

September 2022

US Inflation and Interest Rate Outlook

Inflation or Recession? The Fed has a Choice to Make

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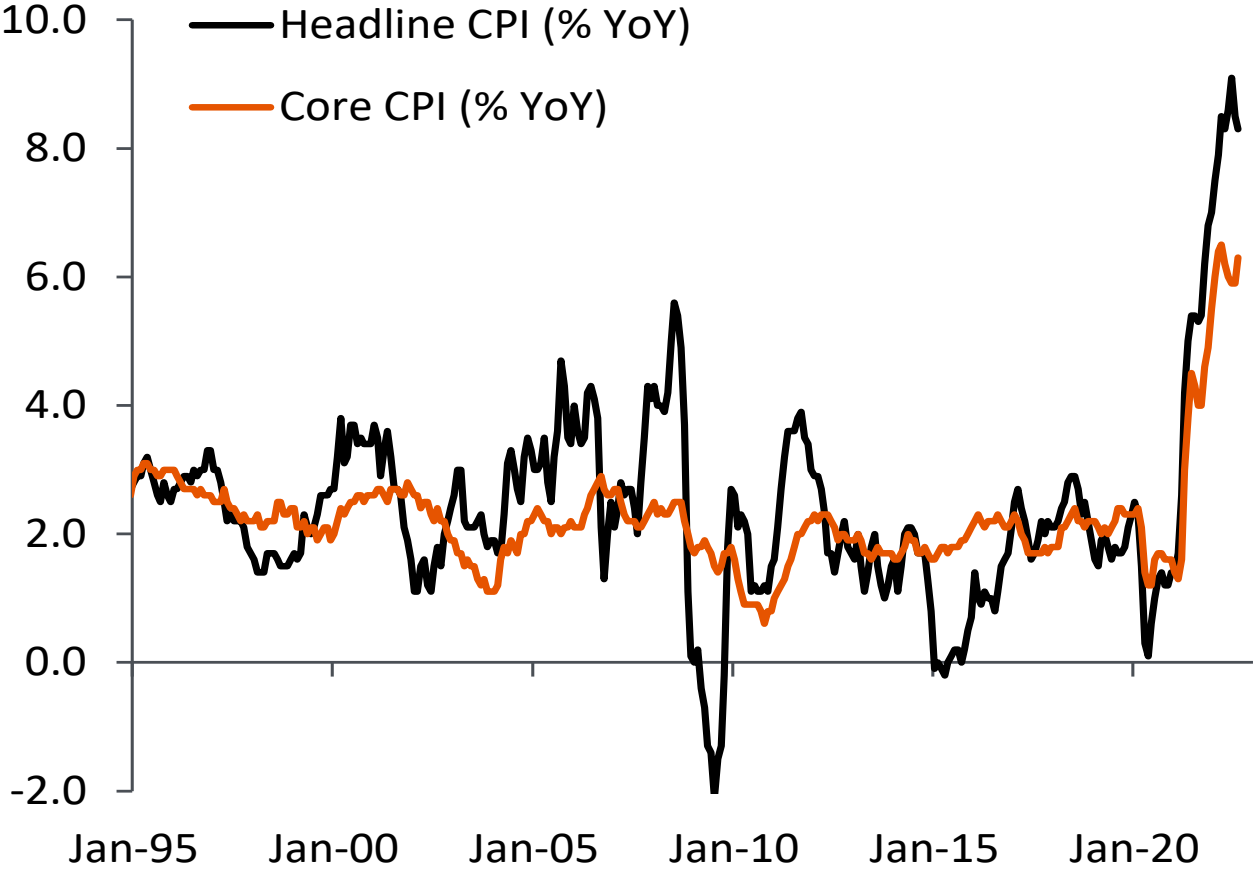
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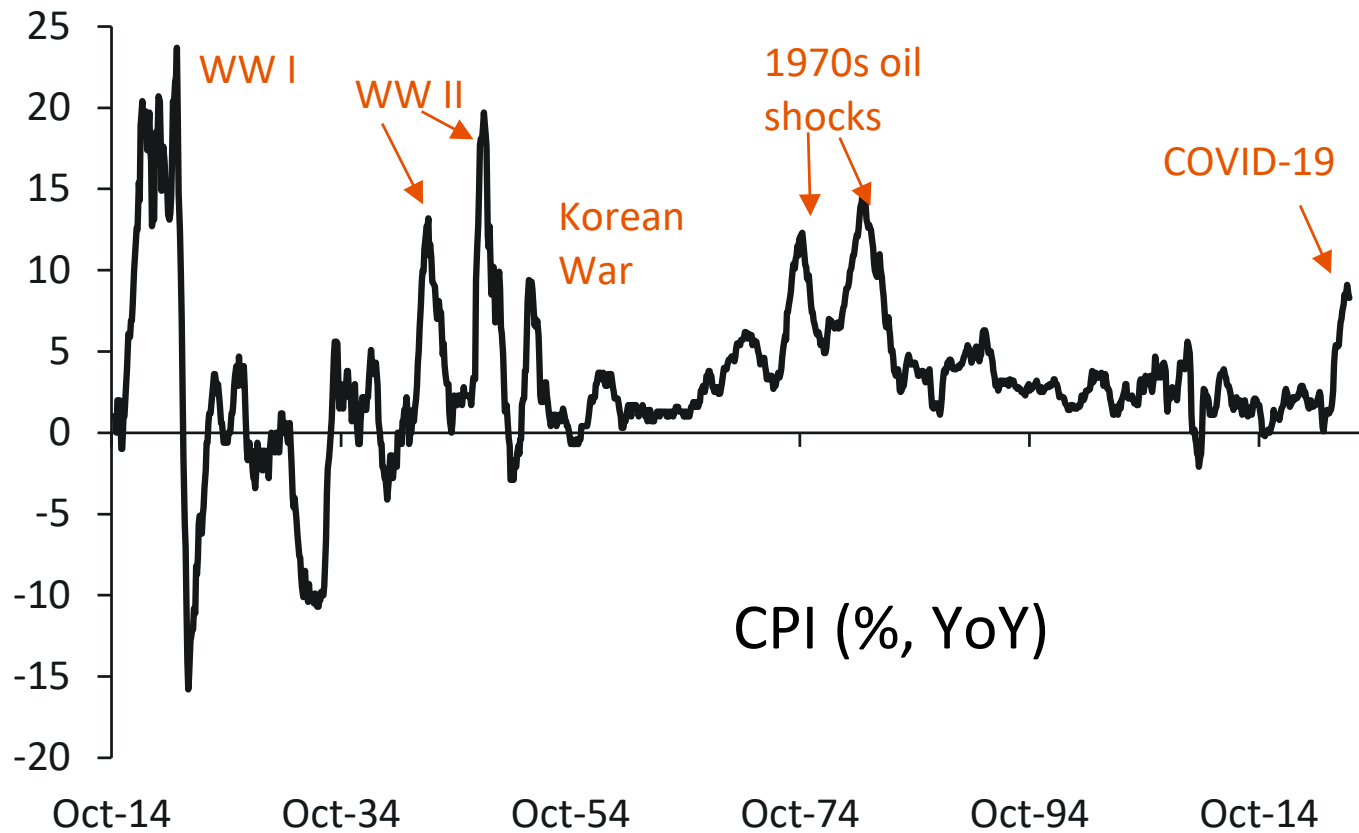
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- **Is high inflation sustainable**
 - Fed to sponsor weak growth
 - Have short term rates peaked
 - Long term rates to remain low
 - Deflating the equity bubble
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Inflation has jumped higher, but...



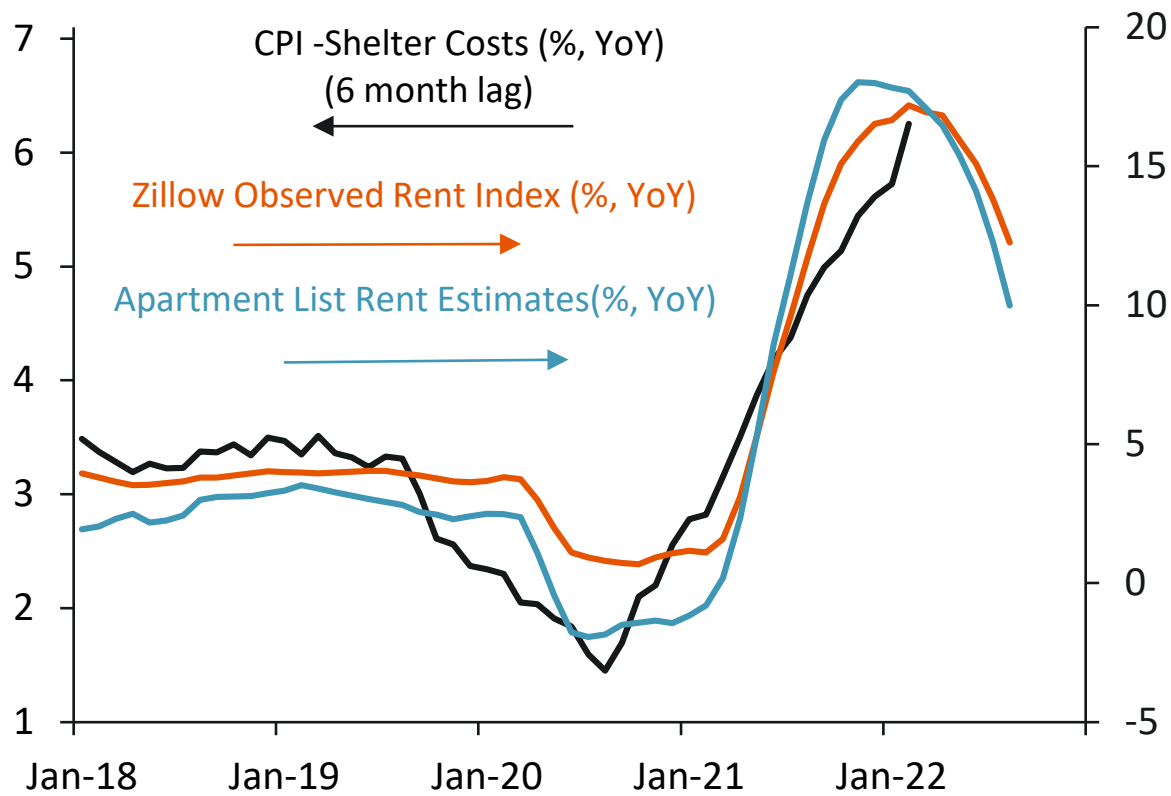
...remains relatively low by historical standards



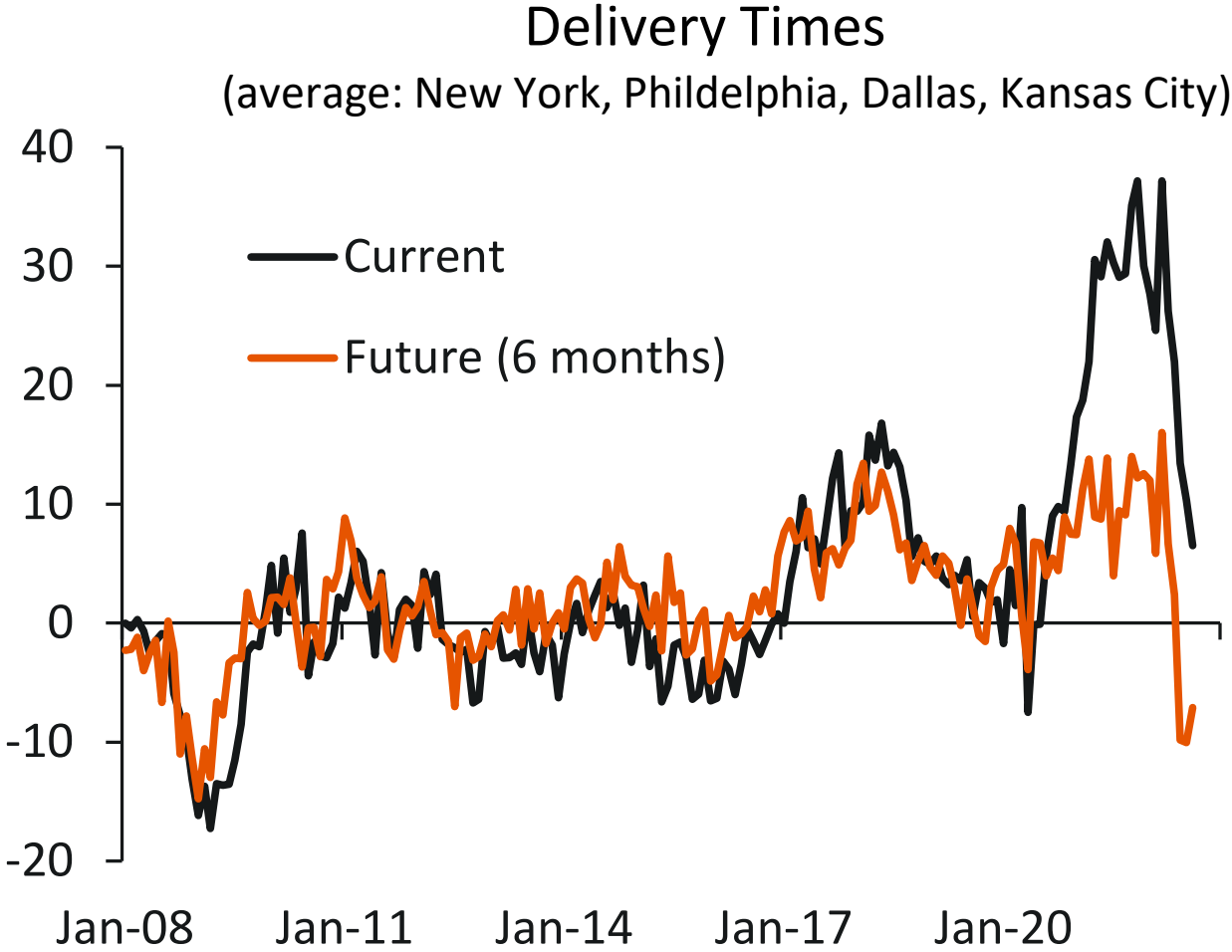
What is driving inflation higher?

