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Why We Don't Trust Government Inflation Statistics...

And Why We Think Rates May Rise More Than Most Expect

SUMMARY

This report is a companion piece to our report *Bank Stocks and Interest Rates* (also published today) in which we argue that rising short rates would help commercial bank fundamentals while rising long rates should help both bank stocks directly and also FICC trading. This report is a one-time departure from our normal industry-focused work to focus on more macro themes. We are keenly aware that we are not economists, but nevertheless as bank stock analysts it is hard not to have an opinion on interest rates, and so for once we thought we would make ours explicit.

KEY POINTS

- We all know that nominal interest rates are a function of real interest rates and inflation expectations. The nub of our argument is that the consumer price index (CPI) as measured by the Bureau of Labor Statistics (BLS) sharply understates what bond investors should incorporate into their inflation expectations.
- The first component of our three-part argument is that CPI measures inflation where the people are, not where the money is. That is an appropriate stance for BLS since CPI is used to set government benefit levels, but consider that the top 20%, who effectively own all the bonds, generate as much consumer spending as the lower 62%. The basket of goods that 20% buys likely differs significantly from the basket of the average person.
- Second, we look at the healthcare anomaly. Healthcare accounts for 17.7% of GDP and 14.5% of the S&P 500 but only 8.5% of CPI. Most private sources estimate healthcare costs have been increasing by ~6%+ in recent years, but BLS puts the number at 2.8%. A recent study found that the average health insurance plan now costs ~$19K (with ~$6K from the employee), but healthcare insurance is just 1.004% of CPI.
- Third, in looking at how CPI is calculated, we suspect there is a "streetlight effect," where one searches where the light is good rather than where the sought object is likely to be. In the case of CPI, we suspect they measure what is easily quantified. There is incredible granularity on the cost of apples, bananas and peanut butter but only big sweeping categories for healthcare and housing.
- The bottom line is that we think CPI substantially understates the inflation expectations that investors should incorporate into the pricing of bonds and that long-term rates should increase. One does not have to believe this to own bank stocks as they remain cheap in any case at a 66% relative P/E, but if we are correct about CPI, the upside should be even better.

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Why We Don't Trust Government Inflation Statistics…And Why We think Rates May Rise More Than Most Expect

We are keenly aware that we are bank industry analysts, not economists and strategists, and as a general rule we avoid opining on macro factors like the direction of the overall market. Yet the level of rates is of such overriding importance to bank stocks and other financials that it is hard not to have an opinion on them, because we believe that the next say 200 to 300 basis points of rate increases will be absolutely beneficial to banks, when and if they come.

Let us confess our leanings straight up front: (1) We think that the official US Government (Bureau of Labor Statistics) consumer price index (CPI) understates the actual inflation in the financial system. (2) Bond rates are abnormally low and at some point will normalize. (3) The history of the Fed is that invariably they get behind the curve and at some point need to catch up with sharp rate increases.

Let us begin by outlining our rationale on the first point. There are three factors that make us doubt that the BLS measure of inflation is a good measure for bond investors to use in setting inflation expectations:

(1) The BLS's CPI measures inflation where the people are, not where the bondholders are. That is to say, the stated CPI is to a very large extent driven by what the average wage earner buys and spends. That is, of course, appropriate for the government's purposes. But almost all the bonds are owned by the top 20% of households, and these households spend as much as the lower 62% of the population combined. The basket of goods that the average person buys is probably not representative of the bulk of consumer spending, and it almost certainly is not representative of what the upper 20% buy. The average wage earner's spending patterns are driven overwhelmingly by wages. The spending patterns of the top 20% are driven by their (higher) wages and the changes in their wealth.

(2) We see certain anomalies in BLS's description of its CPI methodology. The most glaring of these is how healthcare amounts to only 8.5% of CPI, when it accounts for 17.8% on GNP and 14.5% of the S&P 500. At the same time, the CPI puts healthcare inflation at 2.8% for the last few years while private sources suggest a 6%+ rate. Similarly the "Owners Equivalent Rent," which accounts for nearly 25% of the index, has appreciated only 3.25% annually since 1982, while Case-Shiller has increased 4.01%. More on this below.

(3) When one looks at the specific basket of goods that BLS is including in CPI, one cannot help but be struck that it seems like a dated methodology and that BLS is measuring what is easily quantified, rather than that really reflecting the full cost of living.

Measuring Inflation: Where The People Are vs. Where The Money Is

Let us start with the Fisher equation that we learned in business school way back when. It posits that the real rate of interest equals:

$$r\ (i.e., the\ real\ rate\ of\ interest) = \frac{1 + i\ (i.e., the\ nominal\ rate\ of\ interest)}{1 + \pi\ (i.e.,\ inflation\ expectations)} - 1$$

For simplicity's sake let us assume that inflation expectations are generally equal to the recent experience, and so obviously with a 2.36% nominal ten-year Treasury rate, ~1.7% CPI rate (for August Ex-food and energy), the CPI is the biggest component of nominal rates. But is the CPI rate as calculated by the government the right measure of inflation expectations for bondholders? We think there are a number of reasons why bondholders should be wary of that idea.

CPI measures price changes for the population at large. Let us assume for a moment that it accurately captures the inflation experienced by the person or family living at the 50th percentile. But then ask yourself, "How many bonds does that person own?" The answer is of course "virtually none," because virtually all of the bonds are owned by the 20-30% of highest earners. Is the basket of goods that someone at the 50th percentile buys the same as the basket of goods that the top 20-30% buys?

We have no doubts that the people at the Bureau of Labor Statistics are earnest civil servants who do their best to measure what rate of inflation most people experience. Moreover, it strikes us that such an inflation measure is altogether appropriate for use in setting government policy about cost of living adjustments for the average recipient of government benefits. It may even be the right measure for the Fed to look at in setting monetary policy. However, if you are an affluent or wealthy bondholder, is it the right measure of inflation for you? Does that basket of goods accurately measure the inflation rate for the basket of goods that you are saving for and looking to buy through the years?

In its explanation of CPI the BLS states:

The CPI reflects the spending patterns for each of two population groups: all urban consumers and urban wage earners and clerical workers. The all urban consumers group represents about 89% of the total US population. It is based on the expenditures of almost all residents of urban or metropolitan areas, including professionals, the self-employed, the poor, the unemployed and retired people, as well as urban wage earners and clerical workers…Not included in CPI are...people living in rural nonmetropolitan areas, farming families, people in the armed forces, and those in institutions, such as prisons and mental hospitals.

The BLS goes on about how it collects prices from 87 urban areas, from 6,000 housing units and 24,000 retail establishments. Clearly the BLS is aiming to capture the experience of the broad mass of people. In the frequently asked questions section of its website BLS also notes that CPI is not a "cost-of-living index," which "would measure the changes over time in the amount that

consumers need to spend to reach a certain level of utility or standard of living." It also answers the question, "Does the CPI measure my experience with price change?" by saying: "Not necessarily. It is important to understand that the BLS bases the market baskets and pricing procedures…on the experience of the average household..."

Now, with that methodology in mind, consider the distribution of wealth as compiled by the Congressional Budget Office (CBO) in **Exhibit 1**.

Exhibit 1. Shares of Wealth, by Decile

	Bottom 10	Decile								Top 10
	Percent	11th to 20th	21th to 30th	31th to 40th	41th to 50th	51th to 60th	61th to 70th	71th to 80th	81th to 90th	Percent
1989	-0.2	0.0	0.3	0.9	1.9	3.2	5.0	7.8	13.6	67.5
1992	-0.3	0.1	0.4	1.1	2.0	3.3	5.2	7.8	12.9	67.5
1995	-0.3	0.1	0.5	1.1	2.1	3.3	4.9	7.4	12.4	68.5
1998	-0.3	0.1	0.4	1.0	1.9	3.1	4.7	7.4	12.5	69.3
2001	-0.2	0.1	0.3	0.9	1.7	2.7	4.4	7.2	12.7	70.2
2004	-0.2	0.1	0.3	0.8	1.6	2.7	4.3	7.2	13.2	70.0
2007	-0.2	0.1	0.3	0.8	1.6	2.7	4.3	6.7	11.7	72.1
2010	-0.7	0.0	0.2	0.5	1.1	2.1	3.6	6.1	12.1	75.0
2013	-0.7	0.0	0.2	0.5	1.1	2.0	3.6	6.0	11.7	75.7

Source: Congressional Budget Office

The top 10% own 75.7% of the wealth and the top 20% own 87.4%. It is a good bet that they own an even greater share of all the bonds (either directly or indirectly through funds and annuities). About 60% of all people own their own homes, so it is a good bet that most of the family wealth from the 41st percentile to the 71st percentile (6.7% of total wealth) is mainly tied up in their residence. Indeed, we would bet that this is still true for the 71st to the 81st percentiles which own another 6.0% of family wealth. It is, of course, true that people in most of the middle and lower ranges may have some 401Ks, IRAs and other holdings of bonds, or bond funds. So many of these people may have an interest in or opinion about bond prices. However, they do not own enough of them to be a factor in the bond market. It is the inflation expectations of the top 10-20% in terms of the basket of goods they buy that will ultimately drive the bond market.

