Discussion of

"Long Term Expectations and Aggregate Fluctuations"

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Bird eye view

- A very ambitious paper, giving us behavioural perspective on asset pricing and macroeconomic dynamics

- "*Rational Expectations*" has been the central paradigm in macroeconomics and finance during the past half-century
  - Decades of unresolved puzzles, eg Shiller (1981) excess volatility puzzle
  - Focus on time varying discount factor and risk premia

- This paper:
  - Includes survey forecasts of short- and long-term earnings of the S&P 500 index into a dividend discount model (DDM) with a constant discount rate,
  - Delivers a "synthetic" S&P index matching the actual index and "excess" volatility
  - Survey respondents are non-rational, their errors in forecasting long-term earnings growth are a key driver of asset prices
  - The "non-rational" optimism and associated overreaction is further associated with business cycles

The paper – main steps

1. Start from DDM

$$\tilde{p}_t = e_t + \frac{\tilde{k} - r}{1 - \alpha} + \ln\left(\frac{EPS_{t,t+1}}{EPS_t}\right) + \alpha \ln\left(\frac{EPS_{t,t+2}}{EPS_{t,t+1}}\right) + \sum_{s=2}^{10} \alpha^s \, LTG_t + \frac{\alpha^{10}}{1 - \alpha} g_*$$

- $EPS_{t,t+1,2}$ - 1-2 yrs IBES forecasts, LTG – expected annual earnings increase over 3-5 yrs
- Constants: r, g, α, k
- LTG_t displays excess volatility, as a result $\tilde{p}_t$ matches the data well!

2. Use the "miracle variable", ie yearly LTG_t change, as an independent shock

- LP analysis for main finance and macro variables
- Result – LTG acts like a good shock: financial markets and investment, real economy go up, but eventually go down, ie higher LTG predicts systematic disappointment and embodies a systematic future "bad shock"

3. Discuss excess "exuberant optimism" as a driving force for financial and business cycle

Main discussion points

1. **DDM framework and its other "volatile" ingredients.**

2. **It would be great to know empirical properties of the IBES forecasts and the "miracle" variable**

3. **... and get the structural interpretation of the "miracle" driver of the financial and business cycles.**

DDM framework

- A Dividend Discount Model (DDM) is a simple type of model that can be used to help understand past moves in equity prices.

- DDMs are based on the net present value relationship that relates equity prices to expected future shareholder payouts, risk-free interest rates and compensation for risk.

- DDM at the BoE (see eg [Dison and Rattan, 2017](#)) also accounts for
  - IBES earning forecasts, and
  - "excessively volatile" share buybacks,
  - variation over time in long-term growth expectations (long term IMF forecasts),
  - variation in risk-free interest rates across maturities;
  - and equity risk premia as a residual.

DDM framework: Dison and Rattan, 2017

Chart 8 Share buybacks are a significant component of shareholder remuneration in the United States

Share buybacks as a proportion of total shareholder remuneration
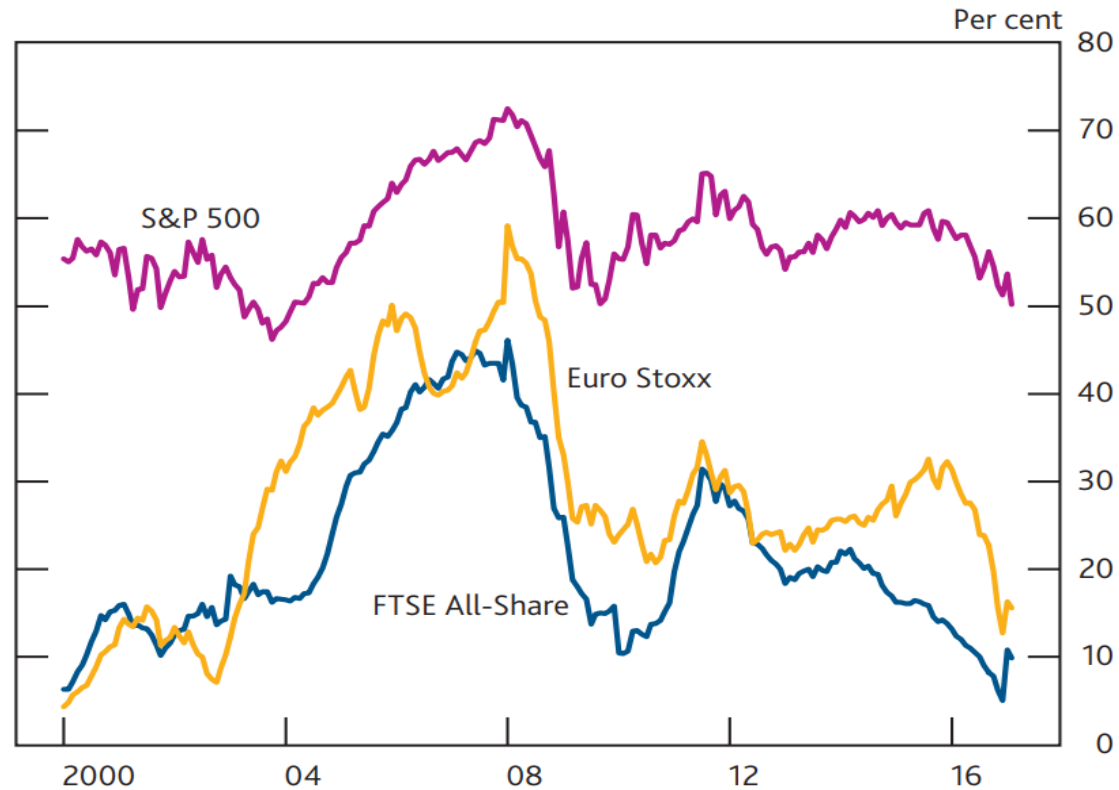
Sources: Bloomberg, Thomson Reuters Datastream and Bank calculations.

