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**Cooling Economic Impact:
National Overview**
February 16, 2023

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The slide has a white background with a faint, large-scale version of the Chmura logo in the background. Two horizontal orange lines are positioned above and below the main title text. The text is centered on the slide.

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Economic Overview

- Inflation is high and driving Fed behavior
 - How quickly will inflation fall?
 - Where/when will the federal funds rate stop rising?
 - Labor market is tight but easing
 - Recession is likely
 - When will it start?
 - How deep will it be?
-

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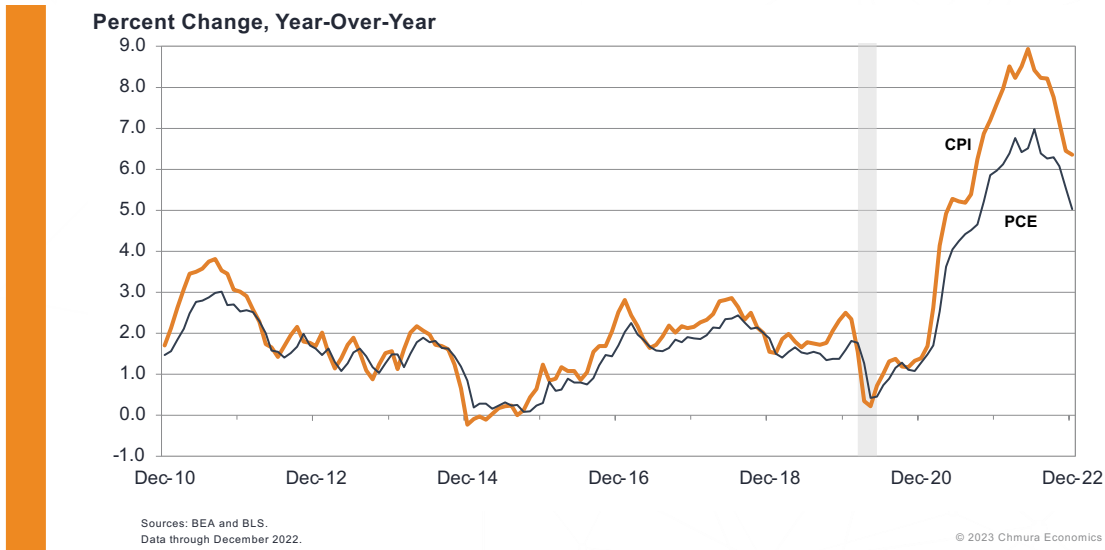
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Inflation is High and Driving Fed Behavior

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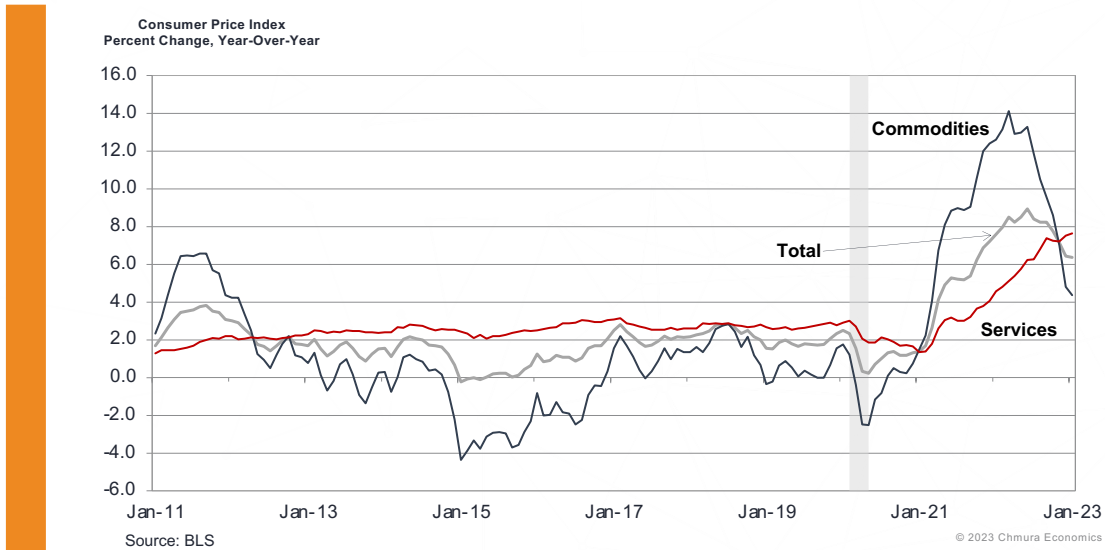
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Two General Measures Show Inflation Dropping From 40-Yr High: Personal Consumption Expenditure Price (PCE) Index and Consumer Price Index (CPI)



