"The Impact of the Dodd-Frank Act on Small Business"

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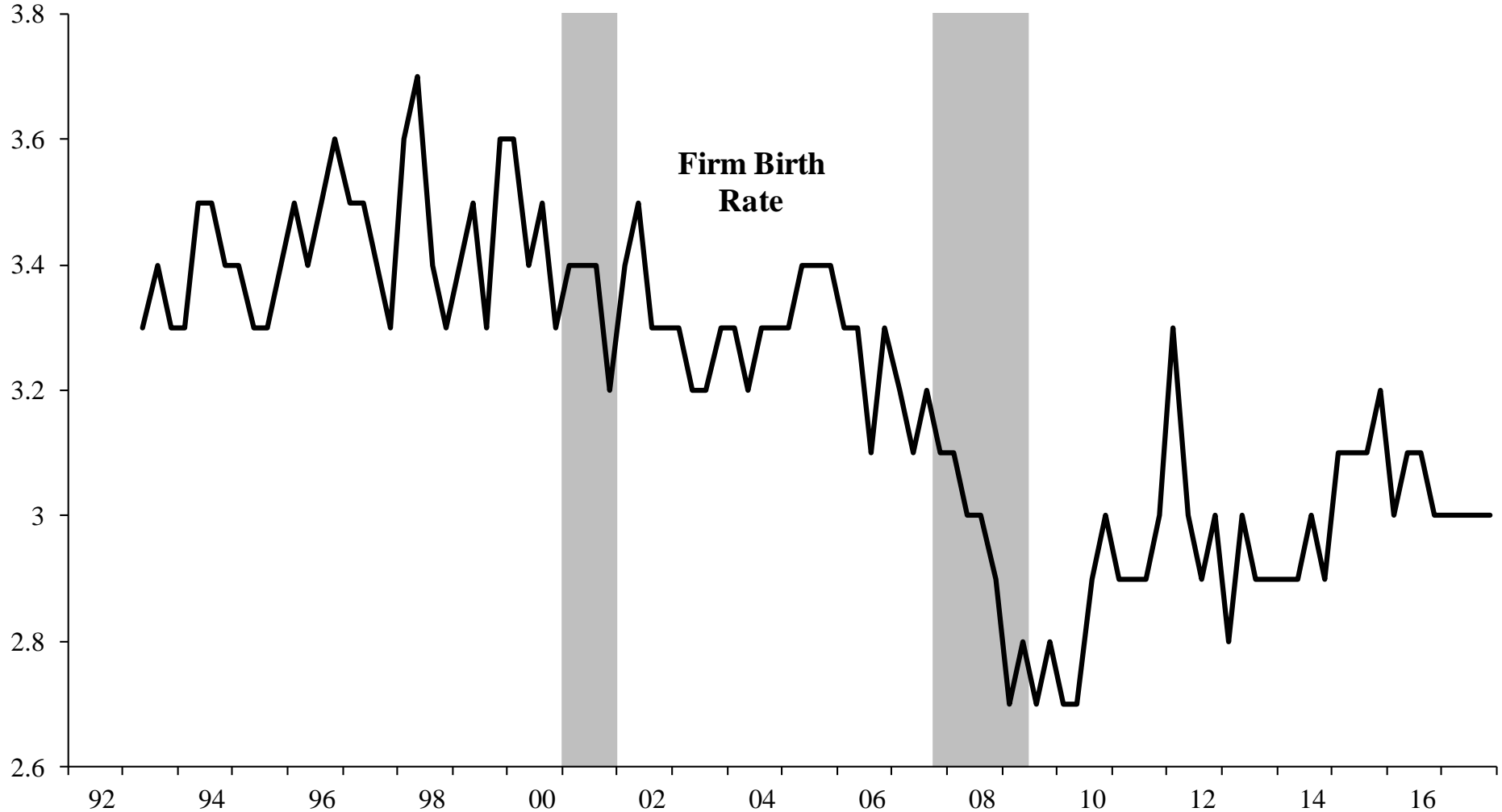## John V. Duca

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Introduction: Concerns About U.S. Recovery from the Great Recession

- Slower long-run U.S. growth, business formation (Decker, et al. '16)

Business Formation Sags Ahead of the Great Recession, and Has Not Fully Recovered

S.A. percent of number of
qtr. t-1 establishments

Firm Birth Rate

Shaded areas denote recessions. Sources: U.S. Bureau of Labor Statistics and authors' calculations.

# Introduction: Concerns About U.S. Recovery from the Great Recession

- Slower long-run U.S. growth, business formation (Decker, et al. '16)

- Economic recovery unusually slow, accompanied by weak bank loan growth and rapid consolidation among small banks.

- Dodd-Frank Act (DFA) reforms raise compliance costs:
  - Stress tests seem to add extra regulatory capital for small business loans
  - New reporting requirements on small bus. loans to minorities & women
  - Pressure to increase documentation of all loans—even very small ones
  - Cyree: DFA more staff (+.6%), 3 bps more costs, 8 bps less ROA

- Unintended consequence: hurt small business loans by:
  - reducing number of small banks that lend mainly to small firms
  - raising costs for making small loans for all sizes of banks.

Concerns About Small Business Loans

- Via both channels DFA may have impeded SME lending.
  - Cole (2018, 2012): bank-level data: falling share of small C&I loans 44% of new businesses used bank loan financing Kaufman data
  - Doerr (2018) stress tests lower home equity lending used by start-ups
  - Covas (2017) stress tests lower C&I and CRE loans to small firms, Cortes et al. (2018) find otherwise, using 2012-15 data
  - Chen, Hanson, & Stein (2017): (1) small business loan originations fell more for 4 largest banks and (2) in counties where they had large mkt share, not offset by other lenders and local economies worse
- Share of C&I loans < 1 million trendless pre-2010, but downshifted from 25 to 16 percent. Time series models: declines due to DFA.
- Surviving small businesses (NFIB data) report loan availability a problem during much of recovery from the Great Recession.
- New business formation unusually slow in the economic recovery, 2010 inflection in small business share of employment.

