Inflation and Unemployment in the News and in the Data

Matteo Iacoviello*

February 15, 2022

Abstract

I document that news about inflation and about unemployment are highly correlated with their data counterparts. Most importantly, I show that these news-based measures consistently predict their data counterparts, 1-month, 3-months, and 1-year ahead. I show that, in a simple VAR, news about inflation lead to a persistent rise in inflation over time. This is a puzzling result since these variables are hard to predict. I analyze which macroeconomic models can be consistent with this finding, and which models cannot.

KEYWORDS: Textual Analysis; Inflation; Unemployment; Phillips Curve; News-Based Indicators.

*Iacoviello: Board of Governors of the Federal Reserve (email: matteo.iacoviello@frb.gov). Maddie Penn and Sarah Conlisk provided outstanding research assistance. All errors and omissions are our own responsibility. The views expressed in this paper are solely the responsibility of the author and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of anyone else associated with the Federal Reserve System.

1 Introduction

I build on Baker, Bloom, and Davis (2016) and Caldara and Iacoviello (forthcoming) and construct news about economic phenomena by counting the occurrence of news about these phenomena in leading newspapers.

The two phenomena I consider are the backbone of the Phillips curve, inflation and unemployment.

I construct an inflation news index and an unemployment news index by counting the share of newspaper articles mentioning these phenomena in the historical archives of the *Chicago Tribune*; *The New York Times*; and the *Washington Post*, starting on January 1950 until January 2022.

For inflation, I count all articles containing either the word 'inflation', or the word 'price[s]' within two words of 'rise OR rises OR rising OR high* OR increas* OR rose.' For unemployment, I count all articles containing the word 'unemployment.'

The resulting inflation news index and unemployment news index are plotted in Figure 1 and 2, respectively.

2 Forecasting Regressions

I explore the role of the news indicators as predictors of the underlying economic measure using simple univariate specifications. Specifically, I estimate the following forecasting regressions:

$$\Delta\pi_{t+h} = \alpha + \beta_h INFNEWS_t + \sum_{i=1}^{p} \Gamma_{t-i}\mathbf{X}_{t-i} + \nu_{t+h}, \tag{1}$$

$$\Delta_{t+h} = \alpha + \beta_h UNEWS_t + \sum_{i=1}^{p} \Gamma_{t-i}\mathbf{X}_{t-i} + \nu_{t+h}, \tag{2}$$

where $\Delta\pi_{t+h}$ and Δ_{t+h} denote the percentage change in the inflation rate and the percentage change in the unemployment rate between month $t-1$ and $t+h$; $INFNEWS_t$ and $UNEWS_t$ are the monthly news indicators; and $\mathbf{X}_t$ denotes a set of macroeconomic controls, namely the term spread (10-Year Treasury Bond Less Fed Funds Rate), inflation, unemployment, and industrial production. I set $p = 12$.

The first two columns of Table 1 report the response of inflation to a one-standard-deviation increase to the inflation news index. The inflation news index is informative about the near-term trajectories of inflation and unemployment, which are higher by about 0.5 percent one to three months after the rise in news about them.

3 VAR Regressions

Figure 3 describes the VAR. Even in the VAR, news about inflation predict future inflation. Same for unemployment (not shown).

4 Conclusions

We propose and implement indicators.

References

Baker, S. R., N. Bloom, and S. J. Davis (2016): "Measuring Economic Policy Uncertainty," *The Quarterly Journal of Economics*, 131, 1593–1636.

