Anxiety, Competing Narratives & the [Macroeconomy](): What is the Role of Policy in Stabilising Expectations?

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(De)Anchored Expectations

- "There was a Chinese curse which took the form of saying, 'May you live in interesting times.' There is no doubt that the curse has fallen on us." Austen Chamberlain (1936)

- Recent developments suggest that the consensus view that expectations are somehow 'anchored' is, arguably, broken.

- These developments include the continued fall-out from the 2008 financial crisis, stagnating wages and productivity growth; the rise in automation and the gig economy; the revival of populism and nationalism; and, of course, Brexit.

- When expectations are de-anchored, there is a lack of common knowledge about future expectations and outcomes; multiple narratives (linking the past and present to the future) exist reflecting heterogeneous beliefs.

Anxiety

- Anxiety influences how we make decisions in an uncertain world. It influences our current payoffs, decisions and overall market outcomes. Like other emotions, anxiety depends on how facts are perceived.

- Or, as Caplin and Leahy (2001) put it, "Anxiety may respond more directly to possibilities rather than probabilities".

- When expectations about the future are de-anchored, the result is a rise in anxiety and potential instability in the economy.

- Adult Psychiatric Morbidity Survey (latest survey in 2014): anxiety is the most common named psychological disorder in the UK; rise in mental health disorders for adults aged 55-64 from 2007-2014 attributed to the effects of the 2008 recession.

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The European Central Bank's vice president says policy makers will add stimulus if inflation expectations become deanchored

ECB Will Act If Inflation Expectations Deteriorate, Guindos Says
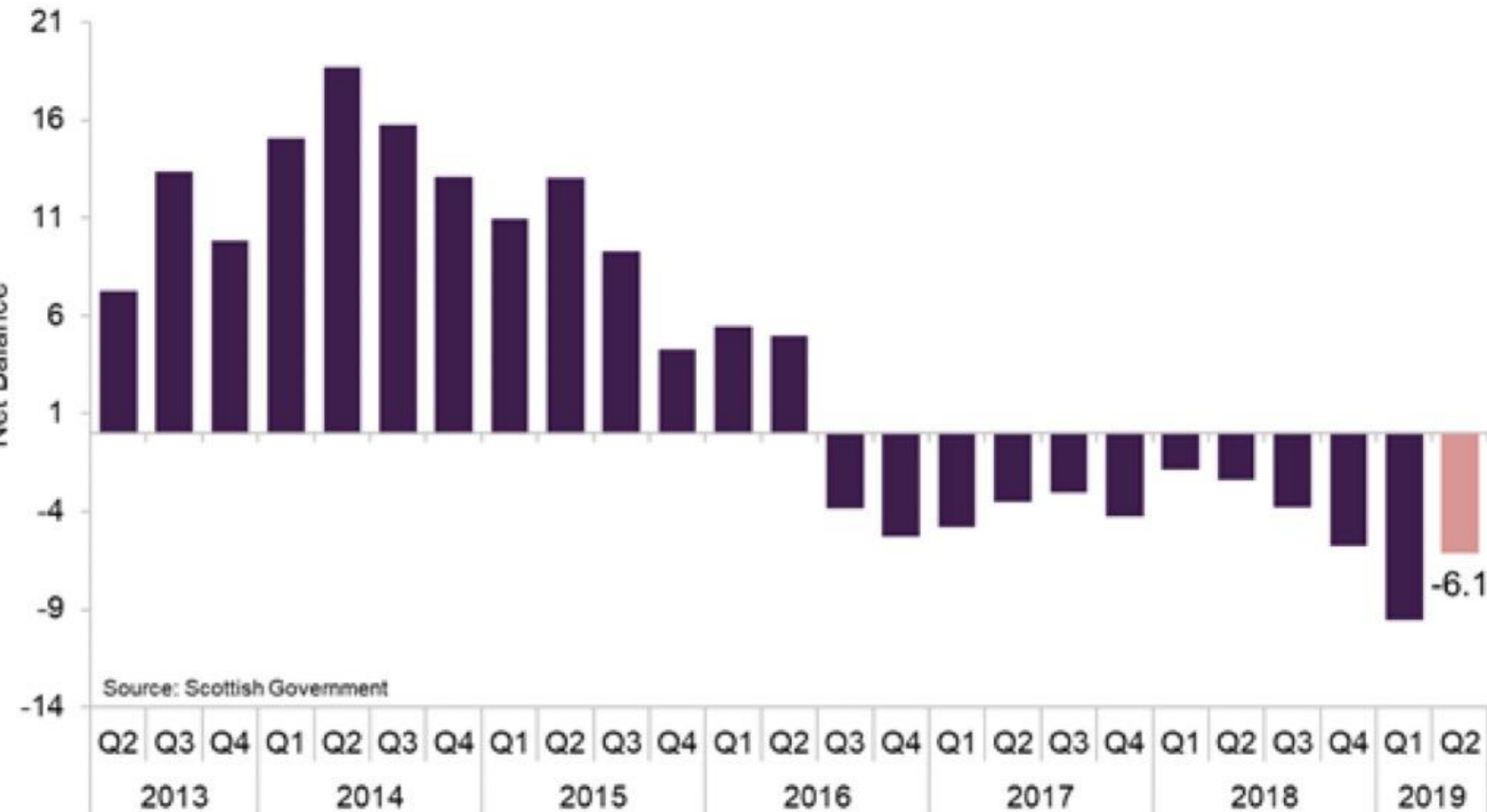bloomberg.com