Figure 2: The Small Loan Share of C&I loans After the Dodd-Frank Act Passes

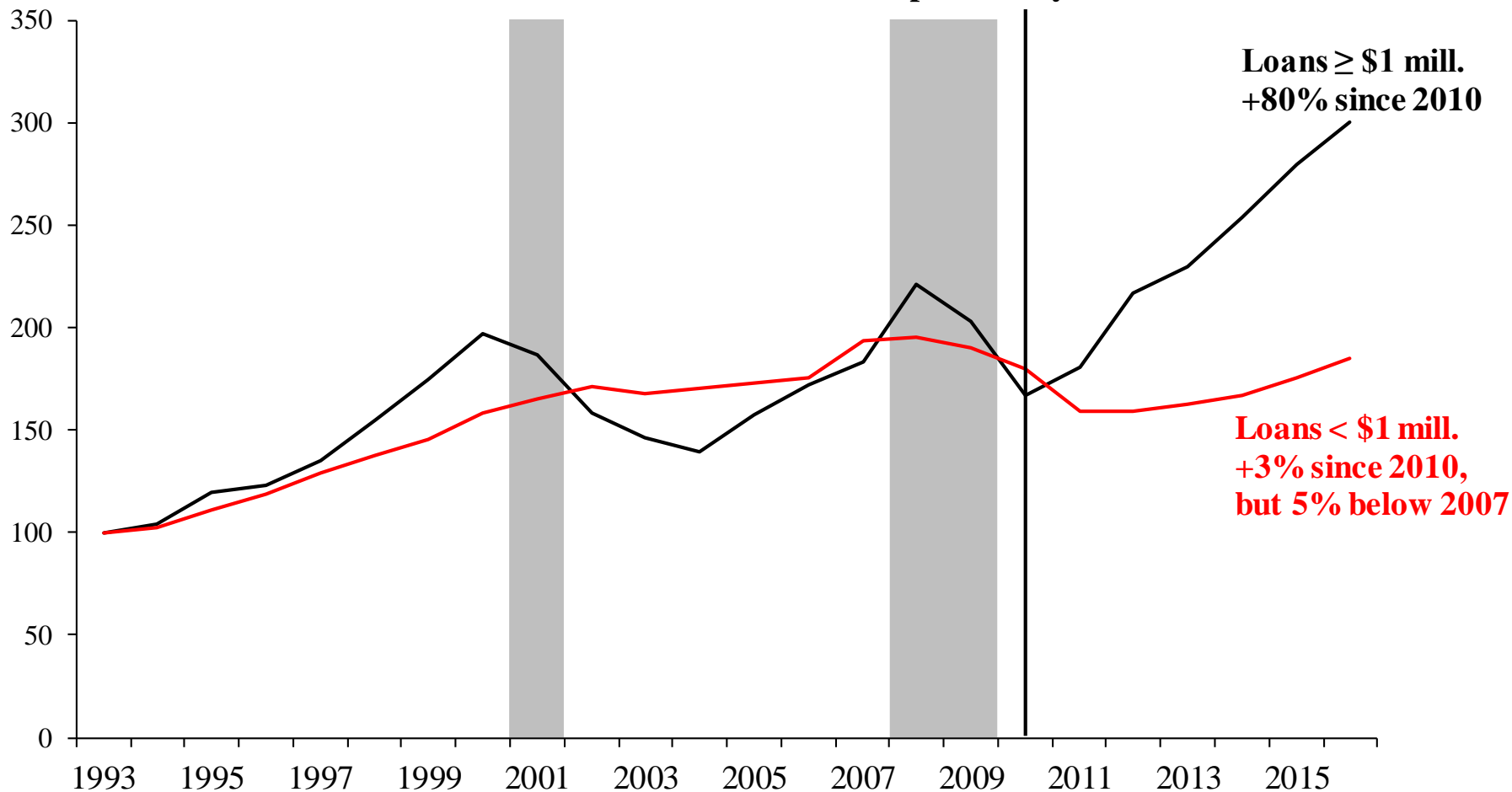percent of C&I loans at banks +300M in assets
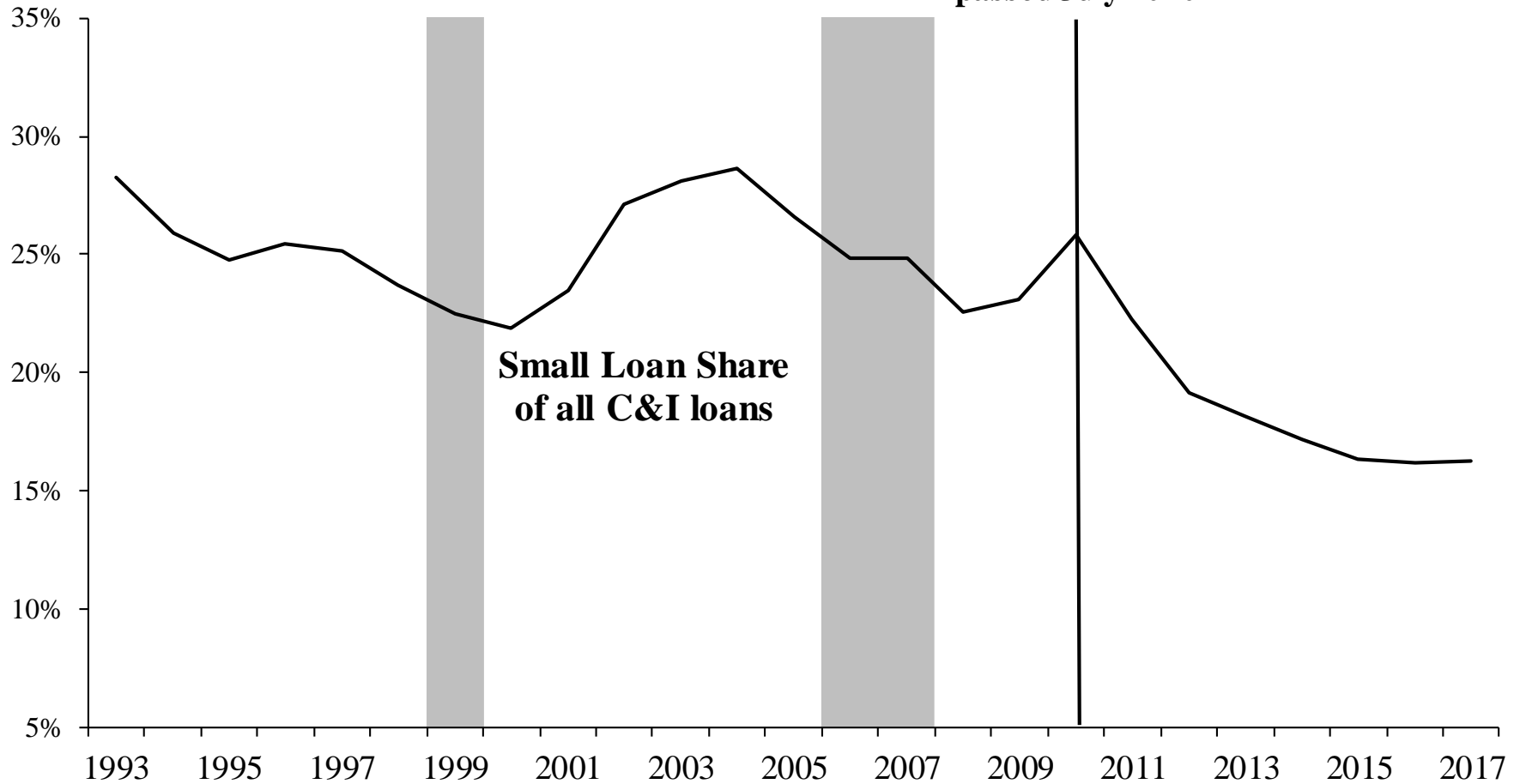
Dodd-Frank passed July 2010

Small Loan Share of all C&I loans

Sources: Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council, and authors' calculations. Shares at banks with assets of at least $300 million ($2004)—consistently available from 1993-2017. Shaded areas are recessions.

Figure 3: Small C&I Loans Trend Differently from Large Loans Since Dodd Frank is Passed

Real $2010
Index: 1993=100

**Dodd-Frank
passes July 2010**

**Loans ≥ $1 mill.
+80% since 2010**

**Loans < $1 mill.
+3% since 2010,
but 5% below 2007**

Sources: Bureau of Economic Analysis, Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council, and authors' calculations. Aggregate real loans at banks with assets of at least $300 million—consistently available from 1993-2016 and deflated with the CPI ($2004). Shaded areas are recessions.

Figure 4: Loan Availability for Small Businesses Unusually Weak in the Great Recession and the Recovery from it.

