

# **Credibility and Commitment**

New York Association for Business Economics  
New York, NY  
March 6, 2007

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## **Introduction**

Good afternoon. It is a pleasure to be here in New York and to have this opportunity to speak to you today.

I'd like to begin by asking a question. How many of you have ever decided that you would be healthier and happier if you lost a few pounds and so made a New Year's resolution to go on a diet? I know I have. But, if you are like me, tomorrow comes and it's your wife's or husband's birthday and you celebrate with a fine dinner, a bottle, or two, of wine, and a delicious soufflé for dessert. Then over the weekend there is a party in the neighborhood and the food is outstanding, so you decide that the diet can wait until next week. But as the days and weeks go by, next week just never comes, and you, in effect, abandon your dieting plan altogether. We all know we would have been better off if we had just stuck to our diet. Yet somehow we failed to follow through consistently on what was basically a good plan.

At this point some of you may be thinking, "What does this have to do with monetary policy?" But the fact is that policymakers often have a good plan, as well, but may not be able to resist eating that soufflé. Consequently, not only would the good plan go out the window, but the public would lose confidence in the policymaker's credibility to follow through on its promises.

The Federal Reserve as the monetary authority has a mandate to provide a stable price level and promote maximum sustainable growth. These are important goals that can contribute to a more efficiently functioning economy and thus help to promote higher living standards. So the question becomes: How can the Federal Reserve System best go about achieving these goals? Today, I am going to address one critical element of the Fed's ability to achieve its objectives—the importance of making credible commitments

## **Commitment vs. Discretion**

The issue of whether it is better for a policymaker to commit to a policy or to operate with pure discretion has long been a central question for many areas of policymaking, including monetary policy. In the late 1970s, Nobel Laureates Finn Kydland and Edward Prescott showed that a regime that pre-commits policymakers to behave in a particular way is preferable to a regime that allows policymakers pure discretion—that is, to choose a policy independently at each point in time.

This idea is very counter-intuitive to most people. After all, the policymaker could choose the same set of actions under discretion as he could under commitment. So it seems that a discretionary policy can certainly be no worse than a policy that entails pre-commitment. Therefore, so the argument goes, there is value in retaining “flexibility” so that the policymaker can respond “appropriately” to the current environment. Thanks to Kydland and Prescott, and many others that followed, we now know that this argument is fundamentally flawed. The fatal flaw in this conventional wisdom stems from its failure to recognize the important role played by expectations of future policy in economic decisions made today. I hope to convince you of that today and to highlight some of the important implications of that reasoning for how we ought to think about monetary policy.

Before I continue, I want to be precise and define what I mean by commitment and discretion. Commitment means delivering, in any particular situation, on past promises. In other words, the policymaker unequivocally will follow through on a promise made about future actions.

Discretion, on the other hand, means that the policymaker is not bound by previous actions or plans and thus is free to make an independent decision every period. Recall my choice to have that soufflé for dessert. It seemed like a great decision at the time, and I certainly enjoyed it. Moreover, each time I chose to eat more extravagantly as opposed to dieting I was making a choice that made me feel better. Yet the consequences of those meal-by-meal or day-by-day choices added up to a very poor outcome—I gained ten pounds rather than lost them.

Well, policymakers can find themselves in similar situations. Discretion means the policymaker may find it preferable to change his mind, or re-optimize, and do something other than what was initially promised. The temptation to renege on previous promises or plans is what economists refer to as the time-inconsistency problem, and it has surprisingly troublesome consequences. In particular, it can mean that outcomes under a discretionary regime are likely to be worse than those under a regime where the policymaker is constrained to follow through on previous commitments. A few examples may help illustrate this seemingly surprising but important idea.

### ***Patent Protection***

Research and development by the private sector is an important source of innovation in our economy. From new drugs to computers, research has led to new products that have enhanced our health and productivity. Thus investment in research generates important social returns that contribute to the improvement in living standards both here and around the world.

To encourage investment, governments frequently seek to ensure that the private returns to innovation are sufficient to elicit the socially optimal amount of investment in new ideas. In practice, governments often give temporary monopoly rights to companies, in the form of a patent, as a means of assuring the private inventor that he can earn a sufficient rate of return on what may be a very costly and risky investment project.

Once the new drug or invention is discovered, however, the discretionary and myopic policymaker might be tempted to revoke the patent and make the new product's design freely available to all. Such an action will likely result in more competition, and the ensuing price reductions will make society better off. In this case the policymaker is acting in a way that is conditioned on previous outcomes and that may appear, at the time, to be optimal for society as a whole. But I think you can all see that such change in policy, while having short-term benefits, is likely to have devastating effects on future investments in research and inventive activity. In particular, since the potential returns to innovation might well vanish at the discretion of the policymaker, the incentive to invest in risky research will fall.

