

3rd QTR – Jun/22

MACROECONOMIC SCENARIOS AND PERSPECTIVES ON BRAZIL 2022/2023

REDWOOD ASSET MANAGEMENT

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Summary

- OPENING STATEMENT
- POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS
 - WORLD
 - BRAZIL
- MARKETS
- REDWOOD MACROECONOMIC FORECAST 2022 AND 2023
- CONCLUSION

OPENING STATEMENT

Brazil is a backward “social function”

The proselytizing of the two front-runners for the presidency this year is an irreversible chant. There is hardly any chance for a third way, one way or another (believing in their promises), and the future is divided between the return to total domination of the Centrão and its *chiefs* or the darkness of socialism that dominates several Latin American countries. In a world that is absolutely different from what we are used to, with enormous challenges in all segments, especially in the economic sector, the only possible advance in line with what was originally proposed in Bolsonaro's Government Plan in 2018, there is no doubt that the main pillars have collapsed. We need a pacified environment, with trust, consistency, credibility and transparency, but with institutions that are not functioning properly, heated exchanges and polarization will lead to the fraying of the social fabric. The result is obvious: confusion and backlash. Reverting this trend will not be easy, because right from the outset we do not understand and/or accept the liberal bias and the nuances of an open and free economy. For the average Brazilian (and some “intellectuals”) the state must always be present, the market economy is beyond grasp and populist rhetoric always sounds very good. For Milton Friedman “the social responsibility of companies is to maximize their profits”. Of course, much of this returns to society via tax payments, job creation, etc., but there is no greater heresy than saying this in our country. It drives away investors (domestic and foreign), and condemns us to meager growth and inequalities. Everything has to do with the “social function”, of facile speech embedded in falsehood. It is cruel!

The Political, Economic and Financial Scenario – Brazil, presented below, the product of a broad assessment, both domestic and international, is based not only on the troubled external context, but also on the course of our likely political choices and underlying beliefs. The combinations of probable scenarios are considered and criticized, with the clear identification of variables, as well as their trajectories and the opportunities that loom in such landscape. The Probabilistic Scenario presented intends to point out these paths, their intensities and, with that, eventual hypotheses that underlie the envisioned scenarios.

Apart from some “accident” along the way, this is what we have for on the horizon: Brazil as it is.

In this way, the 2H 2022 strictly follows the deteriorating trajectory presented in our last report, in addition, however, to more volatility, slightly worse projections for key variables, but substantial contamination for 2023. More than ever, the keyword remains “protect” investments. Caution must prevail. As inflation approaches double digits in 2022 and “threatens to burst” the 2023 target, Brazil favors disorganization and uncertainties on its economic menu. The required skyrocketing interest rates will not help economic activity much either, and with upcoming stagflation, quality jobs are annihilated and any improvement is submerged in the existing brutal inequality. On the fiscal side, it is naïve to believe any reforms may pass this year, a slower pace if the current administration is reelected and a reversal of the few achievements made if the frontrunner wins the presidency. Apart from some “accident” along the way, this is what we have for on the horizon: Brazil as it is.

Overseas, the Russian-Ukraine War continues with no end date and its effects are gaining momentum, as no alternative solution appears for countries dependent on energy, on fertilizers, etc.. The short-term solution does not seem to be an option anymore, but only diplomacy will have a chance to alleviate - or reverse - this situation. Meanwhile, the world (Europe and USA) has reasonable chances of entering recession and, as Brazil, they face the challenge of high inflation. To tame it, the prescription is the same and, with it, it will drag a good part of the rest of the world – we will possibly tag along. A return, albeit under a “new normal” after Covid-19, is necessarily off the table. Turbulence requires understanding, patience and ability when it comes to investments. We are here to help!

Our Scenarios foresee paths and alternatives for preserving and optimizing investments at this time of general turmoil. Good investments!



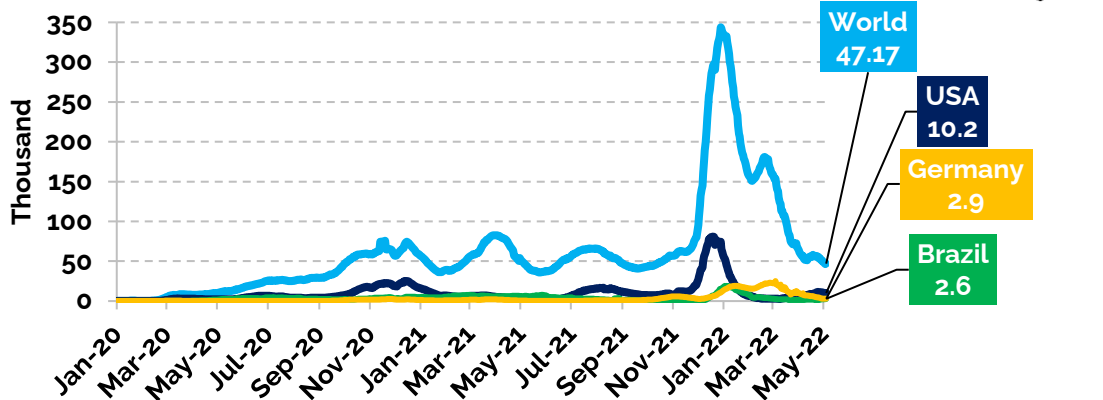
**POLITICAL, ECONOMIC AND
FINANCIAL SCENARIO**

INTERNATIONAL OUTLOOK

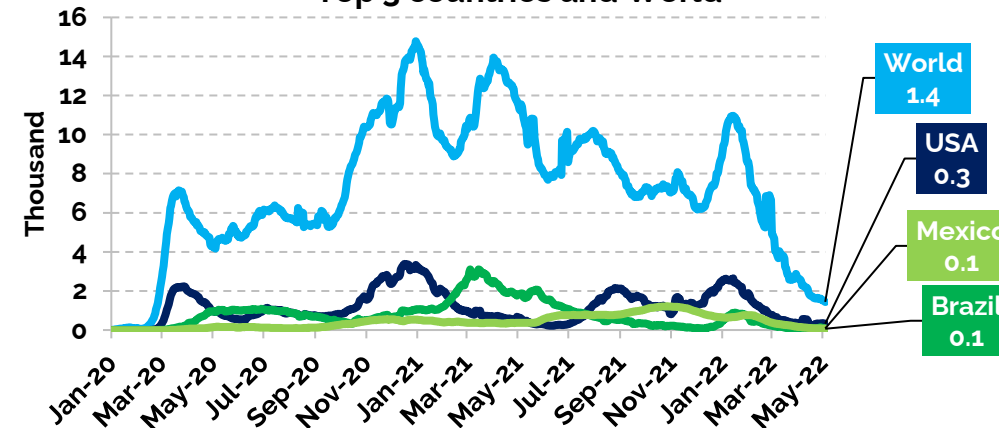
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – One pandemic ends and another begins?

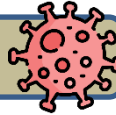
Number of Cases – 7-day Mo. Avg.
Top 3 countries and World



Number of Deaths - 7 day Mo. Avg.
Top 3 countries and World

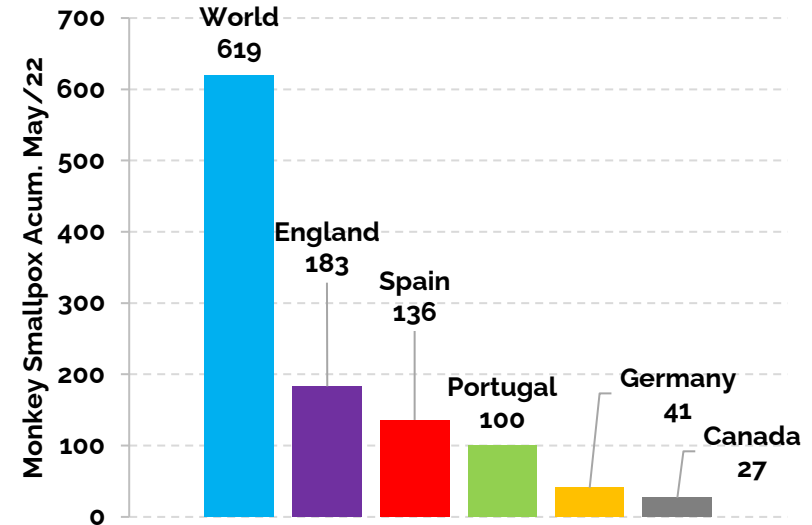


COVID-19



MONKEY SMALLPOX

Monkey Smallpox Acum. May/22
Top 5 countries and World



- For WHO, the Monkeypox outbreak does not yet constitute a public health emergency, but deserves attention;
- First case in Brazil was notified on June 8th – Up to June 26th, there were 11 cases.

Source: GitHub; Johns Hopkins University; Our World in Data | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas - World



- With inflation having reached a 40-year high of 8.5% and the recent economic slowdown, the US economy may be heading for recession. The main components that faced price hikes were food (10%) and energy (34%);
- The American job market seems to be growing ever tighter. Data referring to May show that the level of unemployment is near historic lows (3.6%);
- FED promotes a 75 bps increase in interest rates. The baseline rate is expected to remain at 3.75% in 2022;
- US government expresses concern about the impact of sanctions applied against Russia to prevent invasion. It is suspected that the sanctions were so strong that they began to have consequences for the US economy itself and that they have not stopped the Russian advance in Ukrainian territory;
- Joe Biden secures USD 1 billion in arms for Ukraine and USD 225 million in humanitarian assistance.



- Worldwide inflationary pressure and the lockdowns experienced by the country cut growth projections. A 4.4% growth rate is expected for 2022;
- Producer and consumer price inflation indices were in line with expectations in May, 6.4% YoY and 2.1% YoY respectively;
- The country's moderate level of inflation contributes to monetary easing by the Chinese government;
- PBoC maintains an unchanged one-year interest rate (LPR) at 3.7% and injects USD 30 billion of liquidity into the banking system;
- Conversation between Xi Jinping and Vladimir Putin called into question the country's neutrality regarding the conflict in Ukraine. US urges the country "not to be on the wrong side" of the conflict;
- Country promotes new trade restriction to Taiwan, banning the import of fish. Taiwanese officials say the move is part of China's attempt to economically isolate the island. Chinese government claims they found banned chemicals.



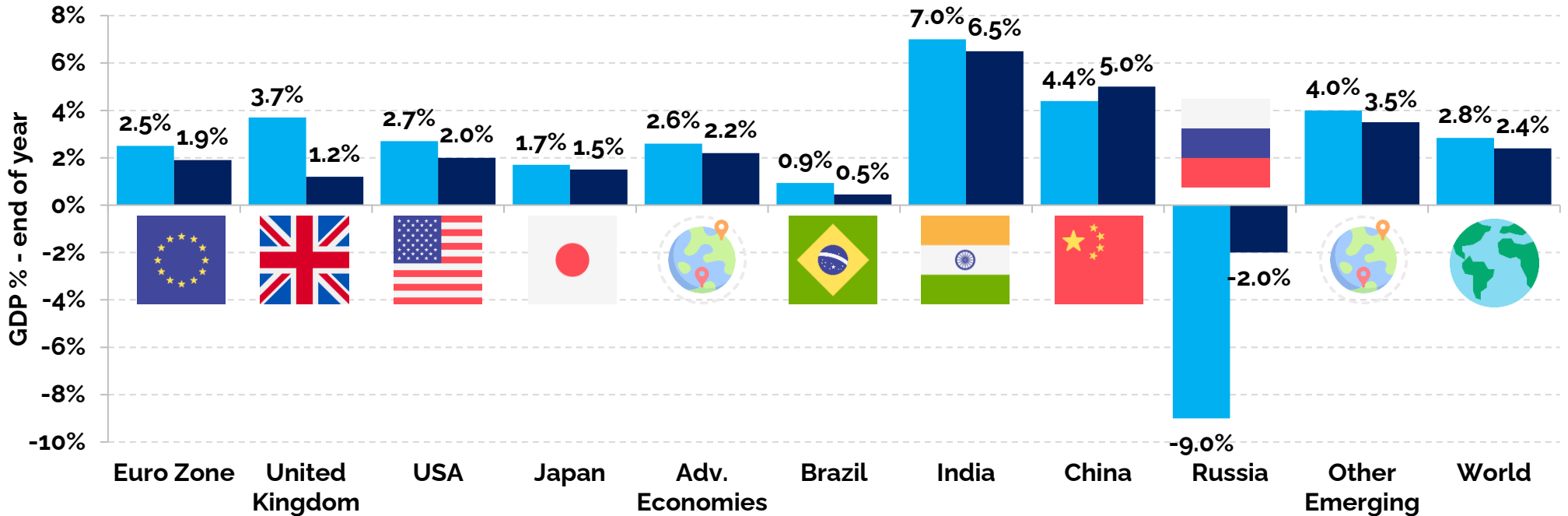
- ECB changes inflation forecast to 6.8% in 2022. Christine Lagarde signals a 25 bps increase in interest rates in July and another increase in September, pending inflation behavior. A 2.5% growth rate is expected for the EU;
- United Kingdom: deterioration of growth expectations and 10% expected inflation in 2022. Unemployment result above expectations in May, 3.8%. Growth of 3.7% is expected in 2022 and 1.2% in 2023;
- Germany: growth forecast revised to 1.5% (BDI Industry) in 2022. Country runs the risk of entering recession if gas supply lines continue to be blocked by Russia;
- Ukraine: should the war status continue, a 30% GDP contraction is expected. The recovery in 2023 could be 25% assuming the end of the conflict and a strong reconstruction and the return of war refugees to the country;
- Russia: A 9% GDP contraction is expected in 2022 and 2% in 2023. The country will take a decade to return to 2021 levels if it does not promote economic reforms.

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – GDP – Major Countries and World

GDP - Major Countries and World - Redwood Forecast

■ 2022 ■ 2023

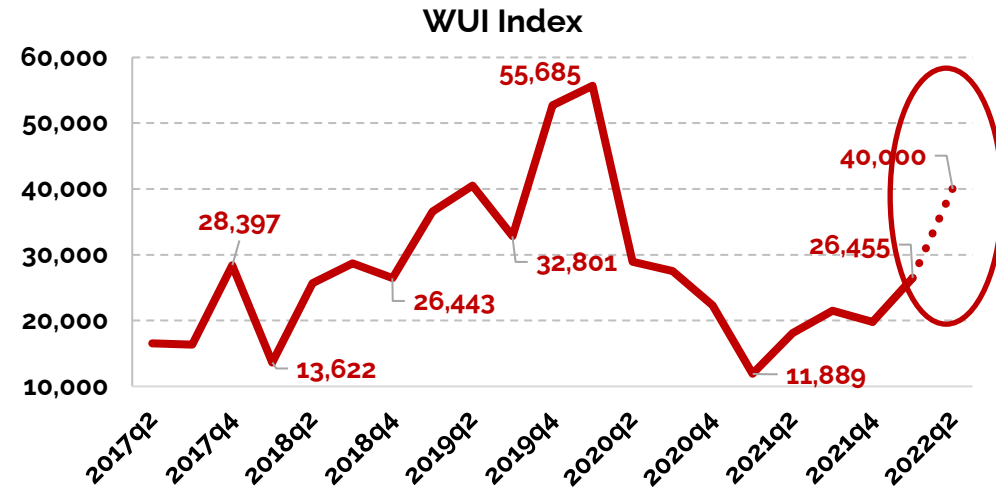
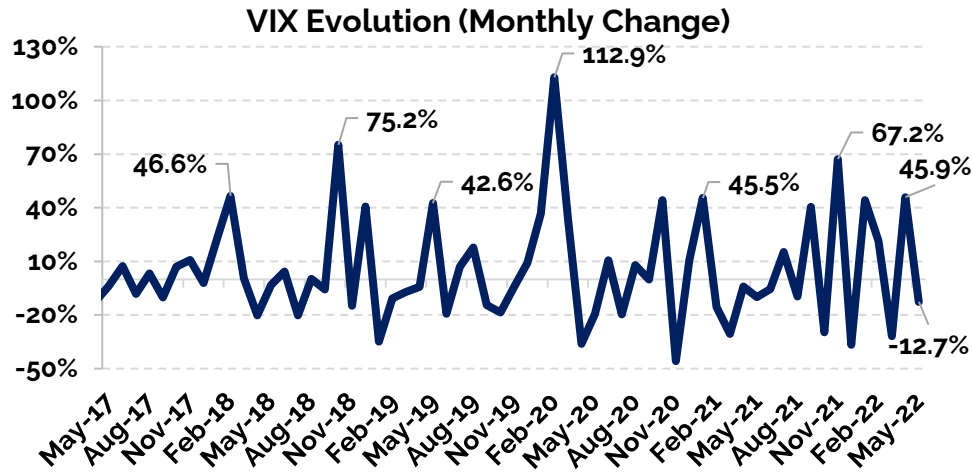


Source: Redwood Forecast | Elaborated by Redwood

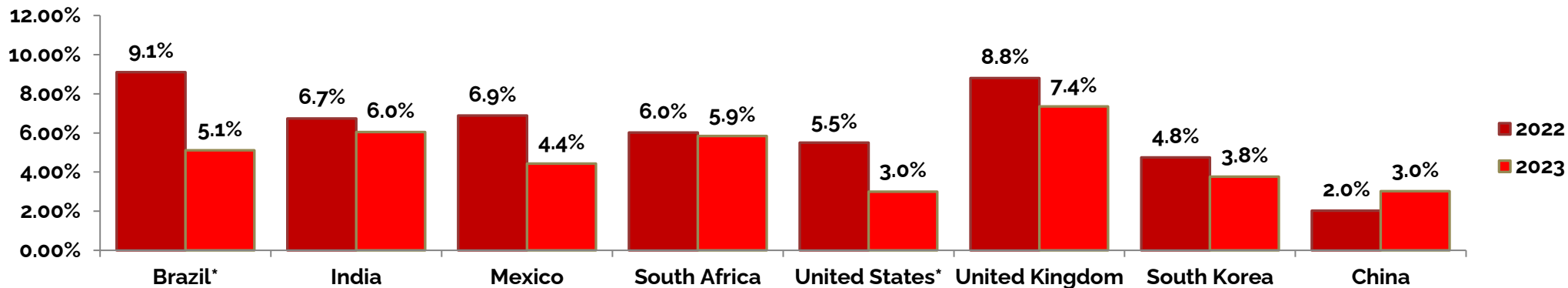
World economic activity points to a significant decline in 2022 and there already looms a risk of recession for 2023... The estimates of this probable economic downturn, especially in the US, reach 40% levels. The reflexes of the pandemic, supply chain disruptions coupled with several supply shocks, the war between Russia and Ukraine and the rampant inflation in several countries promote an almost synchronized action of interest rate hikes by the Central Banks, with a strong impact on the GDPs of the countries. All these problems are just beginning to be faced and there is no horizon for a solution.

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – Risks, Uncertainties and Inflation



Inflation Forecast - OECD and Redwood



Source: Bloomberg; Worlduncertaintyindex.com; IMF | Elaborated by Redwood *Redwood Forecast

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas –Russia-Ukraine War: no solution in sight



Source: OSM, Institute for the Study of War, Critical Threats Project – America Enterprise Institute

SOCIAL CRISIS



It is estimated that more than 6 million of Ukrainians have left the country since the beginning of the war and more than 7 million are currently displaced inside the country. In addition, there are thousands of Ukrainian and Russian civilians and soldiers killed in the war.

FOOD CRISIS



Russia and Ukraine account for about 1/3 of global wheat exports, 20% of worldwide corn exports and 80% of sunflower oil exports. With reduced supply, prices increased mainly in the poorest countries.

ENERGY CRISIS



Russia is the world's largest natural gas exporter, second largest supplier of crude oil and third largest exporter of coal.

Fuel prices around the world are already suffering the impacts of the war.

INFLATIONARY CRISIS

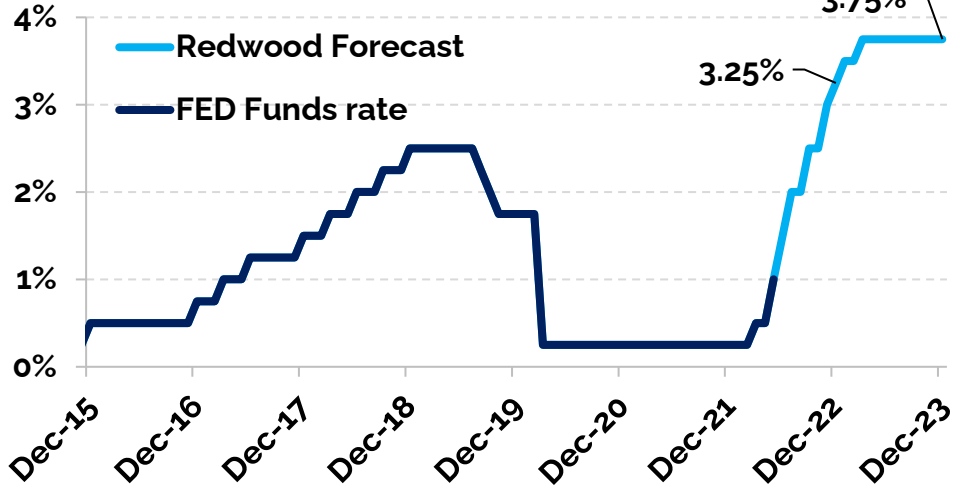


Inflation projections around the globe have already been adjusted (upwards), influenced by the increase in fuel and food prices.

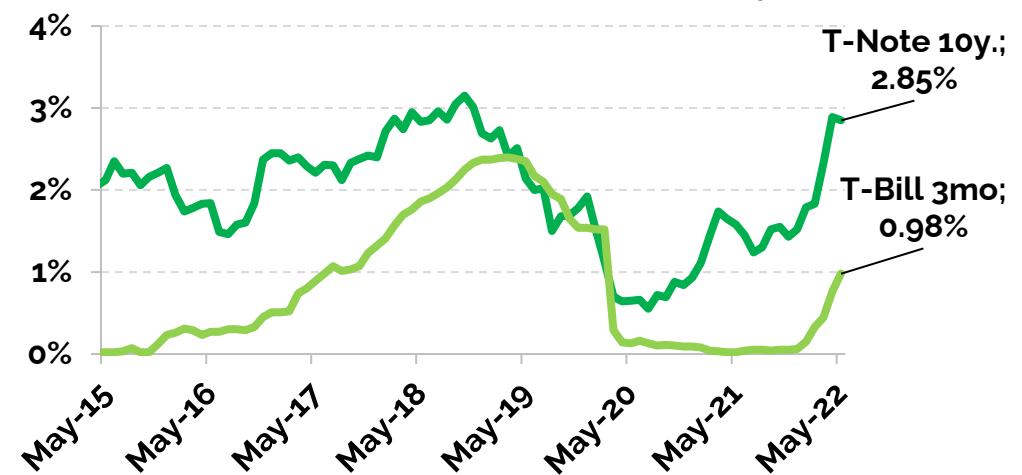
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – FED Funds and US Treasuries

Fed Funds Rate (Upper Limit)



T-Bill 3-mo. and T-Note 10y



FED:

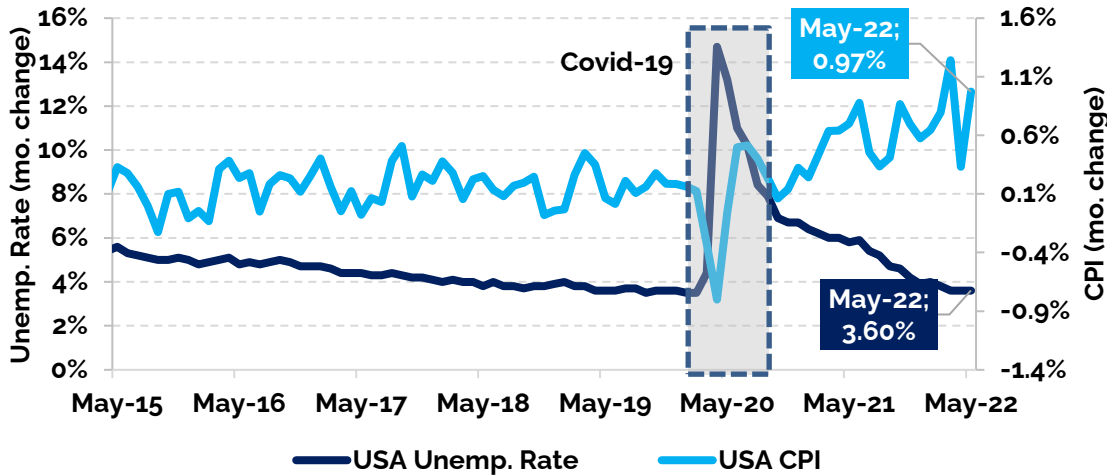
With inflation "out of control" the American monetary authority "strives" to take back the reins, signaling unprecedented monetary tightening in recent years. It still doesn't remind the Paul Volcker era, but the scare of seeing annual inflation at 8.5% alerted to an already heeded (but solemnly ignored) danger. By recognizing a misinterpretation of inflation, Secretary Janet Yellen delivered a milestone and a watershed in the administration, with an impact on the Fed's board.