Small Business Credit Conditions
Loan Availability Compared to Three Months Ago

Net Percent of
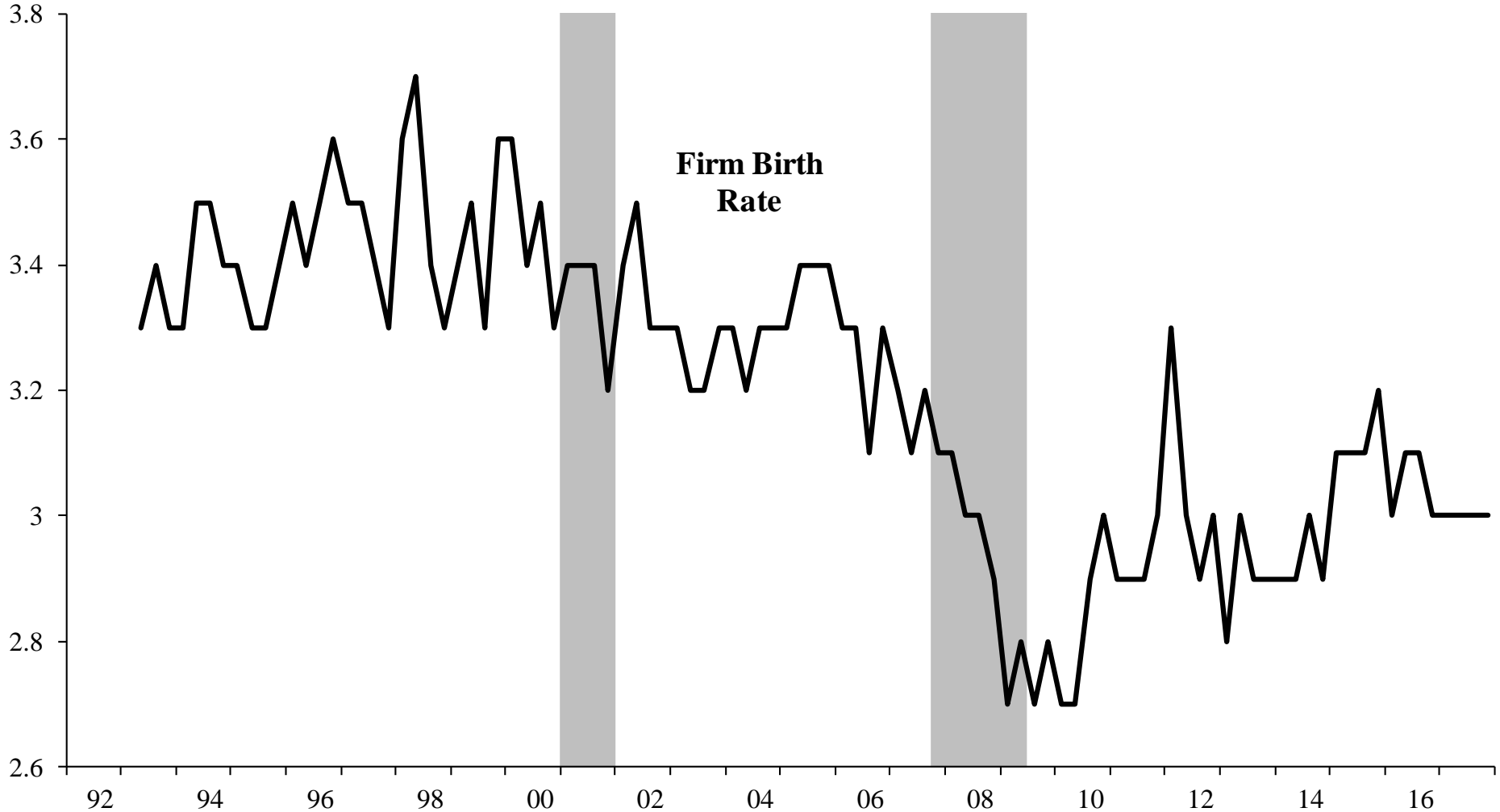Firms (SA)
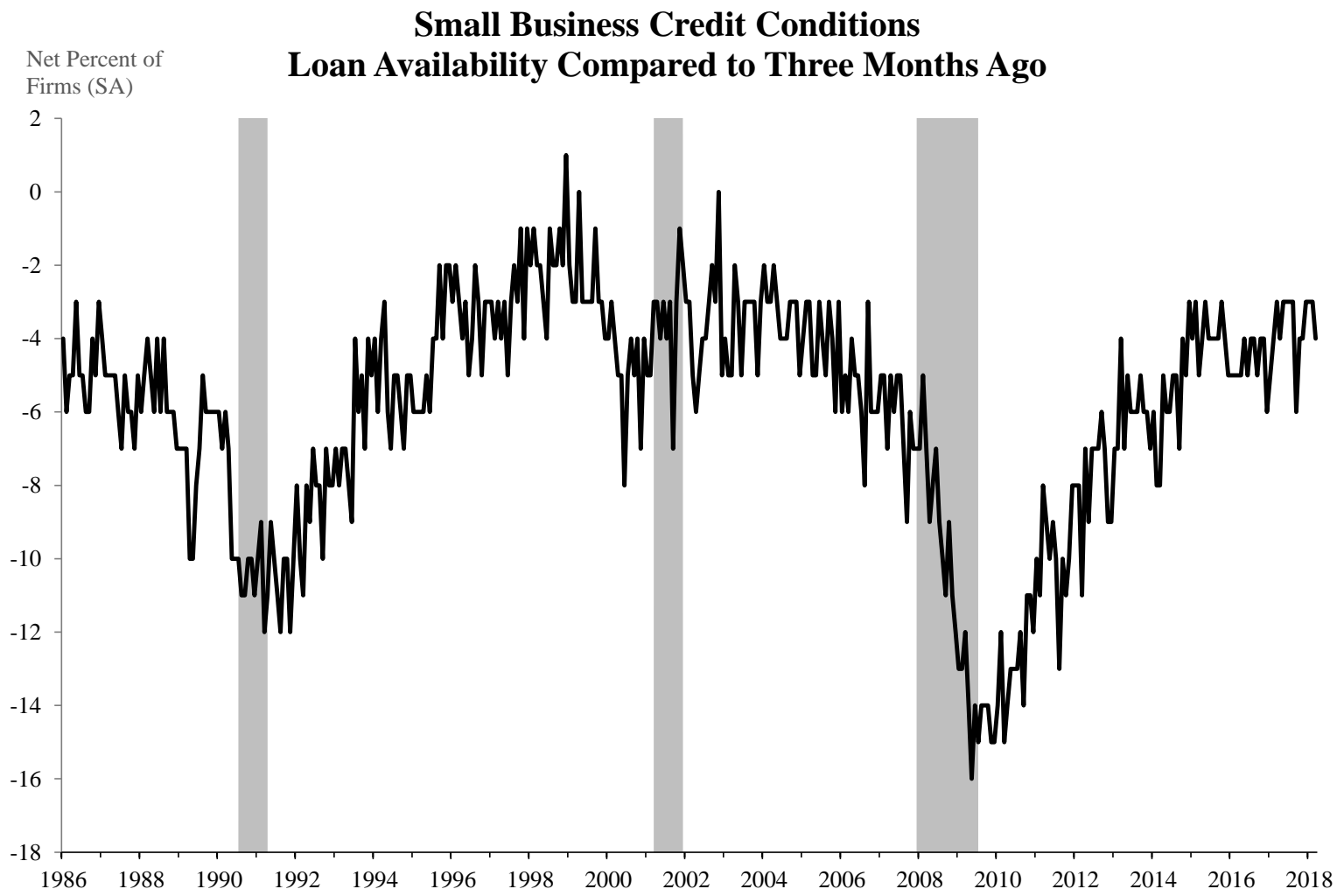
NOTE: Shaded bars indicate recessions.
SOURCES: National Federation of Independent Business; National Bureau of Economic Research.

Business Formation Sags Ahead of the Great Recession, and Has Not Fully Recovered

S.A. percent of number of
qtr. t-1 establishments

Firm Birth
Rate

Shaded areas denote recessions. Sources: U.S. Bureau of Labor Statistics and authors' calculations.

What this Paper Does

- Model annual share of C&I loans < $1M in size—use relative shares helps abstract from common effects on small and larger sized loans omitted from limited set of time series controls

  - Aggregate time series

  - Across banks with balance sheet controls, different size categories

- Assess credit supply effects: test if credit standards on C&I loans to small firms were tightened more than for large firms

- See downshifts in small business formation coincide with changes in financial regulation—DFA—and general regulation

Evidence from Small Loan Share of C&I Loans: Time Series Models of Aggregating by Bank Asset Size

Modeling Small-Sized Loan Share of C&I Loan Originations

- *SBShare:* share C&I loans <$1 mill., 3 bank classes > 300M in assets ($2004) owing to reporting requirement change in 2001:
  - All banks (with at least $300 million in assets, $2004)
  - $300 M to $1 B ($2004)
  - At least $1 B ($2004)
- Small loan share stationary 1993-2009, unit roots 1993-2017.
- Error-correction model of small loan share transition to DFA. *DFASB* = 0 until 2009, ½ in 2010, 1 after. S-run controls in X:

$$SBSH^e_t = \alpha_0 + \alpha_1 DFA_t + \varepsilon_t \tag{1}$$

$$\Delta SBSH_t = \beta_0 + \beta_1 EC_{t-1} + \sum \beta_{2i}\, \Delta SBSH_{t-i} + \sum \beta_{3i}\, \Delta DFASB_{t-i} + \beta_4\, X_{t-1} + \mu_t \tag{2}$$

