The Art of Monetary Policy

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One of Paul Volcker's many telling stories concerns a squirrel in the forest who had a particular taste for fish. The squirrel went to the wise old owl for some guidance and counsel. After listening to his story, the owl advised the squirrel that the way for him to satisfy that desire was to become a kingfisher. So the squirrel happily went away, ran up a tree over a brook, and imagined himself a kingfisher so he could catch some fish. Of course, imagination was not enough. The squirrel discovered he was still a squirrel. After sitting in the tree for a while, he returned to the owl in a state of some agitation and railed, "You told me the way to satisfy my desire to get some fish was to become a kingfisher, but you haven't told me how to do that. I am still a squirrel." The owl replied, "Look, you came to me with a problem. I gave you some sound policy advice. The rest is operational detail."

We begin with this story because it captures the essential message of the book. *Understanding monetary policy requires one to understand the operational details of monetary policy*. By operational details we mean more than just the technical means by which monetary policy is implemented; we mean the institutions and context within which policy makers approach an issue (for example, the existence of informal understandings and sensibilities which affect decisions) and the nuances of seemingly identical actions (the Fed buying Treasuries at 11:30 AM may mean something quite different than buying Treasuries at 1:00 PM).

Knowing these operational details is necessary to do meaningful empirical work on monetary theory, to interpret data, and to choose between competing theories. If one doesn't know operational details and is studying monetary theory or policy, one is playing irrelevant mind-games that may get one published, or through an exam, but that will have about as much meaning for the economy as the advice of the wise old owl had for the squirrel.

When Volcker told the story quoted above he was picking on monetarists' single-minded focus on the money supply. The story, however, has broader relevance, and is directly applicable to many modern-day New Classical and New Keynesian monetary theorists, who, even more so than their predecessors, the monetarists and the various sorts of Keynesians, have lost sight of real world institutions. Modern monetary theorists have become more and more deeply immersed in complicated theoretical constructs. The problem is that, complicated as these constructs are, they are nowhere near complicated enough; they lose many of the interactions and nuances that characterize the real world institutions their theories purport to describe. This means that the subtleties of policy differences far exceed the subtleties of even the most complicated theories than can be taught to students. It

follows that before their theories can be applied to the real world, these nuances and interactions must be included in the analysis. To do that in a meaningful way, one must have a deep sense of the institutions within which monetary policy is conducted.

Why do we belabor the obvious? Because much of the teaching of modern monetary theory and policy, both graduate and undergraduate, has lost sight of the obvious. It is the teaching of theories and models--New Classical, New Keynesian, monetarist, global monetarist, neo-Keynesian, new-neo-Keynesian; there are many--without a meaningful operational context.

Instead of being taught that theories must be interpreted through a lens which reflects operational detail, students are taught to think through policy solely in relation to these models. They finish these courses with a knowledge of these models and the different strategies these models suggest for policy--you should use money supply as an intermediate target; you should use interest rates as an intermediate target; you should use a monetary rule; you should use discretion--and a belief that they can apply those models and the policies they studied to the real world.

That belief is an illusion. Few of the answers to specific questions about monetary policy depend on theoretical differences independent of institutional context. Most good policy makers could be monetarists one moment, Keynesian the next, and sometimes both simultaneously. They make decisions based on a sensibility and a feeling they have for the situation. That feeling and sensibility are often related to their understanding of theories, but not necessarily in a straightforward way, at least not if they are good policy makers.

Let us give an example. One of the "seminal ideas" in New Classical economics was Finn Kydland's and Edward Prescott's (1977) differentiation of a consistent and an optimal policy. An optimal policy is a policy that maximizes a social welfare function from a given point of time into the indefinite future. A consistent policy maximizes this same function, but is invariant over time. They showed that the consistent policy is preferable to the optimal policy.

The key insight which led them to their conclusion is that feedback effects of expected policy decisions can be important to current decisions; if future policy options are not restricted, individuals' current decisions will force policy makers to make certain optimal, but unreasonable, decisions. A good example is a child who wants ice cream and will scream incessantly if he doesn't get it. Let's say that the optimal policy is to give in. That might not be a reasonable policy. The consistent policy is to establish a rule: No ice cream unless you eat your vegetables--from which it is impossible to deviate. Knowing that his parents cannot deviate from that rule any rational child (and many real world children) modify his or her behavior, since the unmodified behavior will not get him ice cream and make everyone worse off.