The coming crisis can be brutal: intense and lasting. The option to "manage" the timing of interest rates was a colossal mistake, but we still need to see, in fact, the appetite and courage to confront the challenge in the next FOMC meetings. Treasuries anticipated the move and will continue to set the tone! It will be expensive, but there is still talk of a probable recession, which could be fast or more intense and evolve for the worse and for longer if it goes back to what they signaled in the last meeting.

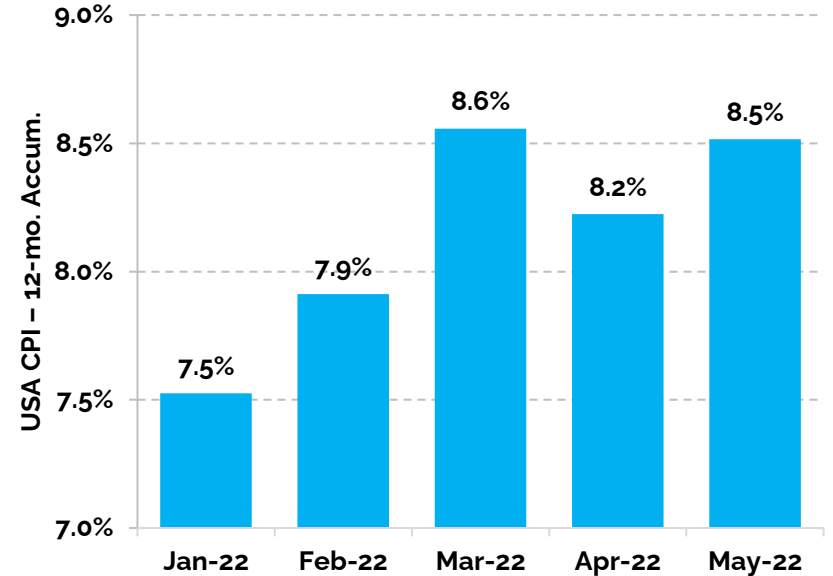
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Exterior – FED Funds, Inflation and Unemployment

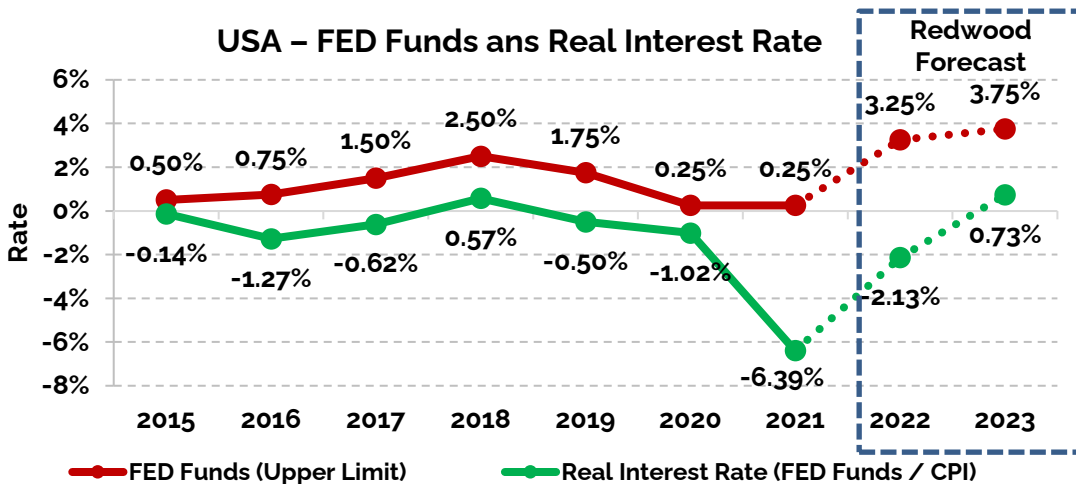
USA – Unemployment Rate and CPI



USA CPI – 12-mo. Accum.



USA – FED Funds ans Real Interest Rate

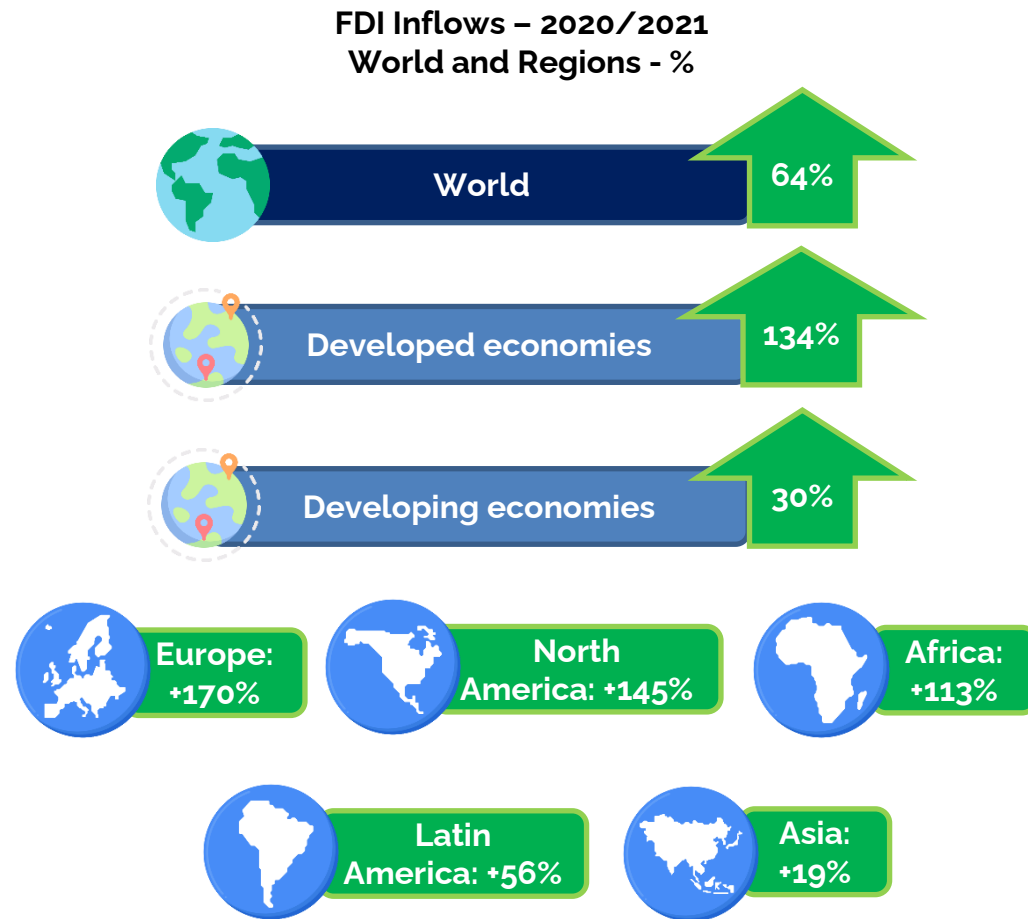
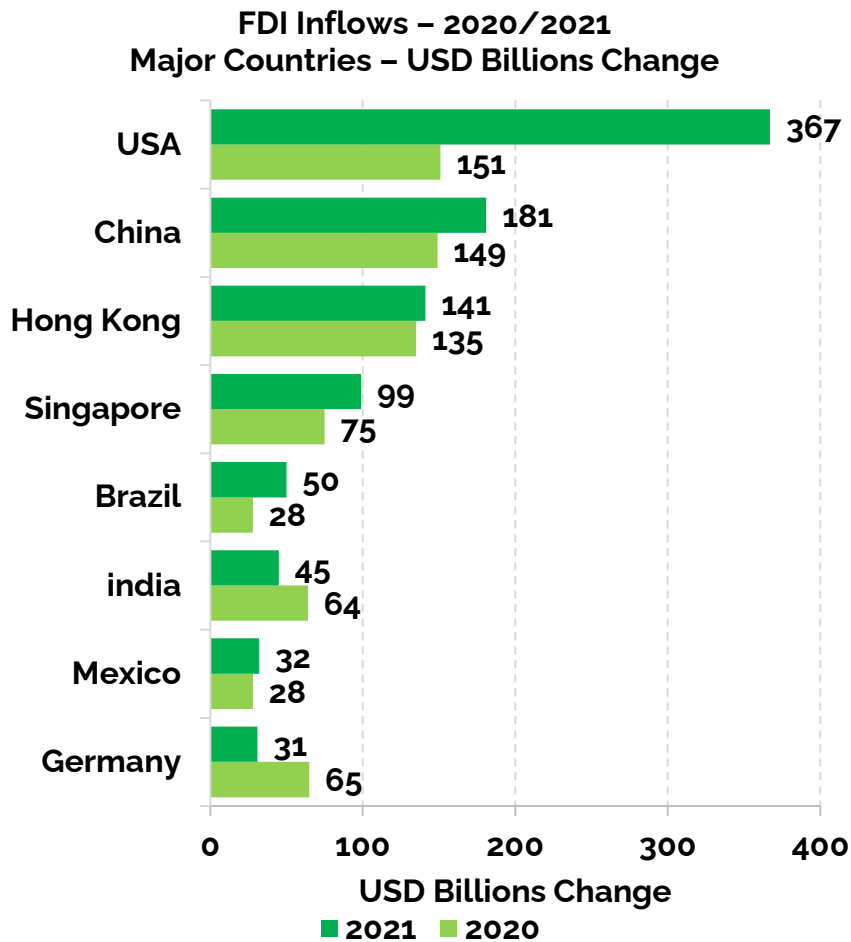


- Highest annualized inflation in 40 years and the economy moving towards full employment. Is it sustainable?
- The expectation is that interest rates will become, even if only next year, a restriction to economic expansion

Source: FRED | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – Foreign Direct Investment – FDI Flows Remain?



Source: World Investment Report 2022 - United Nations Conference on Trade and Development (UNCTAD) | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – Emerging Markets

MEXICO:

- Growth estimates at 1.9% in 2022 and 2.1% in 2023. Gradual recovery of exports, consumption and tourism will sustain economic progress;
- Inflation outlook for 2022 is at 6.9%, with a decline to 4.4% in 2023. OECD warns of maintaining a restrictive monetary policy in order to keep expectations anchored;
- AMLO boycotted the US-hosted and coordinated event, the Summit of the Americas, due to the exclusion of Cuba, Nicaragua and Venezuela;
- The Mexican President also criticized NATO's action in the conflict between Russia and Ukraine, exposing the dubious position of the Mexican government. Mexico condemned the invasion, but did not adhere to the sanctions imposed on Russia.
- **GDP 2022: 1.90%¹ | GDP 2023: 2.10%¹**

INDIA:

- Discrete growth forecast revision for the country due to bad external conditions (high prices in food and energy). Government spending should sustain a 7% growth rate in 2022 and 6.5% in 2023;
- RBI started a monetary tightening cycle at the end of the second half of the year. End-of-year projected interest rate is 5.3%, with maintenance throughout 2023;
- The country is experiencing a political crisis in its wealthiest state, Maharashtra. Lawmakers from the Shiv Sena political party try to take control of the party and overthrow the government;
- Drop in the unemployment level in May to 7.12%. The country reached 11.9% in May 2021. Analysts point out that it is difficult to maintain the momentum and warn that only robust economic growth is capable of correcting the problem.
- **GDP 2022: 7.00%² | GDP 2023: 6.50%²**

SOUTH KOREA:

- Revised growth forecast at 2.7% in 2022 and 2.5% in 2023;
- Commodity and energy prices pushed up inflation. BOK promoted five interest rate hikes, reaching 1.75% while signaling it could reach 2.5% by the end of 2023;
- For the first time a Korean president (Yoon Suk-yeol) will participate in the NATO summit. Presence is seen as an important step towards strengthening cooperation with member countries;
- Yoon Suk-yeol criticizes the previous government's stance (nuclear exit) and commits to rebuilding the country's nuclear industry;
- **GDP 2022: 2.70%¹ | GDP 2023: 2.50%¹**

SOUTH AFRICA:

- 1.8% growth rate is expected for 2022. The country is not directly affected by the conflict between Russia and Ukraine (it represents 1% of the country's trade flow);
- External pressure on inflation means an expected interest rate rising to 5.75% at the end of 2022 and to 6%, at the end of the first half of 2023;
- President Cyril Ramaphosa faces corruption scandal (Farm Gate) that threatens his continuity in office. Ramaphosa was elected with the promise to fight corruption.
- **GDP 2022: 1.80%¹ | GDP 2023: 1.30%¹**

¹OCDE forecast; ²Redwood forecast

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Overseas – Latam

Country	P/E	EV/Ebitda	Risk EMBI ¹	Exchange Rate	Interest Rate % p.a.	OBS
Argentina	8.35	2.31	1,918	120.17	49.00	Minimum rate repurchase (CB) after 7 days
Chile	7.20	6.64	187	821.90	8.25	Overnight rate
Colombia	8.76	7.82	331	3,787.71	6.00	Overnight rate
Mexico	14.71	7.03	219	19.69	7.05	Overnight rate
Peru	8.67	5.08	115	3.69	5.00	CB's reference rate
Brazil	5.77	4.14	300	4.73	12.75	Selic rate

- Argentina: the restructuring of its debt with the IMF did not solve the country's poverty crisis.
- The “new” President of Chile faces its first clashes – disapproval reaches 60%
- Colombia has its first left-wing government – Gustavo Petro, which promises reforms to fight poverty.
- Brazil faces risk of a “downgrade” in view of its political future and recent achievements, despite having the largest economy and maintaining its competitiveness and importance in the region.

Source: Bloomberg; Central Bank of Brasil | Elaborated by Redwood
Date: 31st, May 2022; ¹Various sites. Chile = monthly average

A Brazilian flag is shown waving against a blue sky with scattered white clouds. The flag is green and yellow with a blue globe in the center. A red rectangular box is drawn around the flag. The text "POLITICAL, ECONOMIC AND FINANCIAL SCENARIO" is overlaid in white, bold, uppercase letters.

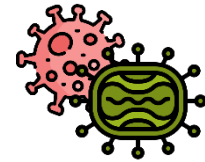
**POLITICAL, ECONOMIC AND
FINANCIAL SCENARIO**

BRAZIL

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Political Aspects – Brazil, gloves are off

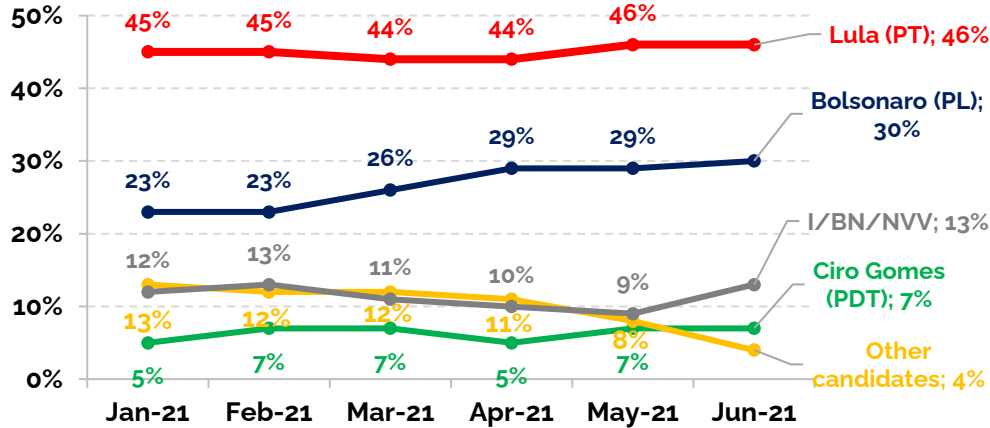
- ✓ President Bolsonaro (PR): despair has taken over
 - Unlike its voters, PR believes in polls
 - Petrobras is a “thorn” in his side. Just when you find you’ve hit bottom, you find there is another trapdoor
 - The only way out is the confrontation and the aggravation of institutional frictions
- ✓ Executive
 - All done “in a rush” and with a single purpose: election
 - Paulo Guedes: statements beyond imaginable. Will regret ever come?
 - Healthcare: the “bat” (Covid) goes out and “monkey” (Smallpox) comes in?
 - Infrastructure: will the technician-turned-politician take the state of SP? PR helps or hinders right now?
- ✓ A “dominated” National Congress: no reforms and all sorts of tweaks to assist in elections
- ✓ The Supreme Court (STF) lost its grip: undue interference and absurd decisions. Gilmar Mendes “in charge”.
- ✓ Institutions are **not** working: the proof will come with elections – respect and control or rupture?
- ❖ *Brazil in Highlights - Summary*
 - Elections: the economy will dominate discussions/debates
 - GDP quite feeble
 - High and persistent inflation: disorganized economy
 - Unemployment
 - Economic team – fiscal shield at risk
 - Supply shocks will not dissipate in the short term
 - BACEN: the test of autonomy and true independence soon to come
 - External scenario: challenges on all sides and a distant horizon for better days



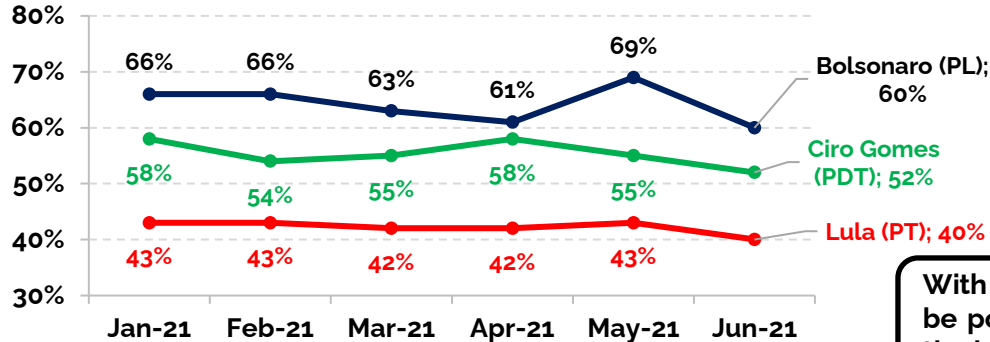
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

A fierce race and what's behind the numbers

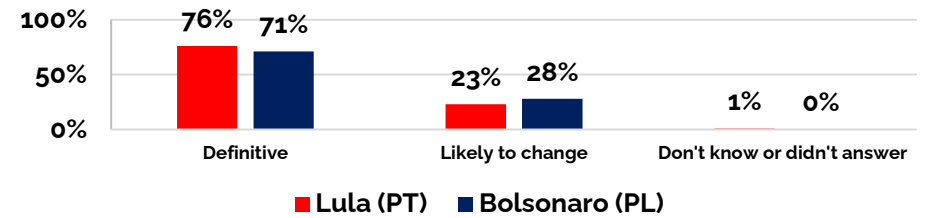
Voting Intention - Stimulated Polls
Election Polls - Quaest



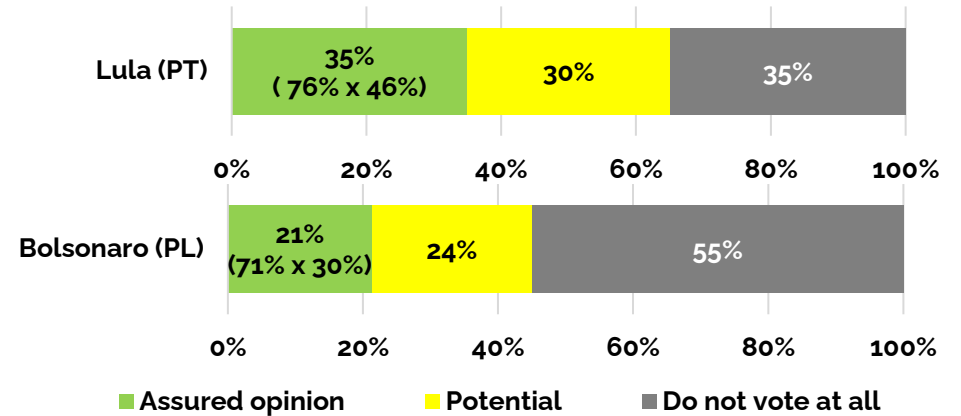
Rate of Rejection
Election Polls - Quaest



Is your vote final or likely to change?
Election Polls - Quaest



100% of valid votes (Stimulated Poll)



Source: Various Election Polls 2022 | Redwood Interpretation and Analysis

With 40% of voting population undecided, the path to the second round will still be possible for those who "conquer" this share of voters. At the moment, only the leading candidate in the polls seems to have "guaranteed" his position.

Source: Election Polls 2022 – Quaest Consultoria e Pesquisa | Elaborated by Redwood / NOTE: Other candidates are: Sérgio Moro; André Janones; João Doria; Simone Tebet; Rodrigo Pacheco; Felipe D'Ávila; Luciano Bivar; Pablo Marçal; Vera Lúcia; Eduardo Leite; Sofia Manzano and Eymael / I = Undecided; BN = Blank and Null votes; NVV = Non-Voting people

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Rejection equals Do not vote at all?

IDENTIFICATION	STIMULATED VOTING INTENTION	% OF VOTES
A	Lula (PT)	46%
B	Bolsonaro (PL)	30%
C	Other Candidates and Types of votes	24%

DEFINITIVE VOTING INTENTION OR MAY IT CHANGE?	Lula	Bolsonaro	Neither Lula nor Bolsonaro
<i>Definitive</i>	76%	71%	28%
<i>Likely to change</i>	23%	28%	71%
<i>Don't know or didn't answer</i>	1%	0%	1%

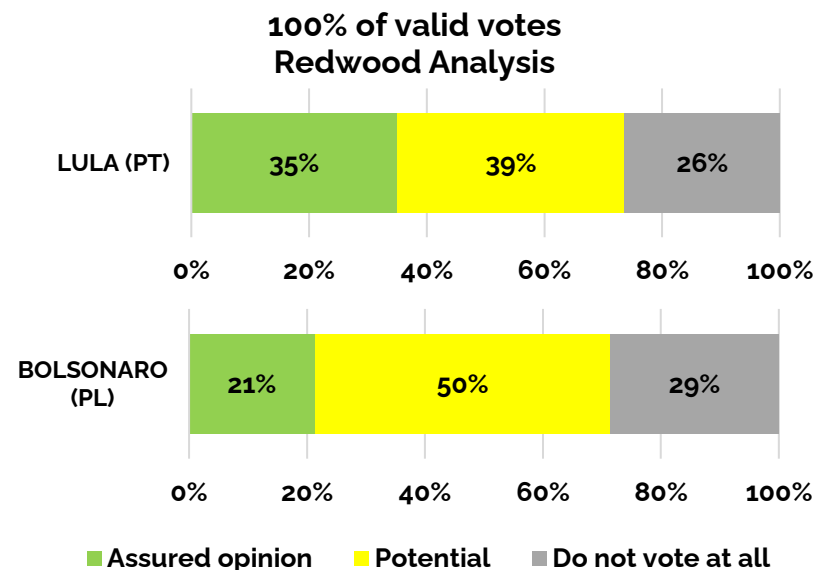
FORMULA	LULA ANALYSIS	% OF VOTES
$D = A \times \text{Definitive Lula}$	VOTE FOR LULA FOR SURE	35%
$E = A \times \text{Likely to change Lula}$	VOTE FOR LULA, BUT MAY CHANGE	11%
$F = 100\% - D - E$	DO NOT VOTE FOR LULA	54%
$G = F - H - L$	DO NOT VOTE FOR LULA FOR SURE	26%

FORMULA	ANÁLISE BOLSONARO	% OF VOTES
$H = B \times \text{Definitive Bolsonaro}$	VOTE FOR BOLSONARO FOR SURE	21%
$I = B \times \text{Likely to change Bolsonaro}$	VOTE FOR BOLSONARO, BUT MAY CHANGE	8%
$J = 100\% - D - E$	DO NOT VOTE FOR BOLSONARO	70%
$K = J - D - L$	DO NOT VOTE FOR BOLSONARO FOR SURE	29%

FORMULA	ANALYSIS OF OTHER CANDIDATES AND VOTES	% OF VOTES
$L = C \times \text{Neither Lula nor Bolsonaro}$	VOTE FOR OTHER CANDIDATES FOR SURE	7%
$N = C \times \text{Likely to change}$	MAY CHANGE THEIR VOTE	17%

VOTES ANALYSIS	LULA (PT)
<i>Assured opinion (D)</i>	35%
<i>Do not vote at all (G)</i>	26%
<i>Potential (100% - D - G)</i>	39%

VOTES ANALYSIS	BOLSONARO (PL)
<i>Assured opinion (H)</i>	21%
<i>Do not vote at all (K)</i>	29%
<i>Potential (100% - H - K)</i>	50%

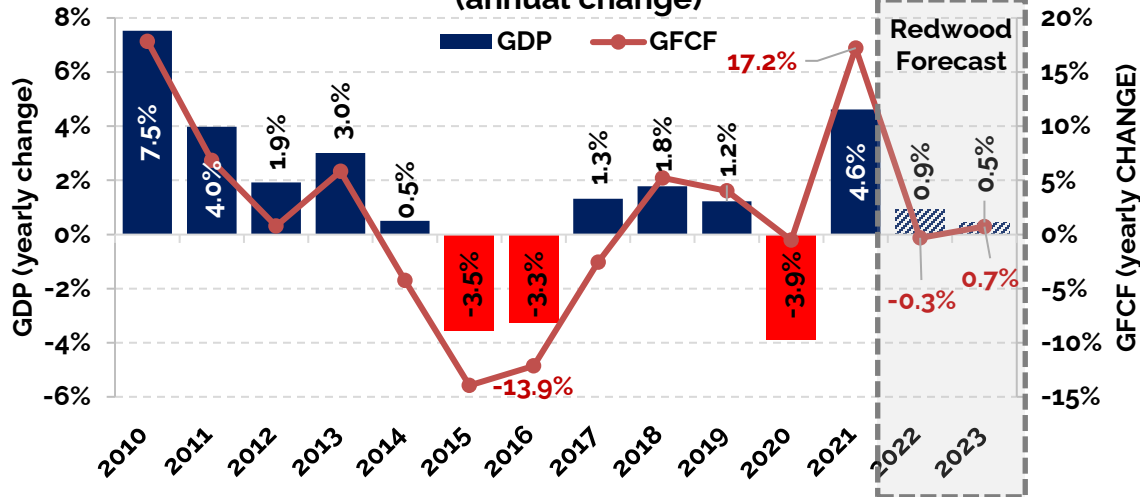


OBS: Data analysis and interpretation by Redwood.

