# A Primer on Inflation (with Comments on Real Estate in the Metroplex)

*Remarks to the North Dallas Chamber of Commerce*

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Dallas, Texas
August 30, 2006

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Real estate runs on borrowed money—so I suspect most of you keep a sharp eye on Federal Reserve policymaking and its effect on interest rates. At times, I am sure, we have made your business more difficult for you, but I urge you to keep in mind the Fed's *raison d'être.* We are charged with maintaining the monetary conditions for sustainable, non-inflationary economic growth. Will Rogers once quipped that "the three greatest inventions of man were fire, the wheel and central banking." Given the times, shortly after the failure of the Bank of the United States and the onset of the Great Depression, he just may have been striking a sarcastic note! Even so, the idea of an independent central bank like the Federal Reserve is, I think, an ingenious one.

President Woodrow Wilson signed the Federal Reserve Act in 1913. One of the more successful and brilliant aspects of this legislation was the creation of 12 regional banks that would influence monetary policymaking. Having representatives from all parts of the country brings a deeper, more diverse perspective to the policy debate, giving a clearer view of what is really happening in the U.S. economy.

Texas lobbied Washington heavily to host one of the 12 regional banks. Dallas won out over Fort Worth and Houston, largely because of the efforts of *Dallas Morning News* publisher George B. Dealey. He rallied support for Dallas by recruiting influential Texans in Washington to back the city's cause. Dealey's emissaries succeeded by pleading their case before the Treasury secretary and President Wilson himself.

Dallas won its bid to become a Reserve Bank city on April 3, 1914, the same day, incidentally, that Pancho Villa's forces captured the Mexican town of Torreón. Other notable events that year included the completion of the Panama Canal, the start of World War I and the invention of the air conditioner. I will leave it to you to decide whether that last one tops the Dallas Fed in importance to this great city's development.

Few Dallas institutions have survived as long as the Dallas Fed. We have been part of the downtown community since we opened, moving from temporary quarters to that stately building on Akard Street in 1921 and then to our current building on Pearl Street, just opposite the Arts District, in 1992. We have the third longest continuous business presence in downtown Dallas and are proud of it. Of the remaining downtown institutions, only the *Morning News* and Neiman Marcus predate our arrival in Dallas.

The Dallas Fed has been at its best in hard times. During the Great Depression, our employees voluntarily took 5 percent pay cuts so the Bank could share the work and hire unemployed Dallasites. In an earlier recession, panicked customers stampeded a Dallas bank, demanding to withdraw their money. It was the kind of run that could ruin a bank. The head of the Dallas Fed, a man named W. F. Ramsey, showed up in an armored car with guards. They hauled a quarter million dollars into the lobby—where everyone could see it. In a scene right out of *It's a*

*Wonderful Life*, Ramsey jumped on a desk and shouted across the crowded lobby that he had $30 million more sitting in the Fed's vault down the street. Just like that, the bank run ended.

The Fed has come a long way from its early years. Today, we employ more than 1,300 people in Texas, almost a thousand of them in Dallas. Each year, the Dallas Fed processes 1 billion paper checks worth about $900 billion and between 240 million and 300 million electronic checks and handles 5.4 billion in circulating banknotes worth nearly $92 billion. We continue to supply the liquidity banking customers need in times of potential and real crises, such as Y2K, the aftermath of 9/11 and last year's devastating hurricanes. Our operations require an underground vault the size of a five-story building—quite something, when you realize our vault was little more than an office safe in 1914.

Our other responsibilities include supervising the banking industry within the Eleventh Federal Reserve District. We conduct on-site audits of our member banks and monitor bank performance and stability. We have public education programs designed to raise financial and economic literacy in our community and host many public events and conferences on significant activities within our economy. We maintain a first-rate research department that provides me with the authoritative economic analysis I need for my role on the Federal Open Market Committee—the FOMC—as well as speeches like this one.

