Leverage Cycle over the Life Cycle

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October 17, 2023

Abstract

I develop a quantitative general equilibrium model which integrates endogenous leverage into the overlapping generation framework. This model rationalizes three well-established features of the US housing market: 1) procyclical leverage, 2) countercyclical mortgage spreads, and 3) a life-cycle pattern in housing wealth and leverage, characterized by a hump-shaped housing wealth profile and higher leverage among younger homebuyers. In this model, households accumulate housing assets using leverage by selecting mortgage contracts from a menu called the Credit Surface, which specifies interest rates for various levels of LTV. Within this framework, a large negative endowment shock not only reduces housing prices due to decreased purchasing power but also reinforces the decline by weakening the ability of houses to serve as collateral for borrowing. The Credit Surface moves up and becomes steeper as mortgage rates and spreads surge in downturns, resulting in a 10-percentage-point drop in equilibrium LTV, which effectively replicates the conditions observed during the Great Recession.

JEL Classification: E20, E44, G51, C68, D52, D53

Keywords: endogenous leverage, leverage cycle, life cycle, Credit Surface, housing price, default