INVESTOR'S BUSINESS DAILY®

"Faster, Better, Cheaper: Why Fed Should Be Cautious About Raising Interest Rates"

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COMMENTARY 12/18/2018

As the Fed struggles with how fast to raise interest rates to a "neutral rate," it is handicapped by data that are giving them the wrong signals. These signals have encouraged the Fed to be too optimistic on economic growth and over-predict inflation for years. If the Fed continues to rely on inaccurate data, the Fed is likely to accelerate the arrival of the next recession and could doom us to **repeat the errors** of the last 15 years.

I have spoken with many prominent economists, including a former Fed chairman, vice chairman, governors and Fed regional bank presidents. While they all agree that U.S. economic data are not completely accurate, there **is little consensus about how inaccurate they are**.

We estimate our statisticians have undermeasured GDP growth by about 2% per year, which is overstating our reported inflation data by 2% per year. It is critical to understand how the 2% rise in value can only be counted as 2% lower aggregate inflation.

Our economic data are cost-based, focusing on how many dollars you spend. They need to be more value-based so we can measure the rapidly rising value of "faster and better" technology driven products and services as "cheaper" products and services. Our data don't do a very good job of measuring the rising value per dollar you spend. If you are buying a new product with increased performance but sold at the same price as the prior year's model, you are getting the new features for free — equal to a discount. That good deflation is what is largely uncounted in our economic data and adds up to about 2%/year across the economy.

Here are some examples of how our data have become inaccurate:

Phones, Medicine, Cars

- A friend infected with Hepatitis C was on the short list for a liver transplant. I suggested he try Harvoni, a new drug from Gilead Sciences. It cost $96,000, but completely eliminated the Hep C virus and his liver has re-healed. He says Harvoni saved his life, but it also saved the healthcare system a $500,000 transplant and up to $42,000/year to treat the virus remaining post-transplant. Interestingly, our economic data only record Harvoni as a $96,000 inflationary increase in health care spending. There is no accounting for its substantial cost savings and good deflation for the health care system – or the enormous value to the patient.

- Apple's iPhone 8 has a 25% faster processor than the iPhone 7, 70% faster multi-tasking, 30% faster graphics, a camera gathering 83% more light and better colors and an engine enabling artificial intelligence and augmented reality. How much are these enhancements worth? Until September an iPhone 8 cost $849, which is the *exact same price* as the preceding year's iPhone 7 with the same memory.

Would you have been willing to pay $849 to take an iPhone 7 instead of an iPhone 8 out of the box? Of course not, but our statisticians in Washington only record the cost of cellphone data plans, with a small increase in value instituted this fall for cellphone hardware. Very little of the annual increase in smartphone performance is recorded as an increase in real GDP.

How much value is not being counted? Economists call this rising value "Quality Improvement" and it involves many complex, fast changing product attributes making it difficult to measure. In 2000, we estimated that cellphone service (including the hardware) was delivering 30% more value per year that was not counted in our economic data.

This year we conducted a survey which suggests that smartphone consumers perceive that the iPhone 8 delivers 27% more value than the iPhone 7. Across all smartphones, we estimate our economic data are not counting 0.2% of GDP from under-measuring smartphone quality improvement.

Tesla's Innovation Value

- Tesla is breaking sales records because buyers are perceiving they are getting more value than the dollars they are spending. This introduces a "New Product" error in GDP accounts. An average Model 3 sells for about $45,000 but

my estimate is that consumers are perceiving a true value closer to $55,000 or more when you consider Teslas are the safest car on the road and have many innovative new features.

There's no accounting in GDP accounts for Tesla's quantum leap in safety, fuel savings, zero emissions, low maintenance costs, instant acceleration, handling, rear camera visibility, lane-centering and car-following assistance and a carbon tax rebate. There's no accounting for the value of Tesla's frequent free after-purchase downloads with improved safety, displays, mapping, diagnostics, energy savings and additional Supercharging stations. As competitors race to match Tesla's enhancements, GDP will become more under-measured.

What new iPhones, Tesla EVs and a cure for Hep C have in common are very large annual increases in real value that are not reported in our economic data.

Underestimating Real GDP

When we first published our findings 14 years ago, we estimated 1.96% of real value across the economy was not being counted ("Digital Deflation," McGraw-Hill 2004). Back then our statisticians were adding a 31%/year performance improvement in "computers made for final sale" as an increase in real GDP plus 3%/year for software and small amounts for switches and other products. This was not nearly enough as it omitted gains in healthcare, cellular services, capital equipment, military spending and consumer electronics.

Since then, we believe the rate of computer enhancements has slowed, but been more than offset by rapid advancements in healthcare, smartphones, business IT spending, military equipment, autos, appliances, social media, online shopping, entertainment, smart home devices and shale oil exploration, all of which would suggest real GDP growth today is being understated by more than 1.96%/year.

Technology and healthcare CEOs know they add value to their products every year and ask me what would happen if we counted it. I answer that inflation would be reported more correctly as 2% lower which would reduce interest rates by 2%.

'Digital Deflation'

How? The only way economists can measure these real gains in product value is as "good deflation." If consumers are getting 27% more value for a new iPhone at the same price as last year's model, they are getting new features for free — equal to a 27% discount.

Adding all the quality improvement across the entire economy, we should have been counting 2% more real GDP as 2% lower inflation.

These CEOs then ask if we counted their value improvements as lower inflation, "Would it have reduced the severity of the Great Recession?" Absolutely! The rising value of their products has been fairly persistent over the 15 years since our study suggesting that inflation has been reported 2% too high well before the recession. This drove interest rates higher in the years leading up to the recession.

During and after the recession, policymakers needed to resort to **massive artificial fiscal and monetary stimulus** to overcome the effects of overstated inflation. If our data more accurately reported technology's advancements as 2% lower inflation, mortgage rates would have been 2% lower. Fewer people would have lost homes and jobs. The recession would have been shallower and the recovery faster.

Fed Hikes Not Needed

While consumers recognize and appreciate the fruits of technology's advancements as "faster, better, cheaper" iPhones, EVs and cures for debilitating diseases, our economic data are becoming more outmoded every year. Overstated inflation data are contributing to suboptimal job growth, lower real wages and costly fiscal and monetary stimulus.

Congress can make a great contribution to society by allocating resources to more accurately count the rising value of technology-driven products and services as "good deflation." The result would be "naturally" lower interest rates and sustained higher employment.

For the Fed, it should **reduce the need for rate increases near term** and Quantitative Easing during future downturns. For society, it would finally allow advancing technologies to create more jobs than they are eliminating.

Tanaka is CIO and chief economist of Tanaka Capital Management, manager of the Tanaka Growth Fund and the author of "Digital Deflation," McGraw-Hill 2004.