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more politically engaged – 40% are paying more attention since the 2016 referendum, rising to 50% in those aged between 18 and 24 – the polling suggests the bitter political debate over leaving the EU has shattered public trust in the way the nation is governed.

> ❝ I'm hearing anxieties voiced in a way that I haven't heard since the 1990s

Some 83% feel let down by the political establishment and almost three-quarters (73%) believe the country has become an international laughing stock and that British values are in decline.

In focus groups, "worried" and "uncertain" were the most repeated keywords used by respondents to describe how they felt about the future. Job insecurity and a perceived breakdown of local communities concerned both older and younger generations. Some blamed immigration, others pointed to cuts in public funding following a decade of austerity.

Scottish Consumer Sentiment Indicator - Q2 2019

Source: Scottish Government

Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
2013			2014				2015				2016				2017				2018				2019	

-6.1

When the indicator is above (below) zero, consumer sentiment is on balance positive (negative).
When the indicator is rising (falling), consumer sentiment is improving (weakening).

The Economist

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Markets in an Age of Anxiety

Research Questions

1. How do anxiety and competing narratives contribute to instability and lead to endogenous fluctuations in aggregate outcomes?

2. How do policies shape competing narratives and influence their effect on anxiety?

3. What are the welfare trade-offs associated with a policy that aims to stabilise expectations?

4. How can policy communication support the effectiveness of policy changes?

- **What is anxiety?**
- "Anxiety involves the expectation of future threat" (Wikipedia)
- The two dimensions are essential for the fear of future threat:
    - Uncertainty and loss aversion
- Loss aversion vs risk aversion
    - **Loss aversion**: Expected losses are valued more than expected gains (threat to survival of negative outcomes –> evolutionary trait)
    - **Risk aversion**: Certain outcomes are valued higher than uncertain outcomes –> equity premium

Partial Consensus and breaking out of "Rational Expectations"

- The conventional approach of rational expectations as a guide to decision-making within economic models relies on the shared (common) knowledge of economic agents.

- Here, in contrast, we develop a new solution concept for large games and markets consistent with partial consensus and use it demonstrate expectations-driven fluctuations.

- Using our solution concept, we demonstrate how lack of common knowledge acts as a foundation for endogenous fluctuations in a linear, dynamic model of Keynesian Beauty Game.

- We do not require either multiple equilibria (as in the vast literature on "sunspots") or exogenously generated heterogeneous beliefs over noisy fundamentals (as in Angeletos et. al. 2018).

- Our model provides a rationale for "lighthouse" policies which may have the potential to steer the future direction of the economy by anchoring expectations.

- A historical case in point: Franklin Roosevelt's Inauguration Speech "let me assert my firm belief that the only thing we have to fear is fear itself".

- For current times, we may take as an example central bank policies such as 'forward guidance' which seek to anchor expectations of future interest rates, or perhaps even 'quantitative easing' to provide a floor on expectations of the future values of asset prices.

