ECON 210C Homework 2

Zorah Zafari

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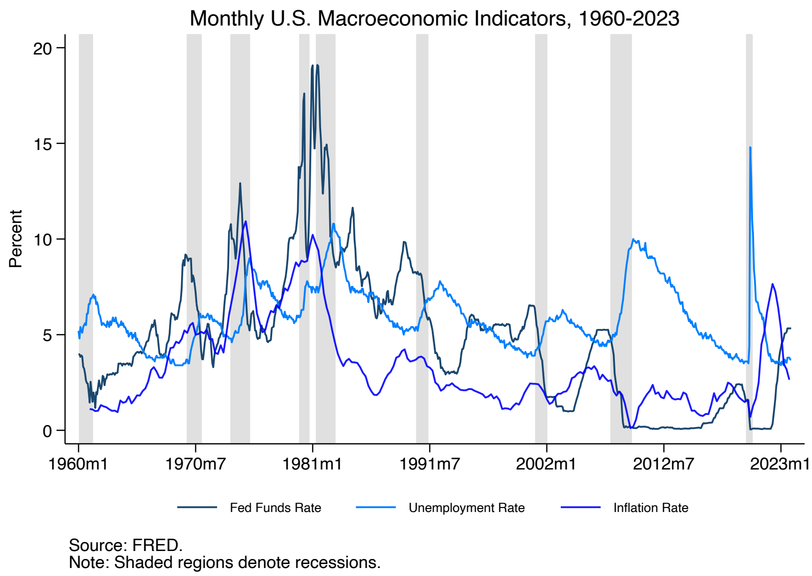
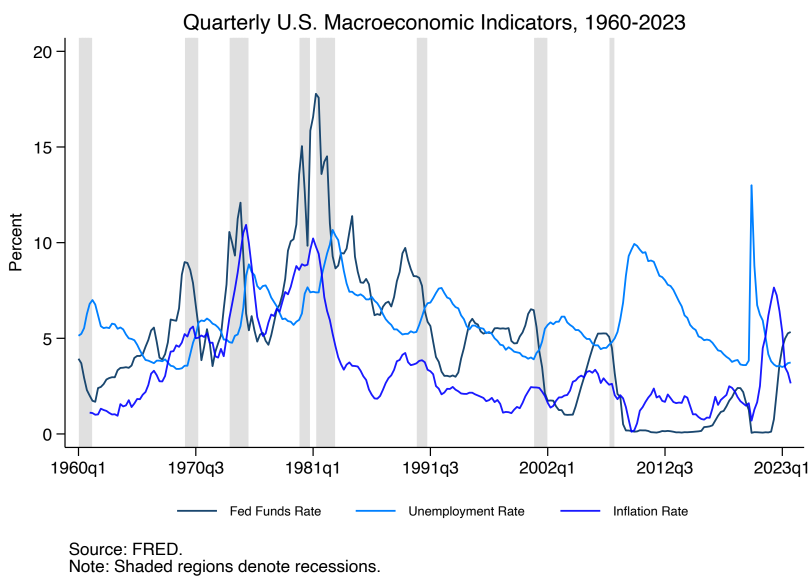
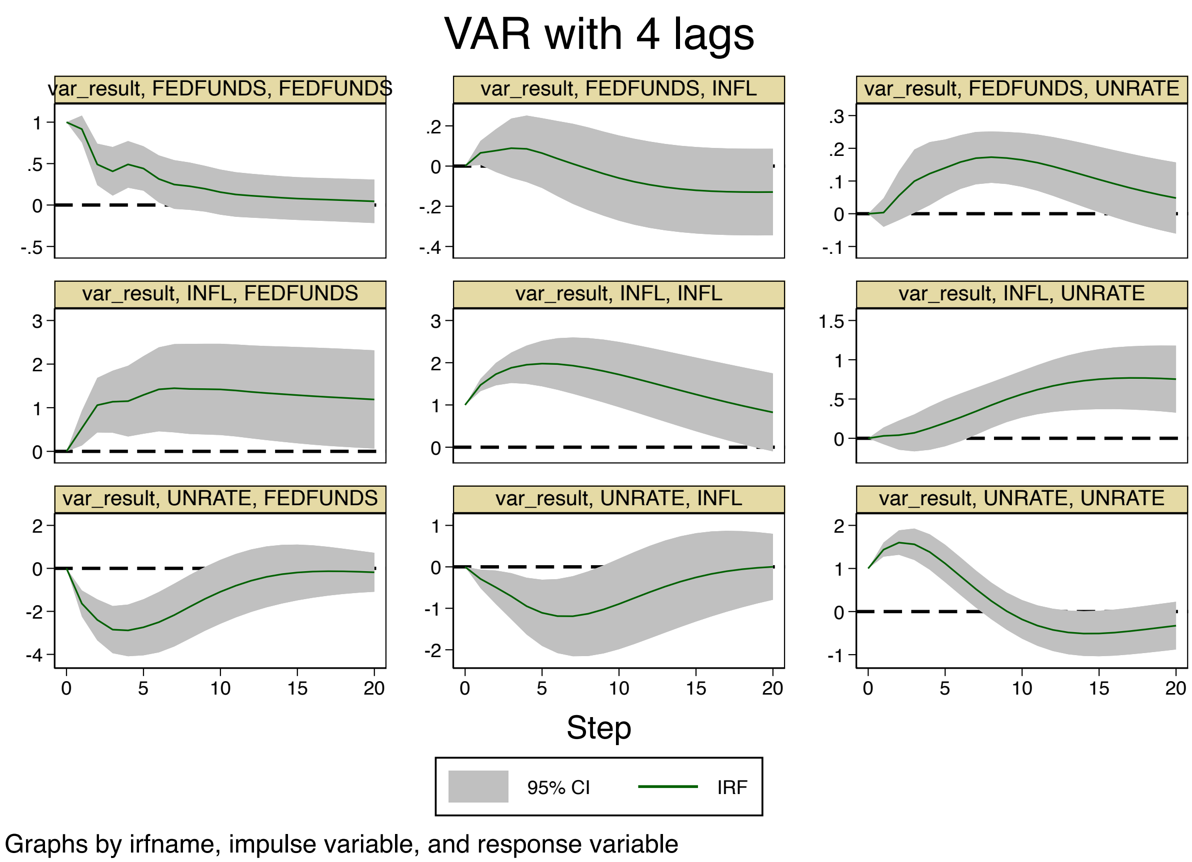
1 VARs

