Equity Premium Events

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Discussion

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UC Berkeley Haas

UT Dallas 2024 Fall Finance Conference

September 2024

Outline

Recap: Setup

**Lots of work on *realized* returns around macro announcements: surprisingly large**

▶ This paper: What about *expected returns* measured ex ante?

▶ Option-based approach to measure *forward equity premium* for one-day window around event day

▶ For event during trading day $m+1$, forward equity premium $f_t^{(m,m+1)}$:
[taken from slides for Gandhi, Gormsen, Lazarus (2023)]

Equity premium from t to $t+m+1$: $\mu_t^{(m+1)}$

From t to $t+m$: $\mu_t^{(m)}$ Forward premium: $f_t^{(m,m+1)}$

t $t+m$ $t+m+1$
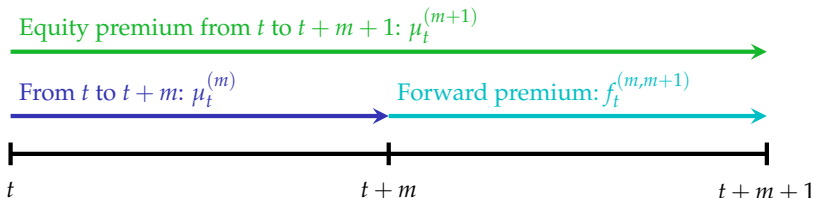
▶ Option-based approach to proxy for two equity premia, from which difference can be read off

▶ Then an "abnormal" forward premium is one significantly above fitted model of daily TS of forwards

Recap: Results

1. **Very cleanly estimated** significant abnormal premia for a **subset of announcement types**
   - ▶ This is itself quite a feat: Options data are large, unwieldy
   - ▶ Very nice service to post these publicly in real time (https://www.pricingthecalendar.com)

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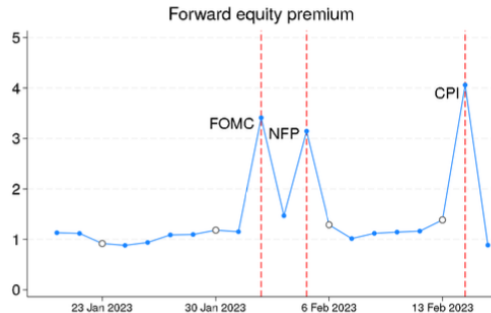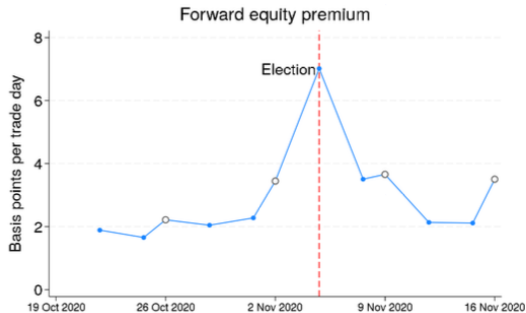
1. **Very cleanly estimated** **significant abnormal premia for a subset of announcement types**
   - ▶ This is itself quite a feat: Options data are large, unwieldy
   - ▶ Very nice service to post these publicly in real time (https://www.pricingthecalendar.com)
   - ▶ Significant event types are the "right" ones: FOMC, employment, (more recently) CPI

2. **Abnormal event premia are nonetheless quite small compared to realized premium estimates**
   - ▶ 10-20 bps per year of abnormal premium for each of the three significant announcement types
   - ▶ Total (non-abnormal) forward premium for all events at most 23% ($\ll$ 60%) of annual eq. prem. . . . but cover 17% of trading days! [not sensitive to choice of eq. prem. measurement method]
   - ▶ My read: This is the main finding of the paper. More on implications later.

