Simple and Robust Rules for Monetary Policy

Milton Fridman coauthored a book with Anna Schwartz in 1963 called A Monetary History of the United States, 1867-1960. The book attributed inflation to excess money supply generated by a central bank. It attributed deflationary spirals to the reverse effect fo a failure of a central bank to support the money supply during a liquidity crunch. Friedman proposed a fixed monetary rule called **Friedman’s k-percent rule**, where the money supply would be calculated by known economic factors in order to specify targeting a specific inflation range.

In the 1990s, research was done to discover the “best” policy rules. The results found that the better rules had three general characteristics: (1) an interest rate instrument performed better than a money supply instrument, (2) interest rate rules that reacted to both inflation and real output worked better than rules that focused on either one, and (3) interest rate rules that reacted to the exchange rate were inferior to those that did not.

Fisher Equation: real interest rate = nominal interest rate minus the inflation rate.

An important concept is the idea of an **equilibrium real federal funds rate** (or the natural rate of interest or the neutral real rate) which is level of the real federal funds rate if allowed to prevail for several years that would place economic activity at its potential and keep inflation low and stable. (you can estimate this with the Taylor Rule).

🡪One specific rule derived from this simulation research is the **Taylor Rule**: It says that the short-term interest rate, it, should be set according to the formula:



r\* denotes the equilibrium real interest rate

pi\_t denotes the inflation rate; and y denotes the output gap (the percent deviation of real GDP from its potential level).

--Taylor set r\* to 2 and the target inflation rate pi\* equal to 2. Thus, rearranging terms, the Taylor rule says that the short-term interest rate should equal 1.5x the inflation rate plus 0.5x the output gap plus one.

--N.B. When the economy is in steady state with the inflation rate equaling its target and the output gap equaling zero, the real interest rate (the nominal rate minus the expected inflation rate) equals the equilibrium real interest rate.

--This rule decides two important rules for monetary policy that are effective at stabilizing inflation and the output gap in certain model simulations:

1) The nominal interest rate reacts by more than one-for-one to movements in the inflation rate (Taylor principle: “when inflation rises, monetary policy needs to raise the real interest rate to slow the economy and reduce inflationary pressures”)

2) Monetary policy “leans against the wind”; that is, it reacts by increasing the interest rate by a particular amount when real GDO rises above potential GDP and by decreasing the interest rate by the same amount when real GDP falls below potential GDP.

More rules that generalized the original Taylor rule incorporate inertia in the behavior of the interest rate through a positive value of the parameter rho. It also allows for the possibility that policy responds to expected future (or lagged) values of inflation and the output gap.

**One Possible Drawback of Strictly Using Explicit Policy Rules**:

Mishkin (2007) found that in the “optimal discretionary policy, the federal funds rate is lowered more aggressively and substantially faster than with the Taylor rule…we can expect this difference because the monetary authority would not wait to react until output had already fallen.”

The analysis of optimal simple rules has abstracted from several important limitations on monetary policy in practice—1) measurement of variables in the policy rule, especially the output gap 2) the presence of the ZLB on nominal interest rates and 3) the potential role of other variables in the policy rule (such as asset prices).