Categories	Aug-22 Weight(%)	Actual		Adjusted	
		CPI (%, YoY)	Core CPI (%, YoY)	CPI (%, YoY)	Core CPI (%, YoY)
All items	100.0	8.3	6.3	5.8	5.3
Shelter	32.2	6.2		6.2	
Food	13.5	11.4		11.4	
Transportation commodities	8.6	9.1		2.0	
Medical care services	6.8	5.6		5.6	
Energy	8.8	23.8		2.0	
Education and communication services	5.2	1.5		1.5	
Transportation services	5.9	11.3		11.3	
Household furnishings and supplies	3.9	10.6		10.6	
Recreation services	3.1	4.2		4.2	
Apparel	2.4	5.1		5.1	
Recreation commodities	1.9	3.8		3.8	
Other personal services	1.3	5.8		5.8	
Medical care commodities	1.5	4.1		4.1	
Other goods	1.3	7.6		7.6	
Water/sewer/trash collection services	1.1	4.6		4.6	
Alcoholic beverages	0.9	4.3		4.3	
Household operations	0.8	6.6		6.6	
Education/communication commodities	0.8	-7.3		-7.3	

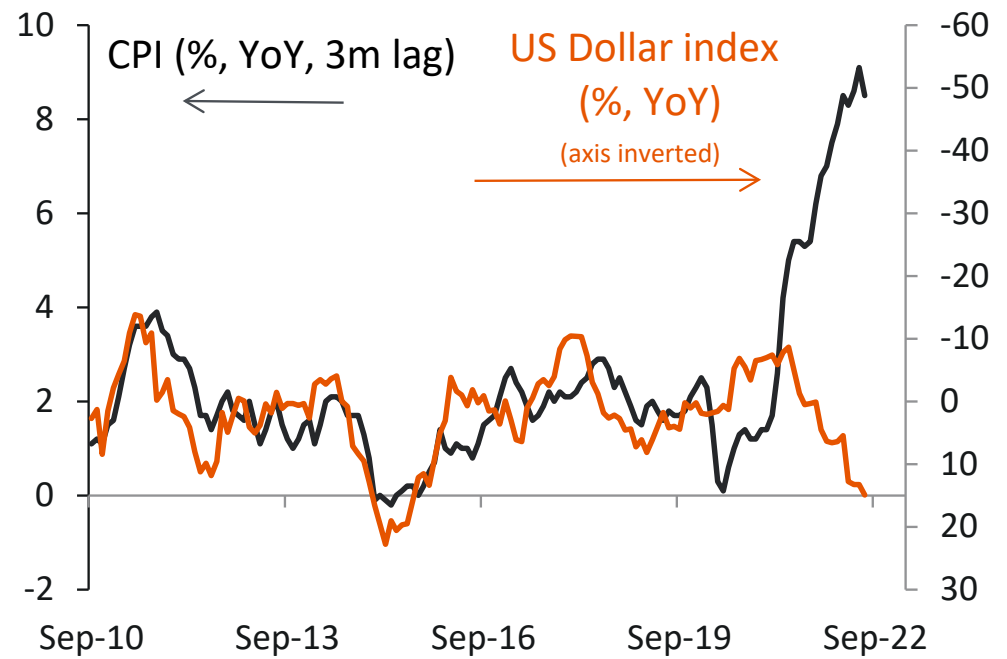
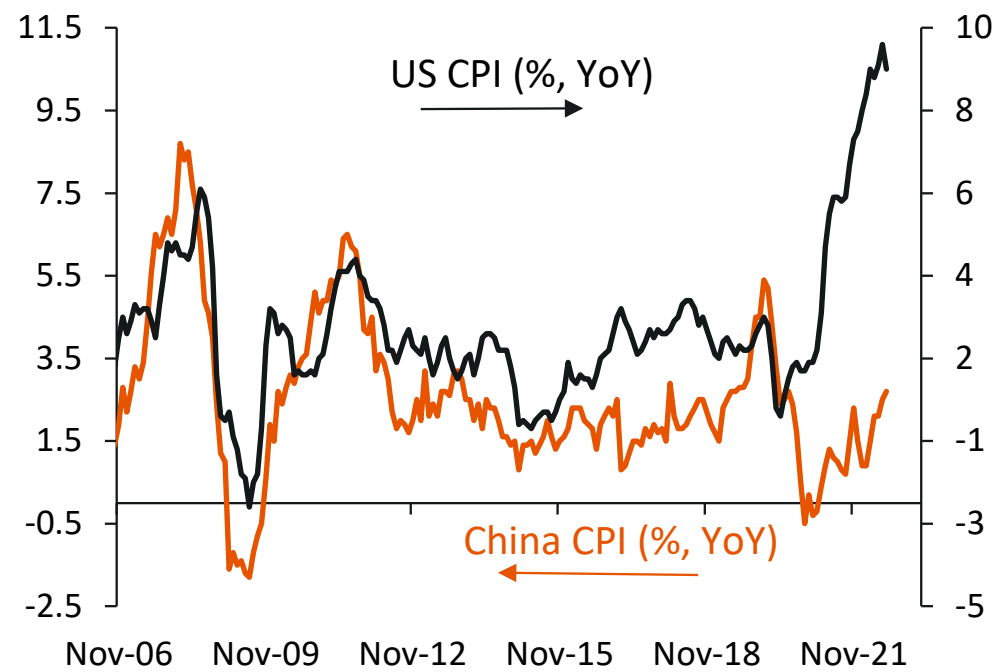
Shelter related costs may be near peak growth levels



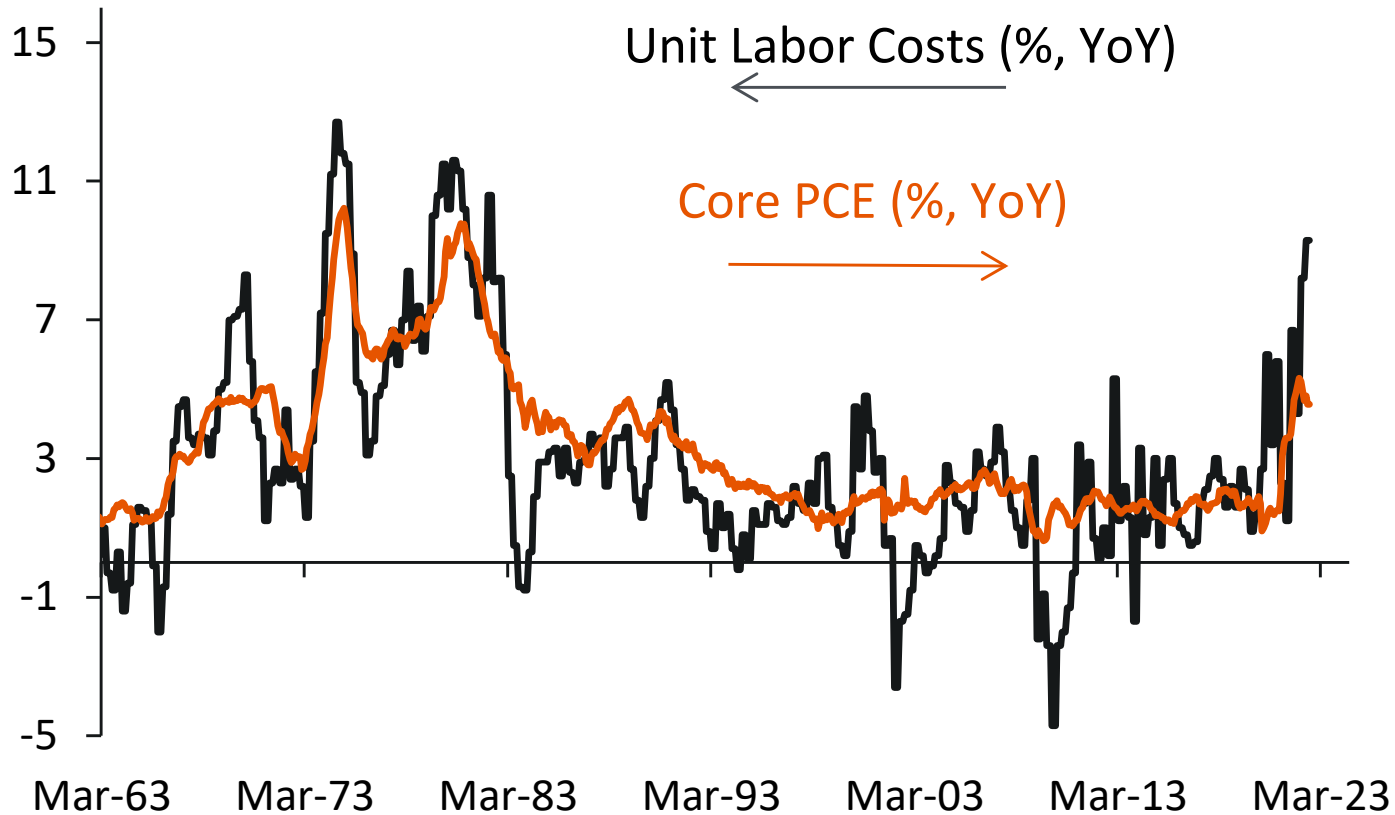
Supply chain delays are improving substantially



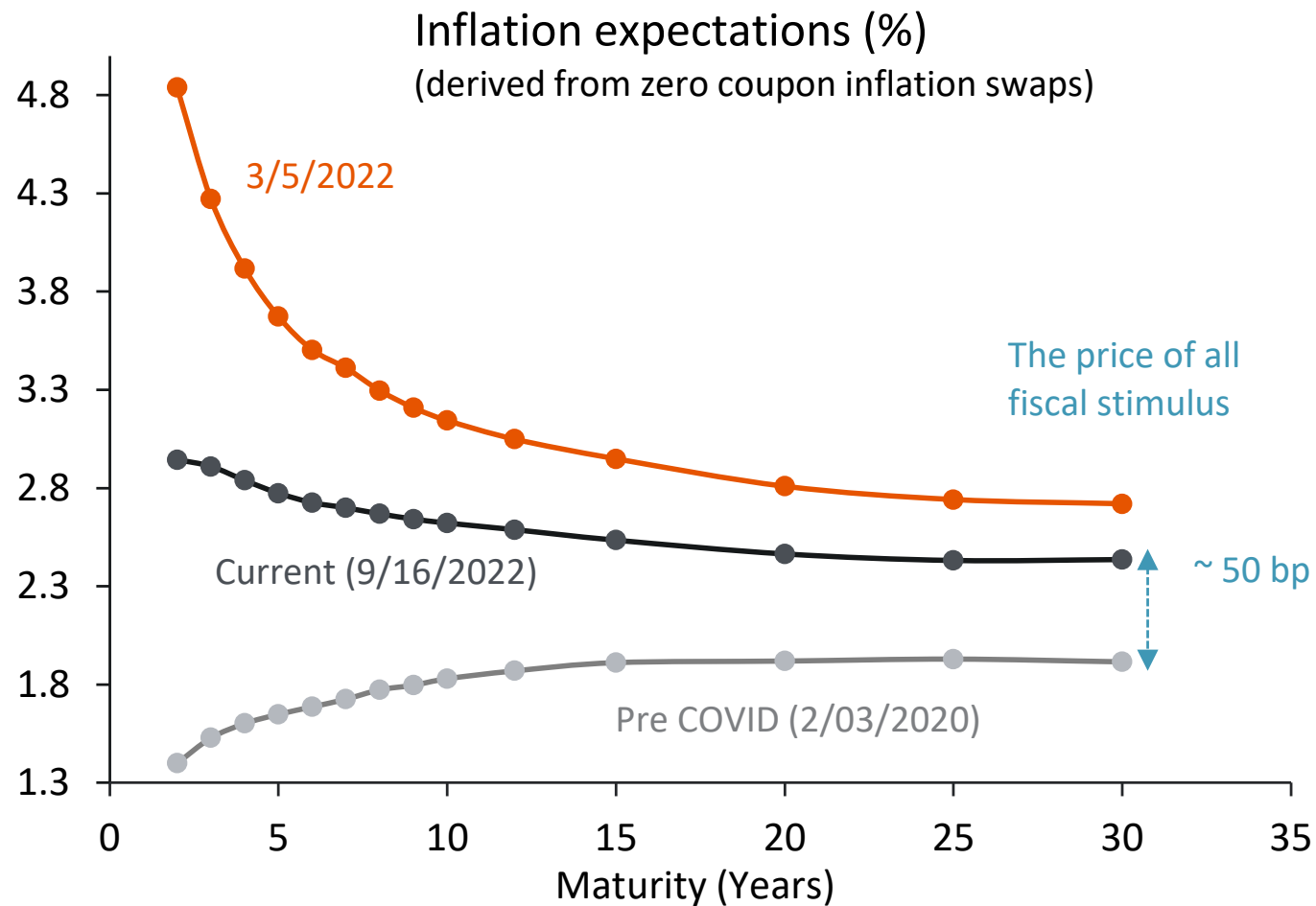
Inflation to move notably lower as global supply chains normalize



Will wage growth lead to higher inflation ?



