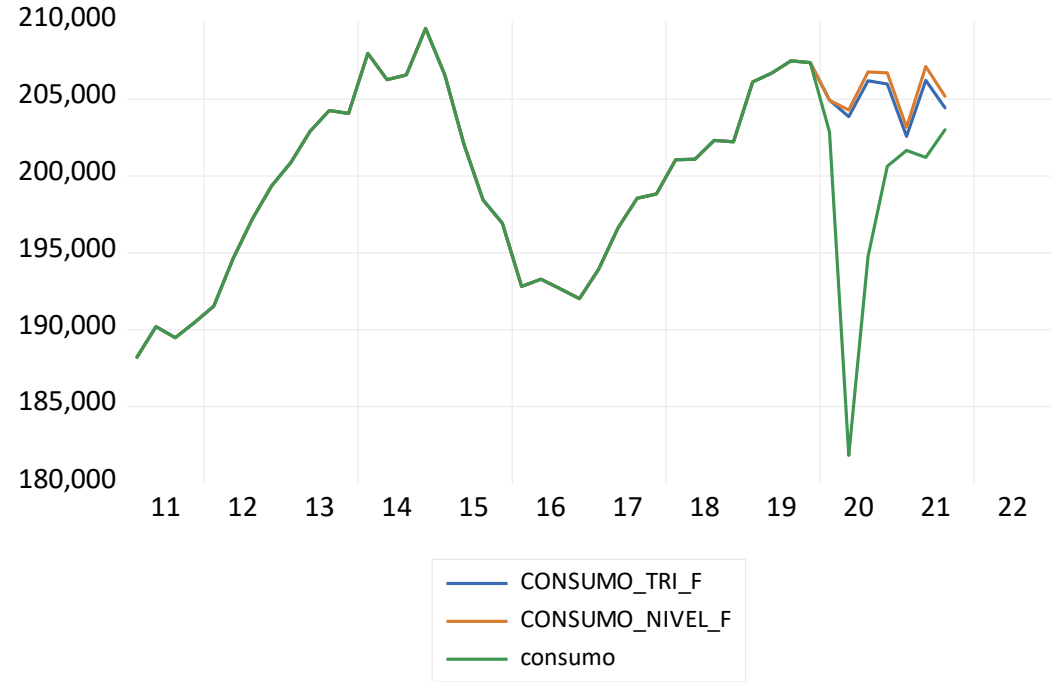
# Payroll-deductible loans showed unusual volatility in 21

- The concessions for individuals of the most sensitive items to consumption showed a much unusual oscillation since the beginning of the pandemic. In 2021, in particular, it showed a strong contraction in the first quarter, a strong recovery in the middle of the year and returned to a very low level at the end of the year. This volatility, which was explained by payroll-deductible loans, was not reflected in consumption fluctuations.
- When we consider the level of credit and income concessions in determining household consumption, our models suggest that consumption should be at a higher level. Both disposable income and credit concessions were at very similar levels as in 2019, but household consumption remained below throughout 2021.

