On the Effect of Monetary Policy During a Credit Crunch

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Abstract

We study the effect of alternative monetary policies during a credit crunch, modeled as a shock to collateral constraints. We consider a model with entrepreneurs that are heterogeneous in their productivity and net worth, face collateral constraints that limit their investment, and whose consumption is subject to a cash-in-advanced constraint. In a benchmark model with logarithmic preferences, we show that the paths of aggregate output, capital, and the real interest rate, are independent of monetary policy, provided that the nominal interest rate is strictly positive in every period. We study three alternative monetary policies. First, we consider a monetary policy that implements a strictly positive nominal interest rate in every period, and therefore, it does not affect the aforementioned real variables. Second, we consider a government that fixes the supply of money. In this case, a credit crunch is associated with a deflation on impact, and a subsequent path for inflation that results in a sequence of nominal interest rates that are zero for a finite number of periods, and leads to paths for aggregate output, capital, and the real interest rate that are very closed to those of the case where the nominal interest rate is strictly positive in every period. Finally, we consider a monetary policy, and associated fiscal policy, that implements a low and constant inflation rate. In this case, the effect of a credit crunch on aggregate output and capital are greatly amplified. The monetary policy that implements the low and constant inflation is characterized by a sharp and temporary increase in the supply of money, and leads to a path of nominal interest rates that are zero for a finite number of periods, and corresponding path for real interest rates that are much higher than in the first two cases.