Inflation expectations remain well anchored

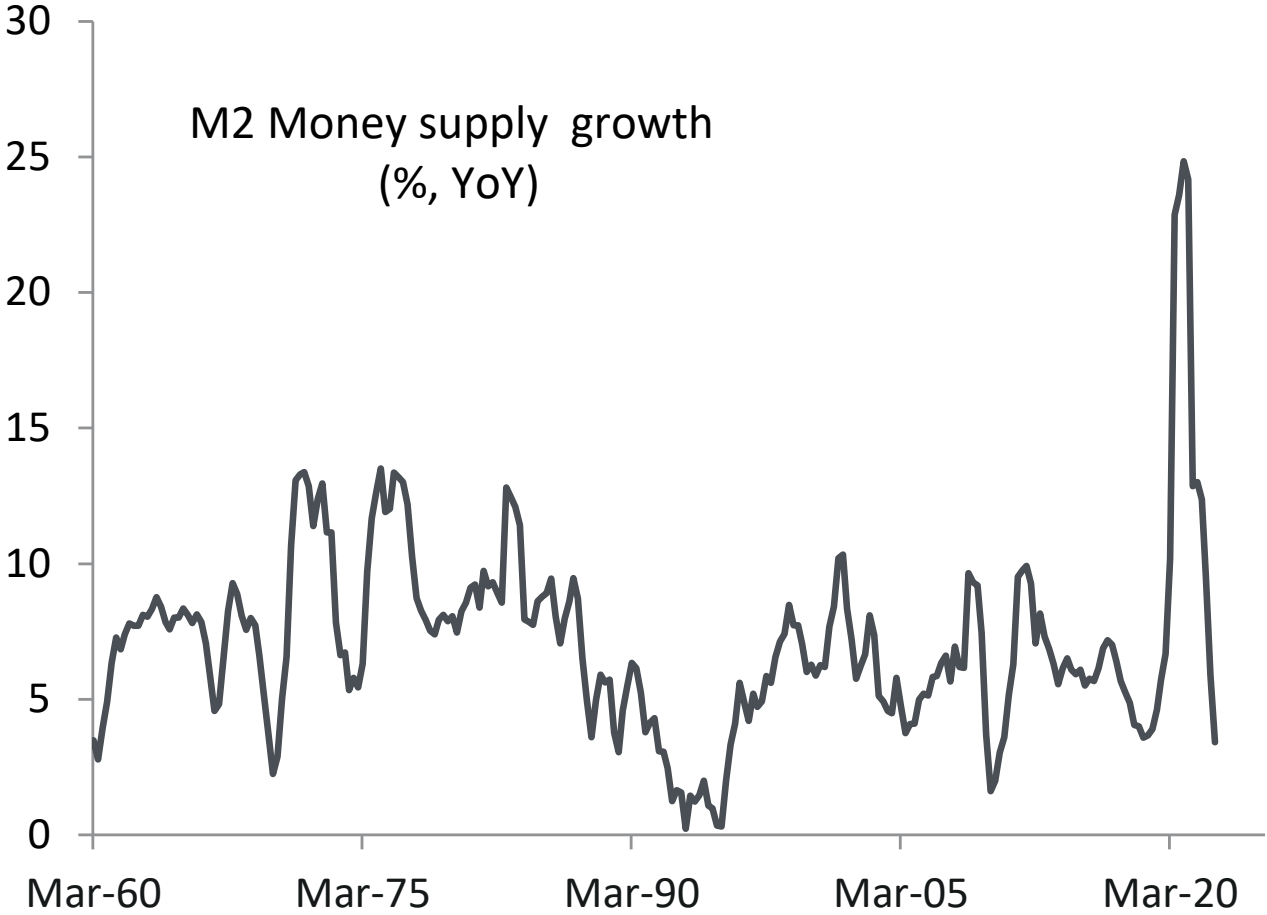


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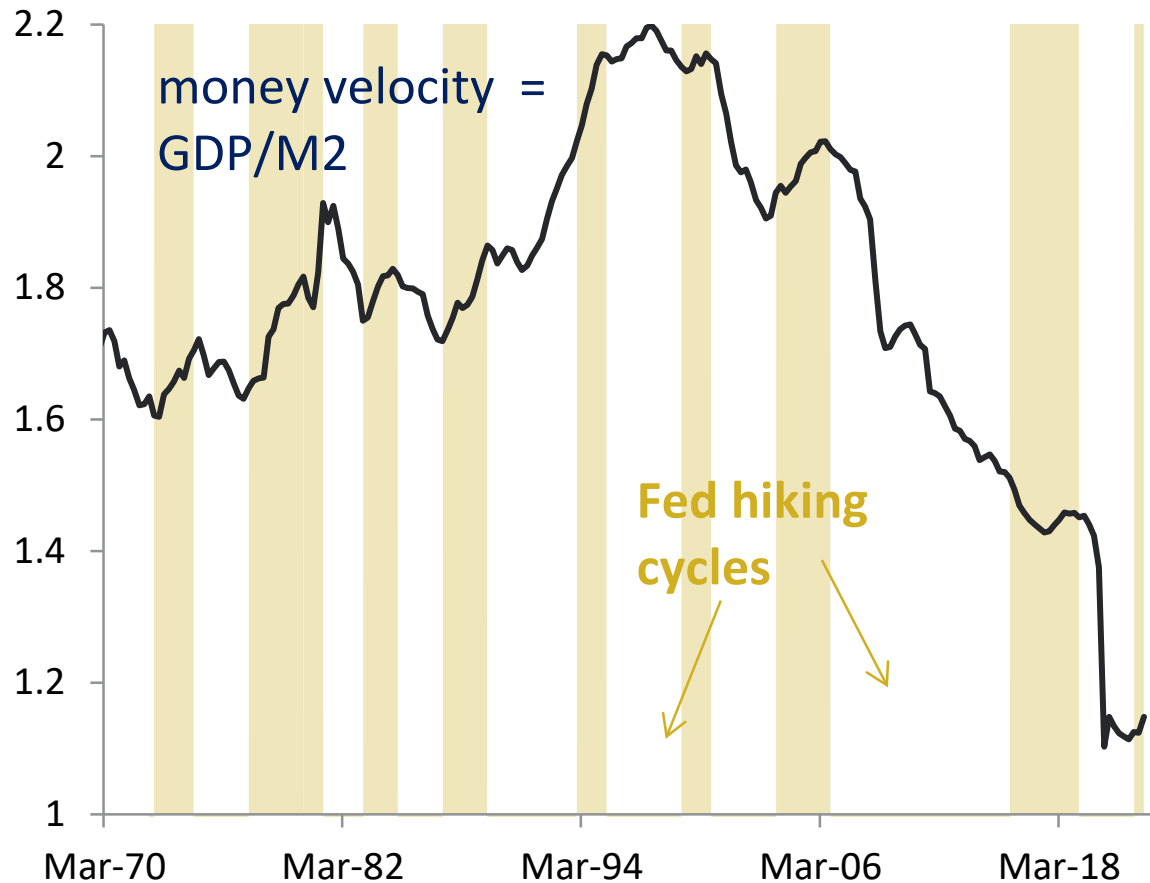
Money supply has been a key factor supporting economic growth

	% change M2 Money Supply + (annualized)	% change V2 Velocity (annualized)	≈	% change Nominal GDP (annualized)
1960 - 2009	7.0%	+ 0.0%	≈	6.9%
2010 - 2019	5.9%	+ -1.7%	≈	4.1%

The pace of M2 money supply growth is declining

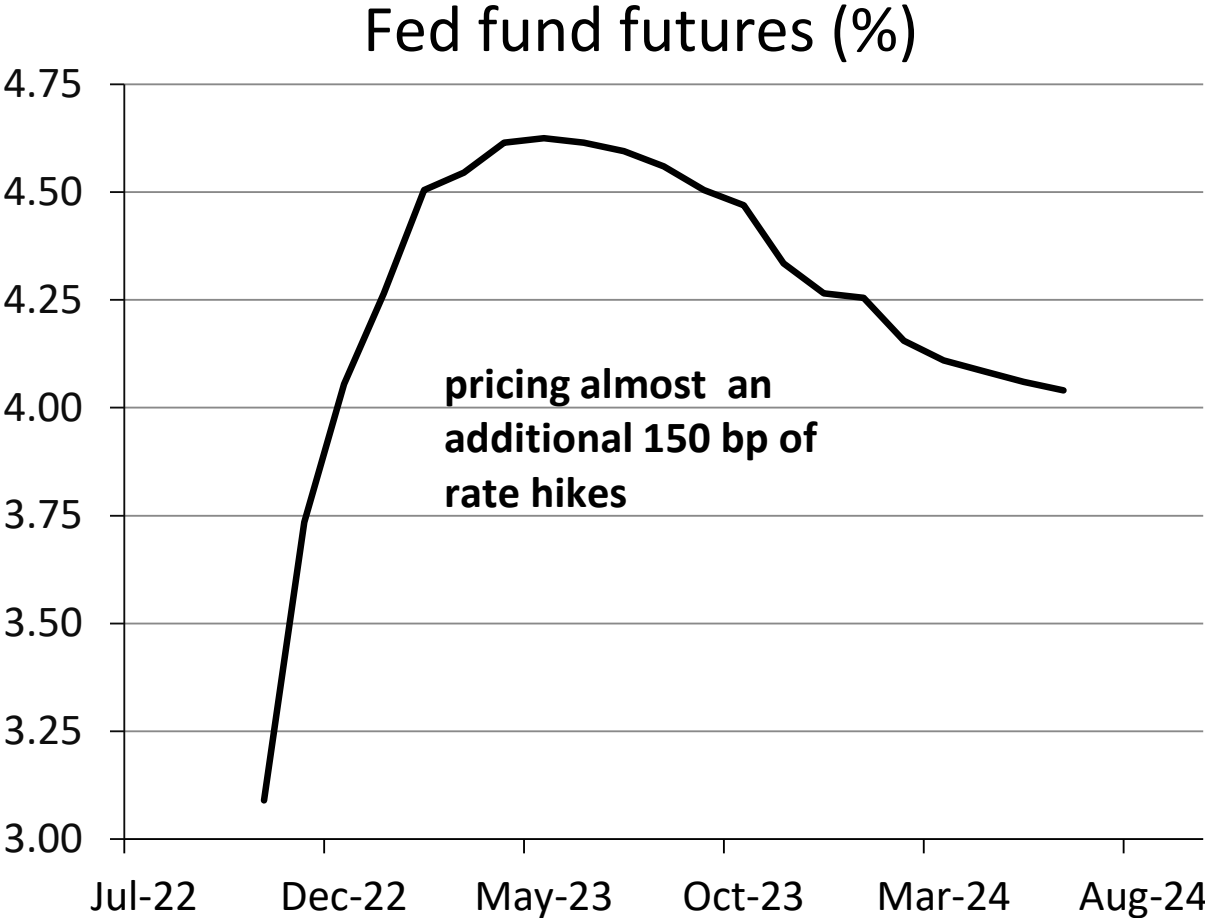


Money velocity usually drops following the end of a Fed hiking cycle

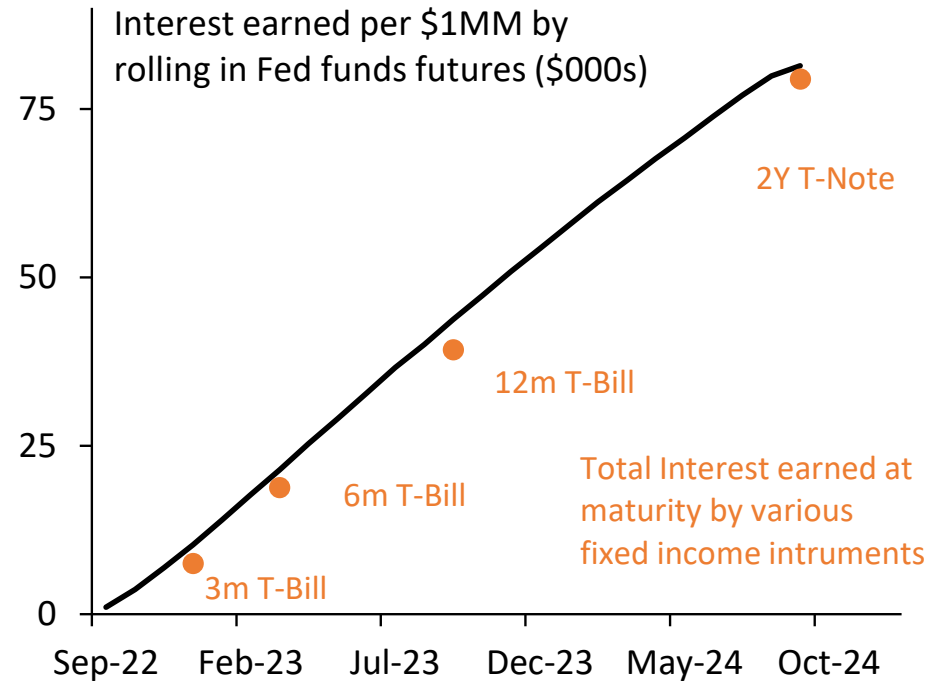
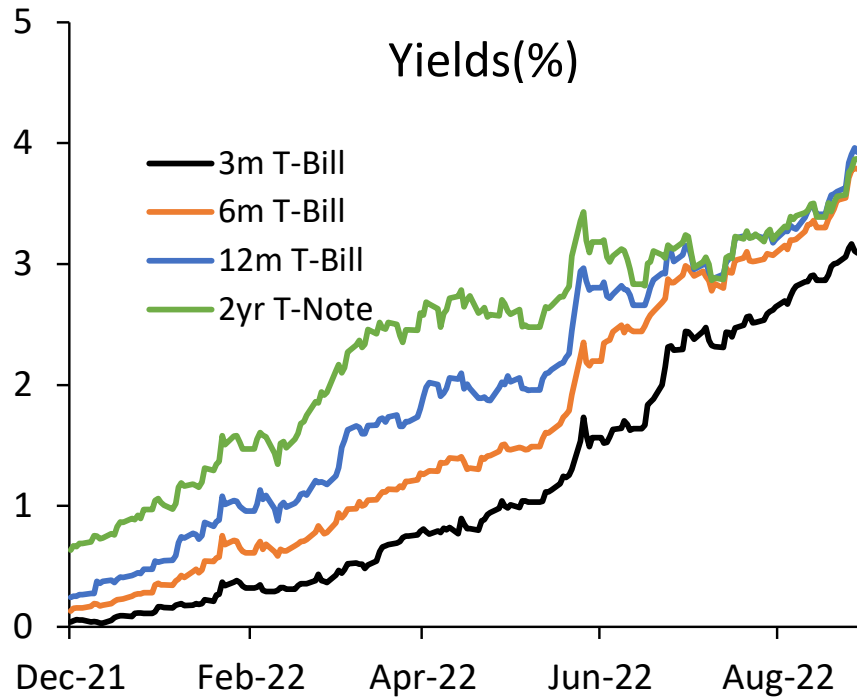