Next, note how since the Great Recession, the top 10% has expanded its share of wealth; the next decile has held its ground, and everyone else lost in the post-crisis era. There are many factors behind this (i.e., the impact of globalization and automation), but to us the simplest overarching explanation is that this is what one should expect from the Fed's quantitative easing. Simply put, the Fed conjured up another $3T of currency and bought bonds from the rich people who owned them. Those people then took the gains on their bonds and bought stocks, and real estate and art, and other stores of value.

Now admittedly, a great many of these bond holdings are held indirectly in mutual funds, pension funds, private credit funds and perhaps one step more removed by banks. It is no doubt the case that many of these institutional holders will have their own logic at work behind when they decide to buy and sell bonds. Thus, the connection between inflation expectations for the affluent and interest rates is not perfectly direct. Nevertheless, the conclusion that the ultimate holders of bonds are rich people and that the inflation they experience will have a dramatic impact on rates seems inescapable to us.

Next, in **Exhibit 2** we show the distribution of income. Here the distribution is not nearly as skewed as the distribution of wealth, but still, 51.5% of all income was generated by the top 20% in 2016, and this is up from 51.1% in 2015.

Exhibit 2. Income Distribution by Quintile

Measures of income dispersion											
Year	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**
Mean Household Income of Quintiles ($)											
Lowest quintile	12,943	12,614	11,837	11,946	12,011	11,991	12,103	12,923	12,994	13,371	13,514
Second quintile	34,504	33,043	31,516	31,748	31,043	31,157	31,409	32,728	32,905	34,082	34,256
Third quintile	59,149	57,550	54,787	55,374	53,500	53,175	54,125	55,411	55,885	57,842	57,405
Fourth quintile	95,178	93,194	89,046	89,101	85,822	85,435	86,831	88,031	88,914	91,578	90,863
Highest quintile	213,941	204,923	196,731	199,228	190,156	189,924	186,473	191,115	190,688	194,440	200,192
Top 5 percent	375,088	355,304	336,934	344,630	332,479	332,270	316,163	330,437	328,531	332,448	354,034
Shares of Household Income of Quintiles											
Lowest quintile	3.1%	3.1%	3.1%	3.1%	3.2%	3.2%	3.3%	3.4%	3.4%	3.4%	3.4%
Second quintile	8.3%	8.2%	8.2%	8.2%	8.3%	8.4%	8.5%	8.6%	8.6%	8.7%	8.6%
Third quintile	14.2%	14.3%	14.3%	14.3%	14.4%	14.3%	14.6%	14.6%	14.7%	14.8%	14.5%
Fourth quintile	22.9%	23.2%	23.2%	23.0%	23.0%	23.0%	23.4%	23.2%	23.3%	23.4%	22.9%
Highest quintile	51.5%	51.1%	51.2%	51.4%	51.0%	51.1%	50.3%	50.3%	50.0%	49.7%	50.5%
Top 5 percent	22.6%	22.1%	21.9%	22.2%	22.3%	22.3%	21.3%	21.7%	21.5%	21.2%	22.3%

Source: United States Census Bureau and Oppenheimer & Co. Inc.

Next, consider the differences in actual consumer spending, as outlined in **Exhibit 3**. While the spending patterns are not as skewed as wealth or income, they are still mightily skewed. Indeed, total consumer spending by the top 10% accounts for, by our estimation, about as much as the lower 43% of the population combined, and the top 20% for about as much as the lower 62%. CPI, as we have noted, shoots to count inflation at the middle 50%, but the lower 50% do not spend in aggregate what the top 20% does.

Again, we are not trying to make an argument that the BLS should not calculate CPI from the perspective of the average person. For setting government benefit cost of living adjustments, that clearly is sensible and equitable. The point we are making is that bondholders should think twice about thinking that CPI measures the basket of goods that is relevant to their inflation expectations.

Exhibit 3. Average Annual Expenditures and Characteristics, by Decile

Item	All consumer units	Lowest 10 percent	Second 10 percent	Third 10 percent	Fourth 10 percent	Fifth 10 percent	Sixth 10 percent	Seventh 10 percent	Eight 10 percent	Ninth 10 percent	Highest 10 percent
Number of consumer units (in thousands)	128,437	12,886	12,787	12,800	12,762	12,853	12,847	12,862	12,867	12,897	12,876
Lower limit	(1)	(1)	$11,890	$19,572	$27,964	$37,638	$49,452	$62,587	$79,640	$103,057	$144,180
Consumer unit characteristics											
Income before taxes	$69,627	$6,063	$15,806	$23,902	$32,797	$43,280	$55,934	$70,812	$90,810	$120,634	$235,160
Age of reference person	50.5	48.1	58.4	55	52.3	50.3	48.3	48.2	47.5	48	49.4
Average number in consumer unit											
People	2.5	1.6	1.7	2	2.4	2.5	2.6	2.8	2.9	3	3.1
Children under 18	0.6	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8
Adults 65 and older	0.4	0.3	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.2
Earners	1.3	0.5	0.5	0.7	1	1.3	1.4	1.7	1.8	2	2.1
Vehicles	1.9	0.8	1	1.3	1.7	1.8	2	2.3	2.5	2.7	2.8
Percent homeowner	62	31	46	52	55	58	63	71	75	84	89
Average annual expenditures	$55,978	$23,705	$25,244	$32,545	$37,586	$42,227	$49,599	$58,398	$68,942	$87,860	$133,180
Cumulative Avg annual expenditures	n.a.	$23,705	$48,949	$81,494	$119,080	$161,307	$210,906	$269,304	$338,246	$426,106	$559,286
Total of top 20 %											$221,040

(1) Not applicable.

Consumer spending at top 10% ($133,180) is ~ equal to the total of lower 43%

Consumer spending at top 20% ($221,040) is ~ equal to the total of lower 62%

Source: U.S. Bureau of Labor Statistics and Oppenheimer & Co. Inc.

Next we look at what that money is spent on in **Exhibit 4**. In the final column we show the amount that the top quintile spends as a percentage of what the middle quintile spends. On balance, the percentages spent on the different kinds of goods are remarkably similar. An upper quintile consumer may spend 7.1% of his or her income on a car, which is not that different from the 8.1% that a middle-income person will spend, but it will likely be a Lexus for one and a Corolla for the other. Is the price inflation for the luxury brands the same as for the basic/utilitarian ones?

But now consider some interesting differences in spending patterns: Consider that on average a top-quintile household spends 2.4x what a middle-quintile household spends, but they are, for example, likely to spend 6.1x as much on "other lodging" (i.e., not owned or rented), 3.9x as much on "Public and other transportation," and they spend 2.7x on "Entertainment." In other words, rich people spend a lot more of their income on vacations, flying planes and staying in swank hotels. Airline prices have over time gone up only slightly more than all items (the airline fares component of CPI stands at 259.4 vs. 245.5 for all items, down 3.2% in the most recent year on lower fuel costs), but consider that the RevPar (Revenue per Available Room Night) in the "Luxury" segment has increased at a 5.0% compound rate since 2010 (PwC *Hospitality Directions US*, August 2017).

Consider also that the upper quintile will spend 6.2x on education what the middle quintile does. Clearly rich people send their kids to private schools and colleges much more frequently than the middle quintile does. Conversely, think about the relative spending on commodity goods that are most subject to global price competition. The top quintile is likely to spend only 1.5x as much on utilities, fuel and gasoline. People generally consume only so much of basic commodities.

Food at home is only 1.8x. There are only so many helpings of cereal, meat, poultry, fish and eggs a person can eat. Maybe they buy steak more than hamburger and free range eggs rather than the massed-produced ones, but again, the consumption patterns in basic commodities are not that different. But on meals out, it is 2.6x and on alcoholic beverages it is 3.0x. It is a good bet that the wealthy don't eat 2.6x as much food and drink 3.0x as much alcohol as middle-income people, but rather that they eat in fancier restaurants and drink fine wines and fancy hooch.

