

DSP- Data, Statistics and Psychology **Gurram Gopal, Ph.D.**

A few years ago, an evening discussion about the stock market valuation methods led a friend of mine to remark that all human phenomena can be explained by the two 'S's, Statistics and Psychology¹. However, to comprehend the behaviors of the markets, a distinction has to be drawn between what statisticians call "raw data" and what is massaged and reported as "official" government statistics. This article uses the Consumer Price Index (CPI) report and the Employment Situation Summary report issued by the government to illustrate the way data experienced by individuals is transformed into "official" statistics that are then purported to drive market psychology and result in observed actions in the financial markets.

CPI

Price Change Data from the City of Naperville where I live:

1. Price of a yard-waste sticker has gone up from \$1.35 each to \$1.85 since the beginning of this year- an increase of 37%. If someone had foreseen the price increase and loaded up on the stickers last year, he/she should note that the old stickers are no longer valid.
2. My real estate tax has gone up nearly 5.7% from last year, and increases have averaged 5.2% over the past ten years.
3. Tuition at Northwestern University has gone up to \$31664, an increase of nearly 5.2% from the prior year. Tuition at University of Illinois at Urbana-Champaign this year is \$8670 for new students, an increase of nearly 9% from the prior year.
4. My HMO health-care premiums have gone up 12.9%, and my dental care DMO premium has gone up 6%.
5. As far as the 'volatile food and energy' category is concerned, the cost of that elixir of all human life, the "non-decaffeinated" coffee beans that I buy from a mail order company has gone up nearly 25% from a year ago.

Massaging Methods used by the government include Hedonic Quality Adjustment Methods, Intervention Analysis Seasonal Adjustments, Rental equivalence, Chained Consumer Price Index. Another sample of how much work the government does is outlined in ['Measuring Price Change for Medical Care in the CPI.'](#)

Reported Statistics: Not Seasonally Adjusted CPI for all items between April 2004-April 2005 is 3.51%, Not Seasonally Adjusted CPI for all items less food and energy is 2.24%, Not Seasonally Adjusted Chained Consumer Price Index for all items is 2.92%. Seasonally adjusted numbers for all items and for all items less food and energy are 3.46% and 2.2% respectively.

EMPLOYMENT SITUATION SUMMARY

The government is in the best position to gather employment related data as it collects payroll taxes from employers on a periodic basis. On an anecdotal basis, in the greater

¹ Readers of the Belgian comic series Tin Tin can see the allusion to stories involving Thomson and Thompson.

Chicagoland area where I live, the employment situation is significantly affected by large mergers and acquisitions including Bank One and JP Morgan Chase, Tellabs and Advanced Fiber Communications, and the restructuring at Kraft Foods and at Sara Lee. But construction is booming and the ranch house tear-downs transformed into monstrous buildings is in full swing.

Massaging Methods used by the government on the payroll data, in addition to concurrent seasonal adjustment methodology, include the CES Net Birth/Death Model.

Reported Statistics: According to the Bureau of Labor Statistics of the U.S. Department of Labor non-farm employment edged up by 78,000 in May following a much larger increase in April, and the unemployment rate was essentially unchanged at 5.1 percent. What is hidden from the Employment Situation Summary primary press release is that the Net Birth/Death model added 207,000 to the jobs number for May, and 257,000 in April. For the twelve month period ending May 2005, this model added 861,000 jobs. If this model is to be believed, nearly half of all jobs created are coming from the birth of new businesses, in aggregate. Due credit must be given to Ron Insana of CNBC for raising this issue with U.S. Secretary of Labor Elaine L. Chao on his show. Her response was that the questions raised regarding the Birth/Death model contribution were wrong because even the household survey data indicated strong job growth, not just payroll data. Of course, Mr. Insana did not deem it necessary to do a follow-up to this non-answer.

As an aside, it is interesting to note that in calculating the unemployment rate, BLS states the following: "People are classified as unemployed if they meet all of the following criteria: They had no employment during the reference week; they were available for work at that time; and they made *specific* efforts to find employment sometime during the 4-week period ending with the reference week." (italics mine). If someone was looking for a job but did not make *specific* efforts then they are deemed not to be in the labor force.

Positioning the Data

Excerpts from the Minutes of the Federal Open Market Committee, May 3, 2005.

"On balance, measures of core inflation were thought likely to remain in check over the remainder of this year and next."

"They likewise all agreed that mention should be made that, on balance, longer-term inflation expectations remained well contained."

"In the seven months since I last testified before this Committee, the U.S. economic expansion has firmed, overall inflation has subsided, and core inflation has remained low." Testimony of Chairman Alan Greenspan as part of the Federal Reserve Board's semiannual Monetary Policy Report to the Congress Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate February 16, 2005.

“A third factor determining inflation is long-term inflation expectations. If inflation expectations are well anchored, in the sense that the public has confidence that inflation will remain low in the long run, the central bank's task of actually keeping inflation low becomes easier. Of course, the benefits that flow from well-anchored inflation expectations make keeping inflation low (and thus validating those expectations) all the more important.” Remarks by Fed Governor Ben S. Bernanke at a Finance Committee luncheon of the Executives' Club of Chicago, Chicago, Illinois, March 8, 2005.

Psychology:

Despite the Federal Reserve raising the federal-funds rate eight times to 3% during the past year, the yield on the benchmark 10-year bond is around 3.95%, down from about 4.7 percent a year ago. The “200%” rate hike since May 2004 is cited as a reason for the bond market pricing in low inflation expectations, resulting in an end to rate hikes and the possibility of rate cuts next year. Wall Street's consensus estimates call for GDP growth of around 3.7% for 2005 with “overall” inflation around 2.4%. and unemployment at 5.1%. This has created a bullish view for equities, fixed assets, and the housing markets.

Historical data suggests that politicians tend to exaggerate a little. It is therefore no surprise that any government run by politicians tends to slightly “adjust” the truth to suit the politicians. When folks who are entrusted with other people's money (like fund managers) and the mass media who are entrusted with people's time and an obligation to ‘educate’ buy into the official statistics without questioning it is cause for concern.