Investor Advisory Committee on Financial Markets
Member Presentation Materials

April 13, 2022

Q2 2022 IACFM Meeting

Discussion Materials

April 13, 2022

Pershing Square

Economy is on the Cusp of Full Employment

The economy has nearly recovered the entirety of the employment shortfall caused by the pandemic, with total employment only 410K jobs lower than its level in February 2020

Current vs Pre-Pandemic Employment Summary (numbers in millions):

	Feb-20	Mar-22	Difference
Total employed in labor force	**158.9**	**158.5**	**(0.4)**
Unemployed in labor force	**5.7**	**6.0**	**0.2**
Headline U-3 unemployment rate	***3.5%***	***3.6%***	***0.1%***
U-6 unemployment rate [1]	*7.0%*	*6.9%*	*(0.1%)*
Total civilian labor force	**164.6**	**164.4**	**(0.2)**
Labor force participation rate	*63.4%*	*62.4%*	
Total civilian non-institutional population (16+)	**259.6**	**263.4**	**3.8**
Employed / Population	*61.2%*	*60.1%*	

The headline U-3 unemployment rate is only 10bps higher than its February 2020 level and U-6 unemployment rate is 10bps lower than its February 2020 level

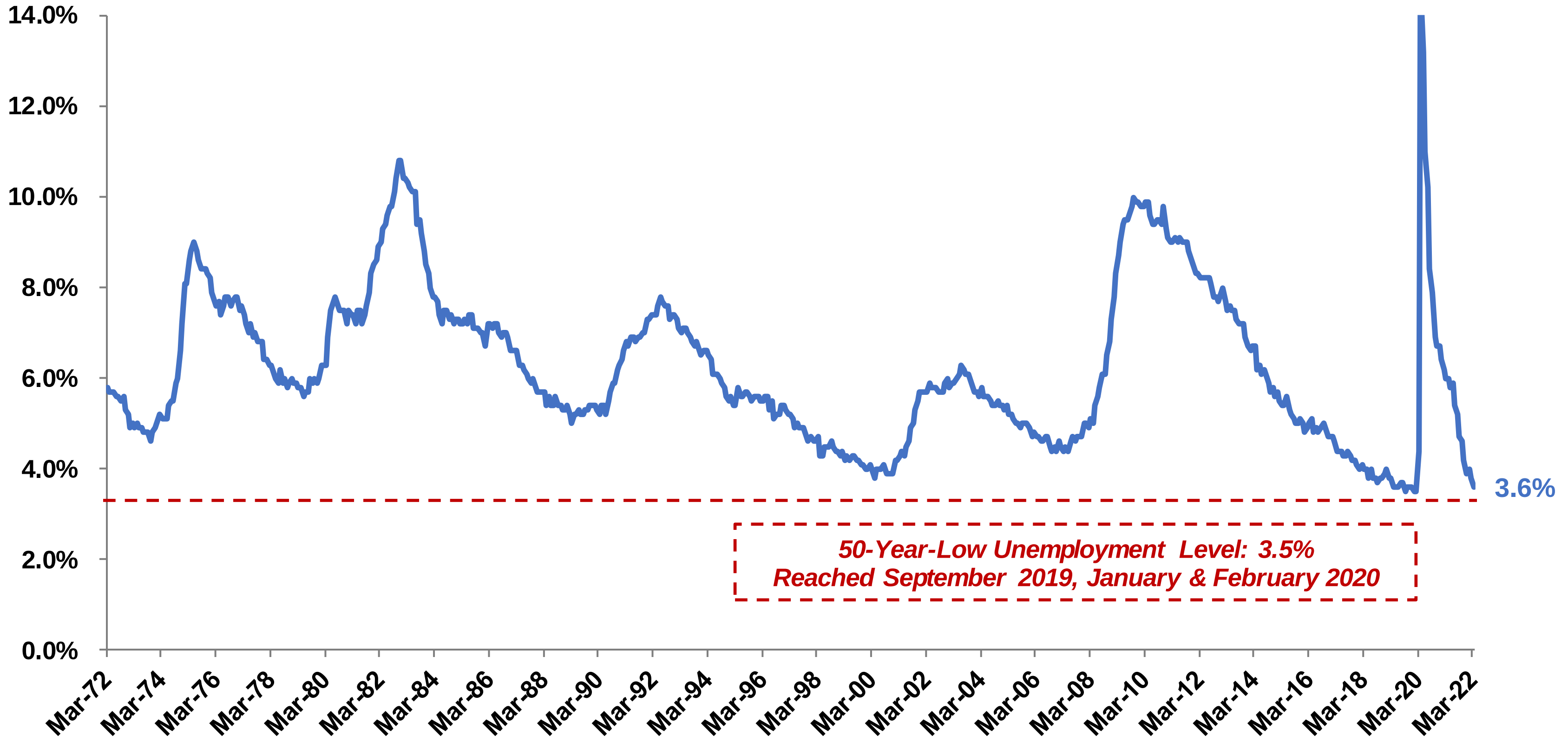
Source: Bureau of Labor Statistics (The Employment Situation Report)