**Credit concessions – Core Individuals (R$, billions of Dec-21)**




**Counterfactual scenarios for consumption in 2021 (R$, Nov-21)**




Source: BCB, Itaú, Mar Asset Management

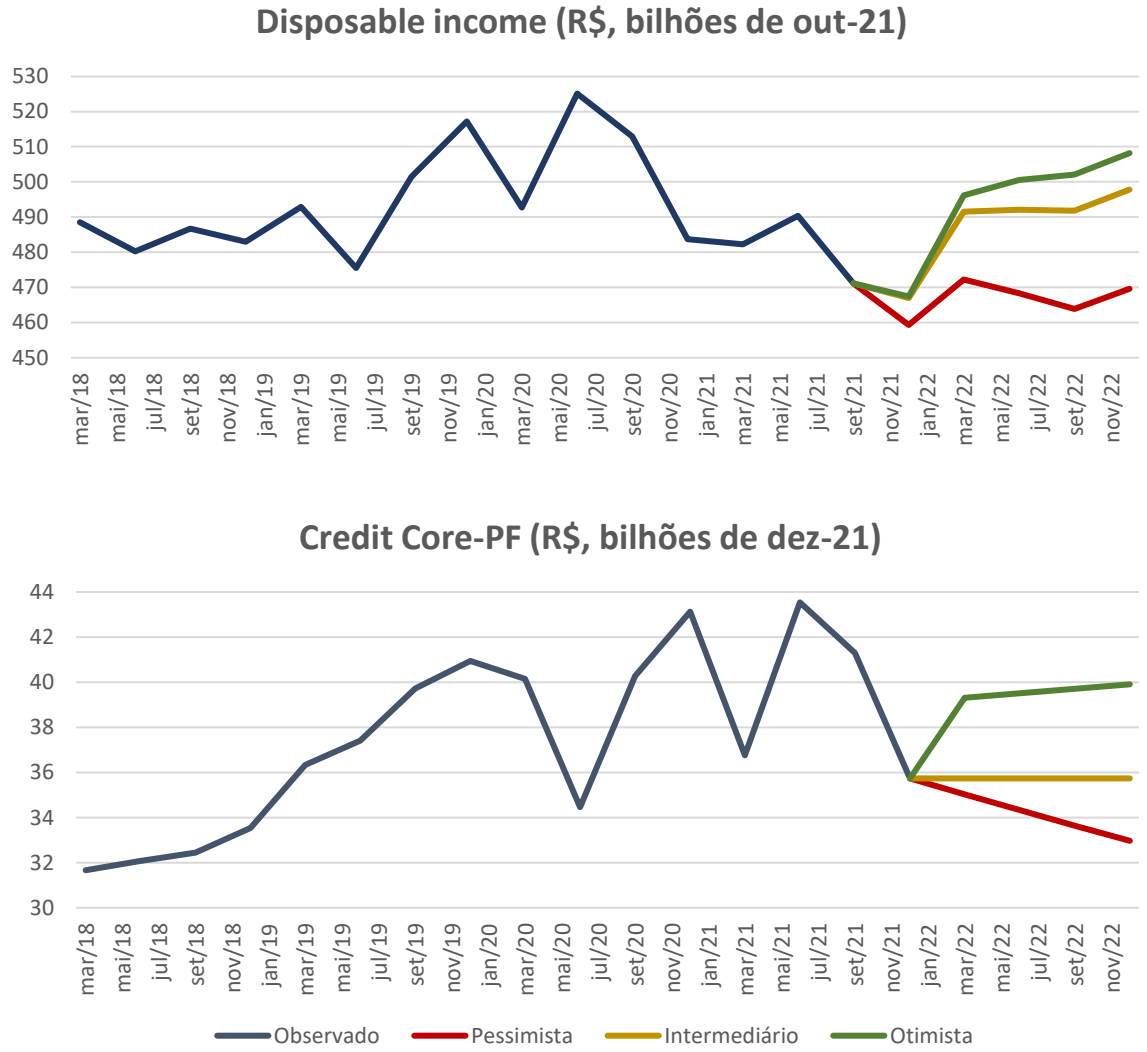
# Credit, income and savings will determine consumption in 22

- We consider three scenarios for the dynamics of credit concessions for Core-Individual in 2022. In the pessimistic scenario, concessions continue to contract at a rate of 2% per quarter. In the intermediate scenario, they keep the same level of December 2021. In the optimist scenario, they return to the average level of 2021 in the first quarter of 2022 and grow at 0.5% per quarter for the rest of the year.
- We simulated how consumption growth would be in the combination of these scenarios. In the optimistic scenarios for both cases, the consumption growth would be 2.0%. In the pessimistic scenario, a contraction of -1.7%.
- The scenarios do not consider the deployment of circumstantial savings. Each 10% use of circumstantial savings is equivalent to approximately 0.4pp more consumption growth in 2022.
- 