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Lockdown Shifted Demand to Goods and Away From Services



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Average Hourly Earnings, +4.6% in December 2022 From Year Ago



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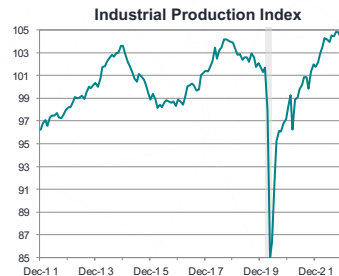
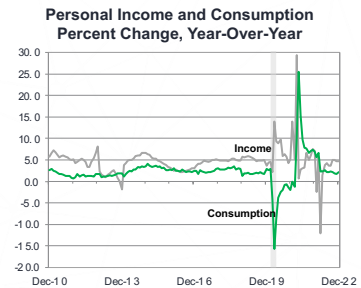
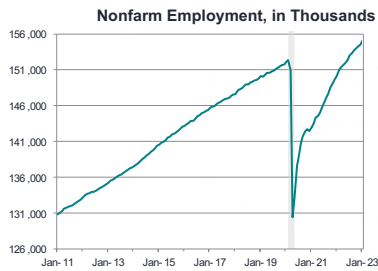
Inflation Is Not Good For Long-Term Economic Growth

- It can spiral upward with wages rising and inflation expectations 'unanchored'
- It is a regressive tax
- It distorts decision making
 - Inventory accumulation
 - Can lead to deeper recessions
- It can lead to recession if Fed continues to raise rates

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No, Not 2 Straight Declines in GDP NBER is the Arbiter of Recession in U.S.



Sources: BLS, BEA, and Federal Reserve.

<https://www.chmura.com/blog/five-horsemen-of-a-recession>

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Inflation-Adjusted Retail Sales Have Been Flat But January was Strong



Shaded areas indicate U.S. recessions.

Source: Federal Reserve Bank of St. Louis

fred.stlouisfed.org

Source: Census. Data through January 2023

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Retail Sales were Barely Up From a Year Ago When Adjusted for Inflation



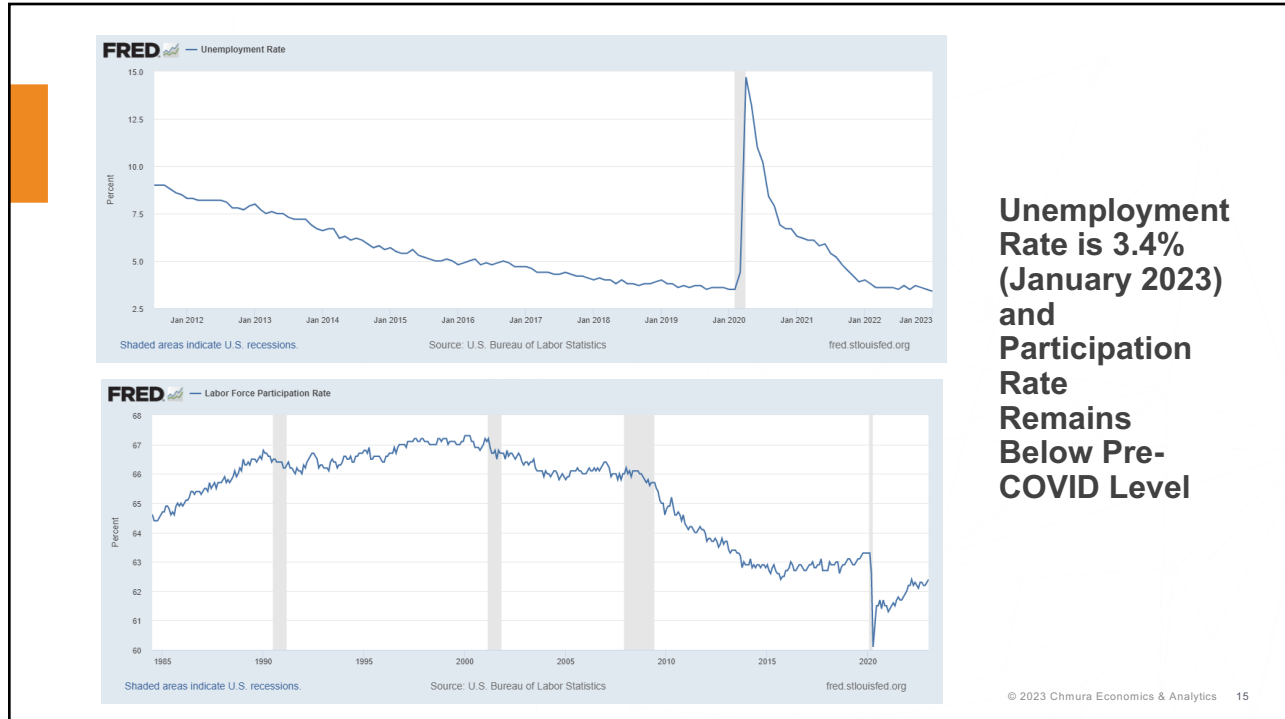
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Labor Market is Tight But Easing