(1) U-6 unemployment rate represents total unemployed, plus all persons marginally attached to the labor force, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all persons marginally attached to the labor force

Unemployment Rate at Historical Lows

Over the last 50 years, there have only been three months when the headline unemployment rate was lower than the current level of 3.6%

Headline U-3 Unemployment Rate | March 1972 to March 2022:

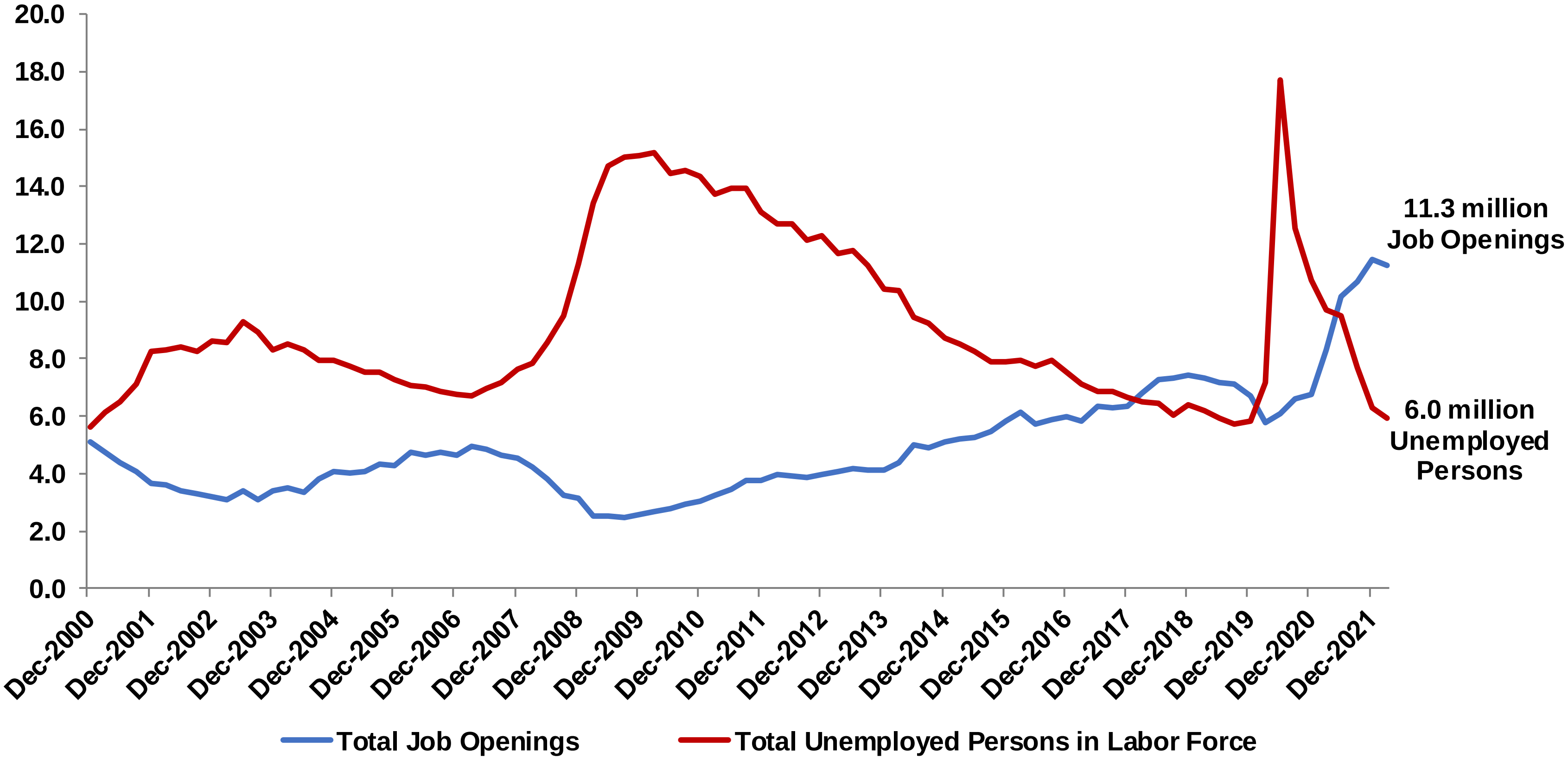


Source: Bureau of Labor Statistics (The Employment Situation Report)

Job Openings at Historical Highs

There are currently 11.3 million job openings in the economy, an all-time high level, and 5.3 million more openings than the number of unemployed persons, the widest gap since job openings data first became available in 2000

Number of Job Openings and Total Unemployed Persons in Labor Force (numbers in millions):



Source: Bureau of Labor Statistics (The Employment Situation Report and Job Openings and Labor Turnover Survey)

Substantial Wage Inflation

A historically tight labor market has resulted in substantial, broad-based wage inflation with almost all industry sectors experiencing mid-single-digit percentage or greater year-over-year growth in average hourly earnings

Average hourly earnings of all employees on private nonfarm payrolls by industry (seasonally adjusted):