$$EC \equiv SBSH_t - SBSH^e_t$$

Table 1: Results, Small-Loan Share of C&I Loans

- 1995-2017, models 1, 3, 5 omit s-run controls; models 1, 3 include: Baa-Tr, LEI, D2008; for small banks, only D2008 significant
  - Models 1 and 2 for "all banks"
  - Models 3 and 4 for "large banks"
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Figure 7: The Small Loan Share of C&I loans Falls After the Dodd-Frank Act
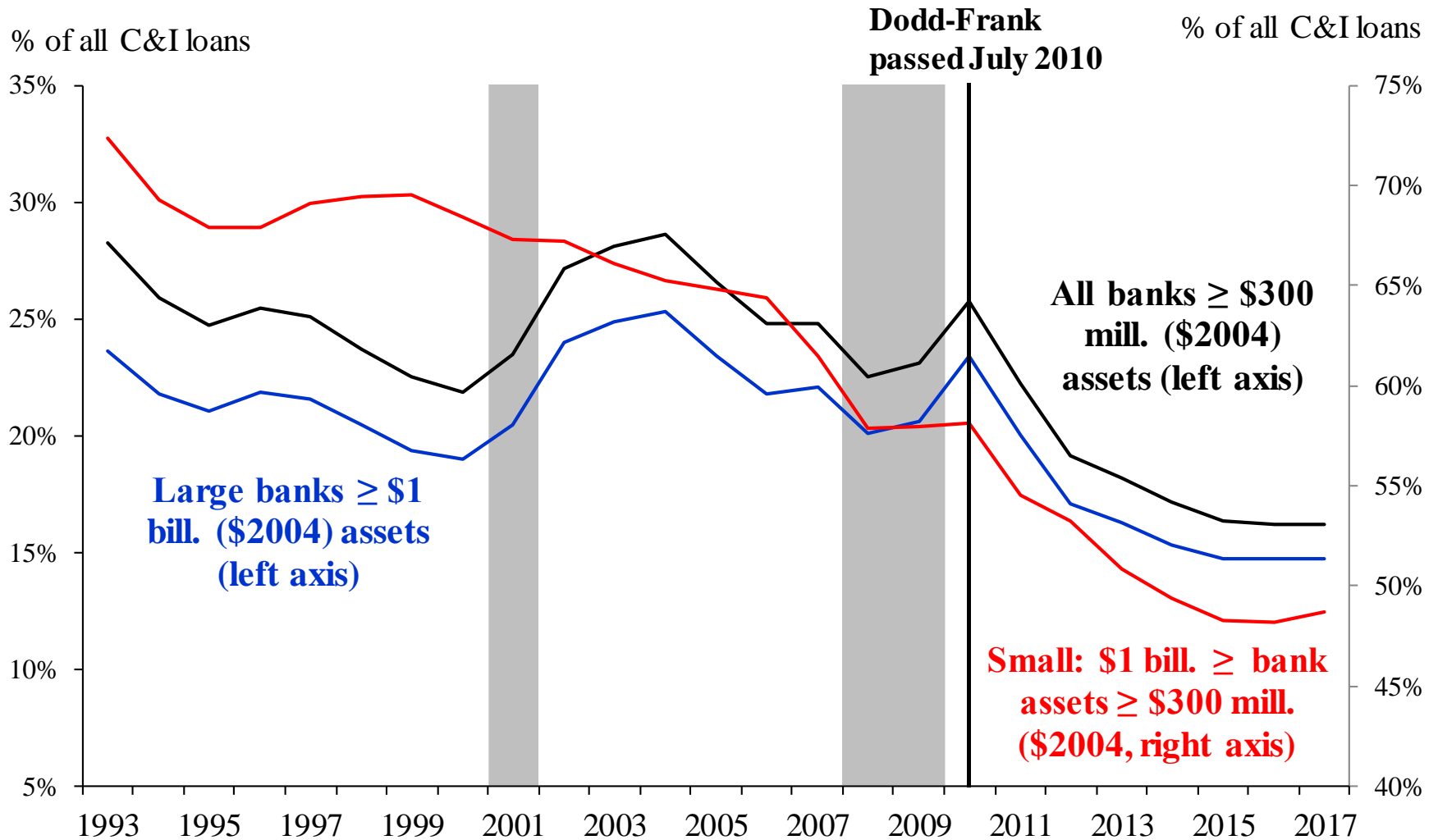
Sources: Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council, and authors' calculations. Shares at all banks are for those with assets above $300 million ($2004), small banks are at least as big but have assets below $1 billion ($2004) throughout the sample. Large banks have assets of at least $1 billion ($2004) for each year. Shaded areas are recessions.

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  - Models 1 and 2 for "all banks"
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- Significant, unique long-run relationship with s-run controls, and for small banks omitting controls. *DFA* has negative long-run effect.
- Significant EC: actual - equil. gap small loan share closes in 3-5 yrs.

Table 1: Annual Models of the Small-Sized Loan Share of C&I Loans, 1995-2017
Long-Run Equilibrium: $SBSH_t = \alpha_0 + \alpha_1 DFASB_t + \varepsilon_t$

Variables	All		Large (assets≥$1B)		Small (300M<assets<$1B)	
Model No.	1	2	3	4	5	6
Constant	0.2541	0.2617	0.2223	0.2294	0.8109	1.039
$DFASB_t$	-0.0795**	-0.1050**	-0.0649**	-0.0882**	-0.0932**	-0.0836**
	(7.14)	(11.95)	(4.37)	(11.02)	(8.50)	(10.56)
$Time_t$					-0.0054**	-0.0073**
					(7.71)	(11.09)
unique coint.	No	Yes**	No	Yes**	Yes**	Yes**
vec. # lags	2	2	1	2	1	1
trace no vec.	13.41	26.44**	15.49	24.75**	29.31**	43.63**
trace only 1	0.70	2.60	3.84	3.12	5.90	1.77

Short-Run: $\Delta SBSH_t = \beta_0 + \beta_1 EC_{t-1} + \sum \beta_{2i} \Delta SBSH_{t-i} + \sum \beta_{3i} \Delta DFASB_{t-i} + \beta_4 X_{t-1} + \mu_t$

Variables	All		Large (assets≥$1B)		Small (300M<assets<$1B)	
$EC_{t-1,}$	-0.619**	-0.391**	-0.412*	-0.432**	-0.211	-0.261*
'adjustment speed'	(3.52)	(3.60)	(2.56)	(3.77)	(1.40)	(2.19)
$BaaTR10_{t-1}$		0.010*		0.011**		
		(2.54)		(2.92)		
$\Delta^2 LEI_{t-1}$ X100		-0.156**		-0.153**		
		(4.92)		(4.51)		
$D2008_t$		-0.024**		-0.021**		-0.031**
		(3.17)		(2.91)		(4.17)
Adj. R^2	0.541	0.840	0.457	0.858	0.146	0.495
S.E.x100	1.178	0.695	1.188	0.620	1.172	0.901

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Variables	Bank Asset Size Classes					
	All		Large (assets≥$1B)		Small (300M<assets<$1B)	
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Constant	0.2541	0.2617	0.2223	0.2294	0.8109	1.039
$DFASB_t$	-0.0795**	-0.1050**	-0.0649**	-0.0882**	-0.0932**	-0.0836**
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- Significant, unique long-run relationship with s-run controls, and for small banks omitting controls. *DFA* has negative long-run effect.
- Significant EC: actual - equil. gap small loan share closes in 3-5 yrs.
- Implied equilibrium tracks trend, predicted tracks long-run trends & short-run cyclical swings for all 3 bank asset classes.
- Results robust to controls for loan size migration from inflation and nominal growth, aging, and wealth hysteresis from Great Recession

