

# Great Expectations:

## The Role of Beliefs in Economics and Monetary Policy

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hether one looks at consumers or businesses, expectations — people's beliefs — are driving forces of every economy. The economic outcomes one can expect from public policy are affected by the way beliefs are formed and how they vary over time. In this message, President Santomero gives his perspective on the important role beliefs play in economic decisions and policymaking. He also offers some observations on the important role the policymaker's credibility plays in determining the outcome of any monetary policy action.

Beliefs play an important role in economic decisions and economic policymaking. The beliefs held by both consumers and businesses lead to physical results in terms of the amount a nation produces, the opportunity for employment, and the formation of both personal and national wealth. The connection is the effect that beliefs have on people's demand for goods and services and on businesses' willingness to invest in new equipment and the construction of new facilities.

Beliefs are important to the decisions people make. Whether one looks at consumers or businesses, expectations — people's beliefs — are driving forces of every economy. The economic outcomes one can expect from public policy are affected by the way beliefs are formed and how they

vary over time. It matters whether people form their beliefs by looking at the past or by looking forward, by either trusting economic policymakers' promises or forecasting economic conditions.

Beliefs also play a central role in one current debate within monetary policy circles: the importance of the credibility of the policymaker in determining the outcome of any monetary policy action.

### BELIEFS IN AN ECONOMIC CONTEXT — ECONOMIC EXPECTATIONS

You will not see the word "beliefs" very much in the field of economics. Rather, you will find the phrase "economic expectations." This is because economists generally talk

about people's "beliefs" in the context of their expectations about the future. Yet, these expectations are at the heart of virtually every economic decision people make today.

For example, when consumers make decisions to spend or save, expectations play an important role. When making these decisions, people base their actions on both their current income and future prospects. This implies that actions today are predicated upon people's belief in the future and their future expected earnings. This plays out on college campuses every day. Even during their graduate school days, MBA, law, and medical school students generally spend more than doctoral students. Unfortunately, the life of a scholar tends to be less remunerative than a career in business, law, or medicine. Since students know this, their spending habits begin



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to emerge early, and these patterns develop not because of current stipends but because of earnings expected well into the future. Likewise, as each of us saves for retirement, we base our decisions on how long we expect to be employed, our expected future annual income, and what we expect to obtain from our accumulated wealth over the intervening years until retirement. Again, expectations about the future matter in an important way, as our beliefs dictate the steps we take today and the plans we make for tomorrow, aimed at achieving our economic and personal goals.

Business decisions are similarly affected by managers' view of the future. In fact, their behavior is perhaps even more dependent on an assessment of the years ahead. Businesses routinely try to project future gains that can be derived from current investments. When making a decision to invest in a specific project today, businesses compare the project's expected future flow of revenues to its current cost. This is fundamental to capital budgeting. These cash flows are only expectations because they are not contracted, nor are they guaranteed. They are derived from management's belief in the firm's value proposition, the marketing studies that support the project, and the firm's assessment of its own capability.

Expectations even affect economic decisions about foreign activity. Decisions about whether to import or export or whether to make a foreign direct investment or a foreign financial investment are all tied to the future relative value of the currencies involved. Moreover, these exchange rates are driven by the expectations surrounding countries' economies and their political future.

So expectations matter and expectations pervade virtually every economic decision.

## EXPECTATIONS AND PUBLIC POLICY

Public policymakers are not oblivious to this fact. They recognize that expectations influence people's behavior and that policymakers' actions will change the private sector's view of future economic conditions.

Policymakers take this interaction into account when policy is made — or to put it more directly, their decisions are influenced by this awareness. This can be illustrated quite easily with reference to the debate surrounding the latest federal tax cuts.

Economists know the effect of a tax cut will differ depending on whether consumers believe a personal

example, another part of the administration's enacted tax program included federal tax incentives that were clearly labeled as a temporary tax break for businesses to encourage investment in new equipment. These incentives are set to expire at the end of this year. Assuming businesses believe Congress will not extend this temporary benefit or make it permanent, this tax benefit should encourage a short-run increase in business spending. Accordingly, most economists expect some business spending to be pulled forward to 2004 to take advantage of the tax incentive.

Let me illustrate why expectations matter to the Federal Reserve in its conduct of national monetary policy. The Federal Reserve's goal is

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income tax cut is temporary or permanent. If people expect the tax cut to be a one-time-only event, they are likely to spend less than if they believe the tax cut is a permanent policy change. To see this, consider your own likely behavior. In all likelihood, a one-time boost in your take home pay will have a smaller effect on your spending than a program that permanently increases your net income well into the future. Therefore, to trigger a desired result of a large boost in economic activity, a tax cut perceived as permanent will assist a slowing economy more than a transitory cut will. This was one of the rationales for the permanent tax-rate changes proposed by the current administration.