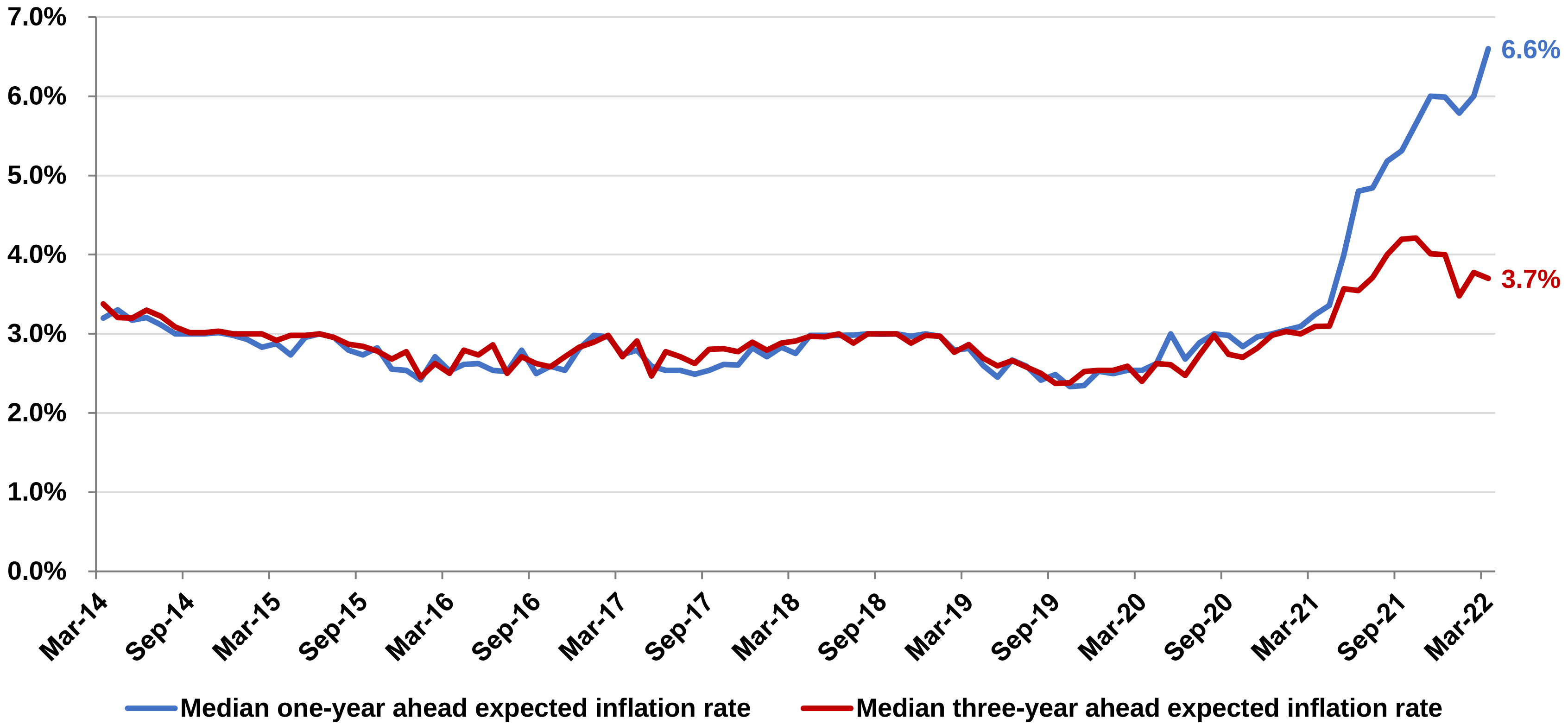
	Mar-21	Mar-22	Y-o-Y Growth
Total private nonfarm payrolls	**$30.06**	**$31.73**	**5.6%**
Goods-producing	**$30.45**	**$31.97**	**5.0%**
Mining and logging	34.30	35.75	4.2%
Construction	32.24	34.07	5.7%
Manufacturing	29.20	30.55	4.6%
Durable goods	30.70	32.11	4.6%
Nondurable goods	26.69	27.96	4.8%
Private service-providing	**$29.97**	**$31.67**	**5.7%**
Trade, transportation, and utilities	25.83	27.44	6.2%
Wholesale trade	33.20	34.71	4.5%
Retail trade	21.50	22.89	6.5%
Transportation and warehousing	25.76	27.79	7.9%
Utilities	44.24	46.71	5.6%
Information	44.06	45.17	2.5%
Financial activities	39.77	41.19	3.6%
Professional and business services	35.80	38.18	6.6%
Education and health services	29.46	31.24	6.0%
Leisure and hospitality	17.60	19.68	11.8%
Other services	27.22	28.18	3.5%

Source: Bureau of Labor Statistics (Table B-3 of The Employment Situation Report)

Inflation Expectations at Risk of Becoming Unanchored

Consumer expectations for both near- and medium-term inflation, as measured by the Federal Reserve Bank of New York's Survey of Consumer Expectations, have risen sharply over the last twelve months

Median one- and three-year ahead expected inflation rate:



Source: Survey of Consumer Expectations, © 2013-2021 Federal Reserve Bank of New York (FRBNY). The Survey of Consumer Expectations is a nationally representative, Internet-based survey of a rotating panel of approximately 1,300 household heads.

Elevated Core CPI Excluding Used Car Prices

Excluding the impact of used car prices, which have been highly volatile over the last six months, Core CPI has remained consistently elevated and hit a new high in March with a 0.6% month-over-month increase, or 7% annualized growth

Month-Over-Month CPI Inflation by Consumption Category:

	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
Used Cars	2.5%	2.4%	3.3%	1.5%	(0.2%)	(3.8%)
Goods ex. Used Cars	0.7%	0.6%	0.8%	0.9%	0.5%	0.4%
Goods	1.0%	0.9%	1.2%	1.0%	0.4%	(0.4%)
Services	0.4%	0.4%	0.3%	0.4%	0.5%	0.6%
Reported Core CPI	**0.6%**	**0.5%**	**0.6%**	**0.6%**	**0.5%**	**0.3%**
Core CPI ex. Used Cars	***0.5%***	***0.4%***	***0.4%***	***0.5%***	***0.5%***	***0.6%***
Annualized Core CPI ex. Used Cars	***5.7%***	***5.4%***	***5.1%***	***6.2%***	***6.1%***	***6.6%***
Inflation Contribution from Services	***65%***	***68%***	***56%***	***60%***	***75%***	***83%***