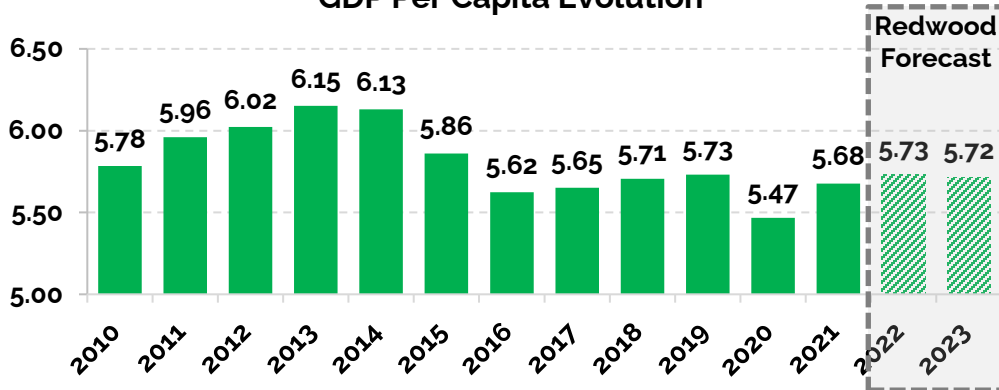
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Brazil GDP

GDP and GFCF Evolution
(annual change)



GDP Per Capita Evolution



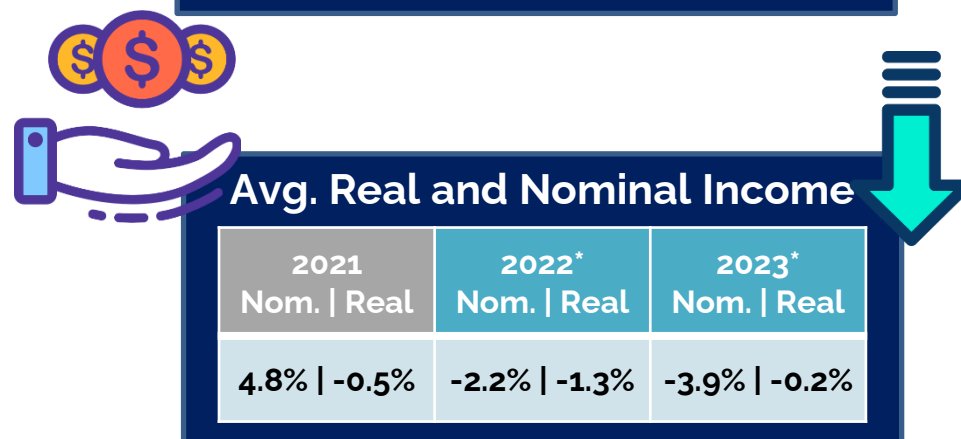
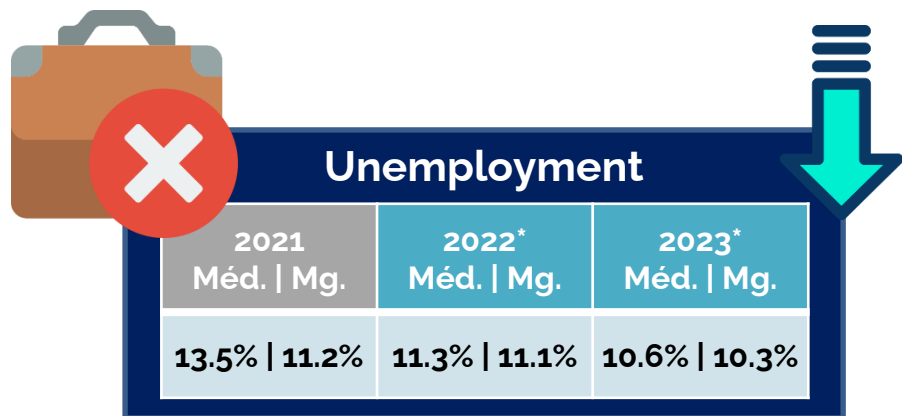
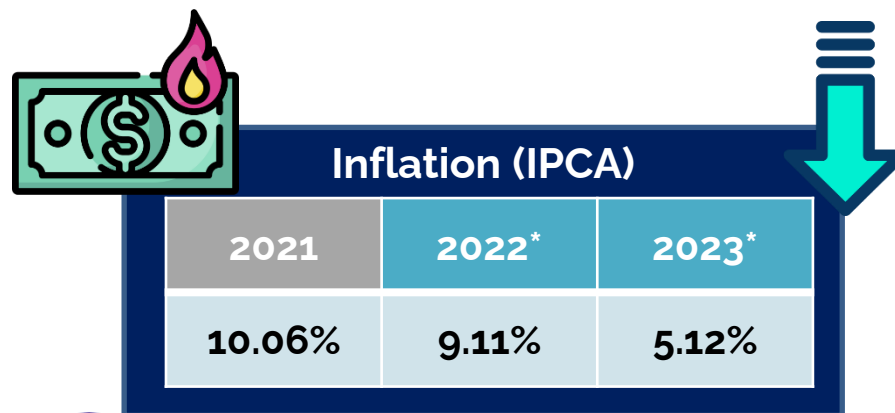
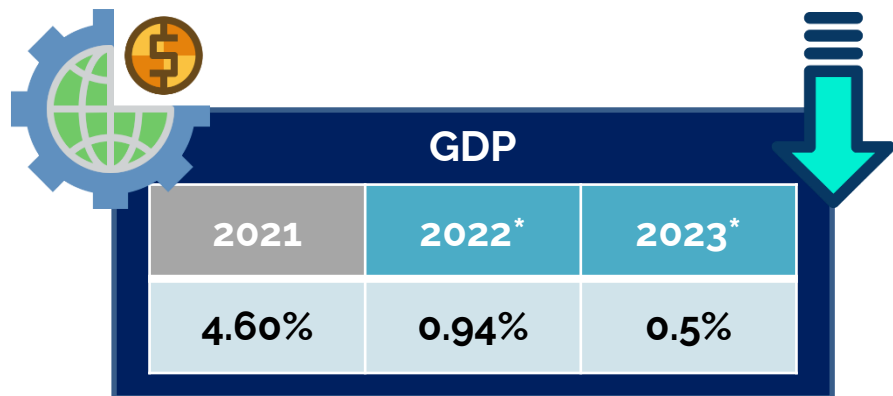
Recession in sight?

With a better growth forecast for 2022 than originally projected - albeit still meager - a "chicken flight" imposes itself. For 2023, growth will be really mediocre and, depending on the worsening of the external situation and the level and maintenance of the Selic in blinding heights, one cannot rule out stagflation or even some level of recession in the last quarter of the coming year. Political issues also promise to greatly influence this outcome, for the worse. Candidates who propose reversing privatizations, interfering in state-owned companies, setbacks in labor market achievements only scare away investors and make the country less attractive. The scenario is far from good, unfortunately.

Source: IBGE; Redwood Forecast – 2022/2023 | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

GDP Brazil - Low growth and high inflation, Unemployment and Avg. Real/Nominal wages suffer

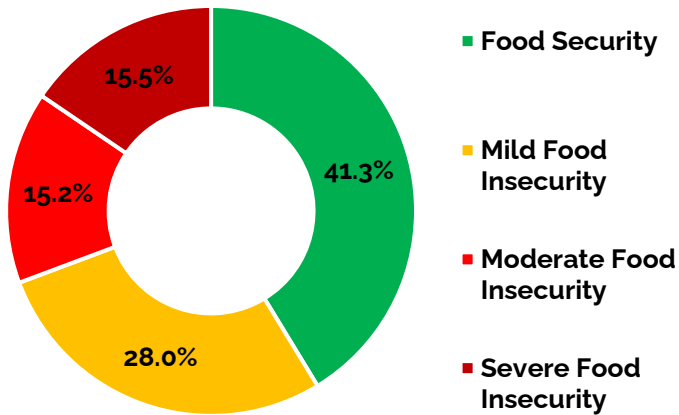


Source: IBGE; *Redwood Forecast | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Hunger reaches over 33 million people in Brazil in 2022. Is IBGE listening?

Food Security and Food Insecurity Levels - % population



Mild Food Insecurity

Uncertainty about access to food in the near future and/or when food quality is already compromised



Moderate Food Insecurity

Insufficient intake of food



Severe Food Insecurity

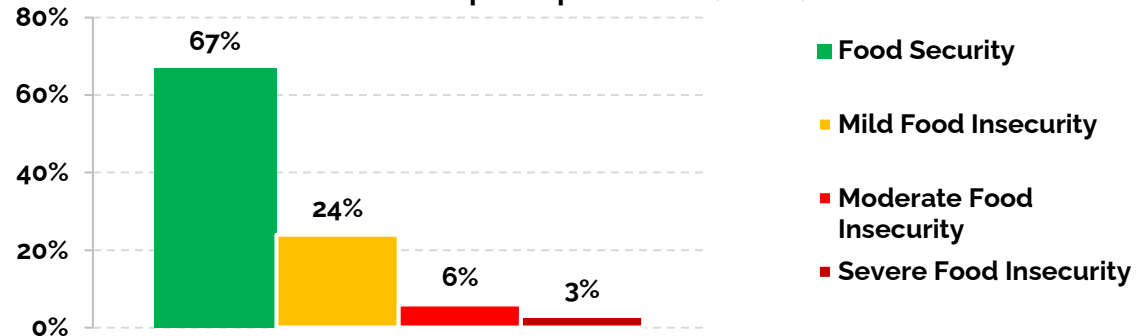
Deprivation in food intake and hunger



North and Northeast regions are the ones that suffer the most

The North and Northeast regions have 72% and 68% of the population enduring food insecurity. The nationwide average is 58.7%

Food Security and Food Insecurity levels - by household income per capita above (1 MW)

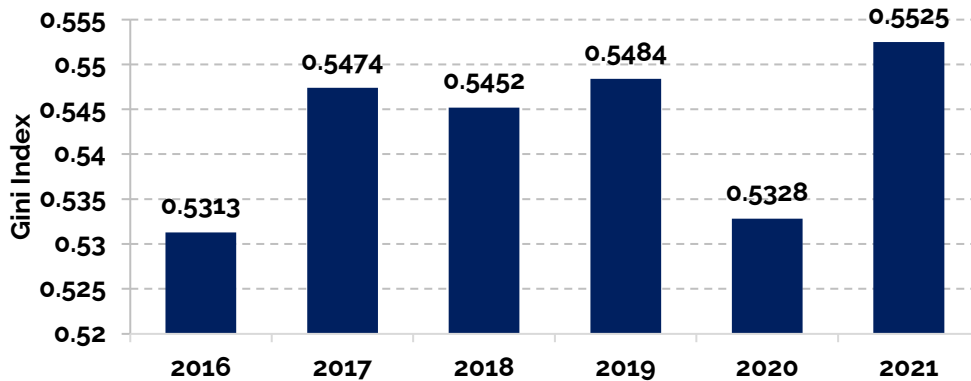


Source: inquérito nacional sobre insegurança alimentar no contexto da pandemia da covid-19 no brasil - Rede Brasileira de Pesquisa em Soberania e Segurança Alimentar e Nutricional (Rede PENSSAN)

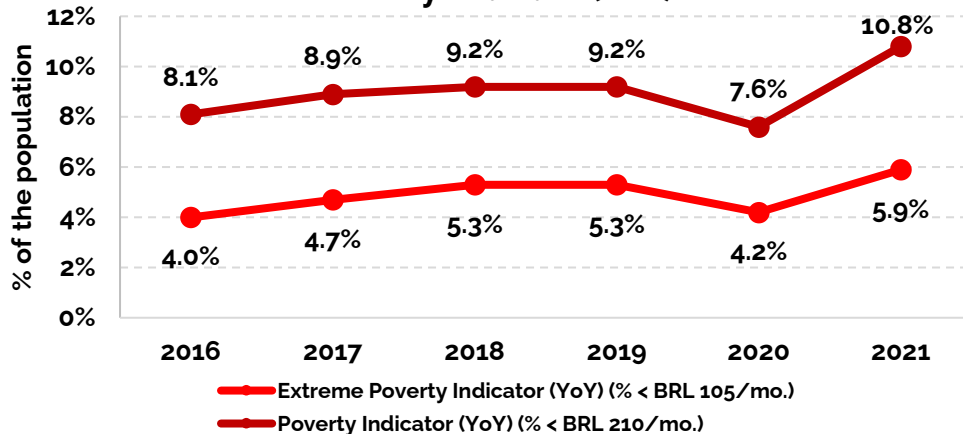
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Pandemic, aid programs and the impacts on inequality

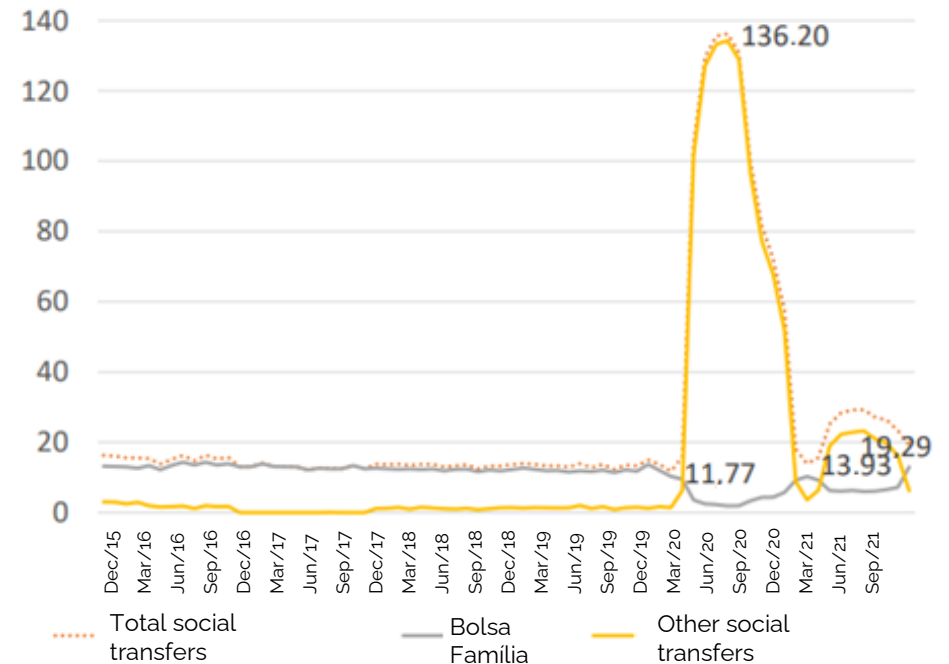
Inequality indicator (YoY)
(Gini Index of Household Income per capita)



Poverty Indicator (YoY)



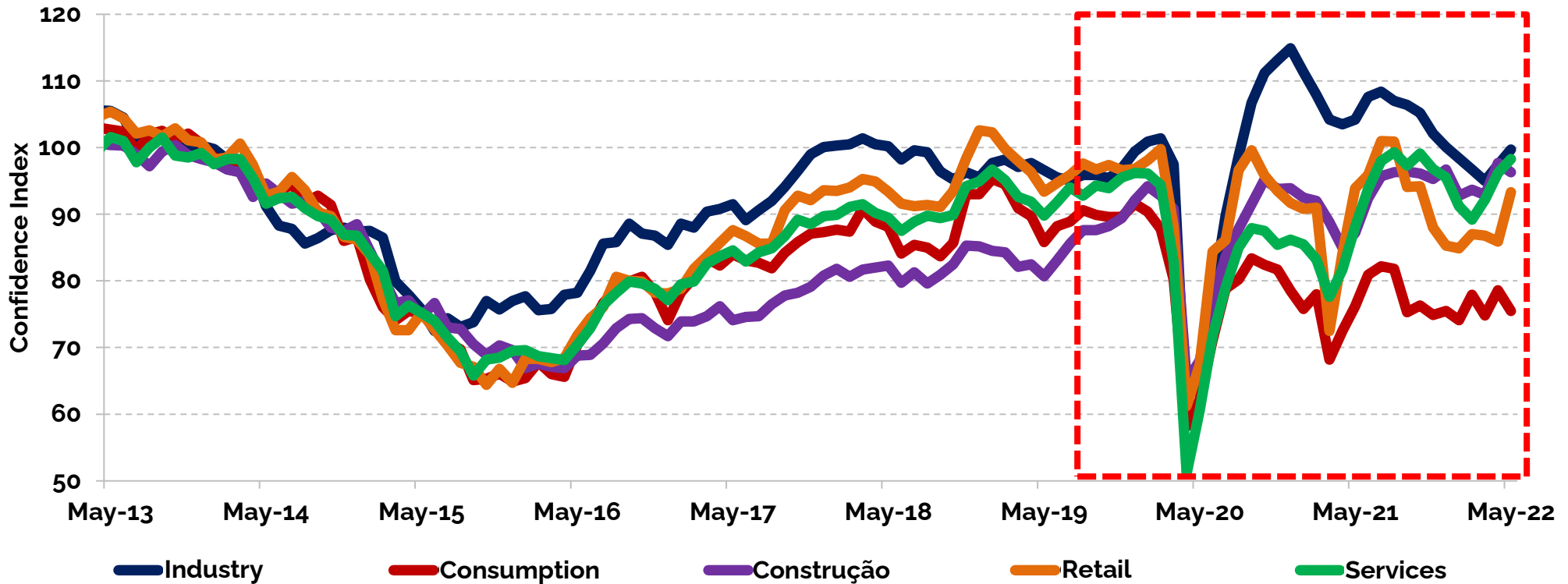
Average of social transfers per capita (BRL from Dec/2021)



Source: FGC Social – Montanha-Russa da Pobreza Jun/22 | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Confidence Indicators



Lead indicator

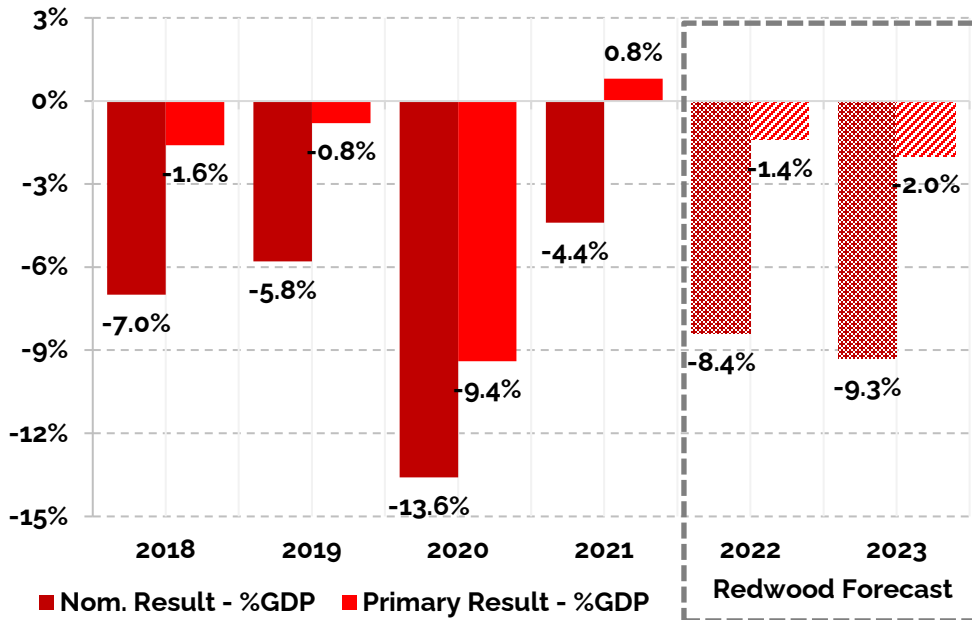
“Calm waters” pervade the entire spectrum, whether on the supply or demand side. With no outline of a firmer and more consistent trend, companies and consumers are cautious, relegating planning and new ventures to the background.

Source: FGV | Elaborated by Redwood

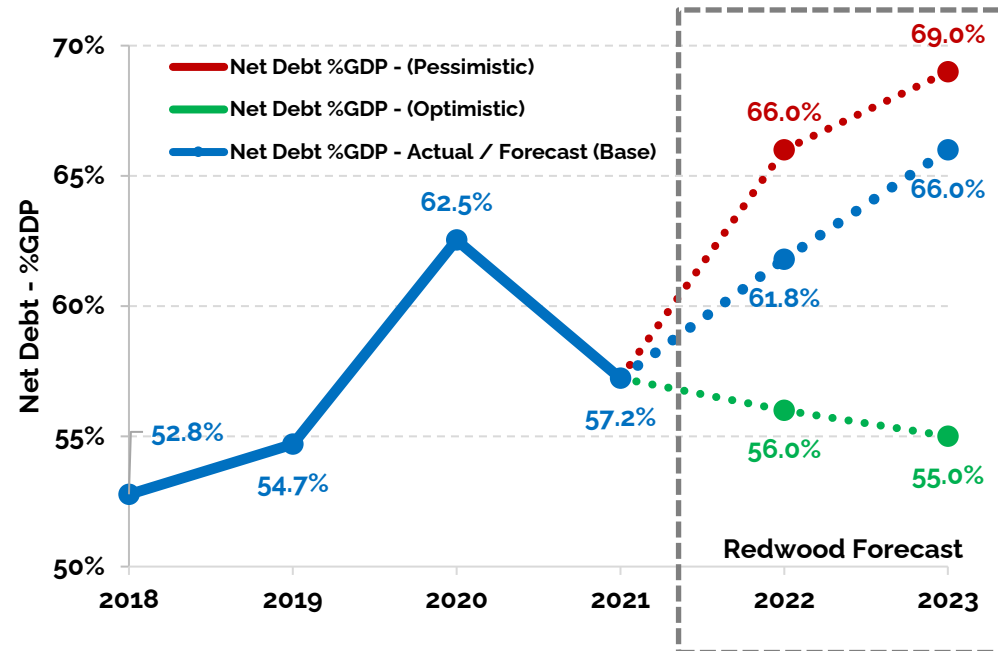
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Fiscal – Is consolidation over?