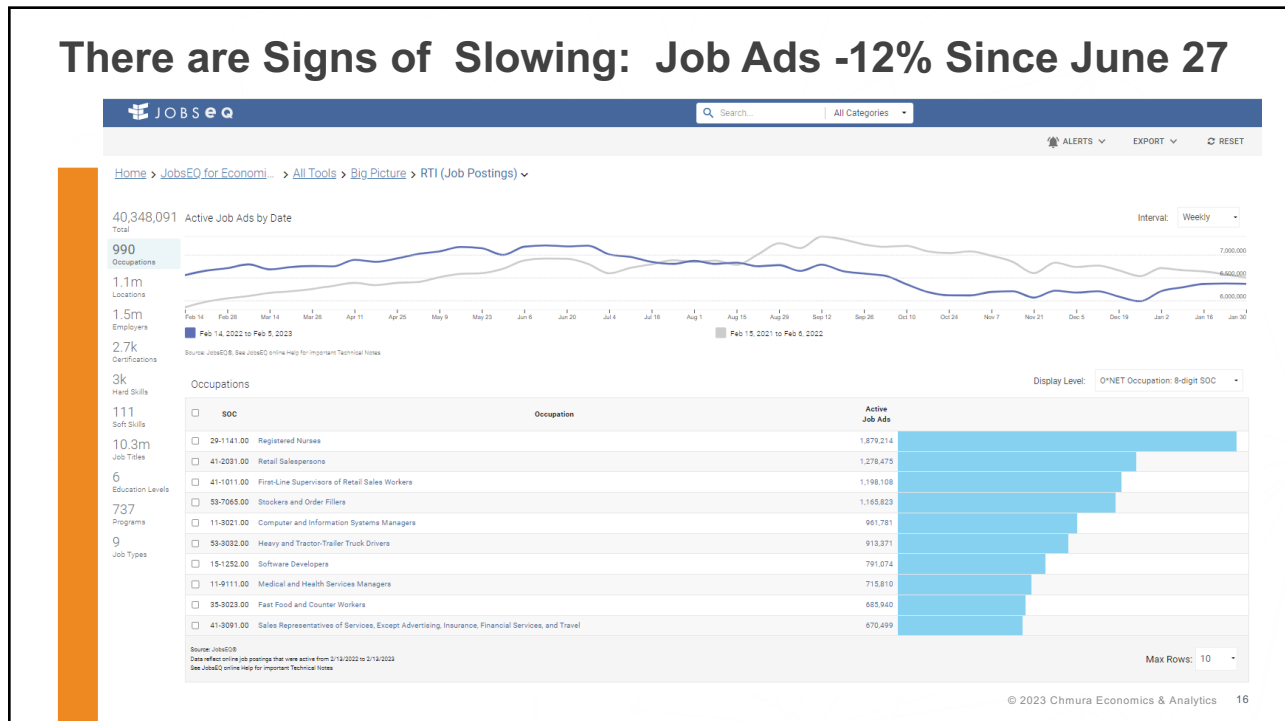
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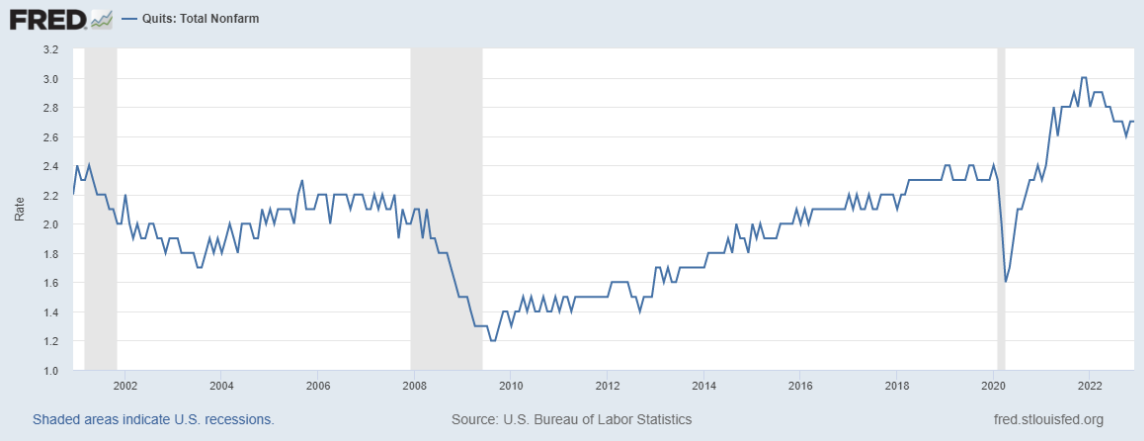
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There are Signs of Slowing: Job Ads -12% Since June 27



