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Macro View USA

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High inflation, unemployment at 3.5% and FF at 2.6%. Is it realistic?

Question – market prices a terminal rate of 2.6% for the current monetary tightening cycle (Slides 5-7). This occurs despite a much faster recovery than initially expected and heavily pressured inflation. Does it make sense?

Markets' central scenario, and the Fed's, is that inflation will gradually converge to the 2.0% target in the coming years while the labor market will remain heated.

This benign scenario requires a flattened Phillips Curve, compatible with the view in the period after the 2008 recession. The tight labor market would not push inflation upward, making it possible for the nuclei to converge towards a goal with an interest rate below neutral (Slides 8 and 9).

The risk is that the feedback process between inflation and wages has gained traction and we are in an inflationary regime closer to that observed before the Great Recession. Indeed, we see several hints that this may be the case (Slide 11).

Inflation has been much more intense, resilient and widespread in recent months. The PCE core is already above 5.0%, the highest level since the Volcker Era. Almost 80% of the CPI components show inflation above 2.0% (Slides 12 and 13).

At the same time, the unemployment rate is below what is estimated to be the long-term equilibrium rate (Nairu) and the number of job vacancies far exceeds the number of unemployed. As a result, wage readjustments have been the largest in decades (Slides 14-16).

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Inflationary spiral would demand interest rate close to 7.0%

These adjustments have been able to recompose the loss of workers' purchasing power, which continues to keep the demand for goods at a very high level. Unlike what happens in Brazil, the real wage bill continued to increase in recent months despite the acceleration of inflation (Slide 37).

As a result of this strong demand from workers, companies have had no problems in passing on the highest costs to the final price of goods/services, generating more inflation (Slide 17).

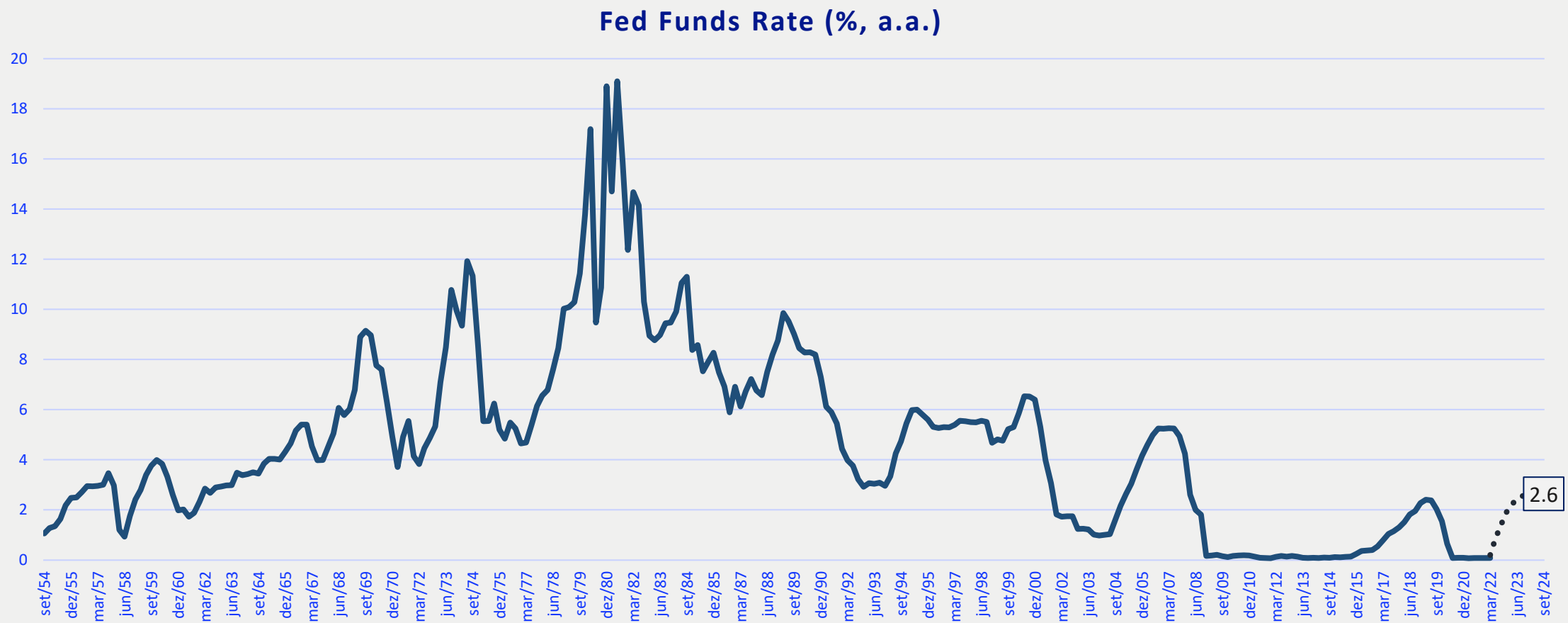
This is a process called inflation and wages spiral. It would be compatible with a more inclined Phillips Curve regime and would require a much more assertive reaction from the Fed to bring inflation back to target.

We calculated what would be the inflation trajectory, under the assumption of an unemployment rate of 3.5%, if the Phillips Curve of the 1990-2005 period were in force. In this case, the core inflation would remain above 5.0% in the long term. **With this inflation and unemployment rate, Taylor's Rule would recommend raising the *Fed Funds* interest rate to close to 7.0% (Slide 10).**

Redoing the inflation projection exercise, but with a Phillips Curve compatible with the view in the period 2010-2020, inflation would converge to the target in a few years. **Even in this case, Taylor's Rule would recommend *Fed Funds* interest rate between 3-4% p.a. This is above the terminal interest rate priced by the market.**

Market prices Fed Funds return to 2.6% p.a.

- What the market prices today is a return of the Fed Funds rate to 2.6%, close to what it was in mid-2019. This would be one of the smallest tightening cycles and compatible with a terminal rate very similar to that which the Fed itself believes to be neutral.

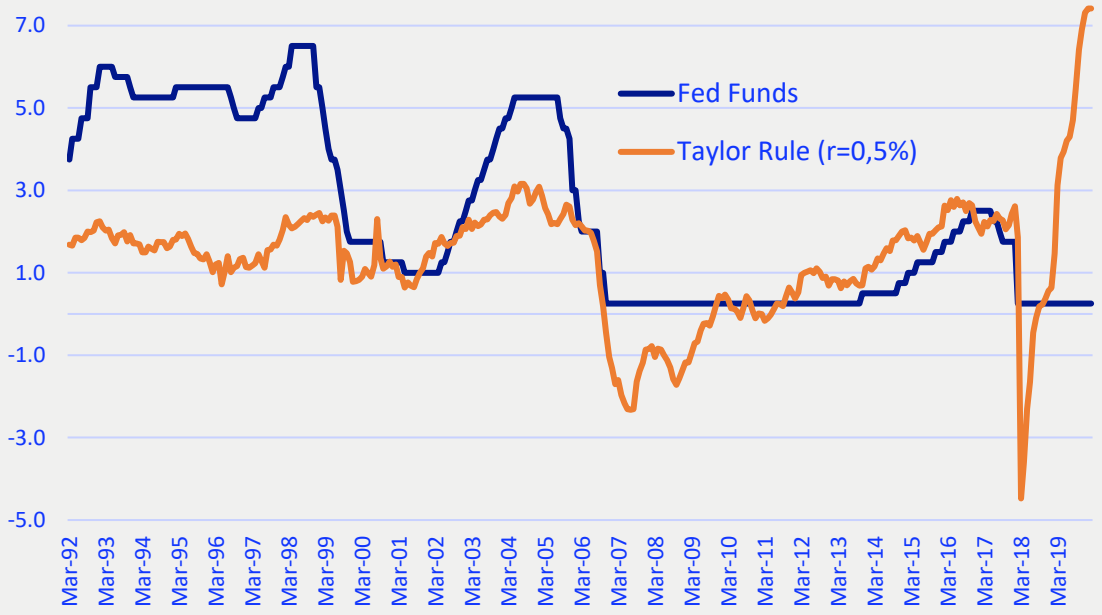


Source: Bloomberg, Mar Asset management

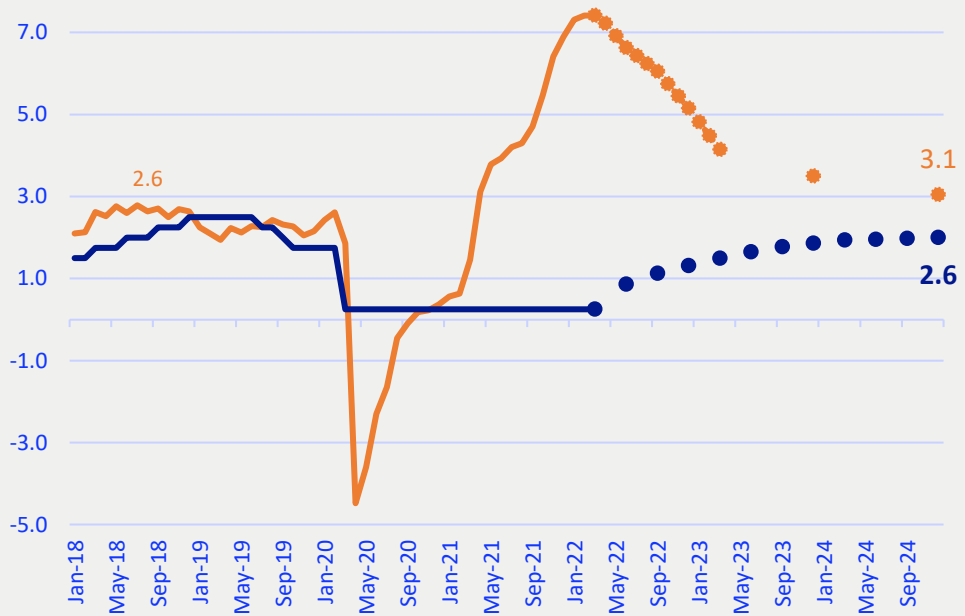
Fed's monetary policy is “behind the curve”

- The Federal Reserve deliberately stayed behind the curve. Taylor's Rule, for example, suggests that the *Fed Funds* interest rate should be above 7.0% p.a. However, the Fed is still not only at a rate close to zero, but also implementing Quantitative Easing until March 2022.
- The interest rate implicit in the term structure is compatible with maintaining the “behind the curve” state for a long time. When we take into account market projections for inflation core and unemployment rate, Fed Funds rate consistent with Taylor Rule would be more than 3% by the end of 2024.

Fed Funds Rate and Taylor Rule (%)



Fed Funds Rate and Taylor's Rule according to projections (%)



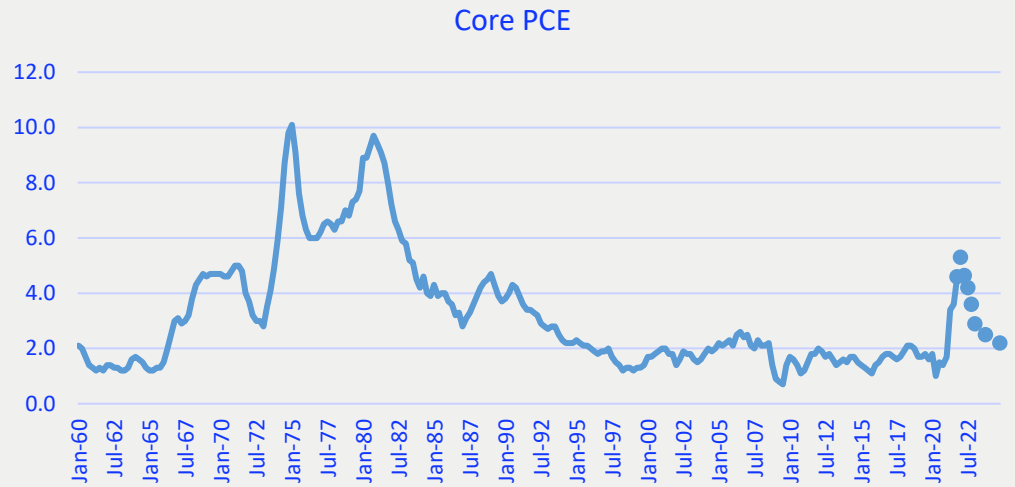
Source: CBO, Bloomberg, Mar Asset Management

2.6% terminal rate compatible with few scenarios

- The market expects an unemployment rate of 3.5% between 3Q22 and 4Q24 and that inflation core will gradually converge to 2.0% over this timeframe. This is a soft landing scenario that is not trivial to occur.
- At the same time, the market expects a terminal interest rate of 2.6% p.a. This rate would only be compatible with a canonical Taylor Rule in a few scenarios of unemployment rate and inflation. In general, these would be scenarios with inflation below 2.0%. Only in the pre-crisis and late 1990s did inflation remain so low concomitant with an unemployment rate below 4.0%.

Taylor's rule for different combinations of unemployment rate and PCE core

Core Inflation PCE \ Unemployment rate	3.00	3.25	3.50	3.75	4.00	4.25	4.50
1.0	1.5	1.4	1.3	1.1	1.0	0.9	0.8
1.5	2.3	2.1	2.0	1.9	1.8	1.6	1.5
2.0	3.0	2.9	2.8	2.6	2.5	2.4	2.3
2.5	3.8	3.6	3.5	3.4	3.3	3.1	3.0
3.0	4.5	4.4	4.3	4.1	4.0	3.9	3.8
3.5	5.3	5.1	5.0	4.9	4.8	4.6	4.5
4.0	6.0	5.9	5.8	5.6	5.5	5.4	5.3
4.5	6.8	6.6	6.5	6.4	6.3	6.1	6.0
5.0	7.5	7.4	7.3	7.1	7.0	6.9	6.8

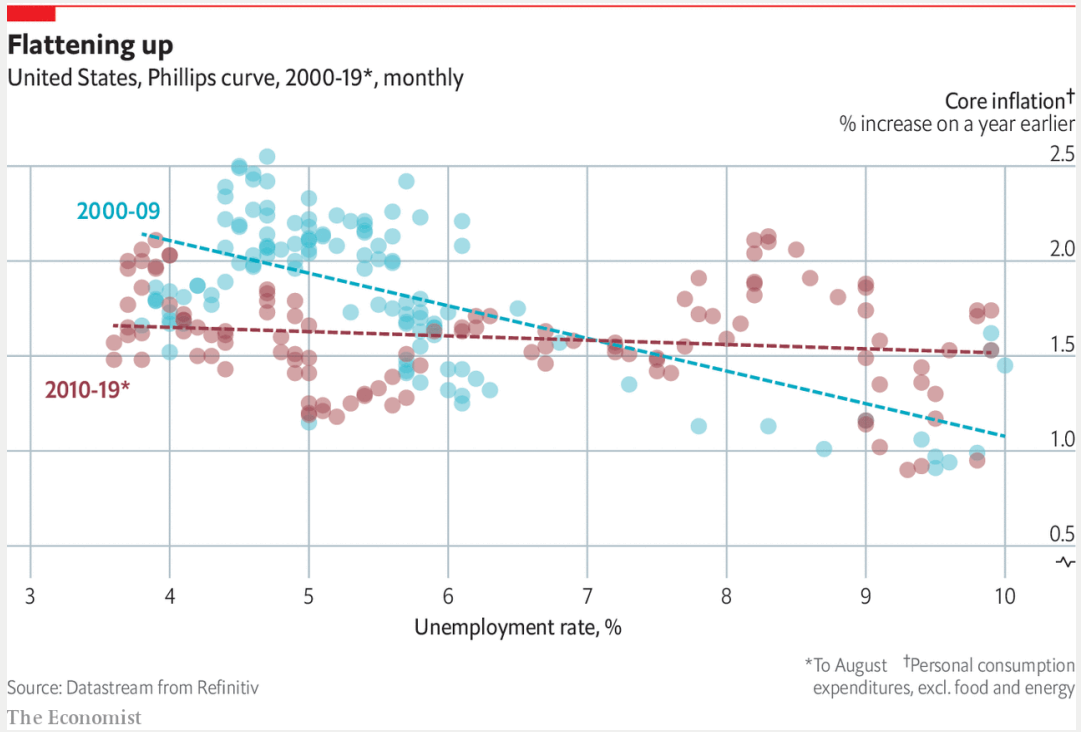


Source: Bloomberg, Federal Reserve, Fed. St. Louis, Mar Asset Management

Flattening of the Phillips Curve in the last decade

- The relationship between unemployment and inflation has declined considerably in recent years. This is reflected in a very small estimated beta in any regression of the Phillips Curve. The current Phillips Curve would give us a very similar forecast for inflation, whatever assumption we make for unemployment in the years to come.

Phillips Curve in the USA - 2000-09 and 2010-09



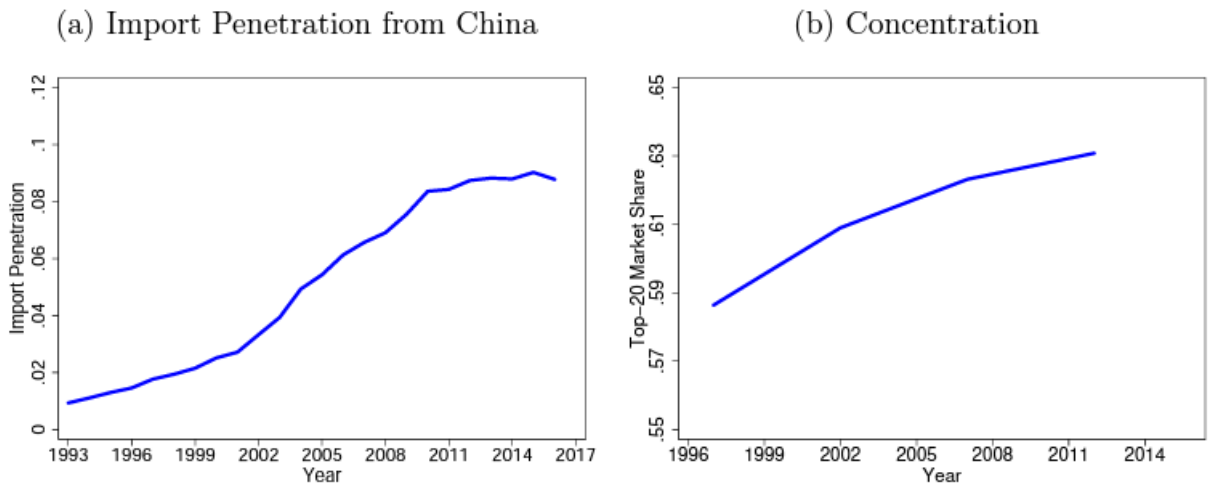
Phillips Curve Coefficient using inflation (20-year moving window)

Source: Fed, The Economist, Mar Asset Management

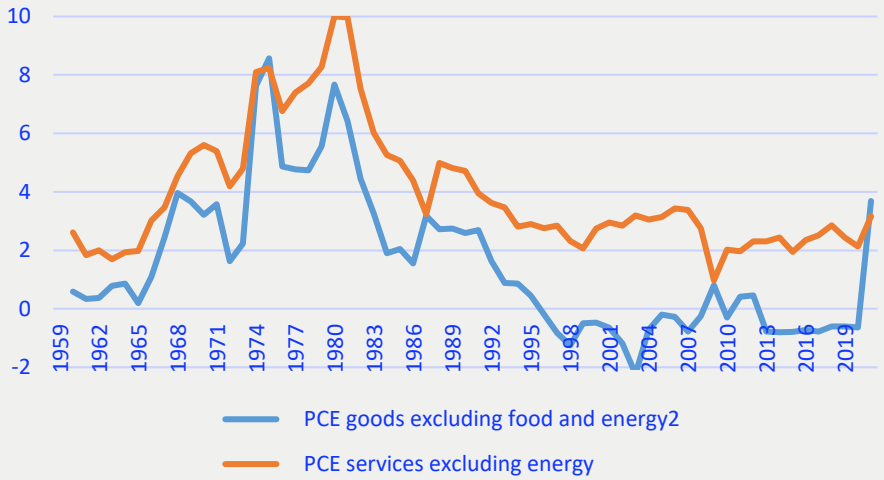
China and *markups* behind flattening

- "When firms set high markups, they are able to at least partially absorb cost-push shocks into their markup without passing through the rising costs to consumers. Firms take into account that by raising their price they lose market share to competitors that did not experience the same shock. As a result, firms absorb part of the shock into their markup, changing their price by less in response to input shocks. In a relatively competitive market, there is little room for firms to absorb cost-push shocks, and firms, therefore, pass them through more fully. A higher import penetration implies that a larger share of an industry's U.S. sales is accounted for by imports from China, suggesting that U.S. firms in that sector are heavily exposed to foreign competition.
  - an industry that experienced a 10-percentage point increase in import penetration from China since 1997 exhibits a pass-through of wages to prices that is about 1.1 percentage points lower than an industry with no Chinese imports.
  - a 1% wage increase translates into a 0.14% price increase in an industry with zero concentration. In comparison, an industry with top-4 market concentration of nearly 50%, at the 75th percentile of concentration across industries, would raise prices in response to the same shock by only about 0.04%." **Autor et a. (2021)**

Figure 7: Rising import penetration and concentration in the manufacturing sector



Goods and Services Inflation in the USA (% yoy)



Source: Autor et al. (2021) BEA, Mar Asset Management

Benign scenario requires flattened Phillips curve

- We project the core inflation from 2023 on according to two Phillips Curves. Both curves have the same functional form and differ only in the window for which the parameters are estimated. In the first curve, we estimated the parameters according to data from 1990 and 2005. In the second, we considered data from 2010 to 2020.
- As expected, the results differ substantially. While pre-Great Recession dynamics would suggest inflation above 5%, post-Recession dynamics will lead inflation toward the target in a few years. The market is based on the recent dynamics to make its projections.