Primary and Nominal Result - %GDP



Net Debt - %GDP



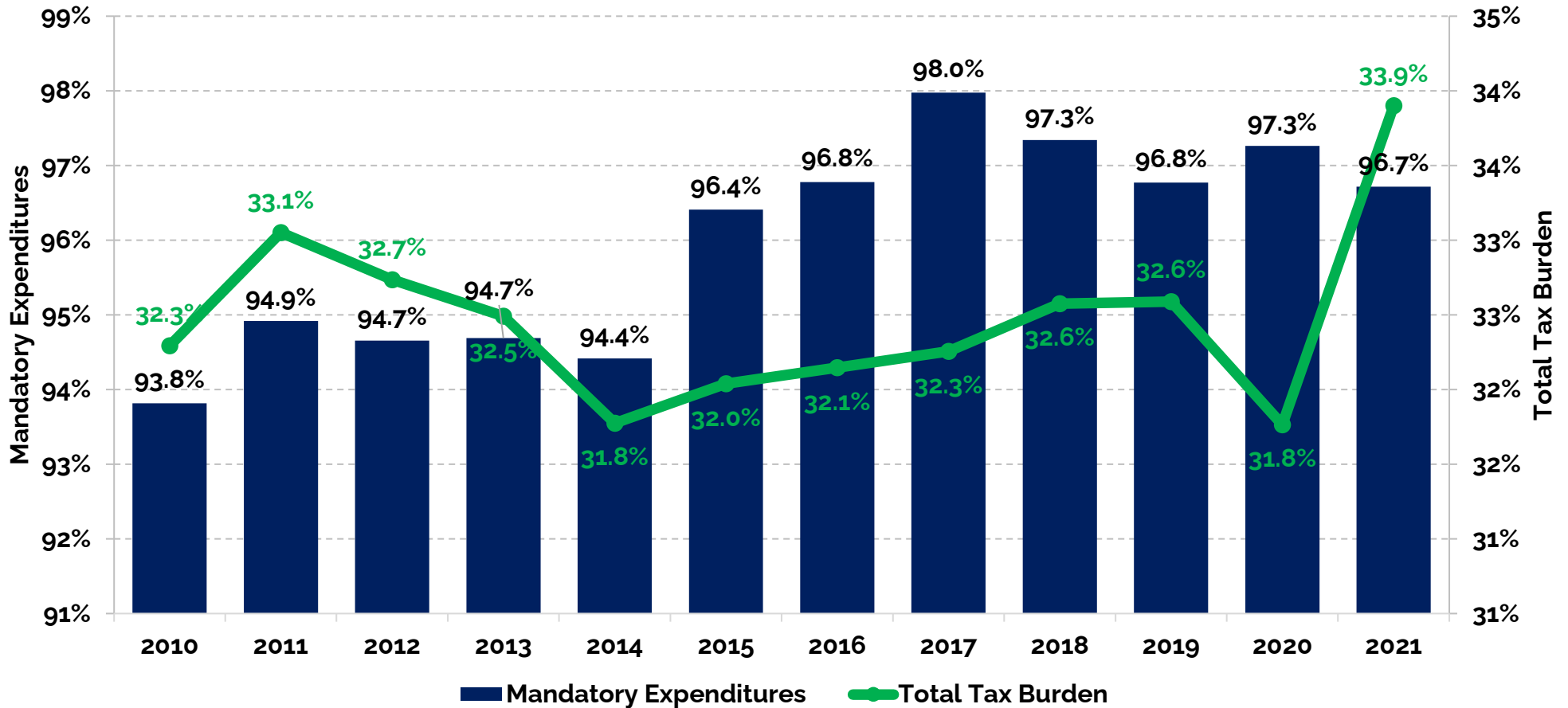
The small but significant surplus expected for 2022 seems to have been totally “wasted” by the united populist forces of the Executive and Legislative branches. The “spending” gate may be opened soon, with the Spending Cap and all control of public finances, including an increase in civil servants, under attack. To this end, even extreme rhetorical “contortionisms” are developed to demonstrate that we have had an increase in productivity in the public sector! The perception of “mismanagement” of public finances and the shameless advance of proposals for “perennial” spending both set the tone of the sentiment, which reflects on asset valuations. It doesn't look like the end of the party (yet), but the pressure to open the “safe” is great.

Source: National Treasury of Brazil; Redwood Forecast | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Fiscal – Too heavy a load for an already high and rigid expense

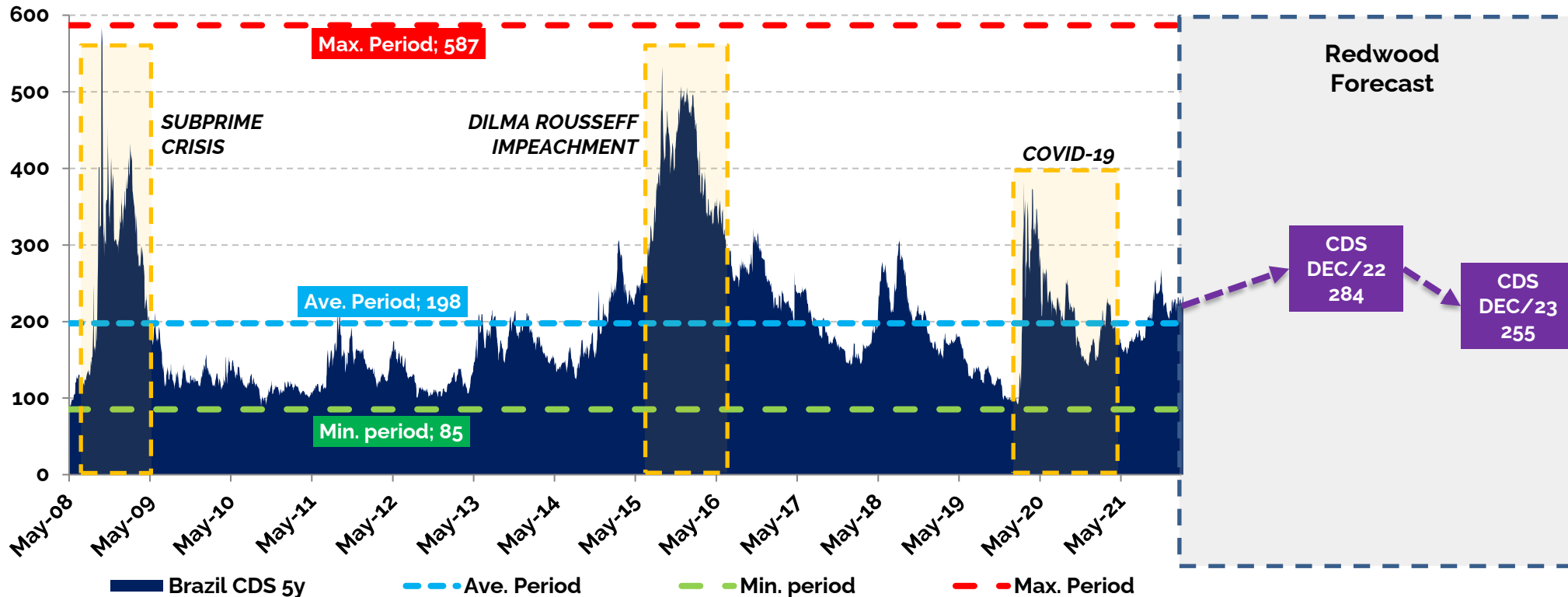
Mandatory Expenditures (% of total outlays) and Total Tax Burden (% GDP)



Source: National Treasury of Brazil | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Credit Default Swap (CDS) - 5 years



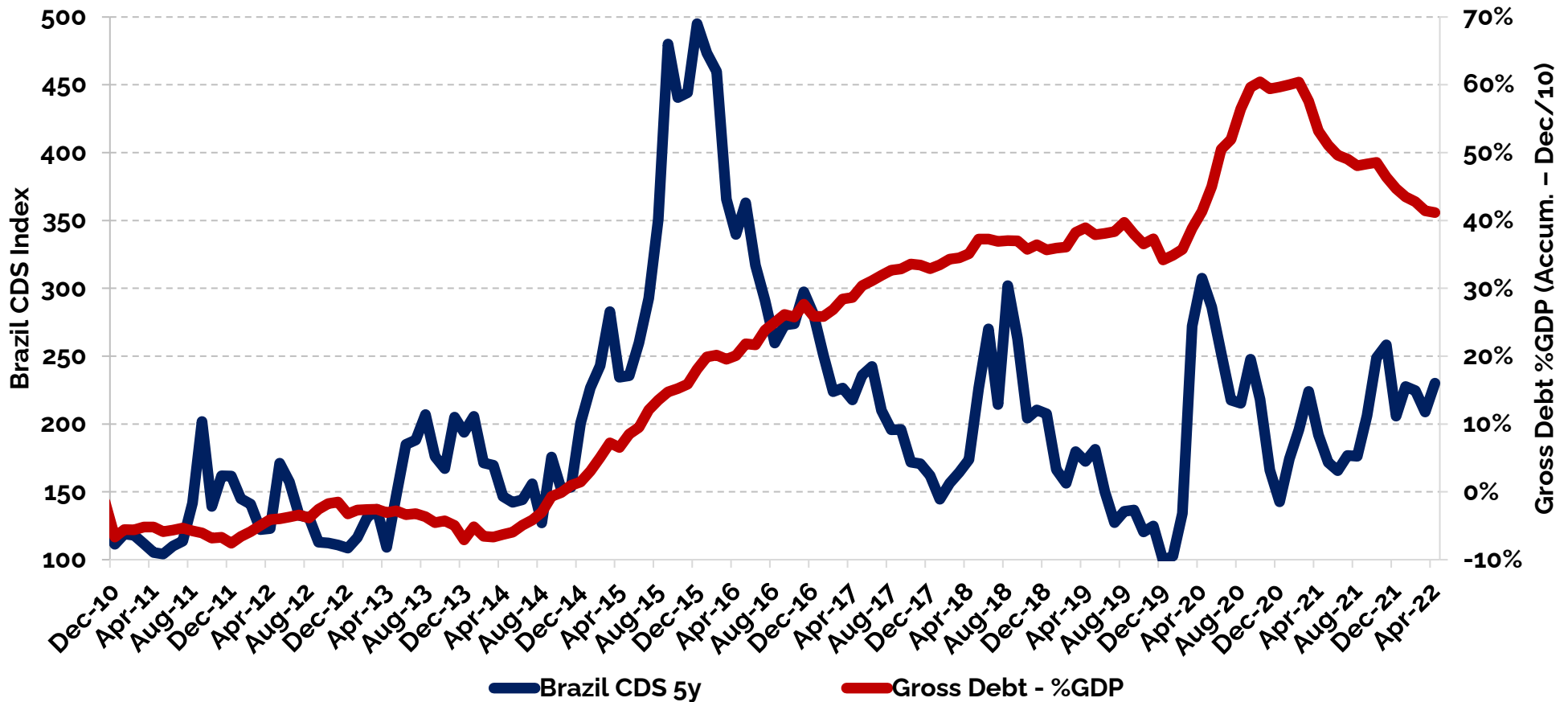
With all the stress lying ahead, the country's main risk indicator has been well-behaved... but you can't bet too much that it will remain unscathed by all the other deteriorating indicators. With the Spending Cap under a perspective of sharp revision/elimination, reforms postponed, public finances under constant attack, electoral volatility, War and other externalities, the forecasts herein presented can be seen as "soft". Risk aversion can increase by a lot in the world in general and, depending on the outcome of our presidential election, we will have additional spread in our risk.

Source: Bloomberg | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Default Risk and Brazil Risk => Causality?

Brazil CDS 5y x Gross Debt (Accum.)

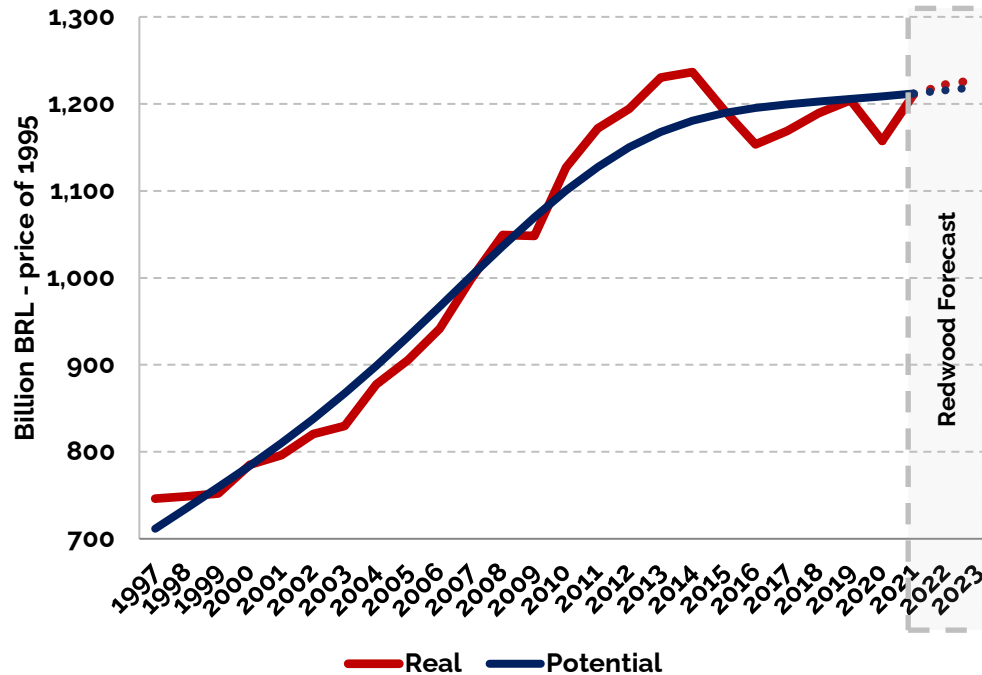


Source: Bloomberg; BACEN | Elaborated by Redwood

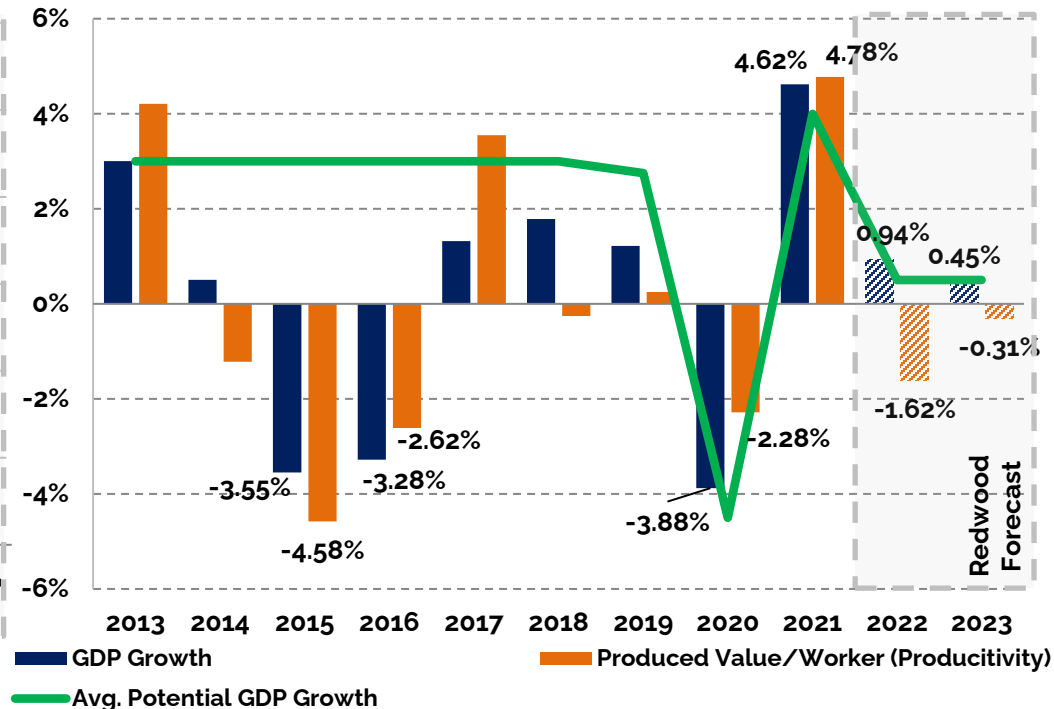
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Economic Activity and Productivity

GDP – Real and Potential (HP Filter)



Growth of GDP, Potential GDP and Productivity



Source: IBGE | Elaborated by Redwood

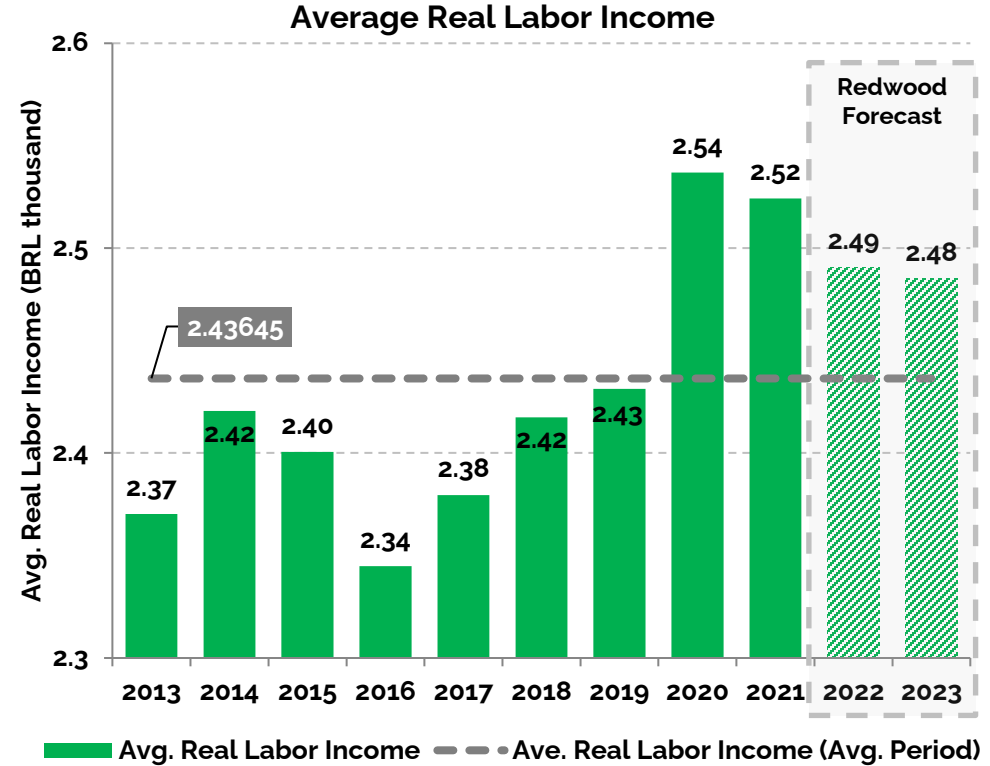
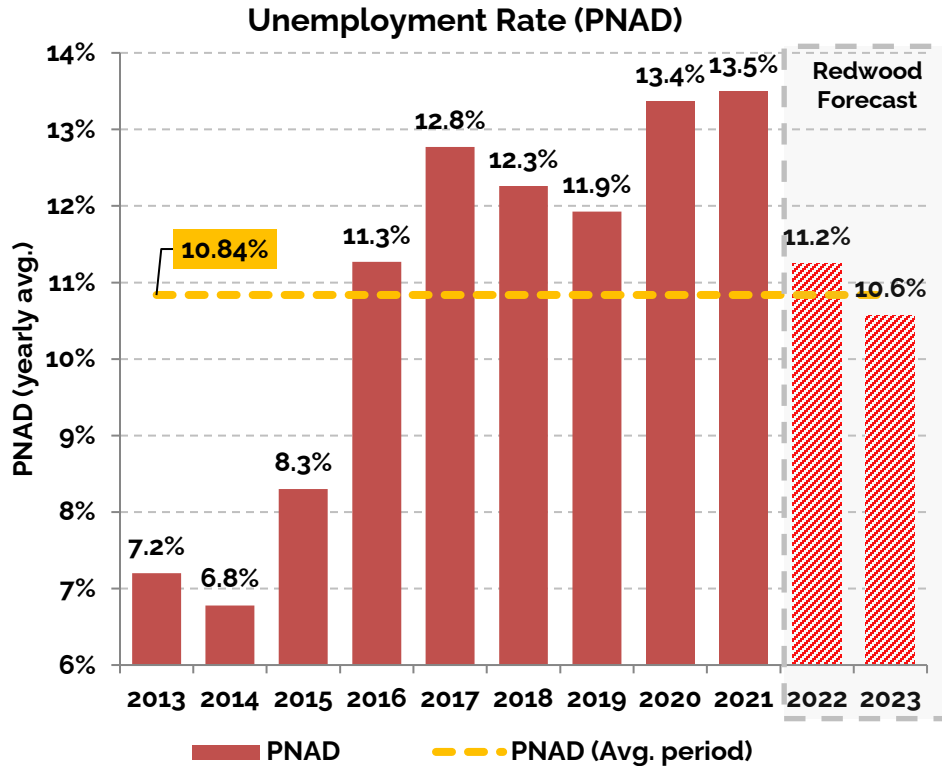
Obs.: Potential GDP and Unemployment Rate under methodological review. Here, we cautiously assume a Potential GDP adjusted for the "short term".

Higher interest rates and crises will promote asymmetry in GDP growth in terms of impacts on employment and value added/work. In addition, the existential difficulty of technical X predictive honesty continues...

- Trend and cyclicity in projections using HP Filter difficult to match
- Potential GDP adjusted for Short Term mischaracterizes true Output Gap

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Unemployment and Wages



Source: PNAD; IBGE | Elaborated by Redwood

Unemployment rate:

If the high interest rate has a direct impact on GDP and, therefore, on the level of employment, in the short term the Phillips Curve has "explained" well the "improvement" in the unemployment rate.

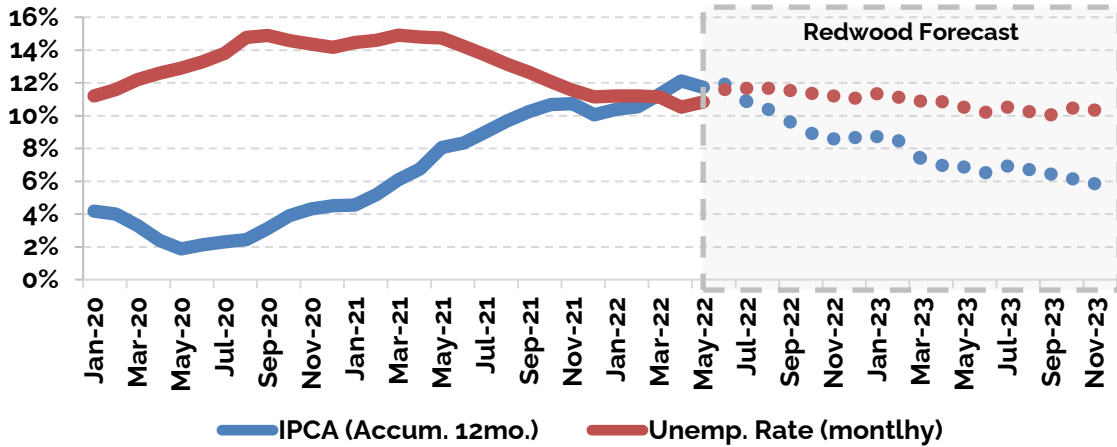
Average real earnings:

Wages are eroded by inflation. With purchasing power diminished, workers face more and more difficulties. Lower GDP and productivity won't help either.

