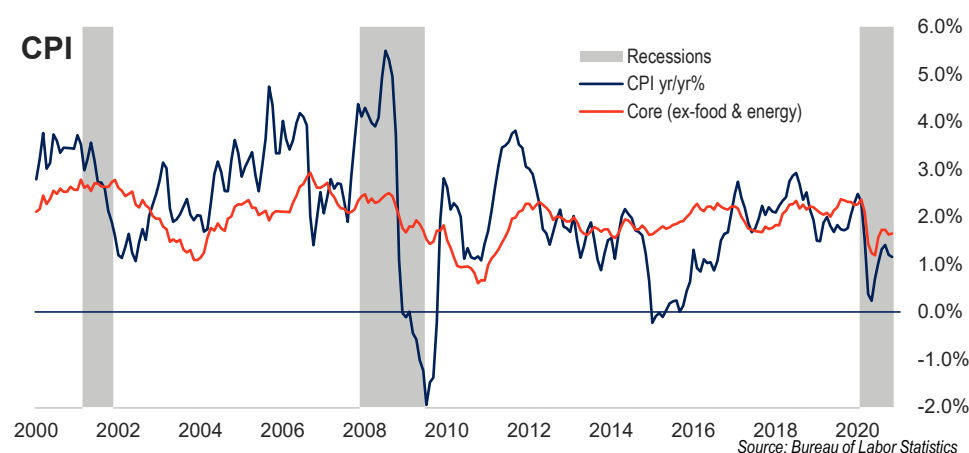


Inflation is Low and Will Stay Low for Years

There are many ways to think about the future rate of inflation. There are known cyclical relationships, using Taylor rule based models, which, when flipped on their head, predict inflation from GDP growth and interest rates. The best Taylor rule model in the last cycle points to -0.5% inflation next year.¹ Another approach eliminates the fastest rising and fastest falling components leaving a trimmed mean, which has fallen from 2.5% to 2.1% since August, suggesting inflation is easing. And there is sticky CPI, which includes only components that are the least volatile, meaning they tend to continue rising at a steady pace over time, which has fallen from 2.8% to 2.0% since February.



Sometimes, it is also a good idea to check in with the major inflation components. This is especially true at economic turning points and after big economic disruptions, when noise in components might affect the aggregate trend. The pandemic and lockdowns caused both turning points and economic disruption.

Energy: 6.1% of CPI

Competition and technology have tamed energy inflation.

A 20-year chart of energy prices splits neatly between pre- and post-global financial crisis. Before 2008, traders bought into the peak-oil theme. OPEC had a firm grip on pricing, and reserves accessible to contemporary technology were drying up. In the decade since the financial crisis, the fracking revolution flipped the script.

¹ The best Taylor rule among those available on Bloomberg's TAYL <GO> function was the Evans Taylor rule, which would have guided the Fed to the 1.5-1.75% pre-pandemic fed funds rate, about right after the 2018 overshoot. Note that while the rule suggests fed funds in a 0-0.25% range will result in -0.5% inflation, the Fed believes it is offsetting restraint from the fed funds rate at the effective lower bound with quantitative easing.

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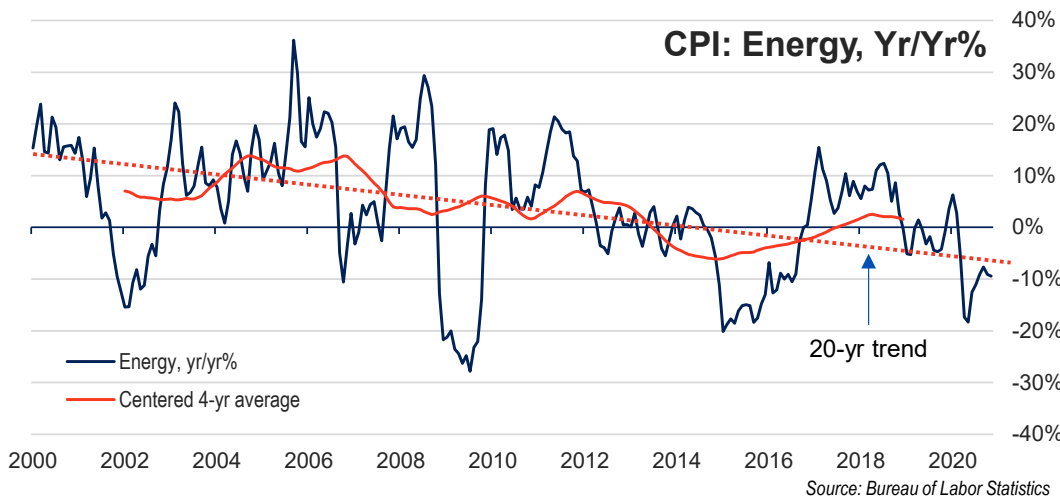
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US producers not only eschew OPEC-style manipulation, it is forbidden by US law. OPEC's lost influence is less important to energy inflation, however, than new technology opening vast new reserves. The US is now the world's biggest energy producer and energy exporter. Peak oil is likely to occur because alternative energy is already displacing oil. Demand, rather than supply, is running out. The affect on oil prices is to push them down over time rather than up.

