



**LESSON 4:**

## *Inflation Rates and Retirement*

**G**ROWING UP IN LATIN AMERICA during the 1980s, I quickly learned how to adapt to the impact of inflation in daily life. With annual inflation rates reaching over triple digits, even young children knew never to expect the same price twice, cash wasn't allowed to sit idle and interest rates on bank deposits were designed to outpace inflation. We knew that salaries were linked to the U.S. dollar and pension income was stated in *unidades reales*, which is effectively a basket of consumable goods. Yes, complicated, but a fact of life.

Then, as I moved back to a monetarily stable North American environment, the debilitating power of inflation moved to my mental back burner. It toppled down my list of risk and worries. After all, the consumer price index (CPI) in the U.S. has increased by a compound rate of only 2.96 percent per annum over the last 25 years. In kindergarten, that was a decent weekly rate. Indeed, it is easy to get lulled into a false sense of security that inflation is just not an issue anymore. The Federal Reserve's main policy mandate is to keep prices stable and even a whiff of unexpected pressure sends them into a tightening tizzy.

But, as I started researching the area of retirement income planning, I found that the relatively low inflation rates we have experienced in the last quarter century might actually be just as dangerous as the hyper-inflation rates I

grew up with. This is because low numbers can be easily ignored. Yet, over long horizons they can be just as deadly, especially if you are not compensated for this risk and don't know your own inflation rate. Stay with me here. One of the main financial risks we face in retirement is the topic of this month's lesson: your unknown and age-specific personal inflation rate.

First, Table 1 illustrates the impact of relatively benign inflation rates over long periods of time. Here is how to read this table. Imagine you are getting a \$1,000 pension income check every single month of your retirement years, but that this check is not adjusted for inflation. What this means is that your nominal income stays at \$1,000, but its real purchasing power declines

steadily with time. As you age, the same check buys you less. The table tells exactly how much \$1,000 will buy you in today's dollars, depending on the unknown value of inflation going forward.

Notice that a 2 percent increase in the inflation rate, from 2 percent to 4 percent per year, can erode the purchasing power of \$1,000 by almost 40 percent, from \$610 to \$375, at the 25-year horizon. I pick 25 years since it is the median remaining lifespan for a newly retired couple, while 2 percent to 4 percent inflation is arguably a reasonable aggregate range.

But actually, the inflation story gets even more interesting. It seems the U.S. Department of Labor, via its Bureau of Labor Statistics (BLS), has created an

**Table 1: What does \$1,000 really buy you in the long-run?**

Year #	Inflation Rate During Each Year of Retirement				
	0%	1%	2%	3%	4%
1	\$1,000	\$990	\$980	\$971	\$962
5	\$1,000	\$951	\$906	\$863	\$822
10	\$1,000	\$905	\$820	\$744	\$676
15	\$1,000	\$861	\$743	\$642	\$555
20	\$1,000	\$820	\$673	\$554	\$456
25	\$1,000	\$780	\$610	\$478	\$375
30	\$1,000	\$742	\$552	\$412	\$308
35	\$1,000	\$706	\$500	\$355	\$253

To calculate the real purchasing power of \$1000 in 25 years, assuming a constant annual inflation rate of 3 percent, the following should be used:  $1000 / (1.03)^{25} = 477.6$

entirely new inflation index for the elderly. They called it the CPI-E and it is meant to capture the inflation rate that is unique for Americans age 62 and older.

Why would inflation be different for the elderly? In fact, how does inflation get measured, at all? The answer to these questions comes down to our spending habits. Boiled down to its essence, statisticians measure inflation partially based on how we spend our money.

Basically, they measure price changes for hundreds of categories and items each month. Some of these items increase in price while others decline or stay the same. The weights placed on the different items and components reflect our average spending habits. If the typical American spends three times more money on banana products than avocado products, then the index weight placed on bananas is three times as high as the index weight placed on avocados. This is regardless of whether you personally are allergic to bananas and love avocados.

Moving on, the consumer price index for wage earners and clerical workers is labeled and abbreviated CPI-W. The precise way this index is created is by

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reflecting the spending habits of this group, which is about 32 percent of the U.S. population. Working Americans spend about four times as much on food and beverages as on apparel, and they spend eight times more on housing than they do on recreation, for instance. The components in Table 2 provide the weights on the various categories that make up the CPI-W, and obviously they must add up to one. Note that the higher the group weighting or relative importance, the more a price change for the group will impact the overall inflation rate.

But, the elderly spend their money differently!