Phillips curve in the USA

D(LOG(CORECPI))=C(10)*D(LOG(CORECPI(-1))) +(1-C(10)-C(13)) *(INFEXP1Y_AUX)/400+ C(12)*UGAP(-1)/100 +C(13)*D(LOG(NEER(-0)))

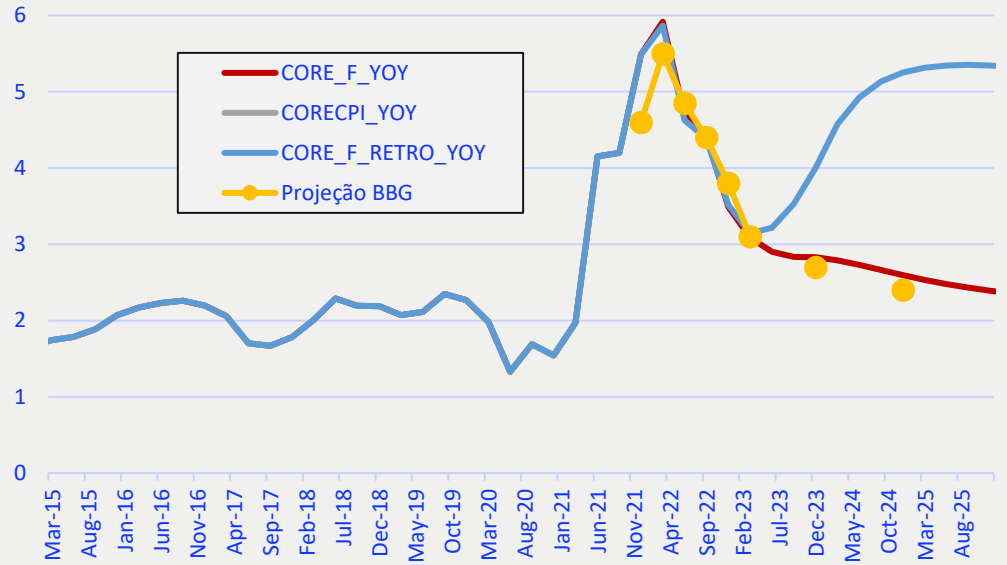
Post Great Recession (2011-2020)

	Coefficient	Std. Error	t-Statistic	Prob.
C(10)	0.445694	0.138004	3.229576	0.0027
C(13)	0.009911	0.005091	1.946681	0.0596
C(12)	-0.003009	0.005486	-0.548589	0.5868

Retro (1991-2005)

	Coefficient	Std. Error	t-Statistic	Prob.
C(10)	0.431673	0.136372	3.165413	0.0025
C(13)	0.011668	0.004852	2.405047	0.0196
C(12)	-0.026136	0.012799	-2.042138	0.0459

Projections of inflation core with Retro Phillips Curve and post-2010 (%, yoy)

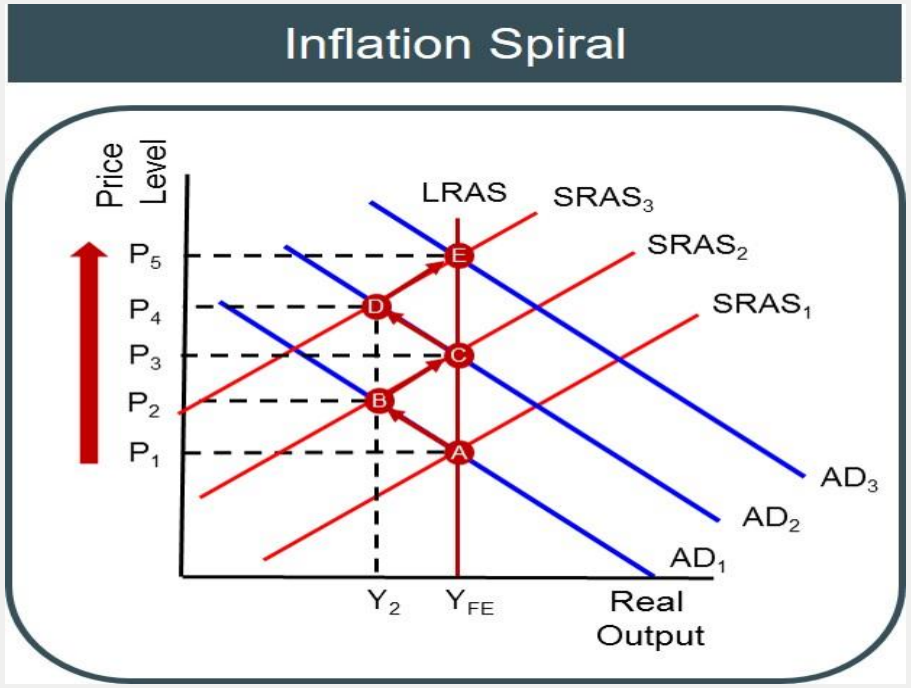


	Taxa de desemprego	Core CPI	Core CPI Retrô	Regra de Taylor	Regra de Taylor Retrô
Dec-20	6.6	1.5	1.5	3.0	3.0
Dec-21	4.0	5.5	5.5	7.6	7.6
Dec-22	3.5	3.5	3.5	4.3	4.3
Dec-23	3.5	2.8	4.0	3.3	5.0
Dec-24	3.5	2.6	5.3	2.9	6.9
Dec-25	3.5	2.4	5.3	2.6	7.1
Dec-26	3.5	2.3	5.2	2.5	6.9

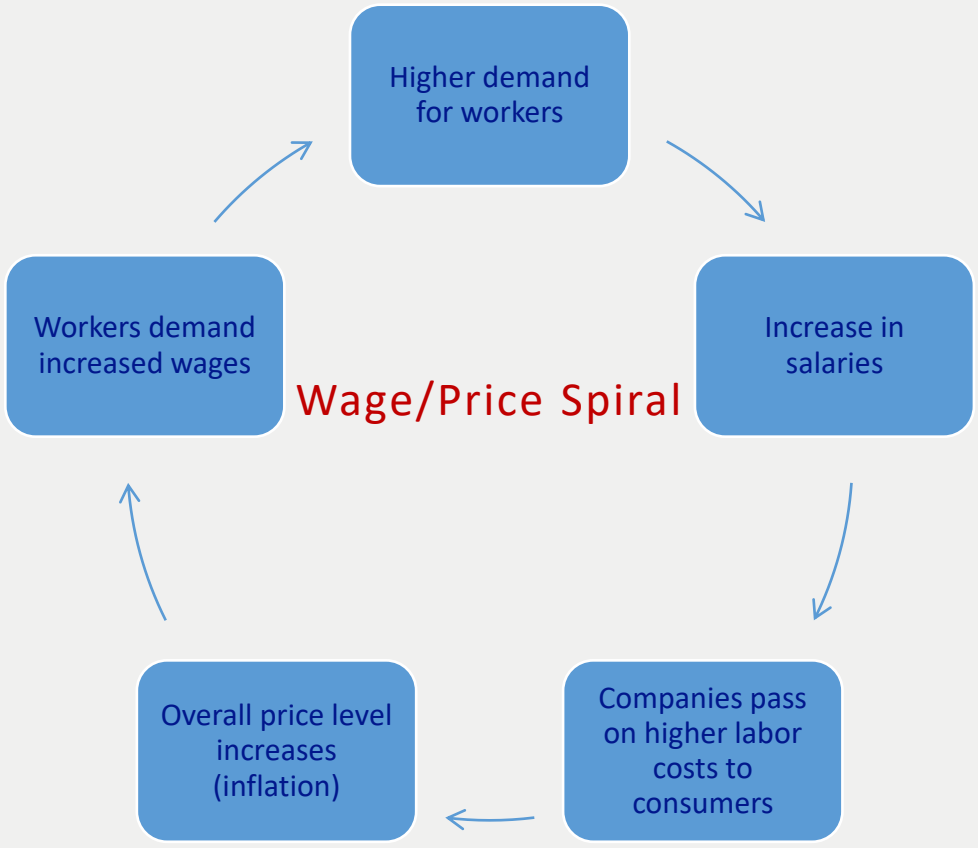
Source: BLS, Bloomberg, Mar Asset management

Dynamics in the USA resemble that of an inflationary spiral

- A spiral price-wage is a phenomenon of increases in prices as a result of higher wages. When workers receive a wage increase, they demand more goods and services and this, in turn, causes prices to rise. The wage increase effectively increases overall expenses that are passed on to the consumer in the form of higher prices. It is essentially a perpetual cycle of consistent price increases.



Operating diagram of a price/wage spiral

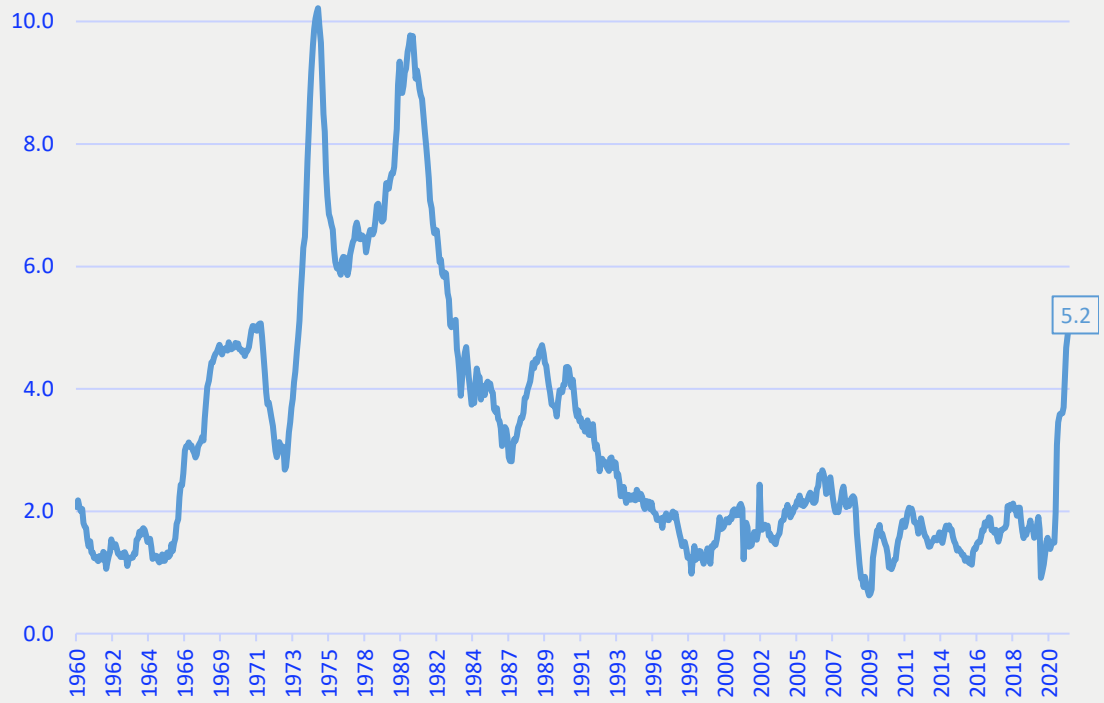


Source: Mar Asset Management

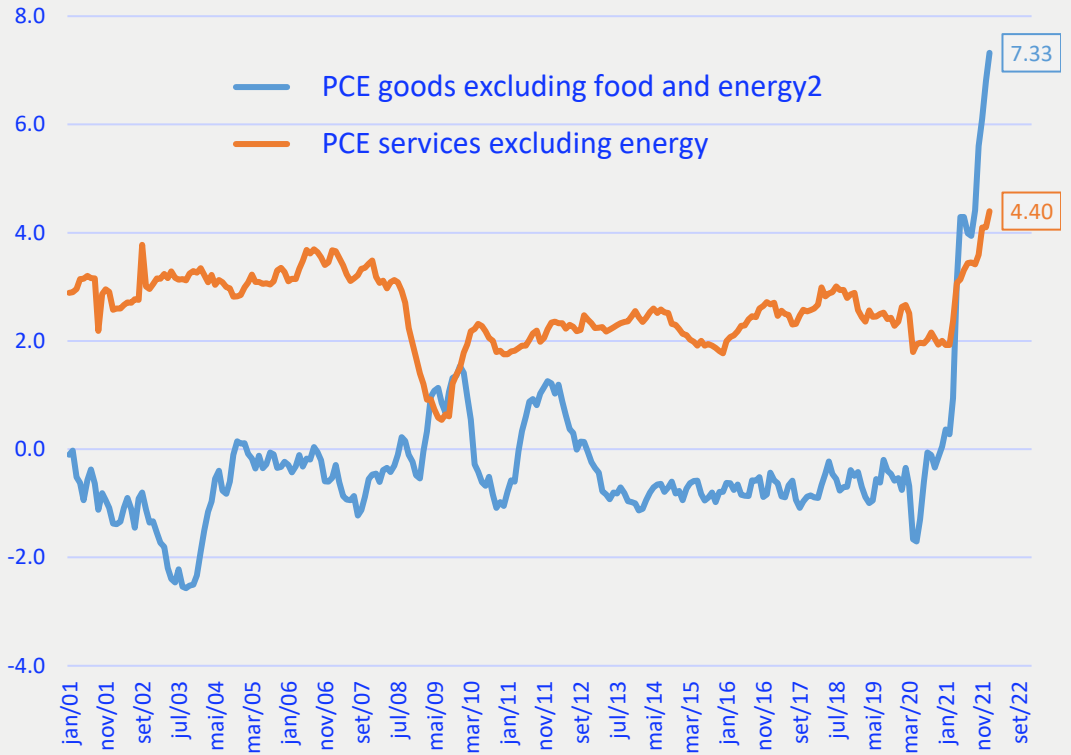
Inflation is the highest since Volcker Era

- PCE inflation core has increased to 5.2%. This is the highest inflation since the early 1980s. The increase was initially con centrated on industrial goods, following very strong demand pressure due to the change in the consumer basket. More recently, service inflation has begun to rise significantly.

Core PCE Inflation (%, yoy)



PCE Core – services vs. goods (%, yoy)

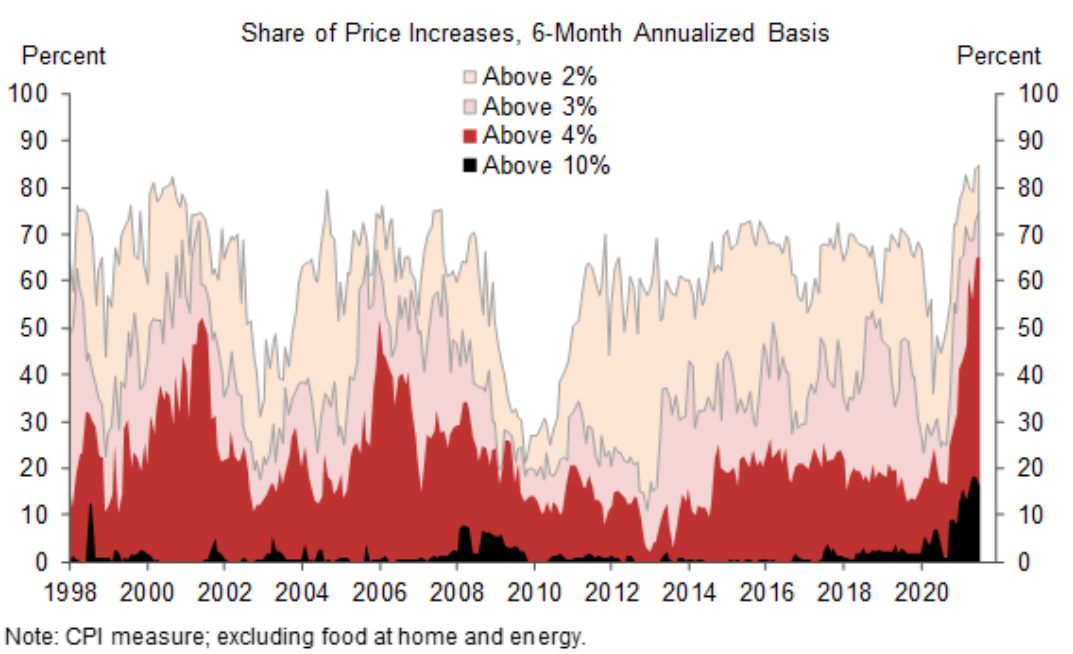


Source: BEA, Fed San Francisco, Mar Asset Management

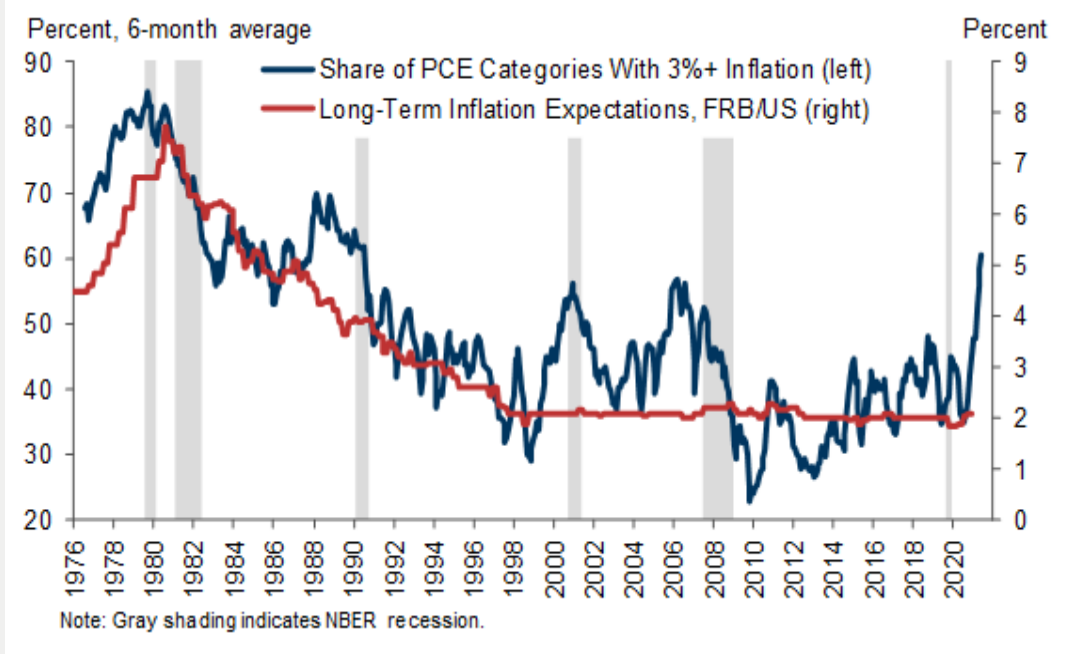
USA inflation is widespread among components

- USA inflation is quite widespread among the components. More than 60% of the CPI components show inflation above 4% and almost 85% are above 2% (Fed soft target). Such a spread was not seen since the 1990s.
- This suggests that there is widespread demand pressure in the country. High inflation is not a specific issue of some commodities responding to disruptions in supply chains/reopening of the economy. (Back to Slide 11)

Proportion of price increase (accumulated inflation in 6 months, SAAR)



Proportion of price increase and inflation expectation (6-month inflation, SAAR)

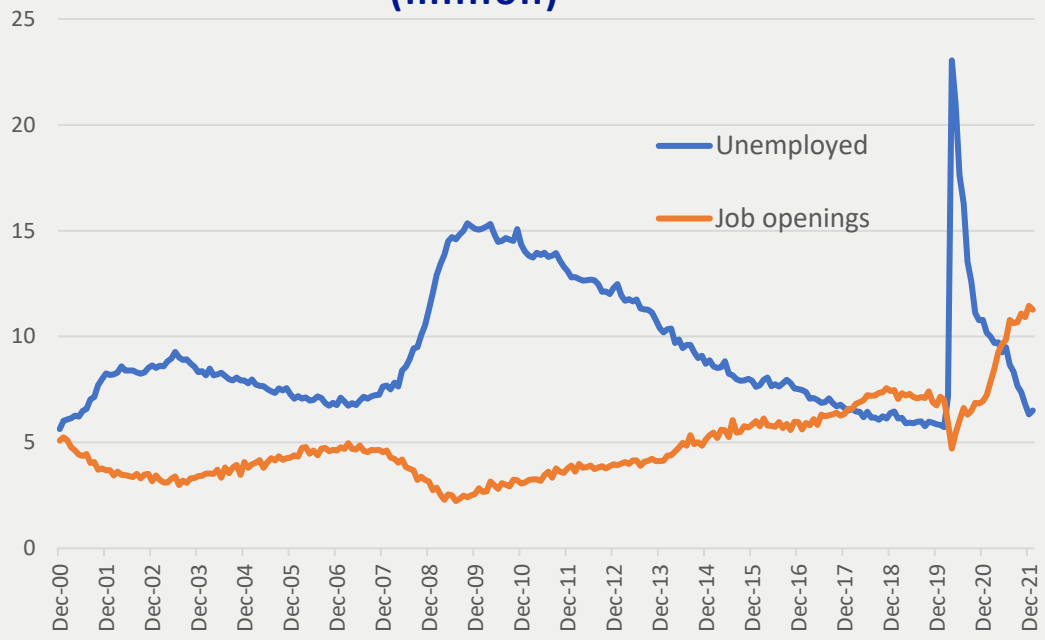


Source: BEA, BLS, Goldman Sachs, Mar Asset Management

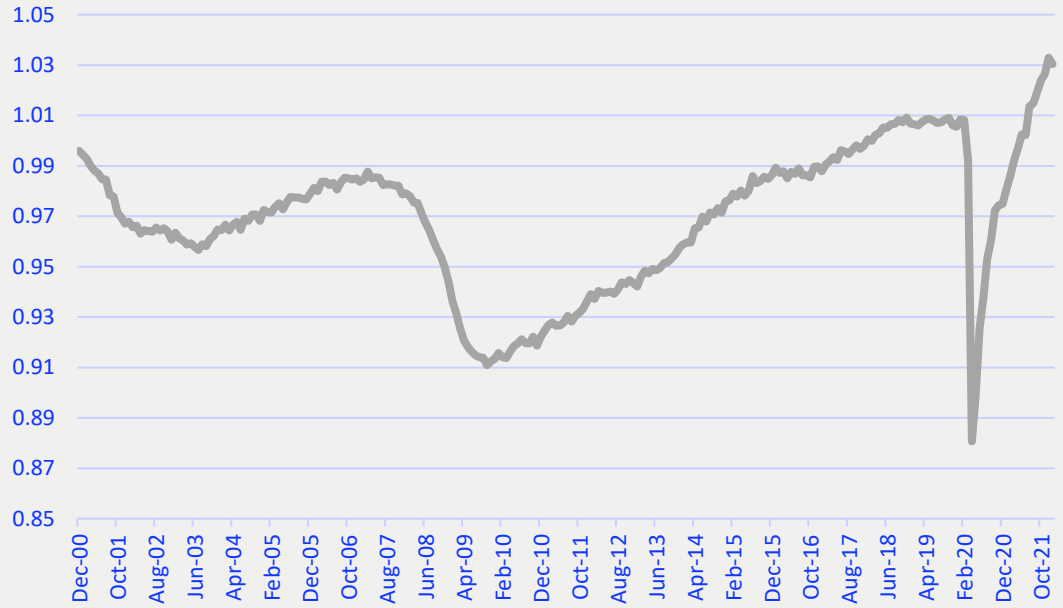
Tighter labor market than pre-crisis

- The job market in the USA has never been tighter. The number of job vacancies is now more than 10 million. This number is much higher than the number of unemployed people. Even when we control for the labor force, there have never been so many jobs (vacancies + employed population) in relation to the total labor supply (labor force).
- This is a different situation from the pre-crisis. The discrepancy between demand and supply for workers is much greater now even though the headline unemployment rate is even higher. Salary, like any other price, tends to respond to these conditions and continue to increase until the normalization of supply and demand. (Back to Slide 11)