3. **Decomposition of premia with application to CPI announcements**
   - ▶ Estimated price of CPI risk very close to 0 pre-2022
     [consistent with role for "good" demand-driven energy shocks pre-2020 (Fang et al. 2022)]

Outline

Things Others Might Care About That I Don't

Is the equity premium equal to risk-neutral variance *[+ higher moments]* **?**

▶ Benchmark (SVIX): Forward equity premium estimated from forward implied vol:

$$\underbrace{\mathbb{E}_t[R_{t+m,t+m+1}]}_{\substack{f_t^{(m,m+1)} \\ \textit{[what we want]}}} \approx \underbrace{\mathbb{E}_t^*[R_{t+m,t+m+1}^2]}_{\substack{\text{Forward SVIX} \\ \textit{[measured from options]}}} - \underbrace{(\text{Cov}_t(M_{t,t+m+1}R_{t,t+m+1}, R_{t,t+m+1}) - \text{Cov}_t(M_{t,t+m}R_{t,t+m}, R_{t,t+m}))}_{\substack{\text{Relative covariance of marginal-utility-weighted return with return} \\ \textit{[unobservable risk premium, equal to 0 under log utility]}}}$$

  ▶ Alternative measurement strategies use higher-order risk-neutral moments to get tighter bound
    (LBR) or point estimate (IEP) for forward premium

▶ From experience: Some people will care about this

▶ In some contexts, I care. . .but not really here (at least not directly)

  ▶ Even if we're just measuring forward implied vol, the fact that it's systematically elevated on
    announcement days — but only very slightly — is still interesting to me

Outline

Digging Deeper on Ex Ante Event Premia

Paper's most interesting (if anything, underemphasized) result: Very small ex ante event premia

- ▶ Contrasts with literature on realized macro announcement returns. . .

  Savor & Wilson (2013): "over 60% of the cumulative annual equity risk premium is earned on announcement days"

  Lucca & Moench (2015): "since 1994 about 80% of realized excess stock returns in the United States have been earned in the 24 hours before scheduled monetary policy announcements"

- ▶ . . . suggesting that macro & policy news might just have been unexpectedly positive in recent decades, *not* that announcements command very large risk premium ex ante

- ▶ Intriguing, but given measurement difficulties, would want to know more

- ▶ Straightforward exercise: **For each event type, regress realized returns on ex ante forward premium**

$$\text{realized announcement return} = \alpha + \beta \times \text{forward premium} + \varepsilon$$

Possibilities:

1. $\alpha \gg 0, \beta \leqslant 1$: Supports paper's interpretation. Unexpectedly high returns, small predictable term.
2. α smaller, $\beta > 1$: (a) Measured ex ante premia understate true premia, or (b) beliefs channel.
   [If half of announcements are risky & half not, but difficult to distinguish, will shrink premium toward 0.]

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     [Additional test (Martin & Shi 2024): Estimate SVIX w/ different γ, use γ that gives best predictability. For $\gamma > 1$, will estimate higher avg. premia.]

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A Possible Role for Term Premia (Time Permitting)

A semi-technical point, likely minor:

► Assume perfect measurement of equity premium at m and $m+1$ [& work with log returns for notation]

$$\mu_t^{(m+1)} = \mathbb{E}_t[r_{t,t+m+1}] - r_{t,t+m+1}^f$$

$$\mu_t^{(m)} = \mathbb{E}_t[r_{t,t+m}] - r_{t,t+m}^f$$

$$\implies f_t^{(m,m+1)} = \mathbb{E}_t[r_{t+m,t+m+1}] - \underbrace{(r_{t,t+m+1}^f - r_{t,t+m}^f)}_{\text{= risk-free forward + term premium}}$$

$$= \mathbb{E}_t[r_{t+m,t+m+1} - r_{t+m,t+m+1}^f] - \text{term premium for event window } (t+m+1)$$

► Term premium for overnight-interest-rate risk may be elevated for window surrounding event
  ► Particularly for announcements with significant interest-rate risk (FOMC, NFP)

► This will tend to push down the measured ex ante announcement premium (related to previous slide)

► My guess is that this effect is likely quite small in reality, but would be nice to try to measure

Final Notes

- Very nicely executed method
- I'll definitely make use of the real-time economic calendar
- Intriguing results: Very small estimated ex ante premium even for significant announcements
- Think the idea can be pushed further — would like to unpack that finding in more detail

Thank you!