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Signs of Easing Job Market: Fewer Workers Quit When There is Uncertainty



Source: BLS. Data through Dec 22

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Recent Layoffs At High-Tech Firms

Snapchat

Active Job Ads by Date



Source: JCS&ES. See JCS&ES online Help for important Technical Notes

Amazon

Active Job Ads by Date



Source: JCS&ES. See JCS&ES online Help for important Technical Notes

Twitter

Active Job Ads by Date



Source: JCS&ES. See JCS&ES online Help for important Technical Notes

JCS 18

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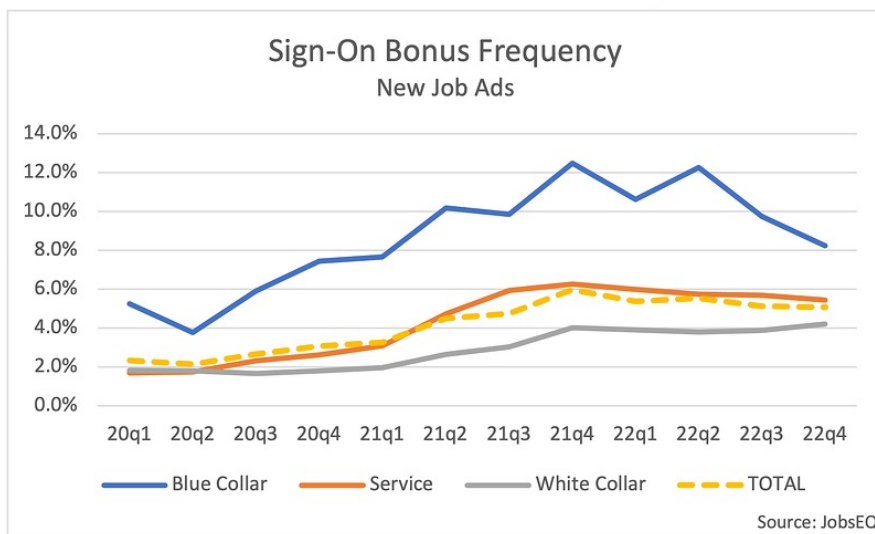
Initial Unemployment Claims Remain Low Why? Severance Received By Workers?



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Decline in Sign-On Bonuses Also Indicate Slowing Hiring Competition

