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# A Model of Sleep, Leisure and Work over the Business Cycle \*

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## Abstract

This paper uses a single-sector dynamic stochastic general equilibrium (DSGE) model to analyze time use patterns over the business cycle. Using data from the American Time Use Survey, we solve and simulate a model of a utility maximizing consumer subject to a penalty function based on a biological model for sleep. We find that sleep is countercyclical with the business cycle: sleep increases as economic activity declines. We also show that our model provides a reasonable estimate of observed sleep behavior over the period from 2003 through 2016.

*keywords:* sleep, opportunity cost, business cycle, dynamic stochastic general equilibrium

*JEL classification:* E37, E39, I19, J22

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