An Economical Business-Cycle Model

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In recent decades, advanced economies have experienced low and stable inflation and long periods of liquidity trap. Take the US as an example. Inflation has not responded much to fluctuations in unemployment: although the Great Recession saw a dramatic increase in slack as unemployment rose from 4.4% to 10%, inflation remained stable, a bit lower than before but never below 1%. Nor has inflation responded much to monetary policy: most empirical studies find that monetary policy barely contributes to price movements. In fact, since 1994, the core inflation rate has remained in a narrow range between 1% and 2.5%. Furthermore, the US economy entered a liquidity trap in December 2008 when the nominal interest rate set by the Federal Reserve reached its zero lower bound. It is still in this liquidity trap in September 2014.

In this paper we construct an alternative business-cycle model capturing these two features---sluggish inflation and long periods of liquidity trap. Our model adds two assumptions to a money-in-the-utility-function model: the labor market is subject to matching frictions, and real wealth enters the utility function. These two assumptions modify the two core equations of the standard New Keynesian model. With matching frictions, we can analyze equilibria in which inflation is fixed and not determined by a forward-looking Phillips curve. With wealth in the utility, the Euler equation is modified and we can obtain steady-state equilibria with a liquidity trap, positive inflation, and labor market slack.

The model is simple enough to inspect the mechanisms behind cyclical fluctuations and to study the effects of conventional and unconventional monetary and fiscal policies. In the model, business cycles may be generated by aggregate demand and supply shocks. A negative aggregate demand shock leads to lower output and higher unemployment rate while a negative aggregate supply shock leads to lower output but lower unemployment rate. A broad range of policies can be used to stabilize the economy. A conventional monetary policy that issues money through open market operations can stabilize the economy in normal times but not in a liquidity trap when the nominal interest rate falls to zero. In a liquidity trap, other policies can stimulate aggregate demand and stabilize the economy---for instance, a helicopter drop of money, a wealth tax, or government purchases.

As a by-product, the model provides microfoundations for the classical IS-LM model.