Figure 4: The Small Loan Share of C&I loans Falls At Large Banks After the Dodd-Frank Act
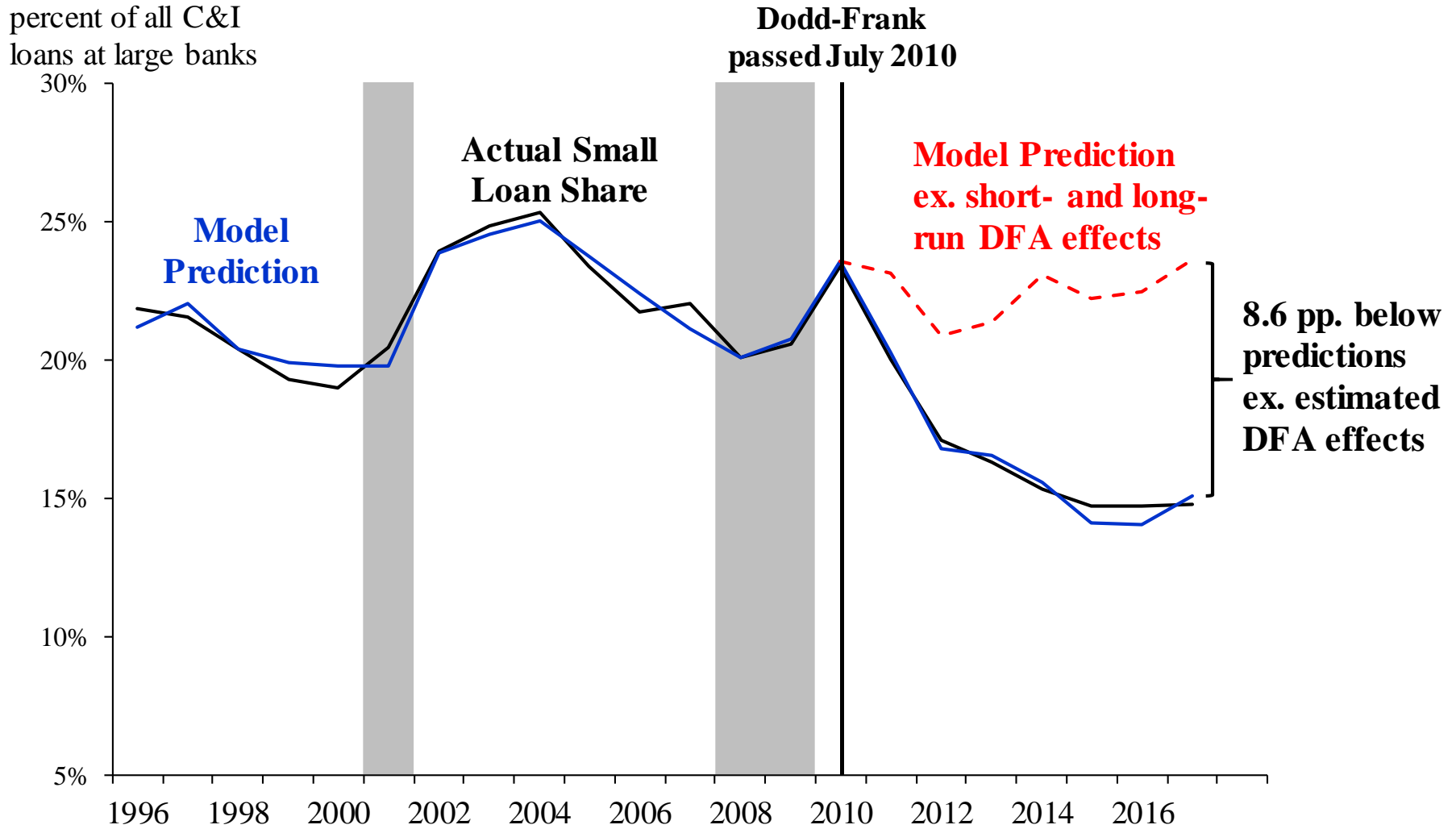
percent of all C&I loans at large banks

Dodd-Frank passed July 2010

Actual Small Loan Share

Model Prediction

Model Prediction ex. short- and long-run DFA effects

8.6 pp. below predictions ex. estimated DFA effects

Sources: Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council, and authors' calculations. Shares at banks with assets of at least $1 billion ($2004). Shaded areas are recessions.

The Small Loan Share of C&I loans
Falls At All Banks After the Dodd-Frank Act

% of C&I loans, banks >
$300 M assets, $2004
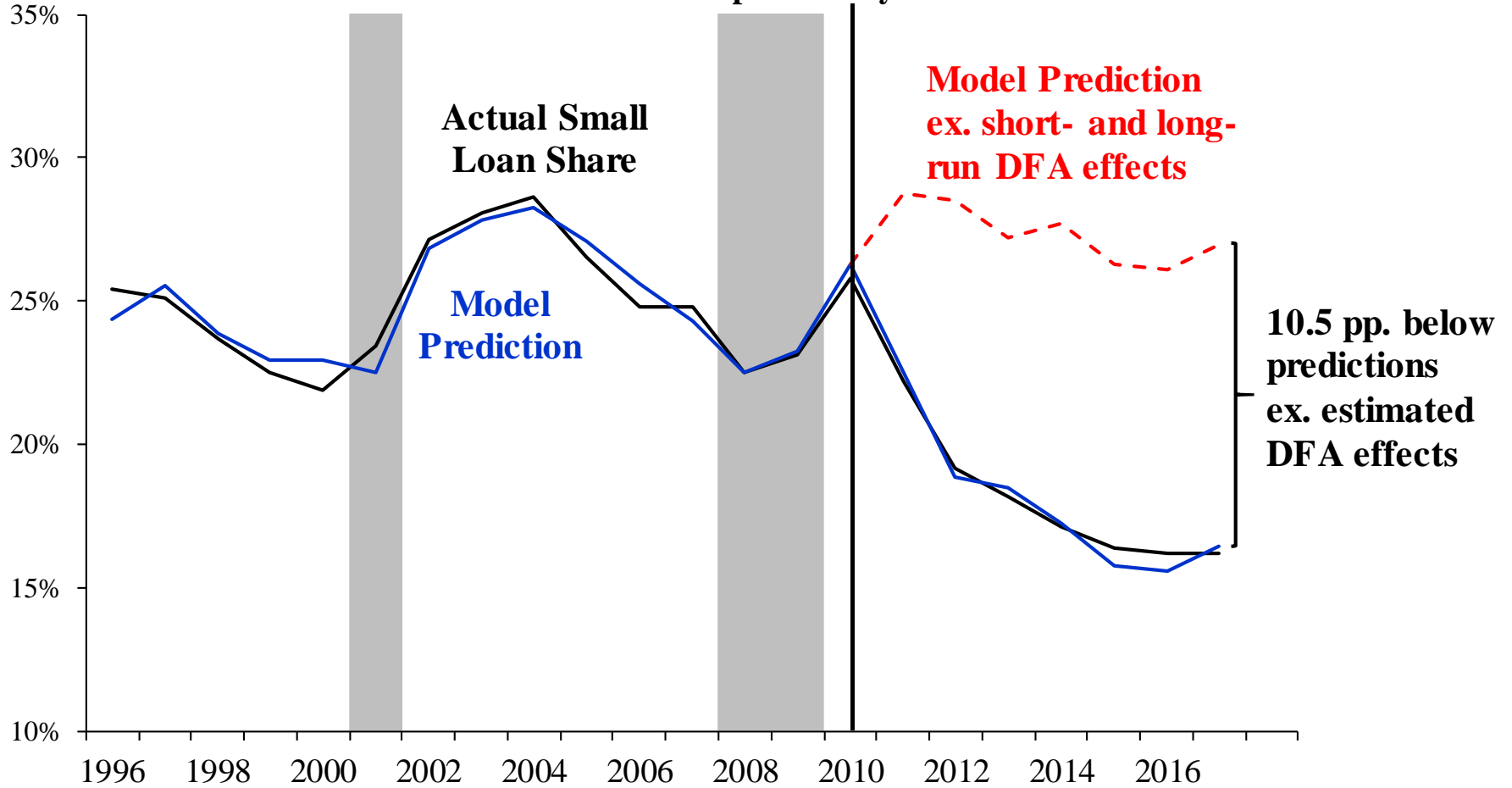
**Dodd-Frank
passed July 2010**

**Actual Small
Loan Share**

**Model Prediction
ex. short- and long-
run DFA effects**

**Model
Prediction**

**10.5 pp. below
predictions
ex. estimated
DFA effects**

35%

30%

25%

20%

15%

10%

1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016

Sources: Consolidated Reports of Condition and Income, Federal Financial Institutions Examination Council, and
authors' calculations. Shares at all banks with assets of at least $300 million ($2004). Shaded areas are recessions.