Job vacancies and unemployed population (million)



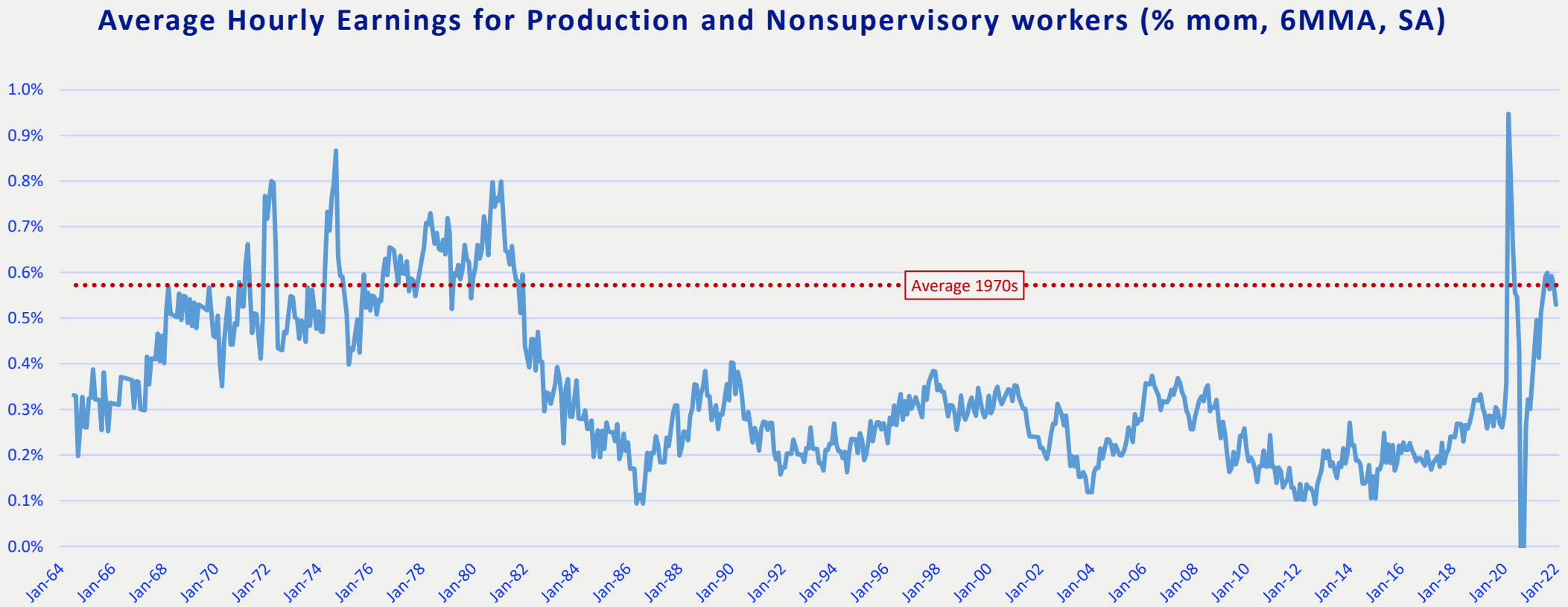
(Job vacancies + employed population)/(labor force)



Source: JOLTS, BLS, Mar Asset Management

Wages rise at the pace of the 1970s

- Throughout most of 2021, the rhythm of the increase in wages was superior to 0.5% mom. This rhythm had not been seen since the Volcker Era. The possibility of entering an inflationary spiral, in which wages immediately pass on the higher inflation of other goods, is a relevant risk in the current USA situation. (Back to Slide 11)

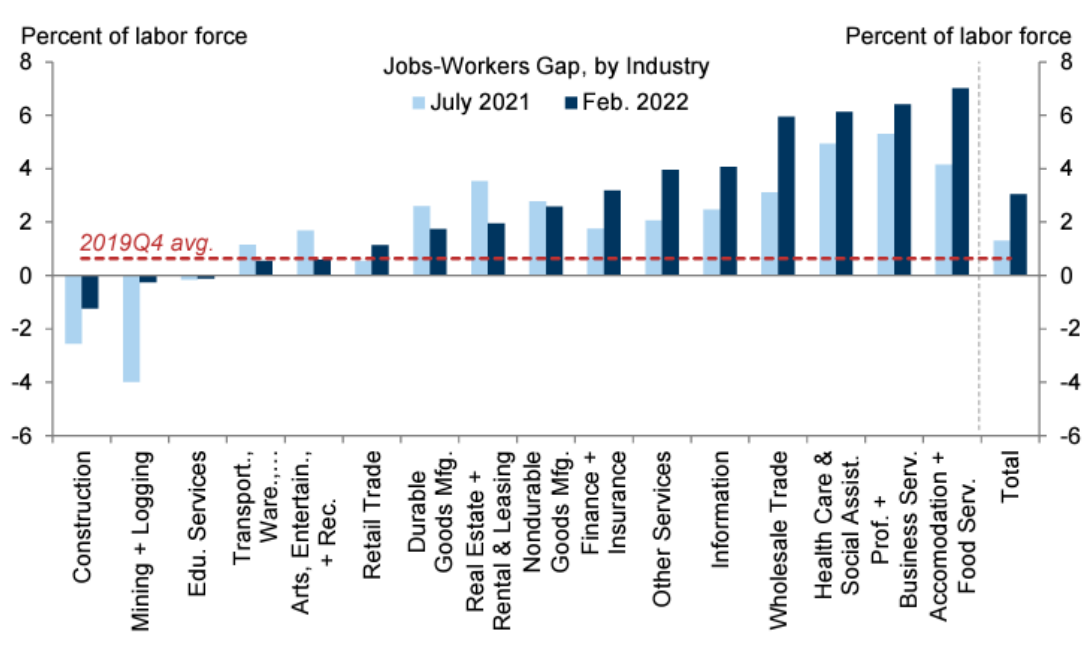


Source: BLS, Mar Asset Management

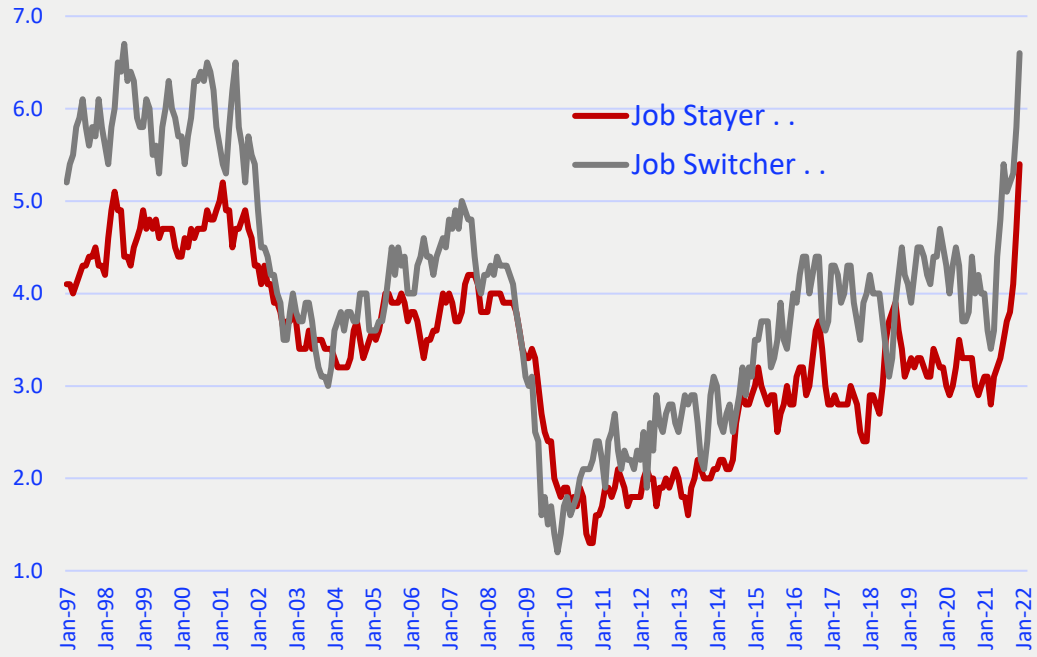
Salaries already show relevant inertial component

- Demand for labor outweighs supply in almost all economic activities. The excess demand subset represents almost 80% of total employment in the USA. The tight labor market has made employers readjust wages more aggressively to retain talent. The growth in the wages of people who remained at work (5.4% yoy) has greatly increased and narrowed the gap with the growth of those who change jobs. (Back to Slide 11)

Average Hourly Earnings – All employees (%, mom, SA)



Wage growth among those who remain employed or change (% yoy)



Source: Atlanta Fed, Goldman Sachs, Mar Asset Management

Anecdotals suggest ease in passing on costs

- Anecdotal Evidence (Back to Slide 11)

"Firms reported an increased ability to pass on prices to consumers; in most cases, demand has remained strong despite price increases. Firms reported they expect additional price increases over the next several months as they continue to pass on input cost increases."

Fed Beige Book – March 22 (link)

"US businesses have managed to do something never before accomplished, which is to lump four years' worth of price increases into one."

David Rosenberg, chief economist and strategist at Rosenberg Research (link)

"Almost 90 percent of firms reported larger-than-normal cost increases—a sharp rise from the second quarter of 2021. "The share of firms with abnormally large cost increases in at least some of their costs grew from 80 percent to almost 90 percent in just six months," said Atlanta Fed economist Brent Meyer."

The overwhelming majority (about 80 percent) of firms experiencing these unusual cost pressures are passing on at least some of these cost increases to customers through higher prices.

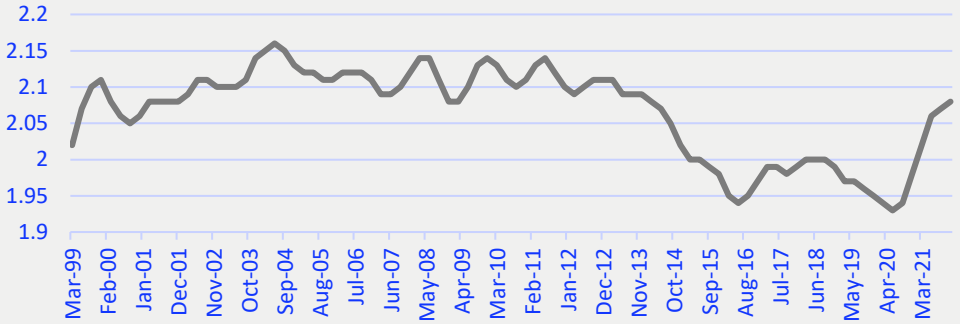
The CFO survey, Fed Richmond (link)

Source: Federal Reserve, Mar Asset Management

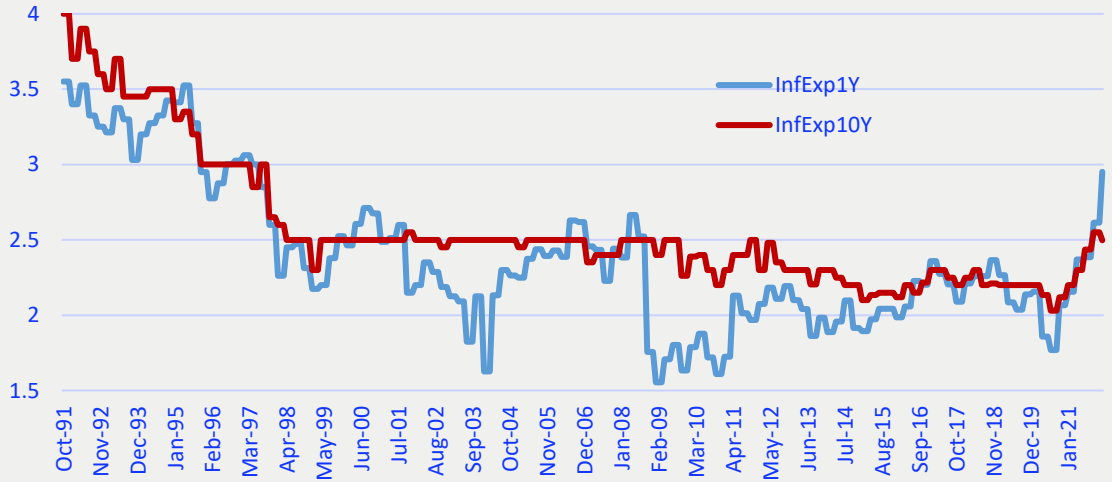
Unachored expectations would be the end

- A very strong indication that the USA would be in a higher inflation regime would be an eventual undocking of inflation expectations. In fact, short-term inflation expectation indicators (1 year) already show that agents expect much higher inflation in the next 12 months compared to the 2.0% target.
- For now, longer-term inflation expectations remain anchored.

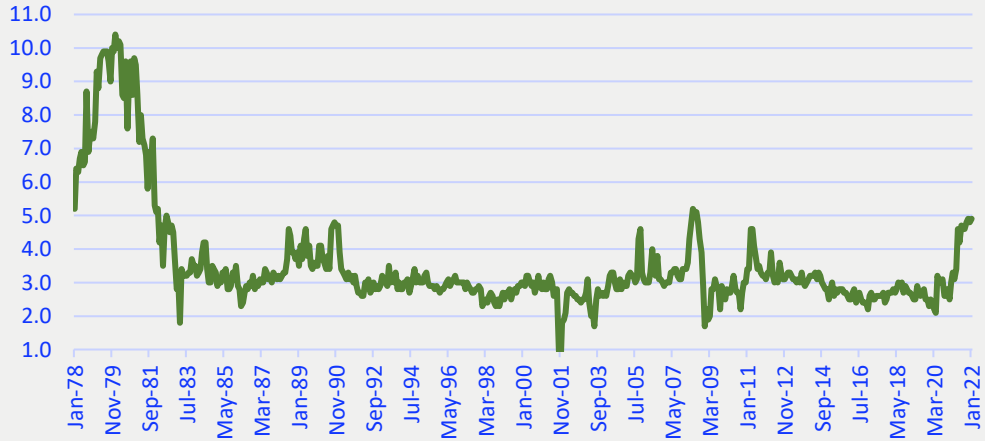
Fed Common inf. Expectation index (% yoy)



Survey of Professional Forecasters – Philly Fed (% average inflation)



Inflation 1 year ahead U Michigan (% yoy)



Source: Philly Fed, Fed Board, U. of Michigan, Mar Asset Management

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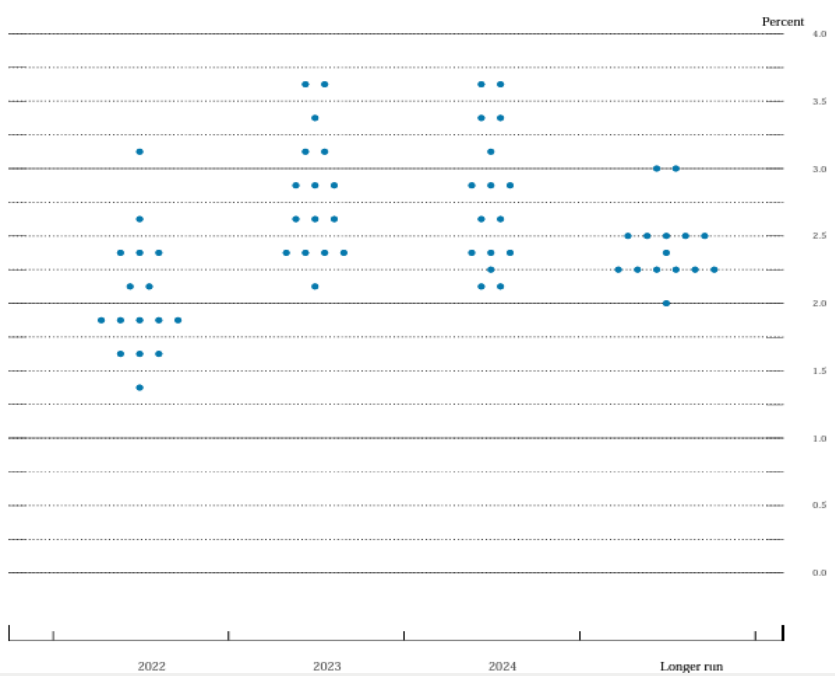
Fed

FOMC already expects seven 25bps hikes in 2022

- In March, the median projections for the Fed Funds terminal range in 2022 were 1.75-2.0%. This would be compatible with 25 bps increases in all Committee meetings until the end of the year. The distribution is quite *skewed* for higher. It is enough for a member to increase its projection for the FOMC to form a majority for a faster liftoff.
- Members raised inflation projections to the entire relevant horizon. Most of them expect core PCE inflation above target by at least 2024. The Committee increased the projection from 2022 to 4.1% yoy vs. 2.7% yoy.

FOMC members individual projections of terminal rate in each year (%, p.a.)



FOMC members median projection

Percent

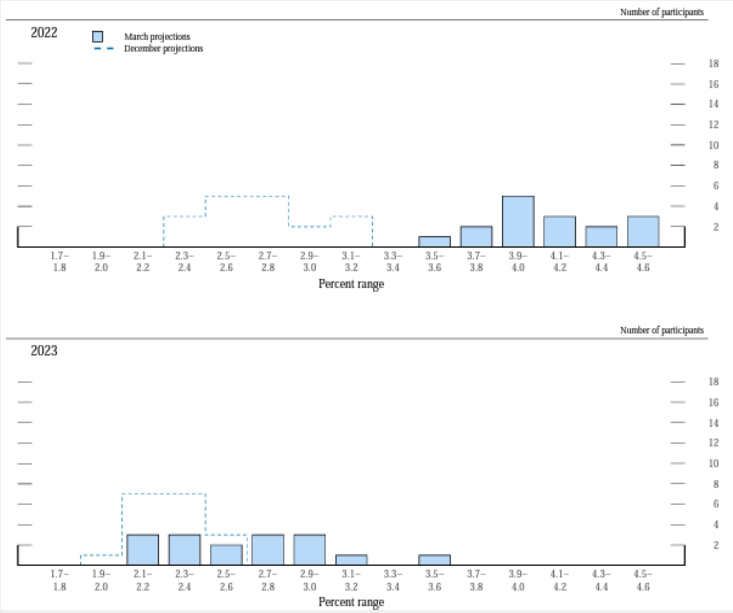
Variable	Median[1]				Central Tendency[2]			
	2022	2023	2024	Longer run	2022	2023	2024	Longer run
Change in real GDP	2.8	2.2	2.0	1.8	2.5–3.0	2.1–2.5	1.8–2.0	1.8–2.0
December projection	4.0	2.2	2.0	1.8	3.6–4.5	2.0–2.5	1.8–2.0	1.8–2.0
Unemployment rate	3.5	3.5	3.6	4.0	3.4–3.6	3.3–3.6	3.2–3.7	3.5–4.2
December projection	3.5	3.5	3.5	4.0	3.4–3.7	3.2–3.6	3.2–3.7	3.8–4.2
PCE inflation	4.3	2.7	2.3	2.0	4.1–4.7	2.3–3.0	2.1–2.4	2.0
December projection	2.6	2.3	2.1	2.0	2.2–3.0	2.1–2.5	2.0–2.2	2.0
Core PCE inflation[4]	4.1	2.6	2.3		3.9–4.4	2.4–3.0	2.1–2.4	
December projection	2.7	2.3	2.1		2.5–3.0	2.1–2.4	2.0–2.2	
Memo: Projected appropriate policy path								
Federal funds rate	1.9	2.8	2.8	2.4	1.6–2.4	2.4–3.1	2.4–3.4	2.3–2.5
December projection	0.9	1.6	2.1	2.5	0.6–0.9	1.4–1.9	1.9–2.9	2.3–2.5

Source: Federal Reserve, Mar Asset Management

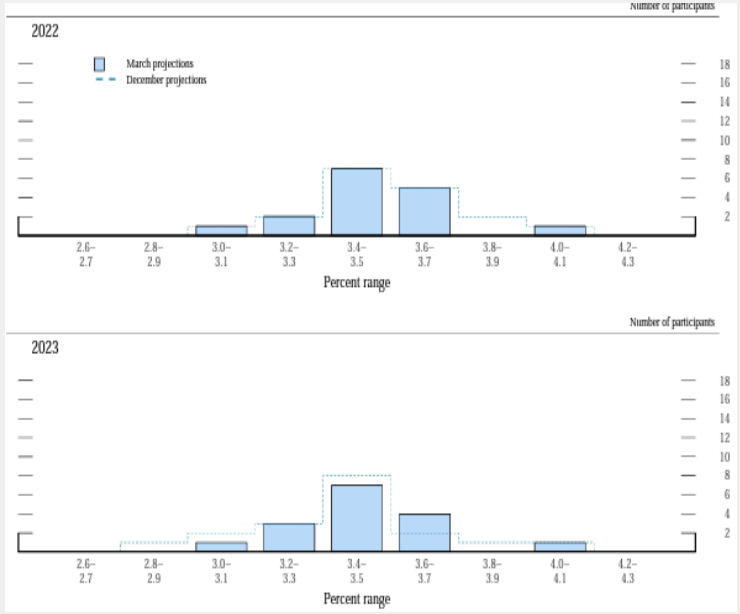
There is no consensus in the FOMC about the Phillips Curve

- The uncertainty about the true Phillips Curve slope lies behind the dispersion of Fed projections. In fact, the dispersion over the unemployment rate this year and the next one is very low, suggesting that the scenario for each FOMC member's activity is not so different from each other.
- How this unemployment rate will translate into inflation is not a consensus. The inflation dispersion projections are very high. That is, there is no consensus on the actual Phillips Curve slope among FOMC members. This inflation dispersion is translated almost one-to-one into Fed Funds projections at the end of 2023.

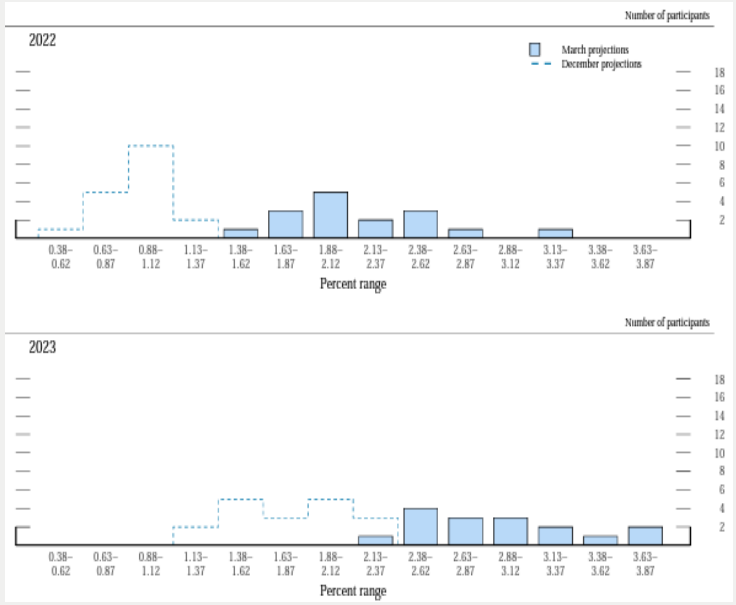
FOMC members projection for Core PCE (%)



FOMC members projection for Unemployment rate (%)



FOMC members projection for Fed Funds rate (%)



Source: Federal Reserve, Mar Asset Management

Reflections on the Fed model for monetary policy

Uncertainty about what the current inflationary regime is (Phillips Curve slope) also permeates the Fed's discussions. The projections released in the March 16 meeting show a consensus among FOMC members that the unemployment rate will remain low across the relevant monetary policy horizon. However, there is no consensus on how this benign scenario for the labor market will translate into inflation – there is a relevant dispersion in the core inflation projections.