Note some of the other high end spending areas: Owned home is 3.3x which makes sense that the sky is the limit on real estate for rich people who also view the home as a store of value. Middle income people need to balance spending on the home more carefully with other expenses. Apparel is another disproportionately high spending area at 3.1x. They are obviously not buying three times as many jeans and t-shirts, they are buying luxury brands.

Again, we are not trying to make an argument that the upper 20% should be pitied because their rate of inflation is higher than the middle 50%. Clearly they are better off. However, what we are trying to argue is that the CPI as calculated by the BLS is not a very good measure of inflation expectations for bondholders because CPI looks at a very different basket of goods than that of the average bondholder. If someone is investing in a bond fund yielding 2.3% to save for their kids' private school or college tuition, or for a condo in New York or San Francisco, chances are you're falling a little behind every year.

Of course, the other thing that CPI does not capture is that for the middle-income families that can't afford these things to begin with, they get a bit further out of reach every year.

Exhibit 4. Average Annual Expenditures and Characteristics, by Quintile

Item	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent	Top 20% / Middle 20%
Number of consumer units (in thousands)	128,437	25,672	25,562	25,700	25,730	25,773	
Lower limit	(1)	(1)	$19,572	$37,638	$62,587	$103,057	
Consumer unit characteristics							
Income before taxes	$69,627	$10,916	$28,343	$49,606	$80,813	$177,851	
Age of reference person	50.5	53.3	53.6	49.3	47.9	48.7	
Average number in consumer unit							
People	2.5	1.7	2.2	2.5	2.9	3.1	
Children under 18	0.6	0.3	0.5	0.6	0.7	0.8	
Adults 65 and older	0.4	0.4	0.5	0.4	0.3	0.2	
Earners	1.3	0.5	0.8	1.3	1.8	2	
Vehicles	1.9	0.9	1.5	1.9	2.4	2.7	
Percent homeowner	62	38	53	60	73	87	
Average annual expenditures	$55,978	$24,470	$35,063	$45,912	$63,671	$110,508	2.4x
Food	$7,023	$3,767	$5,022	$5,799	$8,165	$12,350	2.1x
Food at home	$4,015	$2,499	$3,271	$3,445	$4,545	$6,310	1.8x
Cereals and bakery products	$518	$333	$432	$450	$598	$776	1.7x
Meats, poultry, fish, and eggs	$896	$590	$776	$766	$1,008	$1,338	1.7x
Dairy products	$413	$249	$329	$362	$462	$662	1.8x
Fruits and vegetables	$769	$483	$621	$643	$863	$1,233	1.9x
Other food at home	$1,419	$843	$1,112	$1,225	$1,614	$2,302	1.9x
Food away from home	$3,008	$1,268	$1,751	$2,354	$3,620	$6,040	2.6x
Alcoholic beverages	$515	$195	$253	$387	$578	$1,161	3.0x
Housing	$18,409	$9,890	$12,832	$15,809	$20,408	$33,027	2.1x
Shelter	$10,742	$6,033	$7,320	$8,985	$11,786	$19,537	2.2x
Owned dwellings	$6,210	$1,817	$2,906	$4,363	$7,480	$14,437	3.3x
Rented dwellings	$3,802	$4,034	$4,121	$4,267	$3,660	$2,933	0.7x
Other lodging	$730	$182	$293	$355	$647	$2,167	6.1x
Utilities, fuels, and public services	$3,885	$2,328	$3,211	$3,768	$4,454	$5,653	1.5x
Household operations	$1,309	$462	$714	$1,006	$1,346	$3,006	3.0x
Housekeeping supplies	$655	$378	$517	$563	$701	$1,113	2.0x
Household furnishings and equipment	$1,818	$689	$1,070	$1,487	$2,121	$3,717	2.5x
Apparel and services	$1,846	$776	$1,139	$1,303	$1,984	$4,025	3.1x
Transportation	$9,503	$3,559	$5,923	$8,820	$11,330	$17,834	2.0x
Vehicle purchases (net outlay)	$3,997	$1,136	$2,260	$3,716	$4,995	$7,853	2.1x
Gasoline and motor oil	$2,090	$939	$1,532	$2,110	$2,632	$3,226	1.5x
Other vehicle expenses	$2,756	$1,270	$1,859	$2,538	$3,115	$4,985	2.0x
Public and other transportation	$661	$214	$271	$455	$587	$1,769	3.9x
Healthcare	$4,342	$1,930	$3,423	$3,965	$5,327	$7,048	1.8x
Entertainment	$2,842	$1,270	$1,738	$2,219	$3,051	$5,919	2.7x
Personal care products and services	$683	$307	$453	$524	$797	$1,331	2.5x
Reading	$114	$37	$82	$107	$134	$210	2.0x
Education	$1,315	$689	$494	$614	$986	$3,779	6.2x
Tobacco products and smoking supplies	$349	$308	$360	$376	$372	$332	0.9x
Miscellaneous	$871	$439	$550	$674	$982	$1,706	2.5x
Cash contributions	$1,819	$712	$1,054	$1,335	$1,890	$4,089	3.1x
Personal insurance and pensions	$6,349	$592	$1,740	$3,980	$7,667	$17,699	4.4x
Life and other personal insurance	$333	$85	$132	$193	$405	$846	4.4x
Pensions and Social Security	$6,016	$507	$1,609	$3,787	$7,261	$16,853	4.5x

(1) Not applicable.

Source: United States Census Bureau and Oppenheimer & Co. Inc.

The Healthcare Anomaly

A recent *Wall Street Journal* article (September 19) noted that the average cost of healthcare insurance for a family had risen to $18,764, according to a study by the Kaiser Family Foundation and the Health Research and Educational Trust, an affiliate of the American Hospital Association. Of this, the employee paid an average of $5,714 and the employer the rest. That sounds like a big chunk of the average family's total spending, no? Moreover, the *Journal of the American Medical Association* put total healthcare spending at about $3.2T in 2015, when GDP was about $18.1T, or about 17.7%.

In its recent National Healthcare Expenditures Projections 2016-2025, CMS (Centers for Medicare and Medicaid Services) estimated that health spending is likely to increase 1.2% faster than GDP and increase over this timeframe from 17.8% to 19.9% of GDP. Finally, consider that healthcare accounts for about 14.5% of the S&P 500. Given that there are lots of private practitioners not in the S&P 500, it all points you to the notion that healthcare is a high-teens percentage of the economy. With that in mind, take a look at **Exhibit 5** and see how it is weighted in CPI: Overall healthcare is 8.542%, of which 6.672% is healthcare services and 1.870% is healthcare commodities, mainly drugs. Note how healthcare insurance is only 1.004% of the CPI calculation.

Exhibit 5. Consumer Price Index for All Urban Consumers

Table 6. Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, by expenditure category, August 2017, 1-month analysis table — Continued
[1982-84=100, unless otherwise noted]

Expenditure category	Relative importance Jul. 2017	One Month				
		Seasonally adjusted percent change Jul. 2017-Aug. 2017	Seasonally adjusted effect on All Items Jul. 2017-Aug. 2017[1]	Standard error, median price change[2]	Largest (L) or Smallest (S) seasonally adjusted change since:[3] Date	Percent change
Medical care services	6.672	0.2	0.013	0.07	S-May 2017	-0.1
Professional services	3.101	0.4	0.012	0.09	L-Aug.2016	0.4
Physicians' services[11]	1.658	0.4	0.006	0.09	L-Nov.2016	0.5
Dental services[11]	0.815	0.2	0.001	0.16	–	–
Eyeglasses and eye care[4, 9]	0.314	1.4	0.004	0.29	L-May 2012	1.5
Services by other medical professionals[4, 11, 9]	0.314	0.0	0.000	0.22	–	–
Hospital and related services	2.567	0.1	0.004	0.11	S-May 2017	0.1
Hospital services[11, 17]	2.296	0.2	0.005	0.12	S-May 2017	0.1
Inpatient hospital services[11, 17, 6]		0.2		0.25	S-May 2017	0.0
Outpatient hospital services[11, 9, 6]		0.2		0.35	S-May 2017	0.2
Nursing homes and adult day services[11, 17]	0.196	-0.3	-0.001	0.11	S-Feb.2001	-0.6
Care of invalids and elderly at home[4, 8]	0.075	-0.1	0.000	0.12	S-Jun.2017	-0.7
Health insurance[4, 8]	1.004	0.0	0.000	0.10	S-May 2017	-0.2
Medical care commodities	1.870	-0.1	-0.002	0.26	S-Apr.2017	-0.8
Medicinal drugs[4, 12]	1.811	0.2	0.004	0.27	S-May 2017	0.1
Prescription drugs[11]	1.450	0.2	0.003	0.33	S-Apr.2017	-0.9
Nonprescription drugs[4, 12]	0.361	-0.5	-0.002	0.46	S-Oct.2016	-0.8
Medical equipment and supplies[4, 12]	0.059	0.2	0.000	0.54	L-Feb.2017	0.8
Medical care	8.542	0.1	0.011	0.09	S-May 2017	0.0

Source: Bureau of Labor Statistics and Oppenheimer & Co. Inc.

