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From Buzz to Bust: How Fake news Shapes the Business Cycle

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The threats that misinformation poses to politics and public health are well documented, but the macroeconomic effects of fake news remain largely unexplored. This column highlights insights from recent research on the impact of fake news on economic stability. Leveraging a novel dataset, our study unveils the detrimental effects of technology-related fake news on key economic indicators. Fake news profoundly influences economic dynamics, from heightened uncertainty to amplified business cycle fluctuations. Moreover, nuanced differences in the economic response to various types of fake news underscore the complexity of the challenge. As policymakers grapple with the ramifications of fake news, our research suggests that they should pay attention to its effects on economic stability.

In the contemporary digital era, the proliferation of fake news has emerged as a significant concern, fundamentally altering the landscape of public discourse and raising questions about its economic ramifications. As Thomas Jefferson recognized over two centuries ago, truth itself becomes suspect when filtered through the lens of fabricated news.[1] Today, the urgency of Christine Lagarde's words are emblematic of the emergence of fake news as a primary concern for policymakers and citizens alike.[2] Indeed, the recent 2024 World Economic Forum's ranking of fake news as the most severe global short-term risk underscores the gravity of this problem. To date, fake news related research has focused primarily on the political economy of social media (for a review, see Campante et al., 2023); on understanding the factors driving -- and tools to stop – the consumption and sharing of political fake news (Zhuravskaya et al., 2017; Ozdaglar and Acemoglu, 2021; Guriev et al., 2023; Mattozzi et al., 2023); and on the impact of fake news on election outcomes (Fraccaroli et al., 2019).

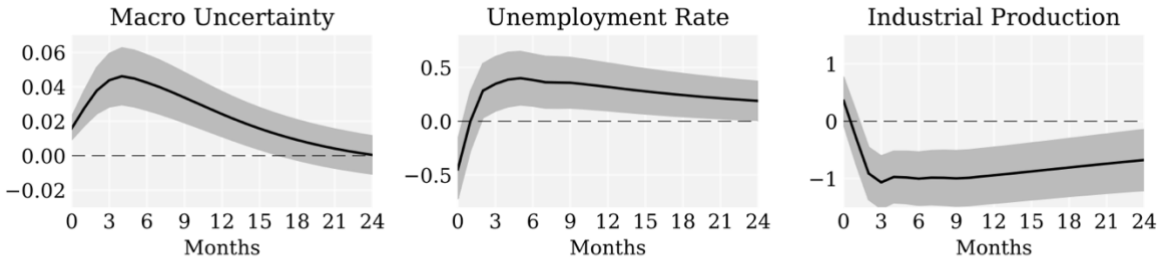
Despite its evident societal and political implications, the macroeconomic impact of fake news remains unexplored. Our research (Assenza et al., 2024) attempts to fill this knowledge gap in the literature by investigating the fundamental question: *Does fake news shape aggregate economic fluctuations?*

At the heart of this investigation lies the methodological challenge of identifying fake news shocks. We rely on the hypothesis that fake news issuance introduces some degree of confusion or noise, thereby augmenting the uncertainty faced by economic agents. Leveraging data from the Assenza-Huber *Fake News Atlas* database our study constructs a proxy capturing exogenous variations in fake news issuance. The database includes news items fact-checked by PolitiFact—a reputable and Pulitzer-Prize winning fact-checking organization. By harnessing this dataset, the study sheds light on the dynamic causal relationship between fake technology news shocks and business cycle dynamics, employing a proxy-VAR approach (see Stock and Watson, 2018; Kilian and Lütkepohl, 2018) to unravel the complex interplay between fake news and economic outcomes. To be precise, we instrument the Jurado et a. (2015) measure of macroeconomic uncertainty with our proxy for fake news.

Our key findings, illustrated in Figure 1, reveal compelling insights. Figure 1 displays the Impulse Response Functions (IRFs) of the model variables to a one-standard deviation shock in fake news. Technology-related fake news shocks sow seeds of uncertainty that reverberate through the economy, manifesting in increased unemployment rates and lower industrial

production. Moreover, these fake news shocks contribute significantly to the overall volatility of the business cycle, underscoring their systemic importance.

Figure 1: **Benchmark Responses – The Economic Impact of Fake News**



Notes. The black solid line shows the IRF of the model variables to a fake technology news shock. Shaded areas represent ± 1 standard deviation around average response obtained from 1,000 Bootstrap replications.

