Seunghyeon Lee, University of Virginia

Optimal Monetary Policy under Heterogeneous Consumption Baskets

I analyze optimal monetary policy in a model with households who differ along two dimensions – they consume different baskets of consumption goods and have differential access to financial markets. The first-best outcome is not implementable even in the absence of nominal rigidities: optimal monetary policy targets non-zero output gaps and benefits borrowing-constrained households. Heterogeneous consumption baskets lead the central bank to target inflation rates that are weighted toward the good that is consumed more intensively by the constrained households and not merely the good with less flexible prices, as existing work finds.

I employ a two-agent two-sector dynamic model with sticky prices to model that some 25-40 percent of households live hand-to-mouth based on either net worth or illiquid wealth. Financially constrained and unconstrained households have different CES preferences over the goods, consuming different baskets and facing different price indices. Despite perfect labor mobility, households face different real wages, so they face idiosyncratic real wage risk. To be consistent with empirical evidence that consumption baskets are heterogeneous across different income levels and that hand-to-mouth households are relatively poor, I assume that the two types of household consume different shares of goods.

Households would want to trade bonds to share idiosyncratic real wage risk, but due to the borrowing constraints, households cannot equalize marginal disutility of labor and fail even with flexible prices to achieve the first-best outcome. Nominal rigidities confront monetary policy with a trade-off: sectoral output gaps and labor hour gaps cannot be closed simultaneously. So optimal policy targets non-zero output gaps in order to balance marginal utilities between households. This is not the case under homogeneous baskets.

Optimal policy benefits more the hand-to-mouth households, whose wage elasticity of consumption is higher, to redistribute towards reducing differences between households' marginal utility. The more constrained households' consumption-relevant inflation rates and real wages are stabilized, the lower variation of their consumption, the less their consumption loss from price dispersion, and the higher their expected welfare. As the inequality of consumption between households at the steady state gets larger, the utilitarian central bank pays more attention to the constrained households, stabilizing more their real wages. This is not the case under homogeneous baskets, because monetary policy has no redistributive effects through sectoral inflation or relative prices.

This paper finds that the central bank can and should deal with some distributional issues at the cost of some overall price instability, giving more weight to stabilizing the real wages and consumption of the constrained. Suppose there is an increase in the relative productivity of the sector that produces goods consumed more intensively by the constrained. Monetary policy should target positive output gaps to reduce distributional inefficiency from imperfect risk sharing when the substitution effect dominates the income effect on labor supply. To redistribute in favor of hand-to-mouth households, policy should be more expansionary when consumption baskets are heterogeneous than when they are homogeneous.