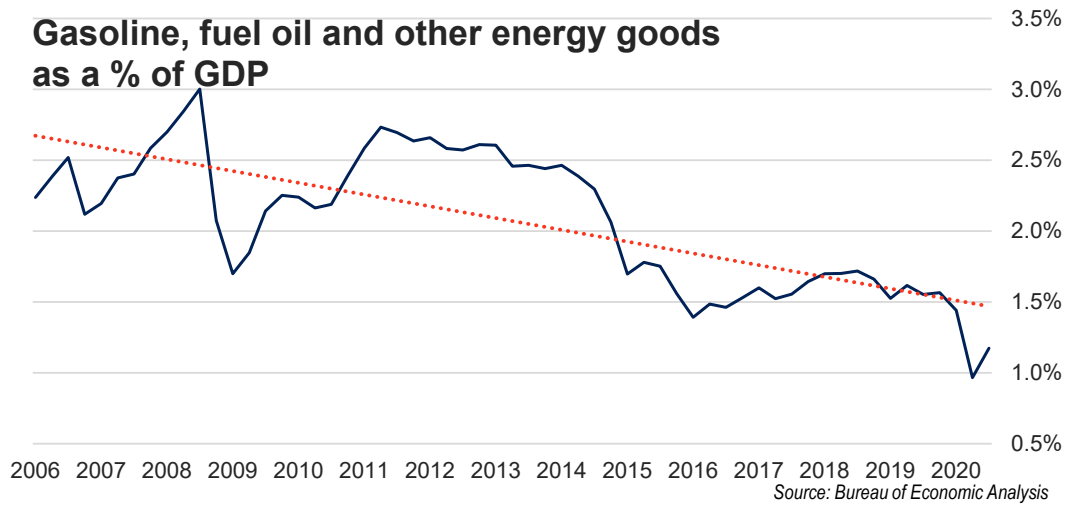
Fracking overturned oil price dynamics. The chart below shows the year-on-year percent change with a four-year centered moving average revealing the trend. The past decade starts with the oil price collapse during the GFC, followed by the recovery of oil demand in 2009-13, which boosted prices enough to justify the first round of significant investment in fracking, then the oil price collapse of 2014-15 caused by China's brief experiment with supply-side reforms, another recovery, and then the pandemic-related price drop in 2020. Every time prices fell, there was new investment, new productivity, lower production costs, and a smaller rise in price.



Energy prices are already recovering from the pandemic, along with economic growth and gasoline demand. But production is also recovering, and once again US producers have found ways to cut costs, reducing breakevens. This time, it's non-shale producers who have cut costs the most, with costs as low as \$15 a barrel, which should mean supply

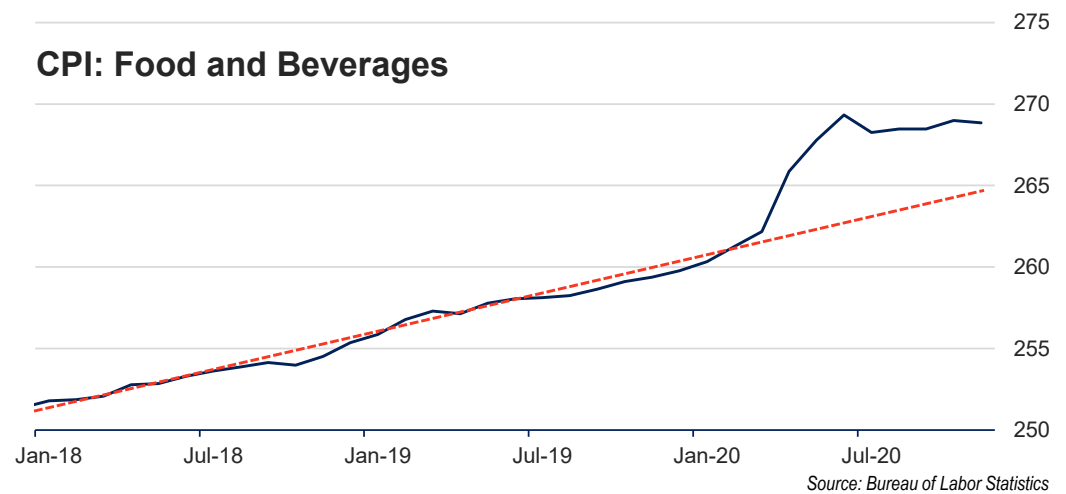
should quickly rise to meet demand when it recovers.² The result is likely to cap energy inflation at a rate below core inflation as long as food prices behave. For the next decade, anyway, while we can be certain fracking has legs.

