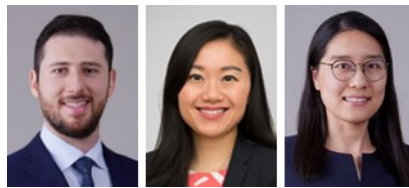


## The Term Structure of Inflation Forecasts Disagreement and Monetary Policy Transmission\*



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*Keywords: inflation expectation; forecasts disagreement; monetary policy transmission.  
JEL codes: E31, E37, E52.*

*The term structure of inflation forecasts disagreement in the US can be summarized by two components: disagreement about the trend inflation, and disagreement about the cyclical inflation. While the former has identical impacts on forecasts disagreement across forecasting horizons, the latter has more muted impacts on forecasts disagreement at longer forecasting horizons. Only the cyclical inflation disagreement has a significant impact on monetary policy efficacy. High disagreement about the cyclical inflation undermines the transmission of monetary policy to both real economy and financial markets. Active communication from the Federal Reserve with the general public is a useful tool to reduce inflation disagreement, especially disagreement about the cyclical inflation.*

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\*Authors' note: This SUERF Policy Brief summarizes Barbera, Xia and Zhu (2022). The views expressed in this study reflect those of authors and are not necessarily those of the Bank for International Settlements.

## Introduction

Inflation expectations play a crucial role in determining the actual price level. They influence consumption and borrowing decisions of households, and investment and pricing strategies of firms. The general consensus is that well-anchored inflation expectations stabilize macroeconomic outcomes. Given the importance, central banks closely monitor survey-based inflation expectations, either from households, firms or professional forecasters, to assess how well inflation expectations are anchored. However, even under the scenario in which consensus inflation forecasts perfectly align with inflation targets, individuals still form heterogeneous beliefs on future inflation rates, raising concerns of inflation expectations de-anchoring. In this paper, we discuss the implication of disagreement about inflation expectations on the transmission of monetary policy.

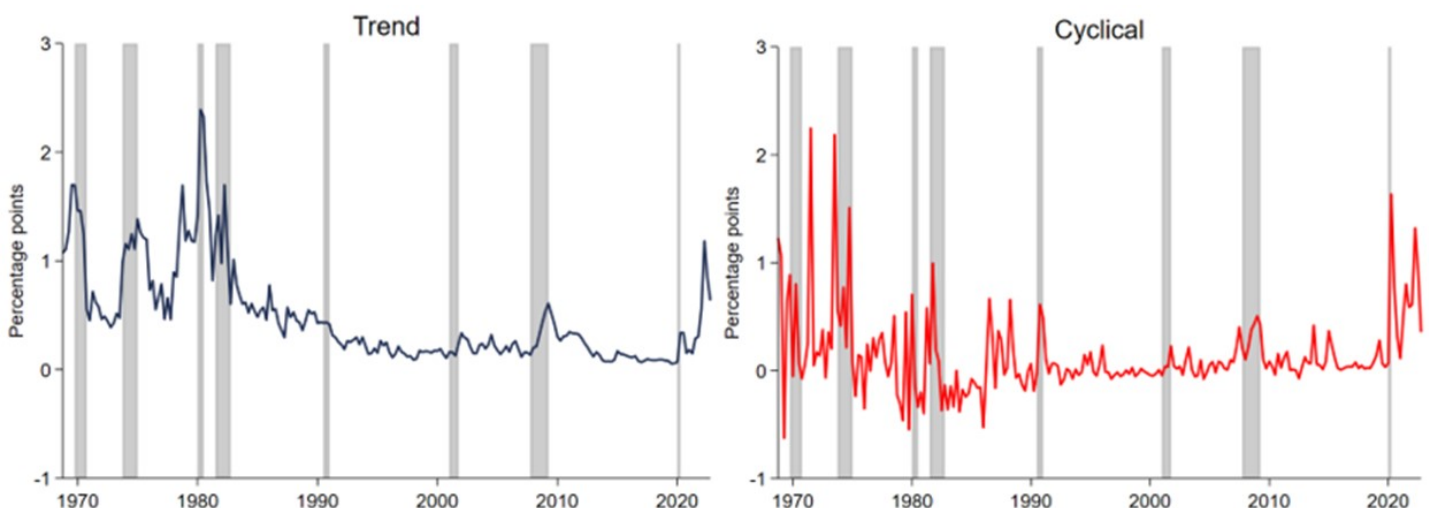
Most existing literature focuses on inflation forecasts disagreement over a particular forecasting horizon. We take one step further and exploit information from the term structure of inflation forecasts disagreement. Specifically, we decompose the term structure of inflation forecasts disagreement to disagreement about the trend inflation and disagreement about the cyclical inflation. These two disagreement factors have different impacts on monetary policy transmission. Lastly, we show central bank communication can tame inflation disagreement.

