

# Executive Summary of “Sticky Expectations, Fiscal Transfers, Inflation, and Unemployment in HANK”

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Recent evidence indicates that households adjust their forecasts slowly in response to macroeconomic shocks in a manner difficult to reconcile with full information rational expectation (FIRE) models. Such information frictions are increasingly recognized as a key factor that explains the slow, hump-shaped dynamics of macroeconomic aggregates observed in the data. This slow learning of changes in macroeconomic conditions by households is well approximated by “sticky” expectations, a framework in which households have full information regarding their own personal incomes and assets but only periodically revise their beliefs about the macroeconomy. However, incorporating these information frictions into heterogeneous agent New Keynesian (HANK) models remains computationally challenging.

This paper develops a new numerical technique to solve linearized HANK models in state space. The method works by recycling the full information Jacobians of the standard HANK model to convert the system into a sticky expectations one by augmenting the former with additional states and drift terms. Because the method operates on a linear state space model, the technique integrates naturally with Kalman filtering and inference tools, and can be adapted to other settings involving higher-order perturbation terms and regime switching models – tasks that are not straightforward with existing sequence space methods.

I use this solution technique to solve and estimate a medium-scale HANK model with incomplete asset markets and search-and-matching frictions in the labor market to study the effects of fiscal transfers (namely, stimulus checks) on GDP, unemployment, and inflation. To do so, I use a model consistent with both microeconomic evidence on marginal propensities to consume and macroeconomic evidence on the empirically identified effects of monetary policy; these features require the model to incorporate some form of inattention like sticky expectations. This allows me to study fiscal policy in an environment disciplined by evidence pertaining to monetary policy. To investigate the historical effects of fiscal transfers, I further incorporate standard shocks and frictions from the literature following Smets and Wouters (2007) and estimate the shocks’ variances and persistences using Sequential Monte Carlo (SMC).

Quantitatively, I find that sticky expectations raise the transfer multiplier of a one-time stimulus check disbursement from 0.10 to 0.30. This is because households do not immediately internalize the policy adjustments that the government will have to make to stabilize future inflation and debt levels. Additionally, absent the large fiscal stimulus efforts taken following the COVID-19 pandemic, the model suggests that cumulative U.S. real GDP losses following 2020 would have been 33% larger. Qualitatively, however, the model suggests that the stimulus checks did little to exacerbate inflation or reduce unemployment, reflecting a flat Phillips Curve and the speed with which transfer-driven aggregate demand rises and falls relative to firms’ longer-term incentives to invest in new hiring or repricing. The fiscal amplification of sticky expectations is further necessary to lead inflation and unemployment to respond in the expected directions following the disbursement of stimulus checks, as

sticky expectations increase the persistence of the aggregate demand expansion.

This analysis methodologically bridges sticky expectations models with the flexibility of state space solution and estimation techniques. Substantively, it suggests that information frictions are quantitatively important for understanding the effects of fiscal transfers in general and in their impact on the post-2020 economic recovery, although the ability of emergency stimulus efforts to boost employment and inflation is weak in standard models.