Of course, there's more to energy than oil. The past ten years has been marked by significant improvements in energy efficiency. Energy accounted for about 2.5% of GDP before and immediately after the GFC recession. It is less than half that now. Reduced dependence on energy means more price elasticity. That is, if prices rise, people are more likely to consume less, reducing producers' pricing power.



Food: 14.1% of CPI

Food price inflation was stable at 1.5-2% in 2018-19, about the same as core inflation. In other words, food was essentially part of the core, thanks to a couple of years without drought or other production and supply bottlenecks in the US. (At the same time, Chinese food inflation was horrendous thanks to a swine-flu related pork shortage so bad it overwhelmed China's strategic pork reserve. And, no, [that is not a joke](#). China really does have an emergency pork reserve.)



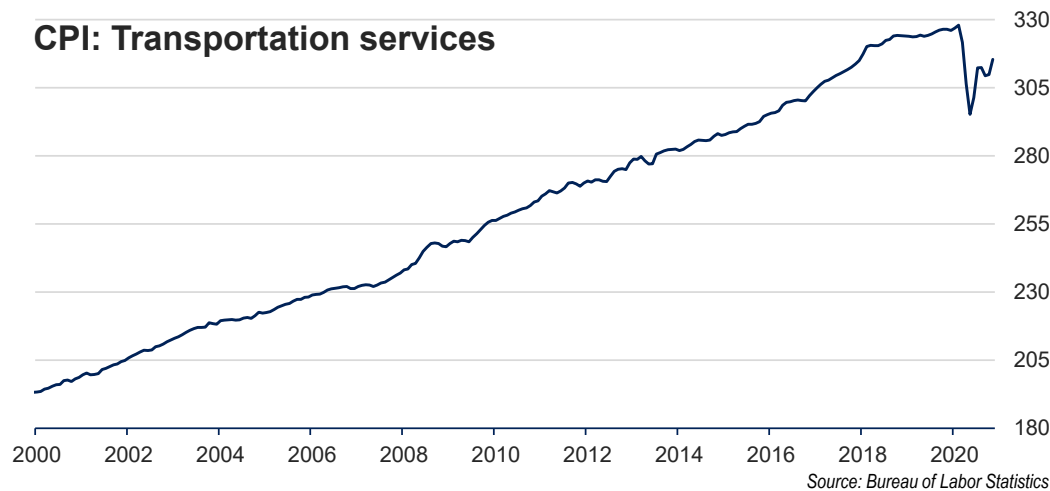
² The Dallas Fed estimates median production costs in the US oil industry are \$50/barrel, with the lowest median cost in the Permian Basin, Midland, TX, at \$46 and the highest at \$52 in the Permian Basin, Delaware. The median cost was also \$50 in 2017. The range varies from \$15 to \$70, however, which is lower than the old range, from \$20 to \$95. The result is the same median, but more producers will be viable at every level as production resumes.

Food prices rose 3.1% between February and June, which works out to 9.5% at an annual rate. The increase reflected supply-chain disruptions in both international and domestic trade as well as COVID outbreaks at meat processing plants. Since June, prices have been steady. COVID has increased costs, which has prevented prices from falling, but they are not rising anymore.