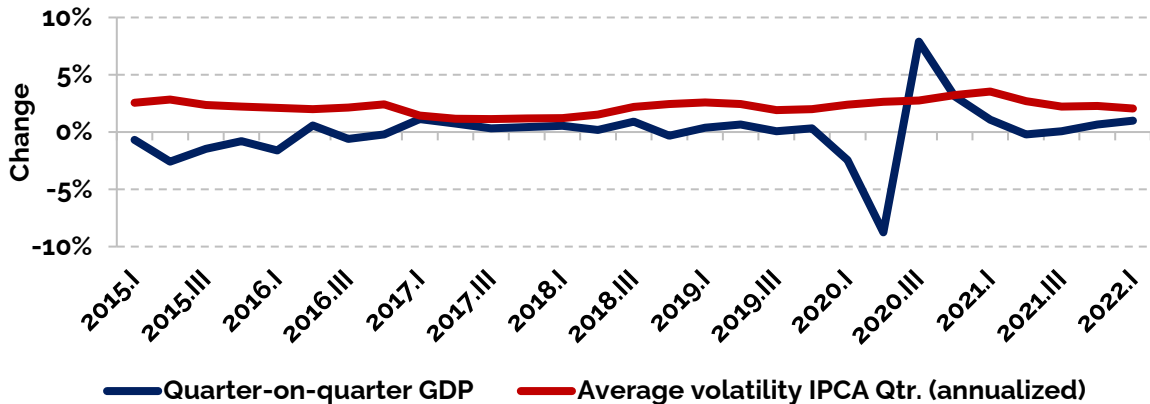
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Unemployment, Phillips Curve, GDP and Inflation Vol. (R. Lucas)

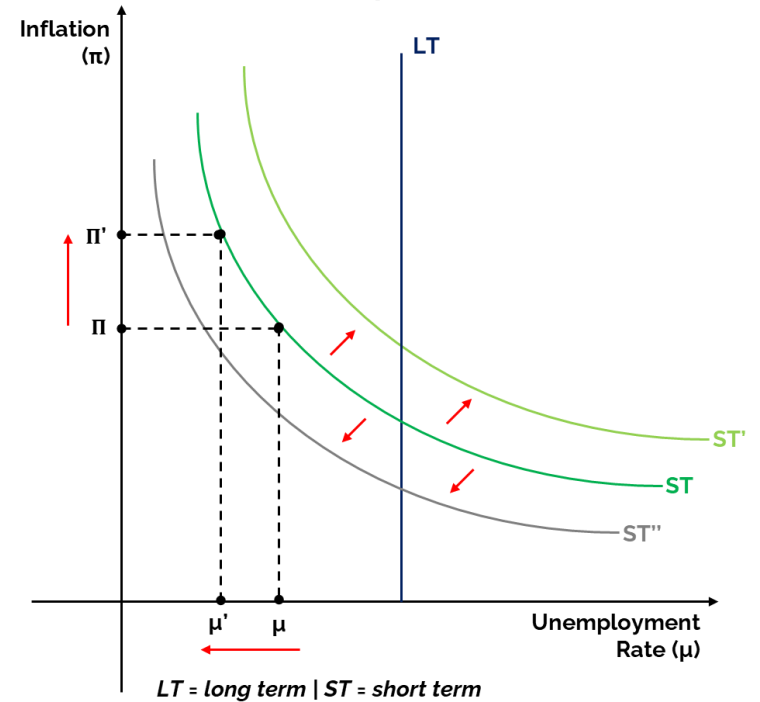
Inflation (IPCA) and Unemployment rate



GDP and Inflation Volatility Ratio



Phillips Curve

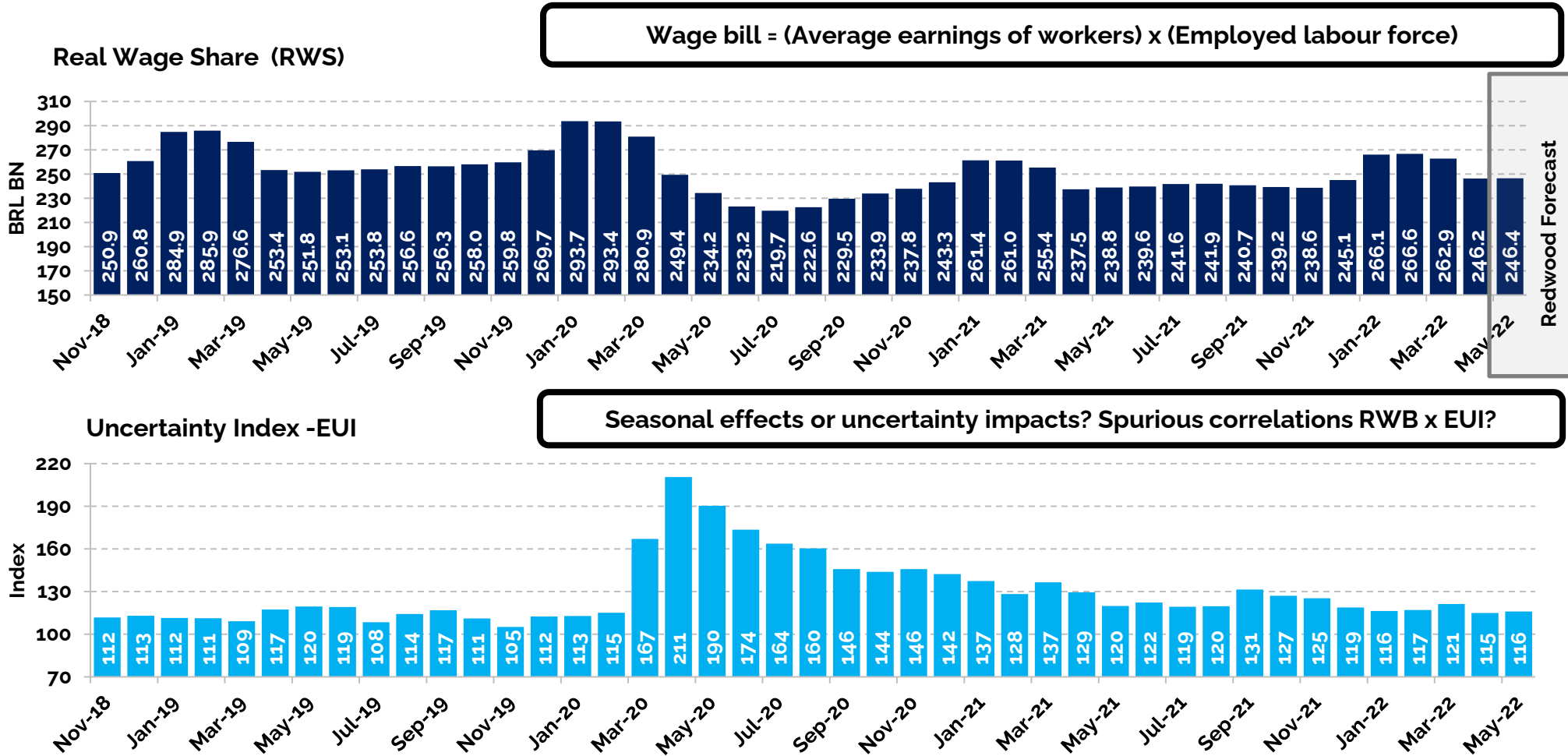


- The slope of the Phillips Curve depends on the volatility of inflation;
- Volatile inflation does not lead to increases in output if inflation is running hotter;

Source: PNAD; IBGE | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

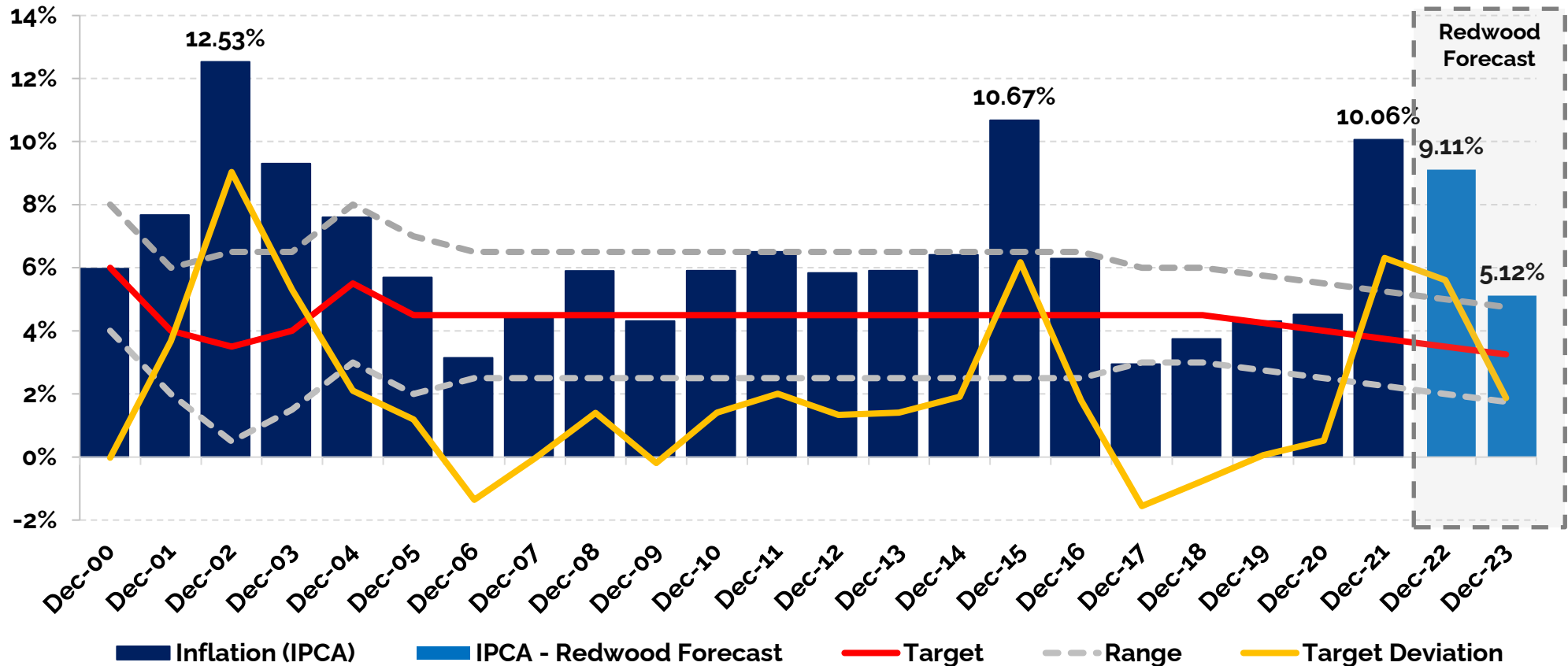
Real Wage Bill vs. Uncertainty Index



Source: IBGE; FGV | Elaborated by Redwood - Redwood Forecast RWS May/22

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

IPCA Evolution, Inflation Targets and Inflation Target Deviation

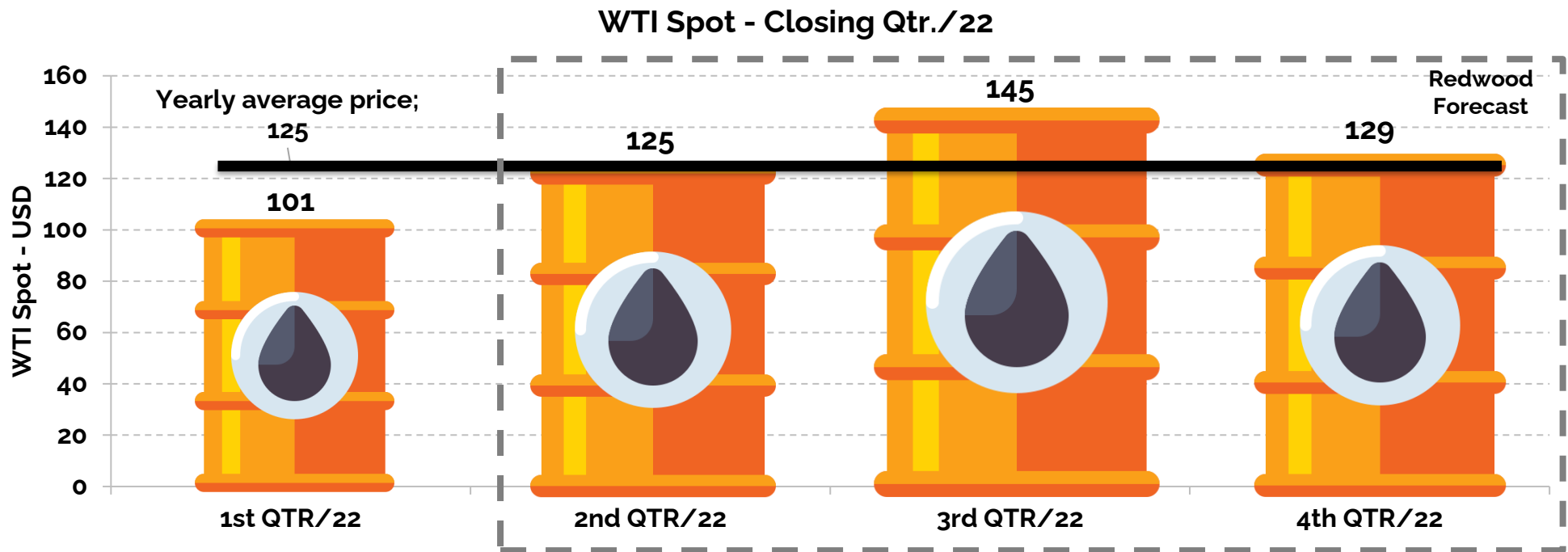


With a deviation from target of this magnitude, it is impossible not to consider inflation as “out of control”. This year we will already be for sure beyond the upper bound of inflation target bandwidth and, ever more likely, next year as well. Discussing the level of the target is not a priority, but the timeliness and appropriate resources used to fight it.

Source: IBGE; BACEN | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Inflation - Impacts of the oil price hike



Source: Broadcast | Elaborated by Redwood

- War and various crises in the world will not cool down oil prices;
- Average price expected for Barrel Oil in 2022 is USD 125;
- We will have more price pass-throughs if international price parity is maintained;
- Without readjustments (gasoline and diesel), shortages are certain in the short and medium term;
- The channel of contamination for other prices in the economy is direct and fast;
- The higher US dollar rate until the elections is an additional stress component on asset.

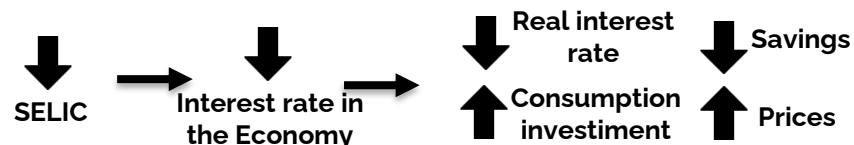
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Política Monetary Policy - nothing left to be done in 2022

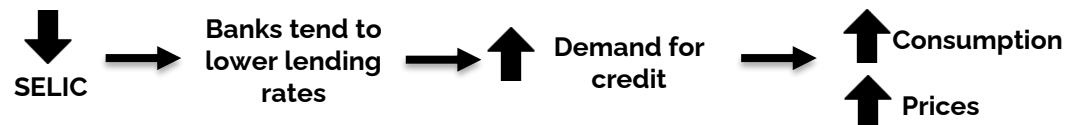
Monetary Policy Transmission Channels (Hypothetical Scenarios)

Fonte: BACEN - Mecanismos de transmissão da política monetária

Investments and Consumption Channels
The Selic is a benchmark for other interest rates in the economy



Credit channel
Selic is a benchmark for the banks' operational cost



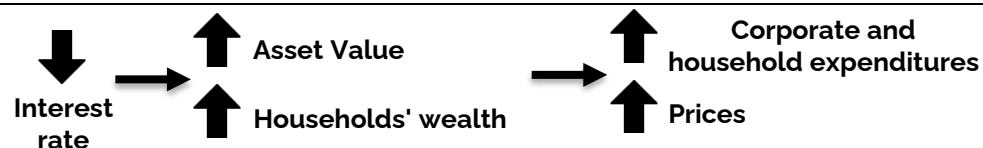
Exchange rate channel
Interest rate cuts attract fewer foreign investors, decreasing the inflow of foreign currency.



Expectations channel
Interest rates influence households' and companies' expectations of economic activity and inflation.



Wealth channel
Interest rate cuts increase the present value of some assets, including those used as collateral for loans by households and firms.

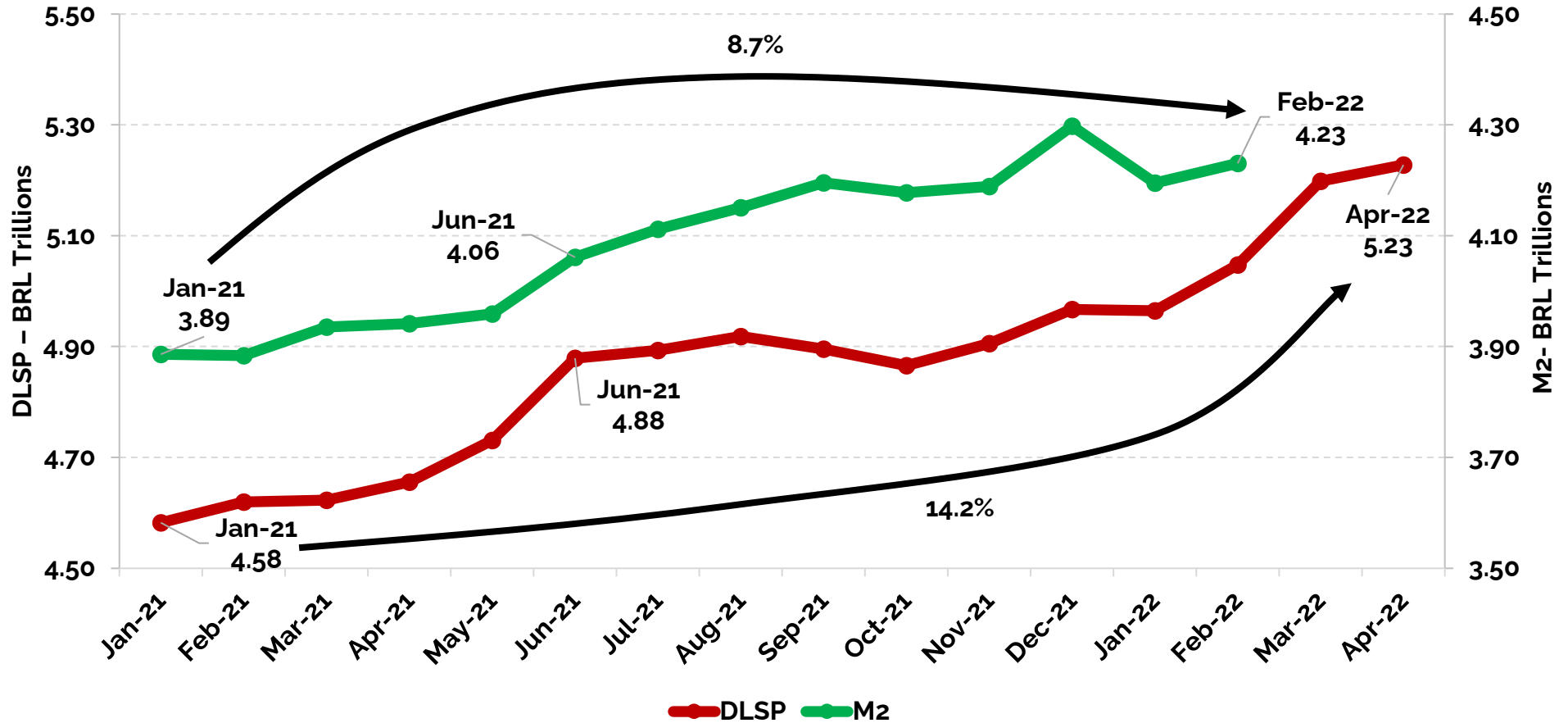


- Relevant Monetary Policy horizon expands to include 2023 and 2024;
- We will have higher interest rates for longer (but short of necessary to bring inflation to the target in 2023);
- Real interest rate around 4% to 5% over the next three years;
- BACEN's dual mandate is a disaster!

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Inflation: is it a monetary phenomenon or not? Or Fiscal/Monetary (T.Sargent)?

Net Public Debt (DLSP) and M2

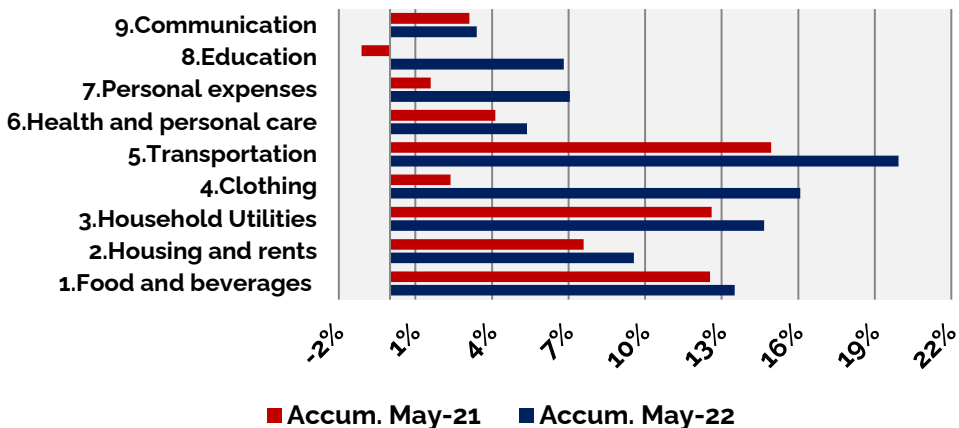


Source: BACEN | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

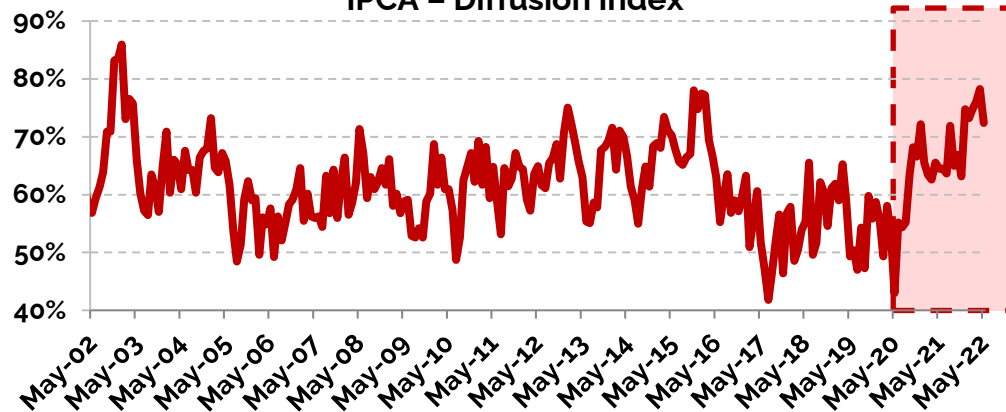
IPCA - Decomposition

IPCA - Accum. Change in 12m. by Group

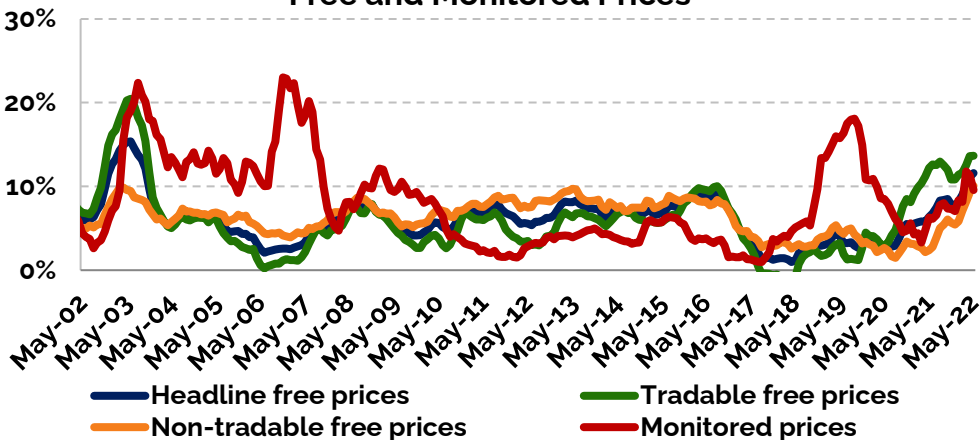


Inflation: The most nefarious of taxes
 In addition to rigorously affecting the poorest, the irony is that even in populist governments the rulers do not accept that they – regardless of ideology or who holds power – are always responsible. Under the concept of widespread AND constant price increases, there is no escaping this responsibility.

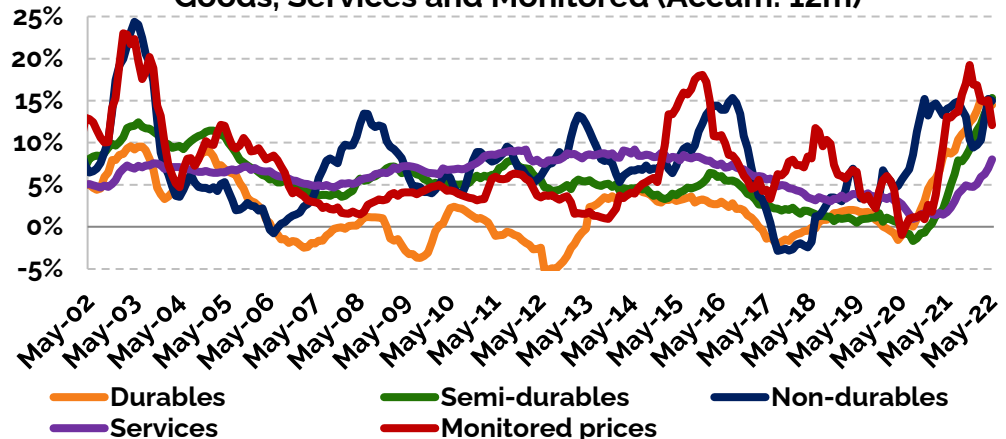
IPCA - Diffusion Index



Free and Monitored Prices



Goods, Services and Monitored (Accum. 12m)

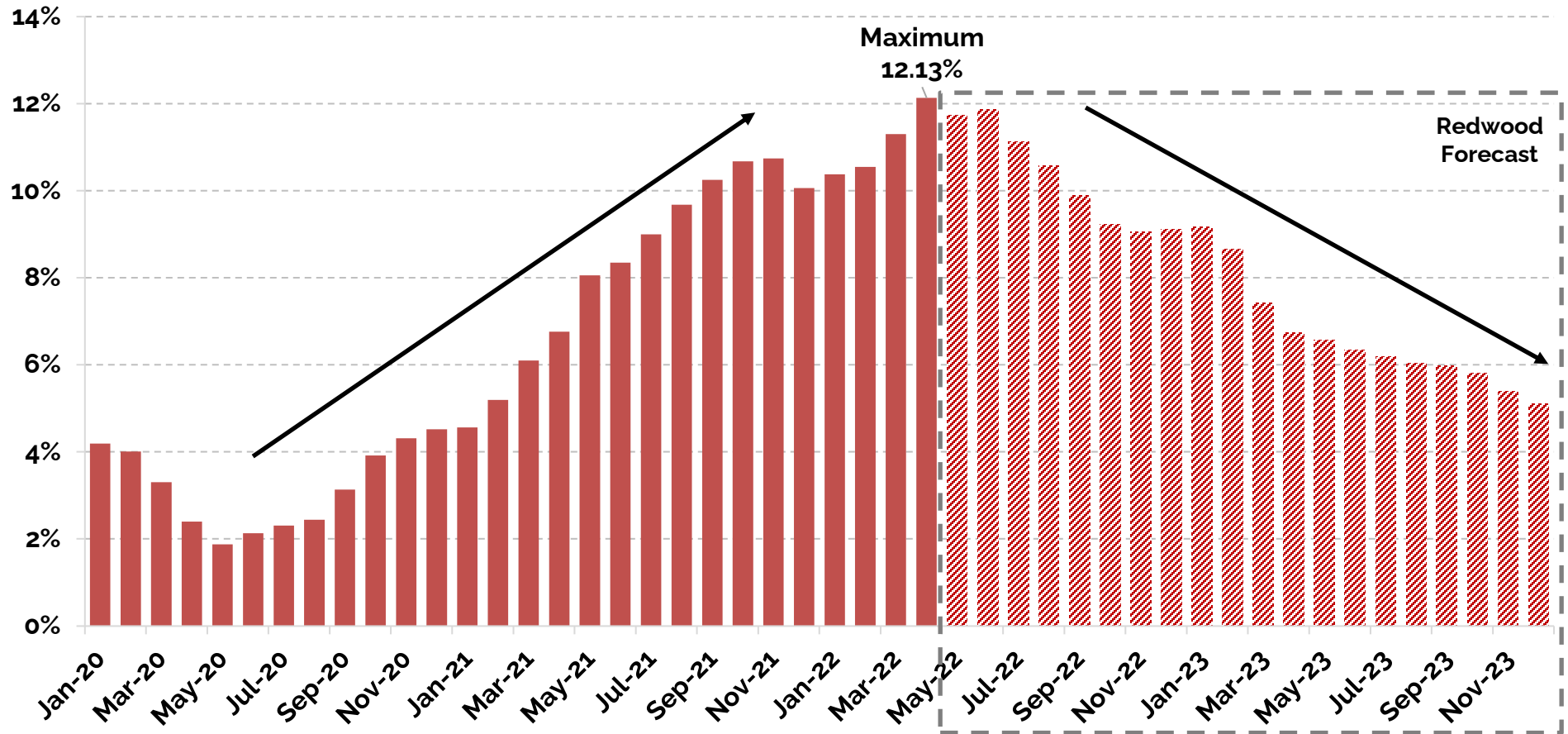


Source: IBGE; BACEN | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

IPCA – Downswing in sight?

