

# Long-Term Volatility, Growth and Asset Pricing\*

Howard Kung and Lukas Schmid<sup>†</sup>

## Abstract

Is there a fundamental link between macroeconomic risk and growth? This question is central for the design of stabilization policies and for welfare. However, no consensus has yet emerged in the literature. We revisit the link between macroeconomic risk and growth from an asset pricing perspective. Asset prices contain important information about macroeconomic risk and long-term growth prospects. We analyze this information by examining the asset pricing implications of a model in which the level and dynamics of aggregate growth rates result endogenously from agents' optimal decisions, namely an endogenous growth model. Furthermore, we assume agents have Epstein-Zin preferences. We use the additional discipline provided by asset market data to pin down the link between volatility and growth more precisely. In particular, we show that asset market data imply a positive relationship between volatility and growth in our baseline calibration. Moreover, absent in the canonical real business cycle model, the endogenous growth model generates long and persistent swings in aggregate growth rates; when coupled with recursive preferences, this allows us to quantitatively match a wide array of facts from asset market, macroeconomic and growth data.

*Keywords:* Volatility, macroeconomic risk, endogenous growth, asset pricing, medium term cycles, R&D.

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<sup>†</sup>Duke University, The Fuqua School of Business, 1 Towerview Drive, Durham NC 27708, USA. Email: howard.kung@duke.edu and lukas.schmid@duke.edu