The Small Loan Share of C&I loans
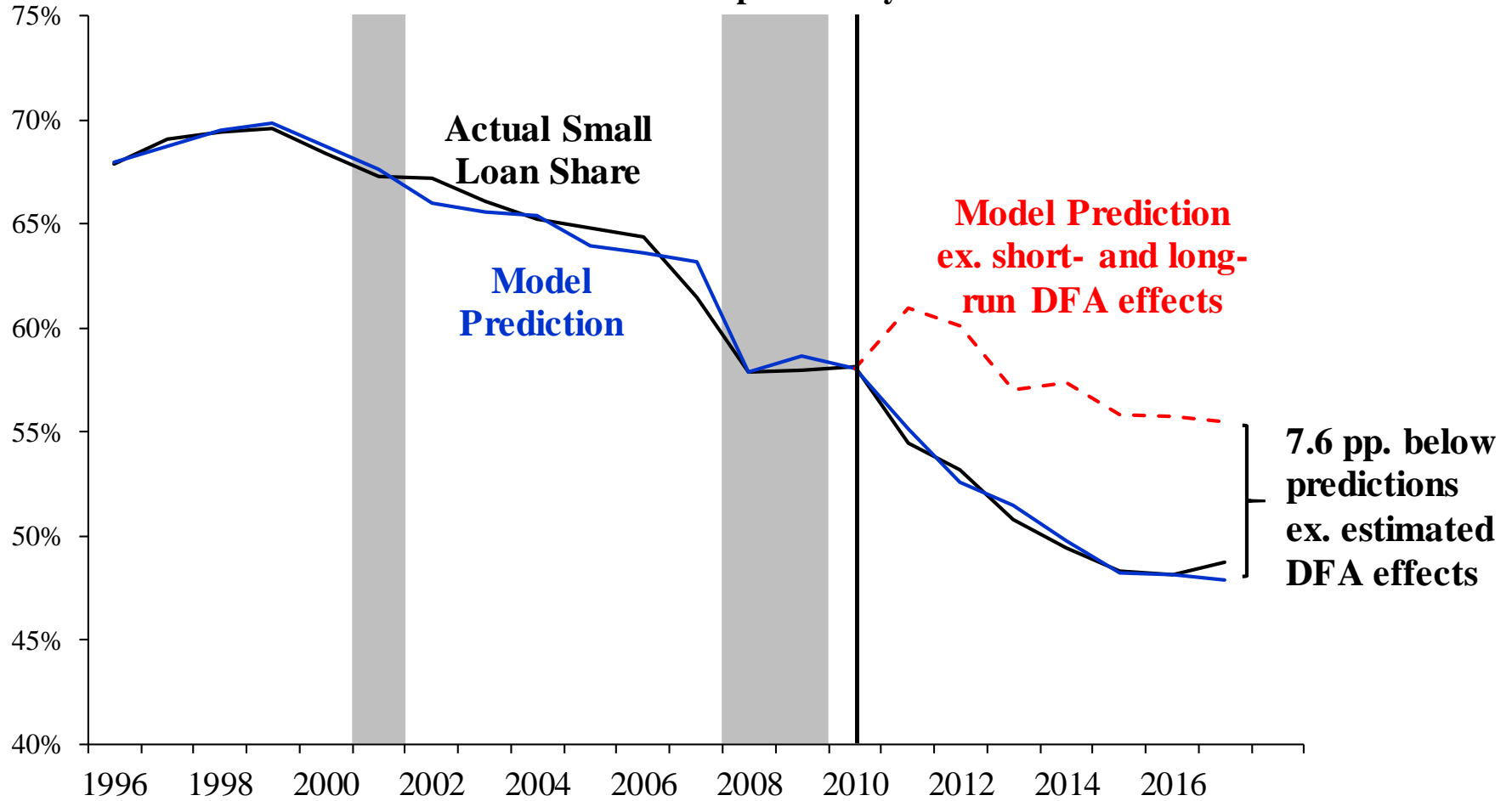# Falls At Small Banks After the Dodd-Frank Act

percent of all C&I
loans at small banks

Dodd-Frank
passed July 2010

Actual Small
Loan Share

Model
Prediction

Model Prediction
ex. short- and long-
run DFA effects

7.6 pp. below
predictions
ex. estimated
DFA effects

Evidence from Small Loan Share of C&I Loans: Bank-Level Panel Data

Evidence from Bank-Level Data on the Small Loan Share of C&I loans

- Analyze small-sized (< $1M) share C&I loans, 1995-2017, merger adjusted call report data, same asset size classes of banks defined in $2004.

- Include bank fixed effects & balance sheet ratios to total assets: deposit--to-assets, equity-to-assets, nonperforming loans-to-assets, ratio liquid-to-total assets, unused loan commitments-to-assets + unused commitments.

- Include time dummies to sop up a variety of cyclical and other influences.

- Standard errors clustered by bank.

- Year dummies significant, positive in early sample, near zero mid-sample, <u>persistently</u> negative and significant after DFA for all three sizes of banks.

- Similar pattern 1995-2014 using loan originations to small firms scaled by t-1 total C&I Loans outstanding. Addressing formatting change in source data. Will include small business origination analysis in future draft.

Table 2: Year-Fixed Effects on Small Loan Share, (<$1M) of Total Bank C&I Loan Outstandings (t-1)

Asset Size:	All	300M-1B	>1B
2003	0.002**	0.005**	0.003+
2004	0.001	0.003*	0.002+
2005	0.000	0.000	0.001
2006	-0.001	0.000	0.002
2007	0.000	0.000	0.001
2008	-0.001**	-0.002**	-0.002
2010	-0.005**	-0.006**	-0.008**
2011	-0.007**	-0.008**	-0.010**
2012	-0.006**	-0.007**	-0.009**
2013	-0.006**	-0.008**	-0.009**
2014	-0.007**	-0.009**	-0.009**
2015	-0.009**	-0.011**	-0.010**
2016	-0.009**	-0.011**	-0.011**
2017	-0.009**	-0.012**	-0.012**

Evidence from Bank-Level Panel Data on Originations of C&I plus Commercial Real Estate (CRE) Loans

Evidence from Bank-Level Data on C&I + CRE Loan Originations

- Analyze (a) small-sized (< $1M, < 100K) C&I + CRE originations, and (b) all C&I+CRE loans to businesses with annual revenues < $1 mill. Amounts are scaled by prior year amount of total C&I + CRE outstanding, 1997-2017. Call Report data are adjusted for mergers. Same asset size classes of banks are used defined in $2004.

- Include bank fixed effects & CAEL balance-sheet ratios: deposit--to-assets, equity-to-assets, nonperforming assets-to-assets, liquid-to-total assets, plus the ratio of unused loan commitments to sum of total assets and unused commitments. Robust standard errors clustered by bank.

- Include year dummies to sop up a variety of cyclical and other influences.

- Year dummies significant, positive in early sample, near zero mid-sample, low, often insignificant after GFC and low since DFA for all three sizes of banks. Downshift in small loans and loans to small businesses starts in GFC, maintained since then. Reporting break in 2016 for smallest category.

Table 3A: Year-Fixed Effects for Small Loan (<$1M) Origination Share of Total Bank Business Loans Outstanding

Asset Size:	All	300M-1B	>1B
2003	0.116**	0.112**	0.134**
2004	0.103**	0.101**	0.117**
2005	0.087**	0.083**	0.112**
2006	0.077**	0.074**	0.111**
2007	0.072**	0.071**	0.084**
2008	0.059**	0.058**	0.061**
2010	0.009**	0.011**	0.000
2011	0.017**	0.019**	0.014
2012	0.019**	0.023**	0.027
2013	0.017**	0.020**	0.027
2014	0.008	0.011*	0.010
2015	0.008	0.011*	0.000
2016	-0.018**	-0.015**	-0.014
2017	-0.005	-0.001	-0.009

Table 3B: Year-Fixed Effects Small Loan (<$100K) Origination Share of Total Bank Business Loans Outstanding

Asset Size:	All	300M-1B	>1B
2003	0.023**	0.021**	0.042**
2004	0.020**	0.019**	0.038**
2005	0.018**	0.016**	0.035**
2006	0.014**	0.013**	0.024**
2007	0.014**	0.013**	0.017**
2008	0.008**	0.008**	0.008
2010	0.001	-0.006**	0.001
2011	0.002	-0.008**	0.003*
2012	0.002	-0.007**	0.002
2013	0.003	-0.008**	0.003*
2014	0.003	-0.009**	0.003
2015	0.002	-0.011**	0.002
2016	-0.003*	-0.011**	-0.002
2017	-0.001	-0.012**	0.000

Table 3C: Year-Fixed Effects Loan Origination to Firms with Revenue < $1M, Share Total Bank Business Loans Outstanding