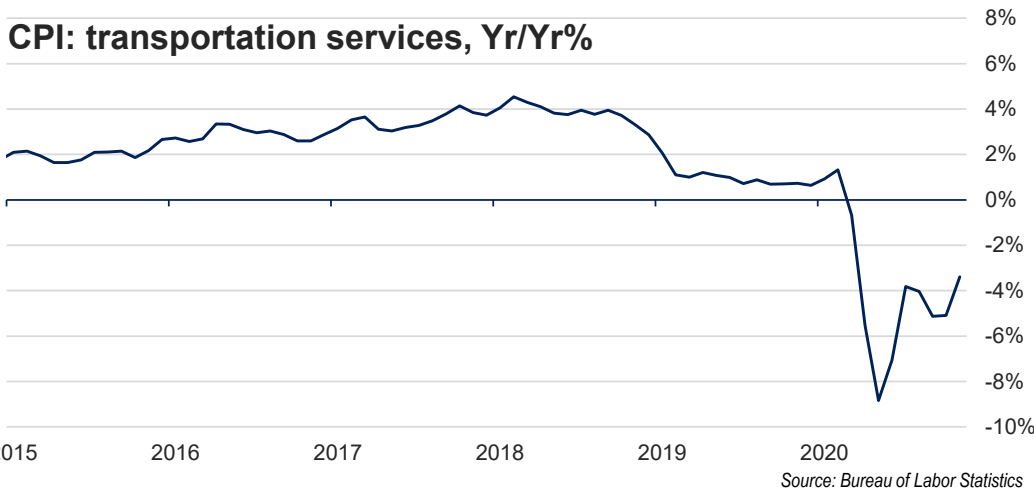
Food prices are not in the core because they are occasionally subject to the kind of volatility that can cause the CPI to spike, as seen in China last year and in the US most recently in the early 1980s and, on a smaller scale, last year. When these dislocations pass, food mimics the core because the bulk of food costs are production, storage, and distribution, the same as for any other core commodity.

Transportation services: 5.1% of CPI

The year-on-year chart of transportation services prices does not do justice to the magnitude of the price shock last spring. Airfares plunged, pulling the transportation index down enough to shave four tenths off the year-on-year CPI. The drop in April and May is clear in the long-term chart, as is the subsequent partial recovery since May. The below chart, showing levels, indicates a relatively smooth ascent for 19 years, followed by an unprecedented plunge in 2020.



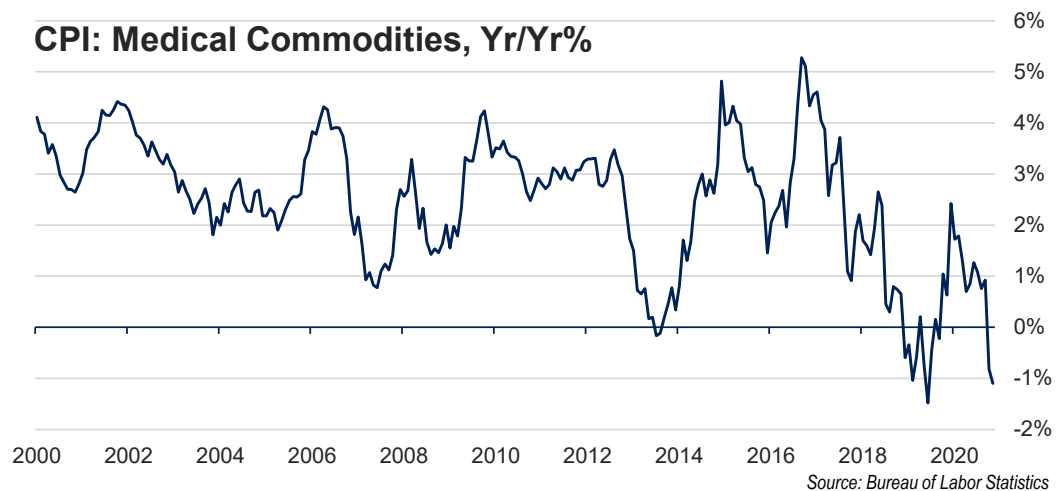
Zooming in on the past five years, transportation services inflation rose from 2% to 4% in 2016-18, before settling down at 1% in 2019. Some of this movement reflects oil prices, which affect bus, ship, rail, and airline fares. There is no energy in transportation services, but it is an influence on ticket prices. Some of the increase might also reflect cyclically strong demand at the tail end of a long economic expansion.



In November, transportation services are still down 3.3% year-on-year. By next May, if transportation demand continues to recover at its current pace, prices will be up 8% or so when the March and April price declines fall out of the year-on-year calculation, after which it will subside to 2.5% over the ensuing six months as ensuing increases fall out of the calculation and the trend reasserts.

