

How Animal Spirits Affect the Economy

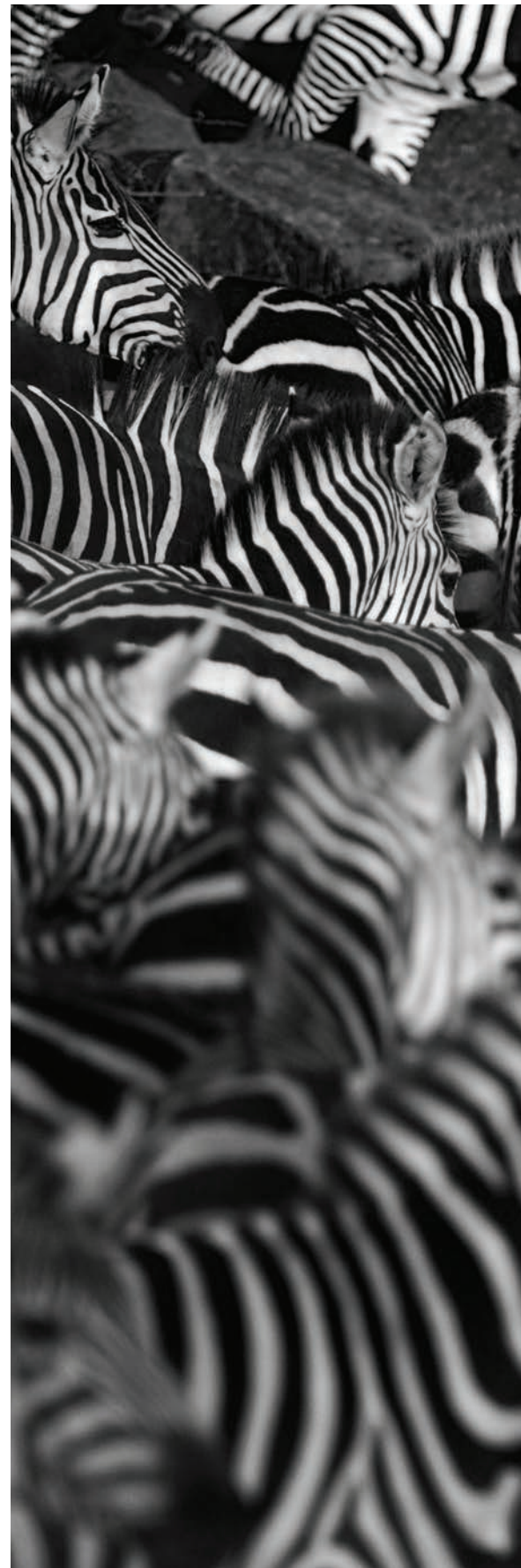
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VIRAL NARRATIVES COULD BE THE MISSING LINK BETWEEN EMOTIONS AND ECONOMIC FLUCTUATIONS

Storytelling is central to how we interpret economic events. We recall economic history through haunting images of anxious crowds waiting to take money out of banks during the Great Depression or dejected office workers carrying cardboard boxes out of Lehman Brothers in 2008. We gauge inflation by comparing shopping baskets with friends and family. We grapple with the consequences of artificial intelligence by channeling our hopes and fears into science fiction.

But do stories themselves influence the economy? This idea has a long precedent in economic thought. John Maynard Keynes wrote extensively about how “animal spirits”—instincts and emotions that influence behavior—prompt people’s economic actions, like spending or investing in

A zebra herd gathers on the bank of the Mara River, Kenya.





businesses. He argued that these herd emotional urges lie at the heart of economic booms and busts.

Taking this idea one step further, Robert Shiller, an economist at Yale University, has pushed for a more detailed study of economic narratives—the contagious stories that shape how individuals view the economy and make decisions. Shiller hypothesizes that sufficiently popular narratives can go viral and have society-wide impact (Shiller 2020).

Viral narratives could be the missing link between emotions and economic fluctuations. But policymakers, researchers, and practitioners alike currently lack effective tools to identify these narratives, measure their contagiousness, and quantify their contribution toward economic events.

We made a first attempt to understand the macroeconomic consequences of narratives in a recent paper (Flynn and Sastry 2024). We introduced new tools for measuring and quantifying economic narratives and used these tools to assess their importance for the US business cycle. Our findings suggest that narratives play a central role. They also raise fresh questions about how and why such stories emerge and what policymakers might do differently in such a world.

Natural language processing

To measure narratives, we use resources not available to Keynes: large textual databases of what economic decision-makers are saying and natural-language-processing tools that can translate these words into hard data.

The key datasets we study are the text of US public firms' conference calls, typically held every quarter to review financial results, and Form 10-K filings, regulatory reports filed with the US Securities and Exchange Commission each year. Both are outlets for company management not just to report company results but to offer explanations: They fill in the *how* and *why* of business results and offer clues to how management and investors are thinking about broader trends.