Although not the baseline scenario, the Fed is uncomfortable with the risk of an inflationary wage spiral. At the press conference following the last FOMC meeting, Fed chairman Jerome Powell repeated his concern about an overheating of the labor market several times. For him, the labor market is *"unhealthy"* because there is a clear excess of demand, which led to an increase in wages above what is compatible with an inflation scenario in the 2% target.

Powell's premise is that a gradual increase in the Fed Funds rate towards the neutral rate will be sufficient to balance the conditions of supply and demand for labor. Once normalized, wage inflation would be controlled and an inflationary spiral would not occur.

The Fed's scenario is to (i) normalize monetary policy to control labor market/economy supply and demand conditions. (ii) be so precise that it will be able to end excess demand while the unemployment rate will end at 3.5%. (iii) The Fed Funds rate that does this magic is neutral.

With wage inflation above 5% and the highest excess demand in the last several decades, would a Fed Funds increase of 2.5 pp be sufficient to rebalance the aggregate demand and supply conditions of the economy?

It is difficult to reconcile this discourse with the hypothesis that monetary policy *per se* would have a relevant contribution to take inflation to the target. For this to be the case, we would have to assume that the impact of small increases in the Fed Funds rate on aggregate demand is enormous.

The most reasonable explanation is that the Fed still believes in a flattened Phillips Curve and that the current inflationary pressure is temporary (e.g., production chains, fiscal). Once these shocks were dissipated, aggregate supply and demand conditions would return to the pre-crisis standard and inflation would also return to a level compatible with the target, despite starting from a very high level of inflation. Anchoring of expectations is implicit in this scenario. In this case, expectations would overcome inflationary inertia and ensure the convergence of inflation to the target in the long run despite an unemployment rate below Nairu.

As the dispersion in inflation projections and Fed Funds for the long run suggests, the degree of conviction regarding this diagnosis has been decreasing among FOMC members.

Source: Mar Asset Management

mar asset management

Potential for deflationary surprise 1: demand contraction

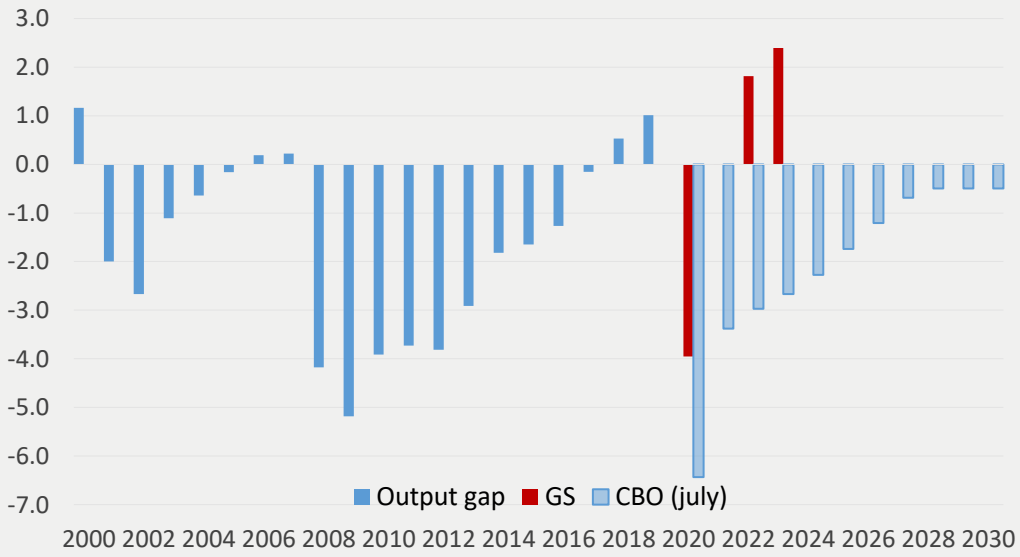
Economy recovery was intense and fast

- The global economy showed very high and synchronized growth in 2021. All major countries showed a strong GDP recovery in 2021 after the initial Covid-19 shock. Which resulted in widespread growth in aggregate demand at the global level.
- In many cases, the recovery of the economy will lead to GDP levels well above pre-pandemic level. The expectation of growth for the USA, for example, is consistent with a product gap at the highest level since at least the early 2000s.

Forecast of GDP growth (%)

	2020	2021	2022	2023
Brazil	-4.1	4.8	0.5	1.8
USA	-3.4	5.7	3.6	2.4
China	2.3	8.1	5.2	5.2
Eurozone	-6.4	5.3	3.9	2.5
UK	-10.1	7.3	4.2	2.1
Japan	-4.7	1.8	2.8	1.7
Mexico	-8.2	4.8	2.1	2.1
Chile	-5.8	12.0	2.5	1.7

USA product gap – forecast in July 2020 vs. current (%)

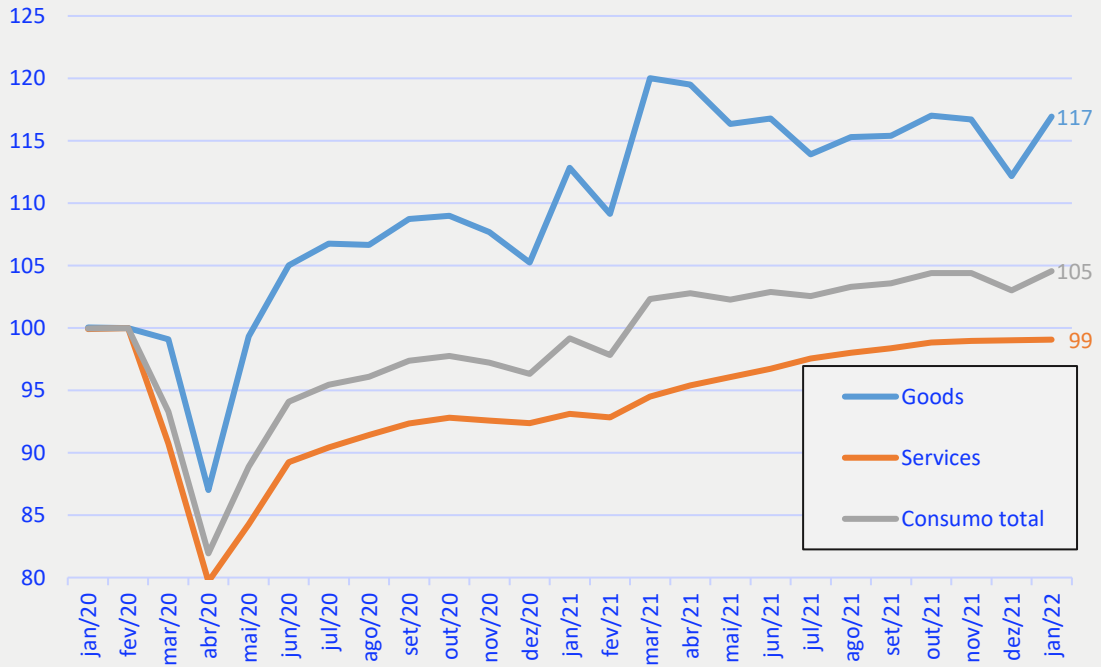


Source: CBO, Bloomberg, Mar Asset Management

Inflationary pressure comes from demand not from supply

- The stimuli and changing composition of the consumer basket caused such a strong demand shock that not even an increase in global IP production was sufficient to absorb it. The consumption of goods by the USA, for example, increased by almost 20% compared to the pre-pandemic levels. Global goods production at the end of 2021 was 10% higher than pre-crisis.
(Back to Slide 11)

Composition of household consumption in the USA (index number, Feb-20=100)



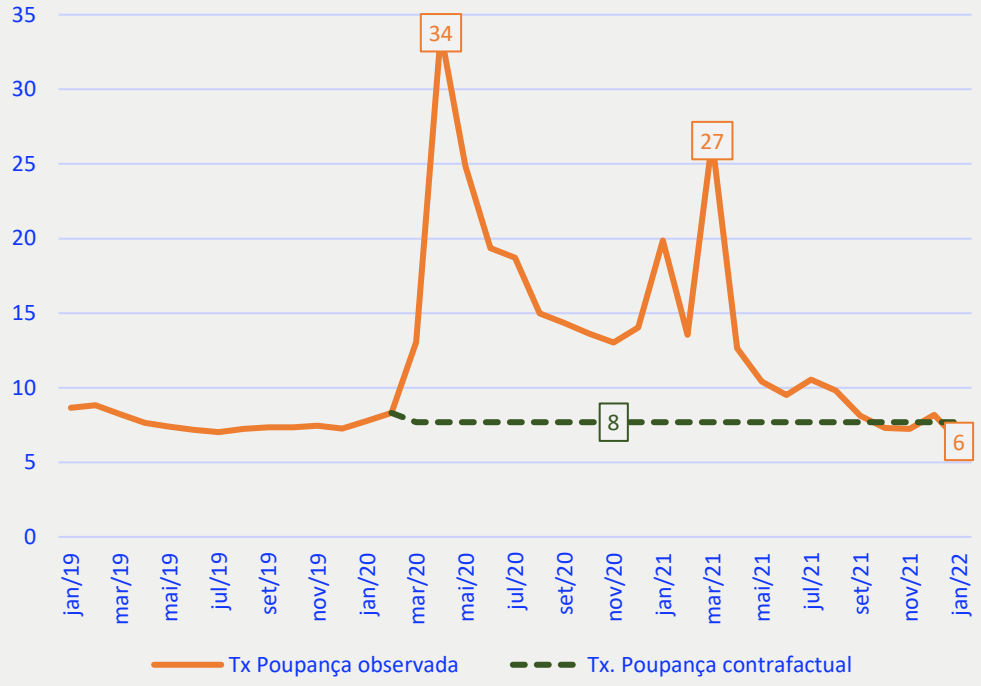
Global industrial production (number index, jan 2008=100)

Source: BEA, Itaú, Mar Asset Management

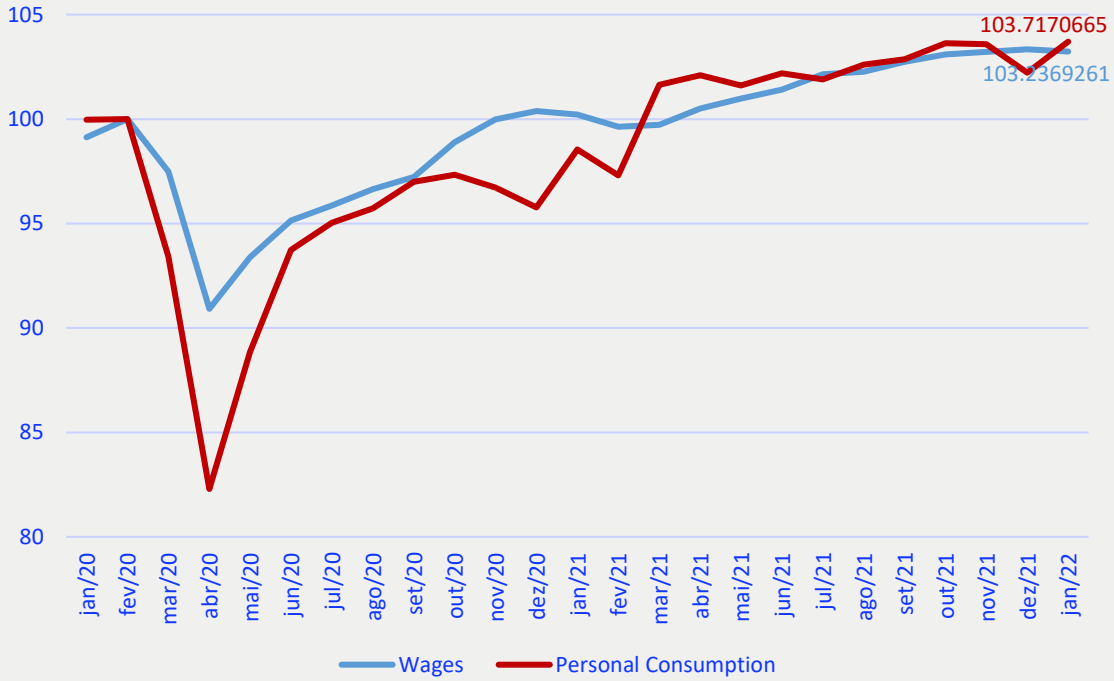
Savings rate returned to normal in the USA

- The household savings rate in the USA showed a soft landing. Despite all the stimuli, the total consumption of USA households has never been much higher than the pre-crisis. Since the second half of 2021, we have seen a return to normal consumption in relation to disposable income. Even if circumstantial savings were not used, we could still have sustainable consumption growth, in line with real wage growth. This is a very different case from Brazil and Chile.

Savings rate
(% of disposable income)



Household consumption and disposable income from wages (US$ trillion, SAAR)

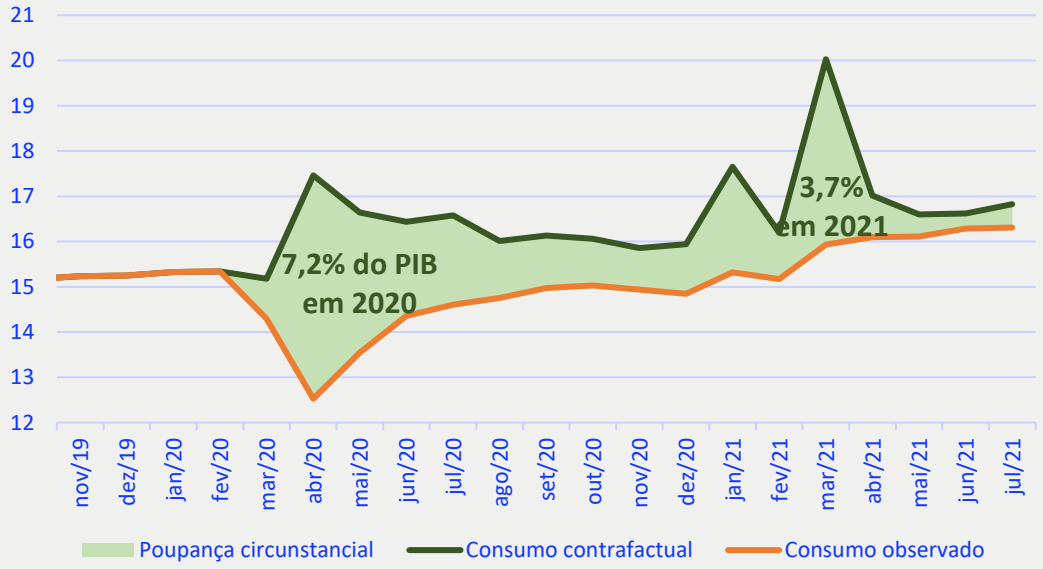


Source: BEA, Mar Asset Management

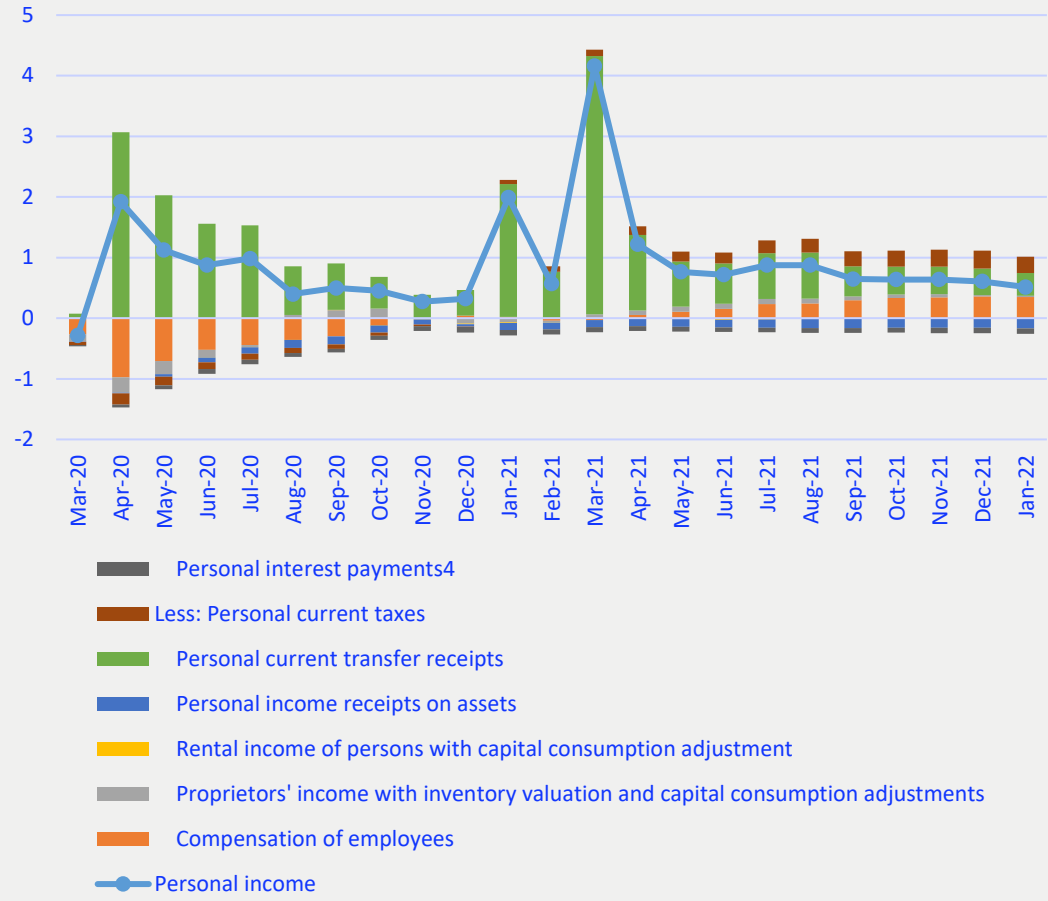
Circumstantial savings of 10.9% of GDP in 2020 and 2021

- The savings rate, which historically is close to 8% of disposable income, reached 34% at the peak of the crisis. In recent months, we have seen savings converge to values close to pre-crisis due to a recovery in consumption.
- The difference between observed and counterfactual consumption, called circumstantial savings, was 7.2% of GDP in 2020 and 3.7% in 2021 until August.

Observed and counterfactual household consumption (US$trillion, SAAR)



Available Income Growth compared to February 2020 (US$, trillion SAAR)

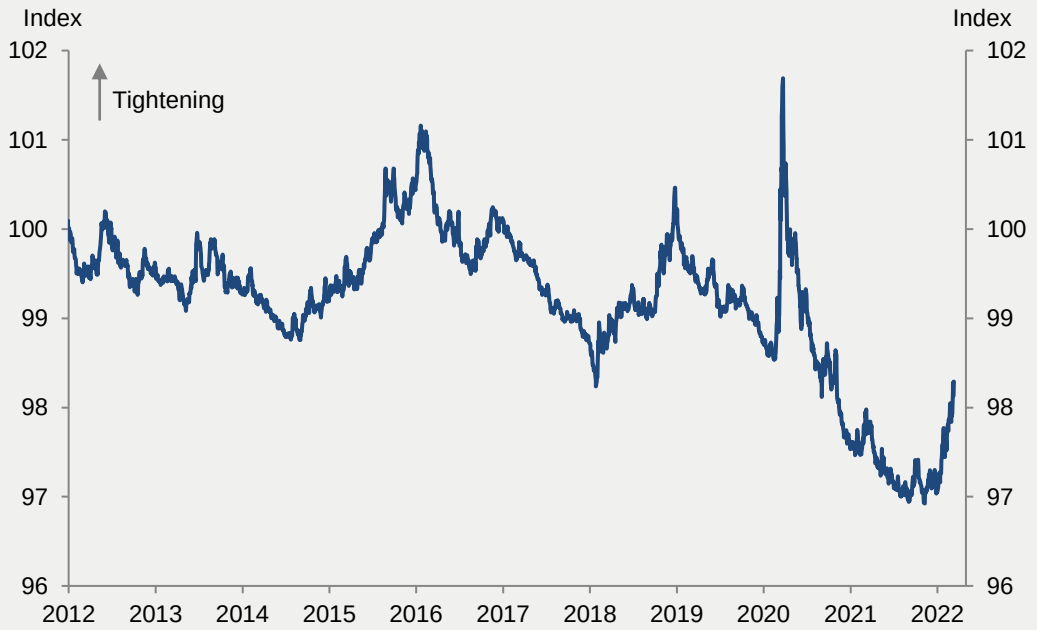


Source: BEA, Mar Asset Management

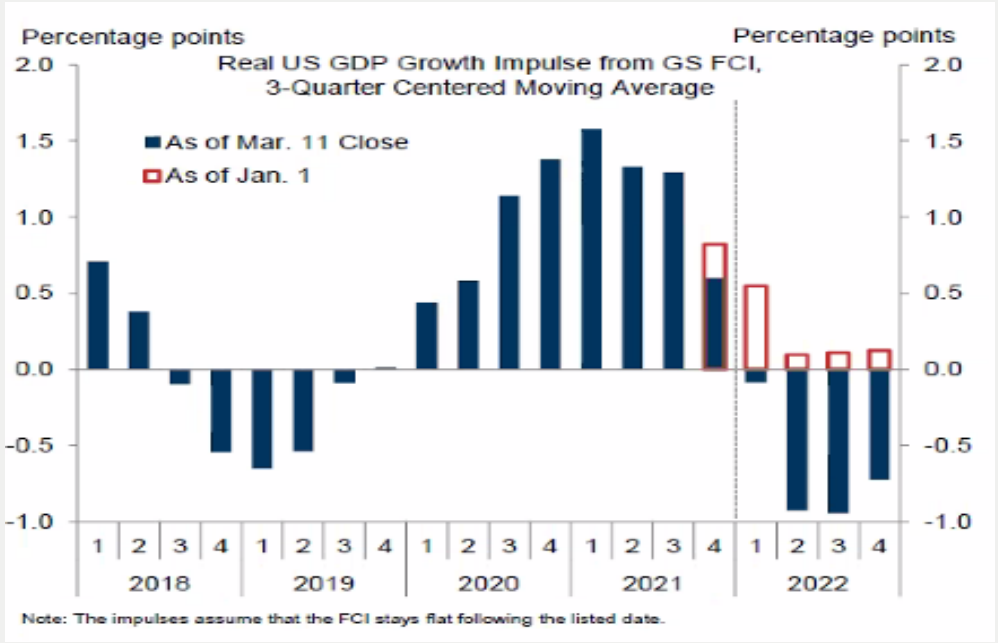
Higher risk is tightening financial conditions

- The greatest risk to the higher interest thesis is a tightening of financial conditions unrelated to changes in monetary policy. For example, an intensification/extension of the conflict between Russia and Ukraine, leading to a significant contraction of the global economy could generate an unnecessary monetary policy tightening in the US and the rest of the world.
- Since the beginning of the year, GS's Financial Condition Index has already increased by 120bps. Financial conditions, which were expansionist at the beginning of the year, became contractionary at the current level.