1.1 Plot raw data





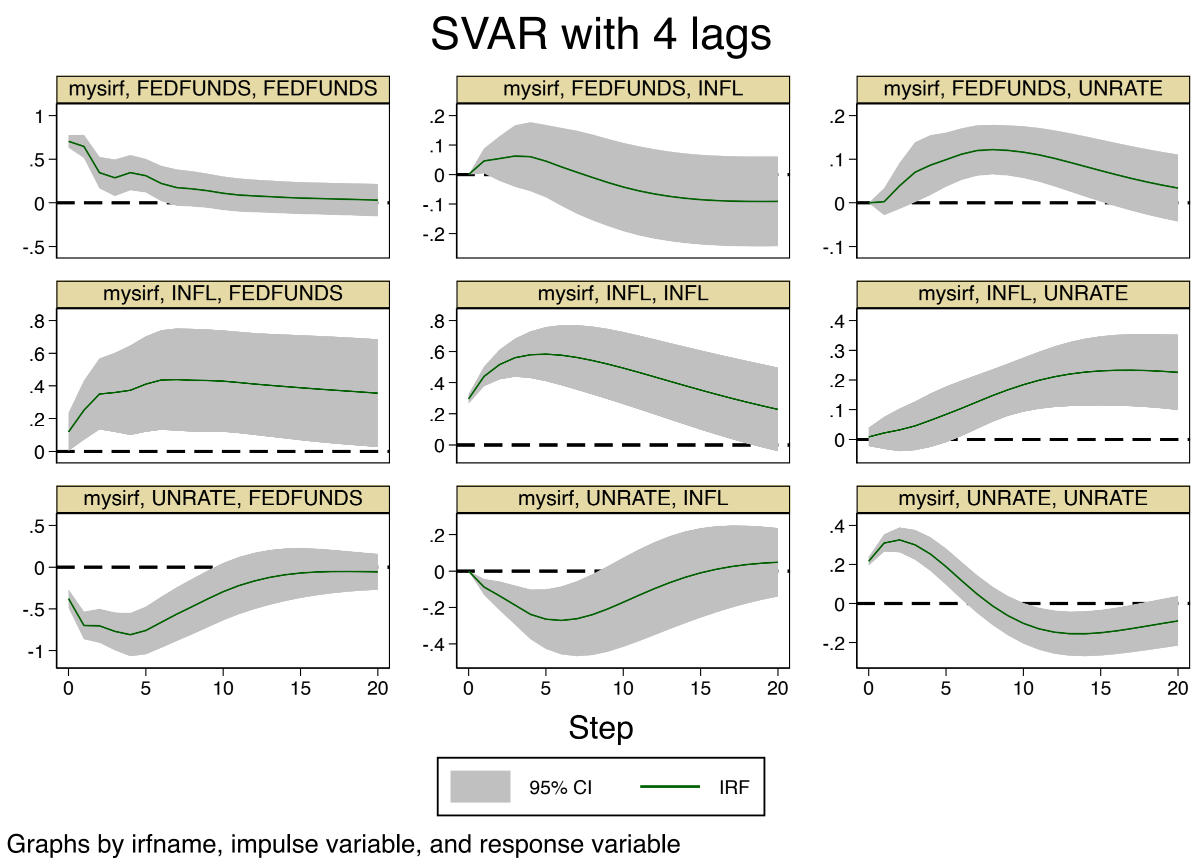
1.2 Estimate VAR with 4 lags from 1960Q1-2007Q4