The Model

- $t = 1,2,\ldots; i \in [0,1]; a_{i,t} \in R$

- $a_{i,t} = \gamma \pi_{i,t}$ where $\pi_{i,t} = \alpha_1 a_t + \alpha_2 E_{i,t} a_{t+1}, 0 \leq \alpha_1 < 1, \alpha_2 > 0$.

- α_2: anxiety parameter, α_1: myopia parameter

- Evolution of average actions: $a_t = \beta \int (E_{i,t} a_{t+1}) di$ where $\beta = \frac{\gamma \alpha_2}{1-\alpha_1}$.

- P-beliefs: with probability at least p all agents believe that $\tilde{a}$ will occur in the future; with probability $1 - p$ they can believe anything else.

- Partial consensus: outcomes that are consistent with common knowledge of p-beliefs and evolution of average actions.

- Unique rational expectations (perfect foresight) equilibrium: $a_t = 0$.

Partial consensus

- Restrict attention to the case where $a_{i,t} \in [-k, k], k > 0$; modify map describing evolution of average actions at the boundary.

- $0 < \beta < 1$: unique rational expectations equilibrium only partial consensus outcome.

- $\beta > 1$: $a \in \{-k, 0, k\}$ all equilibria but each $\bar{a} \neq \{-k, 0, k\}$ also partial consensus outcomes.

- To each partial consensus outcome, we associate a stationary stochastic process of expectations driven fluctuations such that (i) $\bar{a}$ is one of the possible outcomes and (ii) at every state of the stochastic process, all agents assign a probability at least p to $\bar{a}$.

- The simple linear model can be derived as a reduced form representation from a number of models including New Keynesian models (e.g. Euler equation), Overlapping Generation Models (with money, capital, labour) and Kalecki (where profits depend on investment and investment depends on future expected profits).

Sentiment data and Competing Narratives

- Increasing anxiety now and about the future – children worse off than their parents, anxiety regarding income – wage stagnation and increasing income inequalities

- Deaton (2018) Ritzen & Zimmerman (2017) – well-being, hope. 'Deaths of Despair' (Case & Deaton 2017, 2015)

- **Anxiety Index**: composite index Gallup, labour market, health data – evidence shifting sentiment and contradictory narratives

- "Anxiety may respond more directly to possibilities rather than probabilities" (Caplin and Leahy, 2001)

- Shiller and Akerlof =>insights from Keynes and Minsky. Farmer (2010) and De Grauwe (2013) expectations driven by purely autonomous processes on the macro-economic behavior of otherwise standard models. Haldane (2018) 'folk wisdom'.

- **Expectations are socially constructed, communicated and believed** (Dow 2015)