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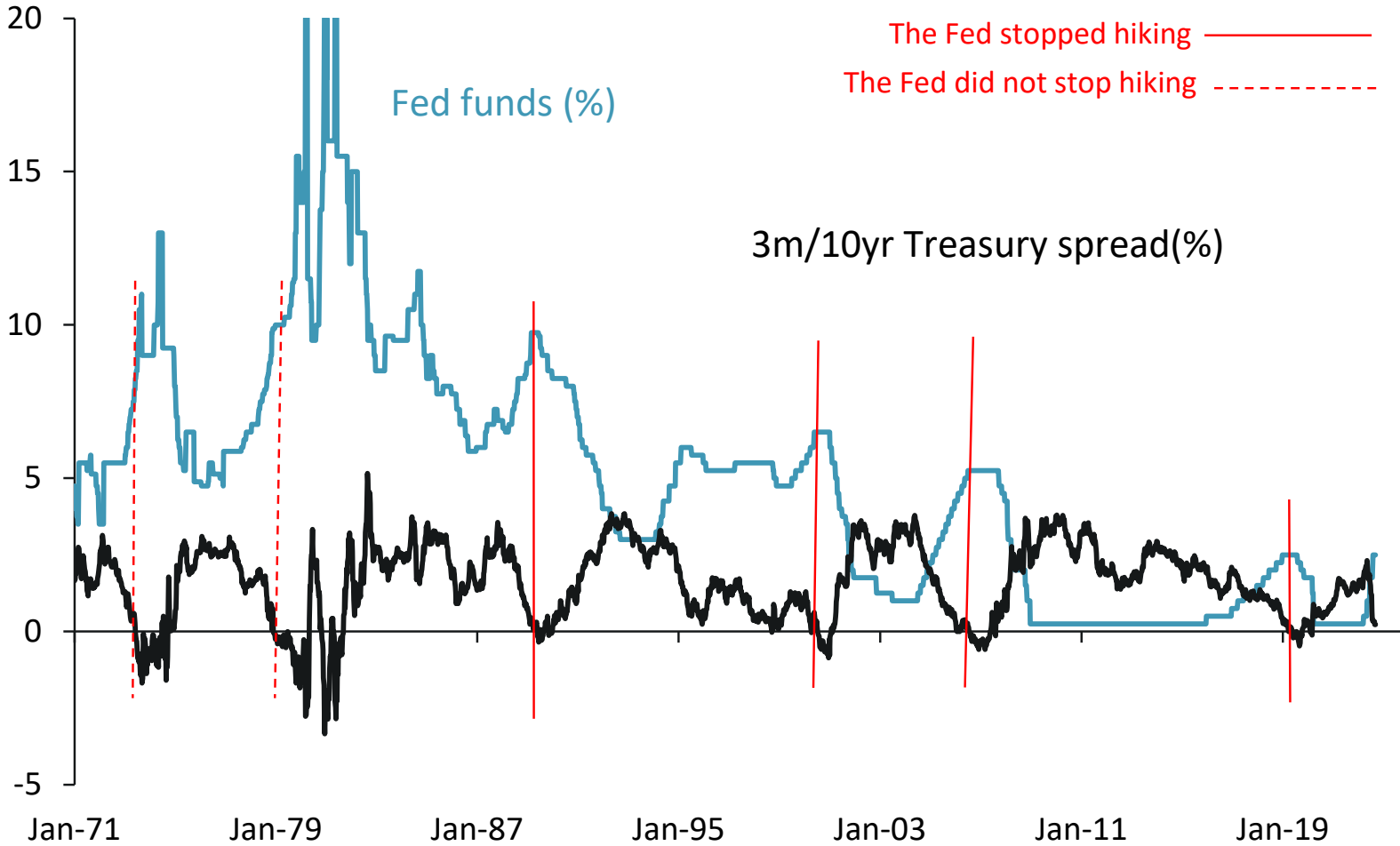
The Fed may hike rates by an additional 150 bp



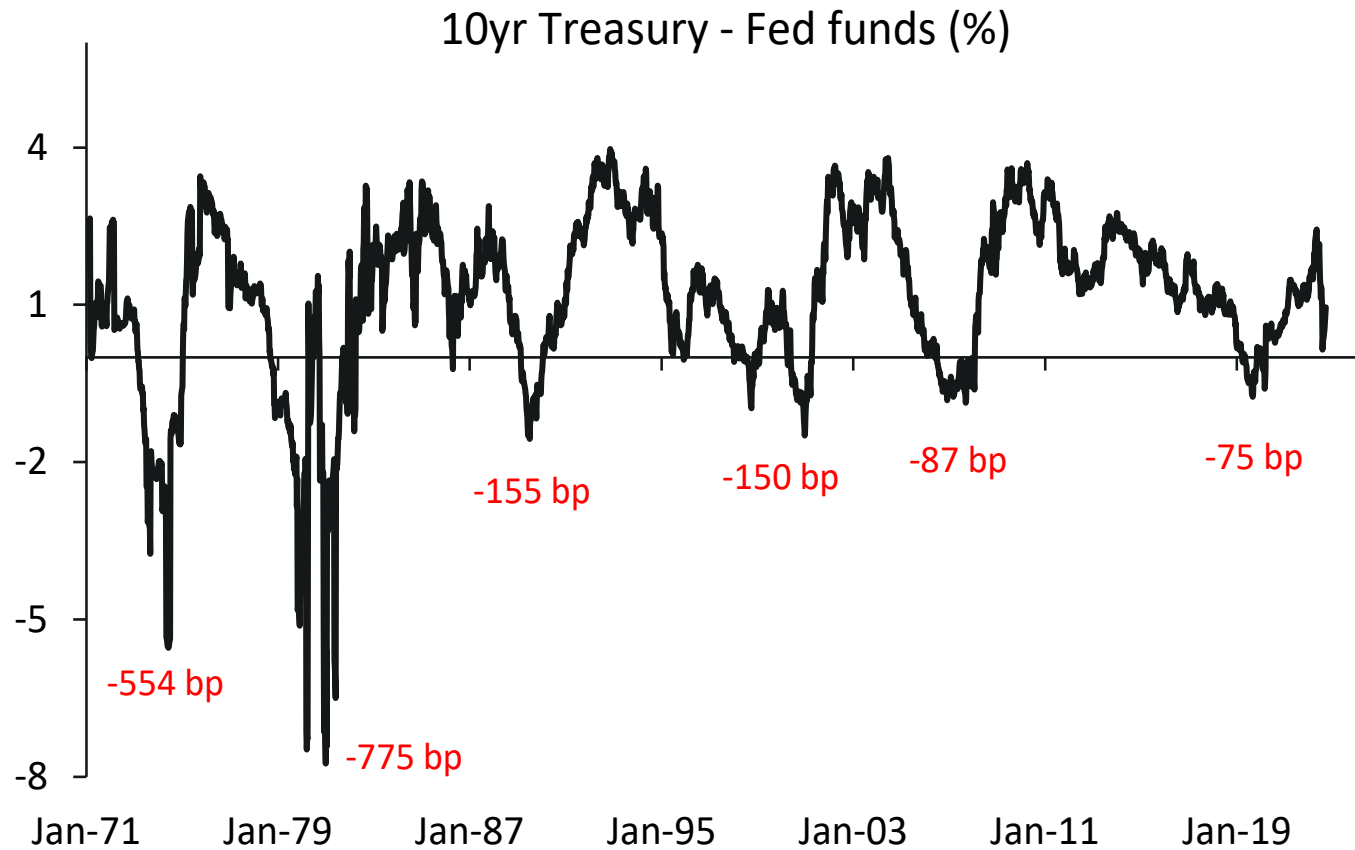
Short term yields may be near their maximum levels for this cycle



Will curve inversion limit the rate hiking cycle? It didn't in the late 1970s.

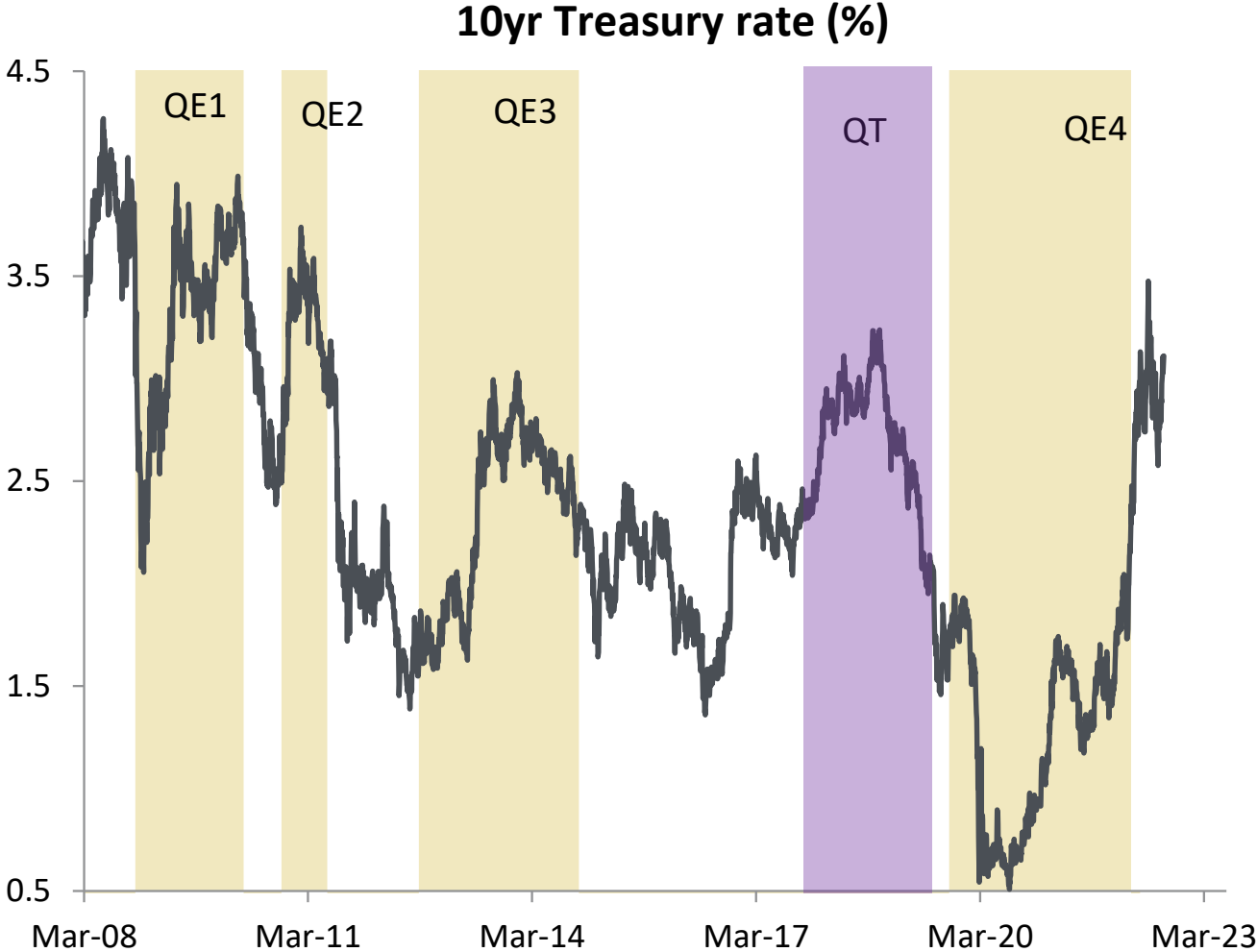


Curve inversion may keep longer term rates low

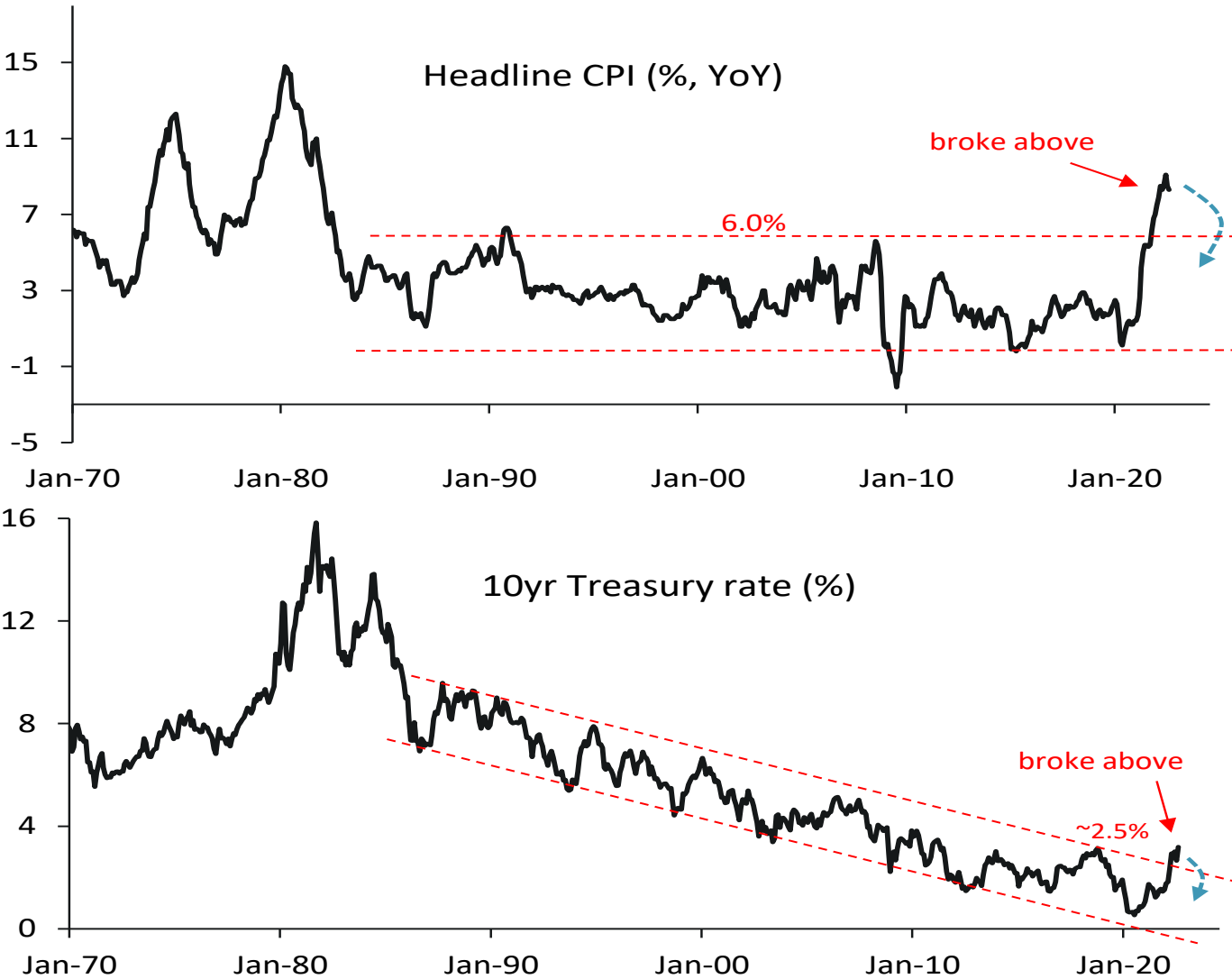


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The end of QE and beginning of QT may not lead to higher rates