Memo: CPI Weightings

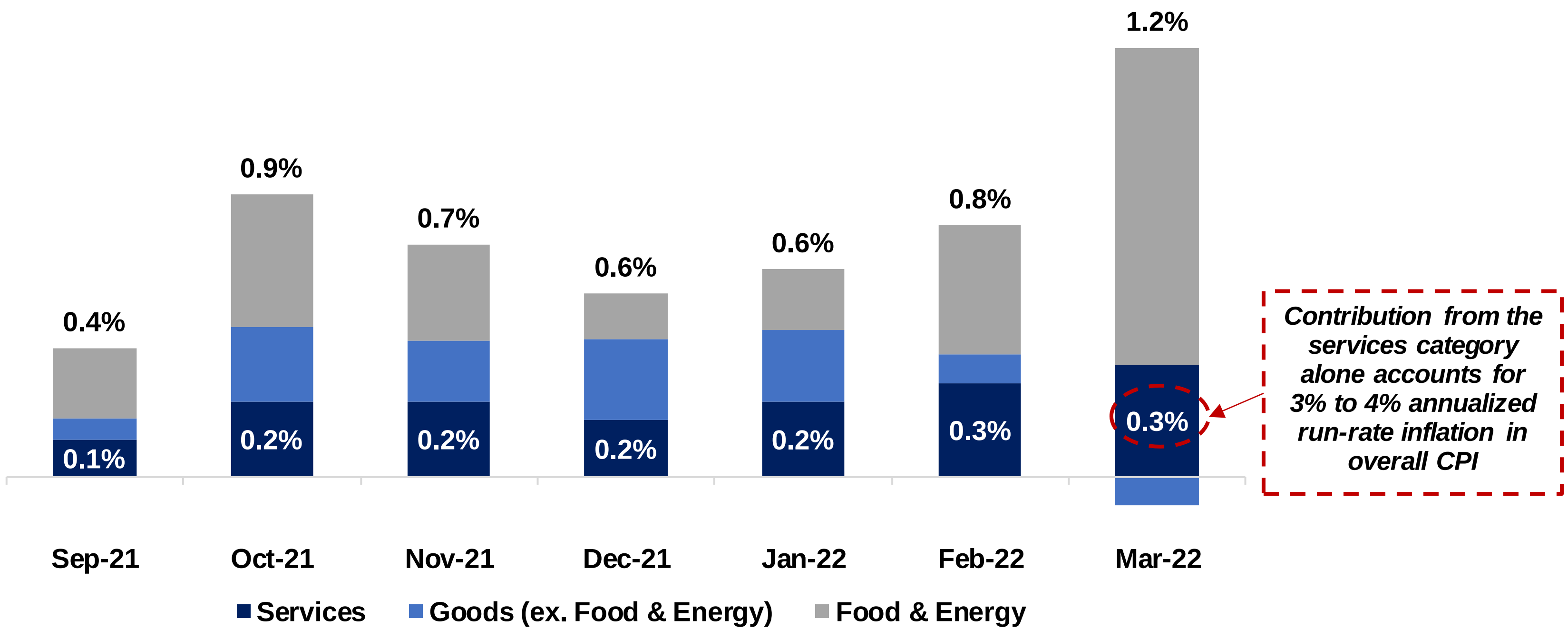
	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
Used Cars	3%	3%	3%	4%	4%	4%
Goods ex. Used Cars	17%	17%	17%	18%	18%	18%
Goods	21%	21%	21%	22%	22%	22%
Services	58%	58%	58%	58%	57%	57%
Reported Core CPI	**79%**	**79%**	**78%**	**79%**	**79%**	**79%**

Source: Bureau of Labor Statistics

Inflation is Increasingly Driven by Services

CPI inflation in recent months has been increasingly driven by inflation in services consumption, which tends to be more persistent and has approximately a 60% weighting in the overall index