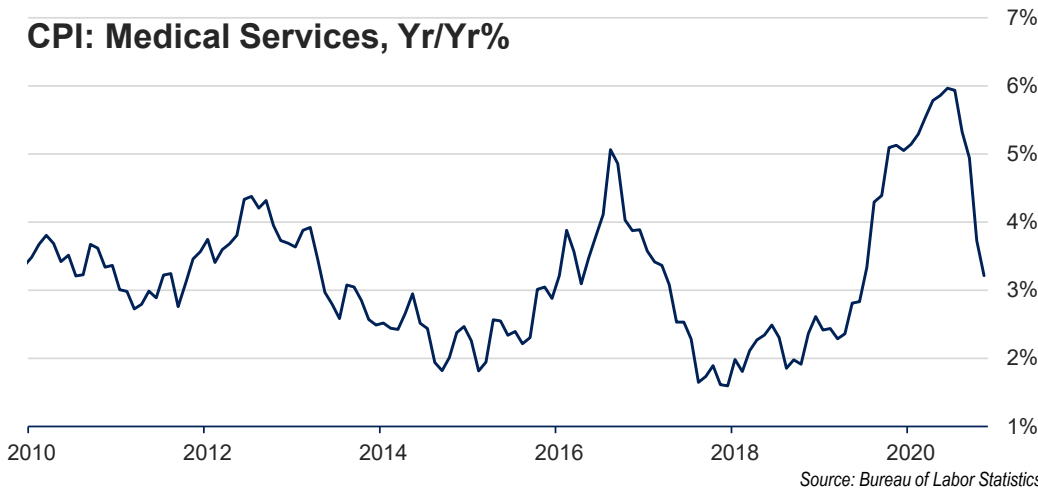
Medical care commodities and services: 1.6% and 7.3% of CPI, respectively

Medical care has been a big contributor to core inflation over the years, mostly reflecting upheavals caused by never-quite-successful healthcare reform efforts. Before the pandemic, healthcare inflation was conflicted. Drug prices were falling, but medical care services finished 2019 up 5% year-on-year.



Medical care inflation rose during the lockdown, possibly because lower-cost providers, including walk-in medical clinics and dentists' offices, were locked down. People needing services — stitches or a new crown, for instance — had to use higher-cost providers. The recent drop in medical service inflation reflects providers opening up again as well as weaker demand due to elevated unemployment.

CPI: Medical Services, Yr/Yr%



Medical care is cyclical. Demand weakens when unemployment is high, reflecting people putting off all but essential procedures when out of work. Medical inflation is likely to moderate further in 2021-22, first as the big COVID-related increases fall out of year-on-year comparisons and then reflecting cyclical weakness.

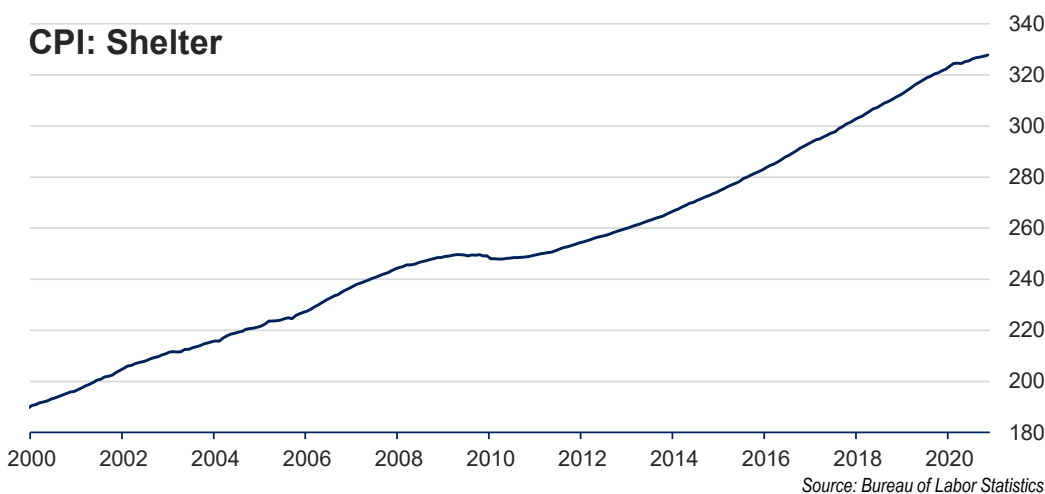
Medical care is a significant inflation wildcard after that, because the Biden administration is likely to take a shot at healthcare reform given [74% of Democrats favor a single-payer system](#). Health reforms tend to be highly disruptive even when they fail, causing inflation both because service providers make changes while bracing for reform and because costs shift between businesses and households with reform.

Shelter: 33.3% of CPI

Shelter is far and away the biggest component of the CPI, accounting for one-third of the cost of living. It is also a stabilizer, both because of what it measures and how it is calculated. It consists of three parts: the owners' equivalent rent (OER), rent of primary residence, and lodging away from home.

Lodging away from home captures hotel rooms and dormitories. Rent of primary residence is rent paid by people living in rental apartments and rental houses. These two are straightforward. Owners' equivalent rent is the biggest of the three and represents the rent homeowners would pay if they rented their homes instead of owning them.