GS Financial Conditions Index for the USA (%, mom, SA)



Boosting financial conditions in USA real growth (%)



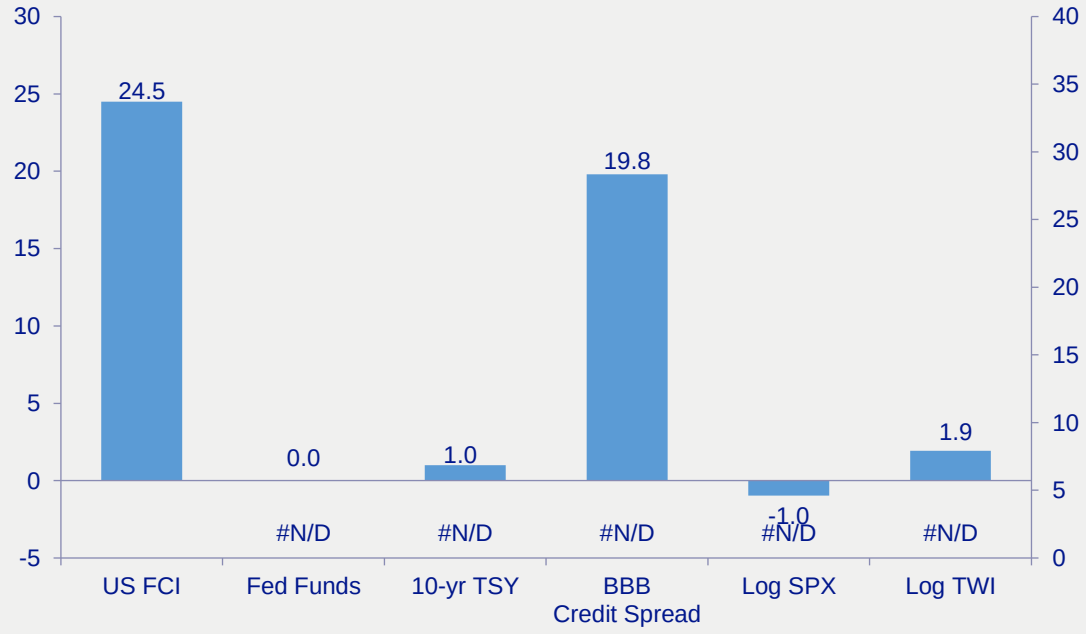
Source: Goldman Sachs, Mar Asset Management

Most of the squeeze occurred before the war

- Since the beginning of the conflict, the Financial Conditions index has increased by only 24.5 bps. Most of the increase in the indicator occurred in January, before the conflict and due to a repricing of monetary policy in the USA. Since then, the biggest contribution to the tightening of the indicator has been in the credit market.

GS Financial Conditions Index for the USA (%, mom, SA)

Decomposition of GS FCI growth for the USA since Feb 23



Source: Goldman Sachs, Mar Asset Management

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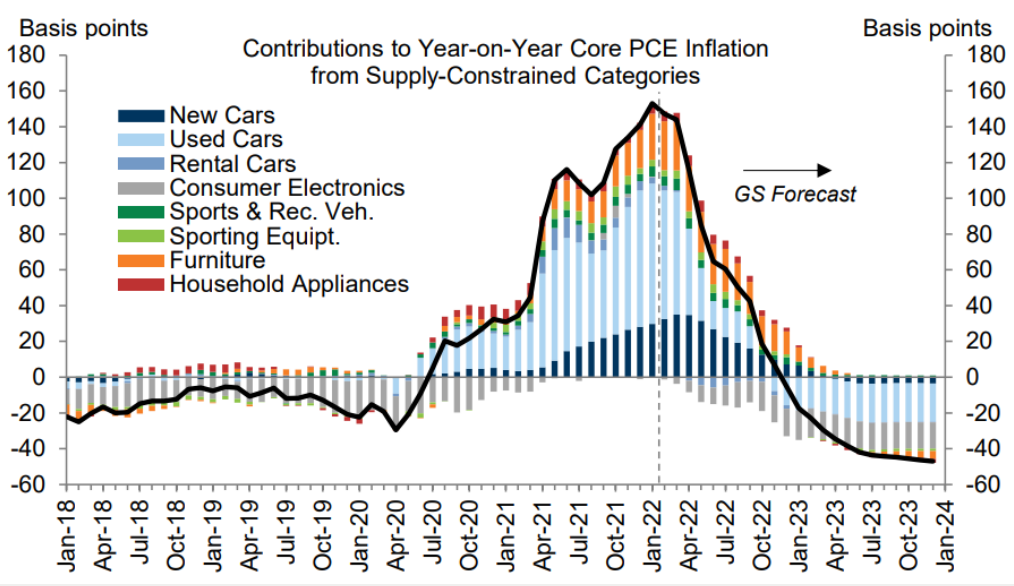
Potential for deflationary surprise 2: demand contraction

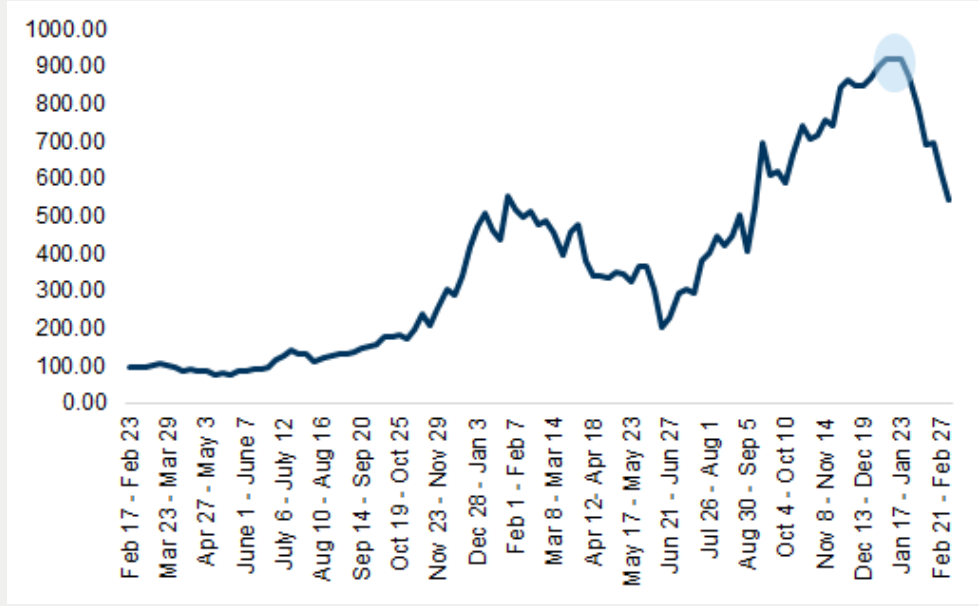
Reversal of industrial goods inflation is a downward risk

- Although the inflationary process in the US was essentially due to an increase in aggregate demand, some supply factors also contributed to the movement. In particular, problems in electronics supply chains have reduced the supply of durable goods to the country. A possible normalization of production is a bearish potential for inflation.
- The contribution of these items to the core of PCE inflation is currently greater than 150bps. A faster-than-expected reversal could be a bearish inflation shock in the short term and could ease the pressure on the Fed for faster normalization of monetary policy. The indicator of bottlenecks in the USA production chain has improved greatly since the beginning of 2022.

Contribution to PCE core of components with supply issues (pp)



GS indicator of production chain bottlenecks in the USA



Source: Goldman Sachs, Mar Asset Management

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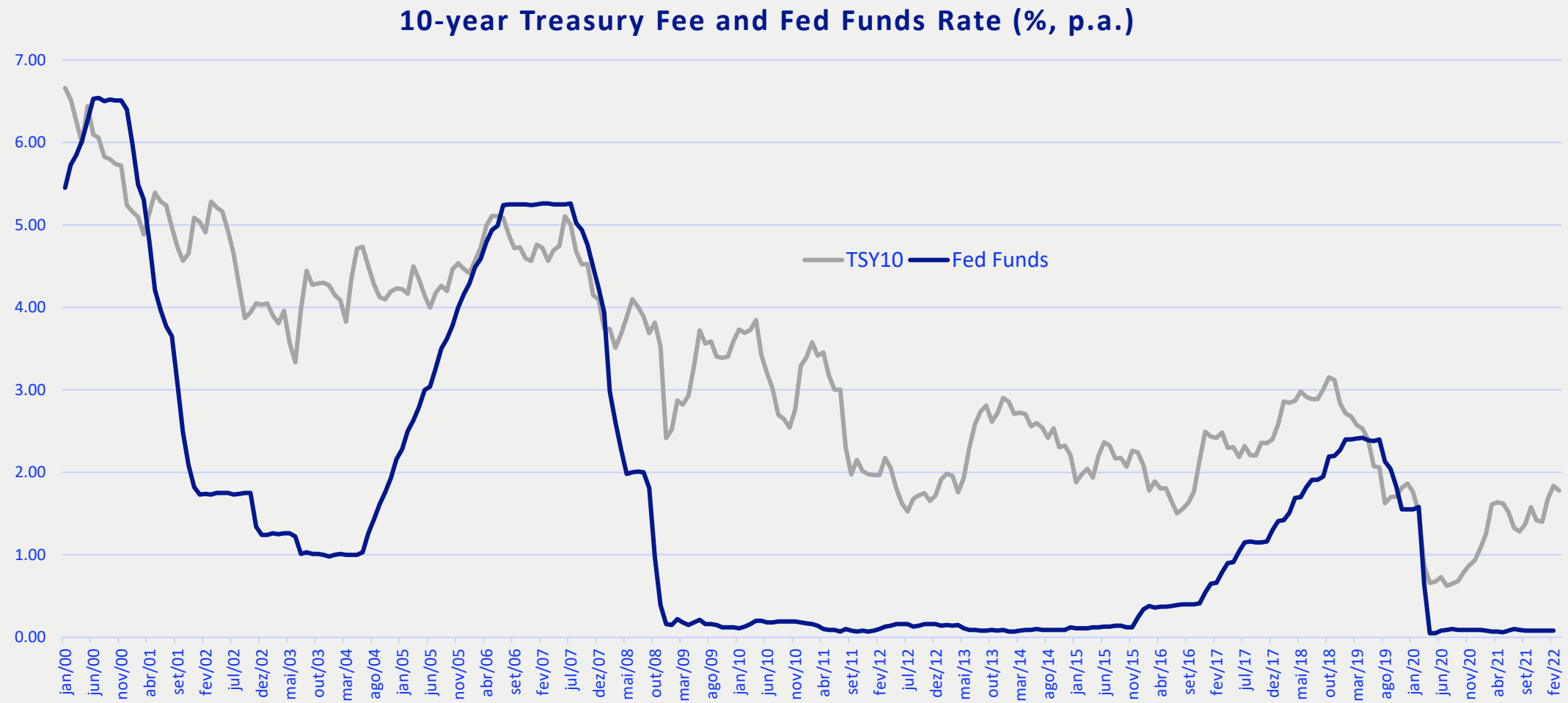
Appendix

Is there a reason to the *sell off* of the USA interest rate?



Source: Fed St. Louis, Mar Asset Management

10-year TS closure explained by actual 5y5y

- The 10-year interest rate decomposition between 5-year rate, 5y5y real and 5y5y breakeven had occurred (i) at the short end and (ii) at the real end of the long end.
- Since the beginning of the war between Russia and Ukraine, a closure of the real long-term rate and an opening of the breakeven occurred simultaneously.

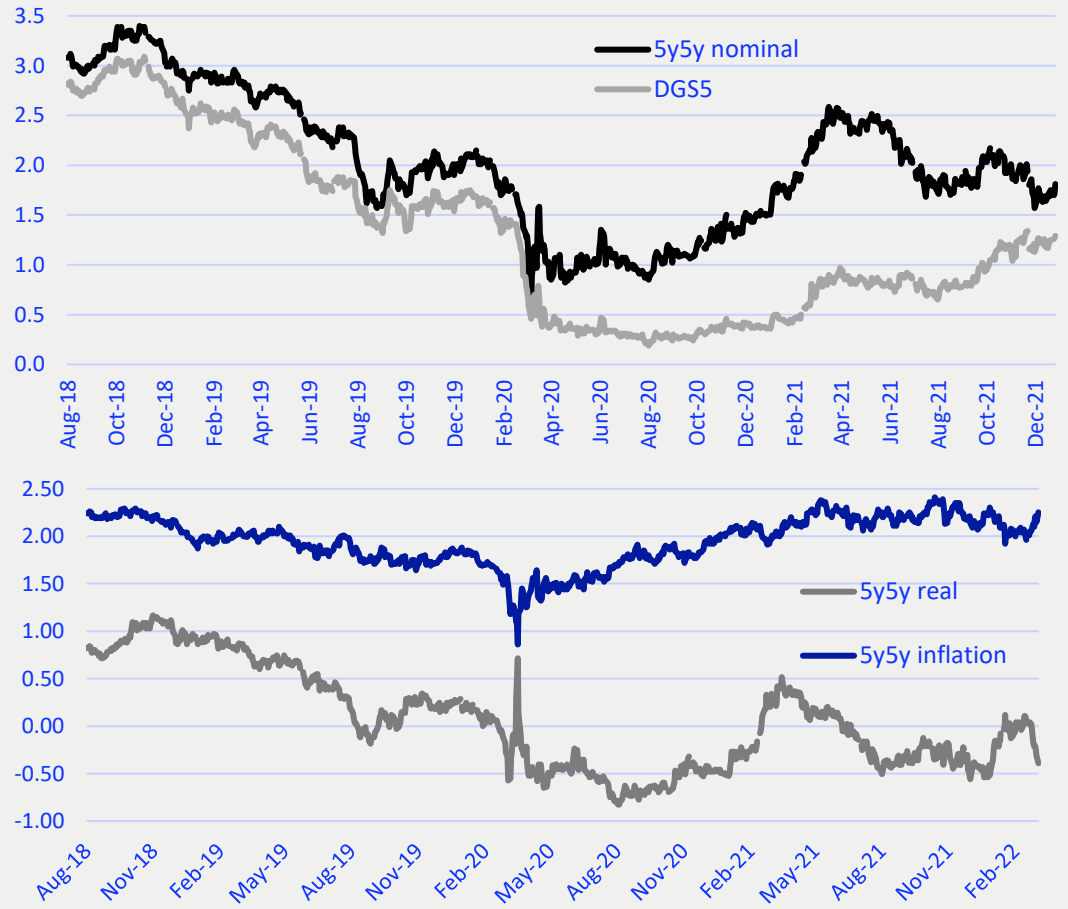
Decomposition of the 10-year rate of USA bonds (%, p.a.)

Yield	Taxa de juros		
	12/31/2021	2/1/2022	3/7/2022
10y	1.52	1.81	1.78
5y	1.26	1.63	1.71
5y5y real	-0.46	-0.07	-0.39
5y5y inflation	2.25	2.06	2.25

Yield	Contribuição		
	12/31/2021	2/1/2022	3/7/2022
10y	1.52	1.81	1.78
5y	0.63	0.815	0.855
5y5y real	-0.23	-0.03	-0.20
5y5y inflation	1.125	1.03	1.125

Yield	Variação		
	12/31/2021	2/1/2022	3/7/2022
10y		0.29	-0.03
5y		0.19	0.04
5y5y real		0.20	-0.16
5y5y inflation		-0.095	0.10

USA nominal, real, long and short rates (%)

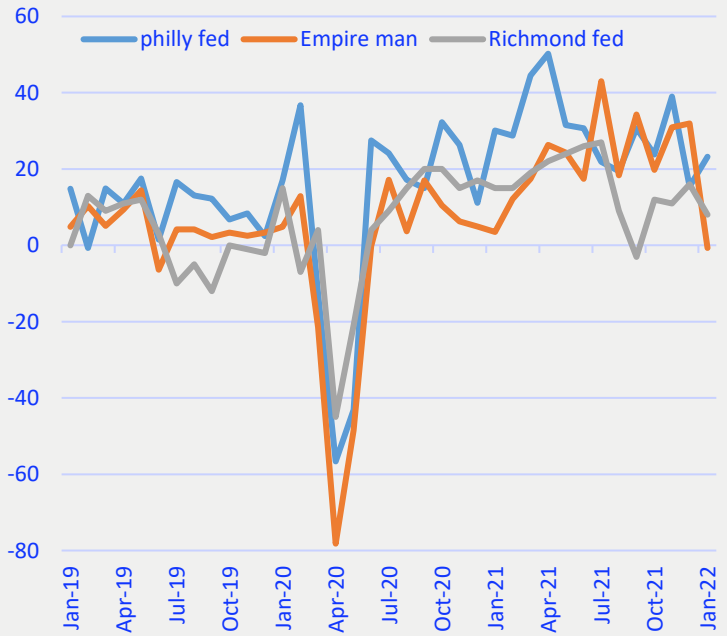


Source: Fed St. Louis, Mar Asset Management

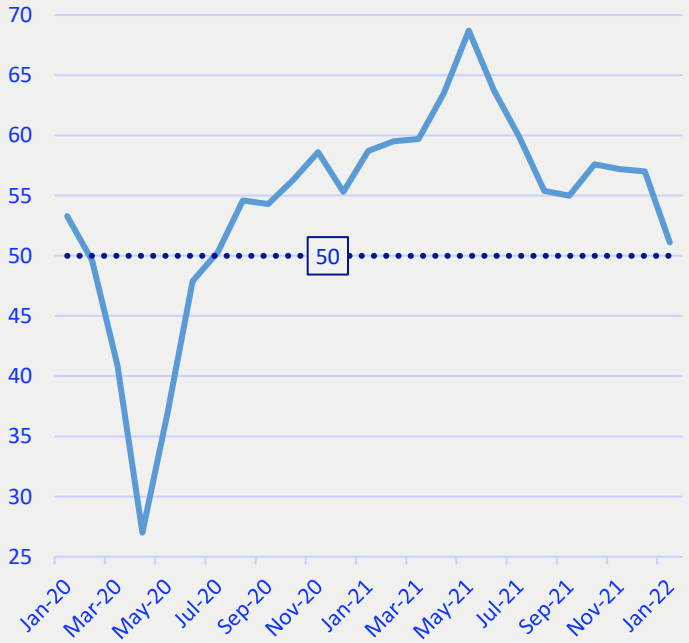
Indicators showed worsening in the last two months

- Higher frequency indicators show a slowdown in the USA economy in the last two months. Feds indicators, such as Philly Fed, Richmond Fed and Empire Manufacturing showed a reduction in the last results.
- Citibank's economic surprise index, which measures the extent to which economic data are surprising expectations up or down, has returned to near zero in recent readings.

Business Conditions Indicators (>0 = expansion)



Markit Composite PMI (>50 = expansion)



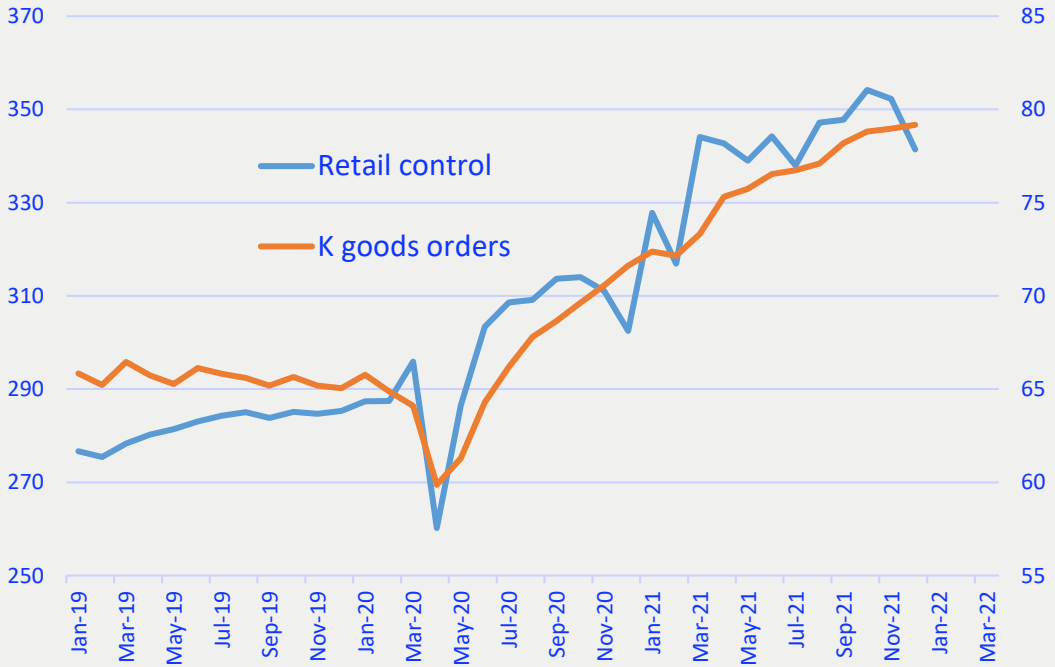
Citibank Surprise Index (>0, positive surprise)

Source: Richmond, Philadelphia, NY Fed, Markit, Citibank, Mar Asset Management

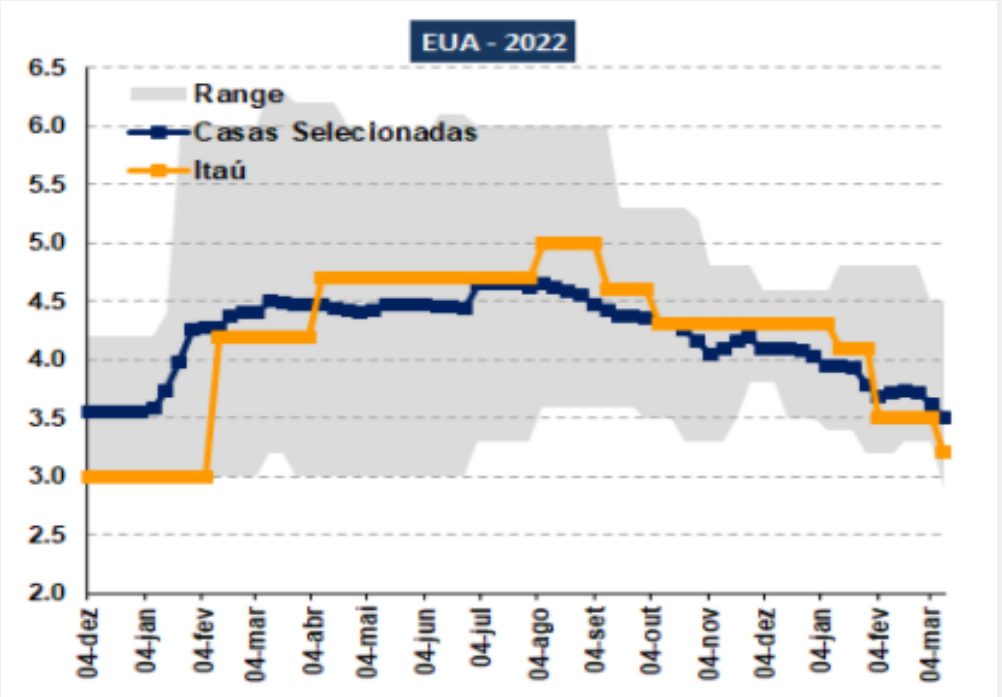
Market revised to low growth in 2022

- Hard indicators also show deceleration. Retail sales have been virtually stable since March and, more recently, *Capital Good Orders* (Non def.) have shown slowdown. Respectively, they suggest a deceleration in consumption and equipment investments. This worsening in indicators led the market to reduce projections for GDP growth in 2022.