The rule gets you what you want; it involves less screaming, but this rule can only be implemented by limiting your discretion: You can't give in, because you have made it impossible to do so.

This insight led Kydland and Prescott to a discussion of rules versus discretion in policy making. In that discussion they equated rules with consistent policy, discretion with optimal policy, and proved that rules are preferred to discretion. They conclude:

> The implication of this analysis is that... active stabilization may well be dangerous and it is best that it not be attempted. Reliance on policies such as a constant growth in the money supply and constant tax rates constitutes a safer course of action ... policies makers should follow rules rather than discretion. ...One possible institutional arrangement is for Congress to legislate monetary and fiscal policy rules and these rules to become effective only after a 2-year delay. (Kydland and Prescott pg 476)

Their paper was seen as an important development in the academic debate about monetary policy. It was. New Classical economics, of which the Kydland and Prescott paper was one part, was a useful response to many neo-Keynesian models in which everything looked clear cut. Neo-Keynesians had used static, or infinite horizon, models to draw implications about what the appropriate monetary policy should be--interest rate control vs. money supply targeting, for example. Kydland's and Prescott's paper was useful in showing that any comparative static model will be insufficient to answer such questions, that the way in which individuals form expectations, and how those expectations interrelate with policy, makes a difference in answering such questions. Like the game of scissors/rock/paper, these New Classical models covered neo-Keynesian models which themselves had covered earlier monetarist black box models.

But all of these academic mind games are quite irrelevant to the debates about the conduct of monetary policy. Kydland's and Prescott's proof of the superiority of rules over discretion is based on an assumption that one can have fully-specified contingent rules. Unfortunately, because the future is unknown, the assumption cannot be met in the real world. Even coming close to meeting it--designing a contingency rule for all currently conceivable contingencies--is too costly to implement. Any real world rule must be of limited contingency. For some contingencies you will want a rule; for others you will not. There is no general proof about the superiority of limited rules versus discretion. There is no escaping the need for situation-dependent judgment.

If one looks at the conduct of real world monetary policy, it is clear that monetary policy has always been conducted with a distinction between optimal and consistent policy and with a deep understanding of dynamic feedback effects, just as most parenting is conducted with that same deep

understanding. All policy makers, even parents with ice cream hungry kids, attempt to have rules. But every policy maker, and every economic agent, recognizes that rules can be broken depending on the situation.

The art of parenting is to impose your rules in a way that doesn't lead your child to total rebellion, while at the same time instilling in your child those values you want to instill (and to do it with children who also know the value of the "Cry until you get ice cream" rule which seems to be instinctually conveyed at birth.) The art of monetary policy is in finding the appropriate rule of limited contingency and in distinguishing those situations when a rule can usefully be broken, because the situation is a sufficiently unique historical event, or one with such long run consequences that there will be no long run unless the rules are broken, from those situations that can be dealt with by rules. For example: Should the Fed bail out large banks? If it does, or can be expected to do so, the large bank will build that into its expectations, making it more necessary to bail out such banks. If the Fed doesn't bail out the large bank, the entire financial system may collapse. Or alternatively, should a parent relent and give a child who is dying from cancer, ice cream? It is a judgment call; no theory can lead to an answer.

Using one's knowledge of theory combined with ones knowledge of the relationships and institutions to make reasonable decisions about monetary policy is what we mean by the art of monetary policy. You cannot get that operational knowledge from studying models or theory, no matter what the flavor; you get it from studying institutions and their development. You get it from apprenticing yourself to those public servants who know the institutions, and to those people who have thought about them and immersed themselves in understanding them. Clearly, this is not the content of most economic students' training, whether it be at the graduate or the undergraduate level. And that's a major flaw in economics students' training.

To tie one's hands in the hope of taking advantage of rules over discretion is also to tie one's hands in cases where discretion is called for. Kydland's and Prescott's "seminal" work lagged far behind real world decision making; with it academic economists simply narrowed the lag between academic theoreticians and practitioners.

Consequences of Teaching Theory without Art

The current practice of teaching students theory without the art hurts both theory and policy. Theory is hurt in one way--it becomes theory for the sake of theory--unconnected to reality; policy is hurt in two ways--many potentially superb policy makers don't go into policy, and the policy that is conducted doesn't have the benefit of informed theory. Let's consider how theory is hurt first.