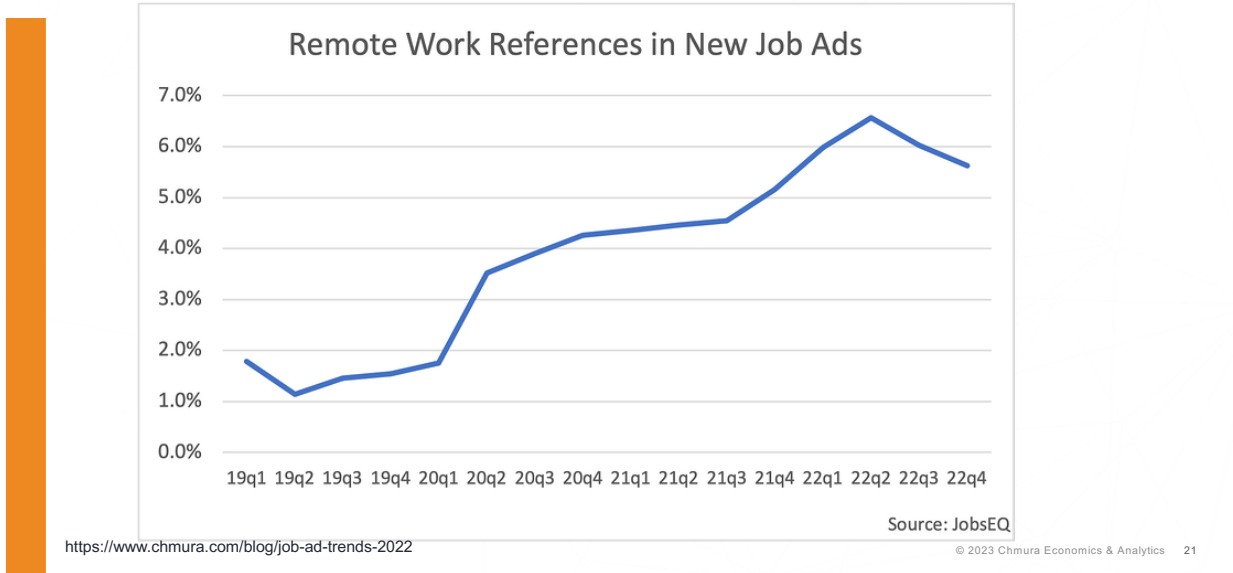


<https://www.chmura.com/blog/job-ad-trends-2022>

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Remote Work Ads Account for Small Percent of All Ads, and Falling



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Top 20 Occupations With Highest Percentage of Remote Job Ads That Typically Require 4yr Degree or Less Are Skewed Toward IT

Occupation	Remote Ads 2022	Total Job Ads 2022	Percent	Typical Entry Education
Blockchain Engineers	1,550	3,243	48%	Bachelor's degree
Data Entry Keyers	18,010	51,402	35%	High school diploma or equivalent
Database Architects	5,200	14,975	35%	Bachelor's degree
Tutors	19,333	55,778	35%	Some college, no degree
Health Information Technologists and Medical Registrars	16,448	51,115	32%	Associate's degree
Computer Network Architects	2,319	7,356	32%	Bachelor's degree
Data Warehousing Specialists	2,601	8,336	31%	Bachelor's degree
Travel Agents	1,079	3,542	30%	High school diploma or equivalent
Physical Scientists, All Other	172	570	30%	Bachelor's degree
Clinical Data Managers	805	2,685	30%	Bachelor's degree
Agents and Business Managers of Artists, Performers, and Athletes	50	176	28%	Bachelor's degree
Tax Preparers	3,071	10,968	28%	High school diploma or equivalent
Life, Physical, and Social Science Technicians, All Other	87	324	27%	Associate's degree
Computer Systems Engineers/Architects	86,765	327,870	26%	Bachelor's degree
Travel Guides	56	212	26%	High school diploma or equivalent
Penetration Testers	1,124	4,268	26%	Bachelor's degree
Software Developers	216,277	823,486	26%	Bachelor's degree
Web and Digital Interface Designers	8,052	30,951	26%	Bachelor's degree
Remote Sensing Technicians	122	474	26%	Associate's degree
Actuaries	3,479	13,688	25%	Bachelor's degree

