

# A theory is a sometime thing

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Milton Friedman's famous presidential address of 1968 is nominally about the uses and conduct of monetary policy. But there is also a fairly plain, broader subtext. It aims to undermine the eclectic American Keynesianism of the 1950s and 1960s, the habits of thought to which Joan Robinson attached the (unintentionally) complimentary label of 'bastard' Keynesianism.

I will only say a little about what that was. In fact, the adjective 'eclectic' is meant to remind you that it was not a tight axiomatic doctrine but rather the collection of ideas in terms of which people like James Tobin, Arthur Okun, Paul Samuelson and others (including me) discussed macroeconomic events and policies. These ideas usually included a distinction between aggregate demand and aggregate supply (or 'potential') along with the understanding that equilibrating mechanisms were weak enough and slow enough that persistent gaps could exist between them. When demand fell short of potential, some version of the IS–LM model was standard, to which extensions and refinements could be added when needed. In due course one or another variant of the Phillips curve became part of the standard apparatus. A systematic allowance for supply shocks and their consequences came later and was duly absorbed.

In the section on 'What monetary policy cannot do,' Friedman goes after two of these lines of thought. His first claim is that the central bank, the Fed, cannot 'peg' the real interest rate. (The meaning of 'peg' will turn out to be important.) It has to be the real interest rate if it is to affect investment and other spending. The point here is to undermine the standard LM curve. Nowadays it is common practice to replace the old LM curve with given  $M$  by a central-bank reaction function that specifies a real policy rate as a function of the level of economic activity. In this setting Friedman's claim is that there can be no such reaction function. The Fed can peg the nominal federal funds rate, but not the real rate.

The basic reason is that the Fed controls a nominal variable, the size of its own balance sheet, and it can use this control to determine another nominal quantity but not a real one. (Eclectic American Keynesians took it more or less for granted that the woods were full of rigidities, lags, and irrationalities, so that nominal events could easily have real consequences.) But the essence of Friedman's argument is explained more concretely. Suppose the Fed tries to achieve a lower real interest rate (starting from some initial equilibrium position); open-market purchases of securities will raise their price and lower their nominal yield. The price level does not respond instantaneously, however, so the real rate of interest also falls. As Friedman says, this is only the beginning of the process, not the end. Lower interest rates and higher cash balances will stimulate investment and perhaps other spending. (This was presumably the Fed's purpose in the first place.) Higher spending will increase the demand for credit, raise prices and thus reduce real cash balances, and so on. After a brief discussion, Friedman comes to the point I want to emphasize. 'These ... effects will reverse the initial downward pressure on interest rates fairly promptly, say, in something less than a year. Together

they will tend, after a somewhat longer interval, say, a year or two, to return interest rates to the level they would otherwise have had' (Friedman 1968, p. 6). Now we know what 'peg' means.

These assertions about timing are not casual. The goal, remember, is to contradict the eclectic American Keynesian view of counter-cyclical monetary policy which did not, after all, require the Fed to control real interest rates forever. If the Fed can have meaningful influence only for less than a year or two, then it is surely playing a losing game, especially in view of those 'long and variable lags.' Is that really so? A trained mind can easily imagine an economy that works just so; the question is whether our economy is like that.

In a recent pungent paper ('The trouble with macroeconomics,' forthcoming in *The American Economist*) Paul Romer has occasion to show (in his Figure 2) what happened to the real federal funds rate in the years just before and after Paul Volcker's appointment as Chairman of the Federal Reserve Board. The real funds rate had been fluctuating around zero in the year before. It then, after a brief recession, rose sharply to about 5 percent and fluctuated around that level for the next six years, when Romer's diagram ends. This sustained 5 percentage point increase in the real funds rate was not a random event. It was a deliberate intervention, designed to end the 'double-digit' inflation of the early 1970s, and it did so, with real side-effects. This chain of events could not have worked through any 'misperception' mechanism; there was no secret about what the Volcker Fed was doing.

So the Fed was in fact able to control ('peg') its real policy rate, not for a year or two but for at least six years, certainly long enough for the normal conduct of counter-cyclical monetary policy to be effective. The history of the Bernanke/Yellen Fed is more complicated, because of the zero lower bound, but it clearly does not support the Friedman view. The Fed was apparently able to lower the real ten-year Treasury bond rate for half a dozen years, 2011–2016. Of course there are many influences on the real long interest rate; it is at least plausible that large Fed purchases contributed to the outcome that the Fed was consciously seeking. The difference between 'a year or two' and 'half a dozen years' is not a small matter. This part of Friedman's demolition project seems to have failed as pragmatic economics, although it may have succeeded in persuading the economics profession.

The second, and even more striking, contribution of the 1968 presidential address was Friedman's introduction of the 'natural rate of unemployment' along with the long-run vertical Phillips curve and its accelerationist implications. The natural rate was, famously, what would be 'ground out' by Walrasian general equilibrium, provided it incorporated 'the actual structural characteristics of the labor and commodity markets, including market imperfections, stochastic variability in demands and supplies, the cost of gathering information about job vacancies and labor availabilities, the costs of mobility, and so on' (ibid., p. 8). (Was that tongue-in-cheek? How on earth was anyone to guess what the natural rate might be, this quarter or next?)