On the other hand, if the policymaker could commit to enforcing the patent rights, the potential payoff to risky research and innovation would remain. Thus removing the discretion of the policymaker to revoke the patent — that is, constraining the policymaker’s choices — actually raises overall welfare. Of course, an unanswered question is: How can the policymaker commit to this policy in a credible way? I will have more to say about this later, but, in this case, commitment is attempted through legislation. The idea is that while passing a law is not a binding commitment because laws can always be changed, it does substantially raise the barrier to policymakers acting in a time inconsistent fashion.

### *Living in the Desert*

The patent example is a simple case, yet it illustrates that by committing to a policy, and tying the hands of the policymaker to honor that policy, commitment actually leads to better outcomes.

Allow me to use a slightly more complicated example that further highlights the importance of expectations and the role they play in economic outcomes. As I mentioned earlier, expectations and how they affect people’s behavior are really at the heart of the issue. The example I will use is loosely based on one suggested by Kydland and Prescott and more recently elaborated on by a former colleague and co-author Robert King, in an article that recently appeared in the Richmond Fed’s *Economic Quarterly*.

In this example, all else being equal, people like living in warm, dry places as opposed to cold, wet ones. And let’s imagine that each individual makes one decision: where to live.

Unfortunately, water is very scarce in these warm, dry places—so I’ll call them deserts. But the government can solve the water problem by building an infrastructure of dams and canals to deliver water from some far-away source. However, this infrastructure is extremely costly and would have to be paid for by a tax on all citizens. In this scenario, the government has only one decision to make—to build or not to build the infrastructure. The government wants its policies to conform to individuals’ preferences; that is, it wants to do what makes people happy. Thus, there is no conflict between the desires of the public and the desires of the government.

Given the public's preferences for living in warm, dry places, but that living there requires expensive infrastructure, what is the best outcome? Of course, that will depend on the cost of the infrastructure, the benefits from living in a desert with water, and the hardship of trying to live in a desert with no water.

To make the problem interesting, let's assume that living in a desert without the infrastructure is costly and inconvenient and that the cost of building the infrastructure to carry the water is very high—sufficiently high that the sacrifice of the consumption of other goods that must be incurred to pay for the infrastructure more than offsets the pleasure of those living in a warm, dry environment. More simply, the collective costs of having people live in the desert outweigh the collective benefits they receive.

Therefore, the socially desirable outcome, the best outcome, is for people not to build houses in the desert and for the government not to build the necessary water-carrying infrastructure. Now, let's ask ourselves "Will this be the outcome?"

In a world where the government can pre-commit to not building the infrastructure (a big "if," I know), everything would turn out well. The logic is straightforward. The government would announce that no infrastructure will be built, and since this is a commitment that everyone believes, no one will choose to live in the desert. Thus the outcome under commitment is the one that maximizes social welfare.

Now what if government could not commit to a policy? For example, suppose the government announced that it would not build the infrastructure, but people did not necessarily believe it would follow through on that announcement. That is to say, the government's commitment may not be credible. Let's call this the discretionary regime, since at some point the government may choose to change its mind based on the conditions prevailing at the time. Under this scenario there are some significant complications and problems that result in social welfare being less than in a regime with credible commitment.

So what determines what the government will decide? Well, if a lot of people decide to build in the desert, then the best decision for the government is to build the necessary infrastructure to support the population living there. On the other hand, if relatively few people decide to live in the desert, the government will not build the infrastructure.

Note that an individual's problem is more complicated because not only must he form expectations about what the government will do, he also needs to form expectations about what other people are going to do. If he thinks a lot of other people are going to build in the desert, meaning enough to force the government to build the infrastructure, he should build in the desert as well. If correct, he gets to live in a more desirable place that has abundant water. Further, if he is correct, the water-carrying infrastructure is going to be built, and he will have to pay for it whether he lives in the desert or not. On the other hand, if he is incorrect, he is in trouble. He will end up living in a desert with little water.

Note that regardless of the outcome in this discretionary regime, some people will be worse off than in a regime of commitment—either those that live in the desert without the water, or those that don't live in the desert and have to pay for the infrastructure. Thus, the regime with credible commitment strictly dominates the regime of discretion in terms of social welfare.