## Decomposing inflation forecasts disagreement

Our theoretical framework suggests that the term structure of inflation forecasts disagreement can be summarised by two factors: disagreement around the trend inflation and disagreement around the cyclical inflation. The trend inflation disagreement has identical impacts on inflation forecasts disagreement across different forecasting horizons, while the impact of the cyclical inflation disagreement diminishes as forecasting horizon increases. In other words, the trend and cyclical inflation disagreement can be thought of as level and slope factors of the term structure of inflation forecasts disagreement, respectively.

Utilizing Kalman filter and inflation forecasts data from the Survey of Professional Forecasts, we estimate the trend and cyclical inflation disagreement for the US. Despite its simplicity, our model does a good job in fitting the inflation forecasts disagreement data. Our estimates (Figure 1) suggest that trend inflation disagreement declined significantly in the 1980s, consistent with the narrative of better anchored long-run inflation expectations following the Volcker shock. In more recent times, both trend and cyclical inflation disagreement rose rapidly in 2021 when the US economy recovered from the COVID-19 pandemic, signalling de-anchoring risk of inflation expectations. That said, both series started to decline near the end of our sample (2022Q4).

**Figure 1: Disagreement on the trend and cyclical inflation**



Note: The grey shaded areas indicate recession periods as defined by the US National Bureau of Economic Research (NBER).

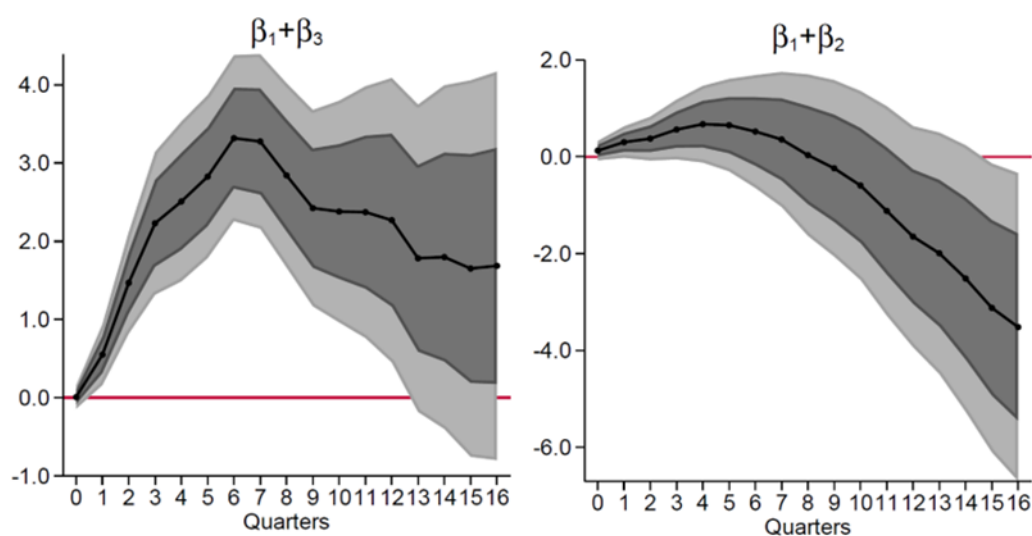
## Disagreement about cyclical inflation undermines monetary policy efficacy

Having estimated these two inflation disagreement factors, we examine their respective roles in the transmission of monetary policy to realized inflation following Falck et al. (2021), and to asset prices following Bauer et al. (2022). We find cyclical inflation disagreement undermines monetary policy efficacy.

For one, when cyclical inflation disagreement is high and trend inflation disagreement is low, monetary policy tightening tends to raise price levels instead of lowering them (Figure 2, left panel). In contrast, when the cyclical inflation disagreement is low and trend inflation disagreement is high (Figure 2, right panel), monetary policy tightening works as intended by lowering price levels. The empirical finding can be reconciled by the model proposed by Falck et al. (2021) in which strength of the signalling effect of monetary policy positively correlates with the degree of disagreement. Firms use policy decisions as a signal to infer aggregate demand and supply in the economy. When inflation disagreement is high, firms partly interpret an interest rate increase as a positive demand shock and raises the price of their products accordingly. In contrast, when inflation disagreement is low, the signalling effect of monetary policy is weak and dominated by the conventional channel. Considering what matters for firms' assessment of economic cyclical outlook is the cyclical inflation instead of the trend inflation, it is not surprising that empirically only the cyclical inflation disagreement affects monetary policy transmission.

