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PREDETERMINED INTEREST RATES IN AN ANALYTICAL RBC MODEL

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Abstract. We solve a version of the analytical Real Business Cycle (RBC) model with a predetermined rate of return on household saving. The solution differs from that of the benchmark RBC model along two dimensions: (i) Policy functions depend on the variance of the technology shock. (ii) There is a suboptimal pattern of excess saving. We discuss the economic intuition underlying these properties. We also demonstrate that unconditional welfare can be higher in the suboptimal model with predetermined interest rates, providing a clear illustration of the pitfall with unconditional welfare comparisons.

JEL Codes: E21, E32, E43.

Keywords: RBC model, predetermined interest rates, over-saving, conditional and unconditional welfare.

1. Introduction

Following the landmark contributions from Bernanke, Gertler, and Gilchrist (1999, BGG hereafter), Iacoviello (2005), or Gertler and Karadi (2011), dynamic stochastic general equilibrium (DSGE) models with financial frictions often impose rates of return for lenders that are predetermined and do not respond instantaneously to the aggregate state of the economy. This assumption is usually introduced without much discussion, suggesting that the literature views it as a benign premise. However, recent work by Dmitriev and Hoddenbagh (2017) shows that it may be important, since removing predetermined lending rates from the BGG model considerably weakens the financial accelerator.

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