**Scenarios for consumption growth in 2022 (% compared to 2021)**

| Credit / Income | Pessimist | Intermediary | Optimist |
|---|---|---|---|
| **Pessimist** | -1.7 | -1.0 | 0.4 |
| **Intermediary** | -0.4 | 0.2 | 1.6 |
| **Optimist** | 0.0 | 0.6 | 2.0 |

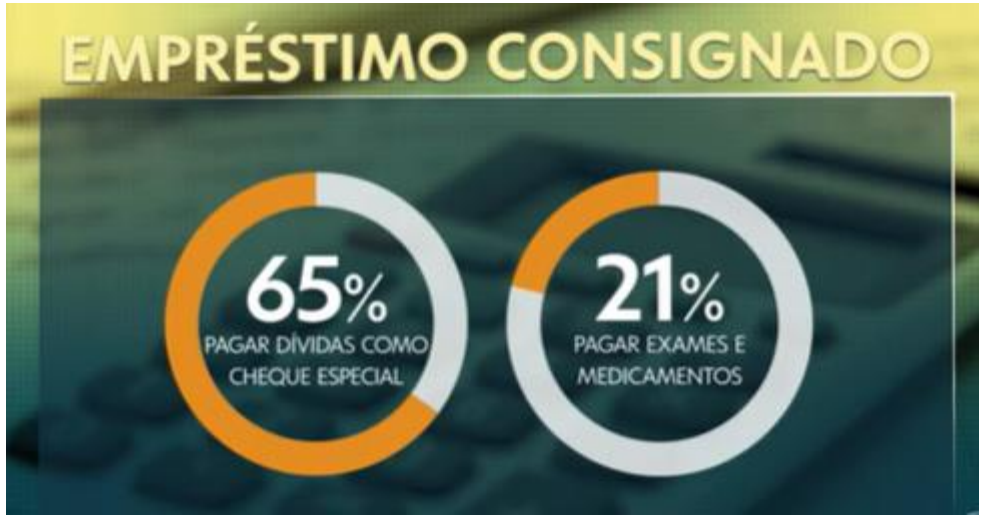
**Scenarios for RNDB and Core-Individuals Credit**




Source: BCB, Itaú, Mar Asset Management

# Appendix

# 1/3 of payroll-deductible loan is for refinancing






**Purpose of loans for individuals in 2018**

*FINALIDADES DO DINHEIRO QUE CONSEGUIU COM O* ***EMPRÉSTIMO PESSOAL***

| | |
|---|---|
| Pagar dívidas de outros empréstimos, cartão de crédito, prestações | 24% |
| Reformar a casa/apartamento | 19% |
| Abrir um negócio | 15% |
| Fazer uma viagem | 15% |
| Pagar contas do dia a dia como água, luz, telefone, aluguel, condomínio, escola | 12% |
| Comprar/trocar de carro | 10% |
| Comprar roupas/sapatos | 9% |
| Comprar mantimentos e comida para casa | 6% |
| Compra de eletroeletrônicos | 6% |
| Fiz empréstimo para outra pessoa | 6% |
| Dar entrada ou comprar imóvel | 5% |
| Compra de celular | 4% |
| Comprar eletrodomésticos | 4% |
| Comprar móveis | 3% |
| Pagar exames, remédios ou consultas médicas | 3% |
| Prefiro não responder | 10% |