CPI: Shelter



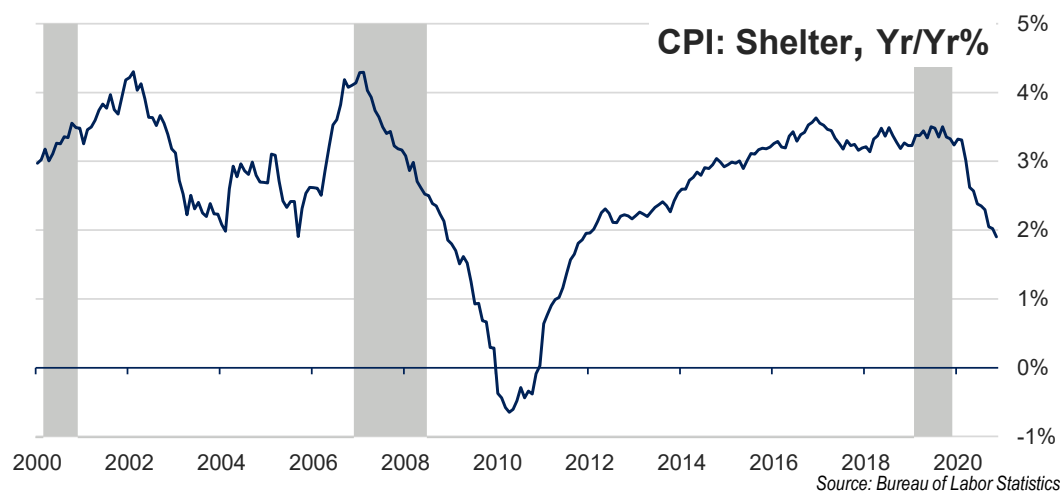
There are no house prices in the CPI. There used to be, sort of, but they were replaced by rents in the early '80s. The way the Bureau of Labor Statistics measured house prices before then — reflecting the cost of buying a house rather than the price of buying a house — mimicked the average homeowner's monthly mortgage payment rather than the price of houses. Mortgage rates dominated the index in the early '80s when Paul Volcker's Fed lifted the funds rate to 20%, creating a feedback loop between mortgage rates and the CPI.

BLS economists decided people are rational and only own homes when they are cheaper to buy than rent. As a result, house prices should rise at the same rate as rents, meaning one can be exchanged for the other. Hence, the OER, where the BLS matches houses in CPI reference cities with rental houses of the same value, the rentals are indexed and the index represents the price of home ownership.

Finally, because the BLS measures the CPI in different cities from month to month, rotating so that the group is the same every six months, and because rents vary significantly between cities, the BLS builds the index from overlapping six-month-on-six-month changes. The effect is similar to a six-month moving average. That's why the chart is so smooth.

The methodology used to create the OER gives it two unique properties among CPI components. First, it is less volatile. The OER helps anchor the CPI — and even more the core, where shelter's weight rises from a 33.3% to 41.7% — making inflation less volatile. It also means shocks, like last spring's COVID lockdowns, have a lingering effect because it takes six months before the index fully captures a nationwide price change.

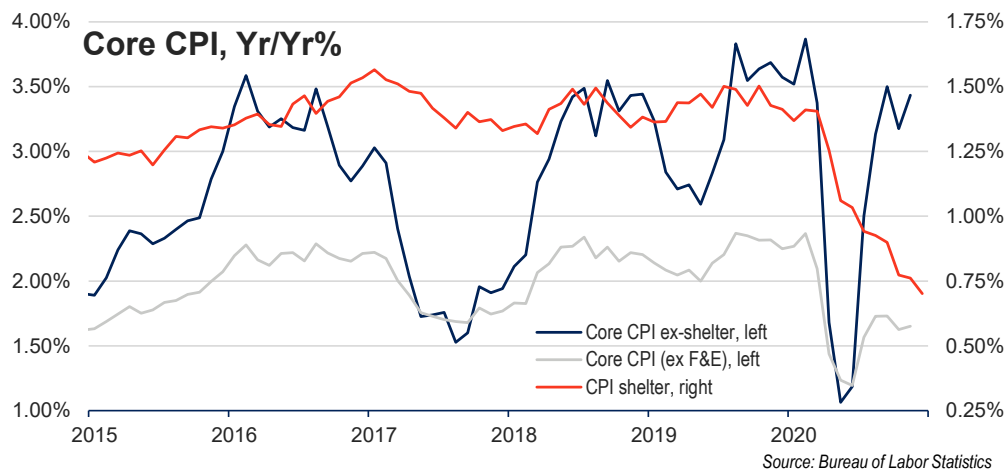
Most renters sign one-year or two-year leases, so average rents change slowly. The lag created by leases exacerbates the lag created by the six-month measurement span captured in the OER. As the below chart shows, shelter prices bottomed in April 2010, nine months after the end of the GFC recession.