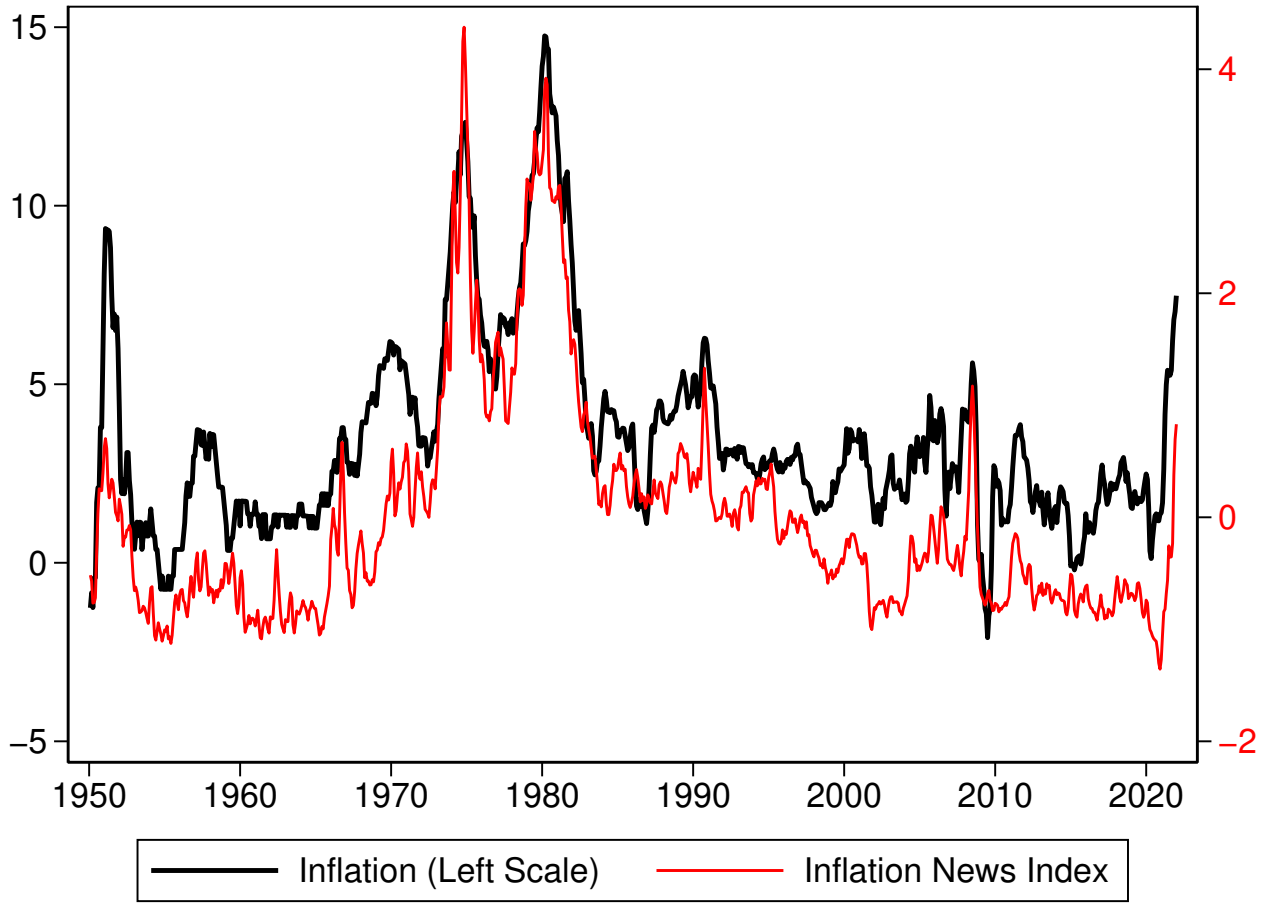
Caldara, D. and M. Iacoviello (forthcoming): "Measuring Geopolitical Risk," *American Economic Review*.

Table 1: Forecasting Regressions

	Inflation $h=1$	Inflation $h=3$	Inflation $h=12$	Unemployment $h=1$	Unemployment $h=3$	Unemployment $h=12$
Inflation News	0.44***	0.73***	0.89***			
	[6.63]	[6.73]	[2.80]			
Unemployment News				0.72*	0.55**	0.22**
				[1.91]	[2.39]	[2.38]
Controls	yes	yes	yes	yes	yes	yes
N	797	795	786	797	795	786

