**Transcript of Research & Statistics Centennial Conference: Keynote Speech
by John C. Williams**

November 8, 2023

STACEY TEVLIN. I hope you'll all join me in welcoming President John Williams.

[Applause]

PRESIDENT JOHN C. WILLIAMS. All right. Thanks, Stacey. And this has been a great conference so far. I've really enjoyed the panels and looking forward to the rest of the day. And I am so pleased and honored to be able to speak at this event commemorating the Research and Statistics Centennial. Stacey mentioned I started my career here—my first seven and a half years here in R&S in the MAQS group.

It's great to see so many friends, colleagues, and especially the many mentors who have had such an impact on this institution and on me personally. When you think about coming out of graduate school, starting your career as I did and many people in this room did here at the Fed, it was a remarkable time. It was clearly a time that we're making connections and friendships and co-authorship with people that have continued for decades since.

But also, as was mentioned earlier, the collaborative spirit is just really something that I valued. I got to work with a lot of different people in different projects, whether research or FOMC related or whatever, learning a lot from others and working with one mission. And it's something that I've brought with me—just like everybody in this room—as I've gone to the San Francisco Fed and the New York Fed. It's just something that I feel is so important that we all have the same mission in the Federal Reserve. We do different parts of that work, and collaboration is maybe our superpower.

Now, one thing that I was thinking about mentors and Dave Stockton is in there. So this is my Dave Stockton story. So when I interviewed at the Board, in the fly out—so R&S and IF

flew me out—I had great interviews, got to talk about my research, got to meet really great economists—both new research economists and people who've been here a long time.

And I was really excited, and I was thinking, well, I hope I get a job offer. And, for reasons I don't know, Mike Prell wasn't around. But Dave met with me—this was the interview with the top person—and Dave says to me, and I quote, "Your research is interesting and I'm hearing good things about you, but it's very theoretical." And I was doing research on endogenous growth—remember, early '90s, is a very big topic. And he said, "Your work is very theoretical; if you want to be successful at the Federal Reserve Board, you've got to bring an empirical part of that to your work. You've really got to get your hands dirty and work with the data. How do you think about that?"

And I realized this was a critical point in my career. And it was. Like, there was a right answer, and there was a wrong answer. [Laughter] And I sat there, and it took me one millisecond to realize that the answer I gave was—I'm sure you do not remember, was, "Dave, the thing that's been most frustrating and disappointing throughout my time at Stanford is, I haven't had the ability to really do empirical work and get my hands dirty because that's what I'm committed to doing." [Laughter]

When I think of the mentors, many in this room and others, I always think, well, how do I carry that forward and mentor others? I always tell the Dave Stockton story, and I said, you know, when you're interviewing for a job, there is a right answer and a wrong answer and think about that.

So Research and Statistics, obviously known as R&S by everybody, is almost as old as the Federal Reserve. We heard about the 100 years in Chair Powell comments, we heard about it

earlier in the panel. R&S has made its mark here at the Federal Reserve and—I think David Wilcox made this point—it's beyond just the Federal Reserve.

I think the work of R&S and the Federal Reserve Board and the Federal Reserve has reaches across countries and central banks around the world. I see that in my work at the BIS, and that's been true for the past century and continues to be true today. It's a testament to the leadership, the high professional standards, and the dedication to the Federal Reserve's mission that's ingrained in in generations of people who work in R&S.

Now, other speakers have already covered other aspects of R&S's history and the various roles R&S was involved in for the past century. So I'm going to focus my remarks on one specific topic, and that's really the past 30 years. It, of course, corresponds to my own time as a researcher and a policymaker at the Fed—first, as a member of the staff of R&S for the first seven years, then as an active consumer of R&S products while at the San Francisco and the New York Feds.

And the theme of my remarks can be summarized in this way. Over the past 30 years, the theory and practice of monetary policy has changed dramatically. Equally striking, though, is the ways that that transformation has influenced the research and analysis done by R&S and other divisions—but today is the celebration of R&S, so I'm going to focus on that—and the ways that the work that the economists in R&S has in turn shaped and influenced monetary policy. Before I go any further, I have to give the usual disclaimer: The views of my own do not necessarily reflect those of Federal Open Market Committee or others in the Federal Reserve System.

So to get a full appreciation of all that's happened in the past 30 years, I want to take you back to 1993. On a personal note, that was when I first interviewed—that first initial interview

you do as an economist—for a job at the Board as a wet-behind-the-ears 31-year-old grad

student. And, if my memory serves me well and Steve doesn't contradict this, I believe Steve

Sharpe was one of the economists who interviewed me in Stanford back then, late in 1993. So

there's a bunch of people who have to answer for some of their parts of this: Dave hiring me,

Steve interviewing me, Governor Meyer for pushing us to do our work on r*.

But from the perspective of monetary policy, 1993 seems like a world away. Okay, so

the Fed's balance sheet in 1983 was $400 billion. Today, it's nearly $8 trillion. And so many

things that we take for granted weren't even a thing back then. So there were no FOMC

statements, no press conferences, no dot plots, no longer-run forecasts in the SEP, no policy

rules, optimal control or flexible inflation targeting. In fact, there was no inflation target at all.

