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Narrow Replication of Ashcraft (2005): Are Banks Really Special?

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Abstract

This is a partly successful narrow replication of Ashcraft [2005] "Are Banks Really Special? New evidence from the FDIC-induced failure of healthy banks" published in the American Economic Review. Despite differences in the findings, the conclusion of the original paper is not called into question.

This replication is part of a research project on the replicability of empirical articles in economics.[1] A replication in the narrow sense by our means is a repetition of empirical research, using the same data sets as well as the same program codes as in the original article.

In his paper, Ashcraft [2005] investigates the macroeconomic costs of bank failures in the USA with new evidence from Federal Deposit Insurance Corporation (FDIC) induced failure of healthy banks. He argued that these banks failed after regulators declared its lead banks to be insolvent. These failures of healthy banks were not caused by pre-existing weakness in local economic activity, but had a significant and apparently permanent effect on real county income where the banks were active. Data and code have been provided in the online archive of the American Economic Review to replicate the published empirical findings and tables. Raw data as well as program code to create the final data set is not submitted, also data and code to create Figures 1A-1D. In the article the author gives information about the used data sets but only insufficient information about transformation of the raw data. As required by the AER Data Availability Policy, authors must provide a description of how intermediate data sets and programs were employed to create the final data sets.[2] Without more information from the author it was not feasible to create final data sets from raw data. The main tables of the article are Table 1 and Table 4. Table 1 shows the results of a OLS estimation of the effect of bank failures on real county income and based on a balanced panel of U.S. counties 1969–2000. It is replicable after a missing variable in the original data set is created (cf. appendix). The results of Panel A of Table 1 are identical to the results in the paper. In Panel B, some minor differences in the coefficients occur, but neither significance nor interpretation change. Table 4 is an OLS estimation of the effect of healthy bank failures on real county income. Panel A is a cross section of 240 Texas counties in 1992 and B is a cross section of 248 Texas counties in 1988. Panel B was successfully replicated after some unnecessary lines were left aside in the program code, (cf. appendix). By contrast, for Panel A the replication yields different results. The coefficients for the effect of the failure of healthy banks on real county income and their significance levels are overall smaller while the coefficients and significance levels for the failure of unhealthy banks are higher. In five cases, the coefficient of healthy bank failures is no longer significant. The evidence that healthy bank failures have significant and permanent effects on real economic activity is weaker than reported in the original paper but remains significant.

[1] http://ineteconomics.org/grants/replication-economics

[2] http://www.aeaweb.org/aer/data.php/

Appendix

A Tables

TABLE 1—OLS ESTIMATES OF THE EFFECT OF FAILURE ON REAL COUNTY INCOME

	Lead k of real county income						
	$k = 0$	$k = 1$	$k = 2$	$k = 3$	$k = 4$	$k = 5$	$k = 6$
Panel B. Ratio of failed deposits to income broken out across size and resolution type							
$\delta_k^{\text{small bank}}$	−0.1218***	−0.2085***	−0.2550***	−0.2310***	−0.2843***	−0.3519***	−0.3585***
	(0.0327)	(0.0414)	(0.0514)	(0.0617)	(0.0690)	(0.0798)	(0.0894)
Evaluated at $\theta_{c,t} = 0.15$	−1.83%	−3.13%	−3.83%	−3.47%	−4.26%	−5.28%	−5.38%
$\delta_k^{\text{large bank}}$	−0.0238	−0.0251	−0.0563	−0.0607	−0.0694	−0.0860	−0.0770
	(0.0289)	(0.0336)	(0.0418)	(0.0492)	(0.0536)	(0.0624)	(0.0694)
Evaluated at $\theta_{c,t} = 0.15$	−0.36%	−0.38%	−0.84%	−0.91%	−1.04%	−1.29%	−1.16%
$\delta_k^{\text{type II bank}}$	−0.0340	−0.0433	−0.0611	−0.0778	−0.0525	−0.0541	−0.0522
	(0.0307)	(0.0360)	(0.0450)	(0.0540)	(0.0583)	(0.0689)	(0.0769)
Evaluated at $\theta_{c,t} = 0.15$	−0.51%	−0.65%	−0.92%	−1.17%	−0.79%	−0.81%	−0.78%
$\delta_k^{\text{type III bank}}$	−0.0839	−0.1578**	−0.1583*	−0.2553**	−0.2750**	−0.1856	−0.2124
	(0.0580)	(0.0745)	(0.0882)	(0.1066)	(0.1237)	(0.1210)	(0.1401)
Evaluated at $\theta_{c,t} = 0.15$	−1.26%	−2.37%	−2.37%	−3.83%	−4.13%	−2.78%	−3.19%
Observations	88,798	85,724	82,650	79,576	76,502	73,428	70,356

