Discussion: Inflation and the Relative Price Premium

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- Revisit the pricing of inflation risks in the asset market
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  - Fang, Liu and Roussanov (2022): core and energy
  - Hong, Pan and Tian (2023): forecasting inflation using the cross-section of stocks
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  - Hong, Pan and Tian (2023): forecasting inflation using the cross-section of stocks
  - Recently reviewed by Cieslak and Pflueger (2023)
- Little attention is paid to the risk of price dispersion across firms
  - Very important topic, the source of distortion in NK models
  - A paper should be written on its asset pricing implications

Questions about the Dispersion of Inflation: This Paper

- Fundamental macroeconomic questions
  - What are the stylized facts about price dispersion?
    - Large dispersion, persistent but with frequent changes
    - Rule out ex ante reasons such as price rigidity as the only explanation
  - What is the source of price dispersion?
    - Redistributive shocks across goods
  - Does price dispersion imply macroeconomic distortion or inefficiency?
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- Asset pricing implications
  - Do stocks with price changes behave differently?
    - High-price-change firms respond positively to the redistributive shock
  - How is the risk of price dispersion priced, if so, how?
    - A more dispersed price represents a state of high marginal utility
    - Therefore, high-price-change firms are risky and earn a risk premium

Comment #1: What Are the "Redistributive" Shocks?

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  - What is the role of price stickiness in driving the price dispersion?
  - Does production network matter in determining firms' price response?
  - ...

Comment #2: The Demand vs. Supply Nature of s_t Shock

- The authors use a two-sector model for illustration

$$\hat{C}_t = \left[\alpha^{\frac{1}{\eta}} c_{1,t}^{\frac{\eta-1}{\eta}} + (1-\alpha)^{\frac{1}{\eta}} c_{2,t}^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}}$$

  - Aggregate consumption $C_t = c_{1,t} + c_{2,t}$
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- The relative price decreases with s_t

$$\frac{p_{1,t}}{p_{2,t}} = \left(\frac{c_{1,t}}{c_{2,t}} \frac{1-\alpha}{\alpha} \right)^{-\frac{1}{\eta}} = \left(\frac{s_t}{1-s_t} \frac{1-\alpha}{\alpha} \right)^{-\frac{1}{\eta}}$$

  Price dispersion increases with s_t when $s_t < \alpha$

Two Key Results ($s_t < \alpha$)

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- $\frac{\partial M_t}{\partial s_t} < 0$. A more disperse price indicates a bad state of world
- The claim to the high-price good (good 1) is risky

$$\frac{p_{1,t}c_{1,t}}{p_{2,t}c_{2,t}} = \left(\frac{1-\alpha}{\alpha}\right)^{-\frac{1}{\eta}} \left(\frac{s_t}{1-s_t}\right)^{1-\frac{1}{\eta}}$$

When s_t is low, price dispersion is high (bad state) and $p_{1,t}c_{1,t}$ is low if and only if $\eta > 1$

Redistributive Shock as Demand Shock

$$\hat{C}_t = \left[\alpha^{\frac{1}{\eta}} \left(s_t c_{1,t}\right)^{\frac{\eta-1}{\eta}} + (1-\alpha)^{\frac{1}{\eta}} \left((1-s_t)c_{2,t}\right)^{\frac{\eta-1}{\eta}}\right]^{\frac{\eta}{\eta-1}}$$

where $c_{1,t} = c_{2,t} = C_t$

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- The same conclusion as the previous case
- Any evidence to distinguish supply vs. demand shock?
- Maybe the quantity data can be helpful: does the ratio of consumption quantity line up with s_t?

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- In this context: relative expensive firms' stock prices underreact to the positive inflation news, thus earning a subsequent return
- Consistent with the "momentum" evidence: the relative premium evidence shares some commonality with momentum
- More evidence to distinguish the risk premium explanation and underreaction explanation will be helpful

Conclusion

- A very nice paper, tackle with an extremely important angle of inflation. Everyone should read it.
- Attempt to answer many fundamental questions about relative price, especially their asset pricing implications
- My comments
  - Evidence on the nature/source of the redistributive shock
  - Any way to distinguish supply vs. demand shock?
  - Can we rule out the underreaction story in this context?