

Extended Abstract

“Who Are the Hand-to-Mouth?”

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Our goal is to understand why some households hold low levels of assets relative to income. The answer to this question sheds light on models of consumption/savings as well as guides empirical strategies to identify households that display a high marginal propensity to consume (MPC).

The literature has singled out households with little net wealth and/or low levels of liquid assets as having high MPC's or, in the extreme, behaving hand-to-mouth (e.g., Zeldes, 1989, Kaplan, Violante, and Weidner, 2014). A large empirical literature tests for spending responses to income by asset holdings. While studies typically find average MPC's that are above those suggested by permanent income consumption, results stratifying by assets are decidedly mixed. For instance Johnson, et al. (2006), Broda and Parker (2014), and Jappelleli and Pistaferri (2014) each find larger spending responses of households with little liquid wealth. But a number of papers find little difference, or even find larger responses for households with higher assets. (Examples include Souleles, 2002, Misra and Surico, 2011, and Johnson et al., 2013.) This lack of empirical clarity leads us to ask whether traditional models of asset holdings have a wider set of predictions that can be exploited to identify those households with high MPC's, in particular, predictions that are more robust to heterogeneity across households.

We start from a standard incomplete markets model, in which infinitely lived individuals smooth income fluctuations with a non-contingent asset subject to a borrowing constraint. The model, while predicting that low-asset households display higher MPC's, also yields several other clear predictions for such households. High MPC households should exhibit higher expected growth in consumption. Specifically, all else equal, households with low wealth have a greater precautionary motive to save as well as may be constrained from borrowing against future income growth. Both forces lead low-wealth households to anticipate relatively fast consumption growth compared to their high-wealth counterparts. Secondly, hand-to-mouth households should have consumption that closely tracks contemporaneous income fluctuations. The empirical test of this prediction is that the volatility of consumption net of income should be lower for low wealth/high MPC individuals. Thirdly, *high* MPC households, conditional on income, should display a *lower* average propensity to consume (APC) out of income, where APC equals spending relative to total income (labor earnings plus net asset income and transfers). This last prediction reflects that low-asset, high MPC households should be building up their buffer stock of assets and therefore (averaging over idiosyncratic income draws) are net savers. Mechanically, this implies a low APC, with spending below income.¹

¹ We also show that each of these predictions holds for reasonable calibrations of the two-asset (liquid/non-liquid) model of Kaplan and Violante (2014).

By sharp contrast, we find that none of these predictions hold in the Panel Study of Income Dynamics (PSID) for those households measured to be hand-to-mouth by measures from the literature, such as Zeldes (1989)'s breakdown based on net wealth relative to income or that Kaplan, Violante, and Weidner (2014)'s based on liquid assets relative to income. Low-asset households: (i) do not display higher spending growth; (ii) display larger fluctuations in spending relative to income; and (iii) exhibit a larger APC than households with greater assets. Furthermore, by taking advantage of the PSID's long panel, spanning up to 18 years on households' incomes and spending, we see clear long-run differences in households' spending patterns that transcend their asset position at any particular point in time. More precisely, controlling for a household's *current* assets-to-income status, those households that are frequently measured to be hand-to-mouth in *previous* periods display sharply lower long-run growth in spending and higher long-run volatility of spending relative to income.

The richness of the PSID and the Consumer Expenditure Surveys allow a deeper look at the consumption behavior of low-asset households. We document that low-asset households, for a given level of total expenditure, allocate spending on fewer discrete *categories* of goods. However, as expenditure fluctuates over time, low-wealth households show a larger elasticity at the extensive margin; that is, low-wealth households adjust spending to a greater extent via dropping or adding categories of spending. Thus their greater volatility of spending occurs disproportionately through an extensive margin.

Motivated by these facts, we develop a model with heterogeneity in preferences. We allow not only that some households are less patient (low- β), but also that some households are more amenable to fluctuations in their spending, displaying a higher intertemporal elasticity of substitution (high-EIS). In the standard model, both low- β and high-EIS households are predicted to hold low assets, and thus to disproportionately be measured as hand-to-mouth. The high-EIS households tend to hold less assets as their discount factor is lower than the inverse of the risk-free interest rate, leading unconstrained agents to front-load consumption in a manner similar to an impatient agent. The low- β or high-EIS households' low asset holdings reflects low "target," or long-run, asset holdings, rather than necessarily holding less than targeted assets due to a sequence of low income draws. Both low- β and high-EIS households are expected to display lower expected consumption growth, reflecting steeper intertemporal indifference curves for low- β households and high-EIS households. In turn, given that measured hand-to-mouth households will disproportionately consist of low- β and high-EIS households, these households can quite plausibly display lower expected consumption growth, especially when not currently holding low assets. Furthermore, the prediction that low-asset households will display lower APC's is weakened, in as much as their lower assets reflect lower long-run assets, rather than shocks that pushed assets below targeted levels.

While the heterogeneity in discount factors is now fairly commonplace in the literature, our focus on EIS-heterogeneity is more novel and warrants justification. We point to two empirical regularities as motivation. The first is the greater volatility of consumption relative to income displayed by low-asset households. This is not inherently consistent with low discount factors for these households. Secondly, we see no reason why β -heterogeneity should yield our finding that low-asset households exhibit more volatility of spending at the extensive (category) margin. By contrast we show in a simple two-good, two-period setting, that differences in the

relevance of the extensive category margin, driven by heterogeneity in the non-divisibility of spending, can serve as a micro foundation for heterogeneity in household EIS. Intuitively, the non-divisibility introduces a non-convexity in the expenditure decision of the individual. The fact that low-wealth households consume fewer categories but are more likely to adjust on the extensive margin suggests that this non-convexity is more relevant for certain households, conditional on a given level of expenditure. For a given level of life-time income, an operational extensive margin implies that per-period expenditure is relatively volatile and sensitive to changes in inter-temporal prices. This provides a micro-foundation for a high EIS in a standard one-good model.

Given the two-dimensional heterogeneity that speaks to the micro facts described above, there is no clear predicted link between observed asset holdings and MPC's. However, the model provides some guidance. For one, we find that an individual's target level of wealth (that is, the ergodic mean for a given preference specification), as well as the level of assets relative to that target, are both important factors for a household's MPC. That is, a household at its expected long-run assets, but with a low target, either because its β is low or its EIS is high, can display a considerably higher MPC than a household with larger target assets. By extension, it is those households with both a low target level of assets and who are currently below that target that display especially high MPC's. Secondly, the model implies that a household's APC is an excellent predictor of its deviation from its long-run asset holdings. In turn, controlling for APC identifies the role of preference heterogeneity in both the dispersion in assets and MPC. This insight can be taken to the data, as the APC is an observed variable (as opposed to target assets). In fact, in the PSID, we do see that it is those households with both low assets relative to income and a low APC who display the largest response of spending to changes in income.

We calibrate the level of preference heterogeneity (β and EIS) in the cross-section based on the empirical patterns described above (e.g., expected growth and volatility of spending for households labeled hand-to-mouth based on low assets, with and without household fixed effects), salient features of the asset distribution, and moments that describe the responsiveness of spending to income by asset holdings, such as those moments stressed by Blundell, Peterson, and Pistaferri (2008). In the calibrated model, we explore the impact of heterogeneity in household EIS versus that in β . For instance, what are the implications for the share of low-asset households who are literally at a corner or kink of their budget set? What does this imply for the distributions of MPC's and effective elasticities to intertemporal prices? What does this imply for the expected costs of income and consumption volatility for low-asset households, and by extension the benefits of policies that insure disposable incomes?