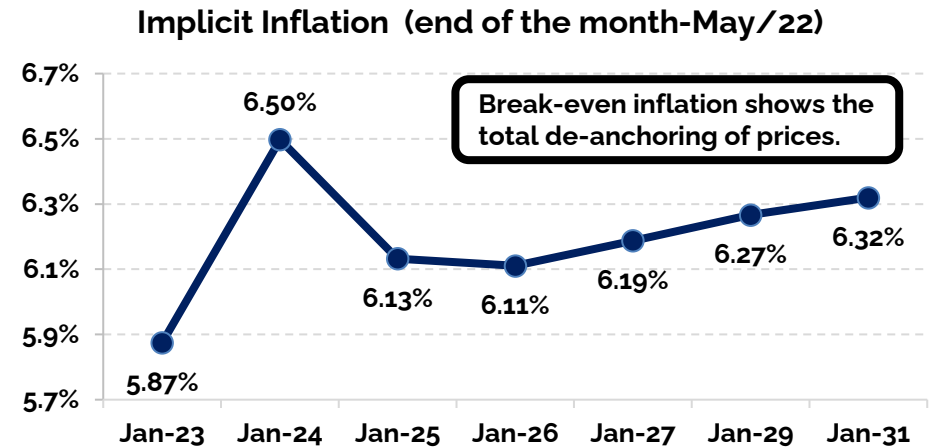
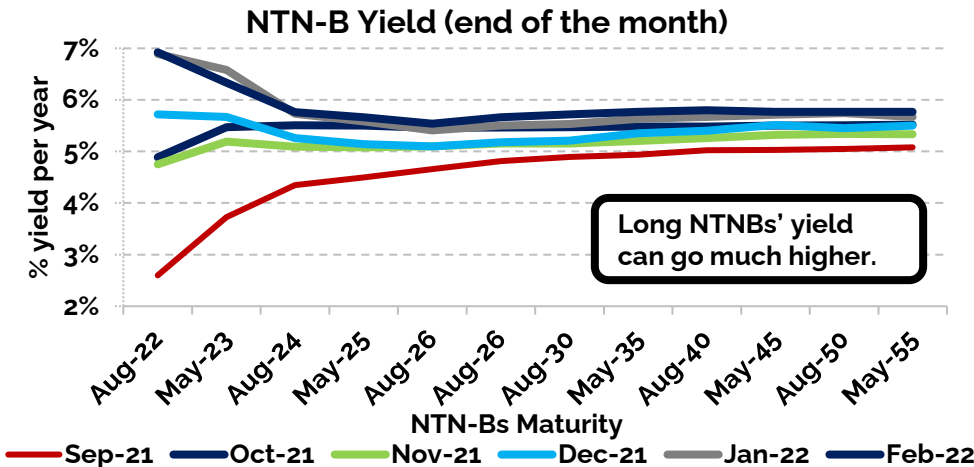
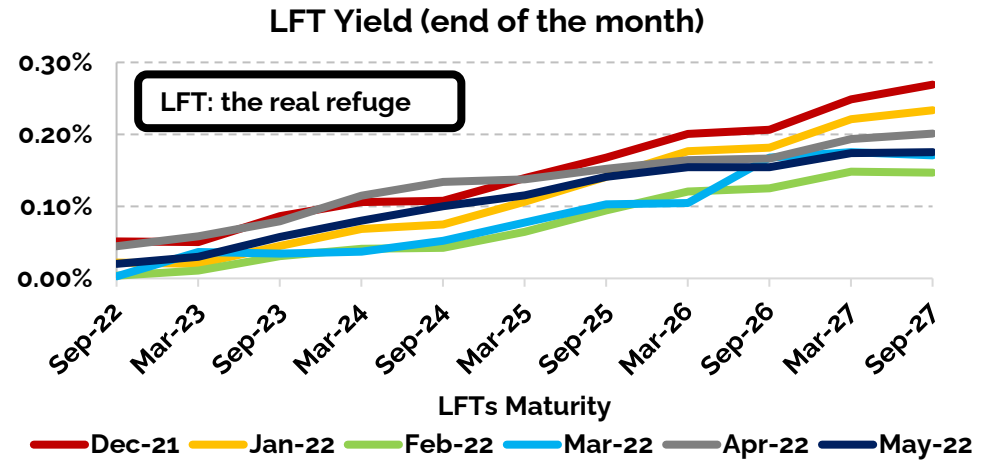
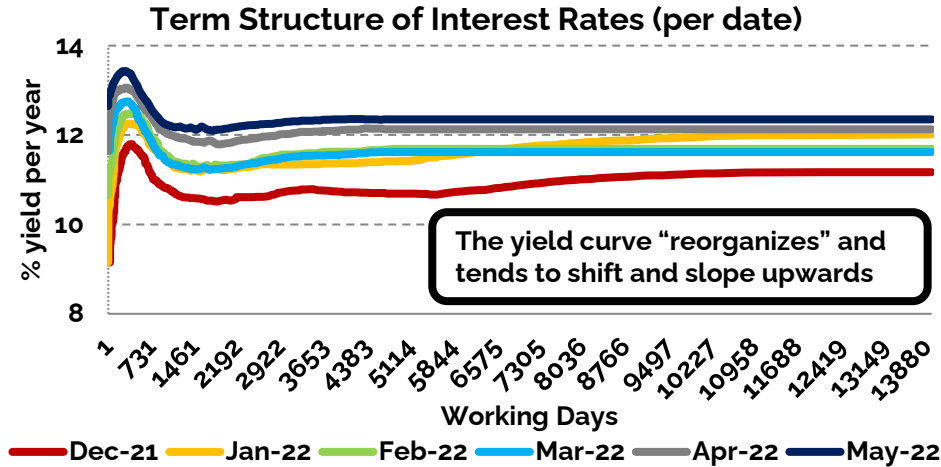
IPCA – 12m. Accum.



Source: IBGE; BACEN | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

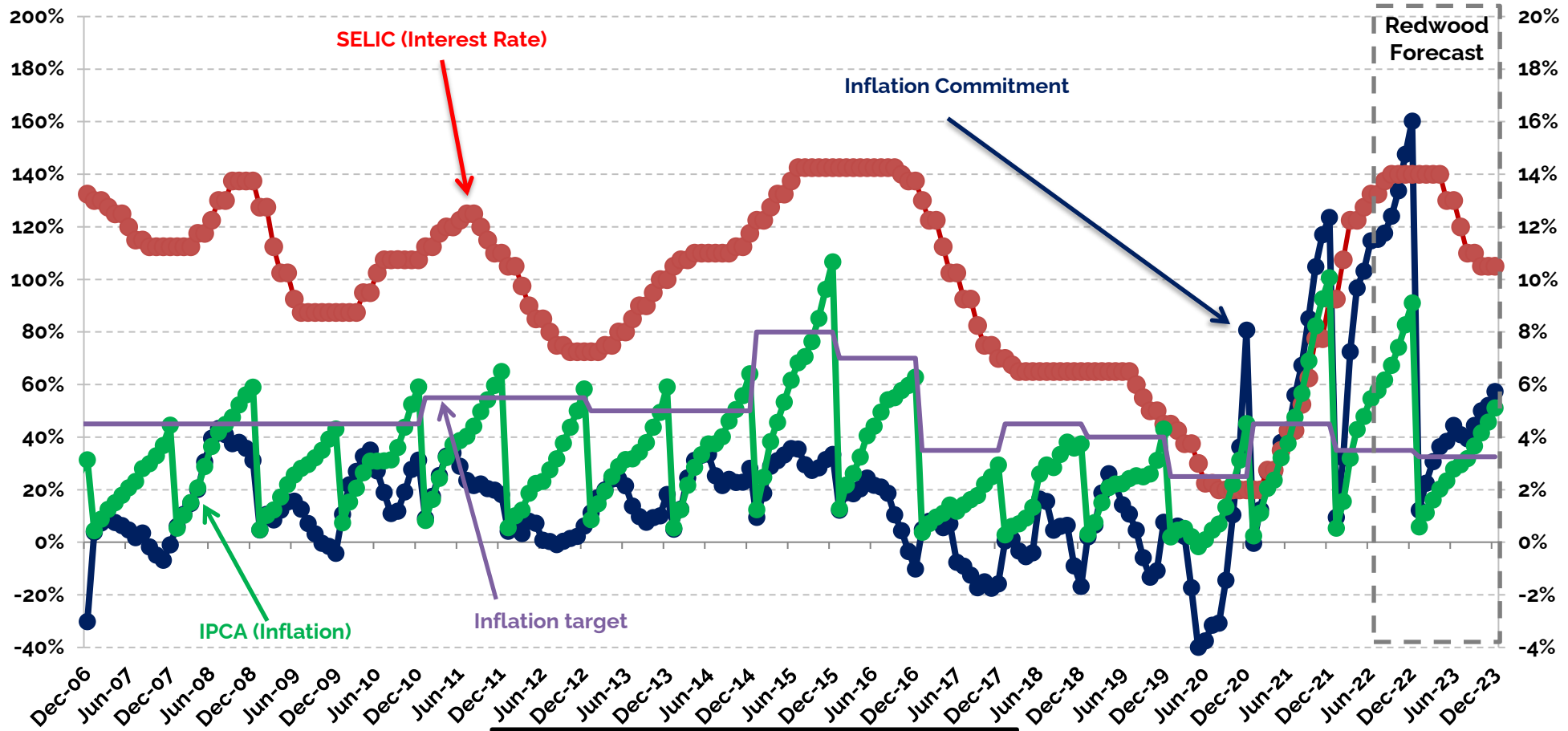
Interest Rates - what to expect of the yield curve and real interest rates



Source: B3; Anbima; Redwood Forecast| Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

BACEN's Reaction Function - Forecast 2022/23 - 3rd QTR 2022



Left Axis: Inflation Commitment

Right Axis: SELIC (Interest Rate), Inflation target and IPCA (Inflation)

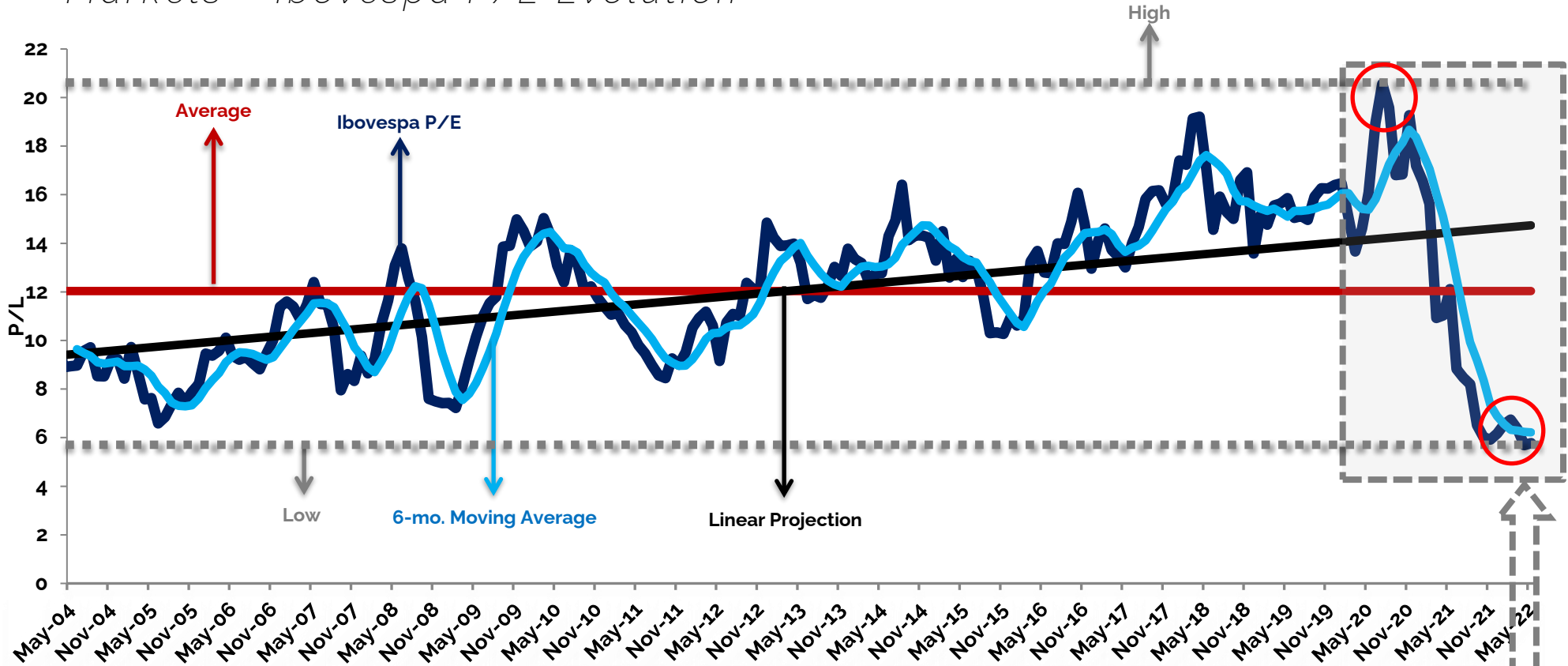
Obs.:
GDP 2022: 0.94% 2023: 0.45%
FX 2022: BRL 5.24 2023: BRL 5.10
Ave. Unemployment Rate 2022: 11.3% 2023: 10.6%
Inflation 2022: 9.11% 2023: 5.12%



MARKETS

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Ibovespa P/E Evolution

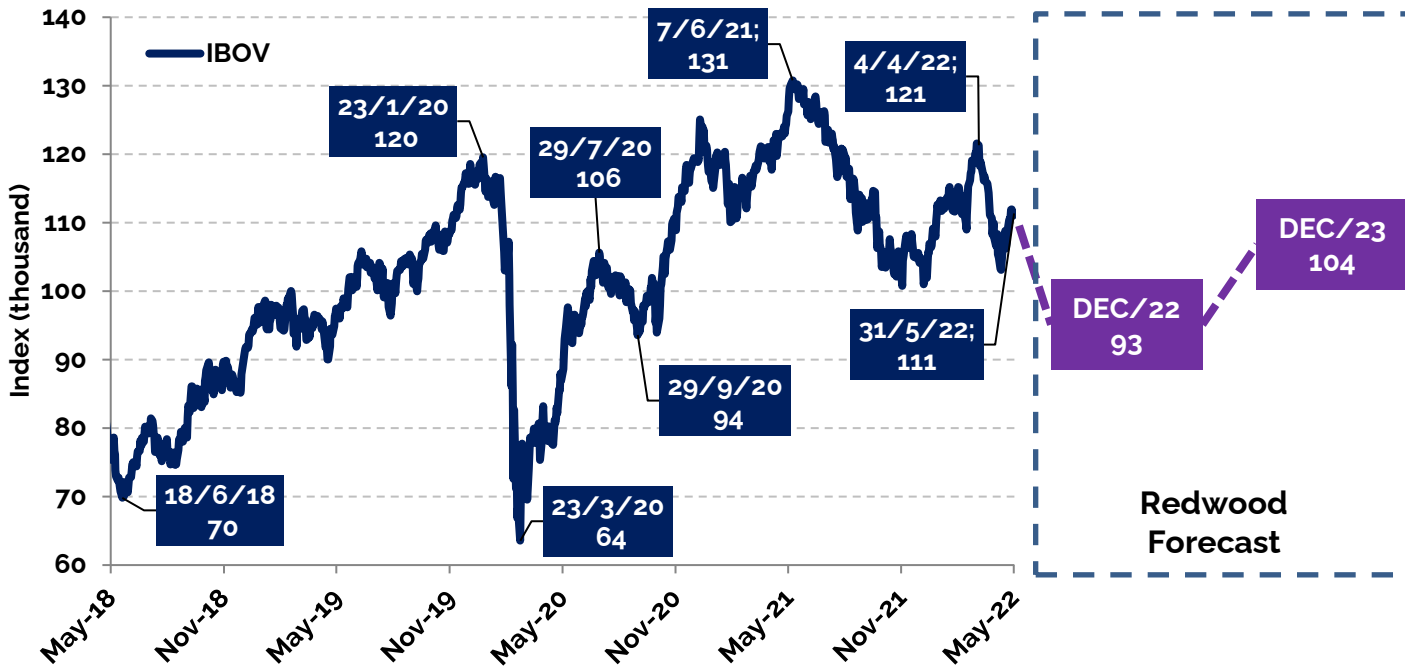


Period: 18.4 years
Source: Bloomberg
Elaborated by Redwood

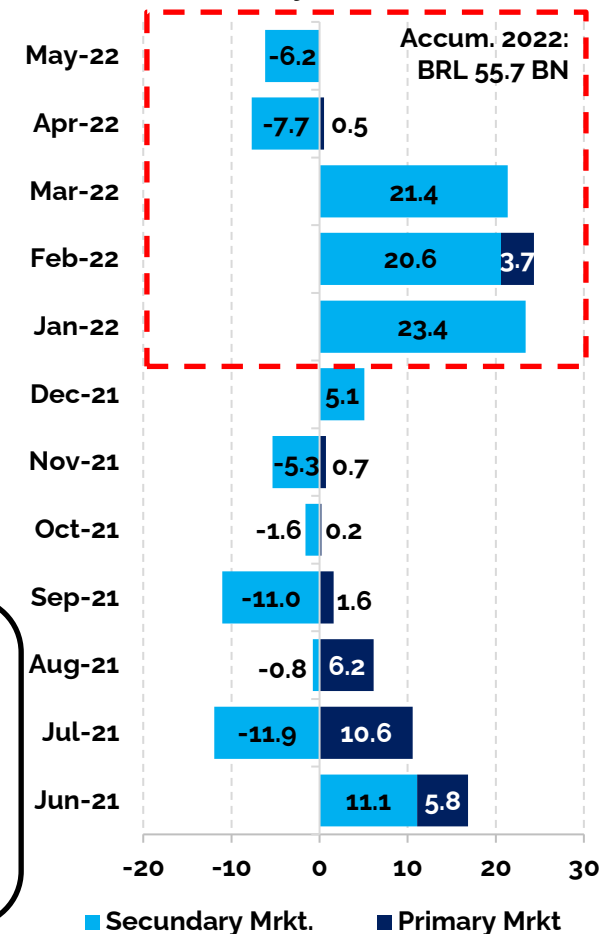
IBOV forecast related to	Up/Downside	May, 31, 2022
Fair Price (Points)	May, 31, 2022	111,351
Linear Projection:	286,313	157.13%
Historical Average Projection:	232,283	108.60%
Historical Low (P/E) – April, 29, 2022	109,830	-1.4%
Historical High (P/E) – July, 31, 2020	396,820	25.4%

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Ibovespa Assessment – Comparative projections



Foreign Investment B3- Monthly (BRL BN)



Stock Market is not (nowadays) a refuge against inflation

- Risk aversion: fiscal risks ahead
- Stock market with a strong weight of commodities and the impact of the War
- P/E ratio at lows... new record lows in terms of P/E?
- SELIC persistently high can have a strong impact
- Will B3 detach itself from the rest of the world?

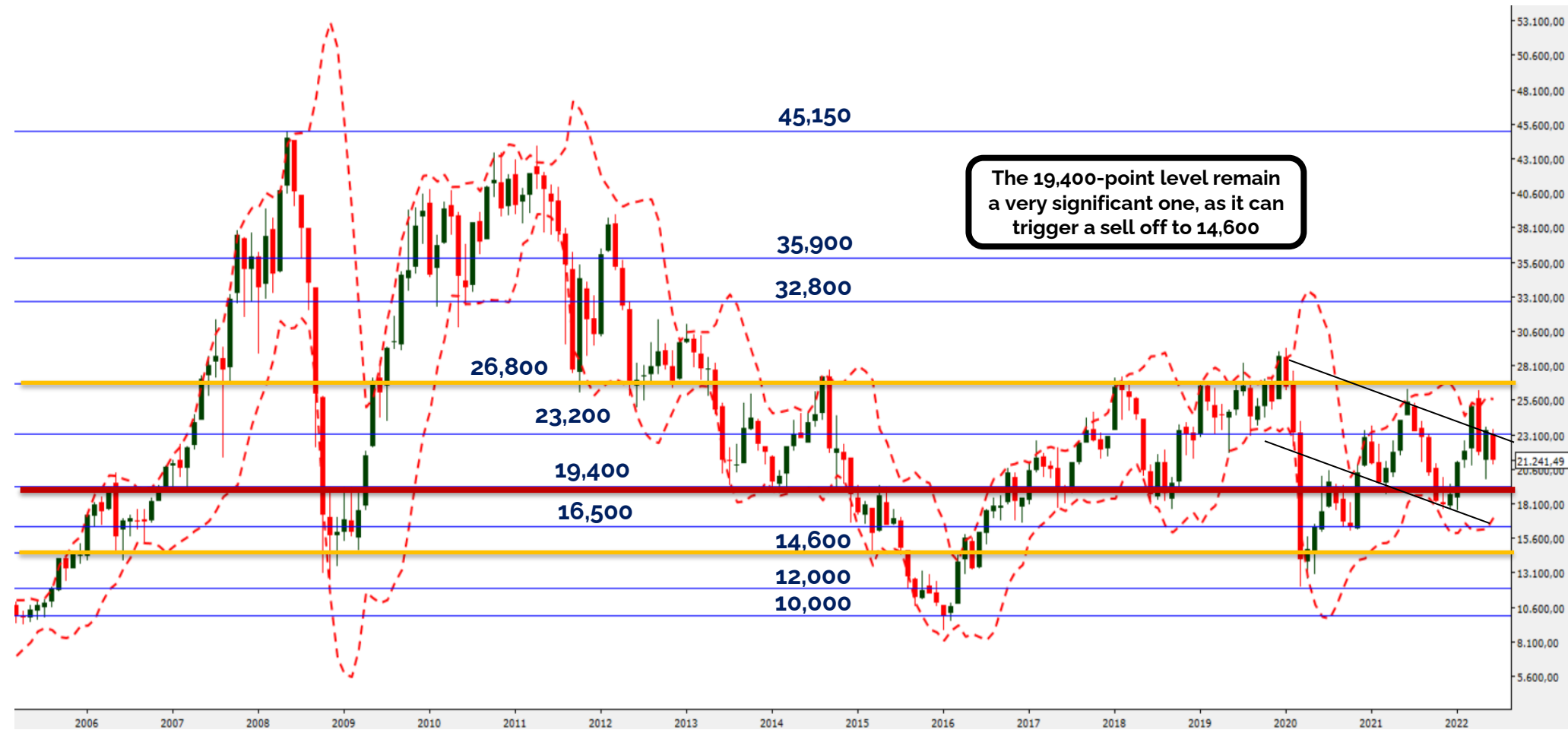
And yet...

- The inflow has been strong... But our statistics and flow measurement methodology have changed... Credibility and projections in check...

