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A MACRODYNAMIC MODEL OF FINANCIAL INSTABILITY

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ABSTRACT

Hyman Minsky has provided interesting theories on financial crises based on his interpretations of Keynes's General Theory. Though the detail of his theory is rich and illuminating, it is not developed as a formal model. To elaborate his work formally has been attempted by some authors. Taylor and O'Connell (1985) among others develop an ingenious macro model that illustrates Minsky's financial crisis theories. Their model is characterized by two assumptions: the first is that the level of nominal wealth is determined macroeconomically, depending on the state of confidence, and the second is that there is high substitutability between liabilities of firms and money in the public's portfolio. Though their attempt is interesting and valuable, it fails to capture an important element of Minsky's theories, i.e., the role of financial intermediaries. Minsky stresses the importance of intermediaries in accelerating boom or crisis through expansion or contraction of credit. It may be essential, therefore, to take into account the role of banking system in modeling his theories. Taylor and O'Connell only point out its importance, and do not discuss it in detail.

Another aspects of Minsky's theories that Taylor and O'Connell's model fails to formalize is the microeconomic foundations. As they notice themselves, "Minsky's theories are both microeconomically detailed and institutional." Though it is beyond the scope of a simple mathematical model to consider all the microeconomic details of Minsky's theories, it may be desirable to pay suitable attention to behavioral aspects of firms, households and banks.

The purpose of this paper is to reconstruct a model that illustrates Minsky's financial crisis, considering those respects. Our model may be characterized by the following respects: (1) it is based on appropriate microeconomic foundations; (2) it formulates credit creation of banks; (3) it takes into account liability structures of firms; and finally, (4) it assigns a central role to expectations of firms, households and banks. Using this model, we will examine causes and consequences of financial instability. Our model, however, not only illustrates Minsky's financial crisis, but more generally serves to elucidate the role of and financial factors behind the fluctuations of the economy.

The paper is organized as follows. Section II discusses investment and financing decisions of firms. Section III discusses portfolio decisions by households and credit creation by banks. Sections IV and V examine the equilibrium conditions in the commodity market and in the financial market, respectively. Section VI analyzes the simultaneous determination of the rate of profit, the rate of interest rate and the price of equity in the short-run. Section VII extends the analysis to dynamics around a steady state in which high-powered money grows at a constant rate, and presents observations on financial instabilities.