But transitory tax changes can also have a place in tax policy aimed at short-term response. For

to create financial conditions that foster maximum sustainable economic growth. The Fed makes two important contributions in this regard. First, it provides essential price stability — meaning little or no inflation. Second, it tries to offset shifts in demand that deter the economy's ability to reach its potential.

To a central banker, long-run price stability is of utmost importance because, for the market economy to achieve sustainable growth, it must generate efficient resource allocations, including appropriate savings and investment decisions. This requires not only a stable price level in the near term but also the expectation of stable prices over the long term. This implies that optimal monetary policy is not simply a matter of establishing a stable price level today, but of ensuring a

stable price level — and expectations of price stability — into the future. Only then can consumers and investors be confident in the environment in which they must make decisions that have implications far into the future. For this reason, central bankers often talk about the need to establish credibility and about the public's confidence in our long-run commitment to price stability.

For the past two decades, the Fed has focused on the goal of price stability and has been quite successful in achieving it. But we have not always been successful. Recall the 1970s. Early in the decade, inflation began to rise, and the Federal Reserve failed to establish itself as a champion of price stability. The public's inflation expectations became unstable. Inflation and inflation expectations spiraled upward. Economic performance deteriorated. The Fed, concerned about the potential impact on employment and economic activity, initially avoided undertaking the strong policy actions necessary to break this destructive cycle. It was not until Federal Reserve Chairman Paul Volcker led the economy into disinflation in 1979-82 that the Fed began to regain credibility. Unfortunately, regaining credibility was costly. We suffered two recessions during those years.

Nonetheless, since that time, the Federal Reserve has achieved what is essentially price stability and has also stabilized inflation expectations. This can be seen in at least two different ways.

First, the level of interest rates has moved lower over the period and has remained low. This is important because the level of nominal interest rates tends to move with expected inflation. This idea has a long history in economics, but it was best articulated by Irving Fisher in 1930. He pointed out that investors in finan-

cial assets would demand compensation for the loss in purchasing power associated with nominal investments when the price level rises. In other words, if an investor believes inflation will remain at 5 percent per year over the next several years, she will demand a yield of at least 5 percent. Otherwise, she risks a loss of purchasing power at

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the time the investment is redeemed. Therefore, the downward trend in market interest rates is associated with our success in reducing inflation expectations.

But we also have some survey data in support of this view. The Federal Reserve Bank of Philadelphia, among others, has been tracking the views of professional economists on various economic indicators for many years. Our Survey of Professional Forecasters, or SPF, asks for quarterly forecasts for a variety of economic data. As part of this process, we ask for expected consumer price inflation over the next 10 years. The most recent SPF reported that the expected inflation rate over the next 10 years was 2.5 percent per year. This level has remained essentially unchanged over the past three years, even as many disturbances buffeted the economy and the Federal Reserve aggressively reacted to offset their macroeconomic effects.

Why is this important? Stated simply, the more people believe in the

existence of price stability, the more effective monetary policy will be as it tries to offset shifts in demand that deter the economy's ability to reach its potential. If people are relatively confident that a downturn will be short-lived, and monetary policy action will be effective in returning the economy to sustainable growth, they will be more willing to spend into a downturn, taking advantage of temporarily low prices and low interest rates.

In this respect, the fact that consumers did indeed spend their way through the recent economic downturn is a testament to the credibility of monetary policy and consumer expectations that we would soon return to a more acceptable rate of economic growth. The Fed's aggressive countercyclical monetary policy over the most recent business cycle has given consumers the opportunity to borrow at relatively low interest rates. Seizing this opportunity, households have increased their purchases of homes and durable goods at record rates, dampening the breadth and depth of the past recession. They are also sustaining that growth, giving business investment time to recover and businesses a reason to invest in a better future.

This situation contrasts with the recent Japanese experience, where interest rates at or close to zero elicited little response. The difference is confidence in the future. Of course, confidence is born of many factors, not just the effectiveness of monetary policy. Nonetheless, I think confidence in the Federal Reserve's effectiveness is part of the mix. In short, expectations about the central bank's performance figure into the public's behavior. Likewise, maintaining public confidence in both the stability of prices and economic growth helps the Federal Reserve achieve its mission.

In Japan's case, interest rates had been at or close to zero for a long

time, without eliciting a substantial response in terms of increased consumer or business spending. Only recently has the situation begun to change. For a number of years, people in Japan did not expect an immediate turnaround in their economy. Accordingly, they have had little incentive to rush to take advantage of current low rates.

