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Informative about inflation and macroeconomy
DE Shaw & Co (2021)

In short, the safe haven status of Treasury securities was put to a major test, and it passed. (...) As argued in that paper, we believe that the stock-bond correlation depends critically on the type of shocks hitting the economic system. The negative correlation between equity and Treasury prices—in other words, the environment that delivers the effective hedging properties of Treasury securities—tends to persist when the most active shocks hitting the economic system are those associated with changes in the strength of economic growth or the risk appetite of investors.

With yesterday’s inflation shock in the US and its implications for the Federal Reserve again raising stress levels in markets, the hot debate is whether we’re headed for soft or hard landings in 2023.

Economic Report of the President (March 2023)

(...) in 2022 inflation led the Federal Reserve to raise the Federal Funds Rate, causing both stock and bond prices to decline. This relationship can be seen (...) starting slightly before the tightening cycle began, possibly due to markets anticipating monetary actions. The sign of this correlation suggests that negative supply shocks were important for U.S. financial markets in 2022.
Back to the 1980s?
Positive bond-stock betas as in 1980s arise only if supply shocks are paired with fast, anti-inflationary monetary policy response.
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Bond betas as real-time tracker: Post-pandemic bond risks look markedly different from 1980s

Financial markets consistent with less aggressive Fed response and “softer landing” after supply shocks.
DATA
Historical Link Between Inflation, Stocks, and Bonds

Cieslak and Pflueger (2023), Figure 1, data from Robert Shiller

- **Nominal bond yields clearly linked to long-term inflation**
- **Inflation was bad for stocks in 1980s, but good in 2000s**
$xr_{n,t+1} = \alpha + \beta x_{eq}^{eq} + \varepsilon_{t+1},$ quarterly returns, 5-year rolling windows

Pflueger (2023) Figure 1
\[ x_{nr,t+1} = \alpha + \beta x_{eq,t+1} + \epsilon_{t+1}, \] daily returns, 6-month rolling windows

Pflueger (2023), Figure 1
Breakeven Moves with Stock Market

Pushes nominal bond-stock return beta negative
Real Yields Move Against Stock Market

Positive real bond-stock return beta

Date of Observation

TIPS 10 YR

SP500

Pflueger (2023)  Back to the 1980s or Not?  May 2023
MODEL
**Literature**


- **Changing risks of Treasury bonds**: Campbell, Sunderam, and Viceira (2017), Campbell, Pflueger, and Viceira (2020), David and Veronesi (2013), Gourio and Ng (2020, 2023), Li et al. (2022), Hall, Sargent, Payne, Szoke (2022)


- **Drivers of post-pandemic inflation**: Guerrieri, Lorenzoni, Straub, and Werning (2021), Rubbo (2022), Di Giovanni, Kalemli-Özcan, Silva, Yildirim (2022), Harding, Linde, Trabandt (2022), Bianchi and Melosi (2022), Blinder (2023), Shapiro (2023) ...

**Interaction of supply shocks & policy response ⇒ Bond risks**
New Keynesian Model with Countercyclical Risk Aversion

Euler equation: \( x_t = f^x E_t x_{t+1} + \rho^x x_{t-1} - \psi r_t + \underbrace{v_{x,t}}_{\text{Demand Shock}} \)

Phillips curve: \( \pi^w_t = f^\pi E_t \pi^w_{t+1} + \rho^\pi \pi^w_{t-1} + \kappa x_t + \underbrace{v_{\pi,t}}_{\text{Supply Shock}} \)

Monetary policy rule: \( i_t = \rho^i i_{t-1} + (1 - \rho^i) (\gamma^x x_t + \gamma^\pi \pi_t) + \underbrace{v_{i,t}}_{\text{MP Shock}} \)

\( x_t = \text{output gap}, \pi_t = \text{inflation}, i_t = r_t + E_t \pi_{t+1} \) nominal rate

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Habit formation preferences (Campbell, Pflueger, and Viceira (2020, JPE)) ⇒ exactly log-linear macro Euler equation and non-linear risk premia in bonds and stocks

Different from this prior work, analyze supply and demand shocks

Pflueger (2023)

Back to the 1980s or Not?