I mean it when I say first-rate. Some of you may not know that Finn Kydland, an associate of our research team for the past 13 years, won the Nobel Prize for economics in 2004. Finn is with me this morning. Now, he is a Norwegian and is therefore genetically incapable of promoting or drawing attention to himself. Nevertheless, I am going to embarrass Finn and ask him to stand up and take a bow.

Our current analysis points to an economy at a crossroads. High energy prices, rising interest rates and the slowdown in a red-hot housing market have taken some of the steam out of what had been a fairly robust expansion. At the same time, our current inflation indicators are not presently as well behaved as I would like them to be. Central bankers are always concerned when inflation starts to rear its ugly head. We know from experience that once inflation gains momentum, it becomes harder and harder to stop.

As you know from reading this morning's papers, at our last meeting of the FOMC, we collectively decided to pause in raising the fed funds rate after 17 consecutive rounds of quarter-point tightenings. It was the collective judgment of the committee that we were at a juncture where it made sense to evaluate the lagged effect of these tightenings, especially on the inflationary impetus of the economy.

How do we define inflation, and how do we measure it? This is a question I want to discuss in depth with you today. Before I do, however, let me issue the usual disclaimer that today, as always, I speak only for myself, not for the Federal Open Market Committee, nor for any of the other committee members.

Inflation is an increase in the general price level. If prices for all goods and services went up in the same proportion, over some period of time—if all prices increased by, say, 2 percent over the past 12 months—there would be no difficulty in identifying the rate of inflation: It would be 2 percent a year. In reality, over any stretch of time, some prices will rise faster than others and some may actually decline. When we speak of inflation as a sustained increase in the "general level of prices," we have in mind an increase in an *average* of all prices.

This average is more sophisticated than a simple arithmetic mean. We don't want to treat a 10 percent increase in the price of pepper, for example, as having the same importance as a 10 percent increase in the price of shelter, clothing or transportation. So the formulas we use weight items by how important they are in people's budgets.

Differences in weighting, and the scope of goods and services included, give rise to the various inflation measures we hear reported on radio and television broadcasts or read about in the papers. The Consumer Price Index (CPI) focuses on the prices of the goods and services consumed by a typical urban household. The price index for personal consumption expenditures (PCE) looks more broadly at all goods and services purchased for final consumption and, additionally, uses a more sophisticated weighting scheme than the CPI. Most broadly, the price index for gross domestic product, also known as the GDP deflator, looks at the prices of all goods and services produced in the economy; thus, it includes not just consumer goods, but also capital goods and government-provided services.

Now, bear with me here.

Each of these measures comes in two flavors: "headline" and "core." The latter—the "core"—excludes prices for food and energy. The man on the street—someone known to occasionally purchase food and gas and air-condition or heat his home—often puzzles at policymakers' focus on core inflation. To add to that man's confusion, it is not uncommon for the press to report the same inflation numbers in different ways. When July's CPI numbers were reported earlier this month, a *Washington Post* article stated, "The Labor Department reported yesterday that inflation rose last month, eating into people's paychecks and savings at a quickening clip." The same day, *New York Times* readers learned that "the government's latest report on consumer prices, issued yesterday, suggests that inflation is slowing." Both were right. The *Post* had focused on the headline rate, which had picked up relative to the month before, while the *Times* focused on the core rate, which had fallen a bit from prior months.

Policymakers and economists tend to focus on the core measures because they strip out volatile items and show more stability than headline inflation. The core measures give a better indication of the underlying inflationary trends that matter most in formulating policy.

I have been using the word "core" as shorthand for "excluding food and energy," and that is the common connotation. To be precise, however, "ex food and energy" measures are but *one form* of the core rate, and—according to research at the Dallas Fed, the Cleveland Fed and elsewhere—not even necessarily the best. The Dallas Fed has created a measure of core inflation called the Trimmed-Mean PCE inflation rate. It is calculated by stripping out the most volatile price movements each month, regardless of whether the items in question are food, energy or something else, in order to not be distracted by temporary price rises or declines and to enable us to focus instead on the underlying trend of inflation.

