MAGYAR NEMZETI BANK
THE CENTRAL BANK OF HUNGARY

RESEARCH

BESS at MNB *(MNB-CEU)*

Optimal Leverage and Investment under Uncertainty

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Abstract

This paper studies the effects of changes in uncertainty on optimal financing and investment in a dynamic firm financing model in which entrepreneurs have access to complete markets subject to collateral constraints. Entrepreneurs finance projects with their net worth and by issuing state-contingent securities,

which have to be collateralized with physical capital. An increase in uncertainty leads to deleveraging, as entrepreneurs reduce their demand for external financing and fund a larger share of their investment from net worth. Upon an unexpected increase in uncertainty, investment initially falls as entrepreneurs decrease the scale of their projects. Investment and output recover as entrepreneurs build up net worth and transition into an equilibrium with high uncertainty. Quantitatively, changes in uncertainty have large effects on optimal leverage and investment dynamics.

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