Problem 4 You will be required to write an executable code for this problem. You are free to use any programming language though Stata, R and SAS are preferred in that order. Quarterly deposit and credit data is publicly available from the Reserve bank of India.

Download the quarterly district-wise data on deposits for public and private sector banks between 2008-09: Q4 to 2009-10:Q4. Use https://dbie.rbi.org.in/ and download the data from the Time-Series Publications > Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks. Public sector banks are the bank groups \SBI AND ITS ASSOCIATES"/\NATIONALISED BANKS". For private sector banks the bank groups are \PRIVATE SECTOR BANKS". In the 2008 September, private sector banks witnessed deposit outflows. Our goal is to see what happened to the public sector bank deposits in the districts that witnessed these panic outflows.

Please provide the output from (c) to (g) in your write-up.

a) Calculate the growth in deposits at the district level between 2008-09:Q4 to 2009-10:Q4 separately for private and public sector banks (PSBs).

b) Designate the bottom tercile of growth of private sector banks as districts having had panic outflows and the rest as having had no panic outflows.

c) What was the corresponding mean deposit growth for public sector banks in districts which had private sector banks panic outflows?

d) Plot the deposit growth of public sector banks against private sector banks separately for

* Districts that had panic outflows
* Districts that had no panic outflows

e) Using either Stata or R: show 4 maps (heat maps) with the following:

* Deposit growth for PSBs.
* Deposit growth for Private sector banks
* Deposit growth for all banks.

f) Find the t-test of the di\_erence in deposit growth rate for private and public sector banks for:

* PSB and public sector banks that had panic outflows.
* PSB and public sector banks that had no panic outflows.
* The t-test of the di\_erence between a. and b. Do you know what empirical strategy this corresponds to?

g) Credit Growth

* Write an appropriate regression model, including the possible control variables, to check what variables affect credit growth. Please explain, giving concrete reasons, why your regression model is appropriate.
* Repeat d) and e) for credit growth. Note, panics still correspond to districts which had lowest tercile of deposit growth.