Source: Broadcast; B3 | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets - Ibovespa in USD terms



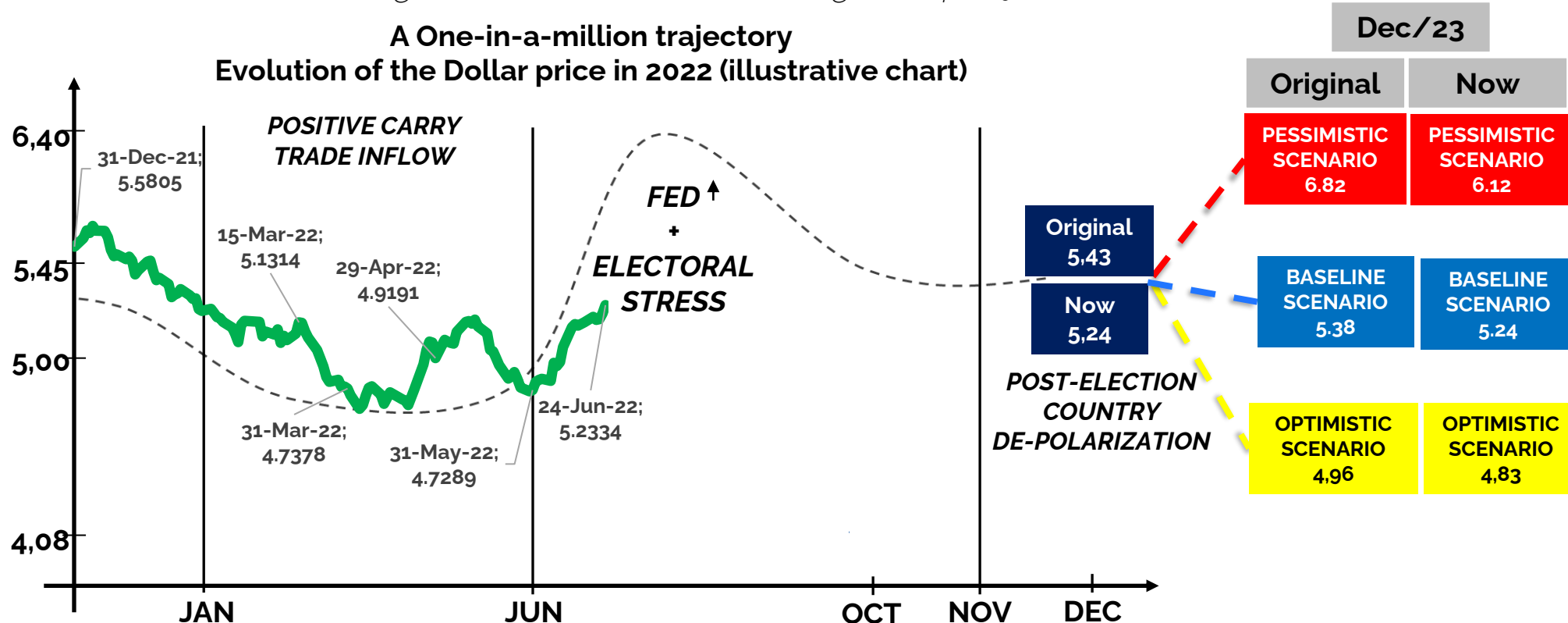
The 19,400-point level remain a very significant one, as it can trigger a sell off to 14,600

Monthly Candles – Base May, 31, 2022

Source: Broadcast | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Exchange Rate evolution: Original project, Observed and Now



Source: Broadcast | Elaborated by Redwood

- Dollar once again as a key variable
- Interest Rate Differential (Internal x External) does "explain"
- The "electoral" volatility hasn't even started yet
- Domestic political stress will tone down after the elections – the country will need to be "pacified"
- Dollar devaluation in the world may be a reality

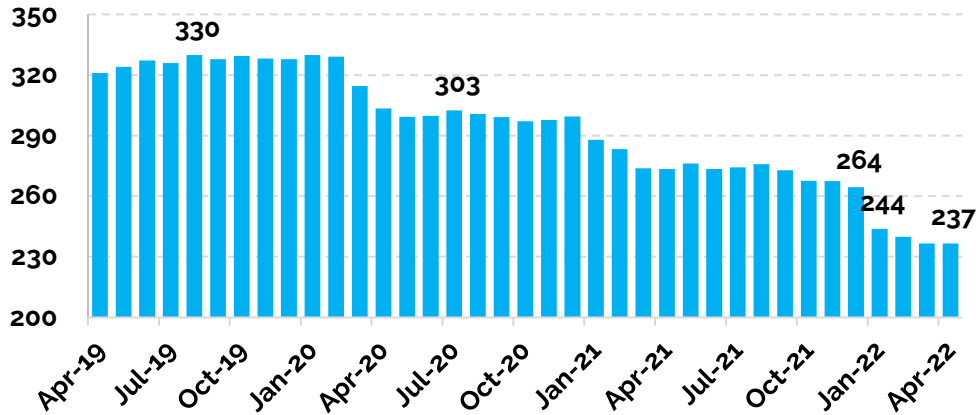
- Legend
- Original project
 - Observed Data

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

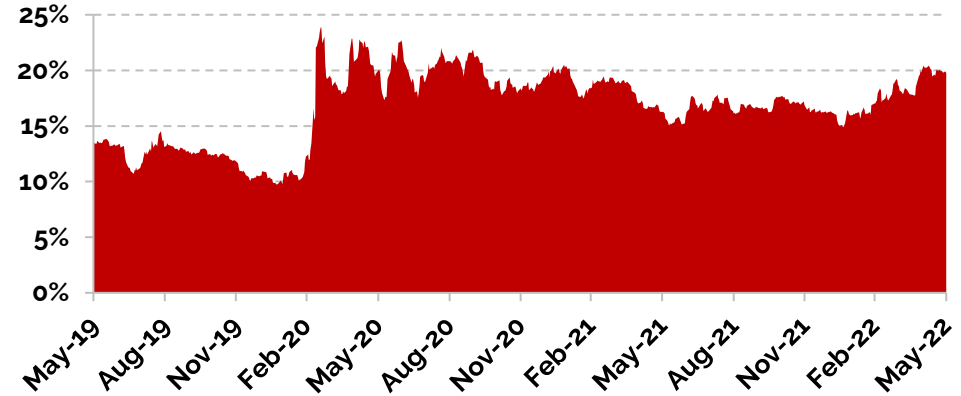
Markets – Exchange rate policy: Endless Interventions

- Highlights:**
- Exchange Swap: necessity;
 - Volatility tends to rebound;
 - Reserves: the tendency is to deploy them;
 - Prices cave in as expected and swings back;
 - CDS 5 years "too well behaved".

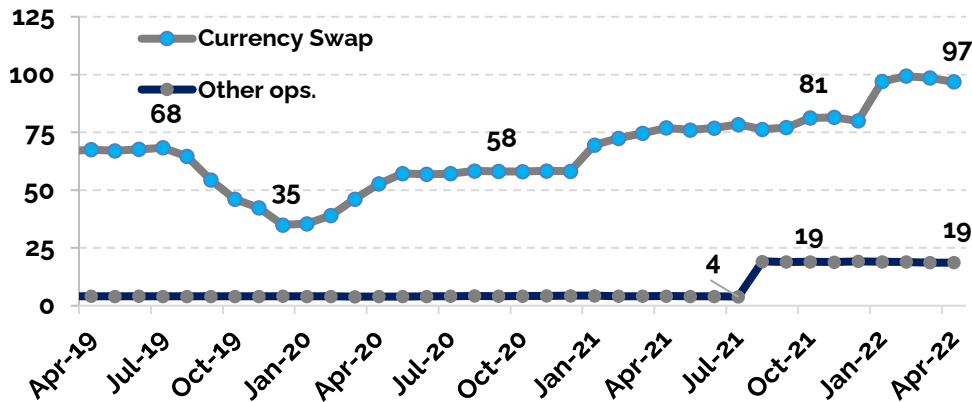
Foreign Reserve Position - Bacen (USD BN)



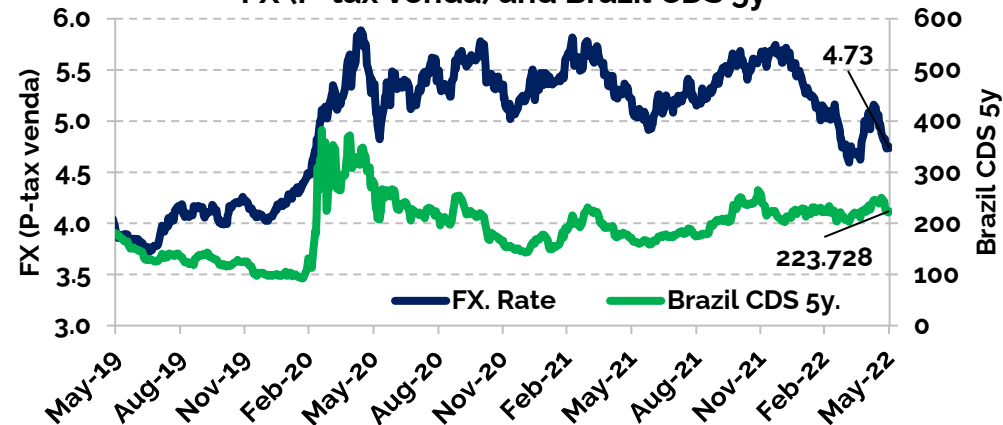
USD BRL Currency Rate Volatility (3 mo.)



Currency Swaps¹ and Other Ops.² BACEN (USD BN)



FX (P-tax venda) and Brazil CDS 5y

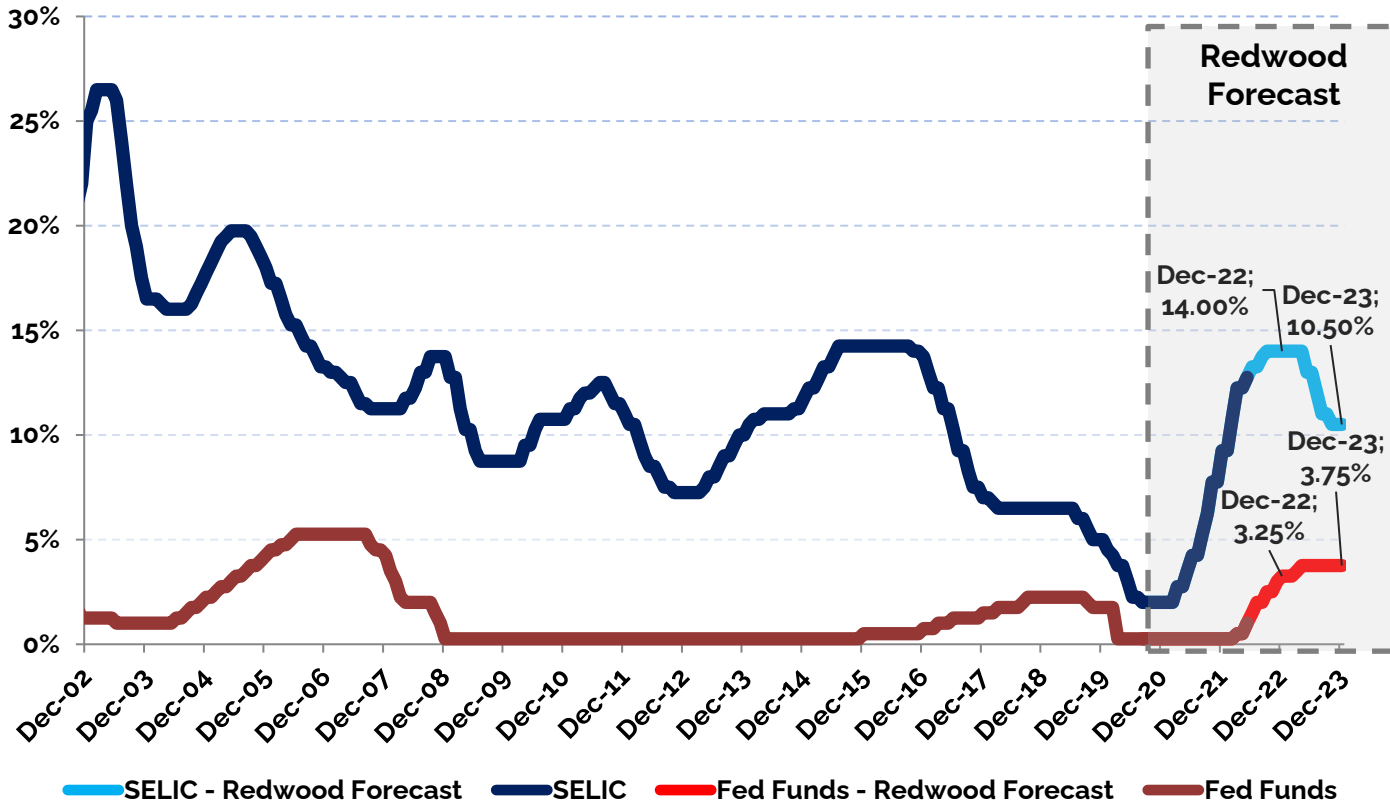


Source: BACEN; Bloomberg | Elaborated by Redwood

¹Transactions carried out through open market auctions and registered at BM&F/B3 S.A. Notional value of debtor position assumed by CB converted at the end-of-period purchase rate of currency. ²Assets and liabilities recorded in the CB balance sheet, except international reserves and stocks of repo lines and loans in foreign currency.

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Evolution of Interest Rates – Brazil x USA and Parity



Source: Bloomberg; IBGE | Elaborated by Redwood

Taylor Rule - Redwood

$$(2022) \text{ Target Rate} = \text{Neutral Rate} + 0.5 \times (\text{GDP}_e - \text{GDP}_t) + 0.5 \times (i_e - i_t) = 13,88\%$$

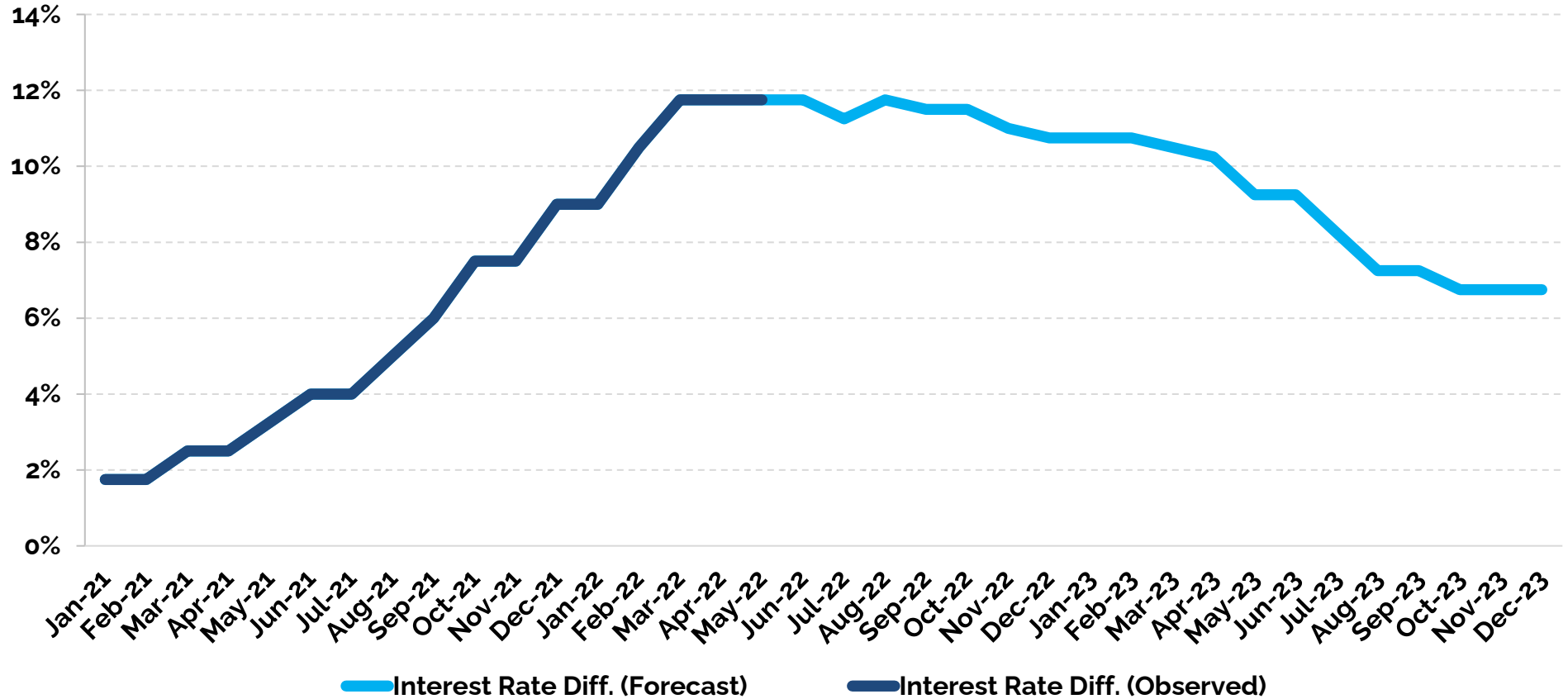
$$(2023) \text{ Target Rate} = \text{Neutral Rate} + 0.5 \times (\text{GDP}_e - \text{GDP}_t) + 0.5 \times (i_e - i_t) = 10,43\%$$

The Fed has lost its timing and, with an estimated neutral rate at 2.5%, it will have to set its rate well above that. There are those in the market who believe that the FED could reach rates above 4% in 2023, but we don't think that it will do it. The other BCs on the planet, especially in Europe, should follow the same prescription, including a retreat from QE. The consequences and the huge impacts on the markets are already measured. Here, BACEN did act promptly, but even so, it also missed the timing, it should raise the Selic a little more and keep it high for longer than originally estimated. This is the "partial" price of "delaying" monetary contraction.

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Is carry-trade trending down?

Interest Rate differential Selic x FED Funds



Source: Bloomberg; IBGE | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Evolution of Interest Rates – Brazil x USA and Parity (Cont.)

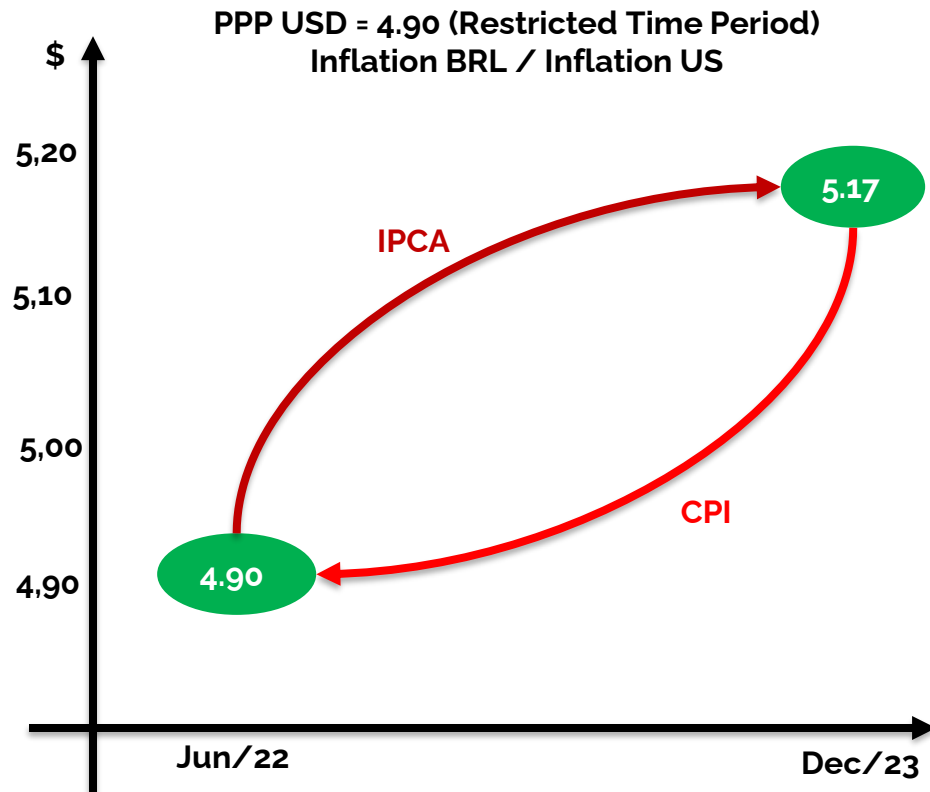
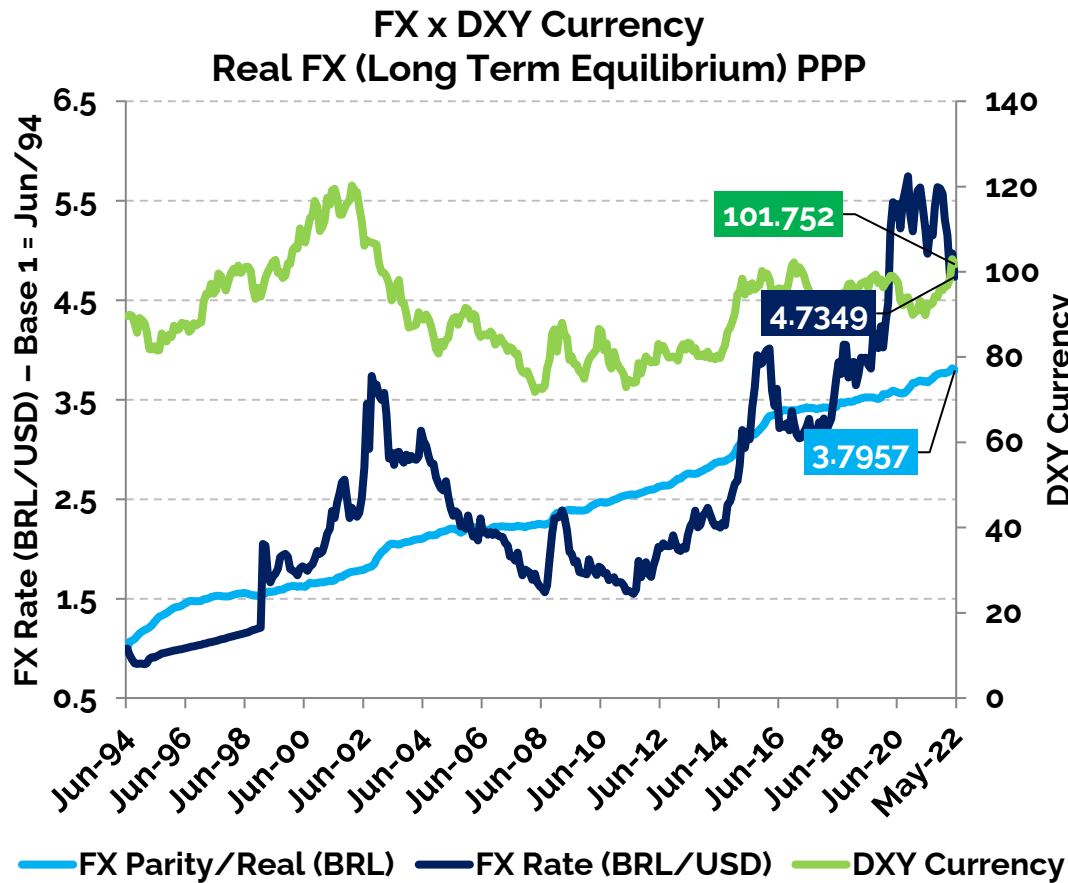
International Interest Rate Parity - Redwood

	NTN-B	T-Bond	CDS	Spread
Average	4.72%	1.95%	3.04%	-0.31%
Standard Deviation	1.12%	0.69%	0.70%	0.51%
May-22	5.60%	2.84%	3.17%	-0.48%
Low stress 2022	8.16%	4.84%	4.01%	-0.82%
High stress 2022	9.27%	4.84%	4.01%	0.20%
Low stress 2023	9.07%	5.59%	3.61%	-0.31%
High stress 2022	9.28%	5.84%	3.61%	-0.35%

The Fed will have no escape but to hike its interest rate. With neutral interest “calculated” at around 2.5%, its terminal rate in 2022 will already be in a restrictive long-term stance, but without producing positive real interest yet. Thus, it should continue to advance in 2023, when it should reach 3.75% against a projected inflation of 3%. The reflexes of this policy, without further adjustments to the model (which are certainly necessary), promote very significant increases (via interest rate parity) in premiums and consequent awareness of the real interest paid by NTNBs.

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Evolution of Interest Rates – Brazil x USA and Parity (Cont.)