Source: Chmura's JobsEQ®

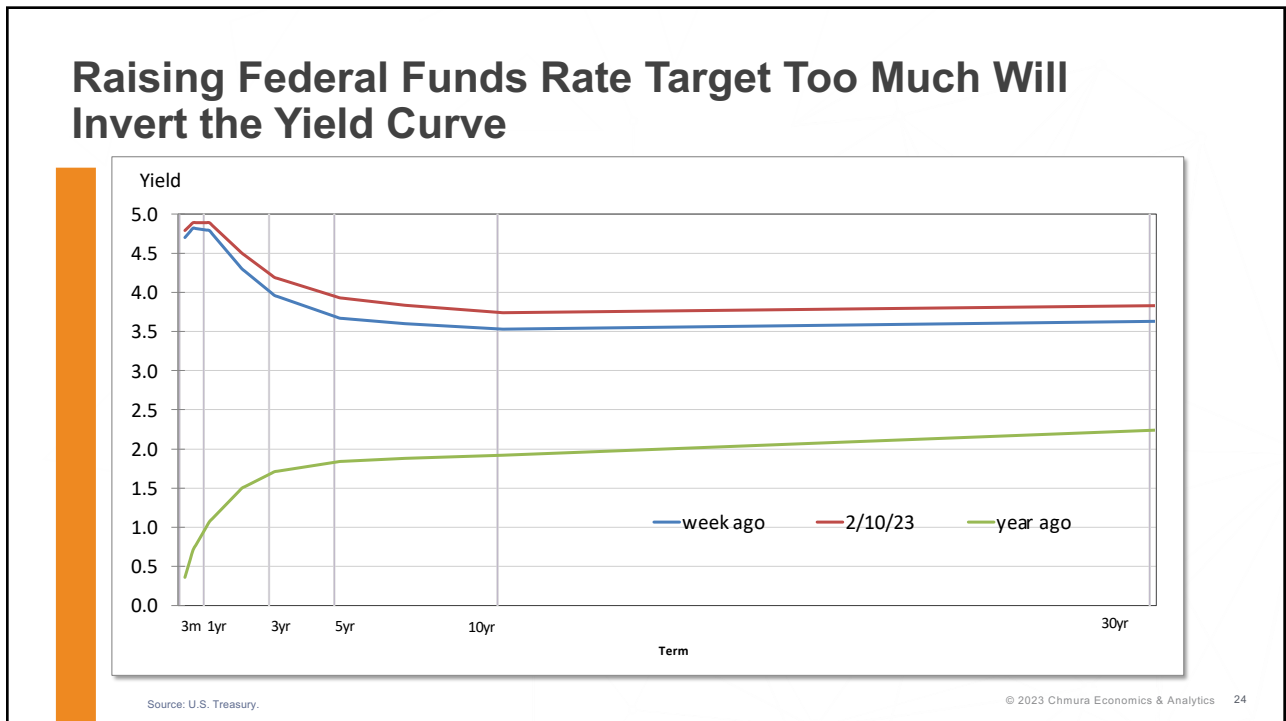
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Recession is Likely

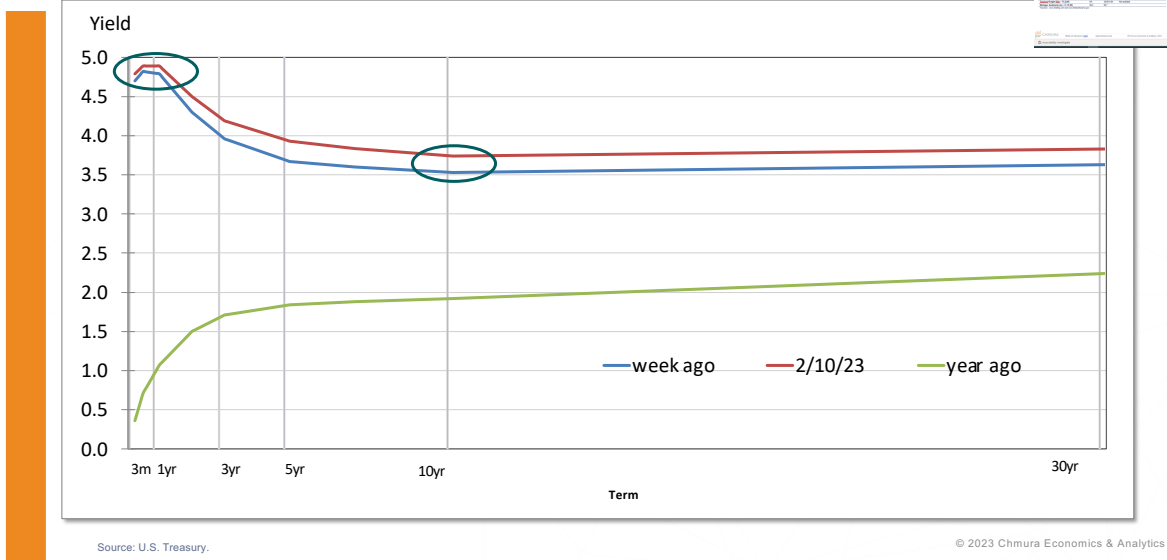
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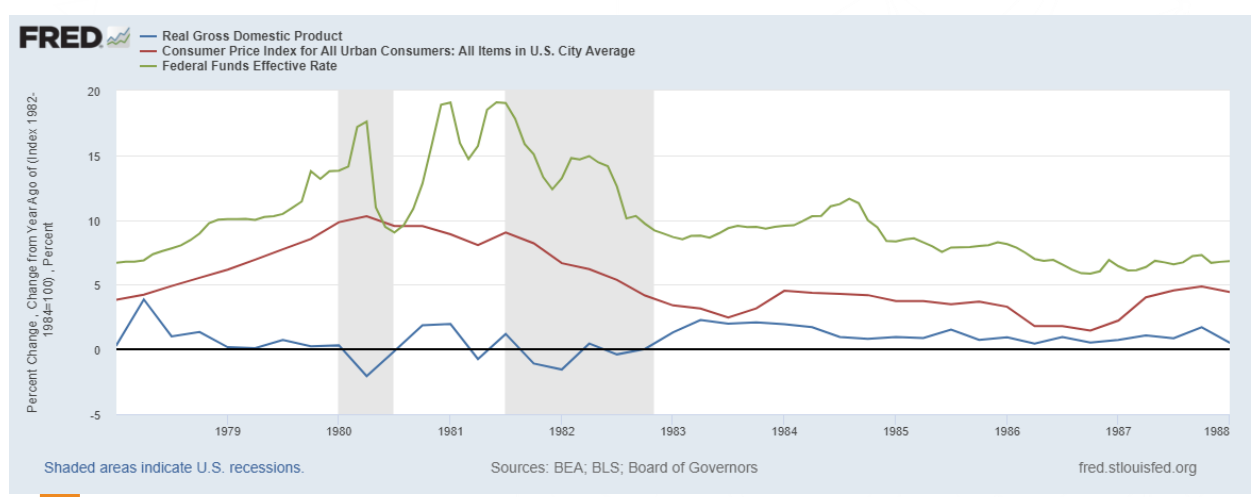
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An Inverted Yield Curve Typically Precedes a Recession (3-Month Bill vs. 10-Yr Note)