Retail Sales and Non-def Cap. Goods orders (USD, SA)



USA GDP growth projection in 2022 (%, compared to 2021)

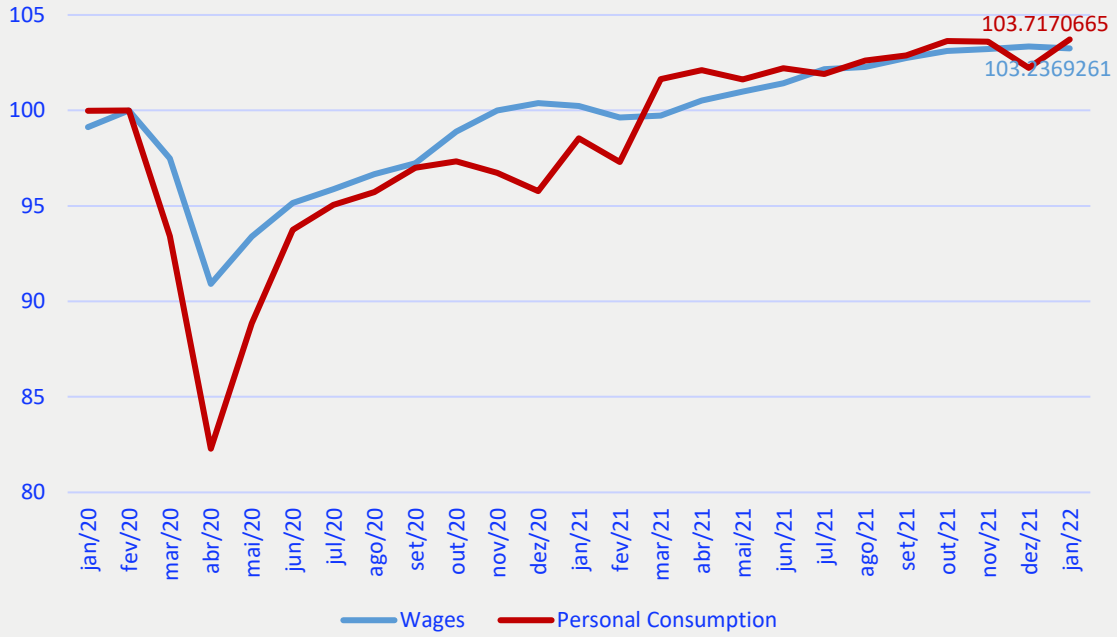


Source: BEA, Census, Itáu, Mar Asset Management

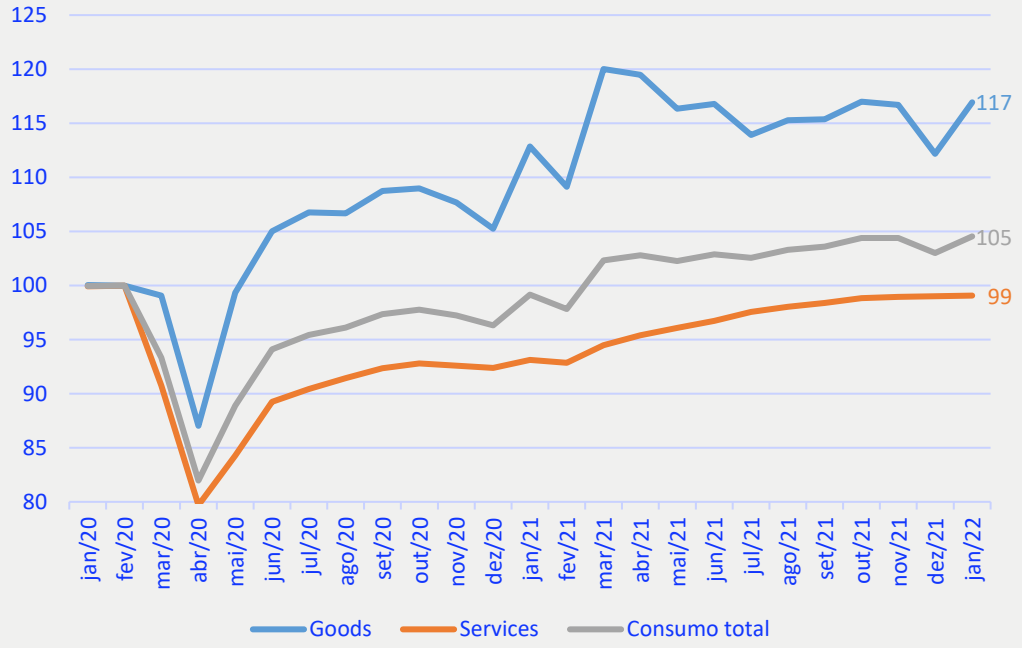
Consumption of goods in the USA well above the pre-crisis

- The recovery in household consumption remained at a rather strong pace throughout the first half of the year. The reopening of the economy and fiscal stimuli caused consumption to exceed the level seen before the pandemic.
- Consumption of services is still below the pre-crisis level. The consumption of goods showed a strong increase in the semester after sending checks and expanding the support programs for families implemented in the period. More recently, consumption of goods shows cooling, in line with retail sales.

Household consumption and disposable income from wages (US$ trillion, SAAR)



Composition of household consumption in the USA (index number, Feb-20=100)



Source: BEA, Mar Asset Management

Services still below pre-crisis levels

- Even within the services, the recovery was quite heterogeneous. Some services, such as *housing* and *utilities*, showed no contraction during the crisis. Others showed a faster recovery, such as professional and financial services. Finally, service s more sensitive to social contacts, such as *child care* and *recreation*, are still well below the pre-crisis.

Composition of USA consumption growth

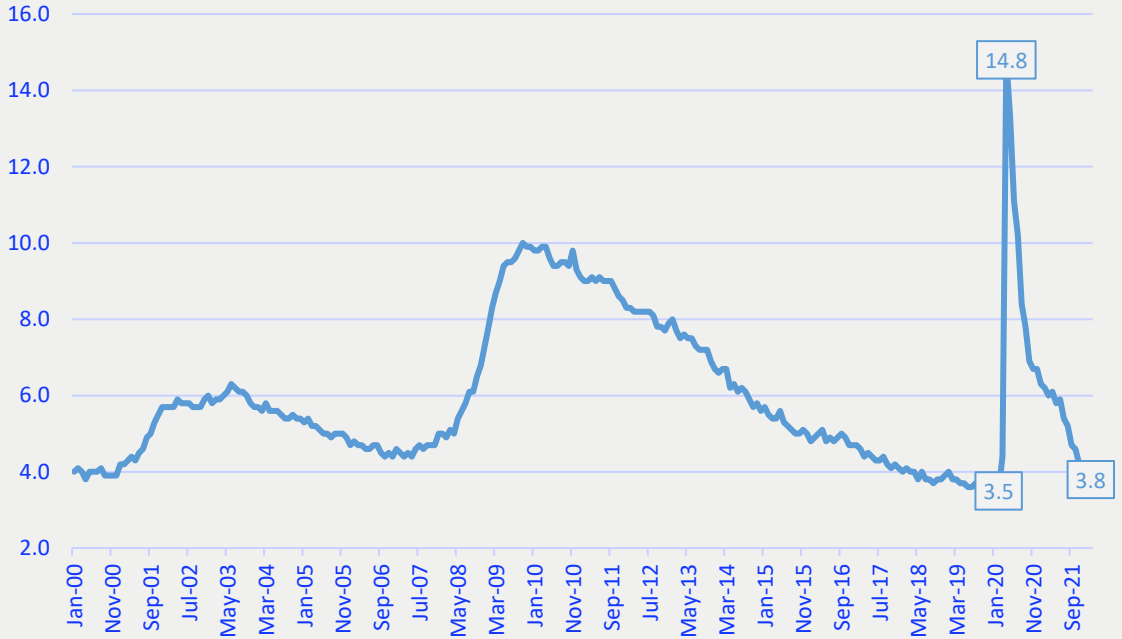
		Variação, %								Contribuição para total (p.p.)							
Componente	Peso	Drawdown	Set 20 vs. pré-crise	Dez 20 vs. pré-crise	Mar 21 vs. pré-crise	Jun 21 vs. pré-crise	Set 21 vs. pré-crise	Dec 21 vs. pré-crise	Jan 22 vs. pré-crise	Drawdown	Set20 vs. pré-crise	Dez 20 vs. pré-crise	Mar 21 vs. pré-crise	Jun 21 vs. pré-crise	Set 21 vs. pré-crise	Dec 21 vs. pré-crise	Jan 22 vs. pré-crise
Market-based total Consumption	**100%**	**-21%**	**-3.2%**	**-4.3%**	**2.4%**	**3.2%**	**3.5%**	**3.3%**	**4.9%**	**-21.4%**	**-3.2%**	**-4.3%**	**2.4%**	**3.2%**	**3.5%**	**3.3%**	**4.9%**
Goods	**40%**	**-14%**	**8.9%**	**5.0%**	**20.2%**	**17.5%**	**16.2%**	**13.1%**	**17.8%**	**-5.8%**	**3.6%**	**2.0%**	**8.1%**	**7.0%**	**6.5%**	**5.2%**	**7.1%**
Durable goods:	**15%**	**-21%**	**13.8%**	**10.0%**	**34.2%**	**25.8%**	**20.7%**	**17.6%**	**26.7%**	**-3.1%**	**2.0%**	**1.5%**	**5.1%**	**3.8%**	**3.1%**	**2.6%**	**4.0%**
motor vehicles and parts	4%	-28%	14.3%	12.6%	42.5%	22.9%	3.5%	5.8%	21.9%	-1.1%	0.6%	0.5%	1.6%	0.9%	0.1%	0.2%	0.8%
durable goods other than motor vehicles and parts	11%	-19%	13.6%	9.1%	31.3%	26.8%	26.7%	21.8%	28.4%	-2.1%	1.5%	1.0%	3.4%	2.9%	2.9%	2.4%	3.1%
Nondurable goods:	**25%**	**-11%**	**6.1%**	**2.1%**	**12.0%**	**12.6%**	**13.5%**	**10.4%**	**12.6%**	**-2.7%**	**1.5%**	**0.5%**	**3.0%**	**3.2%**	**3.4%**	**2.6%**	**3.2%**
food and beverages for off-premises consumption	8%	5%	7.6%	5.6%	13.6%	12.2%	12.9%	10.4%	12.3%	0.4%	0.6%	0.5%	1.1%	1.0%	1.1%	0.9%	1.0%
clothing and footwear	4%	-45%	10.0%	0.2%	23.7%	23.5%	24.7%	15.6%	21.0%	-1.6%	0.3%	0.0%	0.8%	0.8%	0.9%	0.5%	0.7%
gasoline and other energy goods	4%	-33%	-4.4%	-11.8%	-5.2%	0.5%	1.9%	1.8%	-1.4%	-1.2%	-0.2%	-0.4%	-0.2%	0.0%	0.1%	0.1%	-0.1%
other nondurable goods	10%	-3%	7.3%	5.1%	13.0%	13.7%	14.5%	11.9%	15.0%	-0.3%	0.7%	0.5%	1.3%	1.3%	1.4%	1.1%	1.5%
Services:	**60%**	**-26%**	**-9.6%**	**-9.5%**	**-7.0%**	**-4.3%**	**-3.0%**	**-1.7%**	**-1.8%**	**-15.7%**	**-5.8%**	**-5.7%**	**-4.3%**	**-2.6%**	**-1.8%**	**-1.0%**	**-1.1%**
Não afetados	**20%**	**0%**	**0.6%**	**2.0%**	**2.1%**	**2.3%**	**2.5%**	**2.8%**	**3.7%**	**0.0%**	**0.2%**	**0.4%**	**0.4%**	**0.6%**	**0.6%**	**0.6%**	**0.8%**
housing services	15%	0%	0.7%	1.0%	1.3%	1.6%	1.9%	2.1%	2.2%	0.0%	0.1%	0.1%	0.2%	0.2%	0.3%	0.3%	0.3%
household utilities	2%	-1%	1.9%	5.1%	2.3%	4.7%	1.9%	2.1%	6.7%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.2%
communication services	3%	0%	1.7%	6.0%	7.2%	9.4%	10.3%	9.5%	11.3%	0.0%	0.0%	0.2%	0.2%	0.2%	0.3%	0.2%	0.3%
Recuperação mais rápida	**28%**	**-37.2%**	**-9.5%**	**-9.7%**	**-6.3%**	**-3.7%**	**-1.4%**	**-0.6%**	**-1.1%**	**-10.8%**	**-2.8%**	**-2.8%**	**-1.9%**	**-0.9%**	**-0.6%**	**-0.2%**	**-0.4%**
health care	19%	-35%	-7.1%	-5.5%	-6.0%	-3.6%	-2.4%	-0.7%	-1.1%	-6.8%	-1.4%	-1.1%	-1.2%	-0.7%	-0.5%	-0.1%	-0.2%
food services and accommodations	7%	-54%	-17.8%	-24.2%	-9.9%	-2.3%	-0.7%	-1.0%	-2.1%	-3.8%	-1.3%	-1.7%	-0.7%	-0.2%	0.0%	-0.1%	-0.1%
professional services	1%	-14%	-9.4%	-5.0%	-1.6%	-5.8%	-3.5%	-2.4%	-1.2%	-0.2%	-0.1%	-0.1%	0.0%	-0.1%	0.0%	0.0%	0.0%
household maintenance	1%	-12%	-6.3%	-6.2%	-2.8%	-6.5%	-4.9%	-5.8%	-4.4%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
financial services and insurance	1%	-19%	-5.3%	-0.9%	1.3%	-10.3%	-4.8%	-1.5%	-0.9%	-0.2%	-0.1%	0.0%	0.0%	-0.1%	-0.1%	0.0%	0.0%
Recuperação Lenta	**11%**	**-47%**	**-29.5%**	**-30.1%**	**-26.1%**	**-19.6%**	**-16.1%**	**-12.2%**	**-13.2%**	**-5.1%**	**-3.2%**	**-3.3%**	**-2.8%**	**-2.1%**	**-1.8%**	**-1.3%**	**-1.4%**
transportation services	4%	-48%	-30.3%	-30.5%	-26.9%	-19.4%	-13.4%	-8.5%	-10.0%	-1.9%	-1.2%	-1.2%	-1.1%	-0.8%	-0.5%	-0.3%	-0.4%
recreation services	3%	-53%	-34.3%	-36.0%	-31.4%	-24.8%	-22.6%	-15.2%	-16.5%	-1.7%	-1.1%	-1.1%	-1.0%	-0.8%	-0.7%	-0.5%	-0.5%
education	2%	-12%	-8.9%	-11.8%	-8.0%	-6.1%	-5.5%	-4.3%	-4.3%	-0.3%	-0.2%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%
personal care and clothing services	1%	-78%	-47.5%	-44.0%	-39.3%	-28.4%	-23.7%	-27.3%	-27.5%	-1.0%	-0.6%	-0.6%	-0.5%	-0.4%	-0.3%	-0.4%	-0.4%
child care	0%	-60%	-30.7%	-29.5%	-25.5%	-21.5%	-22.2%	-16.7%	-17.4%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%

Source: BEA, Mar Asset Management

Unemployment rate declined to 3.8% in February

- The unemployment rate has fallen below 4.0% in recent months after reaching 14.8% in April 2020. However, the difference between the current rate and the pre-crisis would be greater if not for the lower participation rate. Adjusting for the participation rate before the crisis, unemployment would be 5.8%.
- There is no clear segment of society that shows a more structural worsening of the unemployment rate. All age groups and ethnic groups recovered most of the strong employment contraction in relation to the pre-crisis. It seems that the total unemployment rate serves as a fairly reasonable proxy for minority unemployment.

Unemployment rate (%)



Unemployment and participation rate by age group and ethnicgroup (%)

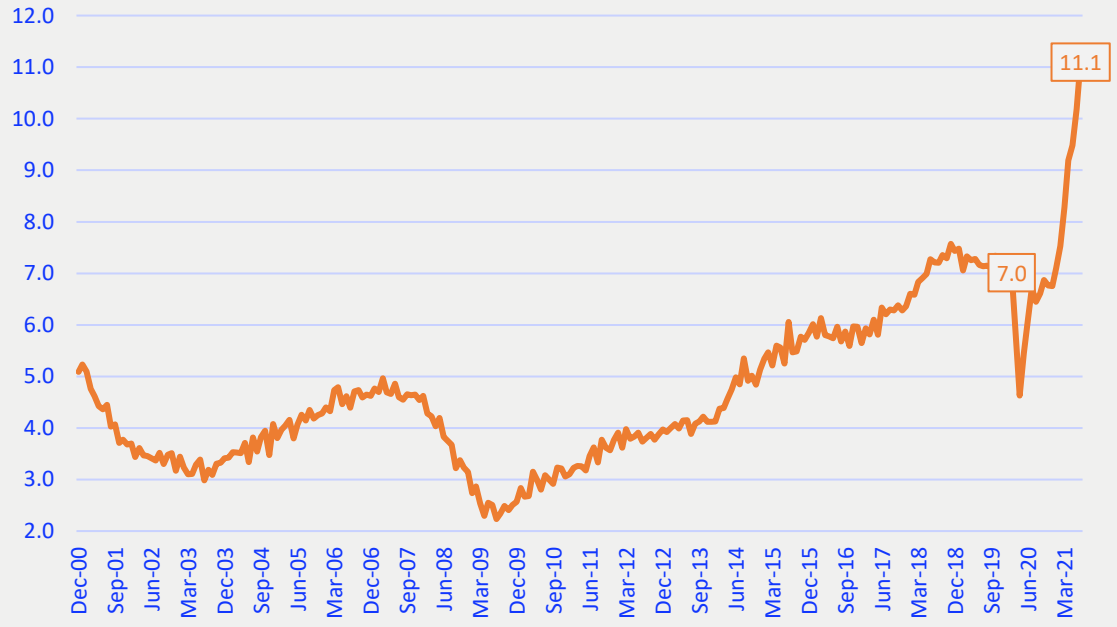
	Unemployment rate			Participation rate		
	Feb-20	Apr-20	Jan-22	Feb-20	Apr-20	Jan-22
Total	3.5	14.7	4.0	63.4	60.2	62.2
Age						
24-	7.8	27.4	8.3	57	49.2	55.6
25-55	3.0	12.8	3.5	83	79.9	82
55+	2.6	13.6	3.1	40.3	38.5	39.1
Gender						
Women	3.4	16.1	3.9	57.9	54.6	56.8
Men	3.5	13.5	4.1	69.3	66.1	67.9
Demographics						
White	3.0	14.1	3.4	63.3	60.3	62
Black	6.0	16.6	6.9	63.2	58.5	62
Latino	4.4	18.8	4.9	67.9	63.1	66.2

Source: BLS, Conference Board Mar Asset Management

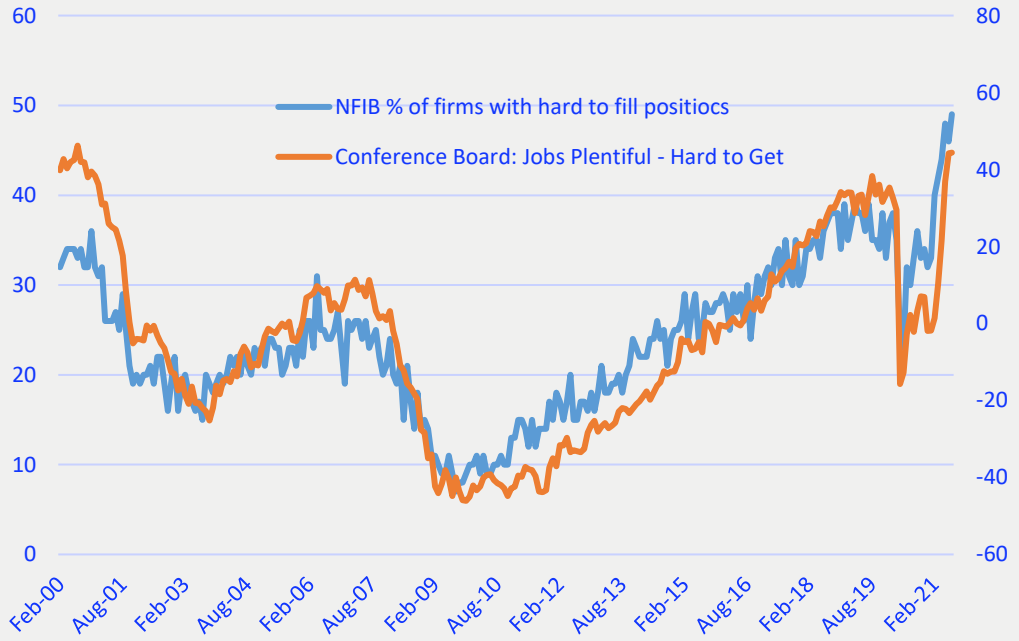
Demand for workers is the largest in history

- The number of open positions in the USA labor market was over 10 million in July 2021. This was the highest value of the historical series and is 3.9 million above pre-crisis levels.
- *soft* indicators of demand per worker show a qualitatively similar situation. The percentage of firms that claim to be struggling to hire increased to 49% at the end of July, the highest level in the historical series. The difference of workers who consider their work *plentiful* versus those with difficulty in finding jobs is also at very high levels for the historical standard.