There was no QE. There was no QT; no LSAPs; no forward guidance, whether Odyssean or

Delphic; no ZLB, ELB, or shadow rates; no ample or abundant reserves; no IORB, ON RRP, or

SOFR; no DSGE, EDO, or Sigma; no FRB/US model, which is hard to believe; and, most

shocking of all, no r*. [Laughter] So, reading through this extensive list, I admit that I have

some sympathy for why central bankers occasionally pine for the simpler times of yesteryear,

except for the r* part.

Okay. But change was already afoot. And so I'll start with one development that I think

in important ways connects a number of changes, and that is the birth of the famous Taylor rule

in 1993 when John Taylor wrote his paper "Discretion Versus Policy Rules in Practice." Of

course, that was an outgrowth of a lot of years of research, including by Fed economists, about

thinking about monetary policy rules and strategies.

But, to me, that paper galvanized in many ways how people were starting to think about

monetary policy differently. Specifically, instead of approaching monetary policy as a one-time

tactical decision as to whether rates should be a little higher or lower or stay the same, the Taylor rule identified or laid out an overall strategy for setting interest rates in any circumstances in terms of a reaction function. And it spawned research on a vast collection of monetary policy rules and optimal control policies—much of that research was developed here and throughout the Fed's system. And the Taylor rule transformed policy research. The idea was simple. It had been around for a while, but I think it transformed it because it changed the language of talking about monetary policy.

We moved away from thinking about impulse response functions to thinking about longer-term issues. That includes what are effective monetary policy strategies; tradeoffs between our policy goals; the effects of the zero lower bound, as was discussed earlier; and, of course, the roles of the various star variables—the inflation target, potential output, the neutral interest rate or r*—that all appear in any policy role.

And so the Taylor rule not only altered the way monetary policy is conceptualized, it also changed the way a lot of the research in R&S, and other research divisions, approached questions related to the economic outlook and thinking about policy alternatives. Now, the Fed, the wheels of change may sometimes turn slowly, but I think the Taylor rule helped get those wheels spinning.

Now a second transformative change in the past three years was the development of large-scale macroeconomic models designed to study a lot of these longer-run issues. Earlier, macro models were often used primarily for short-term forecasting and analysis, which is very important, of course. I'm not saying that's not important and that continues. But the new models and the new generation of models allowed researchers to explore longer-run questions related to policy strategy, importantly using empirically founded models. And, to my mind, the

FRB/US model in R&S and the FRB/Global model in the International Finance Division represented a watershed moment in the early '90s, of course supplementing the other models that were used at the Board. Of course, later a generation of DSGE models were added to the stable of tools for analysis. That included the EDO model in R&S and Sigma in International Finance.

So far, I've highlighted developments under way in economics in the early '90s, but there was also a transformation under way in monetary policymaking with the goal of increasing transparency, especially in public communications about policy goals, strategies, and actions. In late 1989, the Reserve Bank of New Zealand rocked the central banking world by introducing inflation targeting. The Bank of Canada and the Bank of England soon followed suit.

Two key tenets of inflation targeting are the communication of a clear numerical description of the inflation goal and central bank accountability for achieving that goal. Although the Fed did not formally adopt a version of inflation targeting until 2012, the FOMC took several steps to increase clarity and transparency in the '90s and the first decade of the 2000s—importantly, issuing policy statements after meetings, expediting the release of the minutes, adding longer-run FOMC projections, and increasingly using forward guidance about future policy actions.

So this trend towards transparency accelerated dramatically in 2012, with the formal announcement of the 2 percent longer-run inflation goal and policy strategy and, for the first time, the publication of FOMC projections of the federal funds rate, the famous dot plot. So this combination of the Taylor rule, a new generation of models, and growing transparency spurred R&S research into a range of monetary policy topics and, importantly, identified new issues to explore. This is a theme that came up earlier.

And this has been a two-way process and continues to be one, with new research contributing to the policymakers' thinking on issues and policymakers' interest in greater transparency and inflation targeting and other strategies influencing the questions that the researchers studied. Now I could think of many, many examples from the past 30 years of how this has come together, especially with important contributions from our R&S economists, but—many of whom are in this room—but given the constraints of time, I'm going to talk about three that stand out for me. This is a shorter list than Jeff showed, because it's really just on the monetary policy part.

The first is the zero lower bound or ZLB. And if you think back to the early '90s or late '90s, the ZLB was viewed as more of a historical curiosity than a relevant issue for U.S. monetary policy. But I'll mention a paper that was mentioned earlier. In the early '90s, Jeff Fuhrer, building the work he did while in R&S, and Brian Madigan from the Monetary Affairs Division analyzed the effects of the ZLB on nominal interest rates for different policy rules and inflation targets, kind of bringing these different ideas together in one place.