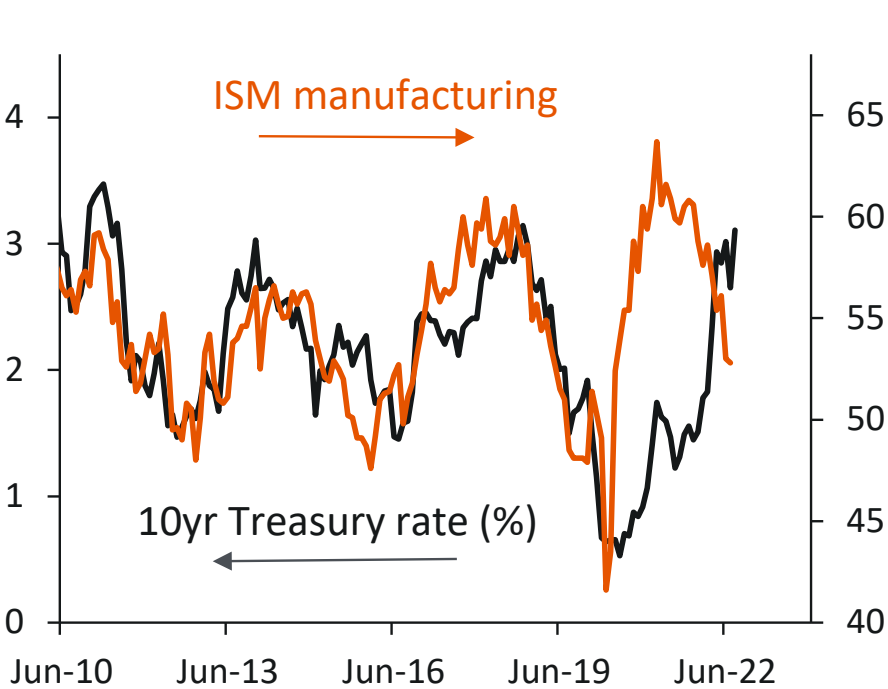


Long rates have been trending lower for decades as inflation remained flat



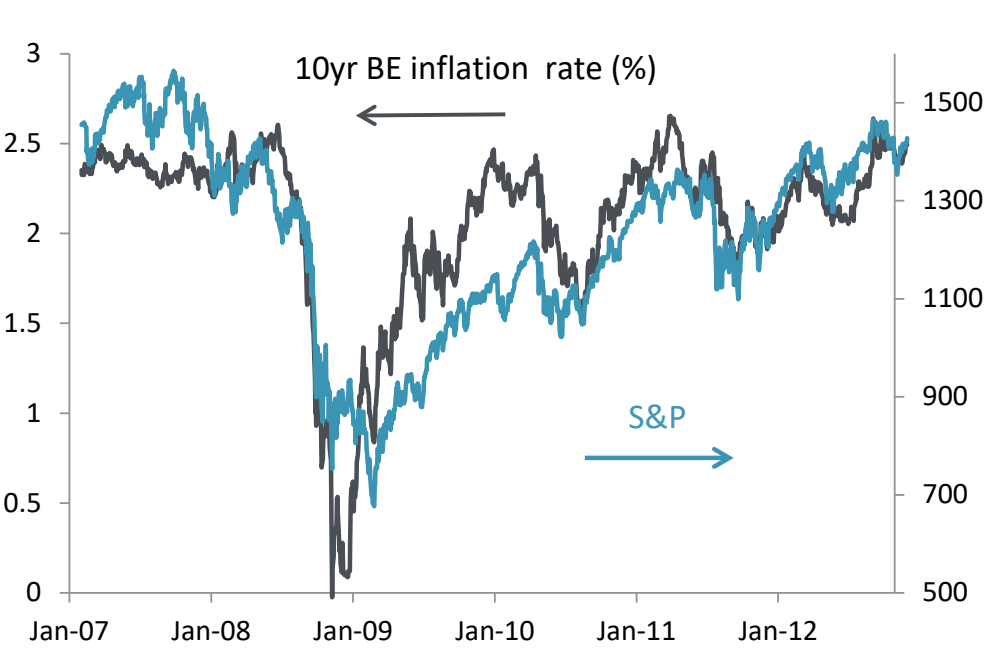
Source: Bloomberg, Piper Sandler.

Cross-sector correlations suggest that 10yr Treasury yields may have topped out

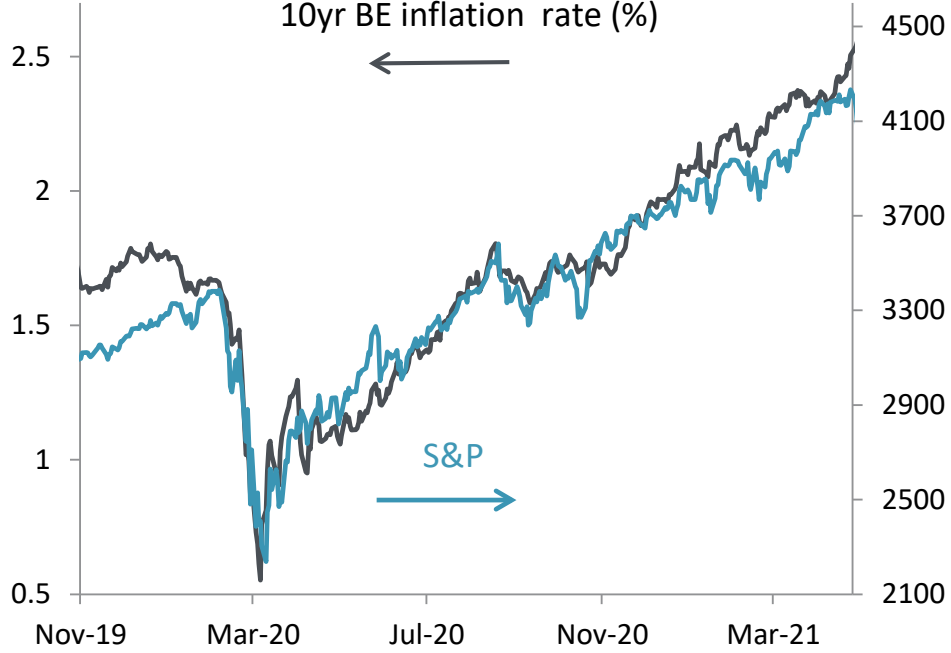


A bubble burst will drive inflation lower

2008 Housing Crisis

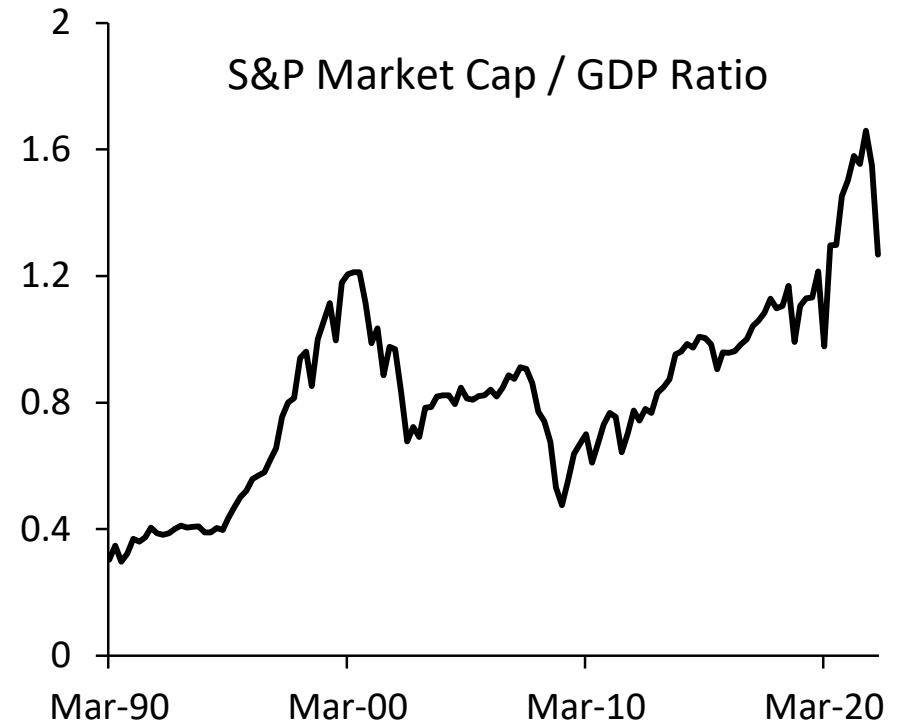


2020 COVID-19 Crisis

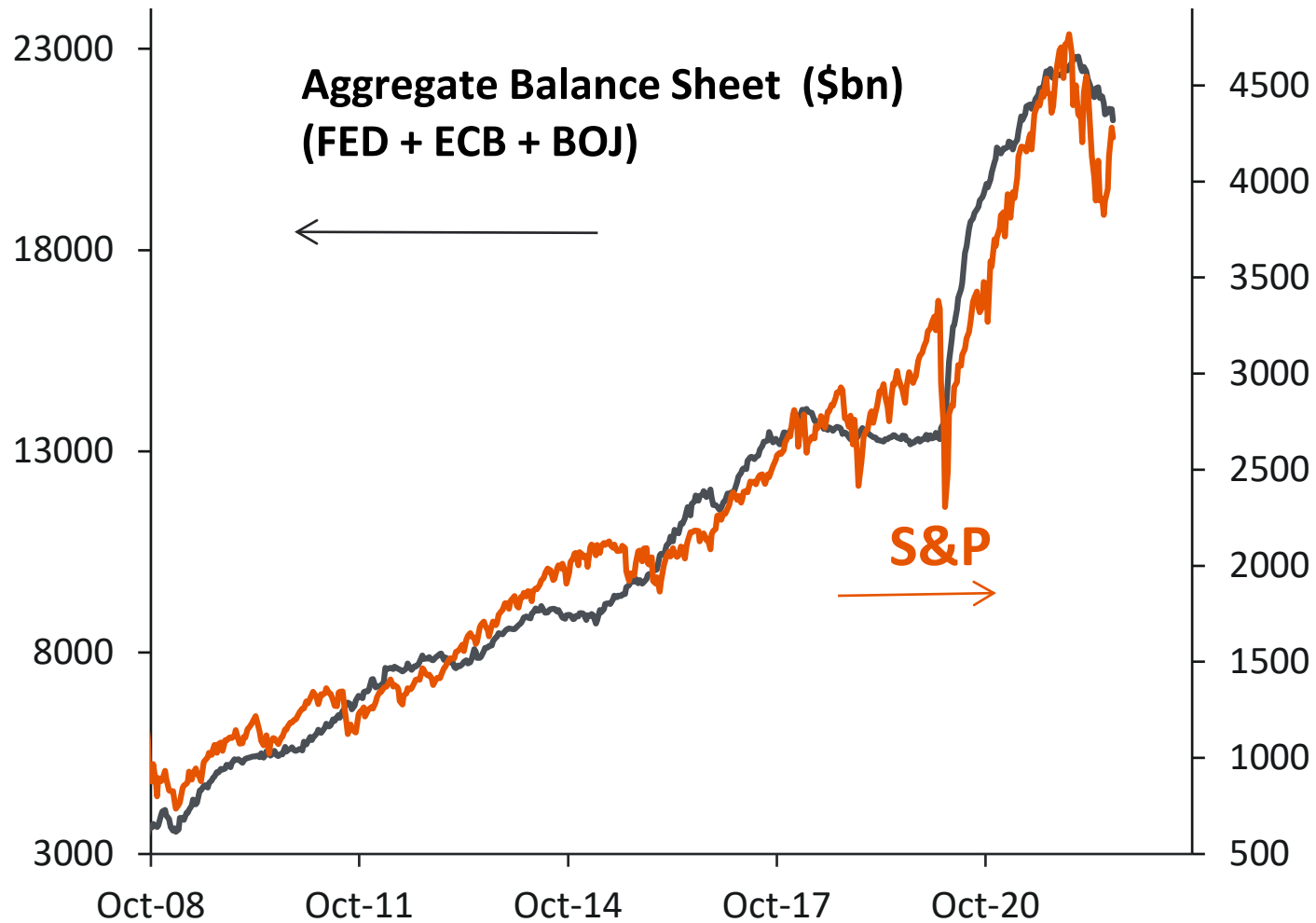


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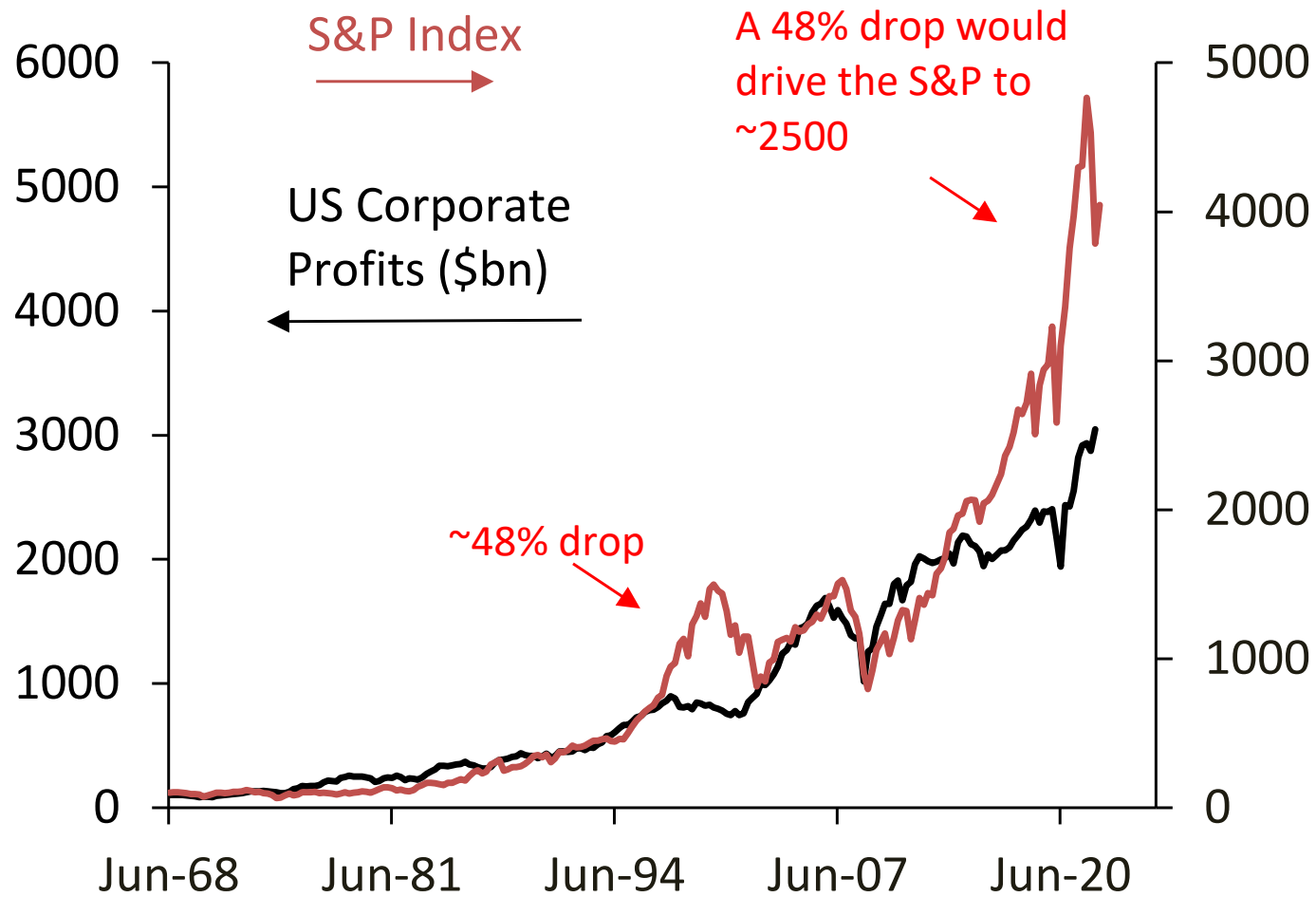
US equities still seem expensive