As you can see from the third and

fourth columns in Table 2, the relative importance placed on the various sub-components differs for the regular (CPI-W) versus the elderly (CPI-E) version. For example, in the CPI-E medical care has twice the weight as it has in the CPI-W. The reason for this is because the elderly spend a greater fraction of their income on medical care. At the opposite end is the weighting that is placed on food and beverages. Its relative importance in the elderly inflation rate is 0.1275 compared to 0.1648 within the regular rate. Remember that each sub-category has its own inflation rate.

Here is the bottom line. From early 1982 until late December 2006, the compound annual inflation rate in the U.S. as measured by the regular inflation rate for wage earners was 2.96 percent per annum. During the exact same period the inflation rate for the elderly was 3.30 percent, which is an average of almost 35 basis points more each and every year during the last 25 years. Moreover, every single year the CPI-E increases by more than the CPI-W, in some cases by a full percentage point.

Now, my main point here is *not* that you should add another percentage

**Table 2: Whose Inflation Rate Are You Measuring?**

Component	CPI-W Wage Earners		CPI-E Elderly	
	Relative Importance	10 Year Inflation	Relative Importance	10 Year Inflation
All items	1.000	26.5%	1.000	29.7%
Apparel	0.040	-8.3%	0.025	-8.8%
Education & Communication	0.056	18.2%	0.032	4.5%
Food and Beverages	0.165	25.9%	0.128	25.4%
Housing	0.405	32.8%	0.479	34.0%
Medical Care	0.052	47.8%	0.107	47.8%
Recreation	0.050	9.8%	0.048	18.3%
Transportation	0.195	20.4%	0.145	21.9%
Other Goods & Services	0.037	56.0%	0.036	45.5%

\*Source: Bureau of Labor Statistics; Data to end of 2006. For detailed description visit the BLS website <http://www.bls.gov/cpi/home.htm>



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point to your retirement income inflation projections. The fact that the Department of Labor bothers to compute an inflation rate for retirees should remind us that inflation is personal. After all, if there is a CPI-E, why not a CPI-ME or a CPI-YOU? Depending on where you live, how you spend your money, how old you are and even your gender, inflation is different.

For instance the average inflation rate for the last 10 years in Atlanta was 2.3 percent, compared to an average of 3.5 percent in San Diego. Likewise, a recent research report by Merrill Lynch quantifies the extent to which inflation is gender-based. According to their chief economist, the recent inflation rate for females has been about 3.6 percent and for males it is closer to 0.2 percent. Why? Their spending habits are different.

The bottom line is that we all have slightly different and personal inflation rates based on spending habits and our desired basket of expenditures. As a financial advisor your task is to make sure that your clients' investments keep up with their very personal inflation rate, not some macroeconomic average. This is the true liability benchmark.

What is the practical side of all of this? First, sit down with your clients and conduct a very careful analysis of their expenditures and spending allocations. In fact, perhaps you might want to create their (rough) inflation rate based on how they actually spend their money as well as where they live. Use the numbers and inflation rates in Table 2 to create a personal inflation rate, or do some extra homework and dig up the rate based on where they live.

Just as a very hypothetical example, imagine that your own retirement spending consists of only two consumption goods: housing and medical care. You consume or spend money on these two categories in equal amounts. In

this case your personal inflation over the last 10 years would have been a cumulative  $(34\% + 48\%)/2 = 41\%$  and the annualized inflation rate would have been roughly  $(1.41)^{(1/10)} - 1 = 3.5\%$  per year.

Note that the BLS doesn't calculate inflation by keeping these weights fixed for 10 years — and they have a unique way of measuring house inflation — but you hopefully appreciate my basic point. Anyone can construct a rough personalized inflation rate that better reflects their expenditures.

Another important take-away is as follows. Since it is exceedingly difficult to locate fixed-income investments that perfectly hedge your particular inflation rate, the next best thing is to locate investments that have strong correlations with your liabilities.

For example, I would tilt my equity-based investment portfolio towards sectors and companies that stand to benefit from an (unpredictable) shock to my personal inflation rate. Companies in the pharmaceutical sector, biotechnology, healthcare and nursing homes will all stand to benefit from further advances in longevity. If Pfizer, Merck, Wyeth, GlaxoSmith-Kline or Bayer discover and develop a drug that extends my life by a handful of years, then my cost of longevity will obviously increase. More importantly, these companies' stock prices will likely increase above and beyond the underlying markets in which they trade. Investing in these companies will then hedge or even partially insure against the unexpected increase in retirement expenditures, which is yet another form of personal inflation.

In sum, anonymous macroeconomic projections between 2 percent and 4 percent don't capture the personal nature of inflation for retirees. In my mind, CPI-ME is a unique risk-label for a very personal adversary that must be constantly battled. **■**