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H. Huang, M.A. Milevsky, T.S. Salisbury

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Retirement Spending and Biological Age

H. Huang, M. A. Milevsky* and T. S. Salisbury

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Abstract

We solve a lifecycle model in which the consumer’s chronological age does not move in lockstep with calendar time. Instead, biological age increases at a stochastic non-linear rate in time like a broken clock that might occasionally move backwards. In other words, biological age could actually decline. Our paper is inspired by the growing body of medical literature that has identified biomarkers which indicate how people age at different rates. This offers better estimates of expected remaining lifetime and future mortality rates. It isn’t farfetched to argue that in the not-too-distant future personal age will be more closely associated with biological vs. calendar age. Thus, after introducing our stochastic mortality model we derive optimal consumption rates in a classic Yaari (1965) framework adjusted to our proper clock time. In addition to the normative implications of having access to biological age, our positive objective is to partially explain the cross-sectional heterogeneity in retirement spending rates at any given chronological age. In sum, we argue that neither biological nor chronological age alone is a sufficient statistic for making economic decisions. Rather, both ages are required to behave rationally.

*Milevsky (the contact author) is professor of finance at the Schulich School of Business and can be reached via email at: milevsky@yorku.ca, or at Tel: 416-736-2100 x 66014. His mailing address is: 4700 Keele Street, Toronto, Ontario, Canada, M3J 1P3. Huang is a professor of mathematics at the Department of Mathematics and Statistics, York University and Deputy Director of the Fields Institute in Toronto, hhuang@mathstat.yorku.ca. Salisbury is a professor of mathematics at the Department of Mathematics and Statistics, York University, salt@mathstat.yorku.ca. The authors would like to acknowledge helpful comments from David Blake, Melanie Cao, Helmut Gruendl, Steve Haberman, Raimond Maurer, David Promislow, Pauline Shum, Yisong Tian, seminar participants at Goethe University, York University, ARIA, detailed comments from an associate editor and reviewer at JEDC, as well as funding from NSERC (Salisbury and Huang), the IFID Centre and a Schulich Research Fellowship (Milevsky).
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