*FINALIDADES DO DINHEIRO QUE CONSEGUIU COM O* ***EMPRÉSTIMO CONSIGNADO***

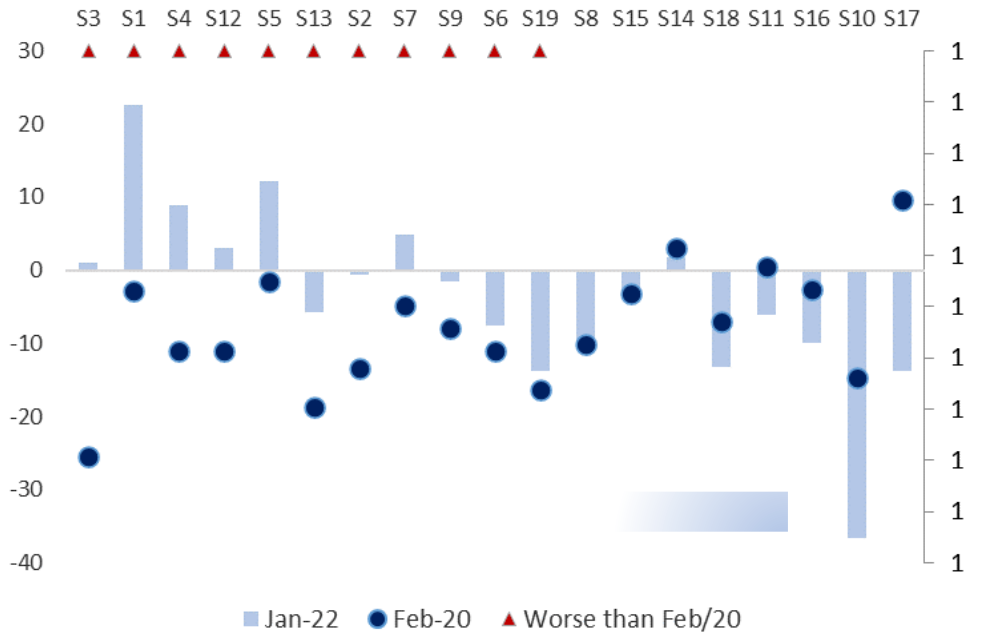
| | |
|---|---|
| Pagar dívidas em atraso de outros empréstimos, cartão de crédito, prestações, contas em geral | 30% |
| Reformar a casa/apartamento | 20% |
| Pagar contas do dia a dia como água, luz, telefone, aluguel, condomínio, escola | 16% |
| Comprar mantimentos e comida para casa | 14% |
| Comprar/trocar de carro | 13% |
| Fazer uma viagem | 12% |
| Fiz empréstimo para outra pessoa | 10% |
| Imprevistos com manutenção de automóvel/moto | 10% |
| Abrir um negócio | 8% |
| Compra de eletroeletrônicos | 7% |
| Pagar exames, remédios ou consultas médicas | 7% |
| Comprar móveis | 6% |
| Comprar eletrodomésticos | 5% |
| Comprar roupas/sapatos | 4% |
| Dar entrada ou comprar imóvel | 4% |
| Compra de celular | 3% |
| Prefiro não responder | 7% |