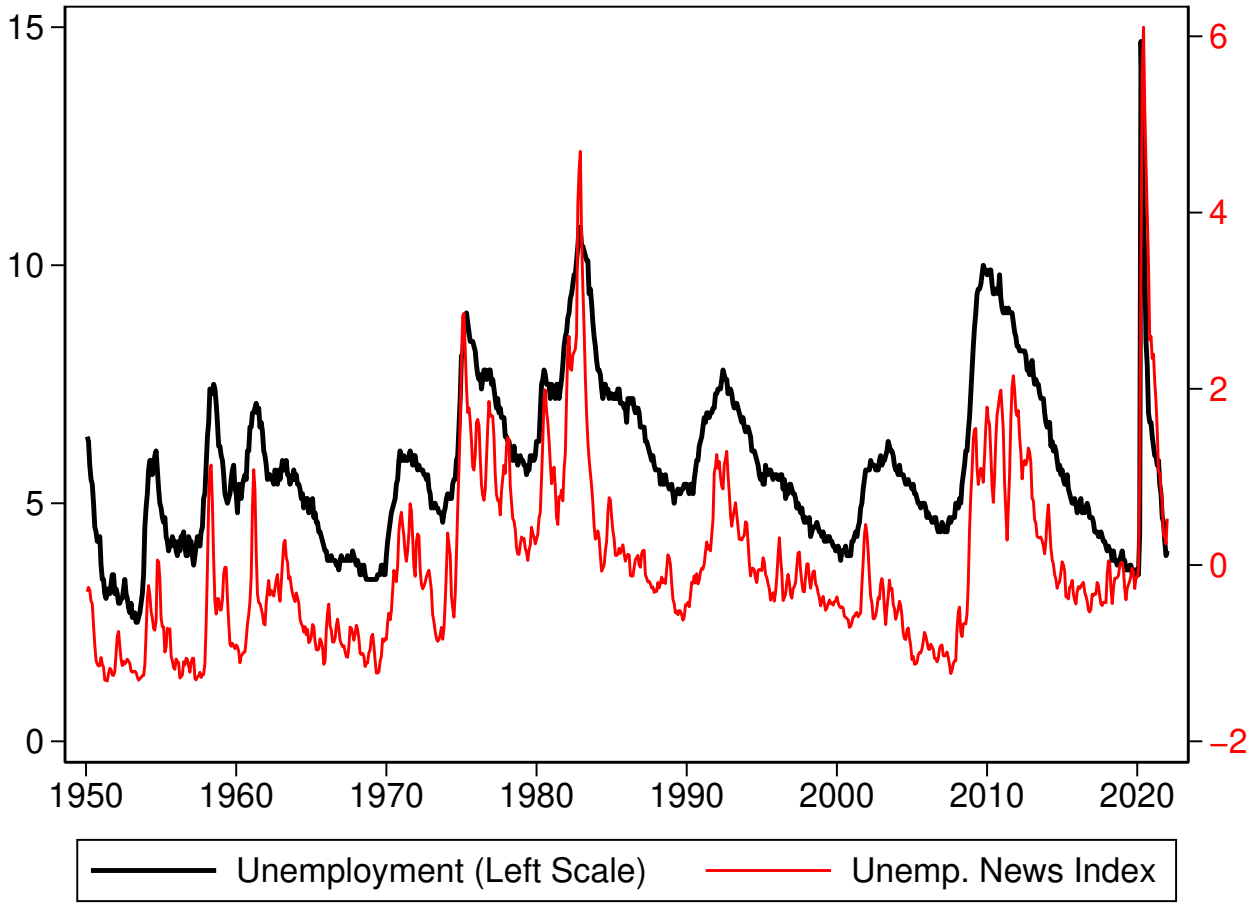
Note: The entries in the table are the regression coefficients and t-statistics (in parentheses) for the forecasting regressions described by Equation (1) and Equation (2). The regressions cover the period January 1954 through January 2022 and are constrained by the availability of the Interest Rate Spread.