## **Commitment and Monetary Policy**

Commitment, or the lack thereof, also has important implications for monetary policy. Just as firms' R&D decisions are affected by their expectations about future patent protection, many of people's economic decisions are affected by their expectations about the future course of monetary policy. As a result, the central bank faces a time-inconsistency problem. That is, it will be tempted to pursue policies that deliver temporary economic benefits that may be inconsistent with longer-term goals. And realizing that the central bank will have the latitude to give into this temptation, people will make decisions today that drive the economy to a suboptimal outcome.

Let me illustrate my argument using a typical view of how monetary policy works. Now, it is widely acknowledged that in the long run, monetary policy cannot raise the level of output or

employment. However, due to various rigidities in the economy, the monetary authority may face a short-run tradeoff: by generating unexpectedly high inflation it may be able to temporarily boost output and employment. By like token, unexpectedly low inflation may temporarily reduce output and employment.

Economic analysis tells us that as long as the prospect of exploiting this short-run tradeoff exists, a central bank conducting a discretionary monetary policy will not be able to achieve its desired rate of inflation.

To see the reason why, imagine the monetary authority announces it is going to maintain average inflation at some desired level. If policy successfully maintains that desired inflation rate, then output would grow at trend. But at some point the monetary authority will be tempted to exercise its discretion to generate a bit more inflation, which may not be very costly, in exchange for the benefit of more output in the short run. However, once the higher inflation is recognized, the public will revise its expectations of future inflation and push wages and prices up. Consequently, the monetary authority will see higher inflation, but no higher output. It might be tempted to try the same experiment again, but it will generate the same outcome. Thus, the monetary authority's attempt to increase public welfare will be thwarted by the behavior of forward-looking individuals and will end up producing more inflation with no added output.

The monetary authority now faces a dilemma: if it seeks to re-establish its desired inflation rate, it must generate unexpectedly low inflation, risking a temporary decline in output. The loss of output would diminish public welfare; thus it seems unlikely that policymakers will undertake such action, and so the economy gets stuck with a permanently higher inflation rate than it desires. Thus, discretionary monetary policy proves to be time inconsistent and so fails to deliver on the desired inflation objective.

Now, what if the monetary authority could commit itself, in some way, to producing the desired inflation rate that it had announced?

The answer is clear. The public would expect that inflation rate would be maintained, there would be no unanticipated inflation, and output would grow at trend. So a monetary authority that could commit to its desired inflation policy would outperform a monetary authority that is free to exercise discretion—that is, it would deliver the same output growth, but lower inflation rate

Some people may find this result counterintuitive. But remember our example of the dieter. Clearly, people starting a diet will be more successful if they are able to commit themselves to not eating that soufflé or those cookies in the cabinet. Letting the dieter have discretion to yield to temptation will not lead to the desired outcome. In the same way, people often think that keeping monetary policy from deviating from a desired inflation goal is like tying the policymaker's hands and, therefore, should yield worse outcomes. But in fact, doing so gives a better outcome.

### ***Real world policymaking***

Now you may be saying to yourself that this is just the idle musings of economic theorists and it can't have anything relevant to say about the real world of policymaking. Yet I would argue that the reason these ideas have been so influential on how economists think about policy is how well they help us understand the evolution of monetary policy choices and their outcomes over the past three decades.

In the late 1960s, after a decade or more of fairly benign inflation, accommodative monetary policy began to drive up inflation. By early 1970 the inflation rate had reached 6 percent. In mid-1971, with the inflation rate still in excess of 4 percent, President Nixon imposed wage and price controls.

By that point, the public was not sure what the Fed's plans for inflation were. To put it another way, inflationary expectations were not well anchored. Then, in late 1973, the first Arab oil embargo hit, and the price of oil quadrupled. Higher oil prices ratcheted up the public's expectations of inflation.



The Fed then had, in effect, two choices: either ease monetary policy, ratifying the public's expectation of higher inflation thus ensuring inflation would rise—hoping that this would ease the economic dislocations of the oil embargo, or tighten monetary policy to keep inflation down with the attendant risk that this policy might lead to increased economic disruption.

Policymakers chose to ratify the higher inflation expectations and we saw rising inflation—reaching nearly 15 percent by 1980. And it turned out that there were few if any benefits to the economy on the output side. The 1970s were and still are viewed as the decade of stagflation. In effect, as a result of the Fed's lack of commitment to low inflation, inflation expectations were not well anchored, and so a discretionary policy produced higher inflation but no improvement in economic performance.

Indeed, the economy subsequently paid a substantial price for the failure to commit to a low and stable inflation rate. In order to bring inflation expectations back down, the economy had to go through a severe recession in 1981-82. Fortunately, we have learned the lesson of that episode. Since then, the Federal Reserve has worked very hard to signal its commitment to low and stable inflation. As a consequence, expectations have been much better anchored.