Source: IBGE, Mar Asset Management

# Brazil: Inventories showing improvement

## Difference between insufficient and excessive inventory levels

| | S3 | S1 | S4 | S12 | S5 | S13 | S2 | S7 | S9 | S6 | S19 | S8 | S15 | S14 | S18 | S11 | S16 | S10 | S17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Feb-20 | -25.4 | -2.8 | -11 | -11 | -1.6 | -18.7 | -13.4 | -4.8 | -7.9 | -11 | -16.4 | -10.2 | -3.2 | 3 | -7.1 | 0.4 | -2.7 | -14.7 | 9.7 |
| Mar-20 | -13.7 | -1.4 | -8.7 | -6 | 3.2 | -13.6 | -3.5 | -3 | -1.8 | -6.9 | 2.5 | -9.9 | -3.5 | 0.4 | -14.9 | -2.6 | 12.3 | -3.9 | 5.3 |
| Apr-20 | 3.3 | -40.4 | -42.3 | -14.3 | -14.7 | -30.2 | -13.6 | -31.3 | -6.9 | -15.1 | -19.2 | -26.5 | -11.3 | 1.2 | -15.9 | -9.2 | 4.3 | -30.8 | 2.8 |
| May-20 | -9.5 | -2.3 | -21.2 | -28.4 | -4.8 | -29.2 | -23.4 | -3.9 | -11.3 | -12.9 | -25.9 | -29.8 | -9.5 | -3.9 | -25.2 | -32.9 | -7.4 | -16.8 | -4.9 |
| Jun-20 | -5.3 | -10.7 | -35.1 | -31.3 | -2 | -28.5 | -24.3 | -16.1 | -17.3 | -14.5 | -24.9 | -22.4 | -2.4 | -1.4 | -25.4 | -6.6 | -12.7 | -21.4 | -4.1 |
| Jul-20 | -2.2 | -7.7 | -35.9 | -29.7 | 2.7 | -26.1 | -13.4 | -0.9 | -15.7 | -10.9 | -43.6 | -13.4 | 0.4 | 1.2 | -12.7 | 1 | -19.6 | -30.4 | 3.7 |
| Aug-20 | -5.7 | 1.6 | -20.2 | -14 | 2.8 | -22.4 | -4.2 | 2.1 | -13.2 | -3.8 | -40.4 | -11 | 1.5 | 1.7 | -7.2 | 8.3 | -33.4 | -15.9 | 7.6 |
| Sep-20 | 4.1 | 0.4 | -1.1 | -10.8 | 6.2 | -16.2 | -9.1 | 8.9 | -9.9 | 4.8 | -41 | -16.6 | 5 | 2.9 | -0.5 | 14.6 | -18.9 | -5 | 13.8 |
| Oct-20 | -4.1 | 4.4 | 19 | -1.7 | 8.4 | -10.3 | -4.6 | 14.5 | -13.9 | 9.6 | -43.7 | -8.2 | 7.7 | 1.5 | 0.3 | 22.9 | -20.8 | -9.6 | 28 |
| Nov-20 | -8.3 | 10.8 | 25.9 | 8.6 | 15.5 | -1.9 | 5.7 | 13.8 | -10.2 | 17.1 | -24.4 | 2.6 | 14.7 | 0.4 | 7.4 | 23.5 | -12 | -8.7 | 29.4 |
| Dec-20 | -9.5 | 12.3 | 34 | 15 | 13 | -8.8 | 3.3 | 14.5 | -3 | 18 | -20.7 | 5.5 | 13.5 | 4.2 | 10.5 | 29.1 | -8.2 | 4.9 | 24.9 |
