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**Yu-Jui Huang\*** ([yujui.huang@colorado.edu](mailto:yujui.huang@colorado.edu)) and **Joshua Aurand**. *Mortality and Healthcare: a Stochastic Control Analysis under Epstein-Zin Preferences.*

This paper studies optimal consumption, investment, and healthcare spending under Epstein-Zin preferences. Given consumption and healthcare spending plans, Epstein-Zin utilities are defined over an agent's random lifetime, partially controllable by the agent as healthcare reduces mortality growth. To the best of our knowledge, this is the first time Epstein-Zin utilities are formulated on a controllable random horizon, via an infinite-horizon backward stochastic differential equation with superlinear growth. A new comparison result is established for the uniqueness of associated utility value processes. In a Black-Scholes market, the stochastic control problem is solved through the related Hamilton-Jacobi-Bellman (HJB) equation. The verification argument features a delicate containment of the growth of the controlled mortality process, relying on a combination of probabilistic arguments and analysis of the HJB equation. In contrast to prior work under time-separable utilities, Epstein-Zin preferences largely facilitate calibration. In four countries we examined, the model-generated mortality closely approximates actual data; the calibrated efficacy of healthcare is in broad agreement with empirical studies on healthcare across countries. (Received January 16, 2021)