<u>Contribution to Month-Over-Month CPI Inflation by Consumption Category:</u>



Rising housing costs, which account for 33% of overall CPI and a majority of the services category of CPI, will likely be a key driver of sustained high inflation

Chart Source: Bureau of Labor Statistics (Consumer Price Index Report)

CPI & PCE Housing Inflation Understate Market Trends

Reported CPI and PCE housing inflation of 4% to 5% year-over-year increases severely understate the 13% to 20% increases observed across most rental and home price market indices

% Year-over-Year Change (February 2022)[1]:

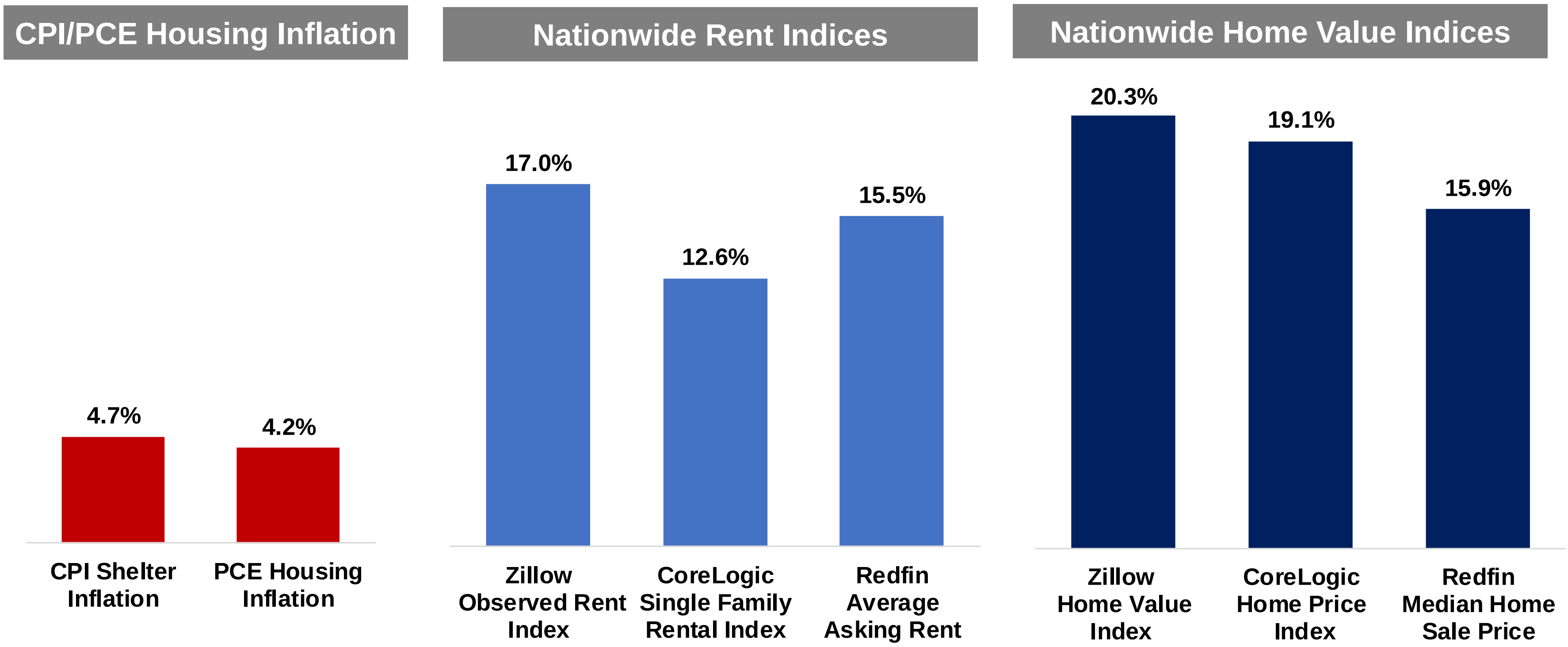


Chart Source: Bureau of Labor Statistics (Consumer Price Index Report), Bureau of Economic Analysis (Personal Consumption Expenditures Price Index), Zillow, CoreLogic, Redfin
(1) CoreLogic indices reflect year-over-year change in January 2022.

