Financial and Uncertainty Shocks

Marco Brianti (~~Boston College~~ Lockdown)

discussed by

Stephen J. Terry (~~Boston University~~ Lockdown)

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The Difficulty in Macro

"The difficulty in macroeconomics is that virtually every variable is endogenous."
  - Narayana Kocherlakota, 2009

So how do we figure out what happened?

▶ Was it a TFP shock?
▶ A financial shock?
▶ A demand shock?
▶ An uncertainty shock?
▶ ...or something else?

The answer matters from an academic standpoint (because macroeconomists can't let stuff like this go) and from a policy standpoint (because the optimal response may differ).

What's So Hard?

Why is it hard to tell one shock apart from another?

Shocks are Unobservable
Unless it's COVID-19, you can't put a macro shock under a microscope and spot it directly.

$\rightarrow$ So you typically need a theoretical model to back them out based on the structure and observable data.

Shocks Can Mimic One Another
E.g., GDP may move similarly in response to different shocks.

$\rightarrow$ That's the problem Marco tackles head on.

Marco's Problem

Financial and uncertainty shocks are tricky little devils.

Financial shocks increase borrowing costs, resulting in

- ▶ lower investment
- ▶ lower debt issuance
- ▶ lower GDP
- ▶ higher credit spreads

Uncertainty shocks increase risk, resulting in

- ▶ lower investment
- ▶ lower debt issuance
- ▶ lower GDP
- ▶ higher credit spreads

Uh oh...

Marco's Solution

He finds an outcome that moves differently in response to financial vs uncertainty shocks.

In Marco's model **liquidity**, which you can think of as something like cash reserves at firms,

- ▶ goes **down** after financial shocks as firms draw down their reserves, but
- ▶ goes **up** after uncertainty shocks as firms increase their savings buffers.

In principle, liquidity can therefore disentangle the shocks.

A time-honored, respectable approach!
Even the crazy I.O. people do this type of thing. E.g., if quantity declines, observing price helps to disentangle supply vs demand.

What Marco Does

Builds a model

Builds a VAR identification strategy

Analyzes empirical uncertainty vs financial shocks

Marco's Model

- ▶ Households save, supply labor, and own everything
- ▶ Intermediaries convert household savings to firm lending
- ▶ Continuum of firms borrow in debt, hold cash reserves, invest, and potentially default
- ▶ Financial shocks gum up intermediation
- ▶ Uncertainty shocks increase iid TFP dispersion and default risk
- ▶ + other RBC model details

$\rightarrow$ Stuff aggregates, solvable in Dynare

$\rightarrow$ Liquidity increases after uncertainty shocks, but liquidity declines after financial shocks (relative to total assets)

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Marco's VAR Strategy

$$Y_t = A + BY_{t-1} + \eta_t, \quad \eta_t = C\varepsilon_t$$

▶ How do you figure out C and hence ε_t?

▶ Informally, how do you get around the fact that "shocks can move endogenous variables similarly?"

▶ Marco chooses C so that
  ▶ Financial shocks decrease liquidity and increase spreads
  ▶ Uncertainty shocks increase liquidity and spreads
  ▶ Financial and uncertainty shocks are orthogonal

$\rightarrow$ intuitively, just a clever formalization of the simple idea "look at shifts in liquidity to tell the two macro shocks apart"

$\rightarrow$ very nicely validated against the theoretical model, in which it works like a charm for simulated data

What Marco Does

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FINANCIAL VS UNCERTAINTY
SHOCKS IN THE DATA

▶ Takes his model-validated VAR for a spin in US data

▶ Both financial and uncertainty shocks are contractionary

▶ Financial shocks explain more variation in output

▶ Uncertainty shocks are deflationary or "demand like" while financial shocks are inflationary

$\rightarrow$ Monetary policymakers shouldn't treat the two shocks in the same manner.

My Thoughts

A really great paper

Dispersion, credit spreads, & disaggregated data

Tightening up the implications

A Really Great Paper

▶ Marco attacks a classic, big picture problem in macro.

▶ Quite satisfying to see the strong toolkit combining

   1. a highly coherent model,

   2. a novel, validated VAR strategy,

   3. and tight empirical results.

▶ Marco also sweats the details, showing the care that you'd desire and expect in a well executed job market paper.

▶ It was a pleasure to read, and I learned a lot.

Seriously, this is a very nicely done paper.

My Thoughts

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Tightening up the implications

Leverage More Variation

▶ Cross-sectional dispersion also directly varies with uncertainty shocks in your model, so you shouldn't stop at liquidity ratios.

▶ Time series are always short, so you can exploit micro variation on the right hand side and not just the left hand side.

Some data I had lying around...

▶ Mergent FISD + TRACE: primary and secondary market micro data on the universe of US corporate bonds

▶ Compustat: US listed firm financial micro data, annual

A four-digit industry $\times$ year panel

▶ "Uncertainty" $\approx$ cross-sectional standard deviation of sales growth

▶ "Financial distress" $\approx$ mean credit spread

▶ Mean liquidity ratio

▶ Spans 286 four-digit industries over 2002-2018 with 3,523 industry-years

LEVERAGE MORE VARIATION

	(1)	(2)	(3)
Dep. Var	Liquidity Ratio	Liquidity Ratio	Liquidity Ratio
Uncertainty	4.724***	4.769***	4.251***
	(1.33)	(1.33)	(1.266)
Spread	-0.986***	-1.191**	-0.800*
	(0.377)	(0.508)	(0.436)
Year FE?		X	X
2-Digit Sector FE?			X
Industry-Years	3523	3523	3523
Years	2002-18	2002-18	2002-18
Industries	286	286	286
Within R2	0.151	0.154	0.135

Note: Liquidity ratio outcome in percentage points, i.e., 1=1%.
Uncertainty and spread measures normalized to unit standard deviation.
Standard errors clusterd at the industry level.

Your story goes through, but you've got 3,523 industry-years rather than 140 quarters!

My Thoughts

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Tightening up the implications

Tightening up the "So What?"

▶ In order to exert this much effort to identify uncertainty vs financial shocks, you need a compelling reason.

▶ Nick Bloom, Susanto, and Pablo's obsessions with uncertainty aren't nearly enough on their own...

▶ Your empirical results on inflation, and the suggestive link to monetary policy, are a very nice start.

▶ But the lack of nominal rigidities in your neoclassical makes the link a bit strained.

▶ There's plenty of time left, why not just add the New Keynesian bit to the existing structure?

▶ Everything would likely go through perfectly, but your conclusion would be tighter.

**Awesome paper,
nicely done!!**