STRATEGIES

for

MONETARY

POLICY

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Monetary Policies in Practice

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My discussion addresses why the Federal Reserve is reviewing its monetary policy framework at this point in time.[1] The first reason is that it's just good practice to review your strategies and tools. The economy changes, and you want to review and revisit these issues. This is something the Bank of Canada does regularly.[2] So I think of this as a best practice, even if we weren't facing some of our current challenges.

But we are facing some challenges. We're more likely to hit the zero lower bound (ZLB) going forward. We've heard this many times throughout this conference. We will frequently find ourselves fighting to push inflation up from below our target, as opposed to trying to pull inflation down to our target. The Fed has been very good at anchoring inflation expectations, but that means they matter more now than perhaps they have in the past. Or maybe they always mattered, but now we really see it. That's going to be increasingly important in the future.

When you put all these things together, we have three potential states of the world. First, we could have inflation that's above our target. We have a long history of knowing how to bring that down

1. See Board of Governors (2019).
2. See Bank of Canada (2019).

The thoughts expressed in this presentation are the author's own and do not necessarily reflect those of others in the Federal Reserve System.

to 2 percent. And we have tools and models that suggest we can do it. That's a world we're used to.

The second possible state of the world is the terrible financial crisis we experienced in the last decade, when you have an all-hands-on-deck policy and use every tool you can. But you hope that those financial crises don't happen frequently, so you don't want to necessarily think of the framework review through the lens of a terrible financial crisis.

What we're facing going forward are the following factors: we're more likely to hit the lower bound, we're fighting inflation from below, and we have this really high weight on inflation expectations. That's going to be our new norm for all the reasons that many of the participants here have discussed.

So I want to focus on that third state of the world. What's the best framework if that's the world we're likely to face? These are the factors I think about a lot.

First we're going to have more limited space for funds rate cuts. From the Summary of Economic Projections (SEP), figure 10.1 shows, as Vice Chair Clarida noted,[3] that the median projections by FOMC participants for r-star (r^*), the long-run neutral real interest rate, have been coming down over time. The star variables in general have been trending down, whether you're talking about u-star (u^*), g-star (g^*), or r-star. This is forward looking in many ways, and it just tells you there's less policy space and less funds rate space going forward than we've been accustomed to having in the past.

The second fact you have to look at if you're thinking about making policy going forward is that in recent years, inflation has consistently fallen below our 2 percent target (figure 10.2). That's true whether you look at the headline personal consumption expenditures (PCE) or core PCE index. As Robert Kaplan mentions (see chapter 11), if you consistently fall short of target, it tugs at the expectations. Even if
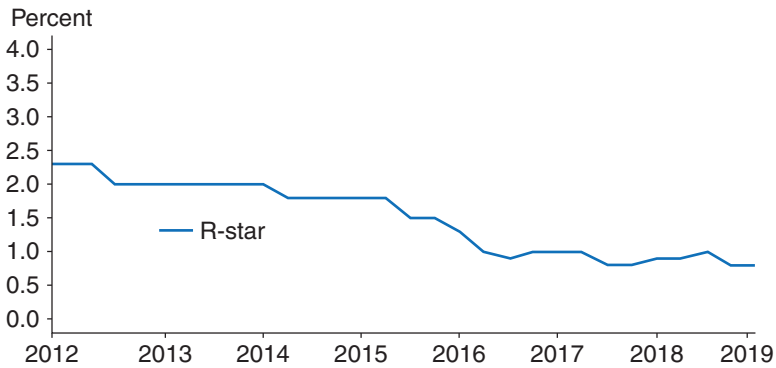
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3. See chapter 1 in this volume.

Percent

FIGURE 10.1. R-Star Estimates (Median of SEP)
Source: Summary of Economic Projections, Federal Reserve.
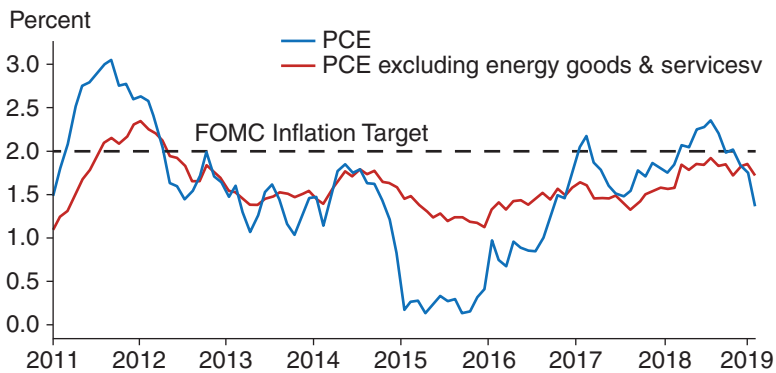
Percent