Rent Inflation Measures Are a Lagging Indicator

“Let's start with rents, because rents give us the most direct information on how affordable housing services are. Early in the pandemic, rent growth slowed as demand dropped to live in dense areas where rental housing tends to be concentrated while some people, especially young adults, moved in with family and friends. However, more recently rents have accelerated sharply. On net, rents have risen 6.5 percent since January 2020, according to the prices tracked under the Consumer Price Index (CPI). That is not out of line with the pace of rent increases seen in the CPI over the previous five years.

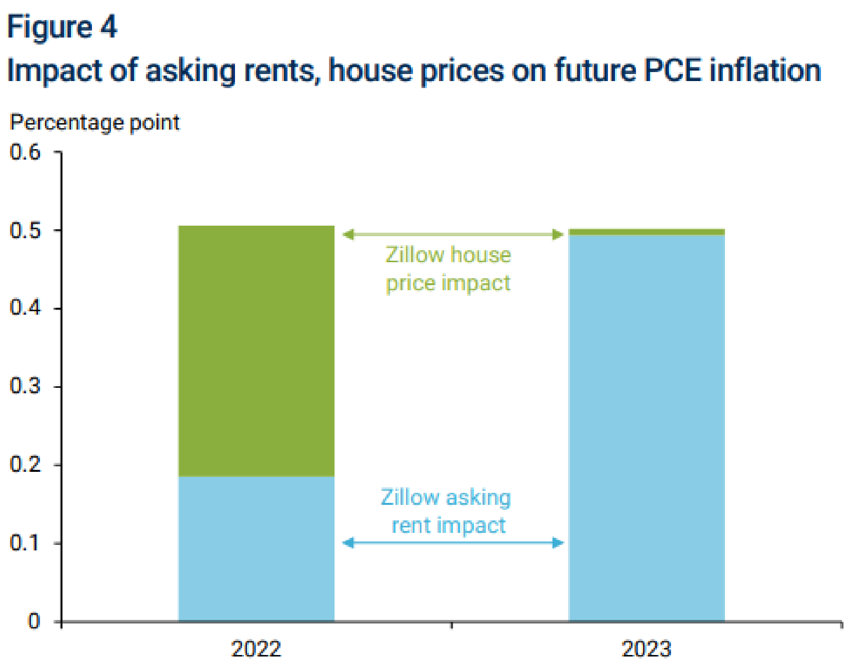
But there is good reason to think this number doesn't fully reflect the extent to which rents have grown. CPI measures rents that people are currently paying, under leases that can be slow to reflect market conditions. Meanwhile, measures of market rent have increased a lot more than 6.5 percent over the last two years. For example, CoreLogic's single family rent index rose 12 percent over the 12 months through December, and RealPage's measure of asking rent for units in multifamily buildings rose 15 percent over the 12 months through February. Based on various measures of asking rents, some recent research suggests that the rate of rent inflation in the CPI will double in 2022. If so, rent as a component of inflation will accelerate, which has implications for monetary policy.”

- ***Federal Reserve Governor Christopher J. Waller,***
The Red Hot Housing Market: the Role of Policy and Implications for Housing Affordability
March 4, 2022

Rising Housing Costs To Sustain Heightened Inflation

A recently published paper by the Federal Reserve Bank of San Francisco estimates that housing inflation will contribute approximately 110bps and 50bps per annum to CPI and PCE inflation, respectively, in both 2022 and 2023

Excerpted from "Will Rising Rents Push Up Future Inflation?"[1]:



"Our model confirms that an increase in current asking rents or current house prices can push up the CPI rent index for a typical MSA for as long as 24 months into the future…..

….We can translate the model's predicted path for future rent inflation into a predicted impact on future overall inflation by using the weights that the CPI or PCEPI assign to rent and OER….. Applied to CPI inflation, our results imply an additional increase of 1.1pp for both 2022 and 2023. Applied to PCE inflation, which is the measure used by the Federal Reserve to gauge its 2% inflation target, our results imply an additional increase of 0.5pp for both 2022 and 2023."