Figure 1: Inflation in the Data and in the News



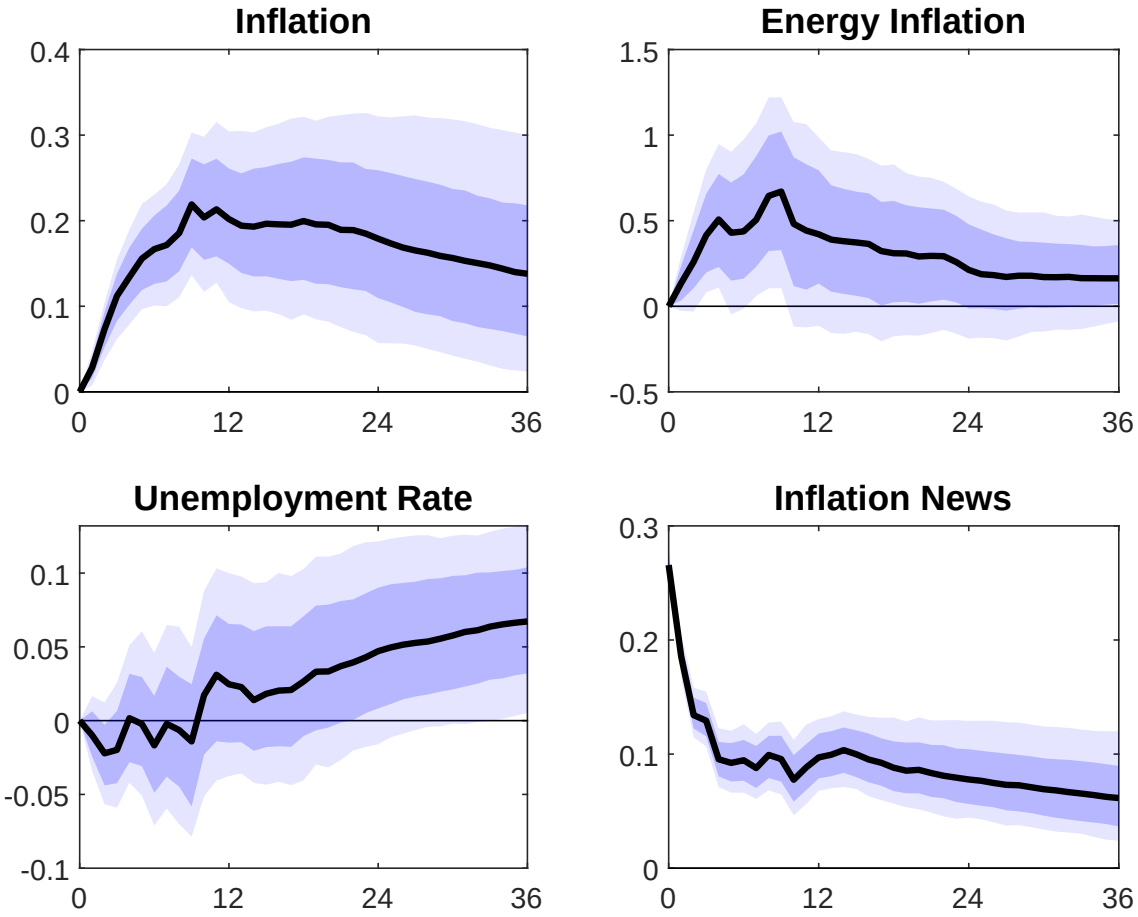
Note: Sample from 1950:M1 through 2022:M1. Inflation is measured by the 12-month percent change of the Consumer Price Index for All Urban Consumers (CPI-U). The Inflation News Index is the share of newspaper articles mentioning inflation or rising prices in the New York Times, Washington Post, and the Chicago Tribune. The news measure is expressed as a 3-month moving average and standardized to have zero mean and unit standard deviation.

Figure 2: Unemployment in the Data and in the News



Note: Sample from 1950:M1 through 2022:M1. Unemployment is the civilian unemployment rate (16 and over). The Unemployment News Index is the share of newspaper articles mentioning unemployment in the New York Times, Washington Post, and the Chicago Tribune. The news measure is expressed as a 3-month moving average and standardized to have zero mean and unit standard deviation.

Figure 3: Inflation in the Data and in the News: A VAR Analysis



Note: The black solid line depicts the median impulse response of the specified variable to a one-standard deviation increase in the Inflation News Index of Figure 1. The dark and light shaded bands represent the 68 and 90 percent pointwise credible sets, respectively. Sample 1958:M1 through 2022:M1. Inflation and Energy Inflation are the 12-month percent change in the CPI and the CPI-Energy Price Index. The horizontal axis denotes month since the shock. The VAR uses 12 lags.