FIGURE 10.2. Core and Headline PCE Inflation, 12-month change
Source: Bureau of Economic Analysis.

expectations haven't become unanchored yet, there's a lot of pressure to tie them to the anchor more closely in the future, as John Williams and Thomas Mertens discussed in their paper.[4]

Another fact that comes from research done by some colleagues at the San Francisco Fed is that inflation expectations matter more today than they used to.[5] Figure 10.3 compares 1997–2007 with

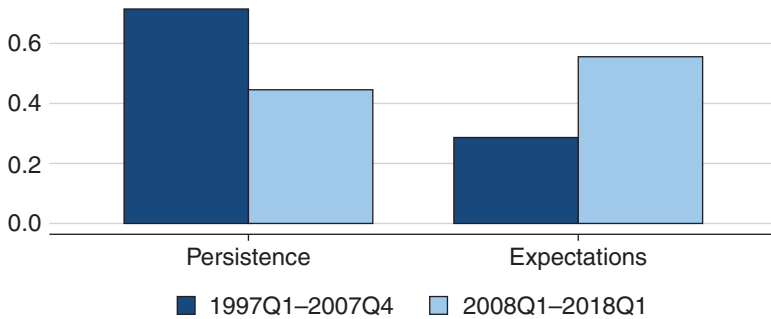4. See chapter 3 in this volume.
5. Jordà et al. (2019).

FIGURE 10.3. Coefficient on Lagged Inflation and Inflation Expectations
Source: Adapted from Jordà et al. (2019).
Note: One-year-ahead inflation expectations (for headline CPI) from the Survey of Professional Forecasters.

2008–2018. It shows that if you decompose inflation into persistence versus expectations, the persistence contribution is falling and inflation expectations contribution is rising. We've always worried about inflation expectations, but you can clearly see they're more important now than they have been in the past. This partly reflects the success of our credibility, but it's also something to think about when you wonder if that anchor is going to drift at all.

So if you put those three factors together—low r-star, low inflation, and an increasing role for expectations—and that's the future you face, then it's important to think about new strategies for achieving target inflation going forward. I'd like to discuss three viable alternative strategies when you're at the effective lower bound: nominal income targeting, price-level targeting, and average inflation targeting. I've obviously left out other things we talked about earlier today, such as negative interest rate policies. I'm going to focus on these three types of strategies, or alternatives, because they have something in common.

To start, here is a very stylized depiction of what John Williams and Thomas Mertens showed using quantitative simulations in their paper. The point I'm going to make here is that the three strategies—nominal income targeting, price-level targeting, and
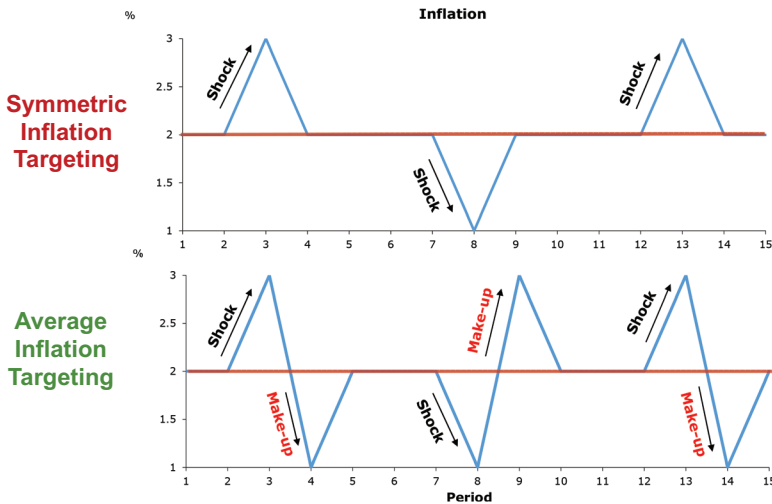
FIGURE 10.4. Targeted Inflation Patterns after a Shock

average inflation targeting—are all meant to have a makeup component that's different from our current symmetric inflation targeting policy. Figure 10.4 shows how the makeup would work if you get a shock. In the first case, we have a positive aggregate demand shock with inflation rising above the target. If you're using symmetric inflation targeting, you simply bring this back to two. If you're away from two, you come back to two.