I do not have to repeat Friedman's classic discussion of the consequences if the Fed (or anyone) attempts to push the actual unemployment rate below the natural rate: higher monetary growth, at first increased spending, output and employment, as prices adjust with a lag to the new state of demand. But eventually the rate of inflation, whatever it was before, increases and this gets built into expectations. 'Employees will start to reckon on rising prices of the things they buy and to demand higher nominal wages for the future' (ibid., p. 10). So the Fed has to create even faster monetary growth to sustain the lower unemployment rate, and you know the rest. Once again, we can imagine such a world; Friedman's claim is that we live in it.

The simplest model that illustrates these ideas is

$$z_t = f(u_t - u^*) + z_t^e,$$

where  $z$  is the rate of inflation,  $z^e$  the expected rate of inflation,  $u$  the unemployment rate, and  $u^*$  the natural rate;  $f(\cdot)$  is the Phillips curve, a decreasing function of its argument, with  $f(0) = 0$ . Suppose for simplicity, not for real, that  $z_t^e = z_{t-1}$  or, for that matter, any weighted finite moving average of past inflation rates. (Friedman appears to have had something like adaptive expectations in mind. But then the model tended to fail; except for rare intervals, the required one-for-one pass-through of expected inflation into realized inflation did not occur. His successors appealed vaguely to rational expectations; this may be the triumph of hope over experience, because rational expectations are not an empirical success in this context.) In the model as stated, obviously,  $u^*$  is the only unemployment rate compatible with steady inflation; if  $u$  is always less than (greater than)  $u^*$ , the inflation rate is always increasing (decreasing). The price of trying to keep  $u$  below  $u^*$  is faster and faster inflation. The model says something even stronger: if  $f$  is linear,  $f(x) = -ax$ , then along any path that starts and ends with inflation rate  $z_0$ , the sum of deviations of  $u$  from  $u^*$  must equal zero. Any temporary reduction in unemployment below the natural rate must be offset by an equal temporary increase in  $u$  above  $u^*$ . (If  $f$  is non-linear, something more complicated but equally discouraging follows.) Is that roughly how the world works?

For a brief period in the 1970s and early 1980s, this simple model seemed to do well: if you plot the change in the inflation rate against the unemployment rate (see Modigliani and Papademos 1975), you get a decent downward-sloping scatter that crosses the  $u$ -axis at a reasonably defined natural rate or NAIRU). At other times, not so much.

For instance, Olivier Blanchard (2016) has recently looked carefully and impartially at the years since 1980 and come to the following conclusions. First, there is still a Phillips curve, in the sense that inflation responds to unemployment. Second, expectations of inflation have become more and more ‘anchored,’ meaning less and less dependent on current and recent experience. Thus  $z^e$  in the above equation is approximately a constant, and we are back more or less to Phillips’s Phillips curve in which the inflation rate, and not the change in the inflation rate, depends on the unemployment rate. (No such anchor is likely to survive a large and prolonged deviation of inflation from current experience. Neither is it fly-by-night. The medium run is where we live.) Third, the slope of the Phillips curve itself has been getting flatter, ever since the 1980s, and is now quite small. And last, the standard error around the Phillips curve is large; the relationship is not well defined in the data.

Taken together, these last two findings imply that there is no well-defined natural rate of unemployment, either statistically or conceptually. (Suppose the Phillips curve is linear,  $a - bu$ , so that  $u^* = a/b$ , and uncertainty about its location takes the form that the intercept  $a$  is somewhere between  $a + c$  and  $a - c$ . Then  $u^*$  is somewhere in an interval of length  $2c/b$ , and if  $b$  is very small this tells us essentially nothing about  $u^*$ .) Between 2009 and 2016 the national unemployment rate fell fairly steadily from 9.3 percent to 4.9 percent while the rate of (GDP chain-type) inflation went from 0.8 percent to 1.3 percent per year, with no clear trend.

This is very different from the story told so confidently and fluently in the 1968 address. My mind kept returning to a famous line of dramatic verse: was this the face that launched a thousand ships? Helen of Troy probably never existed, as Marlowe

may not have known. But Milton Friedman's presidential address did exist, and it launched at least a thousand articles. It may not have burnt the topless towers of Ilium, but it certainly helped lead macroeconomics to its current state of refined irrelevance. The financial crisis and the recession that followed it may have planted some second thoughts, but even that is not certain.

A few major failures like those I have registered in this note may not be enough for a considered rejection of Friedman's doctrine and its various successors. But they are certainly enough to justify intense skepticism, especially among economists, for whom skepticism should be the default mental setting anyway. So why did those thousand ships sail for so long, why did those ideas float for so long, without much resistance? I don't have a settled answer.

One can speculate. Maybe a patchwork of ideas like eclectic American Keynesianism, held together partly by duct tape, is always at a disadvantage compared with a monolithic doctrine that has an answer for everything, and the same answer for everything. Maybe that same monolithic doctrine reinforced and was reinforced by the general shift of political and social preferences to the right that was taking place at about the same time. Maybe this bit of intellectual history was mainly an accidental concatenation of events, personalities, and dispositions. And maybe this is the sort of question that is better discussed while toasting marshmallows around a dying campfire.

## REFERENCES

- Blanchard, Olivier (2016), 'The U.S. Phillips curve: back to the 60s?' Peterson Institute of International Economics Policy Brief, January.
- Friedman, Milton (1968), 'The role of monetary policy,' *American Economic Review*, 58(1), 1–17.
- Modigliani, F. and L. Papademos (1975), 'Targets for monetary policy in the coming year,' *Brookings Papers on Economic Activity*, (1), 141–166.