The fake technology news shock triggers a sustained surge in macroeconomic uncertainty, peaking after four months before gradually subsiding. This "hump-shaped" pattern of the impulse response functions suggests a powerful and robust transmission mechanism, reflecting the spread of fake news, its gradual absorption by the public, and, ultimately, heightened confusion and uncertainty. As Figure 1 shows the initial uncertainty gradually builds up, leading to further depression in macroeconomic outcomes. In terms of magnitude, the fake technology news shock explains up to 84% of the 1-month-ahead macroeconomic uncertainty after a year. It contributes 50% of the short-run volatility of the unemployment rate and still accounts for one third of its overall volatility after one year. While the shock only explains 14% of the short-run volatility of the industrial production index, it accounts for about 50% of its volatility at the one-year horizon. This highlights the potential of fake news to act as a key driver of the business cycle. These results survive a battery of robustness checks.

Disagreement rather than Uncertainty. Our baseline identification rests on the idea that the issuance of fake news creates confusion and in turn greater uncertainty in the economy complicating the forecast of economic agents. Accordingly, we have relied on the macroeconomic uncertainty index developed by Jurado et al. (2015) to identify our fake technology news shock. In addition, we dive into another potential channel of transmission of the shock: disagreement. By its very nature, fake news is controversial and can lead to increased disagreement among agents regarding, among other things, future economic outcomes.

Figure 2 shows the IRFs that closely resemble those of our benchmark model. Amplified disagreement manifests as a decline in industrial production and a surge in unemployment. In line with our benchmark findings, the fake technology news shock accounts for a substantial share of business cycle volatility: about 65% for unemployment and 62% for industrial production at the one-quarter horizon. We take this as further evidence that fake technology news shocks sow confusion and disagreement among agents.

Figure 2: **Disagreement VAR**

Notes. The black solid line shows the IRFs of the model variables to a fake technology news shock. Instead of the the 1-month ahead Jurado et al. (2015) macroeconomic uncertainty index, we include a measure of disagreement in the VAR (using micro-data from the Survey of Consumer Expectations, published by the New York Fed). Shaded areas represent ± 1 standard deviation around average response obtained from 1,000 Bootstrap replications.

Fake News impacts the broader economy. Expanding beyond the core economic indicators presented in Figure 1, our research dives deeper into critical sectors such as consumption, labor, and finance, uncovering the extensive impact of fake news on economic behavior. We find that fake news influences these various facets of economic activity. Specifically, we show that fake technology news shocks explain a sizeable share of both durable and non-durable goods consumption expenditures, as well as services. Following a fake technology news shock, consumers tend to cut their spending. This downturn extends to the labor market — both hours worked and job openings fall after the shock. Additionally, it impacts financial markets with stock prices decreasing amidst increased volatility. Inflation and inflation expectations initially dip, as does the monetary policy interest rate, but quickly revert to their long-run value. Finally, credit spreads and risk premiums increase, suggesting the occurrence of market confusion and higher investor risk aversion. Overall, fake technology news shocks play a significant role in shaping fluctuations, highlighting the pervasive impact of fake news on economic stability and behavior.

It's the economic supply-side Fake News that matters. Notably, the study uncovers nuanced differences in the economic response to different types of fake news. Specifically, we find that supply-side fake news, covering topics like technology, taxes and gas prices, exerts significant influence on economic outcomes. However, fake news focusing on other aspects of the economy – such as labor markets, government spending, or financial regulation – fails to yield statistically significant impacts (see Figure 3).

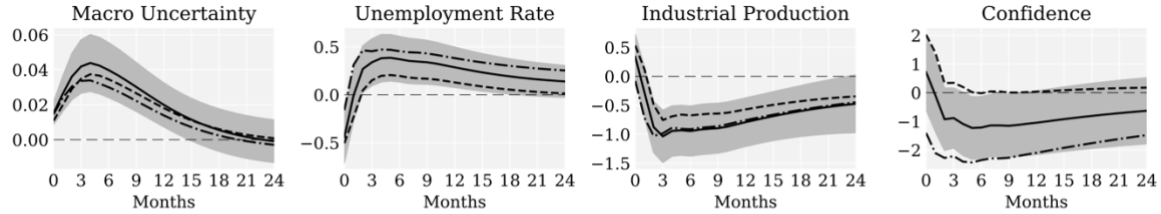
Figure 3: **Comparing the Economic Impact of Supply-side vs. other type of Fake-News**

Notes. The black solid line shows the IRFs of the benchmark model variables to a fake technology news shock, the dashed line the IRFs to a fake labor market news shock, the dash-dotted line the IRFs to a fake government news shock, and the dotted line the IRFs to a fake financial regulation news shock. Shaded areas represent ± 1 standard deviation around average response obtained from 1,000 Bootstrap replications.

This result does not necessarily indicate that these types of fake news do not impact the economy. Rather, it suggests that these types of fake news do not influence the economy through our mechanism – that of macroeconomic uncertainty. For example, we show that government fake news issuance is fundamentally related to the (fixed) electoral cycle, which is totally predictable in the U.S. and therefore does not affect macroeconomic uncertainty. This underscores the importance of understanding the diverse channels through which different types of fake news shapes economic dynamics.