The Trimmed-Mean PCE in one month this past spring, for example, excluded guns, which were set aside because of a big price decline, and funeral expenses, deleted because of a big price increase. I won't speculate on whether these price movements were related.

Central bankers abhor inflation and deflation. Our mantra is "price stability." Taken literally, this means zero inflation. But our inflation measures are imperfect and likely biased upward, so many central bankers see price stability as a very low, though positive, rate of *measured* inflation. The point is to have an inflation rate that is, in its economic effects, essentially zero. Stated differently, we seek to create the monetary conditions for an economy where inflation is not distorting anyone's decisions.

Why do we value price stability? Somewhere in France, there is—or at least there used to be—a rod that precisely defines a meter. It is quite useful to know that the length of that rod is constant from one month to the next, one year to the next. This is the only way to ensure that those 10-meter doohickeys that are on order, when they arrive, will fit with the 10-meter doodads you already have on hand. The best situation is a rod that doesn't change—"meter stability," if you will. Next best would be a rod that changed in predictable ways—say, a rod known to grow by 2 percent a year. Setting aside the question of where—after many years—one would keep such a rod, people could at least confidently plan for the future. The worst case, of course, would be a rod that changed unpredictably—some months growing by "X" percent, some months actually shrinking. Manufacturers and others, like the people who organize marathons, would expend resources attempting to predict changes in the rod's length—resources that could have been put to more productive use. And still, at the end of the day, some of their plans would come to naught because of unforeseen variations. You couldn't build a new house under those circumstances, or a factory, or a school, or practically anything else.

Inflation is a bit like having a measuring stick that grows or shrinks from one month to the next; the "doohickeys" and "doodads" that need to fit together, in this case, are prices for money or goods today and in the future. You get the picture. The consequences of a randomly varying dollar value would be severe. It doesn't take a Finn Kydland to conclude that low and predictable inflation is preferable to high and variable inflation and that low and predictable inflation should be the goal of your central bank.

The evidence suggests central bankers have had some success in that pursuit. In the U.S. and elsewhere, inflation has been brought down to near-negligible levels *and* has become more predictable in the past 20 years.

In 1993, a great economist named John Taylor proposed a simple rule for conducting monetary policy. He recommended setting interest rates based on two inputs: first, the deviation of actual inflation from the central bank's desired rate and, second, a measure of the economy's excess capacity, usually called the "output gap." The Taylor rule recommends raising nominal interest rates—that is, tightening monetary policy—whenever inflation is above its target or output is temporarily above its long-term potential.

The Taylor rule begat the Taylor principle, which recommends how much to tighten in response to a given deviation of inflation from its target. It suggests that increases in nominal interest rates need to be greater than the rise in inflation. In response to a 1 percentage point increase in inflation, for example, the principle might prescribe a 1.5 percentage point increase in nominal interest rates. If you do the math, you will see that a rise in inflation has been met with an increase in the *real*, or inflation-adjusted, interest rate. Higher real interest rates act as a tap on the economy's brakes, slowing the pace of real activity and reducing upward pressure on prices.

John Taylor originally formulated his rule as a *pre*scription for policymakers. But it turns out that, at least since the mid-1980s, the Taylor rule is a good *de*scription of how the Fed has conducted monetary policy. While the Fed has never bound itself to any explicit policy rule, its de facto adherence to the Taylor principle since the mid-1980s has paid off handsomely in terms of achieving price stability. Inflation measured by the PCE price index averaged about 7 percent in the 1970s, 4.5 percent in the 1980s and 2.2 percent in the 1990s and through the first half of this decade.

In the simplest version of the Taylor rule, current inflation is the primary determinant of a central bank's policy actions. In the real world, policymakers look at many other indicators to gauge inflationary pressures before they show up in actual inflation rates. This makes sense, given the lags between policy actions and their ultimate effects on the economy—lags that economist Milton Friedman famously described as "long and variable."