And, to me, this was just a groundbreaking paper at the time. It made the simple yet powerful insight that if you follow a policy rule like the Taylor rule and a big enough negative shock comes along, the nominal interest rate will be constrained at the lower bound, and that will bring negative effects on output and inflation. Later on, my work with Dave Reifschneider on the ZLB in the late '90s, which culminated in a presentation to the FOMC in early 2002, really just was developing these insights further.

And, of course, there's a lot of work by other economists here on that and in the subsequent 20 years when the ZLB went from a theoretical idea for us to a reality. R&S researchers and others made numerous contributions that have helped improve our understanding

of the consequences of the ZLB and of the use of alternative tools such as quantitative easing and forward guidance to address those issues.

Now, my second example is the analysis of alternative policy rules and approaches describing the set of choices and outcomes policymakers face, including analysis of the tradeoffs between our goals—again, a theme that's come up. Alternative scenarios based on different policy strategies have now become the norm and, in terms of Tealbook, kind of analysis prepared for the FOMC with a focus on thinking of the medium term rather than just the short-term implications of different policies.

And I would use one example that I think is really a great example of the power and the importance of research in this field, and that's a set of papers and analyses that contributed to the FOMC policy framework review that was announced back in 2018 and completed in 2020, with important contributions from economists in R&S and elsewhere at the Board. And those papers are all available on the website.

My third and final example is, of course, r*. And I felt the one thing that this morning might have been a little light on [break in audio] if you think about it, you go back to, why do we talk about this? Well, it shows up in our models. It shows up in policy rules. It shows up in the analysis we do of even financial markets in the economy. And, importantly, it's a big driver of the ZLB. A lower r* means the probability of hitting a lower bound is higher.

In remarks that I gave at the Thomas Laubach Research Conference back in May, I recounted how Thomas and I started working on this together, on the estimation of r*, in 2000. And it was really spurred by questions from policymakers and senior leaders at the Board thinking through, if we're going to think about policy rules, if we're going to think about some of these issues, how do we best estimate or assess where r* is? And, again, if anyone in this

room thinks I talk about r* too much, it's Dave and Don who kept pushing us to do this and supporting us. You could have stopped it back then. You didn't. [Laughter] So you have a lot to answer for.

It continues to be a relevant and timely topic of R&S research and policy analysis to this day. And the fact that there's continued debate and uncertainty about this, I think, reflects the fact that the research is valuable, helping us understand those issues as best as we can.

Now, to wrap up, a critical component of any strategy is a focus on the future. And that's very true about monetary policy. Thirty years ago, R&S was very much about the here and now, and I would say that's an important part of the role of R&S. But the staff forecast in the Greenbook back then usually extended only through the end of next year. We did get a twice-a-year medium-term forecast of five years, but much of the policy analysis that I worked on and others was really kind of mechanical and short term. A typical kind of table would be, what would happen if the FOMC increased the funds rate by, say, 100 basis points for the next year? What would that do to the economy? But that world has changed—changed long ago. The analytical tools we have at our disposal have changed. R&S researchers have not only kept up with those changes but, in many cases, have been the first to recognize them and contribute to our understanding of their implications, often well in advance of academic economists.

If you go through a lot of the examples we talk about today, look at the dates of this research—I think Eileen was making this point about earlier research too—a lot of that cutting-edge research was happening here at the Fed before maybe academics came around to think of this as an important issue and then obviously add to our understanding on those. My three examples illustrate this, but there's a lot more examples obviously I could draw on.

Now, recently, macro models—their use at central banks—have been criticized or even blamed for missing the rapid and sustained rise in inflation that began in 2021. I think there are a couple of important points about that. Models don't make staff forecasts. We heard the use of the word "judgment," a lot of bringing a lot of analysis to bear beyond any specific model. And models definitely don't make policy decisions. That's not their purpose. The purpose of models, whether it's simple heuristics or multicountry models with hundreds and hundreds of equations, is to help organize, quantify, and communicate our understanding of how the economy works. Any shortcomings in our models reflect shortfalls in our collective understanding rather than the cause of our misunderstanding.

It's a job of us as researchers to learn from experience, revise the models we have, improve them, and sometimes build new ones. And, in that regard, I think the history of R&S shows that the models and analysis created and refined by generations of R&S researchers has done exactly that. They've added immensely to our understanding of issues critical to the Federal Reserve's mission, and that goes back as long as I can remember, all the way through the pandemic and today.

So I'll finish where I started. So I started looking back over the past 30 years. It's remarkable, really remarkable, how dramatically the theory and practice of monetary policy and the work of R&S have jointly evolved. The Fed of 1993 seems far distant from that of today. So I'll leave you with this. I wonder if 30 years from now, they—by which I mean the AI robots who will be running everything [laughter]—will look back at our current understanding of monetary policy and the macroeconomy with some amusement. And I imagine they'll also be wondering how we manage without all the new things that will be developed over the next

30 years. And much of that will be done right here at the Board in R&S. Thank you.

[Applause]