The other aspect of Japan's recent experience that has attracted some attention is its persistent price deflation. Ordinarily, when businesses cut prices, ensuing increases in demand help to generate an economic turnaround. Once the turnaround begins, prices stabilize and return to normal. Indeed, the expectation of future price increases is what encourages consumers to buy now, inducing a positive response to the price cuts. But if people believe the initial price declines are a harbinger of continued weakness and additional price declines, demand slackens, leading to even less economic activity and a continuing downward spiral. Again, expectations are at the heart of these economic decisions and the impact of these price changes.

In sum, these examples illustrate the important role beliefs play in economic decisions. Physical results in terms of actual consumer and business behavior are influenced by consumer and business expectations — that is, their beliefs.

## HOW BELIEFS ARE FORMED MATTERS

Given the importance of expectations, it should not be surprising that considerable effort has been expended on studies of expectations. Economists have been interested in a number of aspects of expectations, including how they are formed, how expectations change, and their speed of adjustment. Indeed, failure to investigate these issues fully could lead to flawed empirical and analytical

research and then flawed economic policy as well.

For these reasons, researchers have long investigated what people believe will occur in the future and how their views vary over time. Researchers interested in studying consumer spending want information about what consumers believe and how that affects their short-term spending behavior. Similarly, economists studying firms'

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behavior track firms' views about the outlook for their businesses or industry and how this is related to their own business spending on new facilities or equipment.

But beliefs are difficult to observe. One way to obtain data is to simply ask people what they believe. Some organizations conduct regular surveys of general consumer issues. For example, the Conference Board publishes a survey of consumer confidence, and the University of Michigan publishes a survey of consumer sentiment. Both surveys generate an index intended to summarize overall consumer attitudes. The Michigan survey in particular asks pointed questions: whether buying a car is a good idea now or in the future, whether jobs are plentiful now or are likely to be in the future, and what the respondent expects the consumer price inflation rate to be over the next five to 10 years.

Such information is relevant and quite helpful. However, it does not fully solve our problem because behavior is only loosely related to such surveys. It is well known that consumer spending is more closely related to direct economic factors such as income

than to these consumer sentiment numbers. Such numbers are helpful in explaining behavior, most often during times of shocks such as wars, but they are not perfect. Consumers have too often said one thing and done another for economists to totally trust confidence survey numbers.

So economists have had to look more closely at the underlying economic data to determine expecta-

tions. Researchers obtain estimates of expectations about future economic data in several ways. These methods essentially try to model how people form their expectations, or beliefs, about the future.

For instance, economists have tried to generate proxy data for expectations by simply extrapolating from the past, which amounts to saying that people believe nothing is really changing. Others have employed a more forward-looking approach, relying on a model of the economy that is calibrated to the past but permits more to change in the future. If people form their expectations or beliefs in a more forward-looking manner, they may behave differently than if they form their beliefs by looking only at the past. This difference is most evident in economists' discussions of the impact of announced changes in economic policy.

Suppose inflation were 8 percent and the central bank announced a policy to lower inflation in the future from 8 percent to 2 percent. If consumers and businesses absolutely believed the policy announcement, they would be willing to accept lower

10-year interest rates immediately. As a result, interest rates would adjust sharply downward. The policy and ensuing drop in interest rates would essentially prove a self-fulfilling prophecy based on the strength of people's beliefs.

In contrast, if consumers and businesses adjusted their expectations about future inflation only *after* actual inflation started to fall, they would *not* be willing to accept a sharp reduction in 10-year interest rates. This constitutes a kind of “seeing-is-believing” skepticism in the populace.

In general, economic research has shown that the economy makes faster adjustments to announced policy changes when people form their beliefs in a forward-looking manner, rather than forming their beliefs based on the recent past behavior of economic data, and when policymakers have credibility.

Economists' understanding of how expectations are formed has evolved substantially over the past 30 years. In the early days of macroeconomic modeling, we modeled people's expectations as simple extrapolations of their recent experience. Then, in the 1970s, the so-called “rational expectations” revolution changed our whole approach. We began to model expectations about the future as an accurate forecast of the future economic environment.

We continue this research effort even now. Currently, we are modeling expectations as the outcome of an intelligent and well-informed, but occasionally mistaken, learning process. The marketplace eventually weeds out expectations based on poor information and erroneous thinking, but this can take a considerable amount of time. This has led many people to argue that policymakers can assist the market in its attempt to predict the future by greater transparency

and more public disclosure. Let me turn to this topic and its implication for monetary policy.

### TRANSPARENCY, DISCLOSURE, AND EXPECTATIONS

Because the Fed can avoid sharp changes in public expectations about monetary policy and the Fed's credibility by being as transparent as possible in its own decision-making, information about the Fed's policy goals, its assessment of the current economic situation, and its strategic direction are increasingly a part of the public record. The statements now

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released after every Federal Open Market Committee meeting are important in this regard. They not only report our decisions concerning immediate action but also our sense of the key factors driving near-term economic developments and the strategic tilt to our actions going forward.