| Jan-21 | -27.1 | 25 | 32.1 | 13.4 | 14.5 | -5.7 | 6.2 | 9 | -7 | 12.7 | -24.3 | 0.6 | 7.4 | 1.5 | 11.7 | 26.2 | -4.2 | 0.5 | 21.1 |
| Feb-21 | -17.9 | 28.3 | 17.8 | 9.4 | 6.5 | 2.2 | 11.4 | 2.3 | 2 | 14.3 | -46.8 | 4.7 | 2.6 | 0.7 | 6.6 | 22.7 | -3.3 | -8.3 | 14.8 |
| Mar-21 | -6.7 | 11.8 | -6.7 | 8.5 | 15.7 | 8.9 | 7 | -3.3 | 1.8 | 13.2 | -39.8 | -6.5 | -2.8 | 1.9 | 19.1 | 25.1 | -9.4 | 5.6 | 0.3 |
| Apr-21 | -17.6 | 17.4 | 19.2 | 11.6 | 7.8 | 5.4 | 11.3 | -9 | -1.1 | 6.4 | -38.9 | -15.6 | -7.5 | 1.3 | 5.8 | 20.9 | -6.5 | -13.7 | 3.7 |
| May-21 | -5.3 | 32.6 | -1.9 | 1.1 | 22.3 | -8.7 | 11.8 | 1.8 | -2.2 | 6.6 | -32.6 | -4.6 | -7.1 | -0.1 | -6.8 | 16.7 | -17 | -17.7 | 3.3 |
| Jun-21 | -1 | -4.2 | 0.7 | 4.9 | 33.1 | -18.7 | 13.5 | 7.2 | -0.7 | 16.4 | -39.4 | -0.3 | -10 | 0.2 | 2.5 | 15.3 | -13.1 | -22.5 | 5.5 |
| Jul-21 | 2.6 | 28 | -6.3 | 0.3 | 18.1 | -16.9 | 9.1 | 4.9 | 0.8 | 13.5 | -17.9 | -2.7 | -5.8 | 2 | -11.3 | 16 | -17.4 | 10.5 | 5.9 |
| Aug-21 | 6.3 | 19.8 | 1.4 | -6.8 | 26.6 | -18.2 | 5 | 1.3 | -1.6 | 8 | -38.9 | 6.1 | -2.3 | 3.8 | -14.2 | 8.9 | -33.7 | -1 | 10.4 |
| Sep-21 | 6.9 | 18.3 | 4.3 | 4 | 13.3 | -0.5 | 6.9 | 6.4 | -9.9 | 5.2 | -23.2 | 15 | -1.7 | 0 | -20.2 | 14.3 | -20 | 10.8 | 2.2 |
| Oct-21 | -3 | 19.8 | 16.9 | -6.6 | 14.9 | -8.9 | 0.9 | 2.6 | -2.1 | 5.1 | -20.2 | 6.7 | -4.4 | -0.2 | -20.5 | 2.9 | -8 | -0.5 | 7.9 |
| Nov-21 | -11.2 | 22.8 | 2.3 | -10.8 | 10.1 | -19.2 | 5.4 | 1.3 | -5.1 | -2.7 | -41.8 | -4.6 | -7.6 | -1.2 | -21.1 | 2.2 | -12.2 | -12.4 | -1.1 |
| Dec-21 | -4.9 | 14.1 | -2 | -6.1 | 8.7 | -8.6 | -1.9 | 1.7 | -5.7 | -3.8 | -41.5 | -5.5 | -5.2 | 1.9 | -21.9 | -5.8 | -10.3 | -31.4 | -8.7 |
| Jan-22 | 1 | 22.5 | 8.8 | 3 | 12.2 | -5.7 | -0.6 | 4.8 | -1.6 | -7.5 | -13.7 | -9.9 | -3.5 | 1.7 | -13.3 | -6.2 | -10 | -36.6 | -13.7 |