Job Openings in the USA (millions, SA)



Jobs Plentifull minus hard to find and _firms with difficulty to fill positions_(%)

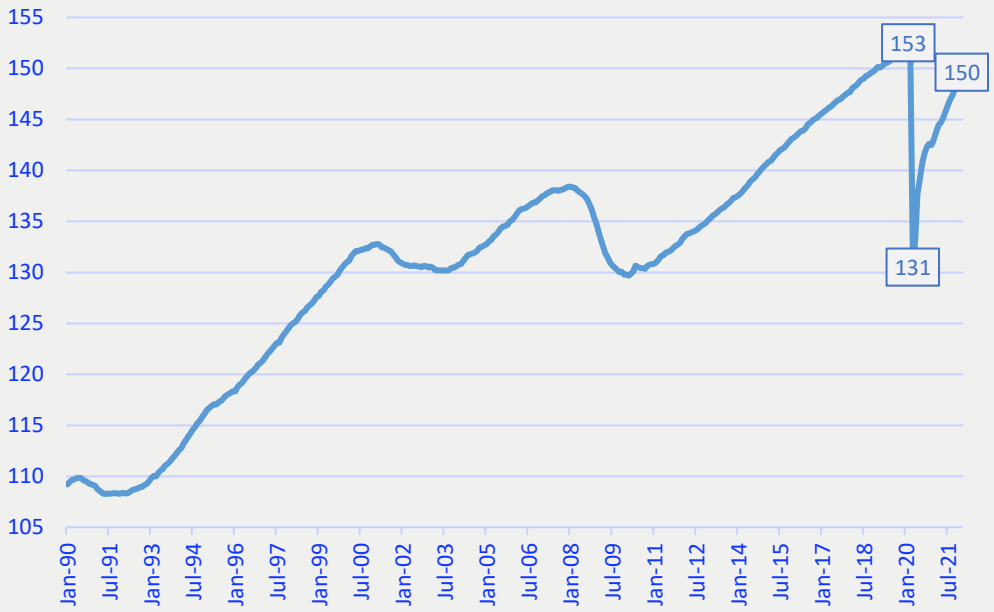


Source: BLS, NFIB, Conference Board Mar Asset Management

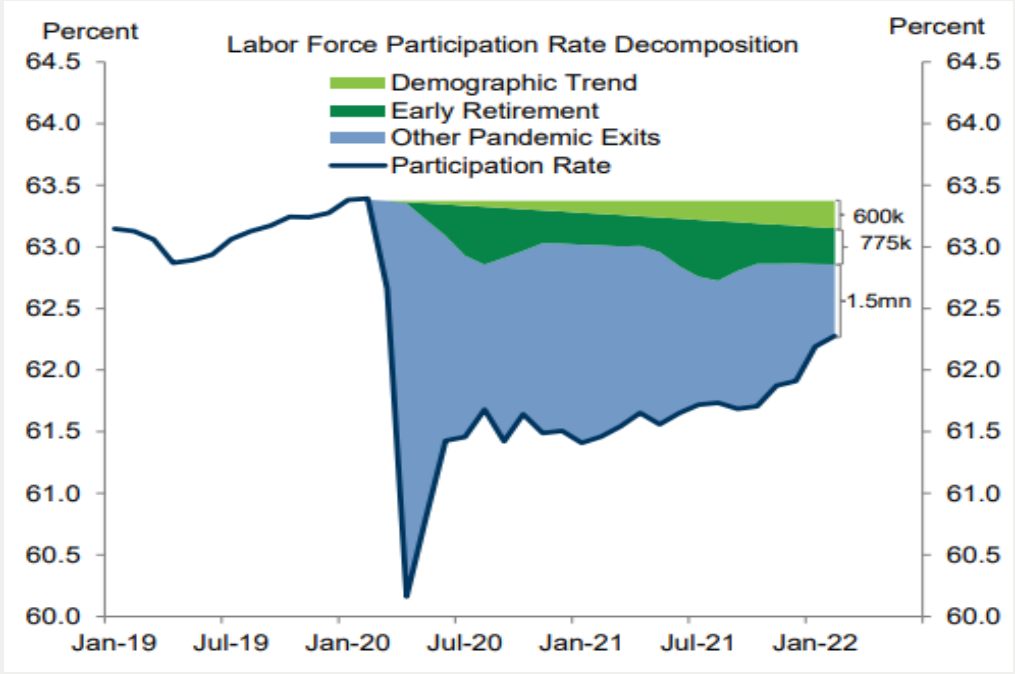
Number of workers still below Feb-2020

- The number of people employed (*Nonfarm Payroll*) is 3 million below the pre-crisis level. This represents a recovery of 85% of the initial job loss due to the pandemic.
- Part of the reduction in the number of employees tends to be permanent. The demographic trend and the number of workers who decided to retire early explain almost half of the drop in the number of workers compared to the pre-pandemic levels.

Nonfarm Payroll (AS, millions)



Decomposition of USA labour market participation rate (%)



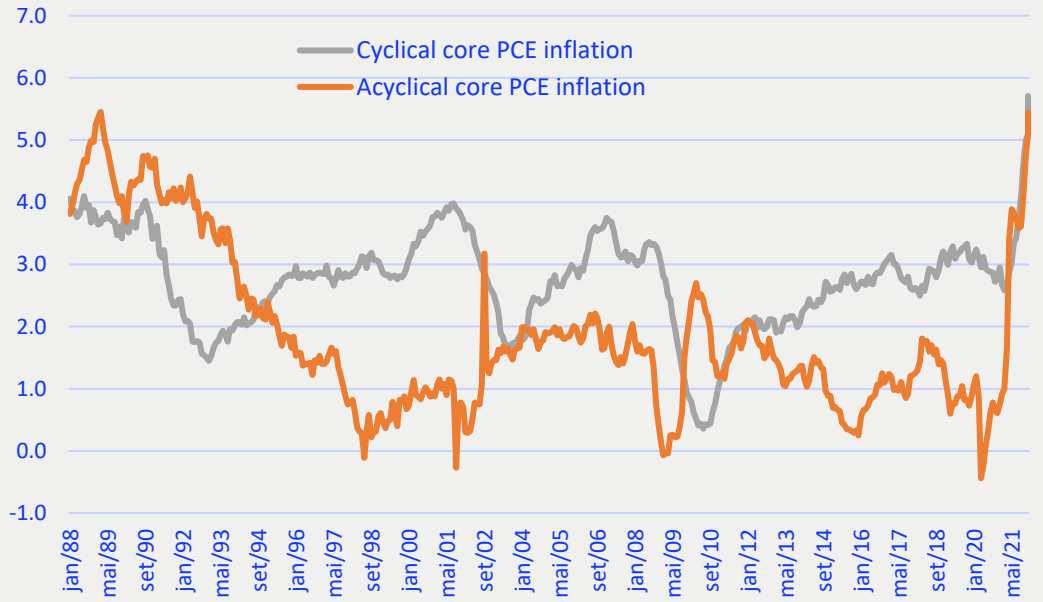
Source: BLS, Goldman Sachs, Mar Asset Management

Inflation in the USA – cyclical vs. acyclic components 1

- The PCE core inflation reached its highest level since the beginning of the 1990s. Since the 2008 crisis, inflation core had rarely surpassed the Fed's 2.0% headline target. The best way to understand the dynamics of the inflation core in the USA is by dividing it between cyclical (43% of the index) and acyclical (57% of the index) components. The cyclical components are those that historically show a positive relationship with the level of unemployment. However, it is the acyclic components that show a greater increase in the current scenario.
- The recent inflation outbreak was initially explained by the acyclic component. Cyclical inflation showed a strong increase from 2021, corroborating the view that is not just supply shocks that explain current high inflation.

PCE Core Inflation

PCE Core – cyclic vs. acyclic



Source: BEA, Fed San Francisco, Mar Asset Management

Inflation in the USA – cyclical vs. acyclic components 2

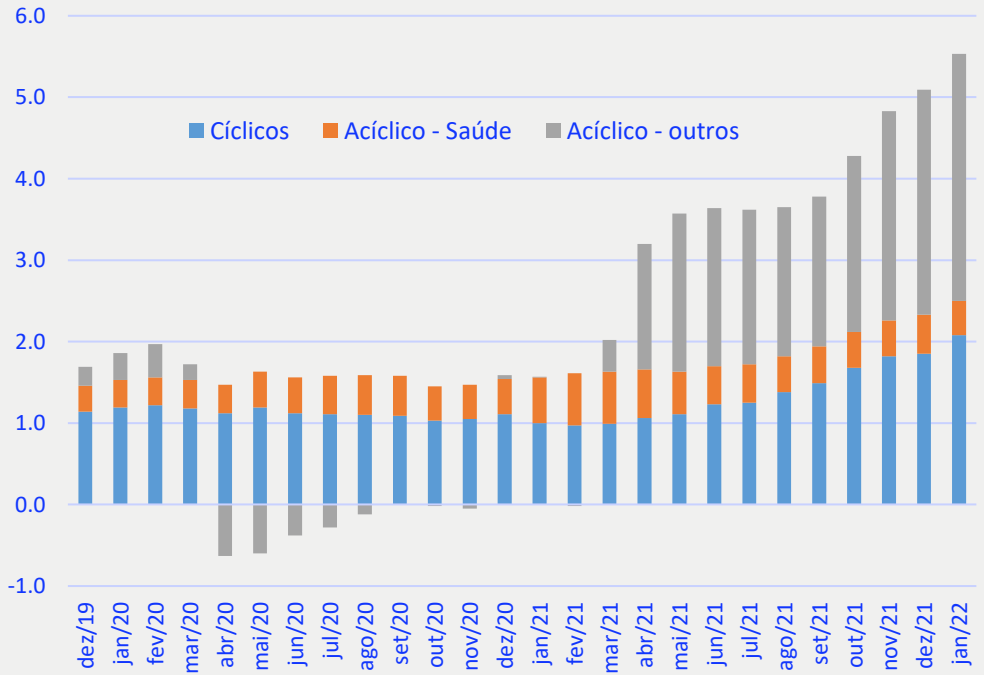
Pro-Cyclicals (43% of index)	Acyclicals (57% of index)		
Accessories & Parts	Sewing Items	Repair of HH Appliances	Transportation
Veterinary & Other Services for Pets	Film & Photographic Supplies	Men's & Boys' Clothing	Net Household Insurance
Bicycles & Acc	Internet access.	Commercial & Vocational Schools	Telephone and Related Communication Equipment
Child Care	Membership Clubs/Participant Sports Centers	Leo Pharmaceutical Products	Other Household Services
Amusement Parks/Campgrounds/Rel Recral Svcs	Financial Service Charges, Fees/Commissions	Food Furn to Empls Price Idx(inc Military)	Water Transportation
Clothing & Footwear Services	Used Autos	Accting & Other Business Services	Less: Exps in the US by Nonresidents
Household Care Services	Physician Services	Therapeutic Medical Equip	Photographic Equip
Social Advocacy/Civic/Social Organizations	Musical Instruments	Corrective Eyeglasses & Contact Lenses	Jewelry
Less: Personal Remittances in Kind to Nonresidents	Clothing materials	Recreational Books	Elec Appliances for Personal Care
Household Cleaning Products	Dental Services	Info Processing Equip	Household Linens
Nursing Homes	Video Media Rental	Hair/Dental/Shave/Misc Pers Care Prods ex Elec Prod	Nursery, Elementary & Secondary Schools
Package Tours	Educational Books	Cosmetic/Perfumes/Bath/Nail Preparatns & Implements	Motorcycles
Labor Organization Dues	Stationery & Misc Printed Mtls	Watches	Cable, Satellite & Oth Live Television Svc
Museums & Libraries	Prof Assn Dues	Rental Value of Farm Dwellings	Hotels and Motels
Lotteries	Health insurance	Children's & Infants' Clothing	Used Light Trucks
Imputed Rent of Owner-Occupied Nonfarm Hous	Outdoor Equip & Supplies	Expenditures Abroad by U.S. Residents	Shoes & Other Footwear
Pari-Mutuel Net Receipts	Hospitals	Ground Transportation	ABC Legal Services
Misc Household Products	Funeral & Burial Services	Repr of Audio-Visual/Photo/Info Process Eqpt	Luggage & Similar Personal Items
Group Housing	Postal & Delivery Services	Sales Receipts: Foundatns/Grant Making/Giving Svcs to HH	Window Coverings
Pleasure Boats, Aircraft & Other Recral Vehicles	Financial Services Furnished w/out Payment	Other Motor Vehicle Services	Tires
Admissions to Specified Spectator Amusements	Foreign Travel by U.S. Residents	Tools, Hardware & Supplies	Other Medical Products
Social Assistance	Telecommunication Services	Flowers, Seeds & Potted Plants	Pets & Related Products
Purchased Meals & Beverages	New Light Trucks	Newspapers & Periodicals	Standard Clothing Issued to Military Personnel
Casino Gambling	Furniture	Photo Studios	Life Insurance
Religious Organizations' Services to HHs	Photo Processing	Moving, Storage & Freight Services	Clock/Lamp/Lighting Fixture/Othr HH Decorative Item
Motor Vehicle Maintenance & Repair	Net Motor Vehicle/Oth Transportation Insur	Housing at Schools	Carpets & Other Floor Coverings
Household Paper Products	New Autos	Women's & Girls' Clothing	Paramedical Services
Domestic Services	Sporting Equip, Supplies, Guns & Ammunition	Tobacco	Games, Toys & Hobbies
Rental of Tenant-Occupied Nonfarm Housing	Major Household Appliances	Repair of Furn, Furnishings/Floor Coverings	Maint/Repair of Rec Vehicles/Sports Eqpt
Final Consumptn Exps of Nonprofit Instns Serving HH	Dishes and Flatware	Small Elec Household Appliances	Nonelectric Cookware & Tableware
	Video & Audio Equip		

Source: Fed San Francisco, Mar Asset Management

Vehicles have the highest contribution among acyclics

- Among the acyclicals, the main contributors to the increase in the PCE inflation core in 12 months were certain goods, vehicles and services directly affected by the pandemic, such as airline tickets and hotels.

Contribution to PCE Core Inflation Breakdown(%)



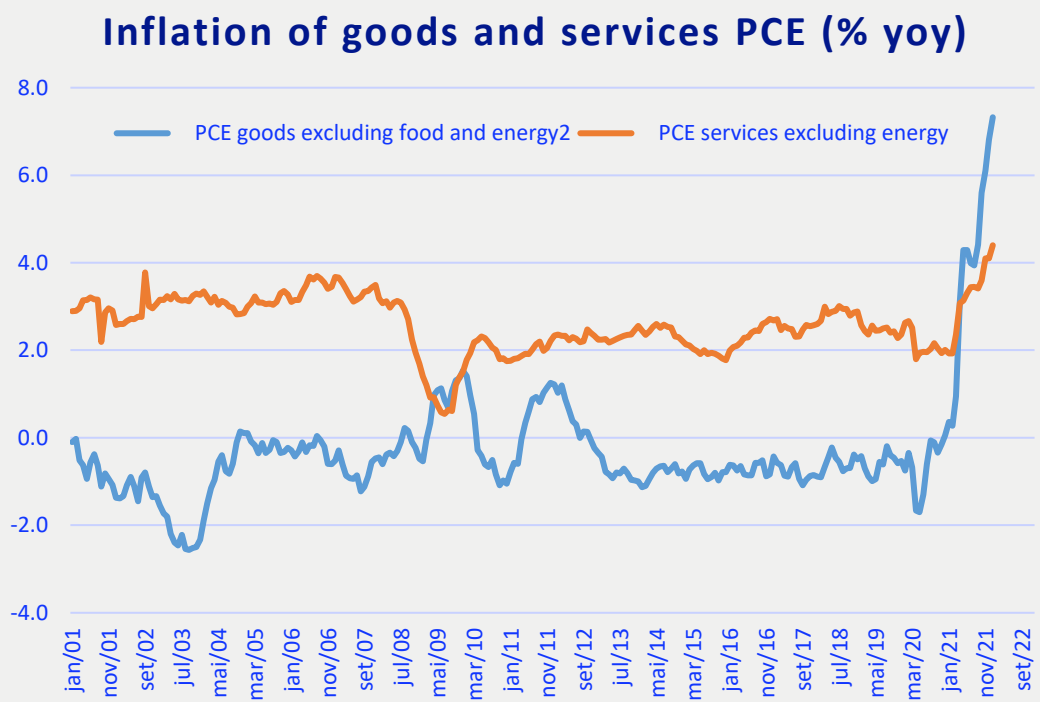
Decomposition of the contribution of acyclicals to the PCE Core (% yoy)

	Dec-19	Apr-20	Dec-20	Jan-22	Jan. vs. pré-crise
Núcleo PCE	**1.66**	**0.81**	**1.52**	**5.71**	**4.05**
Cíclicos	*1.14*	*1.12*	*1.11*	*2.08*	*0.94*
Acíclicos	*0.55*	*-0.28*	*0.48*	*3.45*	*2.90*
Saúde	0.32	0.35	0.43	0.42	*0.10*
Outros acíclicos	0.23	-0.63	0.05	3.03	*2.80*
Motor vehicles and parts	-0.01	-0.13	0.19	1.14	*1.15*
Other durable goods	-0.03	-0.06	-0.08	0.08	*0.11*
Clothing and footwear	-0.05	-0.20	-0.15	0.13	*0.18*
Pharmaceutical and other medical products (40 and	0.12	0.04	-0.10	0.07	*-0.04*
Air transportation	0.03	-0.13	-0.15	0.10	*0.07*
Accommodations	0.01	-0.06	-0.05	0.12	*0.12*
Financial services and insurance	0.19	0.04	0.11	0.35	*0.16*
Demais acíclicos	-0.03	-0.13	0.28	1.04	*1.06*

Source: BEA, Mar Asset Management

Inflation of goods well above the historical level

- The large increase in PCE inflation core in recent months was due to industrial goods. The group's inflation reached 4.0%, well above the historical standard.
- Service inflation has also shown a resurgence in recent months, reflecting a reopening and a tighter labour market.



	Peso	Dec-17	Dec-18	Dec-19	Dec-20	Sep-21	Dec-21	Jan-22
Personal consumption expenditures	**100**	1.9	1.9	1.7	1.3	4.4	5.8	6.1
PCE food and energy	**13.3**	3.1	0.4	1.7	-0.2	10.2	13.1	12.7
PCE excluding food and energy2	**86.7**	1.7	2.1	1.6	1.5	3.7	4.9	5.2
PCE goods excluding food and energy2	**27.3**	-0.9	-0.5	-0.5	0.1	4.4	6.8	7.3
PCE services excluding energy	**60.3**	2.6	2.9	2.4	2.0	3.4	4.1	4.4
Durable goods	**14.8**	-1.8	-1.1	-2.0	1.4	7.4	10.5	11.6
Market-based PCE motor vehicles and parts	**3.6**	-0.4	0.4	0.4	3.6	11.9	17.4	18.6
Market-based PCE durable goods other than motor vehicles and pa	**10.8**	-2.4	-1.8	-2.9	0.1	3.9	4.4	5.6
Nondurable goods	**24.2**	1.5	0.1	1.5	-0.9	5.4	7.7	7.2
Market-based PCE food and beverages purchased for off-premises	**8.2**	0.9	0.8	0.8	3.9	4.1	5.7	6.6
Market-based PCE clothing and footwear	**3.0**	-1.9	0.2	-1.5	-4.6	2.8	5.7	3.8
Market-based PCE gasoline and other energy goods	**3.1**	10.8	-1.6	7.8	-15.0	41.1	47.9	36.3
Market-based PCE other nondurable goods	**9.5**	0.7	0.0	1.7	-0.3	0.8	2.1	2.5
Services:								
Market-based PCE services	**50.7**	2.0	2.6	2.1	2.0	3.2	4.1	4.4
Of which:								
Market-based PCE housing services	**14.8**	3.3	3.3	3.4	2.2	2.8	3.7	4.0
Market-based PCE household utilities	**2.4**	3.0	2.1	-0.3	2.8	6.9	7.9	10.5
Market-based PCE health care	**16.1**	1.6	1.9	1.8	2.6	2.5	2.7	2.4
Market-based PCE transportation services	**2.7**	0.5	3.6	2.2	-2.6	5.8	8.6	7.9
Market-based PCE recreation services	**2.0**	3.3	2.2	2.2	1.9	3.3	3.3	4.7
Market-based PCE food services and accommodations	**5.0**	2.1	2.4	2.4	2.9	6.0	7.6	7.6
Market-based PCE financial services and insurance	**0.9**	0.5	6.3	-1.4	0.5	-3.3	0.7	10.7
Market-based PCE other services	**6.7**	0.2	2.3	1.0	1.1	1.9	2.8	2.9
Of which:								
Market-based PCE communication services	**2.5**	-5.4	-2.8	-1.2	-1.9	-0.8	0.0	0.4
Market-based PCE education	**1.8**	2.5	2.8	1.7	1.4	1.8	1.8	1.8
Market-based PCE professional services	**1.2**	1.9	5.5	-0.1	1.3	2.2	3.6	3.9
Market-based PCE personal care and clothing services	**0.7**	0.8	4.2	3.1	4.0	2.8	5.1	5.2
Market-based PCE child care	**0.2**	1.7	1.9	3.3	2.2	2.4	2.7	2.6
Market-based PCE household maintenance	**0.5**	3.1	5.0	2.5	4.4	7.7	8.8	8.2