Asset Size:	All	300M-1B	>1B
2003	0.172**	0.172**	0.134**
2004	0.303	0.334	0.100**
2005	0.134*	0.139*	0.080*
2006	0.074**	0.075**	0.056**
2007	0.081*	0.085*	0.041**
2008	0.054	0.058	0.020
2010	-0.008	-0.008	0.001
2011	0.013	0.016	0.009
2012	0.034	0.041	0.024
2013	0.012	0.018	0.018
2014	0.000	0.006	0.003
2015	-0.006	0.000	-0.012
2016	-0.017	-0.012**	-0.006
2017	-0.028*	-0.023**	-0.007**

Evidence from
Bank Credit Standards

Evidence from Bank Credit Standards

- Previous results from a reduced form model may not prove that DFA affected the loan supply channel

- If DFA raised the fixed costs of making business loans, then it would directly reduce the supply of small sized loans relative to other loans

- Also as DFA induced more consolidation of smaller banks that make more small business loans, DFA indirectly reduces loan supply more for small than larger loans by decreasing prevalence of small banks

- Both the direct and indirect effects imply that DFA would lead to C&I loan standards being tightened more for small than larger firms

- To test this we use use quarterly data from the Fed Board's Senior Loan Officer Opinion Survey on Bank Lending Practices

Changes in the Relative Tightening of Credit Standards on C&I Loans to Small Versus Medium- and Large-Sized Firms

- Use **diffusion index**: How has your bank's credit standards on C&I loans *changed* from 3 months ago? tightened considerably or somewhat (+1), unchanged (0), eased considerably or somewhat (-1) .

- Screening model of Stiglitz and Weiss (1981, part IV):

  Tightening credit standards a function of:

  Δ real riskless funding costs (+), used Δ real fed funds rate

  Δ macro outlook (-), two-quarter $\Delta\%$ in leading economic indicators

  Δ delinquency (+), used yr/yr $\Delta\%$ in C&I loan delinquencies

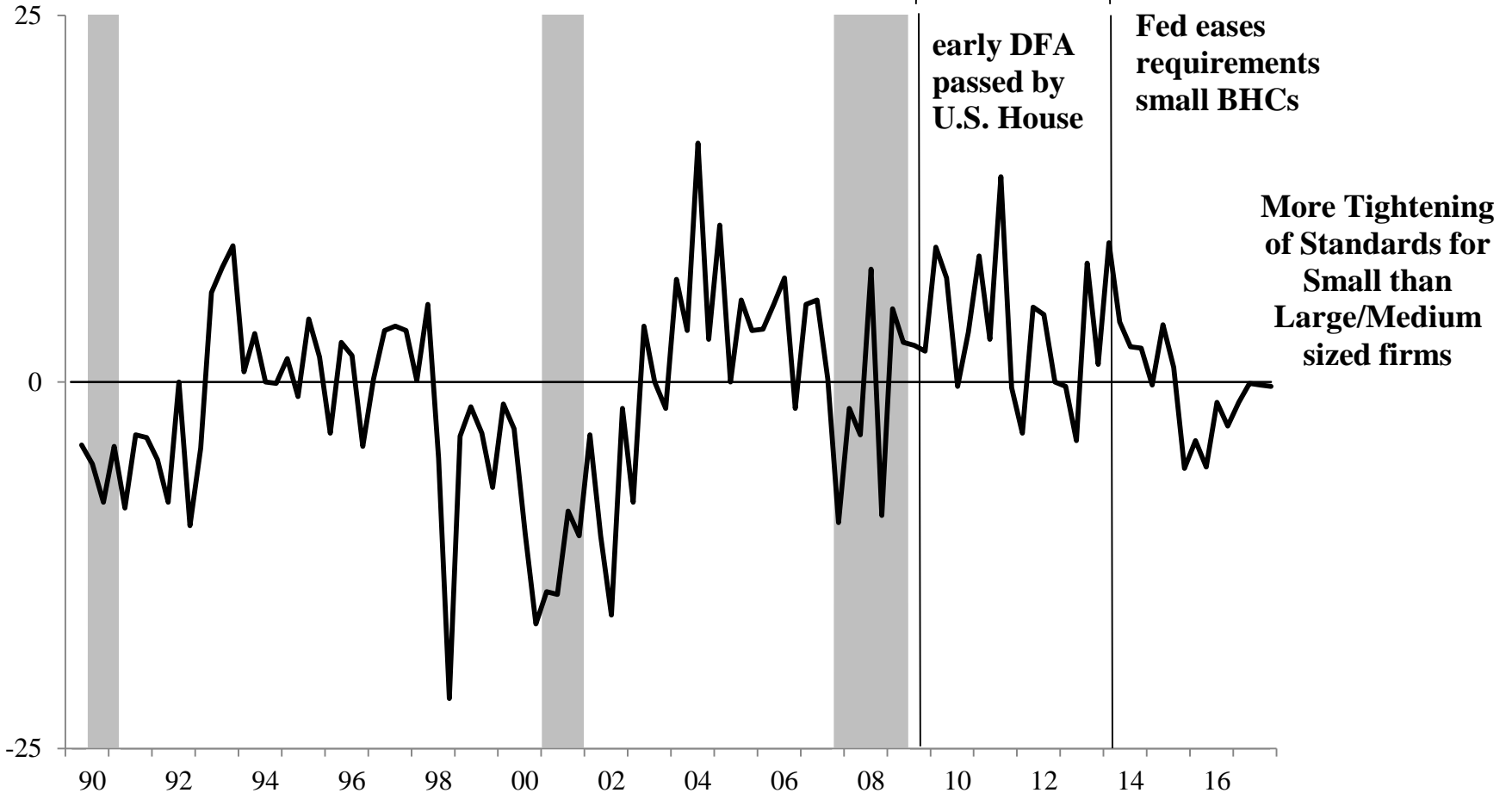 Δ regulatory burden (+), here use DFA dummies

  Works for consumer loans (Aron et al., 2012), all loans (Bordo, et al. 2016).

- *CSGAP* = % tightening small firm – large/medium sized firms

  abstracts from common factors affecting both

  isolates credit supply effect unlike loan share regressions

  effects on loan policy occur before loan shares (*SBShare*) adjust

Percent Banks Tightening Credit Standards on C&I Loans to Small Businesses Minus Percent to Large & Mid-Sized Companies

percent tightening C&I credit
standards small - large/med. firms

pre-passage avg.
-1.4

post-passage avg.
3.1

early DFA passed by U.S. House

Fed eases requirements small BHCs

More Tightening of Standards for Small than Large/Medium sized firms

25

0

-25

90   92   94   96   98   00   02   04   06   08   10   12   14   16

Note: Recessions denoted by shaded areas. Sources: Federal Reserve Board and authors' calculations   HR 4173 passed Dec. 11, 2009.

Changes in the Relative Tightening of Credit Standards on C&I Loans to Small Versus Medium- and Large-Sized Firms

- Estimate *CSGAP* with those variables plus 2 DFA dummies. Tougher *DFASB1* =1 from House passage in 2009:q4 - 2014:q1 (Fed eased small BHC regulations), and easier *DFASB2* =1 since 2014:q2). Drop insignificant variables left with:

$$CSGAP_t = -1.50 + 1.77^+ \Delta FedFundRate_t^+ - 2.13 \Delta_4 C\&IDelinquent_t^*$$
$$ (1.04) \quad (1.78) (2.09)$$

$$- 8.14\ \Delta AaaTR_t^{**} + 4.37\ DFASB1^*$$
$$ (3.40) (2.17) \text{Full Sample Model 3, Table 3}$$

- C&I credit standards on small loans tightened relatively more when:

  - real funds rate rises

  - loan quality improves

  - bond spreads narrow –banks face more competition from securities markets for large firms, shift to lending to small firms and ease standards.