Quantitative easing was supporting equities

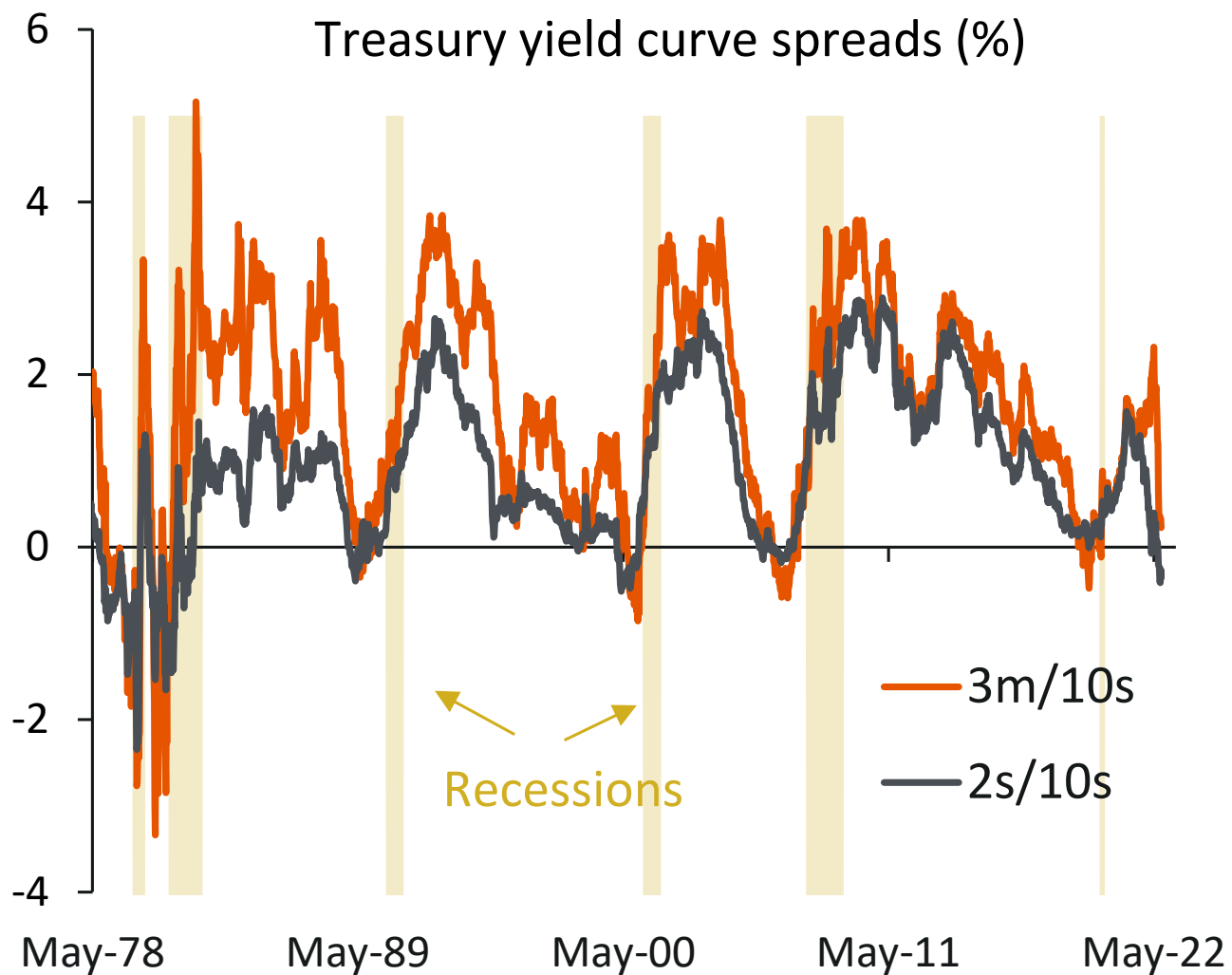


How low can equities go

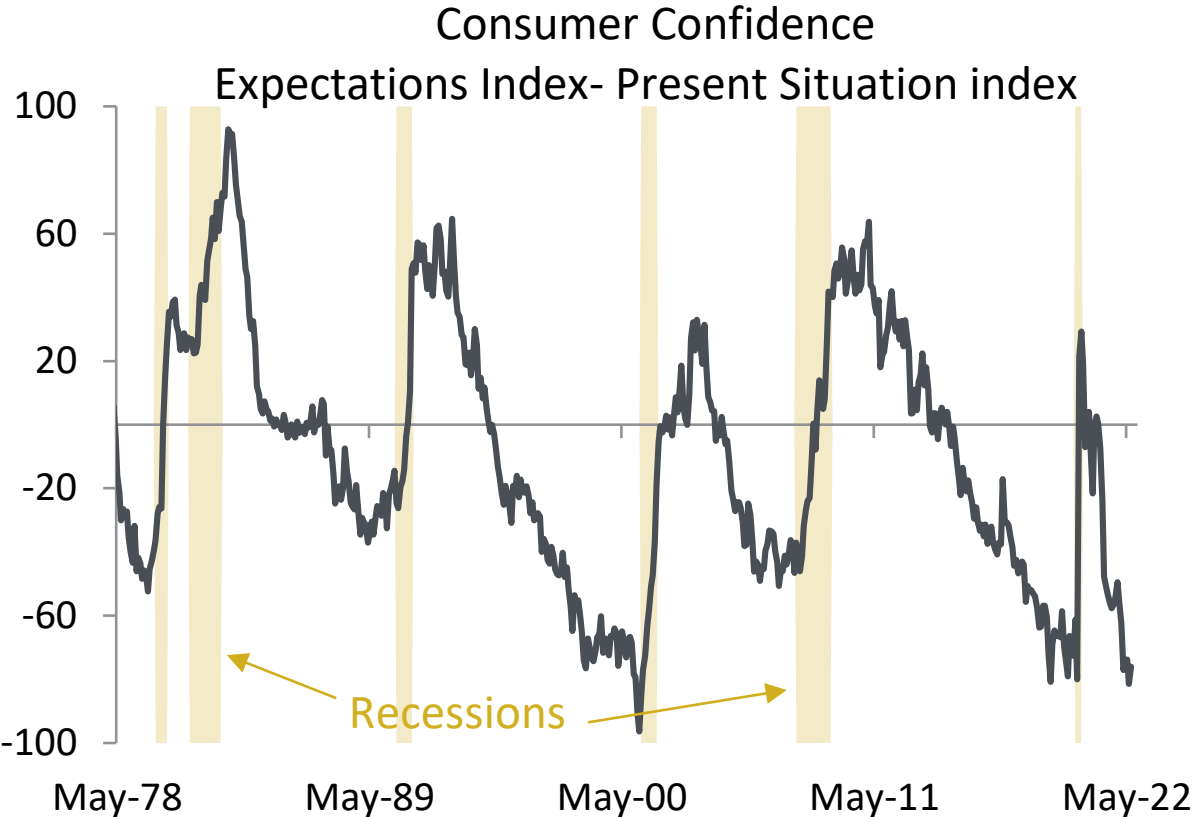


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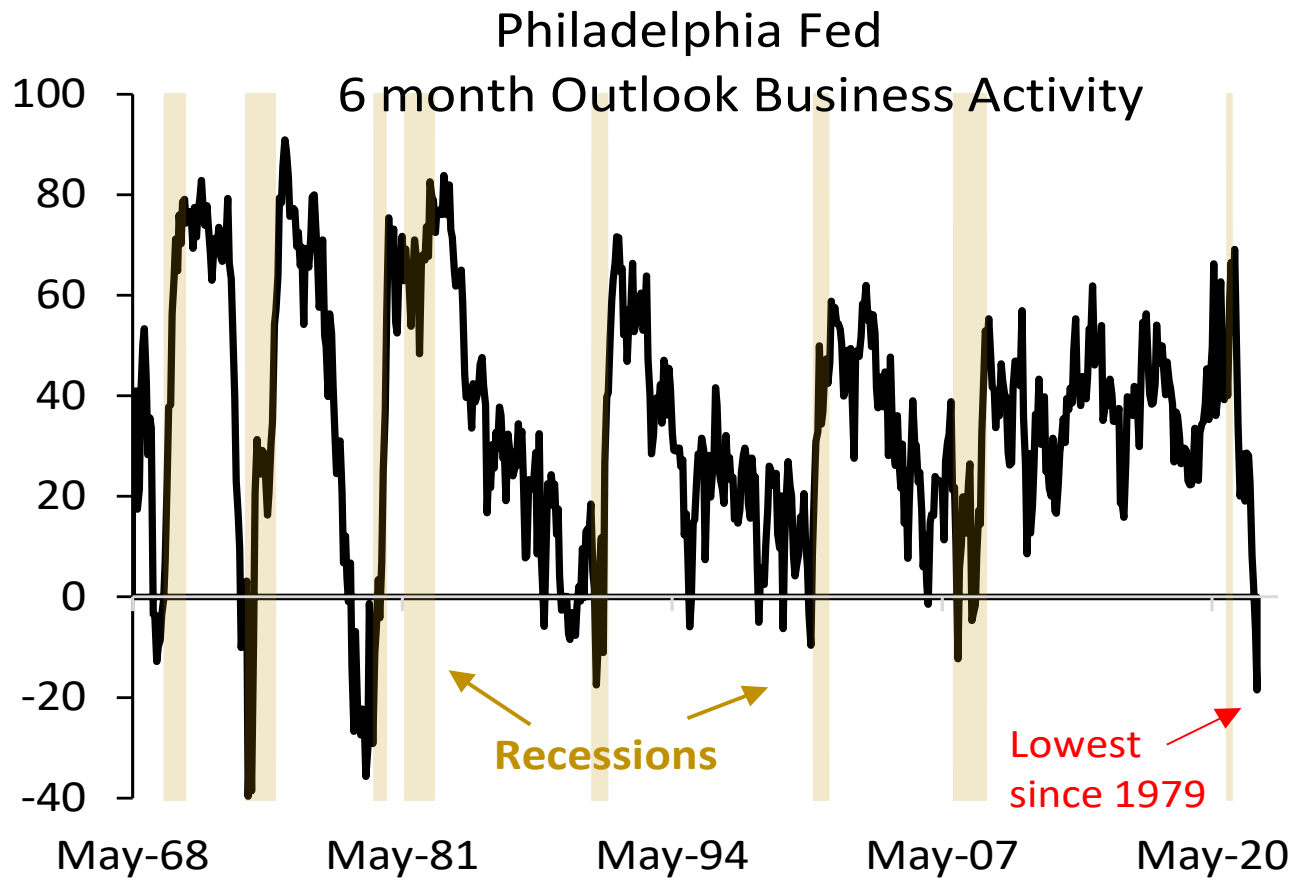
Curve inversions lead to recessions