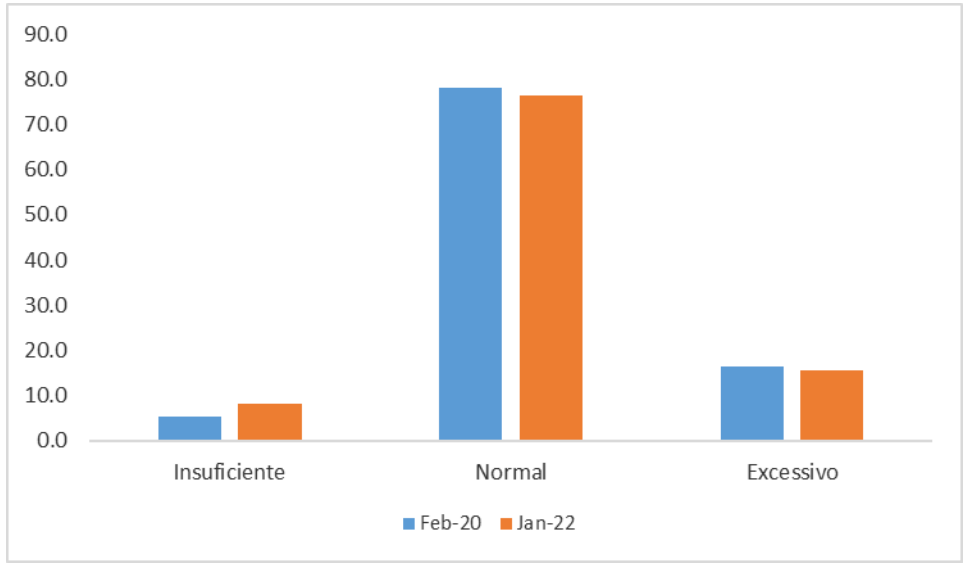



| | | | | | |
|---|---|---|---|---|---|
| S1- | VEHICLES | S7- | OTHER PRODUCTS | S13- | CHEMISTRY |
| S2- | METALLURGY | S8- | LEATHER AND FOOTWEAR | S14- | DERIV. OF OIL AND BIOCOMB. |
| S3- | CLEANING AND COSMETICS | S9- | PULP & PAPER | S15- | FOOD |
| S4- | TEXTILE | S10- | IT AND ELECTRONICS | S16- | PHARMACEUTICAL |
| S5- | NON METALLIC MINERALS | S11- | METAL PRODUCTS | S17- | PLASTIC PRODUCTS |
| S6- | CONSTRUCTION MATERIAL | S12- | MACHINERY AND EQUIPMENT | S18- | MACHINERY AND ELECTRICAL MATERIALS |
| | | | | S19- | OTHER EQUIP. TRANSPORT |

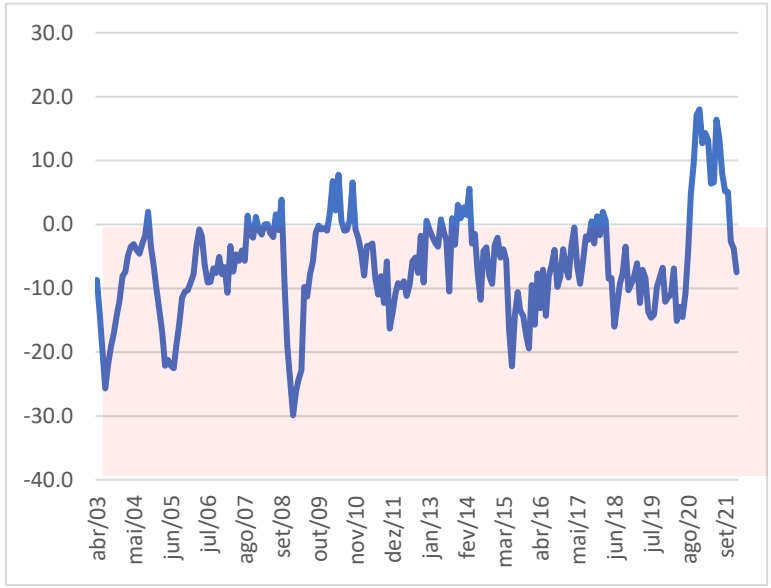
# The construction materials sector is showing inventory normalization