Empirical properties of the IBES forecasts and the "miracle" variable

- Dividend expectations are known to be upwardly biased

- How do the surveys perform during busts vs booms?
  - In periods of high macroeconomic uncertainty, the median expectation is slow to adjust.
  - Typically the respondents wait for more certainty before revising their expectations e.g. March 2020

- Properties of the LTG shock used for LP analysis
  - Reliability statistics, eg Mertens and Ravn (2013)
  - Interpretation

LTG vs realised earnings per share growth
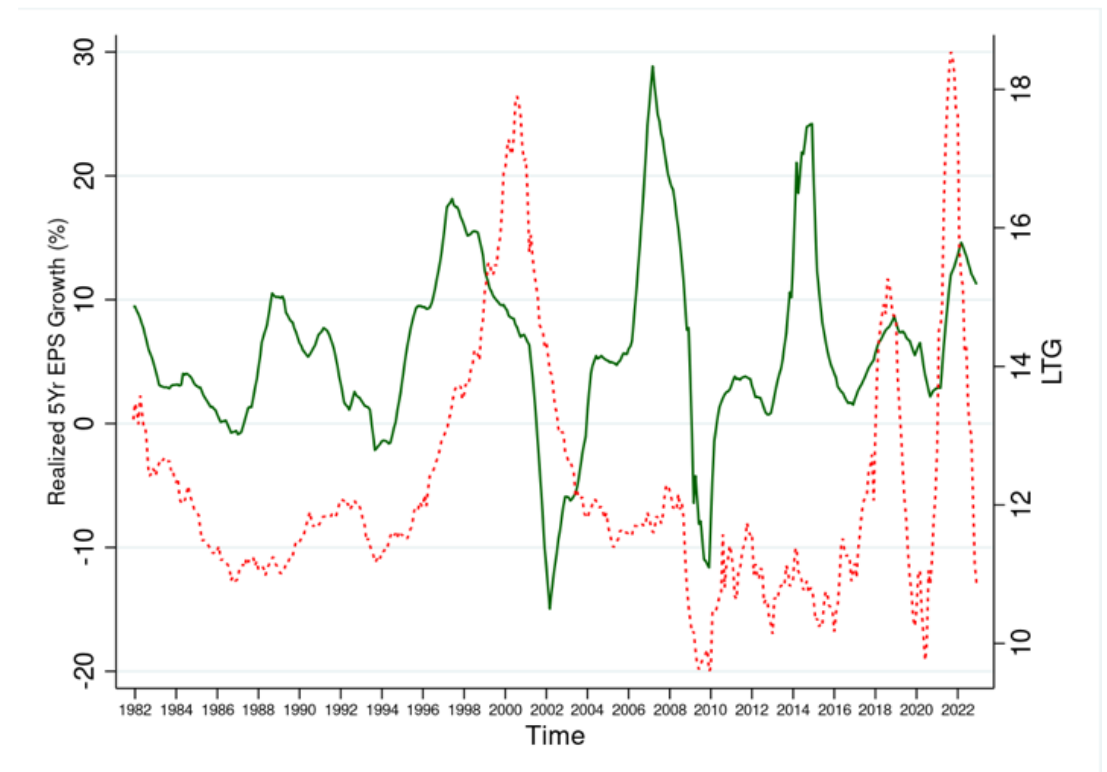
Source: Figure 2, lower subplot from the original paper.

Structural interpretation

- What is the "miracle" LTG shock?

- How does LTG respond to key fundamental shocks:
  - Monetary policy (e.g. action, policy expectations, policy uncertainty, Kaminska, Mumtaz, Sustek, 2021)

- What is the role of time varying uncertainty?
  - link between long-term component of equity market volatility and economic activity: Engle et al. (2013) , Engle and Rangel (2008)
  - economic policy uncertainty (EPU) index by Baker et al. (2016)

- Exuberant optimism and LTG vs overconfidence and lower risk aversion
  - Time varying risk aversion (e.g. Guiso, Sapienza and Zingales, 2018)

To conclude

- A great paper

- My main suggestions:
  - focus more on the "miracle" variable, which drives all the results,
  - provide shock interpretation and discuss its links to other fundamental shocks/concepts in classical and behavioural literature.