Corporate Scandals and Household Stock Market Participation

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Corporate scandals have large negative effects on the value of the firms that are discovered having committed fraud (Karpoff, Lee, and Martin, 2008; Dyck, Morse, and Zingales, 2013). Besides inflicting direct losses to shareholders, corporate fraud may also have indirect effects on households' willingness to participate in the stock market, which may generate even larger losses by increasing the cost of capital for other firms. Evidence of the externalities generated by corporate fraud, however, is quite limited.

In our paper, Corporate Scandals and Household Stock Market Participation, which was recently made publicly available on SSRN, we aim to fill this gap by exploring the effect of corporate scandals on the demand for equity and households' willingness to (directly or indirectly) participate in the stock market. To generate cross-sectional and time-series variation in households' exposure to corporate scandals, we note that households are likely to be more exposed to corporate frauds committed by firms headquartered in the state where they live. This is the case not only because households tend to hold the stocks of local firms and are likely to experience losses in their stock portfolios when these firms are revealed having committed frauds, but also because coverage of local news or personal interaction increase their exposure to these episodes.

We ask whether corporate scandals in a state reduce equity holdings and household stock market participation in that state, controlling for nationwide macroeconomic conditions and capturing asynchronous local shocks with a host of household and state level controls. We find unambiguous evidence that household stock market participation decreases both on the extensive and intensive margins following corporate scandals in the state where the household resides. Moreover, households decrease their stock holdings in fraudulent *as well as* non-fraudulent firms. *All* households, not only the ones holding the stocks of fraudulent firms, decrease their equity holdings. We also provide some evidence that households increase their holdings of bonds and other fixed income securities. Thus, the decrease in household stock market participation is not driven by financial losses associated with holdings in fraudulent stocks.

One may wonder to what extent our findings are driven by state level economic conditions that are associated with both the revelation of corporate fraud and household stock market participation. For instance, the revelation of corporate fraud generally occurs at the beginning of economic downturns that may independently drive households' decision to reduce their

equity holdings (Wang, Winton and Yu, 2010). To establish a causal effect of corporate scandals on local households' stock market participation, we use two different strategies.

The first strategy utilizes an exogenous shock to fraud detection due to the sudden demise of the large auditing firm, Arthur Andersen, in 2002. All Arthur Andersen's clients were forced to change auditors. Since new auditors have incentives to "clean the house", the firms that switched auditor due to Arthur Andersen's demise had higher probability to be revealed as having committed fraud (Dyck, Morse and Zingales, 2013). This led to an exogenous increase in the probability of fraud revelation that differs across states, depending on the fraction of firms in the state that were Arthur Andersen's clients right before its demise. We thus use the fraction of firms in a state that were Arthur Andersen's clients right before its demise as an instrument for fraud revelation in that state in the period following the shock. We find that the exogenous variation in fraud revelation due to differences in the presence of Arthur Andersen's clients across states leads to a decrease in household stock market participation.

The second identification strategy exploits *within-state* variation in households' life-time experience of corporate scandals. Even households living in the same state at a particular point in time can have different corporate fraud experiences depending on their age and because they may have moved across states. In these specifications, we are able to absorb any state level shocks by including interactions of state and year fixed effects and continue to find that the variation in households' fraud experiences has a negative impact on household stock market participation.

Both identification strategies indicate that fraud revelation has a causal impact on household stock market participation. Two mechanisms could drive this effect. First, fraud revelation may undermine trust in the stock market and lead households to rebalance their portfolios away from equity. Second, fraud revelation could affect state economic conditions (e.g., by increasing uncertainty about future employment and income) in a way that leads households to rebalance their portfolios towards less risky securities. The second identification strategy exploiting within-state heterogeneity implies that our findings are not driven by the fact that fraud revelation reflects or causes deterioration in state economic conditions as these should affect all individuals in the state, independently from their past experiences. There is also no evidence that fraud revelation in a state predicts future fraud revelation or deterioration in economic conditions in the state. We also find that naïve households are more affected, and that households react to fraud revelation in the state differently from institutional investors. Taken together, our findings suggest that corporate fraud affects stock market participation by undermining households' trust in the stock market.

Importantly, fraud revelation in the state leads to a decrease in the number of retail shareholders and a (temporary) decrease in the valuation of firms that have not been revealed having committed fraud, but are headquartered in the same state as the firms committing fraud. Consistent with a negative demand effect caused by corporate fraud, we find that the decrease in valuation is more pronounced for firms with less geographically dispersed activities and less ex ante institutional ownership, which may have to offer higher returns to attract other shareholders replacing local households. We further show that following fraud revelation in the state, non-fraudulent firms tend to repurchase their shares and that local mutual funds tend to increase their holdings in these firms. Thus, our results are unlikely to be driven by an increase in the probability that other firms in the state have committed fraud or by changes in state economic conditions.