Productivity Growth and Volatility: How Important are Wage and Price Rigidities?

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We study the role of nominal rigidities on the relationship between short-run fluctuations and productivity growth in a model with procyclical R&D and imperfect competition in goods and labour markets. We show that to the extent that there exist price and/or wage rigidities, short-run uncertainty is likely to increase average mark-ups, so reducing the level of economic activity and productivity growth. In this sense short-run fluctuations may be detrimental to long-run growth. To better understand the interplay between the various forces at work and disentangle the role of different sources of nominal rigidities on the relationship between volatility and long-term growth, we consider an analytically solvable model. In particular, we develop a simple stochastic OLG endogenous growth model with procyclical R&D, imperfect competition in goods and labour markets, where money is the only store value and functions as a medium of exchange. We find that the relationship between volatility and productivity growth is negative or null when technological uncertainty predominates, depending on whether prices are predetermined or not. When monetary volatility is concerned instead, we find that under nominal rigidities uncertainty tends to always have a negative effect on long-run productivity growth, but that the strength of this channel crucially depends on the source of nominal rigidities.