1.3 Explain why it would make sense to end the sample in 2007Q4?

The reason why we would conclude the sample at the end of 2007 because of the onset of the Great Recession in 2008. The Great Recession would complicate the analysis for many reasons. The time series might not remain stationary throughout the entire sample period and there could be a structural shift in the data generating process, which would impact the results of the VAR estimation. The VAR analysis might also misinterpret the financial crisis as an endogenous shock even though it was an external shock.

1.4 Estimate SVAR with 4 lags from 1960Q1-2007Q4



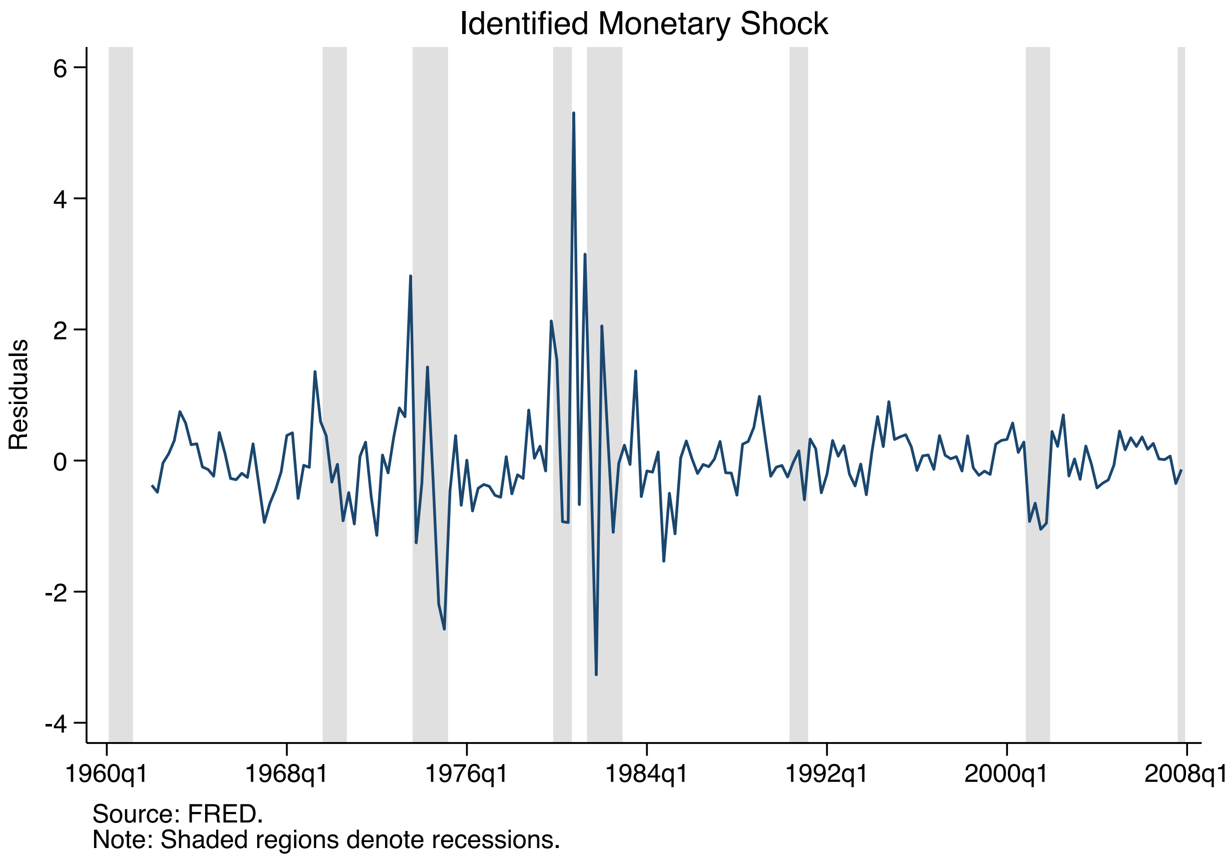
1.5 Briefly, interpret your results.