How can it possibly be??? The Kaiser foundation and the HCA just told us the average employee contribution on health insurance was $5,714, and the census bureau in **Exhibit 4** tells us that the average spending of the middle 20% is $45,912. How can 1.004% possibly be the right number? Clearly there are 28 million uninsured Americans, but even if we include them at a zero price, it surely means that as a group Americans spends way more than 1.004% on health insurance. And this doesn't even begin to consider complexities such as, "What about the $13,050 that the average employer kicks in?" Surely if the employer were not paying that, wages would otherwise be higher, so it's still a cost to the consumer.

Next, consider how much inflation the BLS thinks there is in the healthcare sector, as shown in **Exhibit 6**. The BLS shows a compound annual increase in healthcare costs of 2.8% since 2010. In fairness, that is well above the 1.6% for all items. But on the other hand it seems well below where most observers peg the cost of healthcare. In **Exhibit 7** we show the results of PricewaterhouseCooper's HRI, and in **Exhibit 8** we show Oppenheimer's own Mike Wiederhorn and Michael Nierenberg's calculation of cost increases at the major plan sponsors. They too get a number that is closer to 6% for 2017, just like PwC. Moreover, The Centers for Medicare & Medicaid Services (CMS) projects that from 2016 to 2025 healthcare spending will grow at a 5.6% rate overall and at 4.7% in per capita terms. All these numbers, of course, seem like they are a heck of a long way away from 2.8%!

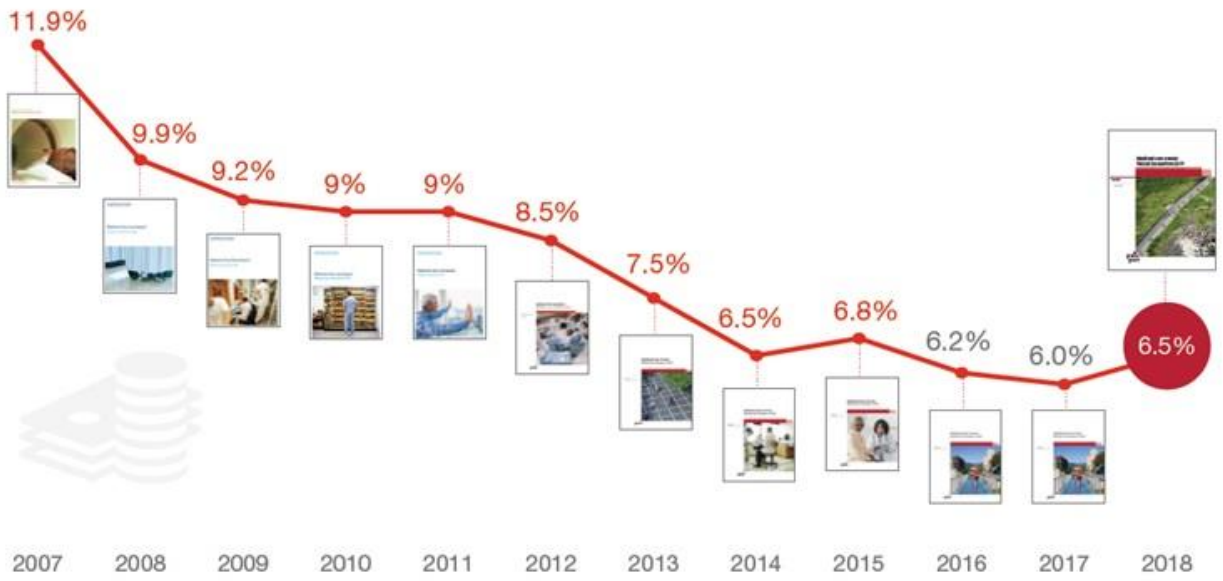
Exhibit 6. Consumer Price Index for All Urban Consumers by Expenditure Category

Expenditure Category	Unadjusted Indexes								CAGR
	2010	2011	2012	2013	2014	2015	2016	Aug-17	
All items	219.179	225.672	229.601	233.049	234.812	236.525	241.432	245.519	1.6%
% gain over prior year	*n.a.*	*3.0%*	*1.7%*	*1.5%*	*0.8%*	*0.7%*	*2.1%*	*1.7%*	
Commodities less food and energy commodities	142.830	145.929	146.387	146.277	145.127	144.522	143.668	143.895	0.1%
% gain over prior year	*n.a.*	*2.2%*	*0.3%*	*-0.1%*	*-0.8%*	*-0.4%*	*-0.6%*	*0.2%*	
Energy	217.953	232.300	233.473	234.542	209.785	183.378	193.306	212.978	-0.3%
% gain over prior year	*n.a.*	*6.6%*	*0.5%*	*0.5%*	*-10.6%*	*-12.6%*	*5.4%*	*10.2%*	
Food	220.946	231.301	235.390	237.869	245.976	247.903	247.313	250.493	1.8%
% gain over prior year	*n.a.*	*4.7%*	*1.8%*	*1.1%*	*3.4%*	*0.8%*	*-0.2%*	*1.3%*	
Medical care commodities	317.199	327.254	332.684	333.801	349.750	355.030	371.561	381.114	2.7%
Medical care services	415.079	430.005	445.955	457.296	468.393	481.983	500.845	507.390	2.9%
Total Medical care (commodities + services)	*732.278*	*757.259*	*778.639*	*791.097*	*818.143*	*837.013*	*872.406*	*888.504*	2.8%
% gain over prior year	*n.a.*	*3.4%*	*2.8%*	*1.6%*	*3.4%*	*2.3%*	*4.2%*	*1.8%*	
Shelter	248.972	253.716	259.298	265.881	273.598	282.394	292.612	299.157	2.7%
% gain over prior year	*n.a.*	*1.9%*	*2.2%*	*2.5%*	*2.9%*	*3.2%*	*3.6%*	*2.2%*	
Transportation services	263.264	269.858	276.982	281.680	286.585	294.081	302.410	309.469	2.3%
% gain over prior year	*n.a.*	*2.5%*	*2.6%*	*1.7%*	*1.7%*	*2.6%*	*2.8%*	*2.3%*	

Source: Bureau of Labor Statistics

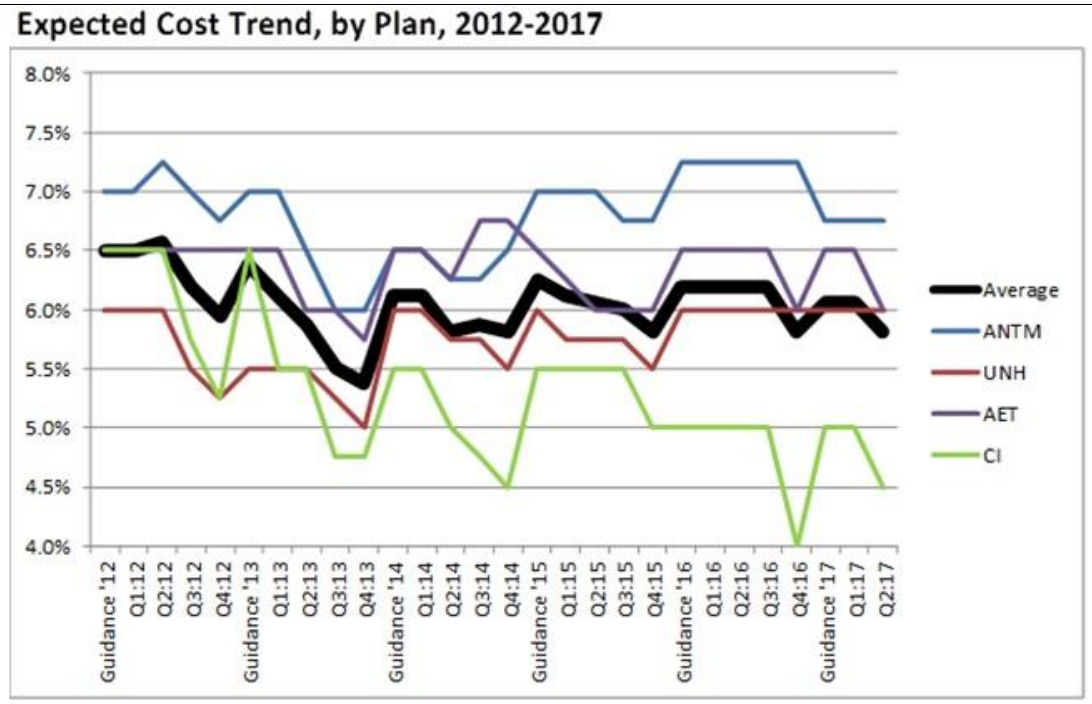
Source: Bureau of Labor Statistics and Oppenheimer & Co. Inc.