Shelter is not just the biggest component in the CPI, it also lags the most, not only because shelter costs actually lag economic activity, but because the way we measure shelter exaggerates the lag. **Why is Wall Street always wrong when predicting a quick inflation rise after recessions? Because Wall Street economists fail to appreciate the weight and behavior of shelter.**

When economists talk about energy prices leading core inflation, or wages leading core inflation, for that matter, what they are really seeing is shelter lagging relatively coincident components the same way it lags the rest of the core, as shown in the chart below.

By the way, measured rents in the US are rising at an even slower pace than in the GFC trough ten years ago, and are still trending down. **There is plenty more house price disinflation to come in 2021.**



Bottom line: Inflation is low and will stay low in the next couple of years. That's the message in the Taylor rule, it is clear from the trimmed mean and sticky price indices (which you already know if you follow Jim Vogel's monthly "Inflation Lab" updates in *The Weekly Report*). It is also evident in the biggest individual components. Inflation may pop in the spring when transportation service prices no longer reflect last spring's big drop, but it will recede afterwards, driven lower by receding inflation in shelter, medical goods and services, food, and energy.

Fade the headfake! (A.K.A., buy the dip!)

10-year Treasury notes currently include a 2.10% inflation premium over the next ten years, the most since the 10-yr breakeven reached 2.2% in 2018. The rise from 0.55% on March 19 to nearly 2% currently is reminiscent of the rise from -0.02% to 2.46% between November 2008 and January 2010. Then as now, traders believed the end of the recession would lead to a quick drop in unemployment and quick return of inflation. As it turns out, inflation not only failed to average 2.46% in the ten years after January 2010, it never once reached that high. As we wrote in the December 18 [Economic Weekly](#), traders and economists always seem to overestimate inflation early in the recovery, creating unexpected fixed income investment opportunities.

Economic Forecast: The Biggest Changes in the New Grid

The biggest changes in the growth indicators:

- Weaker consumer spending in the first quarter reflects both recent increases in COVID cases and the sharp slowdown in spending that started in in November. We all knew spending would fall back to trend eventually. Now we know “eventually” was last year in the fourth quarter.
- Consumption picks up again in Q2, but GDP does not as companies take a break from inventory building.
- Growth is strongest in Q4-2021 and Q1-2022. GDP recovers to its pre-COVID peak in the second quarter of this year despite slower growth in the first half than in our last forecast.
- The employment outlook has not changed much. It will still take until 2026-28 to get back to maximum employment.

The biggest changes in the inflation indicators:

- Recent inflation indicators increase our confidence in lower inflation this year. Price growth pops in Q2, when the price declines from March and April 2019 fall out of the year-on-year calculations, but the indices fall back in Q3 when subsequent price increases fall out.
- By the end of the year, inflation is close to 1%.

The biggest changes in rates:

- The Fed funds rate remains at the effective lower bound through the forecast period.
- We substituted the 3-mo SOFR rate for LIBOR. The rate we used, calculated by Bloomberg, is the one replacing LIBOR in most existing loans when LIBOR reporting ends.
- The low fed funds rate combined with the Fed’s pledge to keep it low until maximum employment returns, inflation reaches 2%, and the FOMC is confident inflation will exceed 2% for some time keeps all short Treasury yields with maturities as long as 2-years pegged.
- Ten-year note yields rise to 1.25% in Q2-21 on fear of inflation (the case for higher inflation will remain credible in the first half before collapsing in the second) and fear of deficit spending.
- Long yields fall back when disinflation resumes in the second half.
- 5-yr yields do not rise nearly as much as tens, in part because the front end of the curve, representing about half of the life of a 5-yr security, is so flat.

The biggest risks to the forecast:

- The most credible threats to growth are interruptions in vaccine production and rollout, tax increases, and re-regulation.
- The biggest upside risks are stimulus spending, infrastructure investment, and rapid vaccination.
- At the moment, upside and downside risks are balanced.

We kept recession risk at 10% in both 12- and 24-month time horizons. The reason it is so low in the near term is that the current recession may already be over. In fact, we expect the NBER will set the end date in the second quarter of last year, probably in May. They are waiting to call the trough, because another negative quarter cannot be ruled out, and a negative quarter before the pre-recessionary peak is recovered is not a new recession, it is a continuation of the old one. The odds don't change in the 24-month horizon. As long as we escape recession in 2021, recession in 2022 or 2023 is very unlikely.

