

DISSERTATION PROPOSAL

Maria Chaderina

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324 GSIA (West Wing)

Co-existence of Debt and Cash; Predator-Prey Dynamics on Wall Street

The first essay is investigating empirical properties of joint distribution of cash and debt holdings of US non-financial firms. More than 8% of firms in 2010 had cash to asset and debt to asset ratios above 20%, suggesting that cash is not a negative of (long term) debt. Cash balances are found to be positively related with the measures of cash flow volatility for both financially constrained and unconstrained firms. I also show that cash holdings are also positively related with volatility of book to market ratio, even controlling for cash flow volatility.

The second essay is providing theoretical model that rationalizes observed co-existence of cash and debt as well as positive relationship between cash holdings and measures of firms' risk through Pre-borrowing motive. The paper establishes that default costs make firms behave as if they are risk averse with respect to news about future prospects. The news affect interest rate at which firms can borrow funds in outside capital markets. Firms hedge the risk of change in the terms of borrowing by issuing debt before the news is revealed. Or, in other words, pre-borrowing and keeping proceeds in cash. Three date – two period model illustrates the mechanism of pre-borrowing motive, which is then introduced to the dynamic neo-classical model of the firm without investment. The firm is facing financing decision – how much to issue long term, short-term debt and save in cash. The panel of firms is simulated and properties of optimal cash and debt policies are analyzed. The model produces non-zero mass of firms with both cash and debt outstanding.

The third essay (co-authored with Richard Green) is analyzing the implication of zero-sum structure of payoff in securities trading. We show that predator-prey allocation of trading surplus exaggerates the underlying real shocks to the business. In a system with two types of trading agents – low and high ability, different steady state equilibriums are possible. All steady state equilibrium, characterized by both low and high ability type surviving each period, can be distorted by a negative shock that makes it non-profitable for low type agents to stay. Because of positive congestion externality, if some low type exit, then profit of low type agents remaining in the system falls even more. Hence, all low type agents exit and system might end up in another steady state equilibrium - where only high type agents stay each period. Effectively, trading activity collapses more than the original drop in the surplus.