How Theory is Hurt by the Current Practices

Most graduate students in monetary economics go on to distinguished academic careers proving lemmas and theorizing about issues such as whether rules are better than discretion; whether monetary aggregates are preferable to interest rates as intermediate targets, how to add an equation to a model to make it come up with a different answer, or how to test empirically whether this model or that model is preferable. This work is far less meaningful than it could be because many of these theorizers have no training in the art of applying economic models to policy issues. They try to squeeze answers out of theory that cannot be squeezed out. Theory without a deep sense of the institutions doesn't answer policy questions.

We are not arguing against theory or theorizing. Once people have information about the way the system actually works, they can generalize from it; they can simplify and condense their insights, and come up with *relevant and useful* models that embody their insights and knowledge. But those models do not have an existence independent from their creator's knowledge of the way the real world works. To judge whether that model is useful requires insights and institutional knowledge. A model is simply a key that opens the door to the much more complicated and messy real world. It is not a world unto itself. Keynes summarized the issue nicely when he said, "Economics is a science of thinking in terms of models joined to the art of choosing models which are relevant to the real world."

Because of the nature of the model as a simplified representation of reality, it generally cannot be formally empirically tested in a meaningful way; the model is part and parcel of a larger vision. A model has meaning only with the large number of ad hoc assumptions and provisos in the back of the modeler's head which reflect that vision. If an empirical observation doesn't fit the model, the model will be adjusted to the vision. Understanding the vision behind the model is as important as understanding the model.

The Monetarist and Keynesian Visions

Consider the monetarist and Keynesian visions. The monetarist vision is of a political climate in which government will too often give in to political pressures, will take the easy way out, and will consistently err on the side of using too much discretion. The Keynesian vision is of a political climate in which government will operate reasonably effectively even in the face of political pressures; while it might sometimes take the easy way out, it will generally conduct policy for the general good. The differences in their policy proposals follow from the differences of those visions, not from any economic model. Yet, the alternative visions have seldom been discussed, and academics have forced the differences to show up in the shape of some curve or specification of a model.

What has happened is that Keynesian and Classical models, freed from the institutional knowledge of their creators, acquired a life of their own.

An equation was added here, a term reinterpreted there, and pretty soon, one had a model with little or no relation to the vision. Moreover, as institutions changed, so too did the appropriate model to describe it. It would seem reasonable that sometimes the Keynesian vision fit reality and sometimes the monetarist vision fit reality. Given the changing problems and institutional structure, the two visions are not necessarily incompatible.

How many economics students are currently taught to view theories in this way? We believe few. Instead they are taught that one or the other theory must be right, and that the choice between the two must be made on the basis of formal empirical tests. When, instead of using informal empirical tests of the larger vision, formal empirical tests are used to determine which model is preferable, the winning model simply becomes the result of a competition, with the winner determined by the ingenuity and perseverance of researchers in various groups. If you lose one round, you simply modify an ad-hoc assumption and win the next until the debate fades away.

Has forty years of empirical testing determined whether the monetarist or the Keynesian model is the correct one? Does anyone believe that a definitive test exists? Instead of definitively answering such questions, theorists simply pose new ones; thus the academic debate has shifted from a monetarist/Keynesian debate to a New Classical/New Keynesian debate. (The 1992 fad is to look for unit roots, in an attempt to test whether a data series generating function is, or is not, stationary. Unfortunately, as every artist knows, the future may be different than the past, so even if an answer is forthcoming based on past data, it will not definitively answer the policy question.)

Art and the Comparative Advantage of Educational Institutions

Many academics agree with us about the above arguments, but nonetheless argue that educational institutions should focus on models. They argue that universities have a comparative advantage in teaching science rather than art, theory rather than mundane operational details and insightful knowledge. These, they claim, are learned as much by osmosis as by teaching. They argue, "You don't teach artists by teaching them art theory; you teach them by having them practice; correcting them when they are wrong; showing them how to do it; and, then, once they've learned how to do what can be done, you show them how to experiment and go beyond the current state of the art. The only way one learns the institutional sense necessary to judge models is to work in the institutions--to get a feel for those institutions and a sensibility about them--the university is not the place to get that."

We agree with the sensibility of such critics, but disagree with the conclusion. We believe that undergraduate and graduate schools can teach art, and that doing so would significantly improve economics education.

True, art is best learned in real-world institutions, but that does not preclude it from being taught in the classroom.