– Chris Low, Chief Economist

The Week Ahead

This Week's Numbers		CONSENSUS				
		PRIOR	HIGH	LOW	MEDIAN	FHNF
Tuesday, January 12	NFIB Small Business Optimism - Dec	101.4	102.5	99.6	100.5	103.4
	JOLTS Job Openings - Nov	6,652k	--	--	--	6,300k
Wednesday, January 13	CPI MoM - Dec	0.2%	0.5%	0.1%	0.4%	0.2%
	CPI YoY - Dec	1.2%	1.4%	1.1%	1.3%	1.1%
	CPI Ex Food and Energy MoM - Dec	0.2%	0.2%	0.1%	0.2%	0.2%
	CPI Ex Food and Energy YoY - Dec	1.6%	1.7%	1.5%	1.7%	1.7%
	Real Avg Hourly Earning YoY - Dec	3.2%	--	--	--	0.6%
	Monthly Budget Statement - Dec	-\$145.3b	--	--	--	--
	Federal Reserve Beige Book					
Thursday, January 14	Initial Jobless Claims	787k	800k	750k	785k	800k
	Continuing Claims	5,072k	--	--	--	5,150k
	Import Price Index MoM - Dec	0.1%	1.3%	0.4%	0.6%	0.2%
	Import Price Index YoY - Dec	-1.0%	--	--	--	-1.0%
	Import Price Index ex Petroleum MoM - Dec	0.0%	--	--	--	0.1%
	Export Price Index MoM - Dec	0.6%	0.8%	0.4%	0.7%	0.3%
Friday, January 15	PPI Final Demand MoM - Dec	0.1%	0.6%	0.0%	0.4%	0.2%
	PPI Final Demand YoY - Dec	0.8%	0.8%	0.6%	0.7%	0.7%
	PPI Ex Food and Energy MoM - Dec	0.1%	0.3%	-0.1%	0.1%	0.1%
	PPI Ex Food and Energy YoY - Dec	1.4%	1.4%	1.3%	1.3%	1.3%
	Retail Sales Advance MoM - Dec	-1.1%	1.0%	-1.0%	0.0%	0.5%
	Retail Sales Ex Auto MoM - Dec	-0.9%	0.6%	-1.9%	-0.1%	0.3%
	Retail Sales Ex Auto and Gas - Dec	-0.8%	0.3%	-1.1%	-0.6%	0.2%
	Retail Sales Control Group - Dec	-0.5%	0.3%	-0.5%	0.2%	0.2%
	Industrial Production MoM - Dec	0.4%	1.4%	-0.1%	0.5%	0.4%
	Manufacturing Production - Dec	0.8%	1.0%	0.2%	0.4%	0.4%
	Capacity Utilization - Dec	73.3%	74.1%	73.0%	73.5%	73.5%
	Business Inventories Nov	0.7%	1.0%	0.4%	0.5%	0.5%
	U. of Mich. Sentiment - Jan	80.7	85.0	77.8	80.0	81.0
U. of Mich. 1 Yr Inflation - Jan	2.5%	--	--	--	2.4%	
U. of Mich. 5-10 Yr Inflation - Jan	2.5%	--	--	--	2.5%	

Review and Preview

From a trading perspective, the three key developments in Washington this week were 1. The election of Raphael Warnock and Jon Ossoff in the GA Senate runoffs, cementing Democratic control of committees and the chamber; 2. The Electoral College vote making official the election of Joe Biden as the 46th President of the United States; and 3. Reassurance from President Trump he will leave the White House for an orderly transition on January 20. The election is over and traders have a clearer understanding of the 2021-22 political landscape.

Nonfarm payrolls fell 140k in December, but there were significant pockets of strength in some industries. In particular, higher-paying goods producing jobs were up 93k, including 38k manufacturing and 51k construction jobs. Job losses were concentrated in leisure and hospitality (-498k), and particularly in the restaurant industry (-372k). In the household survey, employment, the labor force, and the unemployment rate were essentially unchanged. A 0.8% rise in average hourly earnings reflects the loss of low-wage jobs

rather than increases in wages elsewhere. Food service workers' wages are included in the AHE calculation, their tips are not. Hence, they appear lower paid than they actually are, magnifying the impact when they fall out of the average earnings calculation.

Next week is busy on the economic data front. Highlights are the CPI Wednesday and retail sales Thursday. Twelve FOMC members have scheduled events next week. The highlights are Vice Chair Richard Clarida discussing the Fed's new framework Wednesday and Chair Powell in a Princeton University Economics Webinar Thursday. Other Fed speeches are primarily about the economy, which should offer a good overview of where the FOMC stands before the pre-meeting communications blackout starts next Friday. The next FOMC meeting is January 27.

– Chris Low, Chief Economist

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