But if you have average inflation targeting or one of these other strategies, you want to make up for that past miss. In this case, you want to disinflate. That's the makeup strategy.

So this goes forward through aggregate demand shocks, both positive and negative. This is what makeup policies are meant to do. They're meant to offset past misses. And that's very different from our current symmetric inflation target.

Now if you think about these three makeup strategies—nominal income targeting, price-level targeting, and average inflation targeting—they all have the same goal but different ways of achieving it. So we need to evaluate them on those merits. One of the

most important evaluation criteria is ease of communication to the public.

I would argue that average inflation targeting would be a bit easier to communicate than nominal income targeting or price-level targeting, simply because people have already accepted that we have a 2 percent inflation target. Thus, average inflation targeting just becomes how we reach and sustain that target. Nominal income targeting and price-level targeting are just harder to communicate. So for that reason I'm going to focus on average inflation targeting.

Even if you choose average inflation targeting as your strategy, there are many open questions. Some of them have been mentioned here today, but I've got a list. First, what is the window length over which you need to average? Do you really need to fully offset, where you potentially commit past the length of the current committee members' terms of office? If your committee's changing, how long do you have to commit for this strategy to be successful?

Another important question is, does this even work if agents in the economy are backward looking rather than forward looking, since so much of this rests on expectations? Does it matter if people do or don't participate in financial markets? Would an average inflation strategy be credible? Could we really deliver on credibility? And, of course, should it be temporary or permanent?

So let me take on those types of questions using a framework developed by my colleague, Sylvain Leduc, and his coauthors, Amano and Gnocchi.[6] What they do is very similar to what John Williams and Thomas Mertens did, using a simple model,

$$i_t = r_t + \phi \frac{1}{n} \sum_{k=0}^{n} (\pi_{t-k} - \bar{\pi}),$$

where the weight on the inflation gap (φ) equals 1.5 and the deviations are averaged over a period of $n = 6$ quarters. The point here is

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6. Amano, Gnocchi, and Leduc (2019).

to be illustrative, not quantitative, but the illustrative part gives us stack rankings of these different strategies. In this particular model, 20 percent of the households have no access to financial markets, 75 percent of firms are backward looking, and the effective lower bound binds 20 percent of the time. Those are your parameters.

Then the central bank is simply trying to minimize the inflation and output gaps. In this framework, it's going to use an average inflation rule to minimize average inflation around a number of years. The question then is, if you have a ϕ of 1.5, how many quarters does it take?

They ran a number of simulations and came up with six as a good number—six quarters, or one-and-a-half years. The question is, what do you get from those six quarters? If that's all you did, what would you get? Importantly, this is just hitting the effective lower bound and coming back up. It's not staying persistently at the effective lower bound as we did during the financial crisis.

Let's start with just the baseline of inflation targeting (IT). The blue lines in figure 10.5 show what we're all accustomed to seeing. You get a (demand) shock, output goes down, inflation goes down, and it's slow to recover because we're at the zero lower bound in this picture.

What happens if you have average inflation targeting (AIT) using the model framework that I just described? Well, in the model framework they have, the green lines in figure 10.5 show that output recovers a little more quickly. But the important thing is that inflation recovers much more quickly, and that's all because of the inflation expectations term. Agents in the economy know the Fed is going to commit to average inflation targeting, that it's going to get to 2 percent. They see that, and they're forward looking. For one thing, the policy acts as a shock absorber. You don't go down as much because you know inflation is going to come back up, so the shock has less effect on things like pricing decisions. In addition, it's well known and accepted that the Fed is working to stay at this target.
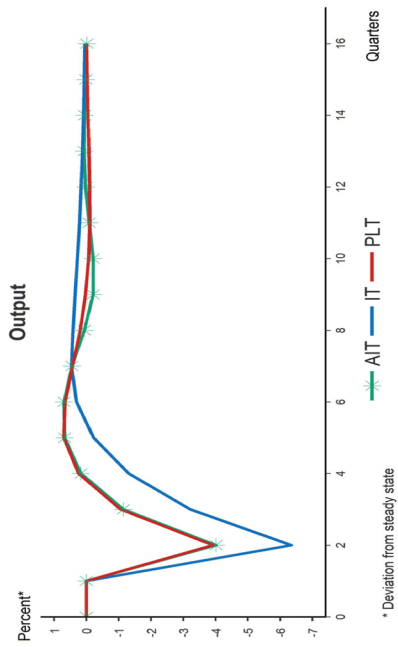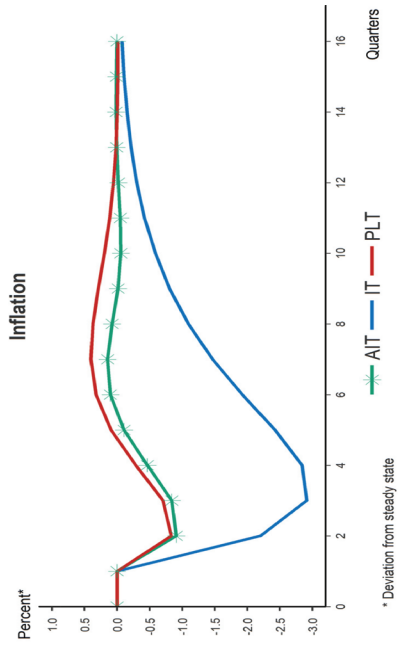
FIGURE 10.5. Simulated Effects of Monetary Policy Frameworks

