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Abstract

This paper develops a general equilibrium model to study the link between the amount of capital invested in housing assets and the term structure of interest rates. In the model, the production of housing assets is irreversible and housing assets can be used as collateral for borrowing funds. Agents' decisions about consumption and investments in housing and non-housing assets generate a time-varying market price of risk that drives the dynamics of the term structure. The calibration to U.S. data using the simulated method of moments technique captures the dynamics of consumption, and the short- and long-term interest rates.

Keywords: Term structure; interest rates; housing; real investments; consumption.

JEL classification: C68; E21; E22; E23; E43.

1. Introduction

Consumers and firms generally use short-term debt to finance the purchase of computers and most non-housing assets. Investments in computers represent a short-term investment because computers are assets characterized by high depreciation rates and a relatively short service life. In contrast, houses are usually financed with long-term debt. As opposed to computers, houses represent long-term investments with low depreciation rates and a long service life. Consequently, the aggregate amount of capital invested in non-housing assets, K , and the aggregate amount invested in housing assets, H , should be related to the short- and long-term interest rates.

In order to study this relationship, I develop a general equilibrium model in which the term structure of interest rates is endogenously determined by the representative agent's decisions on consumption and investments in housing and non-housing assets. The model is a fundamental extension of the Cox, Ingersoll, and Ross (CIR, 1985a and 1985b) model. As in Hirshleifer (1972) and Diamond and Dybvig (1983), the model considers two production

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