Among the additional variables we look at are measures of capacity utilization of business operators and tightness in the labor market—for example, the unemployment rate. Strong job growth will lead to demands for higher pay. Many of you might wonder why that could ever be bad. Well, when it comes to workers' pay and benefits, it is not the increases themselves that cause concern. Problems occur when labor costs rise faster than gains in labor productivity. When that happens, firms often see shrinking profit margins, which add to pressure to raise product prices. What policymakers look at is unit labor costs, a measure of workers' pay adjusted for productivity.

Even if we cull out the misleading signals, the traditional data set may no longer be sufficient. At the Dallas Fed, we are exploring the notion that capacity measures must be extended beyond the domestic market. Today, we live in a world where goods, services, money, and the ideas and tasks performed by American businesses cross international borders with great ease. It stands to reason, then, that inflationary trends in any economy cannot be properly assessed without knowing how readily resources, inputs, finished products and capital from outside the country can be brought to bear. The Dallas Fed's globalization initiative is aimed at developing measures of these broader output gaps, which we hope will let us determine how the dramatic rise of China and India, for example, or the processing of tasks in cyberspace will impact inflation in the U.S.

Monetary policy does not give central banks a lever to control inflation directly. In focusing on interest rates, the FOMC influences demand for credit, which in turn affects growth and inflation. At any given time, of course, all sectors of the economy may not be in sync, adding great complexity to the art of central banking. In the early part of this decade, the Fed was concerned about the deflationary impact of the high-tech investment bust, and it responded by lowering interest rates on overnight, short-term borrowing by member banks. In the past three years, we reversed much of that stimulus, at first because investment began recovering and more recently because inflation was at risk of becoming uncomfortably high.

Which brings us to the subject dear to your hearts—real estate. On the national level, recent data indicate that housing markets weakened further in mid-summer. The holy trinity of housing reports—starts, existing-home sales and new-home sales—all came in much weaker in July than expected by mainstream economists, with inventories of unsold homes continuing to rise.

Stepping back to include weakness shown before last month, permits and new-home sales are down about 20 percent from a year ago.

The declines are moving housing markets from very high and unsustainable levels toward more normal levels, unwinding some speculative activity. We are monitoring the effect this will have on the economy with due respect for its gravity. But it is not a one-sided deal; not all the consequences of the unwinding of a bull market in housing are bad. For example, a beneficial side effect of slower demand is that upward pressures on housing prices are abating. The pace of home-price appreciation has slowed dramatically—from double-digit year-over-year rates last fall to low single digits in recent readings. As prices cool off, we may finally begin the long process of allowing income to catch up with housing costs, helping make homes more affordable in the long run.

Let me give you an example of what I am referring to. In 1999, 43 percent of the residents of Los Angeles could afford a median-priced home. By the end of last year, only 2 percent could. For New York, the comparable figures were 55 percent that could afford a median-priced home in 1999 and 6 percent in 2006. The figures for Dallas, incidentally, were unchanged over the period. At the end of last year, 62 percent of Dallasites could afford a median-priced home, which explains why our local housing market is holding up better than the markets on the West and East coasts.

With home-price appreciation no longer running rampant, we are likely to see fewer homeowners tapping into their home equity, which had been fueling a consumption boom and diverting savings from investment. From a broader perspective, the slowing of housing and consumption frees up resources for investment and a more balanced economy. Some good news can be found by looking carefully at durable goods orders, which foreshadow private investment. Their recent rise suggests that businesses are starting to increase their capacity following the investment bust a few years back. Spending on plant and equipment is crucial to supporting productivity growth, the source of long-term gains in living standards.

The stirring of business investment has helped spark a revival in commercial real estate construction to accommodate the many firms aiming to expand their workspaces. Indeed, we may be seeing the start of a great rotation away from household spending to investment and to more healthy and balanced growth. In setting monetary policy, we assess inflationary pressures and gauge aggregate demand by adding up some sectors that are weakening, like housing, along with sectors that are expanding, like commercial construction and investment.