Exhibit 7. PwC's HRI's Projected Medical Cost Trend 2007-2018



Source: PwC Health Research Institute medical cost trends 2007-2018. HRI recalibrated its trend estimates down for 2016 and 2017

Exhibit 8. Oppenheimer's Healthcare Services Expected Cost Trend



Source: Oppenheimer & Co. and company reports

Guidance is initial view, Q4 is the actual end result, Includes ANTM< UNH, AET an d CI (1Q16 assumes same as 2Q)

AET switched to Core Commercial Trend in '15, which lowered trend by 150 bps in 2015

Source: Company reports and by Courtesy of Mike Wiederhom and Matthew Nirenberg of Oppenheimer & Co. Inc.

Thus, it looks to us like both the weighting of healthcare and the rate of healthcare inflation are understated. In **Exhibit 9** we show our estimate of how the overall CPI number of 1.6% would change if instead of BLS's 8.5% weighting and a 2.8% inflation rate, we used 17.7% and 6.0%. We keep the inflation rate for all the other non-healthcare items flat at 1.49% and, presto, from this change alone, the overall inflation rate would jump from 1.6% to 2.3%. Our method is clearly very crude and simplistic, but directionally it illustrates how the magnitudes of CPI could change with different assumptions. The BLS would also no doubt argue that healthcare is improving and that what we are buying in 2017 is better than what we bought in 2010, but overall the numbers just don't strike us as representative of the actual costs.

Exhibit 9. Hypothetical Inflation

	BLS				Hypothetical		
	Inflation	**Weighting**	**Total**		**Inflation**	**Weighting**	**Total**
Healthcare	2.80%	8.5	0.238		6.00%	17.7	1.062
Non-Health Care	1.49%	91.5	1.362		1.49%	82.3	1.226
Total	*1.60%*	*100.0*	*1.600*		*2.29%*	*100.0*	*2.288*

Source: Bureau of Labor Statistics and Oppenheimer & Co. Inc.

BLS's Explanation of the Healthcare Methodology

BLS does have an explanation page on its website (link) but as best we can tell it was last updated in 2010. In any case, we have read it several times and are wildly confused. Near the start is an explanation of why the health insurance component is so low:

Although medical insurance premiums are an important part of consumers' medical spending, the direct pricing of health insurance policies is not included in the CPI. As explained below, BLS reassigns most of this spending to the other medical categories (such as Hospitals) that are paid for by insurance.

Okay…Maybe that makes some sort of sense, but then the very next paragraph says this:

General Information on CPI Medical Care

The CPI measures inflation at the retail level, and reflects the average price change over time for a constant quality, constant quantity market basket of goods and services. In most cases it ***approximates what households spend out-of-pocket*** *on goods and services used for day-to-day living. Therefore,* ***medical care indexes are limited to items with an out-of-pocket expenditure****, although in the case of medical care the term out-of-pocket includes any health insurance premium amounts that are deducted from employee paychecks.* [emphasis added].

What are we missing here? As for hospital care, the BLS says this:

The goal of the hospital services index is to follow the transaction prices of selected services over time while keeping price-determining characteristics constant. The transaction price is the reimbursement received by the provider from all eligible sources; it is the amount paid by the insurance carrier (if applicable) and/or patient's out-of-pocket payments. With the exceptions of fee-for-service and fee schedule, each type of reimbursement reflects a lump sum payment based on the diagnosis, the type of procedure performed, or a flat fee per unit of service. Only quotes with payer-based transaction prices are eligible for inclusion in the priced sample of hospital services.

Here we are struggling a little with what it really means, but at a minimum they are costing the procedures on the basis of out-of-pocket cost plus insurance reimbursements. Of course, the devil would be in the details. Which are the "selected services? If we know the weights of apples, peanut butter and salad dressing, surely a little clarity here would help. The second sentence we don't understand at all. We have never seen a "flat fee per unit of service" on any hospital bill we have ever received. Instead, there are pages and pages of different bills from different doctors and different departments, all of which seem to be reimbursed at different rates. Finally, there is the part about only "payer-based" transactions. Well, that takes out any elective surgery, and it would also seem to take out all the uncompensated care cases that weigh heavily on every hospital's costs.

Here is what it says about health insurance:

Health Insurance

The CPI began publishing a health insurance index in January 2006. The weights in the CPI do not include employer-paid health insurance premiums or tax-funded health care such as Medicare Part A and Medicaid. Currently, the index employs an indirect method for measuring price changes for health insurance premiums. Under this indirect method, the medical care index will not be affected by changes in policy characteristics, such as modifications to policy benefits and utilization changes. The approach implicitly assumes that the level of service from individual carriers is strictly a function of benefits paid.

Once again, we are not really sure what it means, but wouldn't it be simpler and more reliable to contact the HR departments at the Fortune 500 and find out what the employees' average contribution was? Or contact the top 20 insurance plans? We are sure that the BLS has its reasons for doing it this way, but this methodology seems fraught with measurement problems, indirect measurements and estimations. We would suggest that a simpler methodology would be employee paid health insurance plus out-of-pocket costs. That would still undercount the inflation at the employer contribution, but would probably present a more accurate picture. We will accept that they are statisticians, and we are not, but the answer that they come up with surely strikes us as wildly off. An 8.5% weighting and a 2.8% rate of increase just does not seem to square with anyone's reality.

The BLS's Peculiar Basket of Goods

As noted at the outset, our third argument about CPI is that it seems to be composed of a peculiar and dated basket of goods. In **Exhibit 10** we have reproduced with some detail several pages from the BLS's most recent CPI release. What we were struck by here is the almost comic level of detail that BLS breaks down to on the easy-to-measure items in the food and household goods categories:

We know, for example that according to BLS the weighting for apples is 0.089% but that for bananas is just 0.084%! Given that the middle quintile spends a total of $45,912 (Census Bureau above), we can deduce that the average family spends about $40.86 per year on apples and $38.56 on bananas. The weighting for salad dressings is 0.057% and that of peanut butter 0.110%. Who knew that potatoes have a 0.083% weighting and lettuce only 0.061%? The "Meats, Poultry, Fish and Eggs" category is relatively large at 1.760%, but the category including Frankfurters, lunchmeats, lamb, organ meat and mutton accounts for only 0.251% of the 1.760. Our favorite category is "Shelf stable fish and seafood" which is thrown in with frozen fish in the "Processed fish and seafood" category and accounts for 0.121%.

You name it, it's in there: rolls, muffins, cupcakes, frozen chicken parts, olives, pickles and relishes. Looking at the list one gets the impression that at some point in the 1950s or 1960s some dedicated civil servant set out to be scientific about it and recorded what the average housewife (and, yes, it almost certainly was a housewife at the time) had in her shopping cart.

