

# Household Balance Sheets and Consumption Responses to Income Shocks

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October 31, 2018

## Extended Abstract

Since the Global Financial Crisis, there has been a renewed interest in uncovering the link between household balance sheets and household consumption. For example, a number of papers by Atif Mian and Amir Sufi, e.g. [Mian and Sufi \(2009\)](#); [Mian and Sufi \(2011\)](#); and [Mian, Rao and Sufi \(2013\)](#), find that elevated debt levels and the collapse of net worth were the main causes for the fall in consumption during the Great Recession. Others such as [Mian, Rao and Sufi \(2013\)](#), [Gillitzer and Wang \(2016\)](#), [Berger, Guerrieri, Lorenzoni and Vavra \(2017\)](#) examine the direct impact of house prices on consumer spending. Another strand of literature that estimates the marginal propensities to consume (MPCs) from transitory changes in income finds that individuals/households with higher liquid wealth have lower MPCs, e.g. [Agarwal, Liu and Souleles \(2007\)](#); [Parker, Souleles, Johnson and McClelland \(2013\)](#); [Fagereng, Holm and Natvik \(2016\)](#); [Fuster, Kaplan and Zafar \(2018\)](#).

The objective of our paper is to examine whether these balance sheet effects also impact how consumption responds to unanticipated transitory and permanent income shocks. Using longitudinal household survey data from the U.S. (PSID) and Australia (HILDA), we estimate an unobserved components model of income and consumption using the likelihood-based approach of [Chatterjee, Morley and Singh \(2018\)](#). To elicit the financial positions of households, we group households in three subgroups based on their housing tenure status as renters; mortgaged owners; and outright owners.

Our main findings are as follows. First, the consumption response of households with higher debt to a transitory income shock is higher relative to households with lower levels of debt. Similarly households with lower liquid wealth respond more

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to transitory income shocks. Mortgaged owners and households in the top 25th percentile of the debt distribution in the U.S. have a pass-through coefficient of 0.07-0.08. Second, following [Berger, Guerrieri, Lorenzoni and Vavra \(2017\)](#), we compute the consumption elasticities with respect to house price shocks. The consumption elasticity is 0.17 for mortgaged owners and 0.04 for outright owners in the U.S. Using very different method and sample, other studies have also found very similar estimates, see for example [Case, Quigley and Shiller \(2013\)](#). However, for Australian households in our sample, we do not observe any heterogeneity in their consumption response to a transitory income shock based on housing tenure status.

Why would households with high debt respond more to transitory income shocks? The main intuition can be attributed to the notion of consumption commitments ([Chetty and Szeidl, 2007](#)). Households with debt incur regular expenses such as interest payments which increases their consumption commitments. Faced with a small negative income shock which is transitory, these households will not necessarily change their interest payments on debt, i.e. consumption commitments, but instead reduce spending on other non-durables such as food.

Our third result is based on the time-varying estimates of the pass-through of transitory income shocks to consumption. These estimates highlight the role of debt before and soon after the Great Recession. The pass-through of transitory income shocks to consumption for the U.S. households increased and peaked during the Great Recession which was also the period when there was a substantial increase in the level of household debt. Likewise, homeowners in Australia have experienced a continuous rise in the pass-through coefficient which coincides with the rise in their debt holdings. The consumption elasticity with respect to house price was 0.49 in 2009 for the US mortgage owners, the highest in the US sample, but for the Australian mortgage owners it has continued to increase and it was 0.20 in 2015.

Turning to consumption insurance against permanent income shocks, our fourth result is that households in both countries in our sample have similar levels of consumption insurance, approximately 60 percent. However, there is heterogeneity across households. Households with high net wealth and low debt have more consumption insurance relative to households with low net wealth and high debt.

Our fifth result is that the time-varying estimates of consumption insurance remained almost unchanged in both countries over the sample period. While net wealth of U.S. households increased prior to the Great Recession, their debt also increased and this potentially explains why consumption insurance remained almost unchanged over the sample period. In Australia, for the outright owners' consumption insurance increased a bit over the sample and this could be due to the fact that their net wealth

increased relative to their debt. For Australian mortgaged owners, the rapid increase in debt is possibly one reason why their consumption insurance has not increased as much as outright owners.

The results in this paper provide new insights into the relationship between household balance sheets and household consumption and how this relationship changed overtime. Our results also suggest that macroeconomic models and macroeconomic policies should pay careful attention to the role of debt and its impact on consumption, both at the individual and the the aggregate level.

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