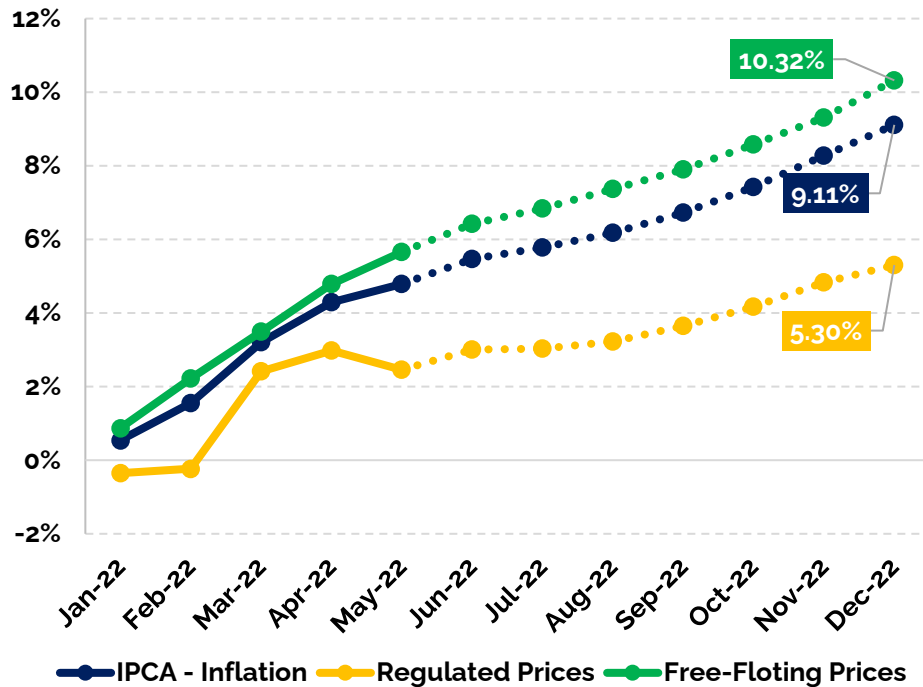


Source: FRED – St. Louis; Bloomberg | Elaborated by Redwood

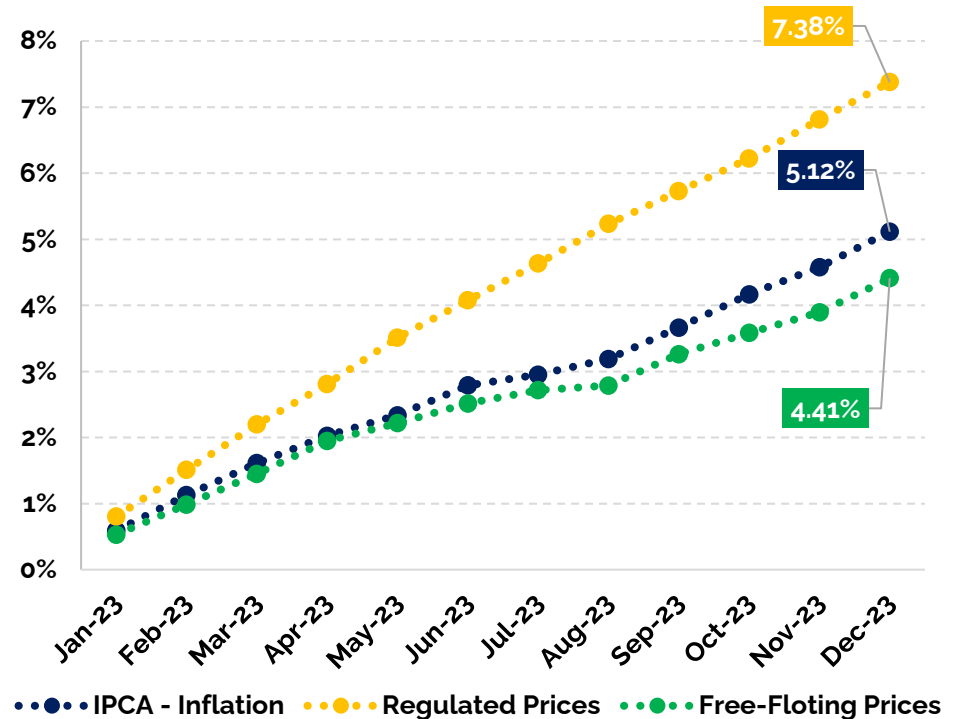
POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Headline IPCA, Regulated and Free-Floating Price Inflation

IPCA, Regulated and Free-Floating Price Inflation
Accum. 2022 - Redwood Forecast from Jun/22



IPCA, Regulated and Free-Floating Price Inflation
Accum. 2023 - Redwood Forecast

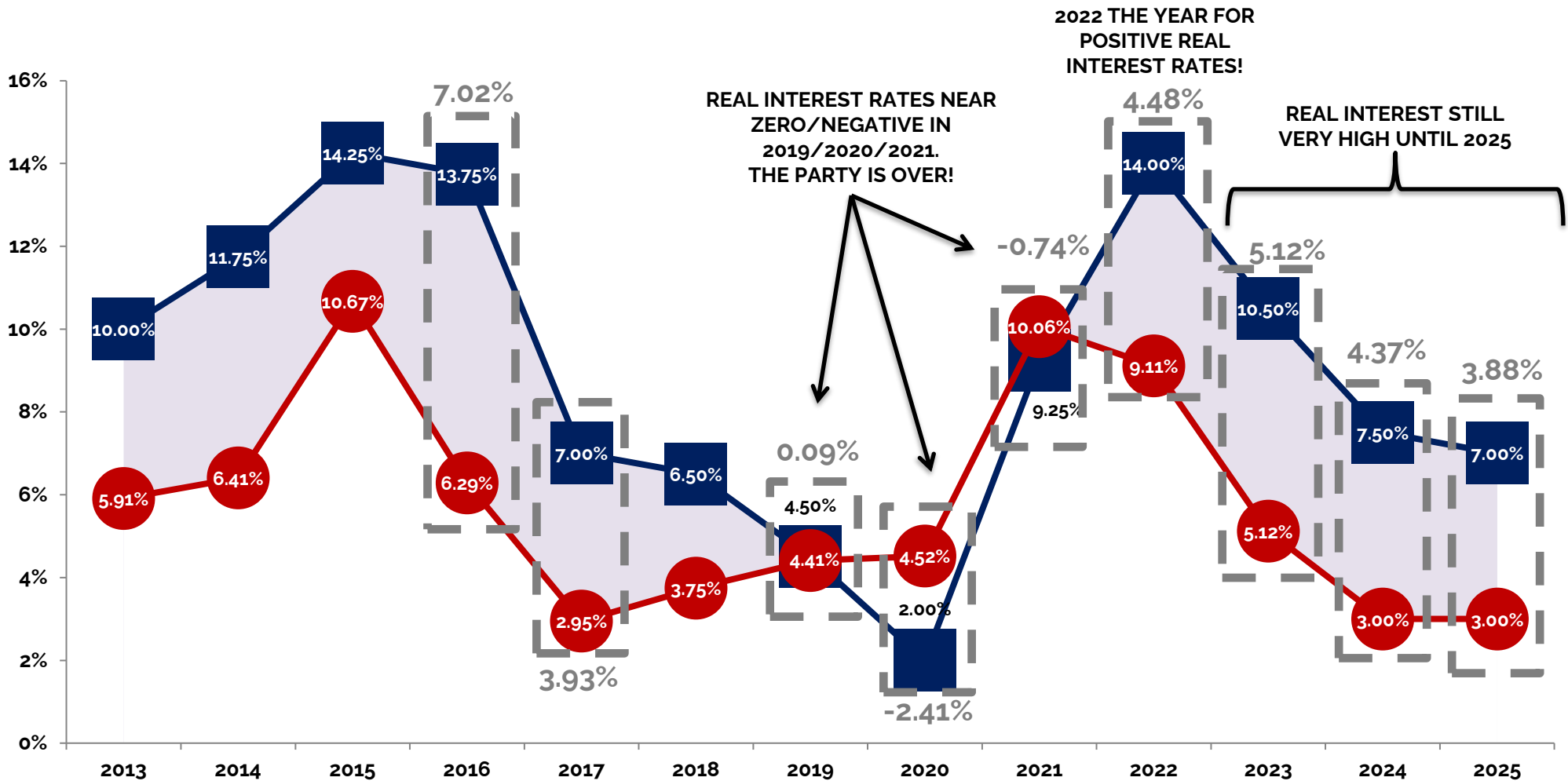


Is the dragon really on the rise?
Any "control" of regulated prices this year will not occur in 2023. Free-floating prices will "adjust" to the Selic effects.

Source: IBGE | Elaborated by Redwood (Redwood Forecast from Jun/22 to Dec/23)

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Evolution of Interest Rate and Inflation in Brazil



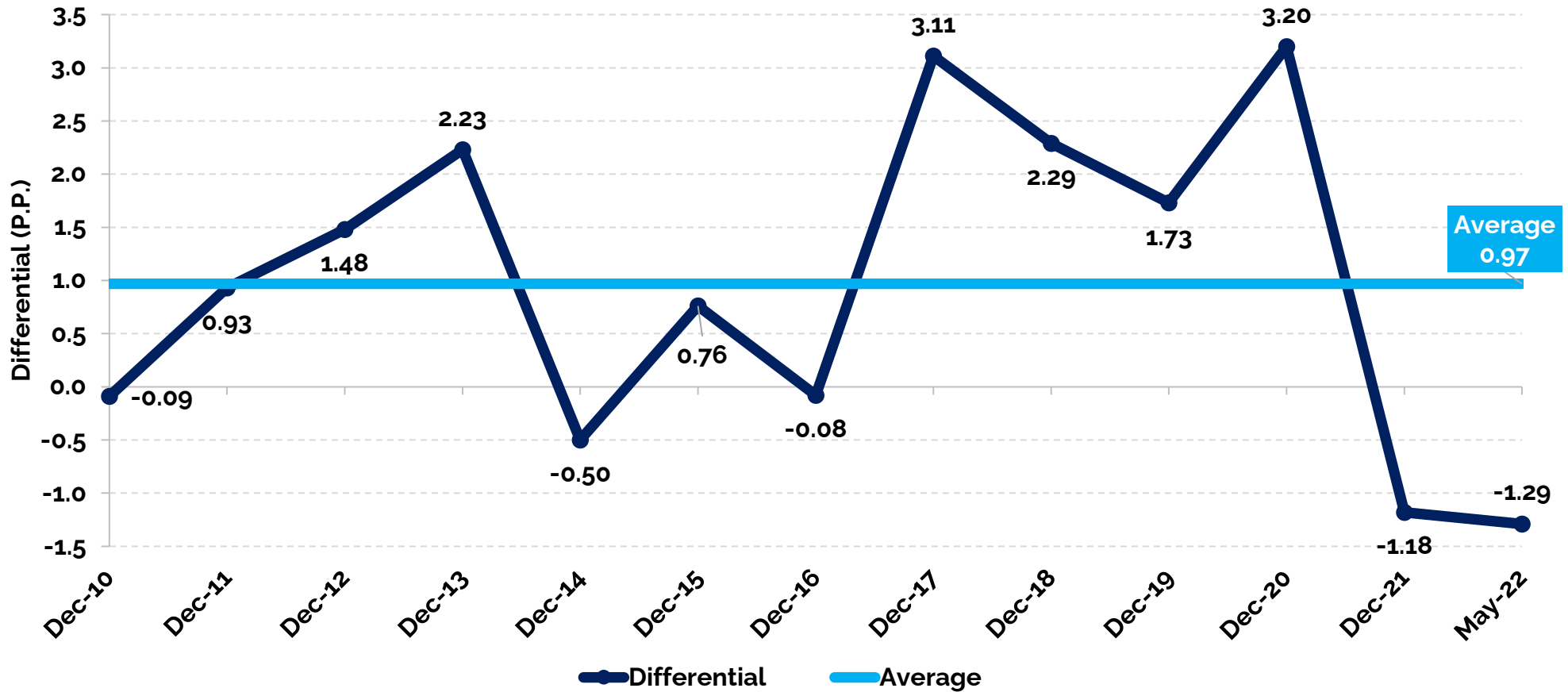
Source: BACEN; IBGE | Elaborated by Redwood – Obs: Redwood forecast for IPCA and SELIC – 2022-2025

Real Interest Rate Interest Rate - SELIC Inflation - IPCA

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Yield Curve Inversion (Anomaly?) => Inflation and Recession

DI-Fixed Differential 5 years and 1 year

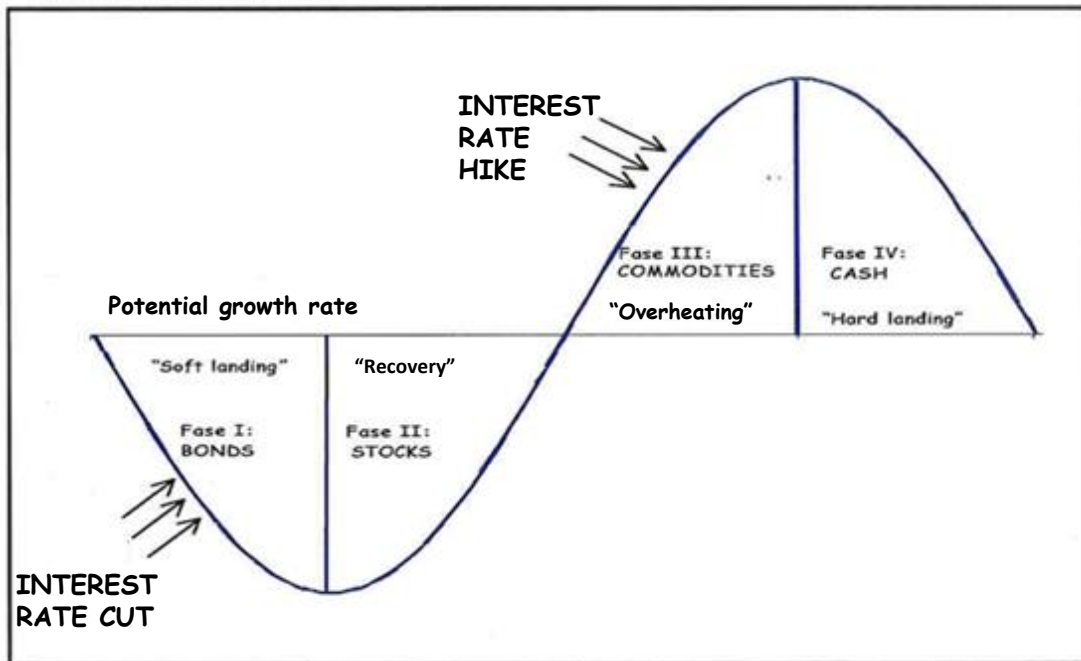


Source: B3 | Elaborated by Redwood

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Investment Clock Model– does it make any sense?

“Investment Clock”



Source: ML Global Strategy Team

- The model associates portfolio allocation and sector strategy with the economic cycle
- The cycle is divided into 4 stages and is a function of:
 - the direction of economic growth
 - the direction of inflation
- the basic premise
 - depending on the identified economic moment, there will be a stage of possible investment assets
 - Bonds
 - Stocks
 - Commodities
 - Cash

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Investment Clock Model– does it make any sense?

- **“Soft Landing”**

- Growth slows down
- Inflation falls due to excess capacity and weak demand
- Bonds are the best asset class, outperforming equities as earnings prospects dwindle
- If inflation is not seen as the problem, BACEN cuts interest rates to boost the economy

- **“Recovery”**

- Interest rate cuts affect economic growth (at least in the short run)
- However, excess capacity is still beyond required levels, keeping inflation and the price of other goods weak
- Companies' profit projections increase, causing their shares to beat the performance of Bonds and other assets.

- **“Overheating”**

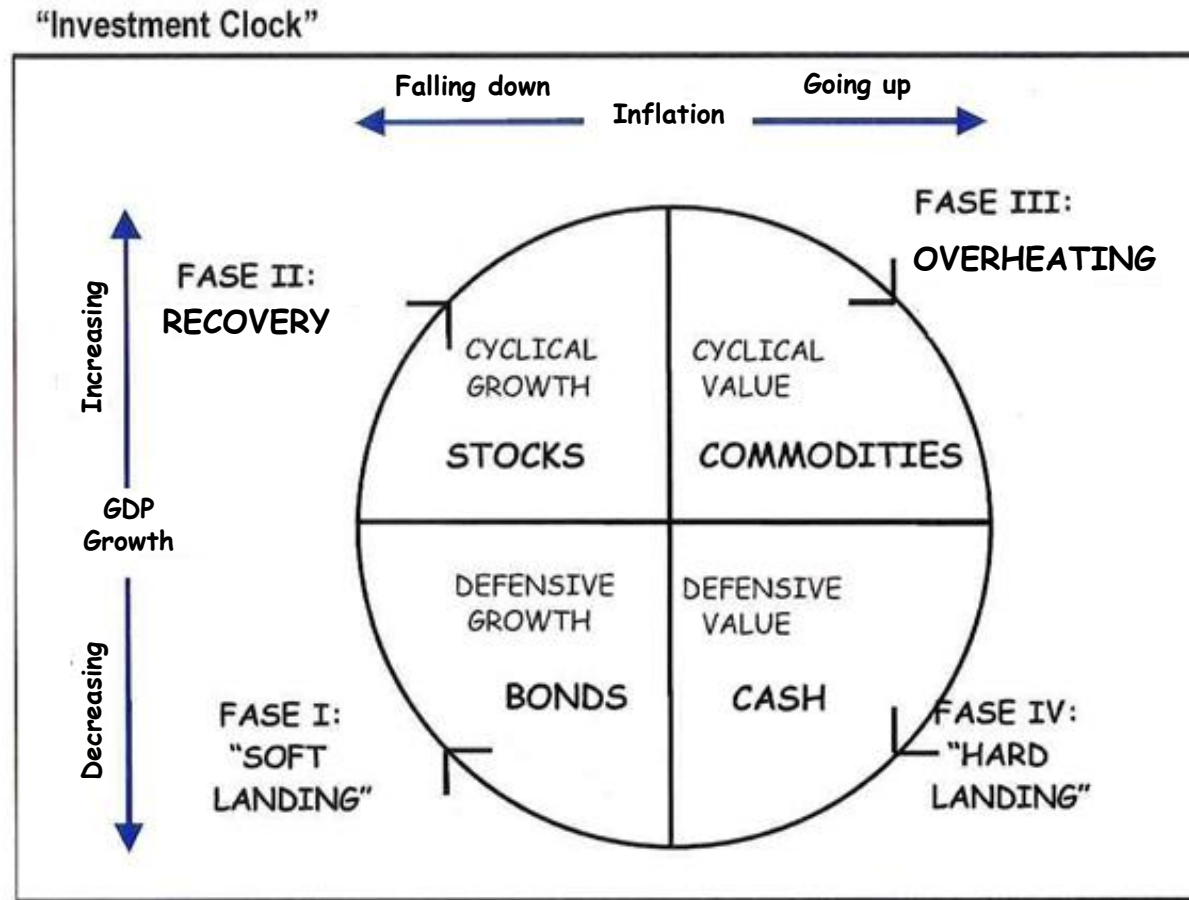
- Commodity-producing companies raise their prices due to narrower restrictions on production capacity
- mounting inflationary pressure induces BACEN to raise interest rates
- price of commodities rises

- **“Hard Landing”**


- Growth slows down, but inflation still rises due to price increases practiced by companies to protect their margins against rising unit costs
- Tight job market with upward wage-price spiral
- This stage ends either with the price of commodities falling or with rising unemployment to bring the price of wages to a manageable level
- This process is called *stagflation*

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Markets – Investment Clock Model– does it make any sense?



Source: ML Global Strategy Team



REDWOOD MACROECONOMIC FORECAST 2022 AND 2023

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Probability-based Prospect 2022 and 2023 – 3rd QTR 2022

INDICATORS		2018	2019	2020	2021	2022 (Base/Prob.)	2023 (Base/Prob.)
Economic Growth							
GDP Growth	%	1.78	1.22	-3.90	4.60	0.94	0.45
Investment Rate	% GDP	15.83	15.47	16.61	19.17	18.46	18.42
Labor Markets (PME-IBGE)							
Average Rate of unemployment (yearly rate)	%	12.39	12.05	13.49	13.50	11.25	10.57
Real Average Wages	R\$ const	2,417	2,431	2,537	2,524	2,491	2,485
Exchange, Interest and Inflation Rates							
Exchange Rate (December)	BRL/USD	3.87	4.03	5.20	5.58	5.24	5.10
Headline Inflation (IPCA)	Var. % yearly	3.75	4.31	4.52	10.06	9.11	5.12
Nominal Interest (Selic) - (December)	Var. % yearly	6.50	4.50	2.00	9.25	14.00	10.50
Real Interest (Selic/IPCA)	Var. % yearly	2.65	0.18	-2.41	-0.74	4.48	5.12
CDS Brazil – 5Y (end of year)	Percentage points	208	99	143	242	284	255
Balance of Payments							
Exports	USD Billions	231.9	221.1	209.1	280.8	319.5	322.7
Imports	USD Billions	185.3	185.9	158.8	219.4	248.6	257.3
Trade Balance	USD Billions	46.6	35.2	50.4	61.4	70.9	65.4
Current Account Balance (new methodology starting in 2019)	USD Billions	-14.5	-65.0	-24.5	-27.9	-19.1	-14.3
Current Account Balance	% GDP	-2.69	-3.47	-1.70	-1.74	-1.25	-0.94
Public Finances							
Primary Result	% GDP	-1.6	-0.8	-9.4	0.8	-0.1	-0.3
Nominal Result	% GDP	-7.0	-5.8	-13.6	-4.4	-6.9	-7.1
Net Debt Stock	% GDP	52.8	54.6	62.7	57.7	61.8	66.0
Gross Debt Stock	% GDP	75.3	74.4	88.6	80.2	80.0	82.8
World & US Economies							
World GDP Growth Rate	%	3.57	2.76	-3.10	5.70	2.77	2.40
US Growth Rate	%	3.0	2.2	-3.5	5.7	2.70	2.00
CPI	Var. % yearly	1.9	2.3	1.3	7.1	5.50	3.00
Nominal interest rate (Fed Funds)	Var. % yearly	2.50	1.75	0.25	0.25	3.25	3.75

Source: Redwood | Projections in red

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Variables Chart – Summary Exchange Rate/Inflation/SELIC – Proj. 2022/23

Summary - 2022/2023						
Scenarios ¹	Exchange Rate ²		Inflation (p.a.)		SELIC (p.a)	
	2022	2023	2022	2023	2022	2023
Optimistic	4.83	4.70	7.50%	3.25%	11.25%	8.50%
Baseline	5.24	5.10	9.11%	5.12%	14.00%	10.50%
Pessimistic	6.12	6.47	10.00%	5.50%	14.75%	12.25%
Probability-based Scenario	5.24	5.10	9.11%	5.12%	14.00%	10.50%

¹Tax and Administrative Reform after 2022;

²December Quotes

GDP	2022	2023
	0.94%	0.45%

Unemployment	Ave. Rate		Dec. Rate	
	2022	2023	2022	2023
	11.25%	10.57%	11.07%	10.31%

POLITICAL, ECONOMIC AND FINANCIAL SCENARIOS

Conclusions – Brazil: Macroeconomic Scenario – The political swamp rules the roost

❖ ***Crises come and go, wars as well, but the sordid Brazilian politics never sees any truce. Transformed into a profession, politics ceased to be a noble mission of serving the citizenry, and “began” to be openly a means of “undertaking”, raising funds and “doing” business. Very few decent politicians remain, even younger ones seem “contaminated” by old ways. Even the “last” of the current administration's banners, non-corruption, seems to be going down the drain. Indeed, a sad fate for the country. A year with several elections, all gloves are off: unbridled populism contaminates everything and everyone. They jeopardize the fragile fiscal balance, undermine governance and ethics, and threaten the interests of investors in Brazil. Unfortunately, the world this time does not come to help us, on the contrary, the winds are blowing strongly against us and there is no way they'll miss us. Financial assets haven't even started to price in this whole mess yet. Strong storm ahead. Buckle up!***

- Monetary Policy: Selic will rise “a little further” and may remain at these levels until the 1H 2023, at least;
- Fiscal Policy: The “extra-effort” of Paulo Guedes' team totally overridden by the political plan: Executive and Legislative united;
- Brazil Risk: CDS remains “well-behaved”, with strict attention to the tripod Economy x Politics x External sector;
- Exchange Rate Policy: BACEN does not “get his act together”: Does it not want to, cannot or does not understand? Perhaps all of those combined;
- External scenario: Economies still under the effects of the health crisis and the ongoing Russia-Ukraine war. The Fed needs to “step up” to make up for lost time in the monetary tightening and, tagging along, so will the Central Banks of Europe and Asian countries. Feedbacks reach Brazil;
- Essential reforms: We may be facing sluggish progress or even set back on what has been accomplished thus far, however insufficient;
- Stock Exchange: Towards new lows in terms of P/E ratio? Likelihood is not low. Opportunities for good investments selectively and for the long term bound to appear;
- Structured and Alternative Investments: The long term in Brazil is always a good prospect, but it requires redoubled attention;
- Unemployment rate: short-run Phillips curve “explains” it, but the recent improvement will slow down under the current interest rate trajectory.



The street fight in politics began and along came its effects on society. In fact, the ends justify the means and thus we are subject to all sorts of decisions that, although disguised as benefits for the people, are aimed exclusively at the benefit of those holding power: reelection and/or support for vested interested. Screw the rest.

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