Exhibit 10. Consumer Price Index Report – Fish and Seafood

Expenditure category	Relative importance Jul. 2017	Unadjusted percent change Aug. 2016-Aug. 2017	Unadjusted percent change Jul. 2017-Aug. 2017
All items	100.000	1.9	0.3
Food	13.668	1.1	0.1
Food at home	7.873	0.3	0.0
Cereals and bakery products	1.056	-0.2	0.2
Cereals and cereal products	0.352	-1.2	-0.1
Flour and prepared flour mixes	0.043	-1.6	-0.6
Breakfast cereal[1]	0.181	-0.8	-0.7
Rice, pasta, cornmeal[1]	0.128	-1.6	1.0
Rice[1, 2, 3]		-0.9	1.1
Bakery products[1]	0.703	0.3	0.4
Bread[1, 2]	0.208	0.4	0.9
White bread[1, 3]		1.2	0.5
Bread other than white[1, 3]		-0.6	1.3
Fresh biscuits, rolls, muffins[2]	0.103	-0.8	-0.3
Cakes, cupcakes, and cookies	0.171	1.3	0.2
Cookies[3]		1.5	1.2
Fresh cakes and cupcakes[1, 3]		0.7	-1.0
Other bakery products	0.222	0.0	0.3
Fresh sweetrolls, coffeecakes, doughnuts[1, 3]		1.5	1.2
Crackers, bread, and cracker products[3]		-1.7	0.0
Frozen and refrigerated bakery products, pies, tarts, turnovers[3]		1.0	-0.5
Meats, poultry, fish, and eggs	1.760	0.6	0.1
Meats, poultry, and fish	1.666	0.8	0.0
Meats	1.061	0.7	0.0
Beef and veal	0.479	0.8	-0.7
Uncooked ground beef[1]	0.195	1.9	-0.1
Uncooked beef roasts[1, 2]	0.065	0.5	-2.1
Uncooked beef steaks[2]	0.170	-1.3	-1.2
Uncooked other beef and veal[1, 2]	0.048	4.4	0.5
Pork	0.331	0.9	1.4
Bacon, breakfast sausage, and related products[2]	0.142	6.0	2.7
Bacon and related products[3]		12.5	5.4
Breakfast sausage and related products[2, 3]		-1.4	-0.6
Ham	0.061	0.9	-0.4
Ham, excluding canned[3]		0.7	-0.6
Pork chops[1]	0.052	-4.1	2.0
Other pork including roasts and picnics[2]	0.075	-4.4	-0.2
Other meats	0.251	0.2	-0.5
Frankfurters[3]		3.2	1.5
Lunchmeats[2, 3]		-0.1	-1.0
Lamb and organ meats[1, 3]		-2.1	-1.0
Lamb and mutton[1, 2, 3]			
Poultry[1]	0.341	1.0	0.2
Chicken[1, 2]	0.278	2.1	0.3
Fresh whole chicken[1, 3]		0.3	-0.5
Fresh and frozen chicken parts[1, 3]		2.5	0.6
Other poultry including turkey[2]	0.063	-3.7	-0.2
Fish and seafood	0.264	1.2	-0.2
Fresh fish and seafood[2]	0.143	1.1	0.0
Processed fish and seafood[2]	0.121	1.4	-0.4
Shelf stable fish and seafood[1, 3]		0.8	-0.6
Frozen fish and seafood[3]		1.2	-0.8
Eggs	0.093	-3.7	1.7
Dairy and related products	0.801	0.5	0.0
Milk[1, 2]	0.224	-0.3	-0.3
Fresh whole milk[3]		-1.1	-1.1
Fresh milk other than whole[2, 3]		0.1	0.2
Cheese and related products	0.260	1.2	0.6
Ice cream and related products	0.112	0.3	0.9
Other dairy and related products[1, 2]	0.206	0.5	-0.7
Fruits and vegetables	1.333	1.0	0.0
Fresh fruits and vegetables	1.044	1.6	0.0
Fresh fruits	0.563	1.3	0.0
Apples	0.089	-0.7	3.0
Bananas[1]	0.084	-0.9	-0.3
Citrus fruits[2]	0.167	3.8	0.2
Oranges, including tangerines[3]		5.9	-0.1
Other fresh fruits[2]	0.222	1.1	-1.2
Fresh vegetables	0.481	2.1	0.0
Potatoes	0.083	1.7	0.1
Lettuce	0.061	1.8	2.9
Tomatoes[1]	0.089	2.1	-0.3
Other fresh vegetables	0.257	2.2	-0.5
Processed fruits and vegetables[2]	0.290	-1.3	0.0
Canned fruits and vegetables[2]	0.150	-2.1	0.6
Canned fruits[2, 3]		-0.9	0.3
Canned vegetables[2, 3]		-2.5	0.8
Frozen fruits and vegetables[2]	0.087	0.5	-0.1
Frozen vegetables[3]		0.6	-0.5
Other processed fruits and vegetables including dried[2]	0.053	-2.1	-1.6
Dried beans, peas, and lentils[1, 2, 3]		-2.8	-0.1
Nonalcoholic beverages and beverage materials	0.942	-0.1	-0.2
Juices and nonalcoholic drinks[2]	0.661	0.2	0.4
Carbonated drinks	0.265	0.3	0.5
Frozen noncarbonated juices and drinks[1, 2]	0.011	6.6	0.0
Nonfrozen noncarbonated juices and drinks[2]	0.385	0.0	0.3
Beverage materials including coffee and tea[2]	0.281	-1.0	-1.4
Coffee	0.176	-0.7	-1.4
Roasted coffee[3]		-0.8	-2.1
Instant coffee[1, 3]		-1.1	0.2
Other beverage materials including tea[1, 2]	0.105	-1.4	-1.4
Other food at home	1.981	0.1	-0.3
Sugar and sweets[1]	0.288	0.2	-0.2
Sugar and artificial sweeteners	0.050	-0.1	-0.1
Candy and chewing gum[1, 2]	0.182	-0.3	0.0
Other sweets[2]	0.056	1.9	-0.8
Fats and oils	0.236	1.3	-0.7
Butter and margarine[2]	0.069	3.0	1.1
Butter[3]		4.3	1.9
Margarine[3]		2.0	-0.1
Salad dressing[2]	0.057	0.1	-2.0
Other fats and oils including peanut butter[2]	0.110	0.8	-1.2
Peanut butter[1, 2, 3]		-2.2	-3.1
Other foods	1.457	-0.1	-0.3

Source: Bureau of Labor Statistics and Oppenheimer & Co. Inc.

Now, armed with the detail of **Exhibit 10,** go back and look at the level of detail on healthcare in **Exhibit 5**. They seem like absolutely non-parallel universes. If we get granular detail on apples and bananas, organ meats and shelf stable fish on the food side, shouldn't the healthcare side have some granularity as well? Shouldn't one want to know the cost of a hip replacements, setting a fractured arm or leg, a healthy baby delivery or a caesarean delivery, a "well baby" visit, a breast cancer treatment and the cost of a filling, root canal or porcelain crown? When we get the granularity that salad dressings are 0.057% of the weight but "Physician services" are 1.658%, we can't help but feel that there are price checkers at thousands of supermarkets checking the price tags on bottle after bottle of creamy ranch and Caesar dressings, but somehow the "Physician service" compilers are running some algorithm from a data base.

Note how the same is true of household goods in **Exhibit 11**: Floor coverings are 0.057% (no Persian carpets in that home), indoor plants and flowers are 0.101% and dishes and flatware also 0.051%. This all seems very scientific because it is all very precise, but there is of course a huge difference between precision and accuracy. Indeed, it all seems like a bit of false precision. It is like being told that there is a 38.627% chance of rain in New York City tomorrow.