This is illustrated by the behavior of prices and the economy during the recent run-up in oil prices. Since 2003 we have seen the price of oil more than double, yet we have experienced very little impact on inflation. I believe this much better outcome was due to the enhanced credibility for low inflation that monetary policy had worked hard to achieve. But we need to work to make sure that expectations remain anchored since the costs of losing credibility, as we have seen, are great.

It hasn't been all smooth sailing since the mid-1980s. There have been a couple of episodes referred to as "inflation scares." These are instances where the markets came to doubt the Fed's commitment to low inflation, and the market's expectations of future inflation spiked up. These "inflation scares" are characterized as periods when long-term rates rise without a corresponding rise in short rates, suggesting rising expectations of future inflation.

In 1986 the Fed reduced the funds rate from about 8 percent to about 6 percent. In early 1987, 10-year Treasuries increased by about 200 basis points in a matter of a few months. The rise in the long-term rates signaled concern about the prospects for inflation, which had fallen modestly in 1986 but was running closer to 5 percent in early 1987. Yet the Fed had not been aggressive in its response. In addition, the Fed had a new Chairman named Alan Greenspan, who took the helm in August of 1987 and was untested and whose commitment to low inflation was not well established. Although the stock market crisis lowered long-term rates in late 1987, they bounced back to over 9 percent in early 1988. Only then did the Fed get more aggressive, raising the funds rate from about 6.5 percent to about 9.5 percent. Long-term rates began to fall in early 1989, dropping about 100 basis points during the first 6 months of the year.

A monetary authority with credible commitment to low inflation would not face such “inflation scares.” The public’s expectations would always remain well anchored, and the monetary authority would not have to raise short-term rates simply to respond to fears of inflation.

### **Response to Shocks with Commitment**

You might ask, though, what about the economy’s response to shocks? This is the area where many people argue that discretion is needed. They make the argument that since policymakers have made a commitment about policy, they will be less flexible and therefore less able to respond to unexpected events that affect the economy. However, this is not the case.

Commitment actually gives the monetary authority additional flexibility. Specifically, because commitment ensures that inflationary expectations are well anchored, policymakers can respond to shocks with less fear that expectations will become unhinged, thus enhancing the potential effectiveness of policy to respond to short-term disturbances.

But we must remember that along with the benefits of anchoring expectations, commitment means that at the end of the day, monetary policymakers must take actions that are consistent with their promises. If they don’t, there is the risk that their credibility will suffer. In this sense, the committed policymaker is not entirely free to base policy solely on current economic circumstances. But having policy constrained in this way should not be viewed as a negative attribute of commitment.

A recent example is the Fed's aggressive approach to deflationary pressures in 2003. In the face of a weakening economy and declining rates of inflation, the Fed aggressively reduced the federal funds rate to 1 percent and held it there for a significant period of time. If the Fed had not had credibility for maintaining a low inflation rate, financial market participants could very well have doubted the Fed's commitment to low inflation, and inflation expectations could have become unhinged. Such a reaction would have severely constrained policy. The Fed would have been left in the uncomfortable position of reining in inflation at a time of economic weakness.

Fortunately, that scenario did not occur, and it did not occur precisely because of the belief that the Fed was serious about keeping long-run inflation low.

## **Methods of Commitment**

To this point I have argued that, in a wide range of cases, a policy governed by commitment dominates one of discretion. The question now is: How do we get commitment? That is, are there institutional arrangements that would make it easier for the policymaker to resist yielding to temptation for short-term gain and instead opt to honor its promises?

If we look back over time, societies have used numerous methods to try to pre-commit to a policy and thereby produce better economic outcomes. None are perfect.

In a democratic society it is impossible to obtain full commitment. As we saw in the case of ensuring patent protection, legislation is one possible mechanism for supporting commitment. Laws can be changed, but it is usually difficult and costly to do so. So, in that sense, laws can enhance the credibility of a commitment.

A monetary regime that is based on the gold standard provides a form of commitment. This was the dominant monetary system of the late 19th and early 20th centuries. Under the gold standard, monetary policymakers were required to maintain the value of the currency in terms of gold at a specified level. In principle there is very little room for discretionary monetary policy

under a gold standard. Although, in the end, this system was far from perfect and it was eventually abandoned, it does illustrate that the idea of commitment is not a new one.

