

Household Indebtedness and Fiscal Stimulus

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Extended Abstract

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Abstract

We build a model of house portfolio selection where agents make separate saving and debt decisions. Savings are costless to accumulate but require a fixed transaction cost to deplete, while debt holdings are freely adjustable but subject to an exogenous borrowing limit. As a consequence, agents primarily accumulate assets as precautionary savings and use debt to smooth consumption in light of temporary income shocks. Using a tax rebate module from the 2008 Survey of Income and Program Participation, we document significant heterogeneity in household usage of stimulus payments across the joint distribution of assets and debt. Consistent with the literature, the most common use of stimulus funds is to repay debt, followed by increasing savings and finally to increase consumption. In contrast to models where households make only a “net worth” decision, our model can help explain the joint dynamics of choosing consumption, savings, and debt, providing a more realistic laboratory for fiscal policy experiments.

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Extended Abstract

An important empirical puzzle in household finance is the fact that households appear to simultaneously hold assets and liabilities, especially when the return on assets is lower than the interest payments on debt. Most models are silent on this issue, as agents are summarized by a single state variable, their “net worth,” where a negative net worth implies net borrowing. In these models, agents have access to a single financial instrument, and must use it for both precautionary saving and consumption smoothing.

We develop a house consumption and portfolio selection model wherein agents face an uncertain income stream and separately choose consumption, assets, and debt. Accumulating assets incurs no transaction cost, but downsizing asset holdings between periods incurs a fixed cost. This can be interpreted as an “early withdrawal” fee common to many savings accounts. Debt accumulation is costless and subject to an exogenous borrowing limit. In this model, debt is unsecured, and can be thought of as using a credit card. In reality, accumulating and paying off credit card debt is costless, but the card provider sets a hard limit on the amount of borrowing. We further make the realistic assumption that the interest rate on debt is higher than the rate of return on assets.

We show that agents primarily use debt to smooth consumption and simultaneously hold assets as precautionary savings. Given fluctuations in income, agents have two choices: borrow or deplete accumulated assets. Borrowing is unattractive because the interest rate on debt is higher than the rate of return on assets. However, liquidating assets incurs a fixed transaction cost, creating a tradeoff. For small fluctuations in income, households find it less costly to borrow small amounts than liquidate their assets. For larger fluctuations, however, households find it optimal to pay the transaction cost and use their accumulated savings to smooth consumption.

We use the model to shed light on consumer behavior around the 2008 fiscal stimulus program. Using the Survey of Income and Program Participation, we document substantial differences across household balance sheets in terms of using the stimulus payment to increase

consumption, increase savings, or pay down debt. While in most models increasing savings and paying down debt are equivalent in that they increase net worth, in our model, the two actions are distinct.

Most research in this area has focused on understanding the relationship between stimulus payments and increased consumption. However, in line with the literature, we find that the most common use of stimulus payments is to repay debt, followed by increasing savings and finally to increase consumption. We document that the use of stimulus funds is closely related to the joint distribution of assets and liabilities, and focusing only on net worth ignores an important layer of household balance sheet heterogeneity.

For example, as net worth increases, repaying debt becomes less common while increasing both consumption and savings become more common. However, holding fixed the level of net worth, households display a large amount of debt heterogeneity, and their use of stimulus payments differs depending on the joint distribution of their asset and debt holdings. Within individual net worth quintiles, we document economically significant differences in usage of stimulus payments, again highlighting that focusing solely on net worth may be misleading, especially as a proxy for determining whether households are financially constrained.

Our model can be used as a laboratory to understand the effects of fiscal stimulus given a joint distribution of household assets and liabilities. We examine the general equilibrium effects of paying off existing debt and show that depending on how the creditor uses the debt repayment, paying off debt may also be stimulative. For example, if household debt is held by other households, and the creditor households treat the repayment as additional unexpected income, then there may be second-order stimulative effects. Similarly, we examine the general equilibrium effects of using fiscal stimulus to increase saving, and find that a lower interest rate from increased asset accumulation is a potential source of stimulus.