I will wrap up by bringing things closer to home—the Texas and Dallas real estate markets, which diverge from national trends, particularly on the housing side. The housing markets all across Texas are healthy compared with the rest of the U.S. While we have seen some signs of cooling, traffic and sales are still strong. We are hearing more reports of cancellations, mostly attributed to relocation buyers not being able to sell their West Coast homes. This is not "Texas brag." If you listen to business leaders in El Paso, for example, you will hear them say that West Texas is being invaded by two forces: the U.S. Army and Californians. The consolidation of military bases in the El Paso area, combined with relocators from Southern California, is changing the character of once-sleepy El Paso.

Throughout the state, housing starts outpaced sales in the second quarter, despite record-setting sales figures. And our apartment markets have improved along with the economy. So far this year, apartment demand is keeping up with supply, helping vacancy rates stay around 10 percent in most Texas markets. We are hearing reports of strong office-leasing activity from both local and relocating firms, as well as increasing requests for large blocks of office space. Office, industrial and warehouse rents are picking up, along with construction activity in several areas in Texas, especially in Dallas. We are also hearing numerous reports of the difficulty developers are having finding construction workers as well as rising pressure on wages.

In the Metroplex, the housing market has been quite strong for over five years. Dallas–Fort Worth has ranked in the top four among U.S. metropolitan areas in single-family permits since 2000. New-home sales set records in the first and second quarters of 2006, while existing-home sales cooled a bit. Year-to-date existing-home sales are flat compared with last year, and July sales were down 10 percent. The median price of homes in the area, however, is still rising modestly. Apartment markets are relatively healthy, with occupancies above 90 percent and three consecutive quarters of modest rent hikes.

Dallas' office market has made a comeback in the past few years, but that really does not show up in vacancy rates, presently ranked second highest in the U.S. Interestingly, Dallas' commercial vacancy rate is about 23 percent, while Fort Worth's is 6 percent. Despite the ranking, demand for space is increasing, and large blocks are diminishing in certain submarkets. Construction has increased dramatically, especially in downtown Dallas, Uptown and Far North Dallas. Our contacts are convinced that occupancy, demand and rents in these areas justify the pace of construction. The industrial market continues to improve, with most of the gains coming from the warehouse side. The retail market has benefited from the strong housing market over the past several years, but demand appears to have ebbed recently, giving cause for caution. However, retail vacancies remain relatively low, at about 10 percent, and construction activity is up strongly.

A word of caution is in order, however, because national trends do have an impact on the local market. Nationally, there is a lot of cash in capital markets looking for sustainable projects to be invested in. The result is that capitalization rates have been pushed down, raising concern among some industry analysts, especially in a condominium market that seems to reflect an excess of supply relative to demand at the margin. We have seen the effect of this here in Dallas with the cancellation of some high-profile building or conversion plans, and I expect there will be more.

I hope my comments have been a good start on today's proceedings. Subsequent speakers will, I am sure, provide more detailed information on Metroplex real estate trends. Before leaving, though, I want to remind you that North Texas owes its prosperity to the legions of vital and entrepreneurial businesswomen and men who grew up here or came here. People like you. You dare to dream. You are not afraid to take risks. You are a large part of what makes Dallas what it is.

Let me put this in perspective. We read a lot these days about India and its barnstorming economy. India has an extraordinary cadre of brilliant and hardworking people. India's economic prowess grabs a lot of headlines. And yet consider this: The 24 million people of Texas produce 20 percent more output than the 1.1 billion people of India. The Texas economy is a fifth larger than India's. That's because of hardworking risk takers like you. The Federal Reserve does its level best to maintain monetary conditions necessary for sustainable non-inflationary growth. But you, and the businessmen and women of America, are the ones that make that growth happen and secure our prosperity. God bless you.