Notes: The table reports coefficients and standard errors from OLS estimates of δ_k from equation (1) in the text: $\ln(y_{c,t+k}) = \sum_{j=1}^{3} \beta_j \ln(y_{c,t-j}) + \delta_k \theta_{c,t}$, where $\theta_{c,t}$ is equal to is the ratio of failed-bank deposits to county income. The data are a balanced panel of U.S. counties 1969–2000. In panel B, small failures are defined using the ninetieth percentile of the ratio of deposits to income. Type II failures refer to assisted mergers, while Type III failures refer to closures. Standard errors have been corrected for heteroskedasticity and clustered at the county level. Coefficients accented by one, two, and three asterisks are statistically significant at the 10-, 5-, and 1-percent levels, respectively.

Source: Ashcraft, 2005, p. 1718

Replication of Table 1 - OLS Estimates of the effect of failure on real county income

	Lead k of real county income						
	k=0	k=1	k=2	k=3	k=4	k=5	k=6
Panel B. ratio of failed deposits to income							
$\delta_k^{small\ bank}$	-0.1264***	-0.2190***	-0.2620***	-0.2393***	-0.2953***	-0.3623***	-0.3709***
	(0.0324)	(0.0412)	(0.0510)	(0.0614)	(0.0688)	(0.0794)	(0.0895)
evaluated at $\theta_{c,t=0.15}$	-1.90%	-3.29%	-3.93%	-3.59%	-4.43%	-5.44%	-5.56%
$\delta_k^{large\ bank}$	-0.0271	-0.0336	-0.0607	-0.0660	-0.0772	-0.0936	-0.0867
	(0.0283)	(0.0331)	(0.0411)	(0.0488)	(0.0531)	(0.0616)	(0.0694)
evaluated at $\theta_{c,t=0.15}$	-0.41%	-0.50%	-0.91%	-0.99%	-1.16%	-1.40%	-1.30%
$\delta_k^{type\ ||\ bank}$	-0.0313	-0.0361	-0.0578	-0.0730	-0.0454	-0.0463	-0.0425
	(0.0301)	(0.0356)	(0.0443)	(0.0536)	(0.0579)	(0.0682)	(0.0768)
evaluated at $\theta_{c,t=0.15}$	-0.47%	-0.54%	-0.87%	-1.10%	-0.70%	-0.70%	-0.64%
$\delta_k^{type\ |||\ bank}$	-0.0803	-0.1489**	-0.1533*	-0.2494**	-0.2666**	-0.1775	-0.2023
	(0.0577)	(0.0743)	(0.0878)	(0.1064)	(0.1235)	(0.1206)	(0.1401)
evaluated at $\theta_{c,t=0.15}$	-1.21%	-2.23%	-2.30%	-3.74%	-4.00%	-2.67%	-3.04%
Observations	88,798	85,724	82,650	79,576	76,502	73,428	70,356

TABLE 4—THE EFFECT OF HEALTHY-BANK FAILURE ON REAL ACTIVITY

	Lead of real county income						
	$k = 0$	$k = 1$	$k = 2$	$k = 3$	$k = 4$	$k = 4$	$k = 6$
Panel A. First City Bancorporation (cross section of 240 Texas counties in 1992)							
	Dependent variable: $ln(y_{t+k})$						
$\delta_k^{healthy}$	−0.0586*	−0.1126**	−0.2091***	−0.2346***	−0.2328**	−0.2207**	−0.2293*
	(0.0308)	(0.0437)	(0.0583)	(0.0761)	(0.1044)	(0.1080)	(0.1194)
Evaluated at $\theta_{c,t} = 0.15$	−0.0088	−0.0169	−0.0314	−0.0352	−0.0349	−0.0331	−0.0344
$\delta_k^{unhealthy}$	−0.1686***	−0.2746**	−0.1879*	−0.3158***	−0.5825***	−0.4016***	−0.4332***
	(0.0449)	(0.0710)	(0.1005)	(0.1190)	(0.1521)	(0.1277)	(0.1641)
Evaluated at $\theta_{c,t} = 0.15$	−0.0253	−0.0412	−0.0282	−0.0474	−0.0874	−0.0602	−0.0650
	Dependent variable: $\Delta ln(y_{t+k})$						
$\delta_{k,c}^{healthy}$	−0.0590*	−0.0665*	−0.0990**	−0.0292	−0.0100	0.0208	−0.0021
	(0.0314)	(0.0344)	(0.0333)	(0.0373)	(0.0420)	(0.0274)	(0.0320)
Sum of coefficients	−0.0590	−0.1255	−0.2245	−0.2537	−0.2637	−0.2429	−0.2450
Evaluated at $\theta_{c,t} = 0.15$	−0.0089	−0.0188	−0.0337	−0.0381	−0.0396	−0.0364	−0.0368
$\delta_k^{unhealthy}$	−0.1683***	−0.1024*	0.0872	−0.127*	−0.2634***	0.1783***	−0.0344
	(0.0451)	(0.0506)	(0.0653)	(0.0813)	(0.0658)	(0.0594)	(0.0758)
Sum of coefficients	−0.1683	−0.2707	−0.1835	−0.3105	−0.5739	−0.3956	−0.4300
Evaluated at $\theta = 0.15$	−0.0252	−0.0406	−0.0275	−0.0466	−0.0861	−0.0593	−0.0645