- Shocks to FedFunds: If there is shock to federal funds rate then inflation and unemployment rate might increase. For inflation, its a slight increase initially but then it starts going down. These results make sense intuitively, if interest rates decrease then inflation might up go up and employment decreases since firms' demand for worker might decrease in the short run.

- Shocks to Inflation: If inflation increases then interest rates increase and unemployment increases. I think its typical that the Fed increases interest rates to curb inflation.

- Shocks to Unemployment Rate: If unemployment increases then the fed responds by decreasing interest rates to stimuluate the economy. You can see that in the graphs a shock to unemployment corresponds to an initial decrease in interest rates and inflation before they go back to their normal levesl as unemployment stabilizes.

1.6 Plot the time series of your identified monetary shocks.

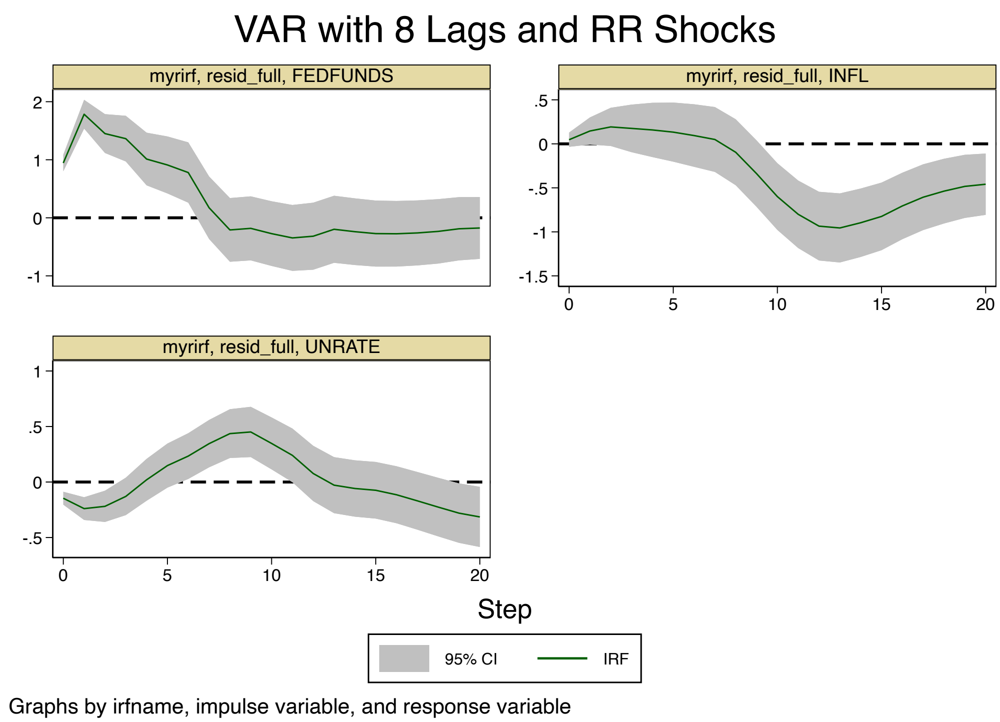


1.7 What are the identified monetary shocks in 2001Q3 and 2001Q4? How should one interpret these shocks?

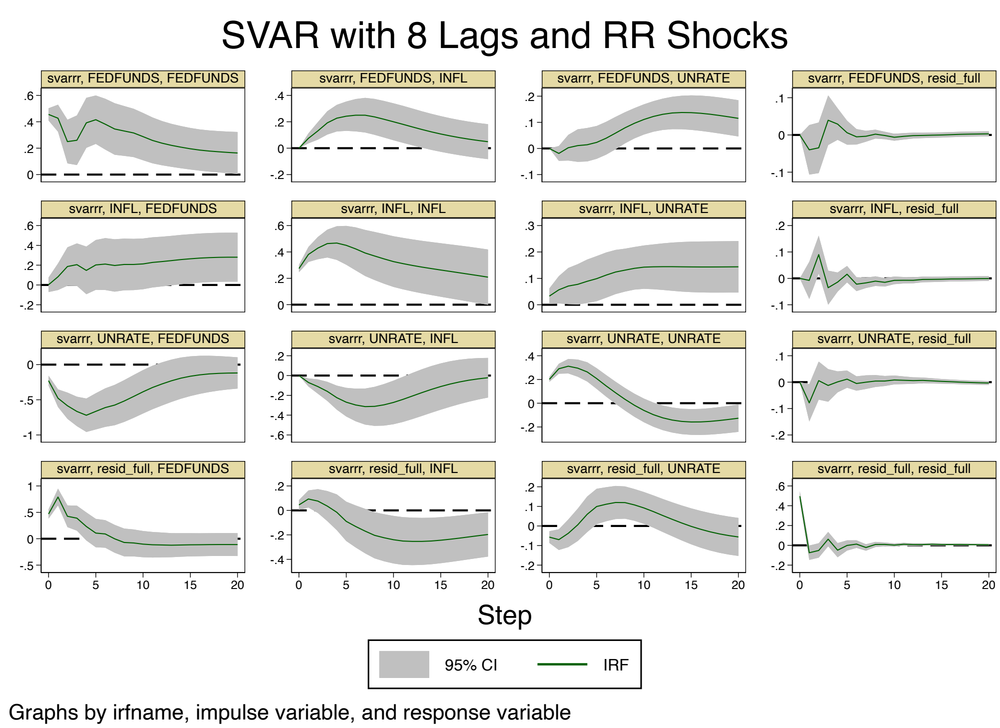
These shocks probably correspond to 9/11. The event that took place on 9/11 was an exogenous shock to the economy which garnered an endogenous response from the Fed. They decreased interest rates to increase aggregate demand.

2 Romer Shocks

2.1 Romer-Romer IRF VAR



2.2 Romer-Romer IRF SVAR



2.3 Why is it sensible to order the Romer shock first in the VAR?

It is sensible to order the Romer shock first in the VAR since they are the most exogenous variables and are unlikely to be affected by the other variables in the model contemporaneously. The Romer approach is to identify exogenous monetary shocks by using historical record to argue what changes in policy were unexpected. The Romer shocks will also have a contemporaneous effect on interest rates, inflation, and unemployment.