Exhibit 11. Consumer Price Index Report - Household Furnishings and Supplies

Expenditure category	Relative importance Jul. 2017	Unadjusted percent change Aug. 2016-Aug. 2017	Unadjusted percent change Jul. 2017-Aug. 2017
Soups	0.096	0.8	-2.0
Frozen and freeze dried prepared foods[1]	0.258	-1.2	-1.4
Snacks[1]	0.325	-0.4	1.4
Spices, seasonings, condiments, sauces	0.284	0.9	0.3
Salt and other seasonings and spices[2, 3]		0.6	0.1
Olives, pickles, relishes[1, 2, 3]		-0.7	-0.5
Sauces and gravies[2, 3]		1.7	1.3
Other condiments[3]		-0.3	-0.4
Baby food[1, 2]	0.055	1.8	0.0
Other miscellaneous foods[1, 2]	0.439	-0.4	-1.1
Prepared salads[1, 3, 4]		3.1	-0.6
Food away from home[1]	5.796	2.2	0.3
Full service meals and snacks[1, 2]	2.813	2.2	0.2
Limited service meals and snacks[1, 2]	2.469	2.4	0.2
Food at employee sites and schools[2]	0.188	1.4	4.7
Food at elementary and secondary schools[1, 3, 5]		0.2	
Food from vending machines and mobile vendors[1, 2]	0.082	2.3	0.1
Other food away from home[1, 2]	0.244	1.2	0.6
Energy	7.275	6.4	1.6
Energy commodities	3.478	10.3	3.8
Fuel oil and other fuels	0.180	9.2	2.0
Fuel oil[1]	0.095	9.4	2.9
Propane, kerosene, and firewood[6]	0.085	9.0	1.0
Motor fuel	3.298	10.3	3.9
Gasoline (all types)	3.249	10.4	3.9
Gasoline, unleaded regular[3]		10.5	4.0
Gasoline, unleaded midgrade[3, 7]		9.6	3.7
Gasoline, unleaded premium[3]		9.7	2.9
Other motor fuels[2]	0.049	9.0	2.8
Energy services[8]	3.797	2.9	-0.3
Electricity[8]	2.981	2.3	-0.3
Utility (piped) gas service[8]	0.817	5.4	-0.4
All items less food and energy	79.057	1.7	0.2
Commodities less food and energy commodities	18.872	-0.9	0.0
Household furnishings and supplies[9]	3.112	-1.6	-0.4
Window and floor coverings and other linens[1, 2]	0.246	-4.7	-0.5
Floor coverings[1, 2]	0.057	-1.8	0.1
Window coverings[1, 2]	0.050	-3.9	-1.0
Other linens[1, 2]	0.138	-6.1	-0.6
Furniture and bedding	0.744	0.7	0.3
Bedroom furniture[1]	0.260	1.4	2.6
Living room, kitchen, and dining room furniture[1, 2]	0.355	0.9	-1.0
Other furniture[2]	0.123	-1.2	-0.6
Infants' furniture[1, 3, 5]			0.3
Appliances[2]	0.176	-1.8	0.7
Major appliances[2]	0.053	-3.9	0.5
Laundry equipment[3]		-3.1	0.4
Other appliances[1, 2]	0.121	-0.8	0.7
Other household equipment and furnishings[2]	0.434	-6.3	-1.6
Clocks, lamps, and decorator items[1]	0.214	-12.5	-3.1
Indoor plants and flowers[10]	0.101	3.2	-0.8
Dishes and flatware[1, 2]	0.051	-0.9	0.4
Nonelectric cookware and tableware[2]	0.068	-2.1	0.4
Tools, hardware, outdoor equipment and supplies[2]	0.664	-0.8	-0.7
Tools, hardware and supplies[1, 2]	0.177	0.0	-0.2
Outdoor equipment and supplies[2]	0.331	-1.2	-1.0
Housekeeping supplies[1]	0.848	-0.7	-0.3
Household cleaning products[2]	0.333	-1.6	-0.4
Household paper products[1, 2]	0.231	-0.2	-0.1
Miscellaneous household products[1, 2]	0.284	0.1	-0.3
Apparel	2.989	-0.6	1.4
Men's and boys' apparel	0.741	-2.4	1.4
Men's apparel	0.598	-3.7	0.0
Men's suits, sport coats, and outerwear	0.091	-7.8	3.1
Men's furnishings	0.192	-3.8	-0.8
Men's shirts and sweaters[2]	0.165	-2.3	1.2
Men's pants and shorts	0.143	-2.3	-2.3
Boys' apparel	0.144	2.7	7.4
Women's and girls' apparel	1.204	0.7	1.8
Women's apparel	1.008	0.4	1.7
Women's outerwear	0.065	2.3	8.0
Women's dresses	0.143	2.0	2.9
Women's suits and separates[2]	0.451	-1.3	1.5
Women's underwear, nightwear, sportswear and accessories[2]	0.340	1.6	0.2
Girls' apparel	0.195	2.6	2.6
Footwear	0.674	-0.8	0.4
Men's footwear[1]	0.209	1.1	1.0
Boys' and girls' footwear	0.166	-1.4	0.0
Women's footwear	0.299	-1.7	0.2
Infants' and toddlers' apparel	0.143	-2.9	1.7
Jewelry and watches[6]	0.228	0.9	1.4
Watches[1, 6]	0.085	6.1	1.7
Jewelry[6]	0.143	-1.9	1.2
Transportation commodities less motor fuel[9]	6.062	-1.7	-0.3
New vehicles	3.601	-0.7	-0.3
New cars and trucks[2, 3]		-0.7	-0.3
New cars[3]		-1.2	-0.4
New trucks[3, 11]		-0.1	-0.2
Used cars and trucks	1.988	-3.8	-0.1
Motor vehicle parts and equipment[1]	0.381	-0.2	-0.2
Tires[1]	0.226	-1.0	0.0
Vehicle accessories other than tires[1, 2]	0.155	0.9	-0.4
Vehicle parts and equipment other than tires[1, 3]		0.7	-0.5
Motor oil, coolant, and fluids[1, 3]		2.1	-0.6
Medical care commodities	1.870	2.4	0.2
Medicinal drugs[1, 9]	1.811	2.5	0.2
Prescription drugs[8]	1.450	2.7	0.4
Nonprescription drugs[1, 9]	0.361	1.6	-0.5
Medical equipment and supplies[1, 9]	0.059	-0.4	0.2
Recreation commodities[9]	1.740	-3.4	-0.5
Video and audio products[9]	0.210	-6.8	-1.4
Televisions	0.100	-9.6	-1.7
Other video equipment[2]	0.025	-4.9	-2.5
Audio equipment[1]	0.054	-9.1	-0.7
Recorded music and music subscriptions[1, 2]	0.024	7.4	-0.7
Pets and pet products[1]	0.576	-0.6	0.0

Source: Bureau of Labor Statistics and Oppenheimer & Co. Inc.

Now consider what we know about the 33.793% of "shelter." We know about this is that it is 24.612% of "owners' equivalent rent," 7.907% of rent and 0.932% of lodging away from home. How is it possible that we get detail on houseplants versus peanut butter on one hand, but 24.612% of the index is a single, solitary number? When we consider that 24.612% what is the weight given to condos in Manhattan and San Francisco and how much on homes in the depressed industrial Midwest?

Moreover, here is how the BLS describes its Owners Equivalent Rent of Primary Residence methodology:

Weights for OER and Rent. The expenditure weight in the CPI market basket for Owners' equivalent rent of primary residence (OER) is based on the following question that the Consumer Expenditure Survey asks of consumers who own their primary residence:

"If someone were to rent your home today, how much do you think it would rent for monthly, unfurnished and without utilities?"

Quite frankly, if someone asked me how much I thought my primary residence would rent for, I would have no idea. The fact that we know the weightings of lettuce and potatoes down to a tenth of a basis point, but fully a quarter of the index is based on a survey rather than actual transactions is breathtaking. The kernel of logic behind the BLS's methodology is that buying, building or improving a house is an investment, not an expenditure, and we will grant that on some theoretical plane.

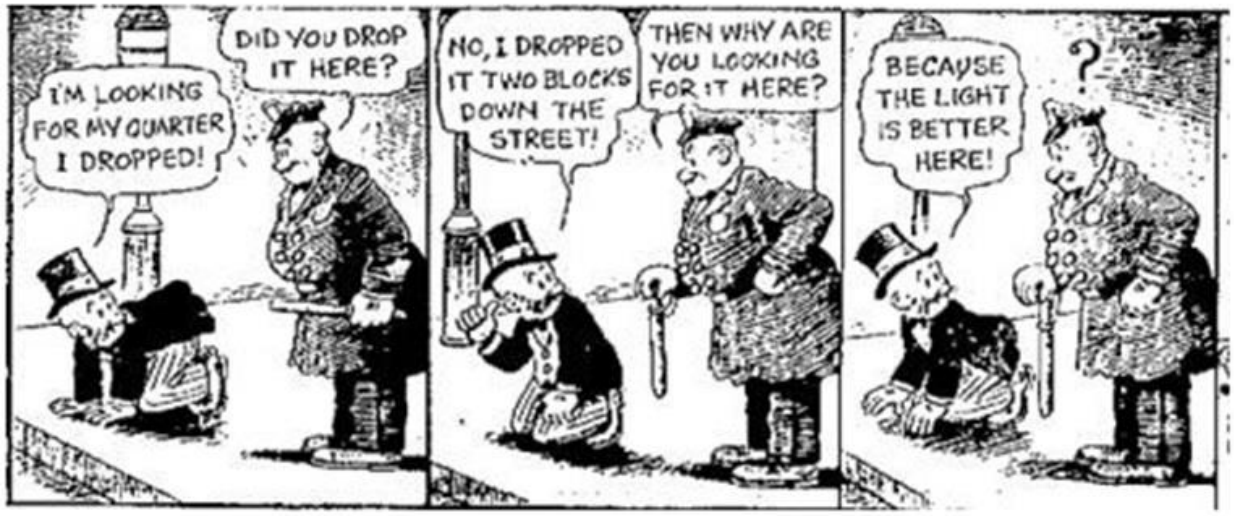
However, on some practical plane, 62% of Americans own their own home, and in reality the rental price of homes would most likely be some function of recent transaction prices for comparable homes. If I were going to rent my home, I would not presume that I knew what rent I should ask for. I would ask a real estate broker, and then he or she would no doubt scan recent sales in the area and take some percentage of that. In that regard, it is once again interesting to note that just as in medical care, the OER is significantly lower than other data sources. The CPI puts housing inflation since 1982 at 3.25% while the Case-Schiller puts it at 4.01%. If one were saving to buy a condo in New York or San Francisco by buying a bond fund that yields 2.3%, chances are that home is getting a little further out of reach every year.