Source: Amano, Gnocchi, and Leduc (2019)

So how does this compare to price-level targeting (PLT) in the same framework with a full makeup strategy? The red lines in figure 10.5 show that there's not a lot of difference between price-level targeting and average inflation targeting in this framework. And if average inflation targeting is easier to communicate, then it might be the dominant strategy between these two.

As I mentioned, this is a stylized model. This economy is only hitting the zero lower bound episodically and not persistently staying there. But if you expand it in simulations or robustness checks, and if you say you're at the zero lower bound for two to three years, then it means your average inflation target window isn't six quarters. It's more like two to three years. So if you are at the ZLB for two years, it's a three-year target window.

I thought a lot about this. I worried, what if it were something like ten years? How long would we have to go to really make that up? These model simulations say something on the order of six quarters if it's a slight time at the ZLB, and something like three years if it's a longer time.

Let me conclude, though, by talking about some other things that are also very important to credibility. This does not work unless there's credibility, because it all comes through the expectations term. That's why you get the big win: you have to have credibility in order for this to be effective. I would argue that calls for adopting such policies before you hit the effective lower bound—not when you hit the effective lower bound. You lose some of the power you have in this methodology if you wait.

It also implies—and this is the challenging part—that we must have a willingness to disinflate if necessary. That can be challenging for two reasons. One, it's not always popular. And two, we may not find ourselves with that many opportunities to disinflate. So how do we get credibility when that's before us?

I will only say that credibility takes time to earn. Credibility was not something the Fed had immediately when we had the Volcker
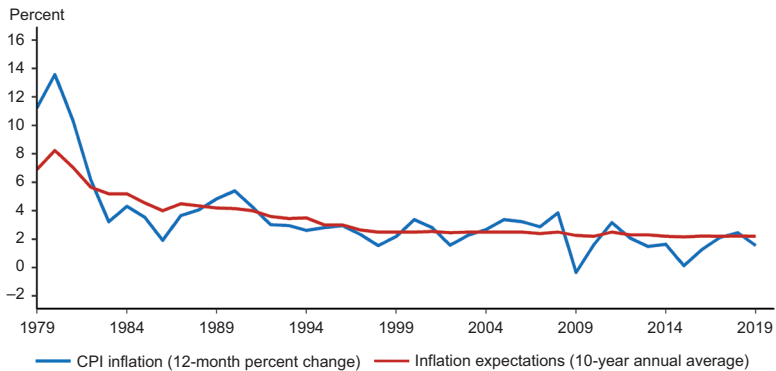
Percent

FIGURE 10.6. Inflation and Long-Term Inflation Expectations
Source: Summary of Economic Projections, Federal Reserve.

disinflation. It took a long time. So standing in 2019 and saying we feel like we have credibility is very different from what we heard today, and even in the historical presentation, it just takes time to earn it (see figure 10.6). I don't think we should be pushed off by the fact that credibility is challenging. But you have to be intentional about making sure that's the policy, and then going after it and recognizing it takes a little time.

In summary, with the Fed objectives met—we're close to our inflation target and we've got full employment—our economy is in a good state. So it is a really good time to look at our framework. And this is a best practice anyway.

I find average inflation targeting an attractive option. But credibility keeps coming back as the important thing. I do think the bar for change is high, so it's not enough to say something might work in theory, and we've got some simulations so, why not? Let's do it. The bar is really high because it can be costly to make mistakes in this space.

This framework and all the things we've heard today—the discussion, the debate, the simulations—and many more pieces of research are needed in order for us to make sure we can deliver on the dual mandate's goals for the American people.

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