(1) Published on February 4, 2022 by the Federal Reserve Bank of San Francisco.

Increasing PPI Suggests Continued Consumer Inflation

Continued rapid increase in Core PPI suggests that supply-side constraints might be longer-lasting than initially expected and will likely result in continued future inflation to consumers

Core PPI: Final demand less Foods and Energy | % Year-over-Year Change:

Chart Source: Bureau of Labor Statistics (Producer Price Index Report)

Structural Forces Will Drive Future Inflation

Several emerging structural forces, which are not yet reflected in current figures, will likely add substantial inflationary pressures to the economy

- **Focus on national and resource security**
  - Desire for energy independence drives local resource production
- **De-globalization and re-shoring of supply chains**
  - Recent supply chain disruptions have highlighted the need for improved supply chain control and redundancy
- **Adoption of ESG standards and de-carbonization**
- **Labor bargaining power**
  - Rise of unionization (e.g., Starbucks and Amazon)
- **Stakeholder capitalism**

Perspectives on a Higher Fed Funds Neutral Rate

“Meanwhile, the major central banks face a difficult balancing act. The Fed appears to be significantly behind the curve; the stagflationary shock is relatively mild for a country that is energy and food independent to a first approximation and ***standard monetary policy rules would call for the policy rate to be anywhere from 4% to 6% right now****”*

- ***Brevan Howard Macro Limited Annual Report***
March 31, 2022

“So if raising rates to 2% or so won’t unduly slow the economy, what will the Fed do? Simple: It will have to take rates much higher, as it has consistently done during economic expansions. ***Since the central bank got inflation under control in the mid-1980s, tightening cycles have typically ranged from 3 to 5 percentage points****, making the 2-point increase of the last expansion the clear outlier. And if inflation proves more tenacious, then the episodes of the late 1970s and early 1980s — which included increases of 10 percentage points and more — could eventually become more relevant benchmarks.”*

- ***William Dudley, Former President of Federal Reserve Bank of New York***
“Markets Still Don’t Get How Far the Fed Might Go”, published on Bloomberg Opinion, February 28, 2022

“First, price stability is essential for sustained maximum employment, while overheating the economy leads to stagflation and higher levels of average unemployment through time. Second, there can be no reliable progress against inflation without substantial increases in real interest rates, which mean temporary increases in unemployment. Real short-term interest rates are currently lower than at any point in decades. They likely will have to reach levels of at least 2 or 3 per cent for inflation to be brought under control. ***With inflation running above 3 per cent, this means rates of 5 per cent or more - something markets currently regard as almost unimaginable. Central to success in fighting inflation is establishing credibility that a new paradigm is in place.****”*

- ***Lawrence Summers, Former Treasury Secretary***
March 17, 2022

Situation Overview

- **Economy is rapidly approaching full employment**
  - Unemployment level is nearing historical lows and job openings are at an all-time high level
  - Tight labor market has led to substantial and broad-based wage inflation
- **Inflation is increasingly being driven by more resilient and persistent inflation in the services category of consumption**
  - Core CPI, excluding used car prices, has remained consistently elevated and hit a new high of 0.6% month-over-month increase, or 7% annualized growth, in March
  - Measures of shelter inflation understate underlying market trends
- **Consumer inflation expectations have risen sharply in recent months**
- **Current Fed policy outlook is at risk of being "behind the curve"**
  - Median FOMC dot plot projection calls for 25bps hikes at each of the remaining FOMC meetings in 2022 and a peak neutral rate of 2.75% by year-end 2023
  - Monthly balance sheet reduction of up to $60bn in Treasurys and $35bn in agency MBS

More aggressive action, including multiple 50bps hikes, a higher neutral rate, and a faster pace of balance sheet reduction, will likely be required to combat inflation and mitigate the risk of a wage-price spiral

Source: Bureau of Labor Statistics (The Employment Situation Report, Consumer Price Index). Federal Reserve Board (Summary of Economic Projections and March 15 – 16, 2022 FOMC Minutes)
Note: Please see additional disclosures at the end of this presentation

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