Notes: The table reports the coefficient estimate and standard error on $\delta_k^{healthy}$ and $\delta_k^{unhealthy}$ from estimation of equation (2) in the text:

$$Z_{c,t+k} = \alpha + \sum_{i=1}^{3} \beta_i Z_{c,t-j} + \sum_{i=1}^{3} \gamma_i x_{c,t-j} + \delta_k^{healthy}\theta_{c,t}^{healthy} + \delta_k^{healthy}\theta_{c,t}^{unhealthy} + \varepsilon_{c,t}$$

where $\theta_{c,t}^{healthy}$ and $\theta_{c,t}^{unhealthy}$ are the ratios of healthy and unhealthy failed-bank deposits to county income, respectively. In column k, the dependent variable $Z_{c,t+k}$ is either the level or change in the log of real county income k years after failure. Standard errors have been corrected for heteroskedasticity. Coefficients accented by one, two, and three asterisks are statistically significant at the 10-, 5-, and 1-percent levels, respectively.

Source: Ashcraft, 2005, p. 1727

Replication of Table 4 - The Effect Of Healthy Bank Failure On Real Activity

	Lead of real county income						
	k=0	k=1	k=2	k=3	k=4	k=5	k=6
Panel A. First City Bancorporation (cross section of 240 Texas counties in 1992							
	Dependent variable: $ln(y_{t+k})$						
$\delta_k^{healthy}$	-0.0374	-0.0797	-0.1315**	-0.1497**	-0.1378	-0.1347	-0.1537
	(0.0293)	(0.0407)	(0.0555)	(0.0736)	(0.1015)	(0.1070)	(0.1149)
evaluated at $\theta_{c,t=0.15}$	-0.0056	-0.0120	-0.0197	-0.0225	-0.0207	-0.0202	-0,0231
$\delta_k^{unhealthy}$	-0.1792***	-0.2716***	-0.2198**	-0.3942***	-0.6538***	-0.5023***	-0.5384***
	(0.0435)	(0.0744)	(0.1039)	(0.1239)	(0.1564)	(0.1318)	(0.1604)
evaluated at $\theta_{c,t=0.15}$	-0.0268	-0.0407	-0.0330	-0.0591	-0.0981	-0.0754	-0.0808
	Dependent variable: $\triangle \ln(y_{t+k})$						
$\delta_{k,c}^{healthy}$	-0.040	-0.0554*	-0.0538*	-0.0210	-0.0012	-0.0122	-0.0055
	(0.0295)	(0.0298)	(0.0316)	(0.0344)	(0.0402)	(0.0266)	(0.0296)
Sum of coefficients	-0.040	-0.0954	-0.1492	-0.1702	-0.1714	-0.1836	-0.1891
evaluated at $\theta_{c,t=0.15}$	-0.0600	-0.0083	-0.0081	-0.0032	-0.0001	-0.0018	-0.0008
$\delta_{k,c}^{unhealthy}$	-0.1787***	-0.0923*	-0.0511	-0.1753**	-0.260***	-0.1511**	-0.0384
	(0.0435)	(0.0538)	(0.0672)	(0.0778)	(0.0695)	(0.0598)	(0.0690)
Sum of coefficients	-0.1787	-0.2710	-0.3221	-0.4974	-0.7574	-0.9085	-0.9469
evaluated at $\theta_{c,t=0.15}$	-0.0268	-0.0139	-0.0077	-0.0263	-0.039	-0.0227	-0.0058

B Code

Table 1

In order to replicate Table 1 the following code must be inserted after line 3 in do-file table1.do:

tsset
gen lnyF1 = F.lny
gen lnyF2 = F2.lny
gen lnyF3 = F3.lny
gen lnyF4 = F4.lny
gen lnyF5 = F5.lny
gen lnyF6 = F6.lny
gen lnyF7 = F7.lny

Table 4 - Panel B

In order to replicate Table 4 - Panel B leave aside line 1-26 in do-file natex_fr.do.

References

Adam B. Ashcraft. Are Banks Really Special? New Evidence from the FDIC-Induced Failure of Healthy Banks. *The American Economic Review*, 95(5): 1712–1730, 2005.