Many countries have adopted fixed exchange rates as a means to attain credibility and ensure commitment. The Bretton Woods system of fixed exchange rates, which was adopted after World War II, was essentially a replacement for the gold standard. More recently, some countries have pegged their exchange to the dollar as a means of restricting the ability of their central bank to create inflation. The country that decides to peg its exchange rate essentially gives away its ability to independently create inflation by putting monetary policy in the hands of another country. Again, while this type of commitment has not been perfect, it makes the point that policymakers struggle with the issue of time inconsistency on a regular basis.

Some have suggested alternative rules for the conduct of monetary. Rules are a means of limiting discretionary behavior by constraining policy choices. For example, Milton Friedman, who was highly critical of policymakers exercising discretion, suggested adopting a rule that required constant growth of the money supply. More recently, rules have been developed that specify a feedback mechanism, from, say, inflation and an output gap measure, for setting the funds rate. The most well-know version of such a rule is the one proposed by John Taylor and is know as the Taylor rule.

Several central banks, including the European Central Bank, have adopted inflation targeting as a method of commitment. Under inflation targeting the central bank announces a numerical target or target range for a specified inflation measure and commits to keeping inflation in that range over some specified period.

The final method of achieving commitment that I will discuss today, and the one we are most familiar with in U.S. monetary policy, is reputation. Reputation can be an important factor in making credible commitments. Indeed, the success of the Federal Reserve over the last decade or so reflects to a large degree former Chairman Alan Greenspan's hard-won credibility and commitment to low inflation. We are very fortunate to have in Ben Bernanke another Chairman whose commitment is equally as strong. Yet reputation and credibility, when resting in the

person who happens to be at the helm of the Federal Reserve, can also be fleeting. Many economists would prefer to see the commitment embodied in the institution, not the individual members of the FOMC.

We also know that while reputation can be a useful device for commitment, it is hard to gain and easy to lose. William McChesney Martin had earned a reputation as a firm believer in low inflation and was successful in keeping inflation low through most of the 1950s and 1960s. Unfortunately, that commitment came under increasing political pressure in the late 1960s, and inflation began to creep up. As we have already noted, the Fed lost all credibility in the 1970s as inflation soared into the double digits.

By the time Paul Volcker became Chairman of the Federal Reserve, it was painfully obvious that inflation had to be brought under control. He was committed to lowering inflation, but neither he nor the Fed had much credibility with the public. The price we had to pay to regain that reputation and credibility was severe, as I suggested earlier. We would rather not go through that experience again. It was the price we paid for operating without commitment.

Even Alan Greenspan had to earn his reputation. As I indicated earlier, the “inflation scare” of 1987-1988 was not unrelated to the fact that we had a new Chairman whose credibility and commitment to low inflation were largely unknown. Greenspan was the new Chairman, and he had to establish his reputation; it was not automatically transferred to him from Volcker.

Thus, the uncertainty over the Fed’s desire to contain inflation, which is a feature of an economic environment where full commitment is impossible, has costs. To the extent that a monetary authority can build a reputation and gain credibility for low inflation, it helps to ameliorate this uncertainty and produces tangible economic benefits

## **Communication and Transparency**

One way to reduce uncertainty about the specific objectives of monetary policy is by stating our objectives clearly and by being transparent in our pursuit of these objectives. This will make it

less likely that the public will misperceive economic outcomes as indicating a lack of resolve on the part of the Fed for maintaining low inflation.

In addition, this improved transparency increases the accountability of policymakers. By stating their objectives clearly, policymakers make it much easier for the public to judge whether they are achieving their stated goals.

What form these communications take has varied greatly over the Fed's history and varies greatly among central banks. For certain, the current Fed is the most open and transparent in history. We announce policy moves and issue policy statements. Further, the minutes of FOMC meetings are released on a timely basis so that the public can get a better sense of the range of views in the FOMC.

Although the Fed is much more transparent than at any time in its history, it is arguably less transparent than a number of other central banks. Many central banks use an inflation target as a way to communicate policy objectives and report more extensive or frequent forecasts of economic activity and inflation to the public. These reports are done in a number of different ways, and it is not clear if any particular method dominates the other.

As you may well be aware, the FOMC is currently studying ways to further improve its communications. It is too early, however, to say precisely what the results of that inquiry will be.

Suffice it to say that there is a realization in monetary policy-making circles, gained through recent advances in monetary theory and the experience of the last 30 years, that maintaining credibility for low inflation is an important aspect of good monetary policy. Furthermore, it is important to be transparent so that the public's expectations and the objectives of monetary policy are better aligned. Achieving this alignment ultimately furthers the central bank's objective of maintaining stable prices while fostering full employment.

Thank you.