Even if it is extraordinarily difficult to teach art, the conclusion--that because of academic economists' comparative advantage, they should teach only theory--does not follow. Such a conclusion would follow only if all graduate education in economics required a real world apprenticeship in which all theorists gained firsthand knowledge of the real world. But that doesn't happen; no undergraduate or graduate economics program that we know of has such an apprenticeship program. Unless the art of economics is taught in graduate school, even taught badly, it will not be taught.

Unfortunately, the current situation is worse in that the art of monetary policy is not being taught. Graduate schools are not even teaching that it is important. Currently, students are given no sense of the limitations of what they are doing.

Thus, we believe that, at a minimum, *it is still fundamentally important to teach students that the art of monetary policy is important, and that it is a necessary component of understanding the models, of testing models, and of working with the models.* The danger of not teaching the importance of the art of economics is that the students start seeing the model as the reality and they lose any interest in the reality that model is supposed to describe.

How Policy is Hurt by the Current Practices

As we stated above, policy is hurt in two ways by the current practices. The first way it is hurt has to do with the number of people planning to go on to work in policy. Many economists trained by academic institutions do, of course, go on into policy jobs. The initial transition is difficult, but successful transfers quickly learn to forget most of what they learned in graduate school. It was a hurdle they had to get over to get to policy; not a necessary part of their training. And since you had to be bright to get over that hurdle, graduate schools serve as a screen for job applicants. In a good policy environment it takes about two months for a bright economist to learn that much of his or her graduate training is irrelevant to the real issues, and another two years or so to get a sense of the institutions and insights of current policy makers. So the system works, but it doesn't work as well as it could.

One reason is that many people who would make wonderful policy makers never go into policy at all. Schools operate like a filter and they are screening out large numbers of people. What happens is that artists like Alan Holmes never become policy makers. Holmes had the integrity, the judgment, and a well honed sense of how theory can be interpreted to be relevant to the real world. People like him make a system work. One of the

most important jobs an educational system can fulfill is to train and prepare people like Holmes to go into public service. Our educational system is not fulfilling that role. It is failing miserably.

Let us give an example. When Paul Volcker gave a speech at Yale, he asked some 350 or so students how many planned to go on into public service. The result: only one student said that he had such plans and Volcker was not sure the student understood the question. Graduate schools in economics are no different. In interviews Klamer and Colander (1990) conducted with graduate students at top schools, many graduate students said they were talked out of going into policy work, even though the reason they had gone to graduate school in the first place was to prepare themselves for policy work. "Policy is for simpletons" is the view they heard from their teachers.

This doesn't mean that academics come out and say that policy is for simpletons (although some of the less discreet of them do say it), but it's the view that the students hear and absorb. By the end of three years of graduate economic education, most students are socialized into the academic way of thinking and are directed away from any policy work.

Again Paul Volcker has a story that captures the problem. After leaving the Fed, he taught at Princeton. While there he was swamped with work and asked an assistant professor of monetary economics if he would like to joint author a book Paul had agreed to do. The young assistant said no, that he could not work on a book on policy because it would destroy his chances for tenure. Paul was surprised and asked the chairman if that were true. The departmental chairman laughed and said, no, one policy book with Paul wouldn't hurt, but two would definitely end his chances.

The second way that policy is hurt by the current situation is that policy is robbed of the useful insights which would come from relevant and informed theorizing and modeling. Keynes once said that we are all slaves of some defunct economist, and by that he meant that some defunct economic theorist. Policy making is ultimately based on an implicit or explicit vision of how the economy works. Ultimately, theory lies behind that vision; theoretical advances help sharpen policy makers' vision. When it is doing its job, theorists' work act as a corrective lens on policy makers visions, placing issues in different focus. Different theories shed different focus on issues. Ultimately, policy making requires an integration of the different visions that flow from different theories.

When theories no longer relate their theories to visions policy-making suffers. Currently the vision that is taught to policy makers in their on-the-job training is the existing institutional vision. The students who come to work in policy are essentially a tabula rasa. They have learned little in graduate school that can't be quickly shown to be foolish or irrelevant. Because they haven't developed their own judgment, after their on-the-job training is complete they are generally imprinted with the establishment vision. In the U.S. this means the Fed vision which is informally imprinted

into incoming policy makers. The Fed vision may be right. But unless people trained in the art of policy outside the Fed interrelate with that vision, the Fed vision will perpetuate itself, whether it be right or wrong. Currently, there is no meaningful interaction of alternative visions that can lead to major policy changes and innovations. And that is sad.