

Theoretical Foundations of Buffer Stock Saving

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Abstract This paper builds foundations for rigorous and intuitive understanding of ‘buffer stock’ saving models (Bewley (1977)-like models that exhibit a wealth target), pairing each theoretical result with quantitative illustrations. After describing conditions under which a consumption function exists, the paper articulates stricter ‘Growth Impatience’ conditions that guarantee alternative forms of stability – either at the population level, or for individual consumers. Together, the numerical tools and analytical results constitute a comprehensive toolkit for understanding buffer stock models.

Keywords *keywordsjelclass* aspublished

JEL codes

Dashboard: <https://econ-ark.org/materials/BufferStockTheory?dashboard>
 PDF: <https://econ-ark.github.io/BufferStockTheory/BufferStockTheory.pdf>
 Slides: <https://econ-ark.github.io/BufferStockTheory/BufferStockTheory-Slides.pdf>
 html: <https://econ-ark.github.io/BufferStockTheory>
 Appendix: <https://econ-ark.github.io/BufferStockTheory#Appendices>
 bibtex: <https://econ-ark.github.io/BufferStockTheory/LaTeX/BufferStockTheory-Self.bib>
 GitHub: <https://github.com/econ-ark/BufferStockTheory>

A [dashboard](#) allows users to see the consequences of alternative parametric choices in a live interactive framework; a corresponding [Jupyter Notebook](#) uses the [Econ-ARK/HARK](#) toolkit to produce all of the paper’s figures (warning: the notebook may take several minutes to launch).

All figures and numerical results can be automatically reproduced using the Econ-ARK/HARK toolkit, which can be cited per our references (Carroll, Kaufman, Kazil, Palmer, and White (2018)); for reference to the toolkit itself see Acknowledging Econ-ARK. Thanks to the Consumer Financial Protection Bureau for funding the original creation of the Econ-ARK toolkit; and to the Sloan Foundation for funding Econ-ARK’s extensive further development that brought it to the point where it could be used for this project. The toolkit can be cited with its digital object identifier, 10.5281/zenodo.1001067, as is done in the paper’s own references as Carroll, Kaufman, Kazil, Palmer, and White (2018). Thanks to Will Du, James Feigenbaum, Joseph Kaboski, Miles Kimball, Qingyin Ma, Misuzu Otsuka, Damiano Sandri, John Stachurski, Adam Szeidl, Alexis Akira Toda, Metin Uyanik, Mateo Velásquez-Giraldo, Weifeng Wu, Jiaxiong Yao, and Xudong Zheng for comments on earlier versions of this paper, John Boyd for help in applying his weighted contraction mapping theorem, Ryoji Hiraguchi for extraordinary mathematical insight that improved the paper greatly, David Zervos for early guidance to the literature, and participants in a seminar at the Johns Hopkins University, a presentation at the 2009 meetings of the Society of Economic Dynamics for their insights, and at a presentation at the Australian National University.

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