## Level of construction material inventories

### Comparison of the percentage of respondents Feb/20 x Jan/21



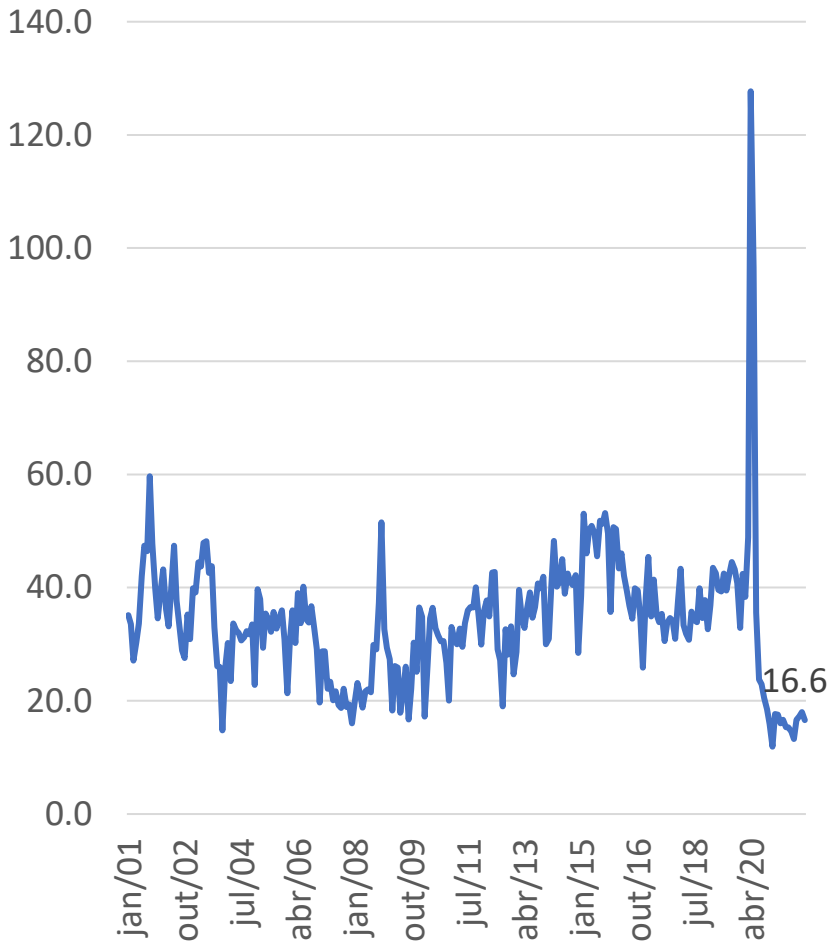

### Difference in the percentage of respondents with inventories at insufficient levels vs. excessive levels



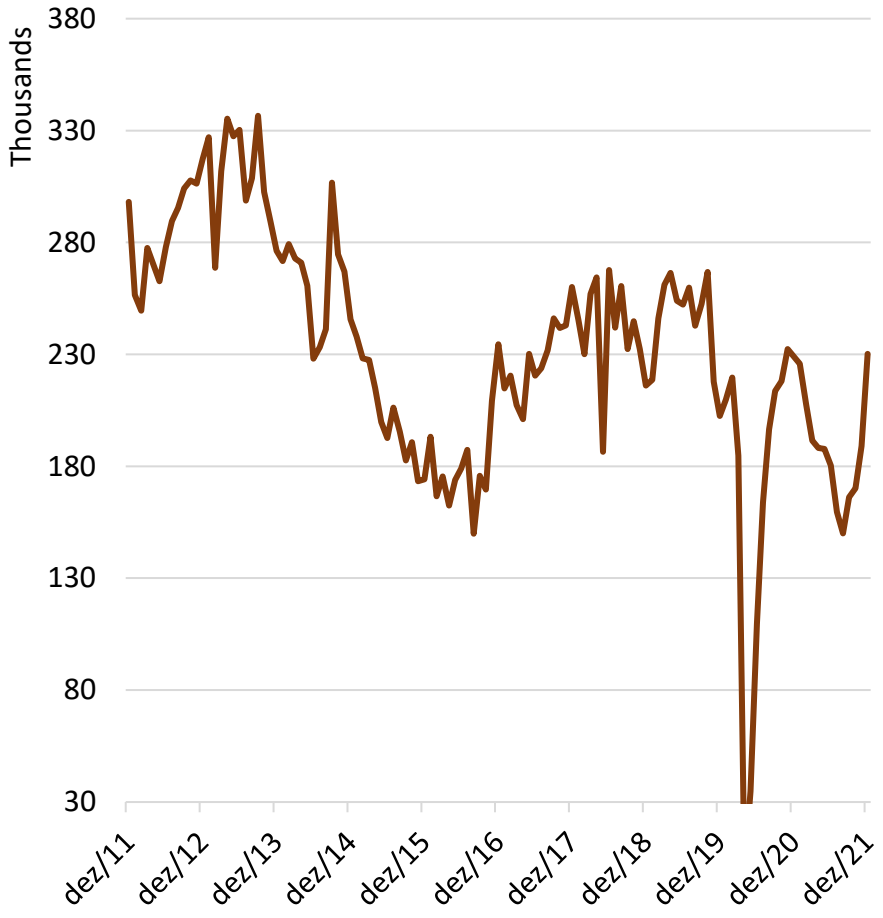

Source: BTG, Mar Asset Management

# Anfavea: daily inventory are at historical lows

## Days of vehicles inventory (ANFAVEA)




## Vehicle production




Source: BTG, Mar Asset Management

mar asset management

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