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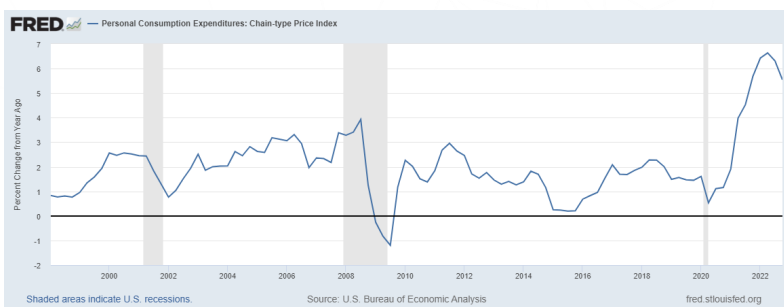
Historical Context: Double Dip Recession in 1980s



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How High Will Rates Go? It Depends on How Quickly Inflation Comes Down

- “If inflation persists at its current four-quarter rate of 5.5%, policy rule recommendations for the funds rate range from 6.5% to 8% by the end of the year, Substantially above what the Fed and markets are currently expecting.”
- Jeff Lacker and Charles Plosser, WSJ, January 30, 2023



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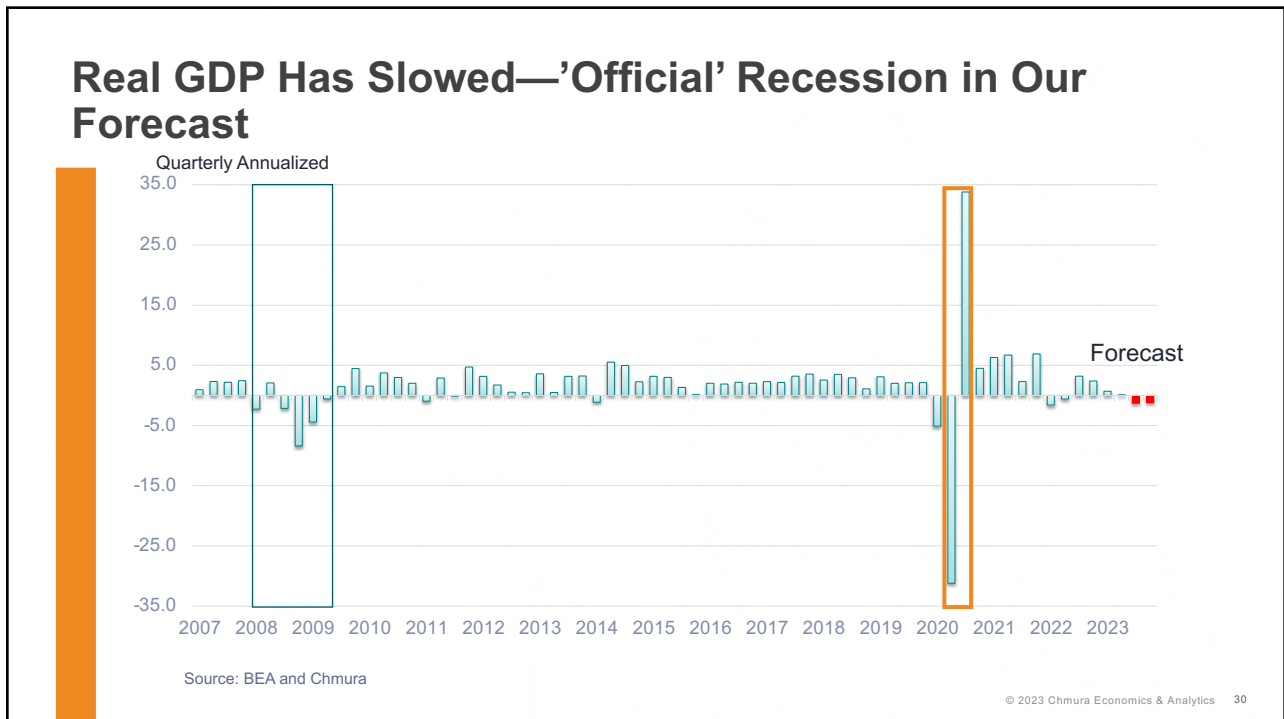