2.4 Compare the IRFs for the Romer shocks from the first two methods. How are they different and why?

For the SVAR method, there is contemporaneous impact of both inflation and Romer shcok on unemployment. Inflation is also influenced contemporaneously by the Romer shocks. The magnitude of the effects are slightly highers. The VAR only includes lagged terms. The Romer shocks on all the variables of interest are larger in magnitude in the VAR than SVAR. This is might be because it accounts for contempraneous shocks in the impulse variables that might be omitted from the VAR but are related to previous and potentially future realization of the Romer shocks.

2.5 Compare the VAR IRFs for the Romer Shocks with the VAR IRFs for the SVAR shocks in 1d. How are they different and why?

While in part 1d the impact of interest rates on inflation is very small, when we include the Romer shocks, they become much more significant. I think the Romer shock accounts for endogeniety and movements due to anticipation effects so the dynamics change with the Romer shock!

2.6 Compare the Romer-Romer the identified monetary shocks in 2001Q3 and 2001Q4 with the SVAR identified monetary shocks. How are they simillar or different?

The shock effects are still there but the magnitude is smaller than the SVAR identified monetary shock. I think this is because the SVAR shocks are related to the economy and fed forecasts in response to 9/11. The Romer-Romer shocks would be more exogenous and it also considered the FED forecast of the downward revision because of the exogenous attack.