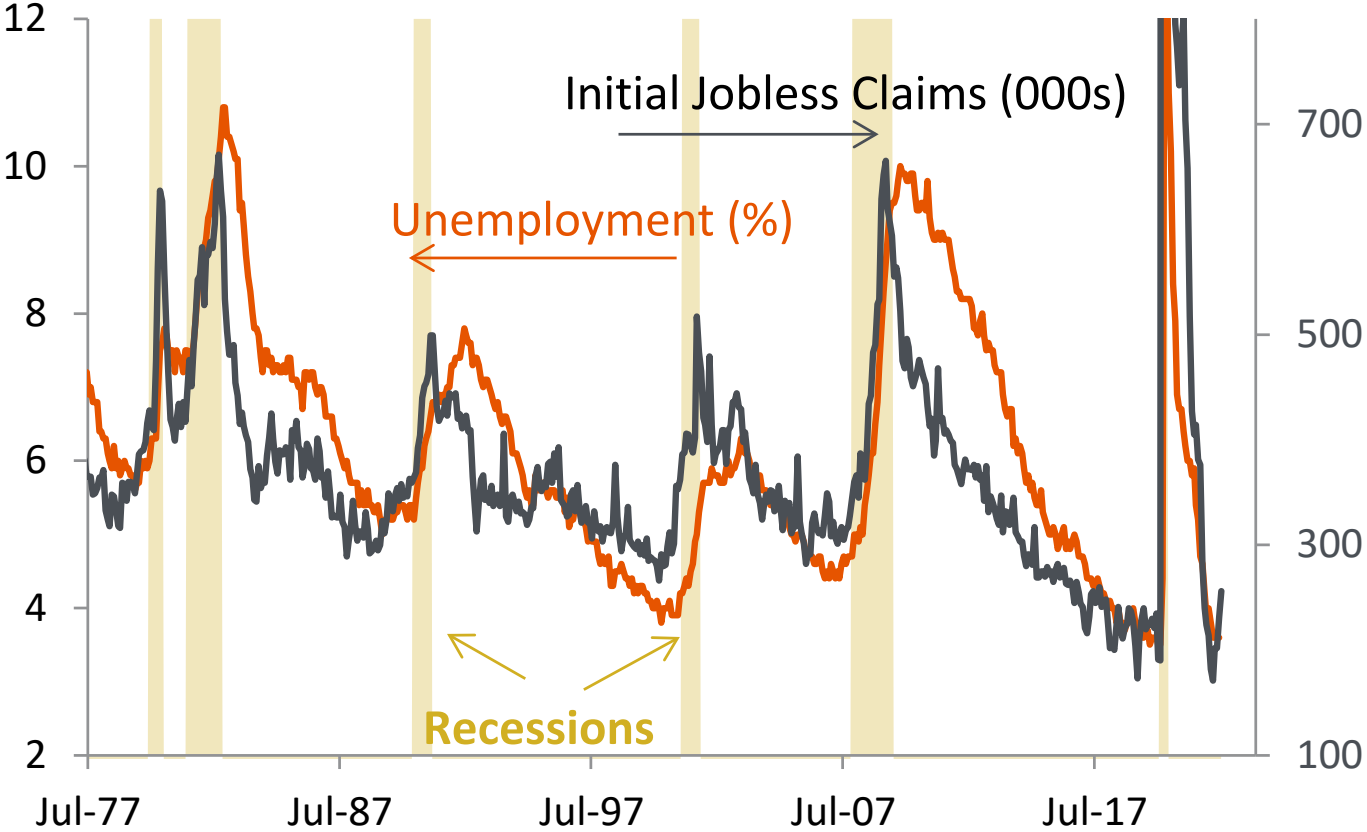
Falling confidence leads to recessions



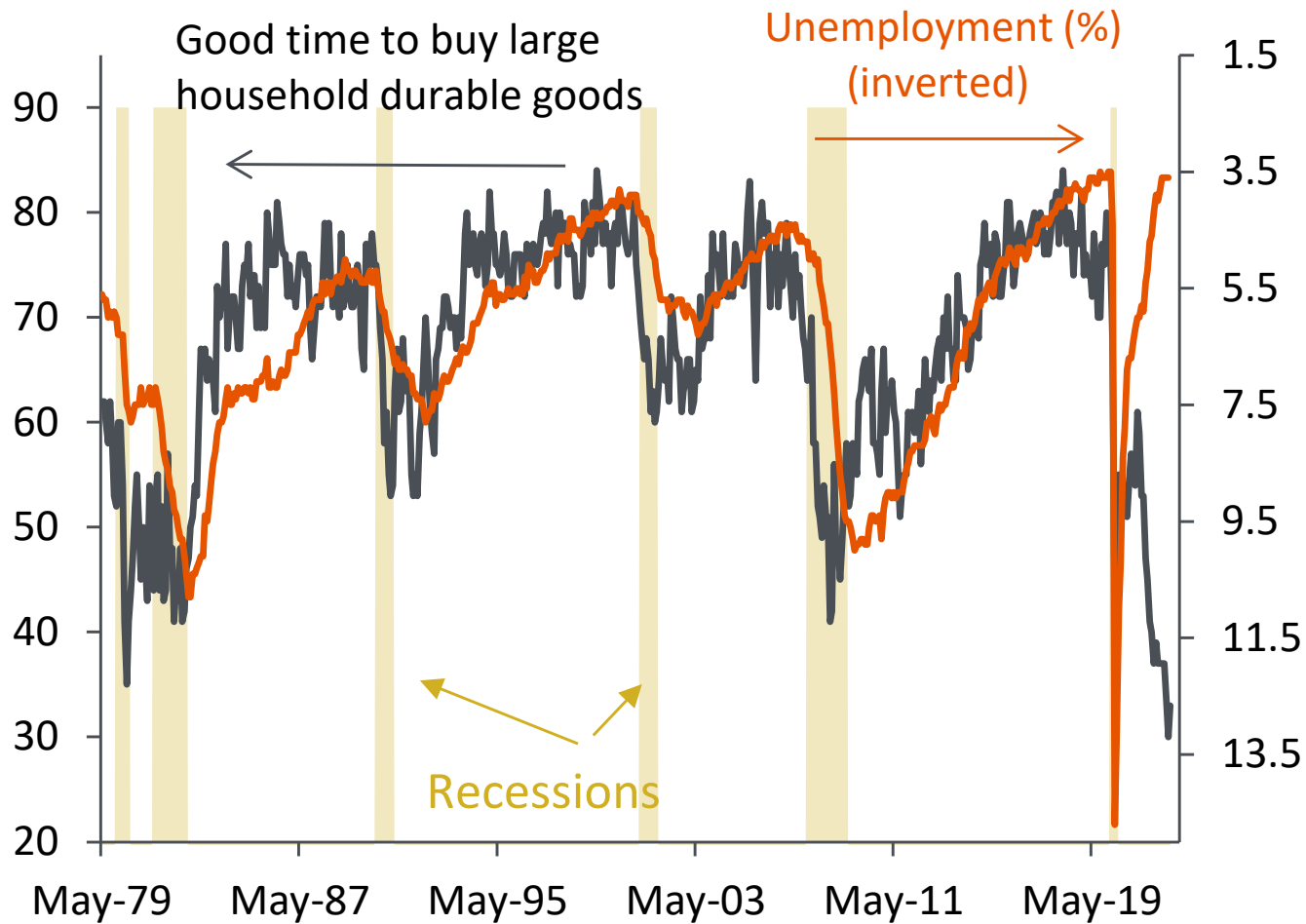
Manufacturing pessimism raises recession odds



Unemployment hit its cyclically low just prior to the onset of the next recession



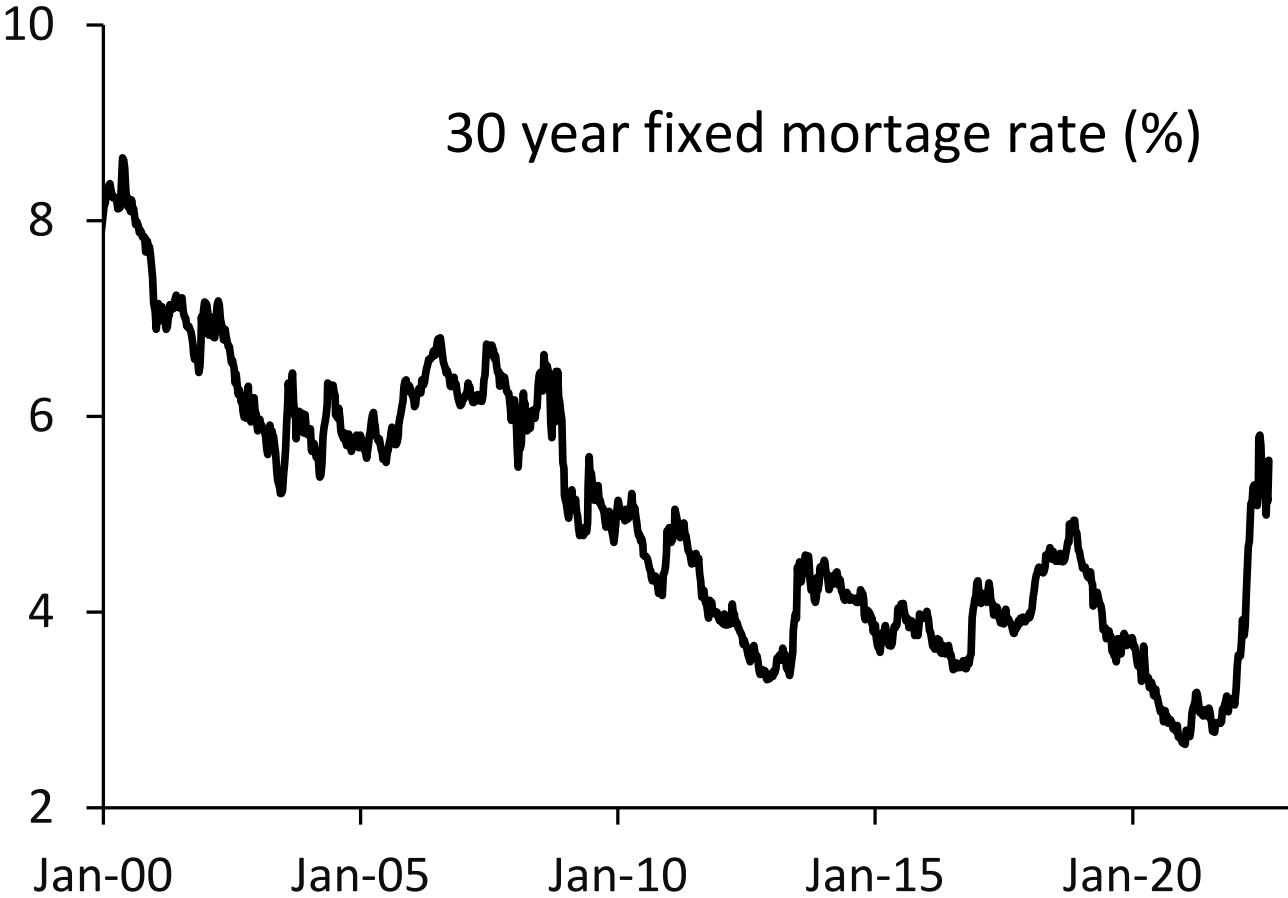
Declining optimism should lead to higher unemployment



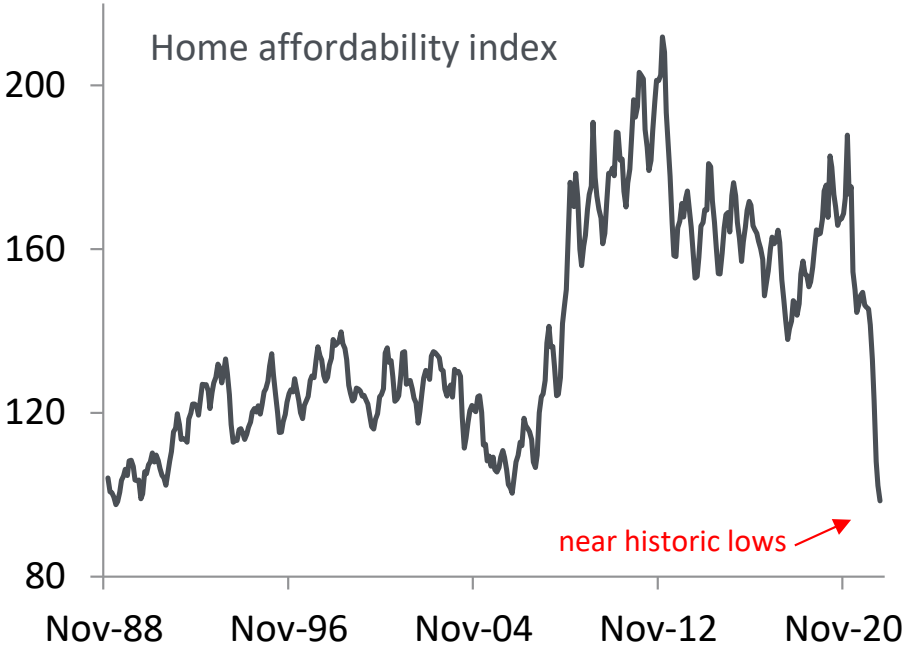
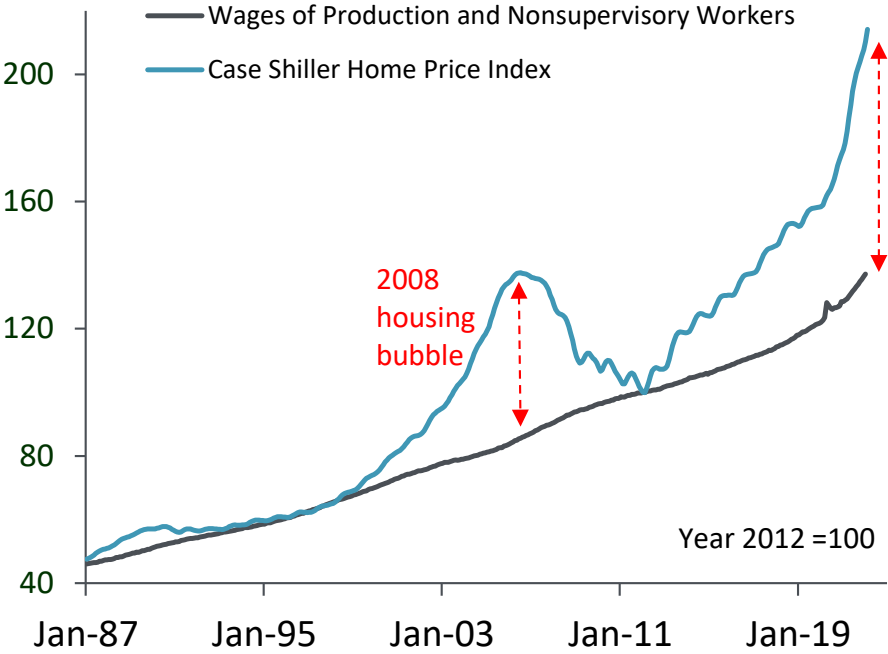
Addendum:

A slowdown in the Housing Market

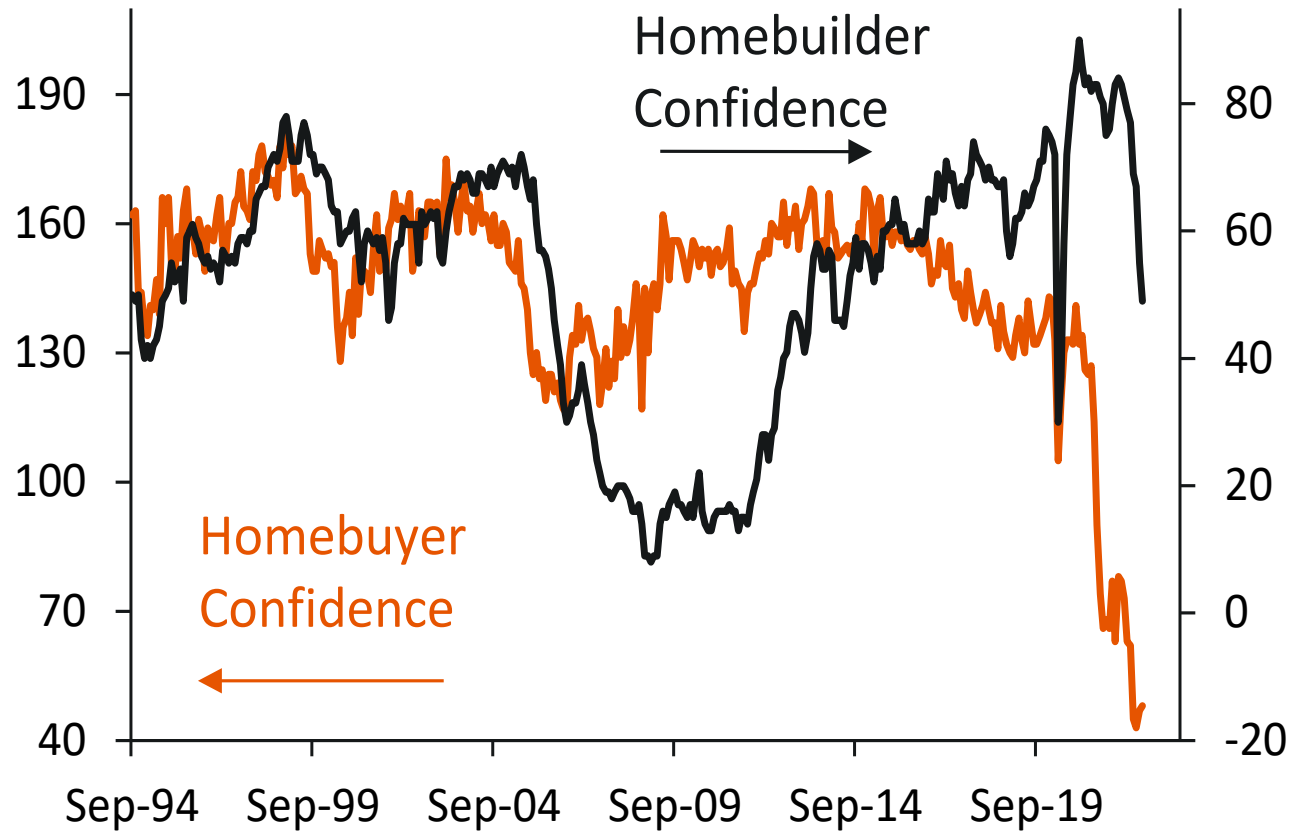
Mortgage rates at 13 year highs



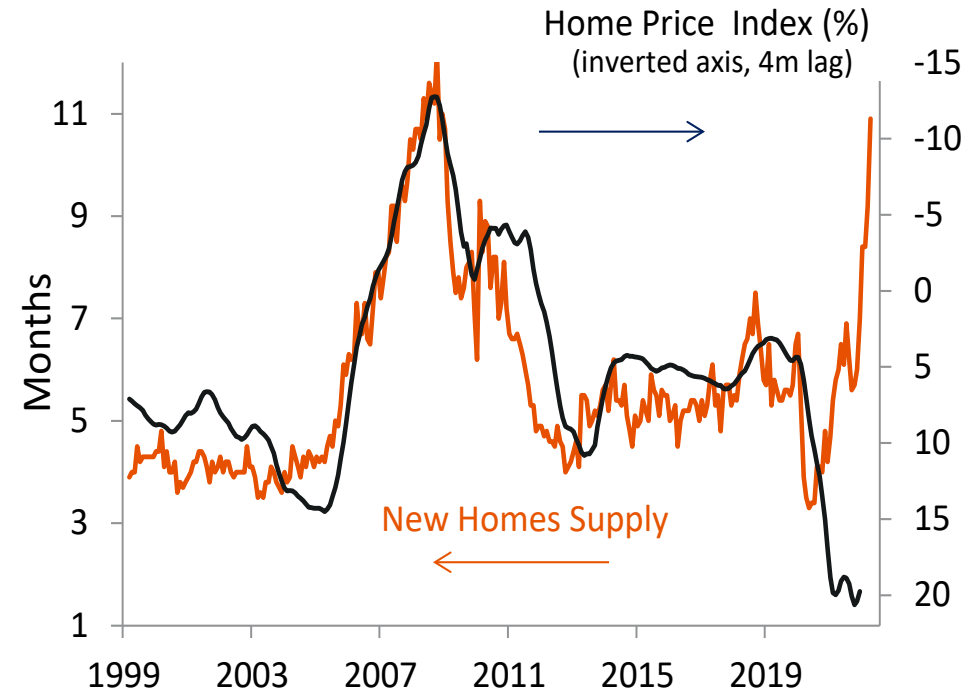
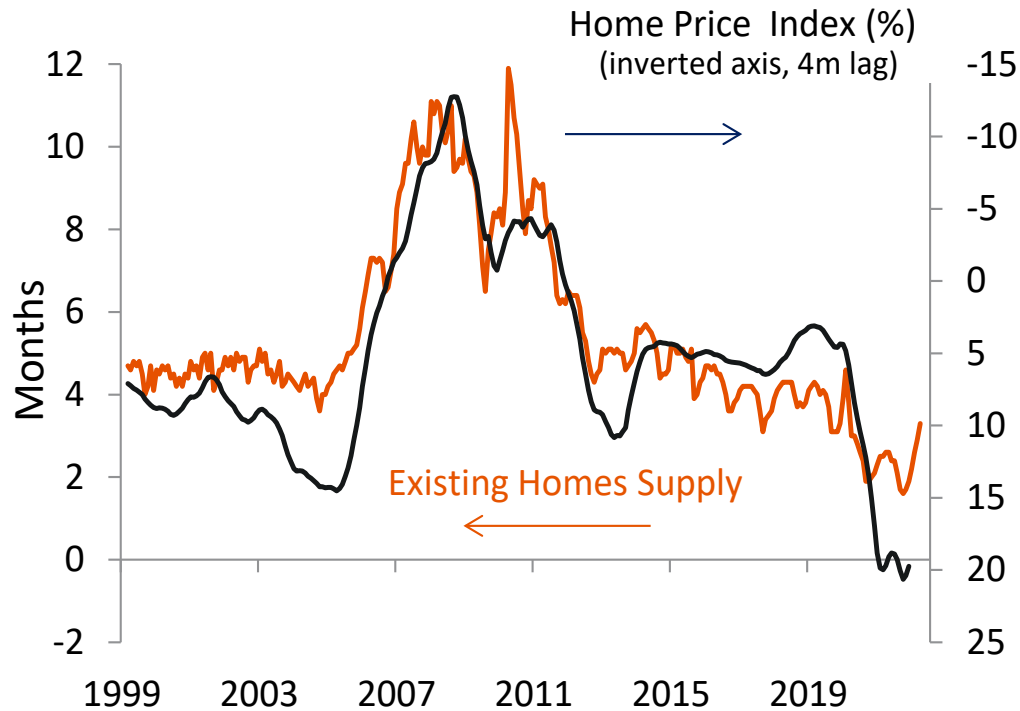
Affordability is becoming an issue



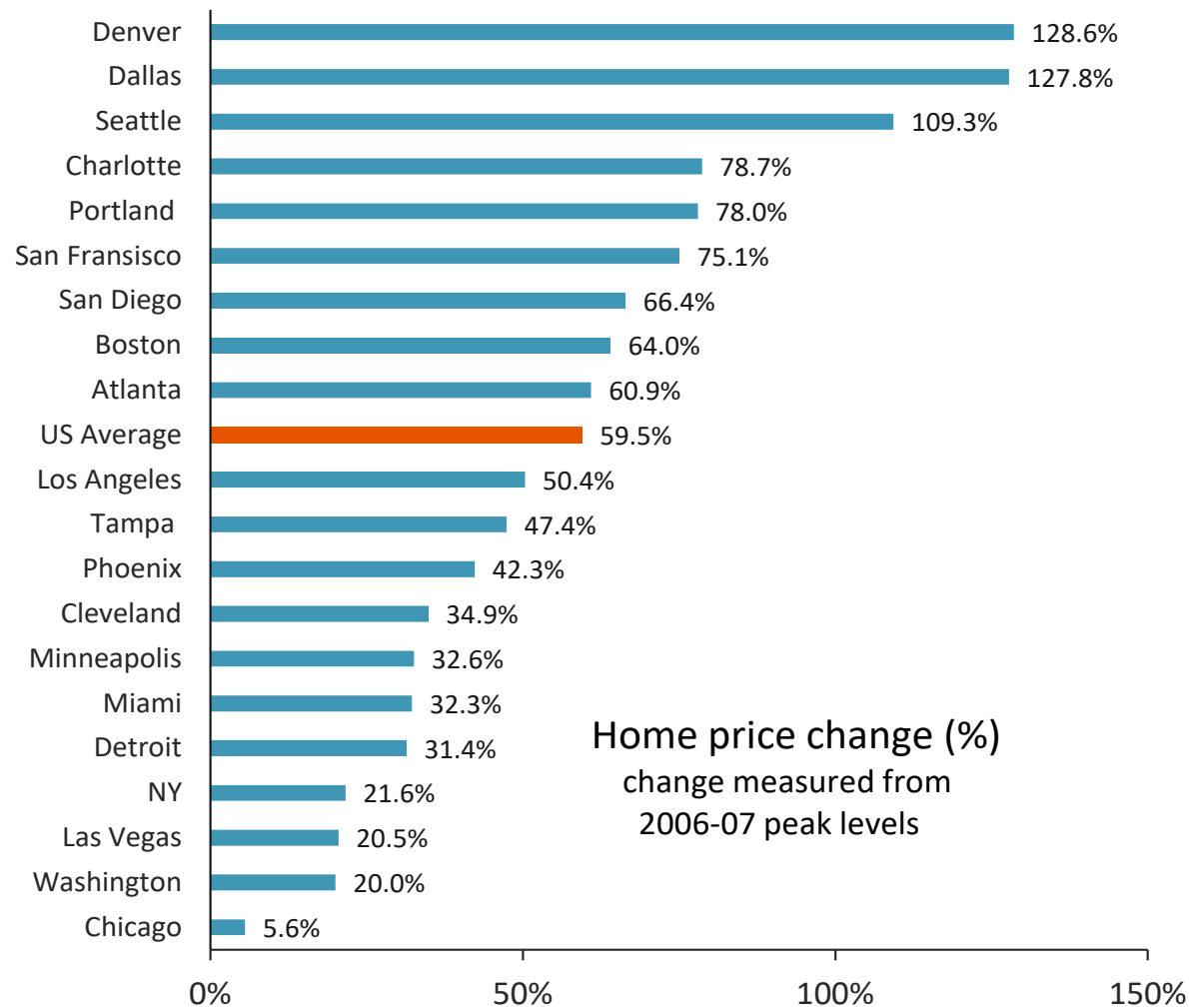
Home buying confidence is at historically low levels



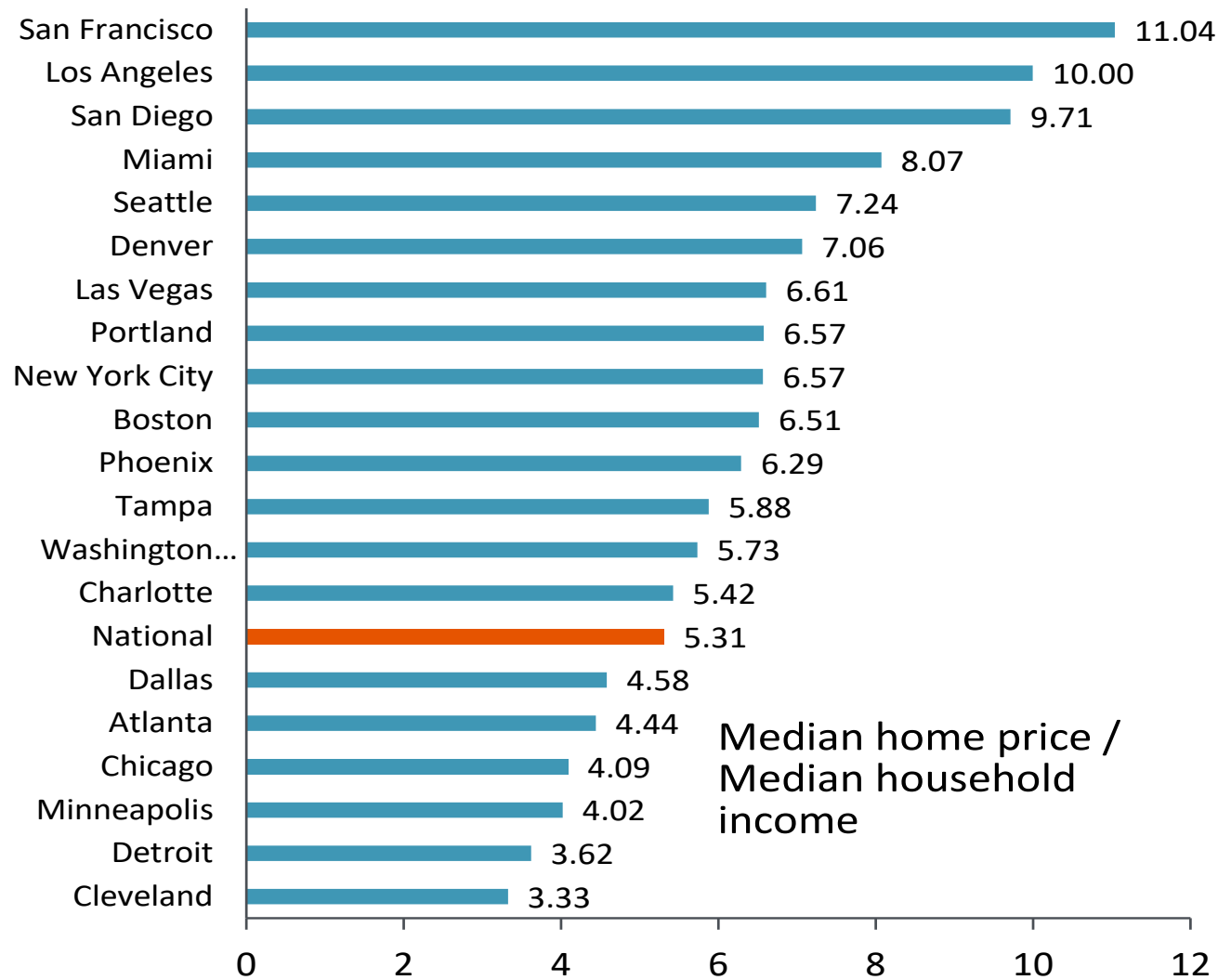
Housing price growth should slow down significantly



Not all cities have experienced the same degree of home price appreciation



Cities with high price to income ratios are at a larger risk of outright declines



Q & A

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