To identify narratives, we apply a variety of natural language techniques. These range from simple dictionary-based methods that scan for keywords and phrases to more complex algorithmic methods that uncover less structured topics. The narratives we uncover pertain to varied topics, such as firms' general optimism about the future, their excitement about artificial intelligence, or their adoption of new digital marketing techniques. Using this database, we can empirically model the extent to which narratives drive firms' decisions and the process by which such stories spread in the US economy.

“A detailed understanding of the origins, spread, and economic consequences of narratives could significantly change how we collect information about the economy and tell the story of the business cycle’s ups and downs.”

Shaping business decisions

We find that companies with more optimistic narratives tend to accelerate hiring and capital investment. In particular, the pace of hiring at a company that uses optimistic language increases by 2.6 percentage points more in a year than a comparable company that uses pessimistic language. This effect is above and beyond what would be predicted by firms' productivity or recent financial success. These results challenge conventional economic theories, which suggest that these fundamentals, and the “rational” expectations about the future that they embody, should entirely explain firms' economic decisions.

Strikingly, firms with optimistic narratives do not see higher stock returns or profitability in the future and also make overoptimistic forecasts to investors. This suggests that narratives do not simply capture positive news about the future. In this way, firms' optimistic and pessimistic narratives bear the hallmarks of Keynes's animal spirits: forces that drive managers to expand and shrink their businesses but are based on emotions rather than fundamentals.

The data also support the idea that narratives spread contagiously, like a virus. That is, companies tend to adopt the narratives of their peers: When one company adopts an optimistic mood or starts

talking up the transformative power of AI, others seem to follow suit. This narrative contagion seems to start within groups of peer firms that directly compete in the same industry and then spread to the aggregate level. Moreover, there is an especially large effect for narratives that arise at large companies. This raises the possibility that large companies are thought leaders in the narrative economy, with more influence than traditional measures of market power might suggest.

Macroeconomic impact

To interpret these results, we developed a macroeconomic model in which contagious narratives spread between firms. Because narratives are contagious, they draw out economic fluctuations: Even a one-time shock to the economy can have long-lasting effects, because a negative mood infects the population and holds back business activity.

Sufficiently contagious narratives that cross a virality threshold can induce a phenomenon we call *narrative hysteresis*, in which one-time shocks can move the economy into stable self-fulfilling periods of optimism or pessimism. In these scenarios, there is a powerful feedback loop: Economic performance feeds a narrative that reinforces the economic performance. These findings underscore the importance of measurement to pin down exactly how much narratives affect the economy.

How strong are the narratives driving the US economy? Using our model and our empirical measurements, we estimate that narratives explain about 20 percent of fluctuations in the US business cycle since 1995. In particular, we estimate that narratives explain about 32 percent of the early 2000s recession and 18 percent of the Great Recession of 2008–09. This is consistent with the idea that contagious stories of technological optimism fueled the 1990s dot-com bubble and mid-2000s housing bubble. Contagious stories of collapse and despair led to the corresponding crashes.

While the overall mood of the US economy seems to fluctuate slowly around a long-term average, individual narratives—like those surrounding new technologies—tend to be more volatile. These granular narratives are much more likely to go viral and fully infect the population, our research shows. In other words, a constellation of fast-moving fears and fads contributes to the relatively stable behavior of aggregate economic sentiment.

Policy implications

Our analysis suggests that contagious narratives are an important driving force in the business cycle. But it also qualifies this conclusion in important ways. Not all narratives are equal

in their potential to shape the economy, and the fate of a given narrative may rest heavily on its (intended or accidental) confluence with other narratives or economic events.

How should policymakers act in a narrative-driven economy? Our analysis has at least three major conclusions, which also suggest future directions for both academic and policy research.

First, what people say is highly informative about both individual attitudes and broader trends in the economy. Public regulatory filings and earnings calls contain lots of valuable information already. Both policymakers and researchers can use improved machine learning algorithms and data processing tools to analyze this information. There are possible implications for how researchers and governments collect information, too. The same data science advances have increased the value of novel surveys that allow households or businesses to explain the “why” behind their attitudes and decisions (Andre and others 2024).

Second, some narratives are more influential and contagious than others. It is therefore important to combine descriptive studies measuring narratives with empirical analysis of their effects on decisions and their spread throughout populations.

Third, the narratives introduced by policymakers have the potential for significant impact. We know relatively little about what makes a policy narrative into a great story: Why, for example, did Mario Draghi’s unscripted remarks about doing “whatever it takes” make a much more compelling story than similar statements by other central banks?

The study of narrative economics is still in its infancy. But a detailed understanding of the origins, spread, and economic consequences of narratives could significantly change how we collect information about the economy and tell the story of the business cycle’s ups and downs. **F&D**

DATA

20%

Macroeconomic narratives explain about 20 percent of fluctuations in the US business cycle.

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