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Why Do We Expect Recession?

- We don't expect inflation to drop quickly
- Fed will continue to raise fed funds rate target
 - Takes 6-9 months or longer for increases to impact economy
 - Homes, autos, capital expenditures become marginally more expensive so demand drops
 - Recession historically occurs about a year after yield curve inverts
- At this point, expect mild recession
- GDP will be below potential for next two years and unemployment rate will increase to about 5%

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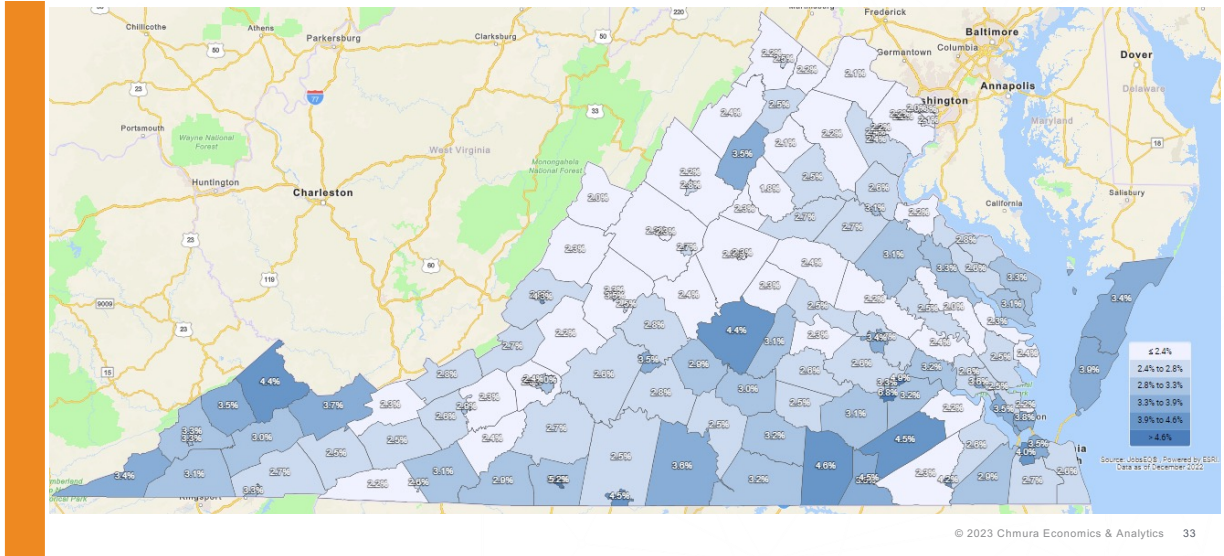
Not All Industries Are Equally Impacted By Recession

- Durable goods hit hardest
- Warehousing and construction have already pulled back
- Due to demographics, health care should continue to grow
- Education often grows during recessions
- Reshoring will continue and that will support some manufacturing
 - Pharmaceutical
 - Semiconductors

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Unemployment Rate Shows Conditions Vary By County



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