Getting to the Core: Inflation Risks Within and Across Asset Classes

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Discussion

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Summary of the Paper

What does this paper do?

- The authors highlight the different asset pricing properties of 'core' and 'non-core' inflation components.
- In a nutshell, an insightful study with novel findings on the nature of inflation risk (and we should all pay attention to it).

What are the key ingredients?

- Portfolio returns on many asset classes such as stocks, different types of bonds, currencies, commodity, and real estate,
- A VAR to extract unexpected shocks to core and non-core inflation coupled with state-of-art asset pricing techniques,
- A two-sector New Keynesian model that rationalizes the empirical findings.

Summary of the Paper (cont'd)

What do we learn?

- Core and non-core inflation behave differently in the data,
- Asset classes traditional used to hedge inflation (e.g., stocks, currencies, and real estate) offer no protection against core inflation,
- Core inflation carries a significantly negative price of risk,
- Results are robust to different methods, sample periods, and controlling for various macroeconomic factors.

How to rationalize these stylized facts?

- A simple economy where a positive markup shock increases the cost of production, core inflation goes up and core output down.
- The marginal utility of consumption increases so that core inflation carries a negative price of risk of asset returns.

Table 2: Average Portfolio Exposures to Inflation Risks

| | Mean | S.D. | A. Headline | | | B. Core and Energy | | |
			headline β	t-stat	core β	t-stat	energy β	t-stat
Stock	6.80	16.79	-1.33	(-1.38)	-5.60	(-3.69)	0.21	(1.81)
Treasury	2.07	6.90	-2.53	(-7.06)	-2.51	(-4.27)	-0.20	(-4.57)
Agency	2.44	5.10	-1.62	(-5.42)	-2.25	(-4.28)	-0.09	(-2.75)
Corporate	3.08	6.39	-1.60	(-4.38)	-2.98	(-4.91)	-0.05	(-1.08)
Currency	1.76	7.05	1.04	(2.02)	-1.04	(-0.65)	0.13	(2.54)
Commodity	4.47	21.90	8.59	(7.53)	-0.07	(-0.04)	1.10	(8.21)
REIT	7.96	17.46	0.31	(0.27)	-6.54	(-3.30)	0.31	(2.48)
Intl Stock	6.09	16.53	-1.20	(-1.23)	-5.78	(-3.74)	0.19	(1.70)

Notes: This table reports the regression results of the specification $r_{i,t}^e = \alpha_i + \beta_\pi^i \varepsilon_{\pi,t} + u_{i,t}$ for 8 average portfolios in each asset class. $r_{i,t}^e$ is the return of asset i in excess of the risk-free rate in the US. $\varepsilon_{\pi,t}$ is the shock to respective inflation extracted from the VAR system. Panel A uses headline inflation shock as the risk factor. Panel B uses core and energy inflation jointly as risk factors. The t-statistics are in the parentheses. The first two columns report the mean and standard deviation of returns in each row. All returns and inflation variables are annualized and span 1963 to 2019 at the quarterly frequency.

Traditional asset classes offer no hedge against core inflation.

Table 4: Price of Inflation Risks

	A. 8 Average Portfolios			B. 38 Portfolios	
headline λ	0.14			-0.08	
t-stat	(0.47)			(-0.32)	
core λ		-1.03			-1.07
t-stat		(-2.94)			(-3.72)
energy λ		3.86			3.81
t-stat		(1.35)			(1.36)
R^2	0.44	0.98		0.41	0.82

Notes: This table reports the price of risk estimated from the test portfolios. Panel A uses the 8 average portfolios from each asset class as test portfolios. Panel B uses the 38 test portfolios as test assets. In each panel, the first column reports the price of headline inflation and the second column reports the price of core and energy inflation. Price of risk is estimated using two-step procedure and the t-statistics are calculated using Shanken-adjusted standard errors. The second-step R^2 is also reported in the last row.

A significantly negative price of risk for core inflation.

My (2 cents' worth) **comments**

Comment #1

Why core inflation?

- Core inflation measures the change in the costs of goods and services, excluding those of food and energy,
- The idea is to remove highly volatile components, thus identifying inflation signal from temporary supply shocks,
- Policymakers use core inflation for policy decisions because it provides a better picture of the underlying inflation pressures.

Which measure of core inflation?

- CPI core inflation is a weighted average of price changes and Blinder (1987) suggest that individual price changes should be weighted depending their ability to forecast future inflation (policymakers care about persistent inflation),
- You can perhaps interact core inflation with future headline inflation.

Comment #2

The paper focuses on US core inflation

- Unlike the Federal Reserve, some central banks like Bank of Canada maintains an explicit inflation target in terms of headline inflation,
- Can you extend the analysis to other countries, especially to those that use headline inflation?

This would shed light on the role of monetary policy channel

- When core inflation is unexpectedly high, the Fed would increase policy rates thus affecting discount rates.
- Also, is it just a US phenomenon? Does local core inflation matter?

Comment #3

Demand vs Supply shocks

- Suppose there is a persistent disruption to supply chain that causes an increase in the cost of production of goods and services,
- Core inflation increases but the Central Bank decides to slash policy rates to reduce funding costs and avoid a negative impact on economic activity.

Would you expect a positive relationship between asset returns and core inflation?

- Does the sign of the relationship between core inflation and asset returns depend on whether you have a demand or supply shock to core inflation?

Comment #4

Real assets do not offer a hedge against core inflation

- The relationship between core inflation and asset returns is time-varying as you show in the paper.

A strategy that offers a hedge against core inflation?

- Can you combine all asset classes in a dynamic fashion and construct a tradable strategy that offers a hedge against core inflation?

Comment #4 (cont'd)
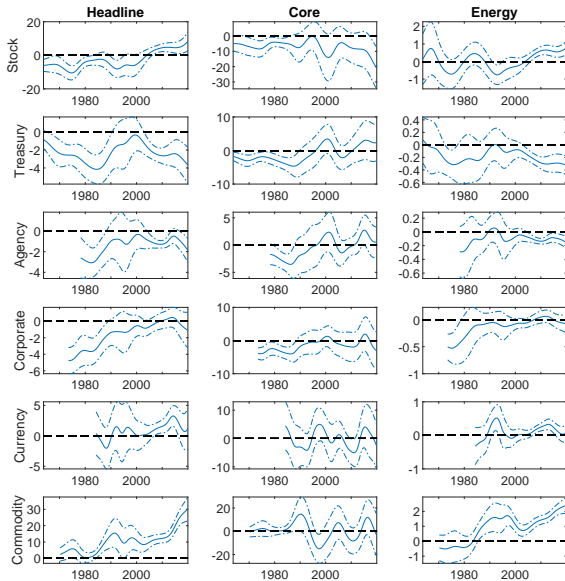
Conclusions

Do real asset offer a protection against core inflation?
This paper provides the answer.

- An interesting paper with lots of new results,
- I have enjoyed very much reading it and it is now in my reading list.

Thank you