All in all, if one spends 20 or 30 quality minutes contemplating the BLS news release on CPI, one cannot help but be reminded of the street light effect. One searches for a lost object where the light is good rather than where one probably lost it. The CPI quantifies that which is easily quantifiable. The concept of the street light effect is based on the medieval Middle Eastern folk tale of Mulla Nasreddin:

Mulla had lost his ring in the living room. He searched for it for a while, but since he could not find it, he went out into the yard and began to look there. His wife, who saw what he was doing, asked: "Mulla, you lost your ring in the room, why are you looking for it in the yard?"

Mulla stroked his beard and said: "The room is too dark and I can't see very well. I came out to the courtyard to look for my ring because there is much more light out here."

The American formulation of the story is best captured in the Mutt & Jeff cartoon:



Source: 1942 June 3, Florence Morning News, Mutt and Jeff Comic Strip, Page 7, Florence, South Carolina. (NewspaperArchive)

The Investment Implications: The Fed Has Frequently Gotten Behind the Curve

Today we also issued a companion report entitled *Bank Stocks and Interest Rates*. That report argues three points: (1) rising short-term rates are the biggest boost to bank margins rather than the level of long rates or the shape of the yield curve on commercial banking fundamentals. (2) Despite that, bank stocks have been tightly correlated to movements in long-term rates since 2012. (3) Rising long-term rates should help the FICC trading businesses.

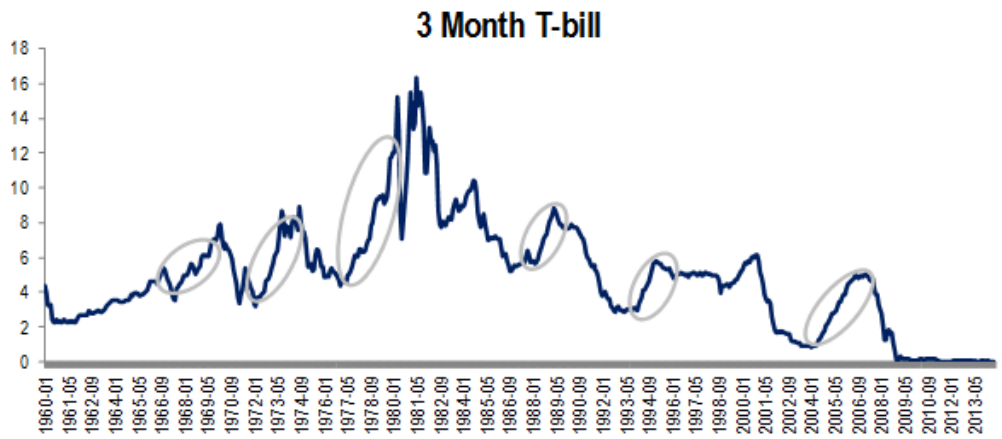
Thus, obviously we think rising rates will be good for bank stocks, and while there seems to be a building consensus that short rates will rise a bit, the idea that long-term rates should increase as well is obviously very controversial. One common theme on why long-term rates should remain low is the idea that inflation is "undershooting" the Fed's 2% target. A good formulation of the argument can be seen in Caroline Baum's recent editorials *Why Greenspan is wrong about bubbles in bonds* (*WSJ/Marketwatch*, August 4, 2017) and *The Fed's idiosyncratic excuses for inflation's 'anomalies' are wearing thin. (WSJ/Marketwatch,* Aug. 15, 2017) The first line is "Janet Yellen struggles to explain the persistent undershoot in inflation."

The point of this report was, of course, to argue that CPI is a poor measure of inflation. It is certainly a poor measure for the wealthy population that owns bonds and probably a dated, and somewhat poor measure overall. It is not surprising that this measure of inflation would undershoot. BLS in any case makes it clear that CPI is not really a "cost of living" index. Thus, in our view, CPI significantly understates what bond investors should embed in their inflation expectations.

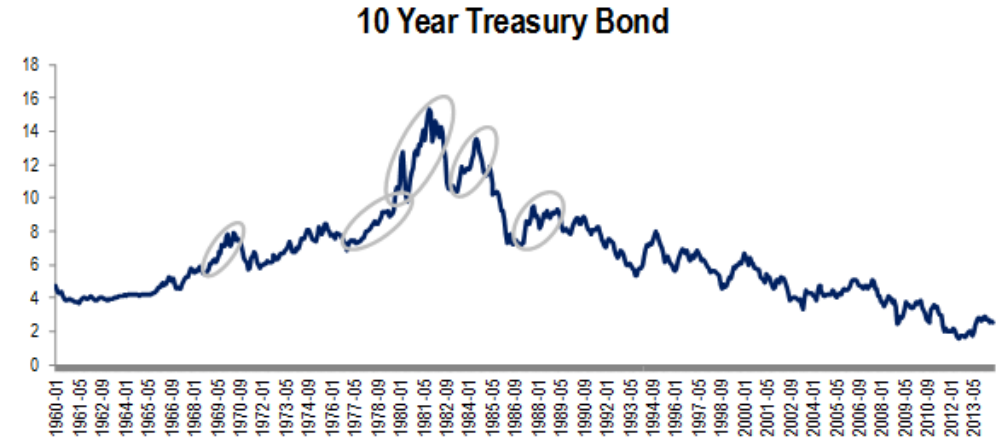
It is our view that while the Fed may continue to target CPI, we doubt that in the long run investors will. At some point, bond investors will get the joke and react accordingly in the bond market by raising their inflation expectations and selling bonds. We think bond investors will likely end up leading the Fed in this regard.

It would not be the first time that the Fed has had to play catch-up. In **Exhibit 12** we show the trend in long- and short-term rates over the past 50 years, and it shows that once rates start moving, they often move much farther than people think. People naturally think incrementally. When the ten-year Treasury is at 2.3%, people can conceive of a 50 or 100 basis point move, but they cannot conceive of a several-hundred basis point move. That is, however, precisely what has historically happened once rates started to move.

Exhibit 12. Many Examples of Discontinuities in the Past 50 Years



Start Date	Yield	End Date	Yield	Δ Yield	# of Months
Jun-1967	3.54%	Jan-1970	7.87%	4.33%	31
Feb-1972	3.20%	Aug-1974	8.96%	5.76%	30
Mar-1977	4.60%	Aug-1981	15.51%	10.91%	53
Oct-1986	5.18%	Mar-1989	8.82%	3.64%	29
Sep-1992	2.91%	Feb-1995	5.77%	2.86%	29
Jan-2004	0.88%	Jan-2007	4.98%	4.10%	36
			Total	31.60%	208
			Average	5.27%	35
			Average increase per month		0.15%



Start Date	Yield	End Date	Yield	Δ Yield	# of Months
Jan-1968	5.53%	Jun-1970	7.84%	2.31%	29
Dec-1976	6.87%	Dec-1978	9.01%	2.14%	24
Oct-1977	7.52%	Mar-1980	12.75%	5.23%	29
Jun-1980	9.78%	Jun-1982	14.30%	4.52%	24
Aug-1986	7.17%	Mar-1989	9.36%	2.19%	31
			Total	16.39%	137
			Average	3.28%	27
			Average increase per month		0.12%

Source: Federal Reserve, FactSet and Oppenheimer & Co. Inc.

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			IB Serv/Past 12 Mos.	
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