May 2023 15 / 29
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Phillips curve: $\pi_t^w = f^{\pi} E_t \pi_{t+1}^w + \rho^{\pi} \pi_{t-1}^w + \kappa x_t + v_{\pi,t}$

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$x_t = \text{output gap}, \ \pi_t = \text{inflation}, \ i_t = r_t + E_t \pi_{t+1} \text{ nominal rate}$

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- Different from this prior work, analyze supply and demand shocks
Countercyclical Risk Aversion via Habits

- High Output (Boom)
- Low Output (Recession)
- Time

- Relaxed Attitudes towards Risky Investments
- Strong Preference for Safe over Risky Investments

Back to the 1980s or Not?
May 2023
Pflueger (2023)
CALIBRATION
Changes in Prevalent Shocks 1980s vs. 2000s
Monetary policy rule: \( i_t = \rho^i i_{t-1} + (1 - \rho^i) (\gamma^x x_t + \gamma^\pi \pi_t) + v_{i,t} \)
### Asset Pricing Implications: Stocks

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<td></td>
<td>Model</td>
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<tr>
<td>Equity Premium</td>
<td>7.33</td>
<td>7.96</td>
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<td>Equity Vol</td>
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<td>Equity SR</td>
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<td>AR(1) pd</td>
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<td>1 YR Excess Returns on pd</td>
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<td>-0.01</td>
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<td>1 YR Excess Returns on pd ($R^2$)</td>
<td>0.06</td>
<td>0.00</td>
<td>0.14</td>
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## Asset Pricing Implications: Bonds

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<tr>
<td></td>
<td>Model</td>
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<tr>
<td>Yield Spread</td>
<td>2.28</td>
<td>1.53</td>
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<td>Return Vol.</td>
<td>15.82</td>
<td>14.81</td>
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<td>Nominal Bond-Stock Beta</td>
<td>0.86</td>
<td>0.24</td>
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<td>-0.31</td>
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<td>Real Bond-Stock Beta</td>
<td>0.05</td>
<td>0.08</td>
<td>-0.08</td>
<td>-0.06</td>
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<td>1 YR Excess Return on slope*</td>
<td>1.26</td>
<td>2.55</td>
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<td>1 YR Excess Return on slope ( (R^2) )</td>
<td>0.01</td>
<td>0.07</td>
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* = targeted
ECONOMIC MECHANISM
1 percentage point shocks

2000s Calibration: Monetary policy rule leads to “soft landing” after adverse supply shock
Model Positive Bond-Stock Betas in 1980s...

- Baseline
- Shock Volatilities
- MP

Nominal Bond-Stock Beta
Real Bond-Stock Beta

1980s Betas Flip with Prevalent Shocks or Monetary Policy


Nominal Bond-Stock Beta
Real Bond-Stock Beta

Baseline
Shock Volatilities
MP
Model Negative Bond-Stock Betas in 2000s

Change Parameters to 1979.Q4-2001.Q1

Nominal Bond-Stock Beta  Real Bond-Stock Beta

Baseline  Shock Volatilities  MP
Positive bond-stock betas are harder to generate than one might think
Only if supply shocks and fast anti-inflationary monetary policy work together
Bond Betas Are All About What’s in Investors’ Minds

Bonds benefit endogenously from “flight-to-safety” if supply-shock driven stagflation deemed sufficiently unlikely
Conclusion: Not (Yet) Back to Stagflationary 1980s

- Positive nominal bond-stock betas require *both* supply shocks and fast, anti-inflationary monetary policy
  - Explains switch from positive nominal bond-stock betas in 1980s to negative nominal bond betas in 2000s

- Endogenous “flight-to-safety” turn bond-stock betas into forward-looking indicator of investors’ perceived equilibrium

- In contrast to 1980s, small nominal bond risks appear to indicate “soft(-ish) landing” after adverse supply shocks

- But of course only the future tell what’s next: Bond-stock betas will be important indicator to track