For another, cyclical inflation disagreement weakens the pass-through from monetary policy shocks to asset prices. This partly explains why uncertainty about future policy rates attenuates asset prices' response to monetary policy shocks documented in Bauer et al (2022). In contrast, trend inflation disagreement does not seem to play a significant role in the transmission of monetary policy shocks to asset prices.

**Figure 2: Impulse responses of realised inflation to 100 bps monetary policy shock**



*Note: Shaded areas indicate 68% (dark grey) or 90% (light grey) confidence intervals of the estimated coefficients. Left panel shows the impulse response for periods with high cyclical (and low trend) inflation disagreement. Right panel shows the impulse response for periods with high trend (and low cyclical) inflation disagreement. The economy is under a high-disagreement regime when the seven-period moving average of inflation disagreement exceeds its median.*

## Central bank communication can tame disagreement about the cyclical inflation

Consistent with the literature, we find realized inflation and output gap (Mankiw et al. (2004), Banerjee and Mehrotra (2021)) are important drivers of inflation disagreement (Table 1). Besides these traditional determinants, we find monetary policy stance and framework also matter. Specifically, if a central bank is persistently behind the curve (i.e. realized policy rates are below rates prescribed by a Taylor-type rule), trend inflation disagreement tends to rise. We also find Federal Reserve's communication to the public can help reduce both types of inflation disagreement. But its impact on cyclical inflation disagreement is more pronounced than on trend inflation disagreement. By taming cyclical inflation disagreement, central bank communication can therefore indirectly improve the effectiveness of monetary policy.

**Table 1: Drivers of inflation disagreement**

	$\tilde{V}_t(\pi_{t+1})$		$\tilde{V}_t(\pi_t^T)$		$\tilde{V}_t(\pi_t^g)$	
	(1)	(2)	(3)	(4)	(5)	(6)
$\tilde{V}_{t-1}(\pi_t)$	0.36*** (0.07)	0.36*** (0.07)				
$\tilde{V}_{t-1}(\pi_t^T)$			0.61*** (0.06)	0.62*** (0.05)		
$\tilde{V}_{t-1}(\pi_t^g)$					0.30*** (0.07)	0.29*** (0.07)
$\pi_t$	0.19*** (0.03)	0.18*** (0.03)	0.08*** (0.02)	0.07*** (0.02)	0.19*** (0.05)	0.18*** (0.05)
$ \Delta\pi_t $	-0.18 (0.13)	-0.18 (0.12)	-0.11 (0.07)	-0.11 (0.07)	0.41** (0.20)	0.42** (0.20)
$y_t - y_t^*$	-0.11*** (0.02)	-0.11*** (0.02)	-0.05*** (0.01)	-0.05*** (0.01)	-0.13*** (0.03)	-0.13*** (0.03)
<i>Recession<sub>t</sub></i>	0.08 (0.08)	-0.00 (0.09)	0.06 (0.05)	-0.01 (0.05)	0.36*** (0.14)	0.25 (0.16)
<i>InflationDisp<sub>t</sub></i>	0.21*** (0.04)	0.19*** (0.04)	0.13*** (0.03)	0.12*** (0.03)	0.12* (0.07)	0.10 (0.07)
<i>TaylorRuleDev<sub>t-1,ma</sub></i>		-0.16 (0.10)		-0.13** (0.06)		-0.19 (0.17)
$\Delta\ln(\text{FedSpeech})_{t-1}$		-0.05 (0.04)		-0.04* (0.02)		-0.14*** (0.06)
Constant	-1.67*** (0.20)	-1.59*** (0.20)	-0.99*** (0.13)	-0.92*** (0.13)	-1.25*** (0.29)	-1.17*** (0.30)
$R^2$	0.74	0.75	0.81	0.83	0.64	0.66
Observations	105	105	105	105	105	105

Note: Dependent variables are the normalized disagreement about next-quarter inflation (left panel), trend inflation (middle panel), and cyclical inflation (right panel). Explanatory variables are: the one-quarter lagged (normalized) inflation disagreement ( $\tilde{v}_{t-1}(\cdot)$ ), realized yoy inflation ( $\pi_t$ ) and its absolute change ( $|\Delta\pi_t|$ ), output gap ( $y_t - y_t^*$ ), NBER recession dummy (*Recession<sub>t</sub>*), the dispersion of inflation rate across different commodity groups (*InflationDisp<sub>t</sub>*), four-quarter moving average of the difference between the actual policy rate and the rate implied by Taylor rule (*TaylorRuleDev<sub>t-1,ma</sub>*), and the log change in the number of Fed governors' public speeches in the previous quarter ( $\Delta\ln(\text{FedSpeech})_{t-1}$ ). Sample period is from Q4 1996 to Q4 2022.

■

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