

Lecture 4B: Vector Autoregression (VAR) — Empirical Example

Vitor Possebom

EESP-FGV

Econometrics 2

- Recommended Reading: Hamilton's Chapters 10.1, 10.2, 10.5, 11.1, 11.4-11.6
- Problem Set 3 - Deadline: June 4th at 9:00 am

Does Monetary Policy Have Real Effects?

Does Monetary Policy Have Real Effects?

We want to analyze the impulse responses of a set of macroeconomic variables to a monetary policy shock.

To identify the relationship between those macroeconomic variables, we will use the method described by Christiano et al. [1999].

Does Monetary Policy Have Real Effects?

We collected quarterly data from 1959Q1 to 1995Q2 about the U.S. economy.

Our variables of interest are:

- GDP87: Real GDP at 1987 prices
- USAPGDP: Implicit GDP deflator with $1987 = 1$
- PCOM: Smoothed change in an index of commodity prices
- FF: FED funds rate
- NBR: Nonborrowed reserves plus extended credit
- TOTR: Total reserves
- M_AGG: A money aggregate, where AGG can be M1, M2, MB.

Does Monetary Policy Have Real Effects?

Our discussion will use the R file `code01-var-example.R`.

Does Monetary Policy Have Real Effects?

Our discussion will use the R file `code01-var-example.R`.

One implicit assumption in any *VAR* model is that the true coefficients are constant over time. To explore this assumption's validity, we break our sample in two and analyze the results in files `code02-half01.R` and `code02-half02.R`.

Does Monetary Policy Have Real Effects?

Our discussion will use the R file `code01-var-example.R`.

One implicit assumption in any *VAR* model is that the true coefficients are constant over time. To explore this assumption's validity, we break our sample in two and analyze the results in files `code02-half01.R` and `code02-half02.R`.

If we look at the structural response of GDP87 to a shock in FF, we see that these graphs differ a lot from each other.

It seems that the implicit assumption that the true underlying model is constant over time is not valid.

Thank you!

Contact Information:

Vitor Possebom

E-mail: vitor.possebom@fgv.br

Website: sites.google.com/site/vitorapossebom/

References

- L. J. Christiano, M. Eichenbaum, and C. L. Evans. Chapter 2 — Monetary policy shocks: What have we learned and to what end? volume 1 of *Handbook of Macroeconomics*, pages 65–148. Elsevier, 1999. doi: [https://doi.org/10.1016/S1574-0048\(99\)01005-8](https://doi.org/10.1016/S1574-0048(99)01005-8). URL <https://www.sciencedirect.com/science/article/pii/S1574004899010058>.