Expectation Formation and Anchoring

- Socially constructed

Trust

Sentiment

Expectations

- Believed

- Communicated

Common Knowledge
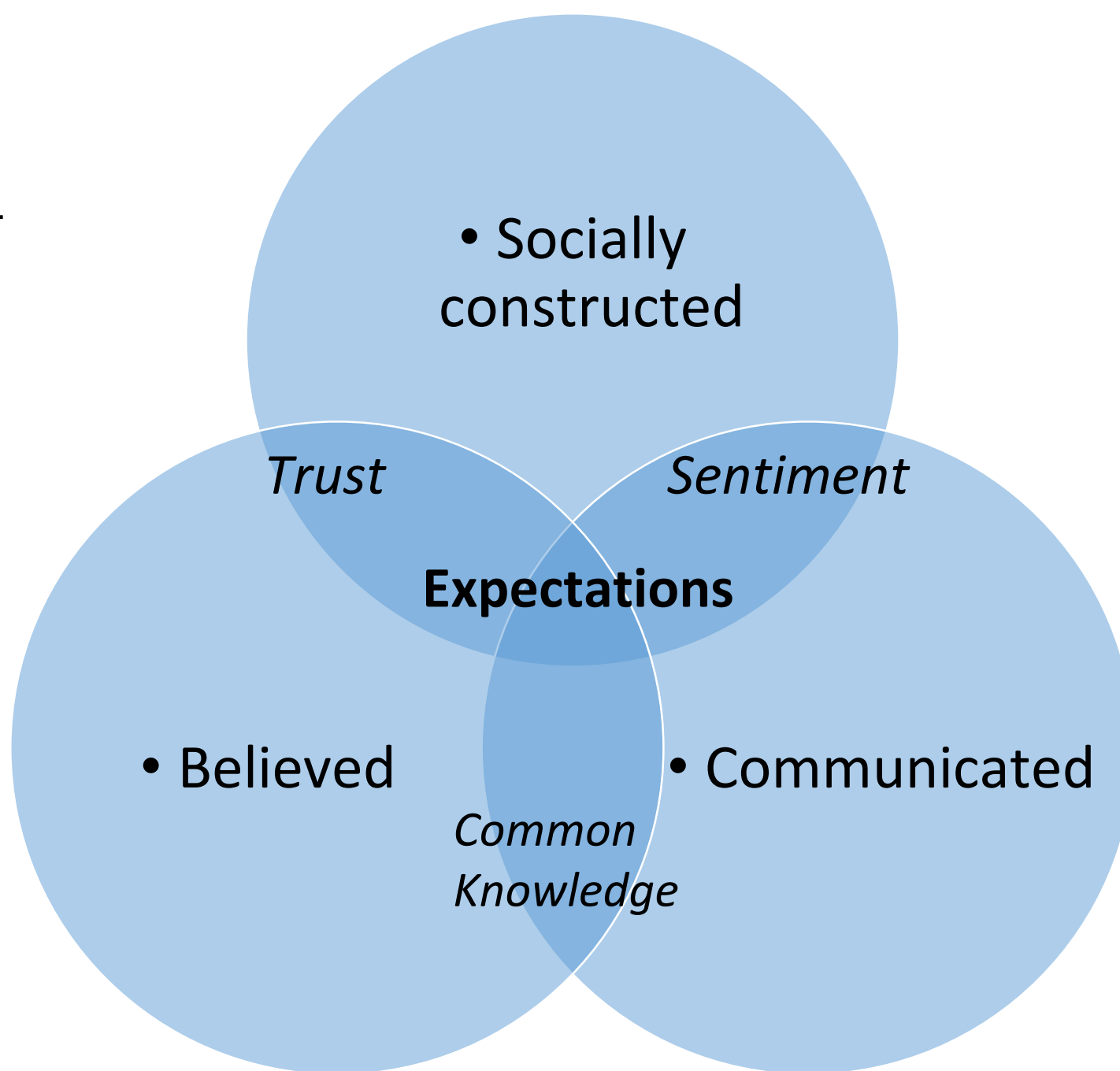
Operationalising Anxiety

- Anxiety Index - Survey sentiment, expectational data
- Policy selection – applying it to 'real world' policy
  - **Lighthouse policy** – policy likely to shape narratives/beliefs, shift to new equilibrium
  - **Labour market**:
- Hysteresis
- Lost capacity not a shock, permanent loss (Blanchard 2018, Krugman 2018)
- Structural shifts in labour markets = reflected in Philips Curve (Farmer 2018)
- Low unemployment not resulting in wage rises (Bell and Blanchflower 2018)
- Secular stagnation (Stansbury Summers 2018)
- Weakening of the link between productivity and pay

Minimum wage – empirical strategy

- MW data – differentiated EU level policy response to minimum wage setting post crisis:

- **Increased politicisation of MW**: use of MW to influence sentiment

- UK Low Pay Commission reports 1999-2019 & media news – text analysis.

- **Policy Communication – forward guidance** on MW policy

- Can minimum wage act as a stabilisation policy at aggregate level?

- **Efficiency Wage Theory** => minimum wage policy => fairness => trust => self-reinforcing beliefs and strategic stability => anchoring expectations => common knowledge = > p-consensus => p-equilibrium

Anxiety Transmission channels

- Focus on two transmission channels through which anxiety affects aggregate outcomes:

I) Irreversible business investment ('wait and see' effect, delays investment (capital v labour) decisions)

2) Precautionary savings (households defer consumption and increase savings due to uncertainty)

  - Given stagnant wage levels - saving is more challenging (debt in UK outstrips savings), thus induces even greater anxiety as rational response to uncertainty is to save more.
  - 'precautionary labour supply' - increasing hours worked due to uncertainty of future income (productivity implications).
  - macro-distributional linkages (Ostry, Loungani & Berg 2019): role of inter-temporal beliefs