Source: BEA, Mar Asset Management

mar asset management

High inflation is widespread among consumer goods

Componente	Peso	Inflação	Contribuição
Motor vehicle rental	**0.12**	30.2	*0.04*
Net purchases of used motor vehicles (56)	**1.44**	27.4	*0.39*
Major household appliances	**0.46**	14.3	*0.07*
Natural gas (28)	**0.39**	12.6	*0.05*
Moving, storage, and freight services	**0.11**	11.0	*0.01*
Portfolio management and investment advice services	**0.99**	10.1	*0.10*
Domestic services	**0.18**	7.8	*0.01*
Pension funds	**0.35**	7.1	*0.03*
Jewelry	**0.52**	7.0	*0.04*
Furniture	**1.18**	6.4	*0.08*
Foundations and grantmaking and giving services to households	**0.03**	6.4	*0.00*
Tobacco (127)	**0.59**	6.3	*0.04*
Social assistance	**0.91**	6.1	*0.06*
Bicycles and accessories	**0.05**	6.0	*0.00*
Pleasure boats, aircraft, and other recreational vehicles	**0.44**	6.0	*0.03*
Hairdressing salons and personal grooming establishments	**0.25**	5.9	*0.02*
Other household services	**0.21**	5.8	*0.01*
New motor vehicles (55)	**2.20**	5.7	*0.13*
Flowers, seeds, and potted plants	**0.29**	5.6	*0.02*
Maintenance and repair of recreational vehicles and sports equip	**0.04**	5.6	*0.00*
Watches	**0.09**	5.5	*0.00*
Household paper products	**0.31**	5.3	*0.02*
Tools, hardware, and supplies	**0.25**	5.3	*0.01*
Postal and delivery services (68)	**0.09**	5.2	*0.00*
Televisions	**1.08**	5.0	*0.05*
Religious organizations' services to households	**0.05**	4.8	*0.00*
Cable, satellite, and other live television services	**0.58**	4.8	*0.03*
Social advocacy and civic and social organizations	**0.07**	4.7	*0.00*
Tires	**0.29**	4.6	*0.01*
Accommodations (104)	**0.56**	4.6	*0.03*
Laundry and drycleaning services	**0.07**	4.5	*0.00*
Motor vehicle maintenance and repair (60)	**1.17**	4.4	*0.05*
Securities commissions	**0.25**	4.1	*0.01*
Household cleaning products	**0.33**	4.0	*0.01*
Veterinary and other services for pets	**0.26**	3.9	*0.01*
Other recreational services (81, 94, and part of 92)	**0.34**	3.9	*0.01*
Food services	**4.59**	3.9	*0.18*
Personal computers/tablets and peripheral equipment	**0.83**	3.8	*0.03*
Repair and rental of audio-visual, photographic, and information p	**0.06**	3.8	*0.00*
Gambling (91)	**0.72**	3.7	*0.03*
Magazines, newspapers, and stationery (part of 90)	**0.61**	3.6	*0.02*

Componente	Peso	Inflação	Contribuição
Musical instruments (part of 80)	**0.05**	3.5	*0.00*
Water transportation (65)	**0.01**	3.4	*0.00*
Small electric household appliances	**0.09**	3.4	*0.00*
Rental value of farm dwellings (22)	**0.13**	3.4	*0.00*
Hospitals (51)	**7.29**	3.4	*0.25*
Repair of furniture, furnishings, and floor coverings	**0.01**	3.3	*0.00*
Repair of household appliances	**0.05**	3.3	*0.00*
Electricity (27)	**1.39**	3.3	*0.05*
Hospital and nursing home services	**8.49**	3.3	*0.28*
Labor organization dues	**0.08**	3.3	*0.00*
Motor vehicle parts and accessories (58)	**0.61**	3.1	*0.02*
Live entertainment, excluding sports	**0.08**	2.8	*0.00*
Museums and libraries	**0.05**	2.8	*0.00*
Motion picture theaters	**0.02**	2.8	*0.00*
Nursing homes (52)	**1.19**	2.7	*0.03*
Nursery, elementary, and secondary schools (98)	**0.29**	2.6	*0.01*
Imputed rental of owner-occupied nonfarm housing (21	**10.91**	2.6	*0.29*
Clothing repair, rental, and alterations	**0.02**	2.5	*0.00*
Repair and hire of footwear	**0.00**	2.5	*0.00*
Miscellaneous personal care services	**0.35**	2.5	*0.01*
Outpatient services	**7.63**	2.5	*0.19*
Outdoor equipment and supplies	**0.04**	2.5	*0.00*
Ground transportation (63)	**0.23**	2.5	*0.01*
Rental of tenant-occupied nonfarm housing (20)	**3.91**	2.4	*0.09*
Group housing (23)	**0.01**	2.4	*0.00*
Life insurance (110)	**0.68**	2.4	*0.02*
Accounting and other business services	**0.21**	2.3	*0.00*
Commercial and vocational schools (99)	**0.30**	2.2	*0.01*
Photo processing	**0.01**	2.2	*0.00*
Parking fees and tolls	**0.10**	2.1	*0.00*
Accessories and parts	**0.33**	2.0	*0.01*
Child care	**0.22**	2.0	*0.00*
Nonelectric cookware and tableware	**0.23**	1.9	*0.00*
Other video equipment	**0.16**	1.9	*0.00*
Clocks, lamps, lighting fixtures, and other household de	**0.55**	1.6	*0.01*
Educational books (96)	**0.08**	1.5	*0.00*
Video and audio streaming and rental	**0.28**	1.5	*0.00*
Funeral and burial services	**0.20**	1.4	*0.00*
Carpets and other floor coverings	**0.21**	1.4	*0.00*
Window coverings	**0.22**	1.3	*0.00*
Recreational books (part of 90)	**0.19**	1.3	*0.00*

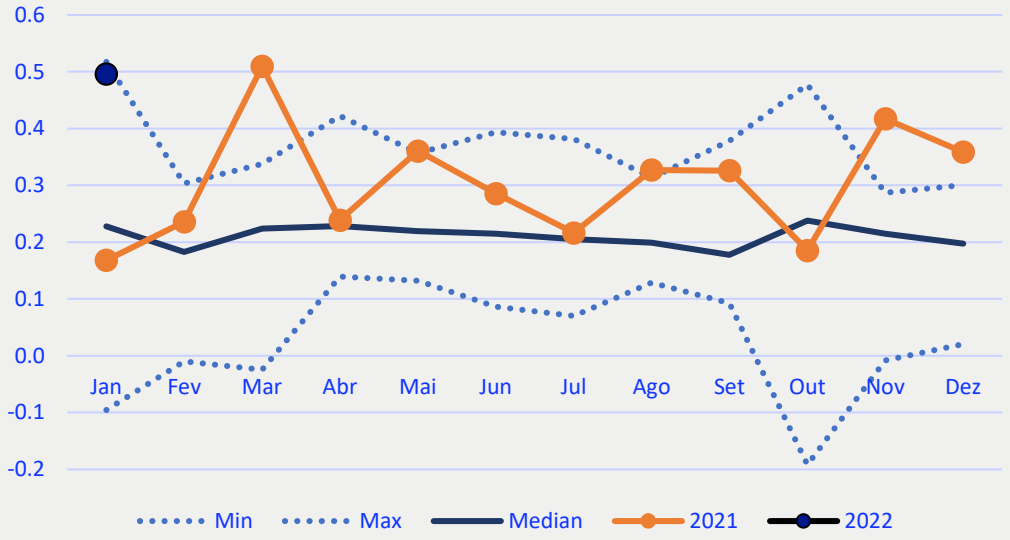
Componente	Peso	Inflação	ontribuiçã
Package tours	**0.04**	1.3	*0.00*
Amusement parks, campgrounds, and related recreational services	**0.22**	1.2	*0.00*
Net household insurance (111)	**0.07**	1.0	*0.00*
Higher education (97)	**1.19**	0.9	*0.01*
Corrective eyeglasses and contact lenses	**0.25**	0.9	*0.00*
Miscellaneous household products	**0.23**	0.8	*0.00*
Legal services	**0.70**	0.8	*0.01*
Professional association dues	**0.04**	0.8	*0.00*
Net health insurance (112)	**1.74**	0.6	*0.01*
Photo studios	**0.02**	0.6	*0.00*
Luggage and similar personal items (part of 119)	**0.25**	0.5	*0.00*
Electric appliances for personal care	**0.08**	0.4	*0.00*
Hair, dental, shaving, and miscellaneous personal care products except	**0.63**	0.4	*0.00*
Membership clubs and participant sports centers	**0.29**	0.1	*0.00*
Air transportation (64)	**0.52**	0.0	*0.00*
Motorcycles	**0.11**	0.0	*0.00*
Pets and related products	**0.59**	-0.1	*0.00*
Nonprescription drugs	**0.65**	-0.4	*0.00*
Commercial banks	**0.58**	-0.5	*0.00*
Cosmetic / perfumes / bath / nail preparations and implements	**0.46**	-0.5	*0.00*
Internet access (72)	**0.60**	-0.5	*0.00*
Motor vehicle leasing	**0.54**	-0.6	*0.00*
Sewing items	**0.02**	-1.0	*0.00*
Other depository institutions and regulated investment companies	**0.93**	-1.1	*-0.01*
Household linens	**0.43**	-1.1	*0.00*
Clothing and footwear	**2.99**	-1.1	*-0.03*
Games, toys, and hobbies	**1.28**	-1.1	*-0.01*
Spectator sports	**0.06**	-1.2	*0.00*
Financial service charges and fees	**0.70**	-1.4	*-0.01*
Telecommunication services (71)	**1.78**	-1.7	*-0.03*
Trust, fiduciary, and custody activities	**0.11**	-2.0	*0.00*
Net motor vehicle and other transportation insurance (116)	**0.53**	-2.1	*-0.01*
Prescription drugs	**3.22**	-2.4	*-0.08*
Film and photographic supplies	**0.01**	-2.7	*0.00*
Audio equipment	**0.38**	-3.2	*-0.01*
Therapeutic medical equipment	**0.27**	-3.5	*-0.01*
Other medical products	**0.05**	-3.5	*0.00*
Dishes and flatware	**0.20**	-4.8	*-0.01*
Computer software and accessories	**1.37**	-5.9	*-0.08*
Telephone and related communication equipment	**0.84**	-15.6	*-0.13*
Calculators, typewriters, and other information processing equipment	**0.02**	-15.6	*0.00*

Source: BEA, Mar Asset Management

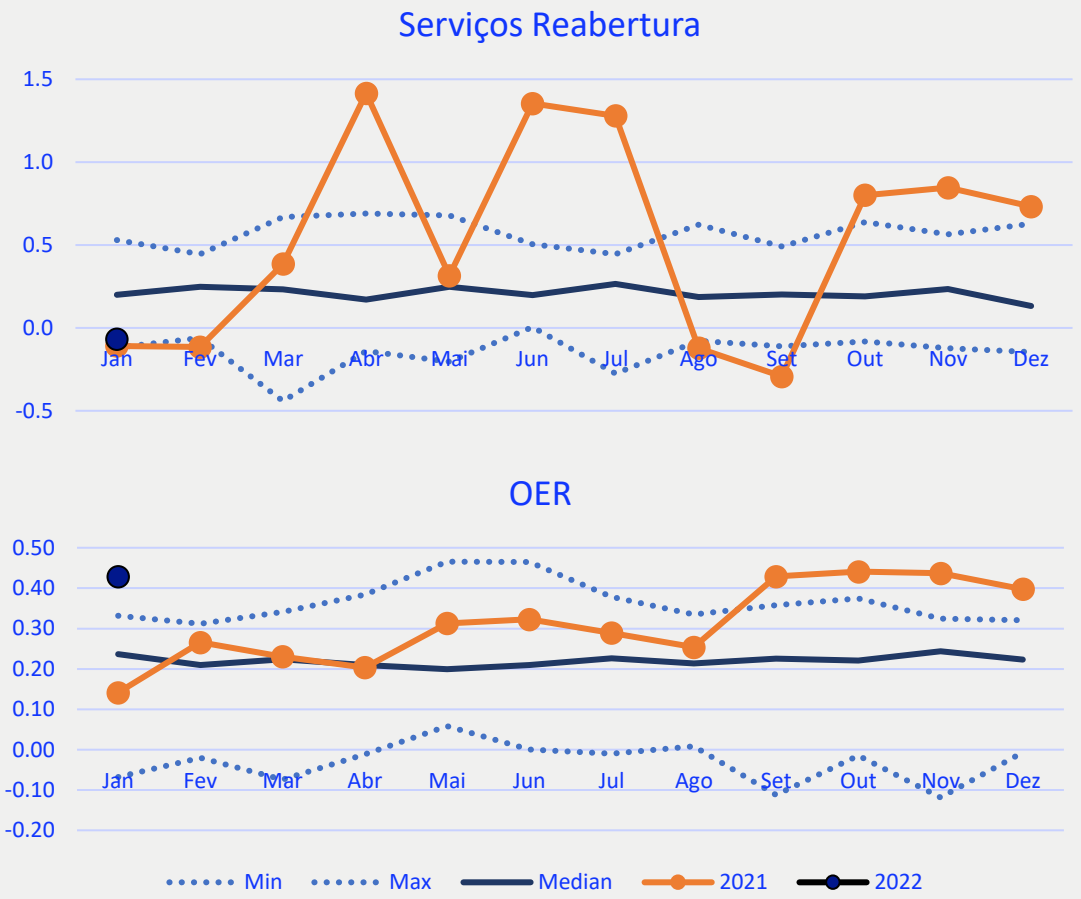
Widespread increase in service inflation

- With the economy returning to normal, service inflation has shown results higher than the historical median.
- The opening shows a general increase. Both services are more sensitive to economic reopening, as the other services show this pattern. In particular, recent months have shown an increase in OER inflation, which is a major component and inertia of the PCE.

Inflation of ex-energy services and sensitive to reopening * (%, mom, SA)



Inflation of different service groups (% mom)



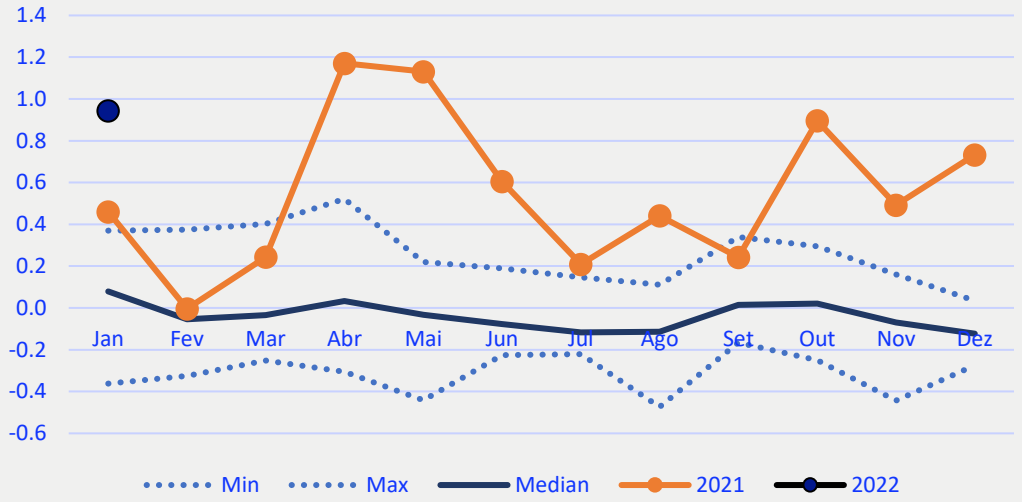
*Services sensitive to reopening: Air transportation, Food service and Accommodation e Recreational services

Source: BEA, Mar Asset Management

Inflation of goods remains high

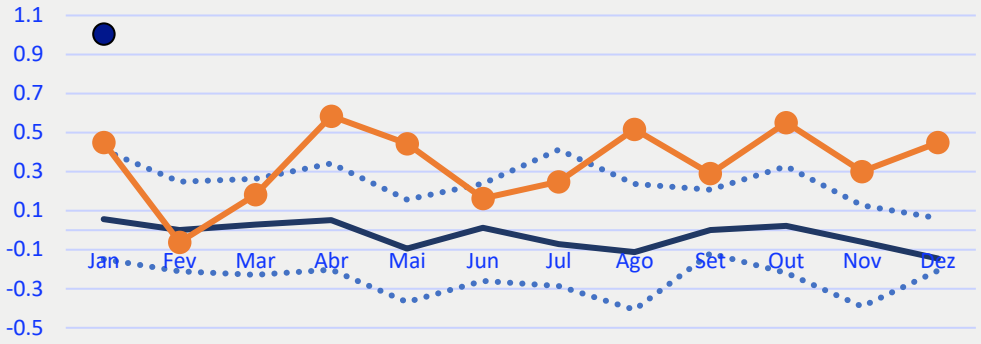
- The strong demand for goods has led the group's inflation to the highest levels in several years. In particular, vehicle inflation was the main driver of the group in 2021 due to issues related to the lack of semiconductor supply.
- Nevertheless, inflation of other goods was also quite strong in the first half of 2021, most likely due to fiscal stimuli in the period (checks remittance).

Industrial Inflation, median and maximum between 2002 and 2019 (%, mom, NSA)

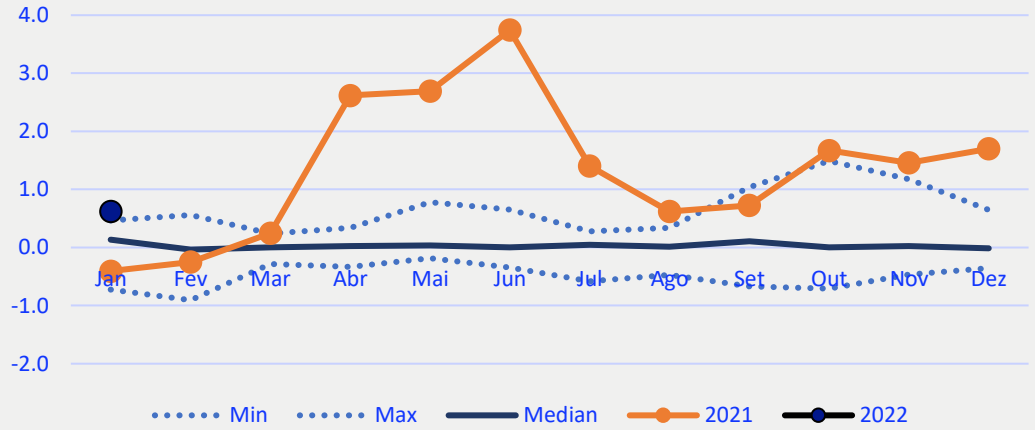


Inflation of different groups of goods (% mom)

Core Goods ex-veículos



Veículos

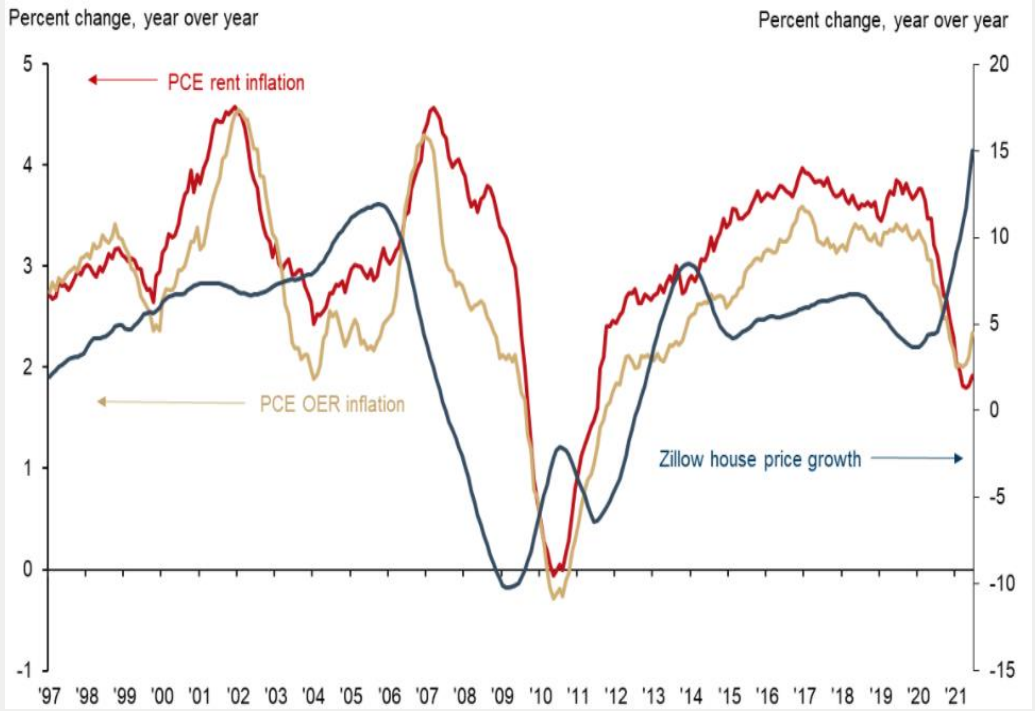


Source: BEA, Mar Asset Management

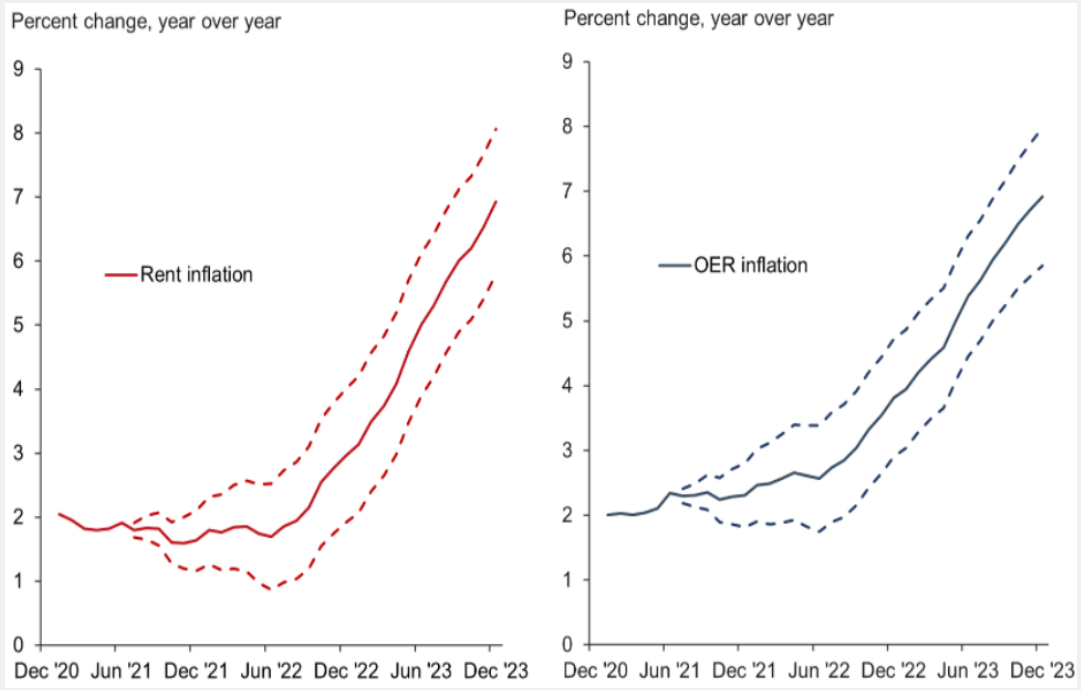
Rental inflation is a risk for long-term inflation

- The Housing group (Shelter) represents approximately 17% and 40% of the PCE and CPI nuclei, respectively. This high weight and the inertial characteristic of the group make it the main low-frequency driver of the inflation cores.
- The strong house price increase seen in 2021 has not yet been reflected in inflation figures. The Dallas Fed's projection is that the impact will be substantial and more likely from the second half of 2022.

Rental inflation, OER and the Zillow index of house prices (% yoy)



Dallas Fed Rental and OER Inflation Projection (% yoy)



Source: Dallas Fed, Fed Board, Mar Asset Management