The Fed recognizes that transparency plays an important role in achieving its policy objectives and goals. Any policy action can have very different effects, depending on what the private sector infers about the information that induced policymakers to act, about policymakers' objectives, and about their likely future actions.

Over the last few decades, there has been enormous progress in improving the clarity of the Fed's objectives and its discipline in pursuing those objectives. There has also

been great progress in providing more accurate and timely information about Fed policy actions. This progress has greatly enhanced policymakers' credibility. Providing more certainty about the central bank's objectives and plans through greater transparency and disclosure will help avoid large swings in public expectations about future changes in monetary policy. This can help stabilize the economy over the long run.

When you come right down to it, the Fed directly influences just one market interest rate — the rate on overnight unsecured loans among banks, commonly known as the fed funds rate. Therefore, for the Fed's policy actions to affect economic activity, they must ripple out to other short-term interest rates. How and to what extent are primarily a matter of expectations.

When the Federal Reserve changes its fed funds target, financial markets make an assessment as to how persistent that change will be, what it signals about the future path of fed funds rate targets, and the economy's reaction to the Federal Reserve's change in policy.

This alteration in market expectations, in turn, drives changes in other short-term interest rates. It is the markets' anticipation today of future Federal Reserve actions that extends the impact of a fed funds rate change to other short-term interest rates.

The effect of a monetary policy action by the Fed will also ripple out to long-term interest rates. Thus, the change in the overnight rate, a single Fed action, affects the entire pattern of interest rates, with long-term interest rates often moving in the same direction as short-term interest rates.

Research suggests that Federal Reserve near-term policy actions are pretty well anticipated by financial markets, though the precise timing

and magnitude of interest rate changes are not.

At times, however, long-term interest rates do not move in the same direction as short-term rates. For instance, this can occur when the Federal Reserve is reducing its fed funds rate target but investors believe this easier monetary policy will lead to higher inflation. Yet again, an economic outcome depends on what investors expect — their beliefs — about the future. The better markets can predict the future course of Fed actions and their results for the economy, the more effective monetary policy will be.

Unfortunately, expectations about the economy evolve in ways we cannot always predict. They are also subject to dramatic shifts that we cannot always anticipate. Consequently, they impart an inevitable element of instability to the economy.

## INFLATION TARGETING AS A NEXT STEP

It is partly for this reason that some economists have recently spoken in favor of explicit inflation targeting. Proponents argue that the Federal Reserve should set an explicit target for inflation to further improve central bank transparency.

I admit to being of this opinion. I believe the FOMC should seriously consider inflation targeting so as to consolidate the gains made in central bank credibility over the past two decades and to increase the efficacy of policy even further.

I believe we have reached a point where institutionalizing inflation targeting simply makes good sense from an economic perspective. In short, it is a reasonable next step in the

evolution of U.S. monetary policy, and it would help secure full and lasting benefits from our current stable price environment. Evolving to explicit inflation targeting from our current implicit target has significant potential benefits, and the costs may be minimal if we can implement it in a constructive manner.

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Clearly, proper implementation of inflation targeting is crucial to its success. That, in turn, requires more research and analysis about how and when to introduce it. But while it requires more public debate and discussion, it may be an idea whose time is approaching.

Explicit information about the Fed's policy goals, along with its assessment of the current economic situation and its strategic direction, can only improve financial markets' expectations and move market interest rates into better alignment with appropriate Fed policy.

## CONCLUSION

Expectations are at the heart of virtually every economic decision people make. The public's expectations about factors affecting the economy have a powerful impact on the economy's overall performance. People's view of the future pervades virtually every decision made in our complex and vibrant economy. In some ways,

beliefs assume characteristics of a self-fulfilling prophecy. If people believe the economy is healthy and strong, that belief helps to make it so. Their confidence will induce spending and increase demand, which will, in turn, promote business investment spending, which creates jobs, and ultimately translates into economic growth.

People's beliefs extend not just to the economy's state and structure but also to policymakers' behavior in their attempts to control both monetary and fiscal policy. As for monetary policy, its effectiveness hinges on public confidence — people's belief — that the Federal Reserve has the commitment and the capacity to maintain stable prices and foster maximum sustainable economic growth.

Establishing this confidence is not easy, particularly in a world where shifts in public expectations can themselves create episodes of economic instability. But, ultimately, the key to creating stability lies in demonstrating stability: focusing on the ultimate policy objectives, pursuing those objectives persistently, and communicating them forthrightly. In this regard, I believe the Federal Reserve is on that path. 