The asymmetric impact of Fake Technology News shocks. Moreover, our research highlights the role of "news sentiment" in amplifying the economic impact of fake news. We find that fake technology news shocks with a negative tone account for a greater share of the volatility of macroeconomic uncertainty, the unemployment rate, and industrial production than those with a positive tone. Figure 4 illustrates that the influence of negative fake technology news shocks on key economic indicators outweighs that of positive ones. In addition, we find that negative fake technology news shocks trigger a significant persistent consumer confidence loss, while the same shocks identified on positive news induce a very short-lived surge in confidence. Hence, fake (negative) technology news increases not only uncertainty but also instils a sense of pessimism that positive fake news fails to counteract.

Figure 4: **Comparing the Economic Impact of Positive vs. Negative Fake News**



Notes. This VAR includes the Michigan Confidence Index, in addition to the benchmark variables. The solid black line shows the IRF of the model variables to a fake technology news shock, the dashed line the IRFs to a positive sentiment fake technology news shock, the dash-dotted line the IRFs to a negative sentiment fake technology news shock. Shaded areas represent ± 1 standard deviation around average response in the VAR featuring all fake technology news obtained from 1,000 Bootstrap replications.

In Conclusion, our research offers insights into the economic ramifications of fake news, shedding light on its systemic importance. While specific policy recommendations lie beyond the scope of our paper, our findings emphasize the need to recognize that fake news poses challenges not only to social and political stability but also to economic stability. However, current policy-related analyses and discussions largely focus on the political and societal consequences of fake news, such as its detrimental effects on democratic processes (see IMCO & EU code of practice on disinformation). Our research contributes to this ongoing discourse by shedding light on the adverse economic implications of fake news. Moreover, it suggests that policymakers, particularly those in economic and financial realms, could benefit from monitoring the prevalence of fake economic news, especially when it pertains to the supply side of the economy.

References

Assenza, T. and Huber, S. J. (2024). The Fake News Atlas. Data retrieved from the *Assenza-Huber Fake News Atlas*. https://www.fakenewsatlas.org

Assenza, T. and Collard, F. and Fève, P. and Huber, S.J. (2024). From Buzz to Bust: How Fake News Shapes the Business Cycle. CEPR Working Paper, no 18912.

Campante, F, R Durante and A Tesei (eds) (2023), 'The Political Economy of Social Media', CEPR Press, Paris & London. https://cepr.org/publications/books-and-reports/political-economy-social-media

Nicolò Fraccaroli, Roberto Volpe, Michele Cantarella. VoxEU Column "The effect of fake news on populist voting: Evidence from a natural experiment in Italy", 11 JUL 2019.

Sergei Guriev, Emeric Henry, Theo Marquis, Ekaterina Zhuravskaya. VoxEU Column "Evaluating anti-misinformation policies on social media", 10 DEC 2023.

IMCO (2018). Societal costs of "fake news" in the Digital Single Market. *Study requested by the European Parliament (IMCO Committee)*.

Kilian, L. and Lütkepohl, H. (2018). Structural Vector Autoregressive Analysis. Number 9781107196575 in Cambridge Books. Cambridge University Press.

Andrea Mattozzi, Samuel Nocito, Francesco Sobbrio. VoxEU Column "Politicians' response to fact-checking: Evidence from a randomised experiment with a leading fact-checking company", 26 Feb 2023.

Asuman Ozdaglar, Daron Acemoglu. VoxEU Column "Misinformation: Strategic sharing, homophily, and endogenous echo chambers",30 Jun 2021.

Stock, J. H. and Watson, M. W. (2012). Disentangling the channels of the 2007-09 recession. *Brookings Papers on Economic Activity*, 43(1 (Spring)):81–156.

Stock, J. H. and Watson, M. W. (2018). Identification and Estimation of Dynamic Causal Effects in Macroeconomics Using External Instruments. *Economic Journal*, 128(610):917–948.

Ekaterina Zhuravskaya, Sergei Guriev, Emeric Henry, Oscar Barrera. VoxEU Column "Fake news and fact checking: Getting the facts straight may not be enough to change minds", 2 NOV 2017.

WEF (2024). The Global Risks Report 2024. *World Economic Forum*.

Endnotes

[1] *"The task of separating truth from falsehood has plagued policymaking for centuries [...] Today, this task of distilling the truth is more urgent than ever."* So was Christine Largarde, 4th president of the European Central bank, expressing her concern about the rise of fake news in a speech in November 2019.

[2] *"Nothing can now be believed which is seen in a newspaper. Truth itself becomes suspicious by being put into that polluted vehicle. The real extent of this state of misinformation is known only to those who are in situations to confront facts within their knowledge with the lies of the day."* (Thomas Jefferson, Letter to John Norvell, 14 June 1807)