Replication Files for Deposit Competition and Financial Fragility: Evidence form the U.S. Banking Sector

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I. Data Sets:

deposit_data_final.dta: This data file contains quarterly bank balance sheet and income statement data for the banks in our sample over the period Q12002-Q32013. The data file is constructed from the FDIC's Statistics on Depository Institutions data using the Stata program "create_deposit_data_final.do." The data file is used to estimate demand for deposits and calibrate the model in the Stata program "demand_estimates_final.do."

cds_to_hazard.dta: This data file maps CDS prices into annual default probabilities. The default probabilities are calculated assuming a constant hazard into default as per Hull (2012). The data file is constructed using the .R program "Calculate Default Prob from CDS.R." The data file is used to estimate demand for deposits and calibrate the model in the Stata program "demand_estimates_final.do."

monthly_swaps_and_treasuries_rates.dta: This data file contains LIBOR, Constant Maturity Swap, and Constant Maturity Treasury rate data at various tenors. The data reflects the monthly average rate. The data comes from the Federal Reserve Bank of St. Louis's FRED data. The data file is used to estimate demand for deposits and calibrate the model in the Stata program "demand_estimates_final.do."

depost_rate_data_1yr_cd_wide.dta: This data file contains deposit rate data for the banks in our sample. The data is proprietary and can be obtained from RateWatch. The data file is constructed using the Stata program "create_deposit_data_final.do." The data file is used to estimate demand for deposits and calibrate the model in the Stata program "demand_estimates_final.do."

monthly cds.dta: This data file contains CDS data for the banks in our sample. The data is proprietary and can be obtained from Markit. The data file is constructed using the Stata program "create_deposit_data_final.do." The data file is used to estimate demand for deposits and calibrate the model in the Stata program "demand_estimates_final.do."

calibration params final.csv: This data file is used to calibrate the model and run the counterfactual analysis in the paper (Tables 4-6, A1-A5). The data file contains the relevant estimated demand parameters and the bank income/balance sheet data used to calibrate the model. The data file is the key input to the .R programs used in the counterfactual analysis. The data file is constructed using the Stata program "demand_estimates_final.do."

II. Stata Programs

demand_estimates_final.do: This Stata program summarizes the data (Table 1), estimates demand for deposits (Tables 2-3), and constructs the data set used to calibrate the model and run counterfactuals ("calibration params final.csv"). The program uses the files "deposit_data_final.dta", "cds_to_hazard.dta", "monthly_swaps_and_treasuries_rates.dta", "deposit_rate_data_1yr_cd_wide.dta", and "monthly cds.dta." The program constructs the data set "calibration params final.csv."

create_deposit_data_final.do: This Stata program constructs the data sets "deposit_data_final.dta", "cds_to_hazard.dta", "deposit_rate_data_1yr_cd_wide.dta", and "monthly cds.dta" from their source data files.

III. R Programs

Overview: The folder "Calibration and Counterfactuals" contains the .R files needed to calibrate the model and run the counterfactual analysis in the paper. All of the .R programs utilize the data set "calibration params final.csv." The folder "Calibration and Counterfactuals" contains seven folders corresponding to each model variant (Sections 5-8 in the paper).

Calibration and Counterfactuals\Baseline: The program "Bank Calibration and Counterfactuals - Baseline – 06202016.R" calibrates the baseline model, searches for multiple equilibria, and is used to construct Tables 4, 6, A1, and A2. Once the user runs the program "Bank Calibration and Counterfactuals - Baseline – 06202016.R," the user can run the file "capital_req_figures_baseline_06_20_2016.do" to construct Figure 5. The program "Bank Calibration and Counterfactuals - FDIC Limit Counterfactuals – 06202016" calculates the FDIC insurance limit and risk limit counterfactuals (Tables 5 and A3).

Calibration and Counterfactuals\CR: The program "Bank Calibration and Counterfactuals - CR – 06202016.R" calibrates the model and searches for multiple equilibria under the assumption that banks initially face an 8% capital requirement. This program is used in the construction of Table 6. Once the user runs the program "Bank Calibration and Counterfactuals - CR – 06202016.R," the user can run the file "capital_req_figures_cr_06_20_2016.do" to construct Figure 6(a).

Calibration and Counterfactuals\TBTF 50: The program "Bank Calibration and Counterfactuals – TBTF 50 – 06202016.R" calibrates the model and searches for multiple equilibria under the assumption that banks are too big to fail. This program is used in the construction of Table 6. Once the user runs the program "Bank Calibration and Counterfactuals – TBTF 50 – 06202016.R," the user can run the file "capital_req_figures_50_TBTF_06_20_2016.do" to construct Figure 6(b).

Calibration and Counterfactuals\Ins Run: The program "Bank Calibration and Counterfactuals – Ins Run – 06202016.R" calibrates the baseline model and searches for multiple equilibria under the assumption that insured depositors are run prone ($\gamma^I = 0.5\gamma$). This program is used in the construction of Table 6. Once the user runs the program "Bank Calibration and Counterfactuals – Ins Run – 06202016.R," the user can run the file "capital_req_figures_ins_run_06_20_2016.do" to construct Figure 6(f).

Calibration and Counterfactuals\Issuance Costs: The program "Bank Calibration and Counterfactuals -Issuance Costs - 06202016" calibrates the model and searches for multiple equilibria under the assumption that banks face capital adjustment costs. We assume that banks face a capital adjustment cost (deadweight cost of external financing), which is proportional to the amount of funds injected with a constant marginal cost of 5%. This program is used in the construction of Table 6. Once the user runs the program "Bank Calibration and Counterfactuals – Issuance Costs – 06202016.R," the user can run the file "capital_req_figures_eq_iss_costs.do" to construct Figure 6(c).

Calibration and Counterfactuals\ EA (Iss) 50 TBTF CR: The program "Bank Calibration and Counterfactuals - EA (Iss) TBTF CR - 06202016" calibrates the model and searches for multiple equilibria under the assumption that banks face capital adjustment costs, an initial capital requirement of 8%, and are too big to fail. This program is used in the construction of Table 6. Once the user runs the

program “Bank Calibration and Counterfactuals – EA (Iss) TBTF CR – 06202016.R,” the user can run the file “cap_req_figures_eq_50_tbtf_cr_06_20_2016.do” to construct Figure 6(d) and 6(e).

Calibration and Counterfactuals\Baseline – Safe Assets: The program “Bank Calibration and Counterfactuals - CR Safe Assets – 06202016” calibrates the model and then searches for the multiple equilibria under the risk free capital requirement counterfactual. Once the user runs the program, “Bank Calibration and Counterfactuals - CR Safe Assets – 06202016”, the user can run the file “cap_req_figures_baseline_safe_assets_06_20_2016.do” to construct Figure 7.