  - *DFASB1*: 4 percentage points more banks tightened credit standards on C&I loans to small-sized firms when DFA rules were most burdensome
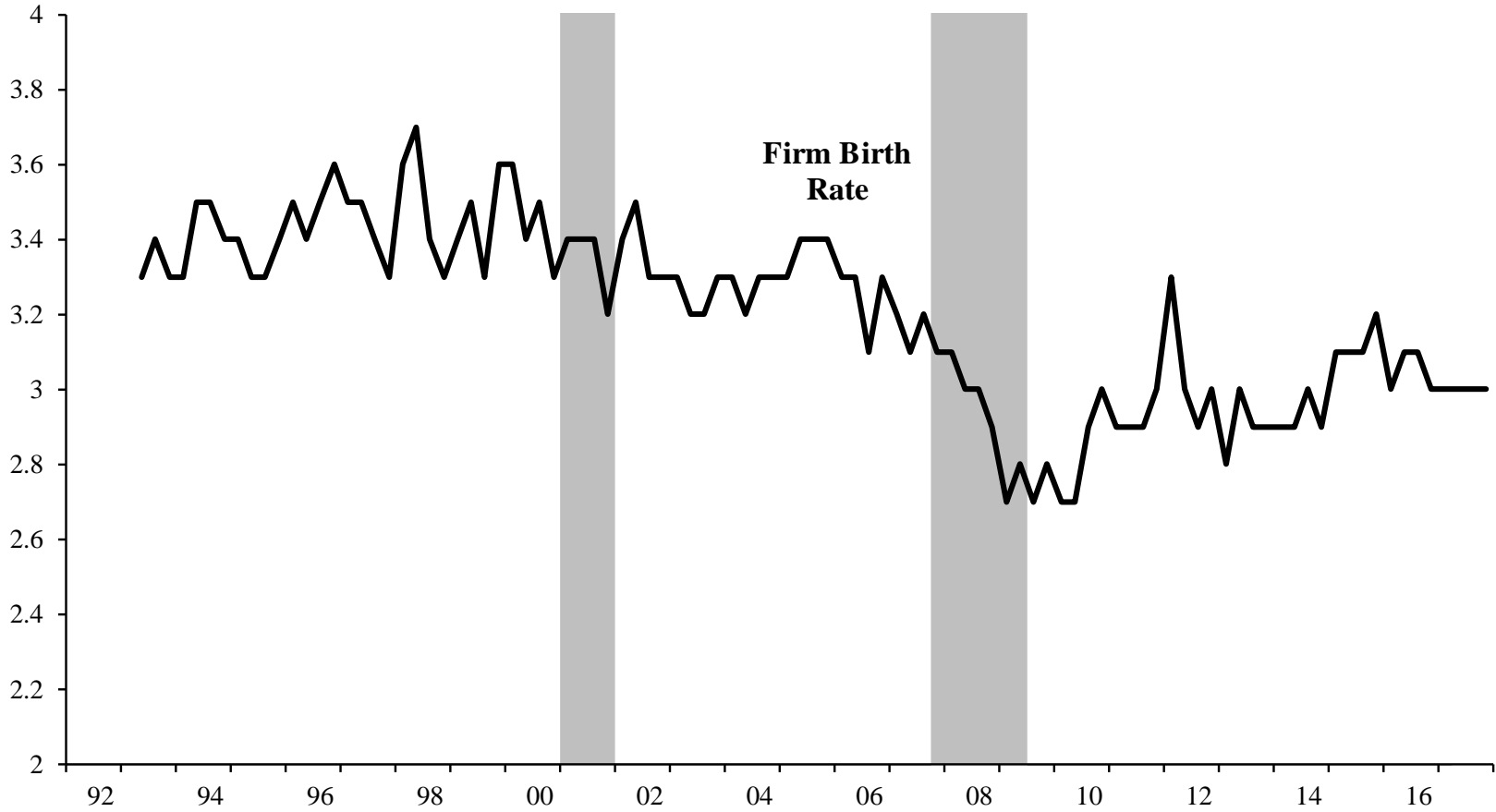
Evidence from Business Formation

Financial Regulation & Business Formation: Motivation & Model Specification

- Test if financial regulation altered business formation rate

- Firm birth rate weak since Great Recession, and slowed earlier (Decker, et al. 2014, 2016a)

Figure 1: Despite an Economic Recovery, Business Formation Below Pre-Recession (2002-07) Pace

S.A. percent of number of
qtr. t-1 establishments

Firm Birth Rate

Shaded areas denote recessions. Sources: U.S. Bureau of Labor Statistics and authors' calculations.

Financial Regulation & Business Formation: Motivation & Model Specification

- Test if financial regulation altered business formation rate

- Firm birth rate weak since Great Recession, and slowed earlier (Decker, et al. 2014, 2016a)

- Regulations per capita (*RegPerCap*) used as an overall regulatory burden proxy

- Birth rate function of business cycle (Δ unemp., ΔU), financial cycle (*AaaTr* = Aaa-10 yr. Treas. spread), investment cycle (*TobinsQ*), *RegPerCap* and regulatory changes affecting access to debt (DFA) :

  - DFA with *DFASB1* and *DFASB2*
  - *RegPerCap* or use a time trend

Federal Regulations Per Thousand of Population and Business Formation
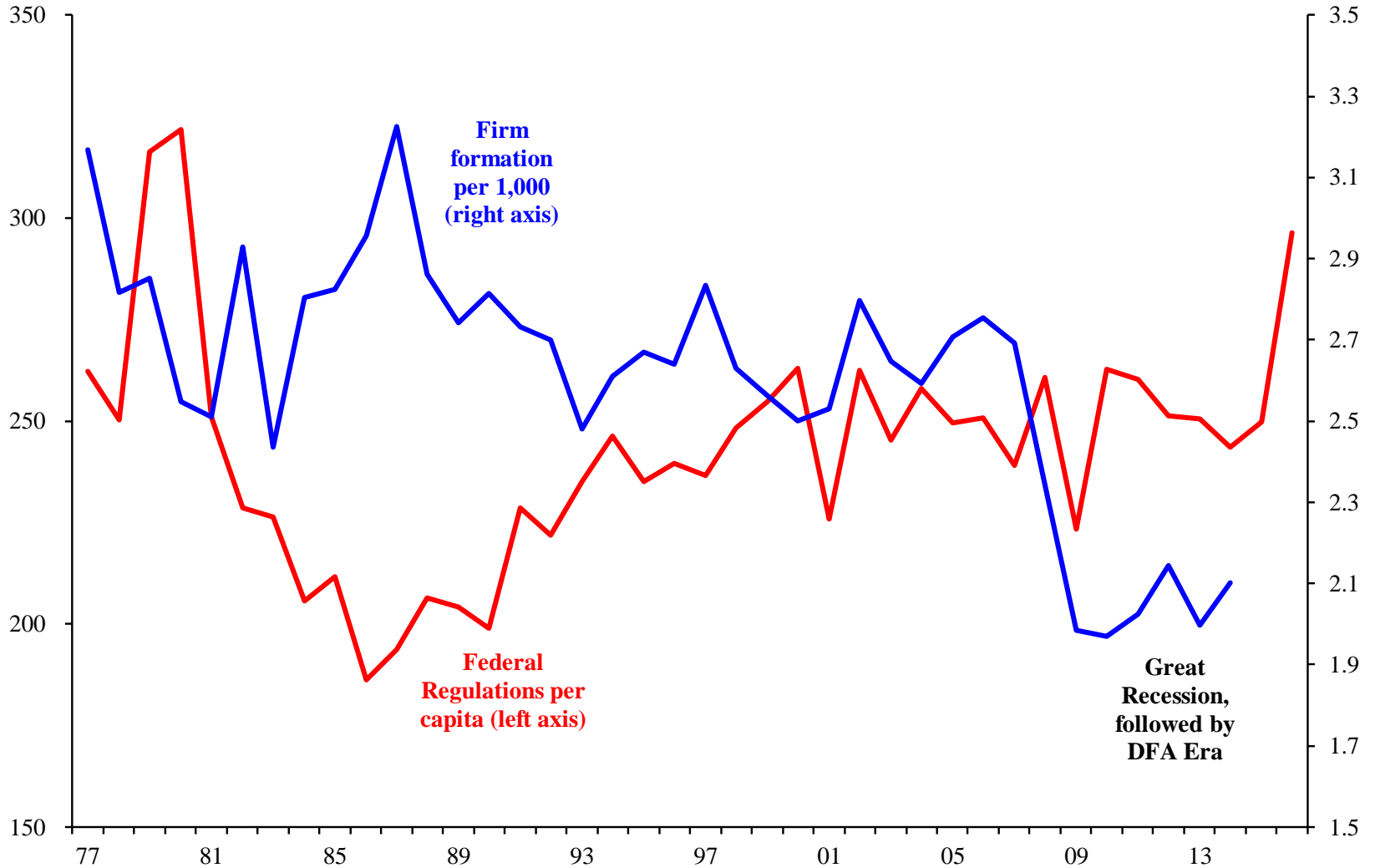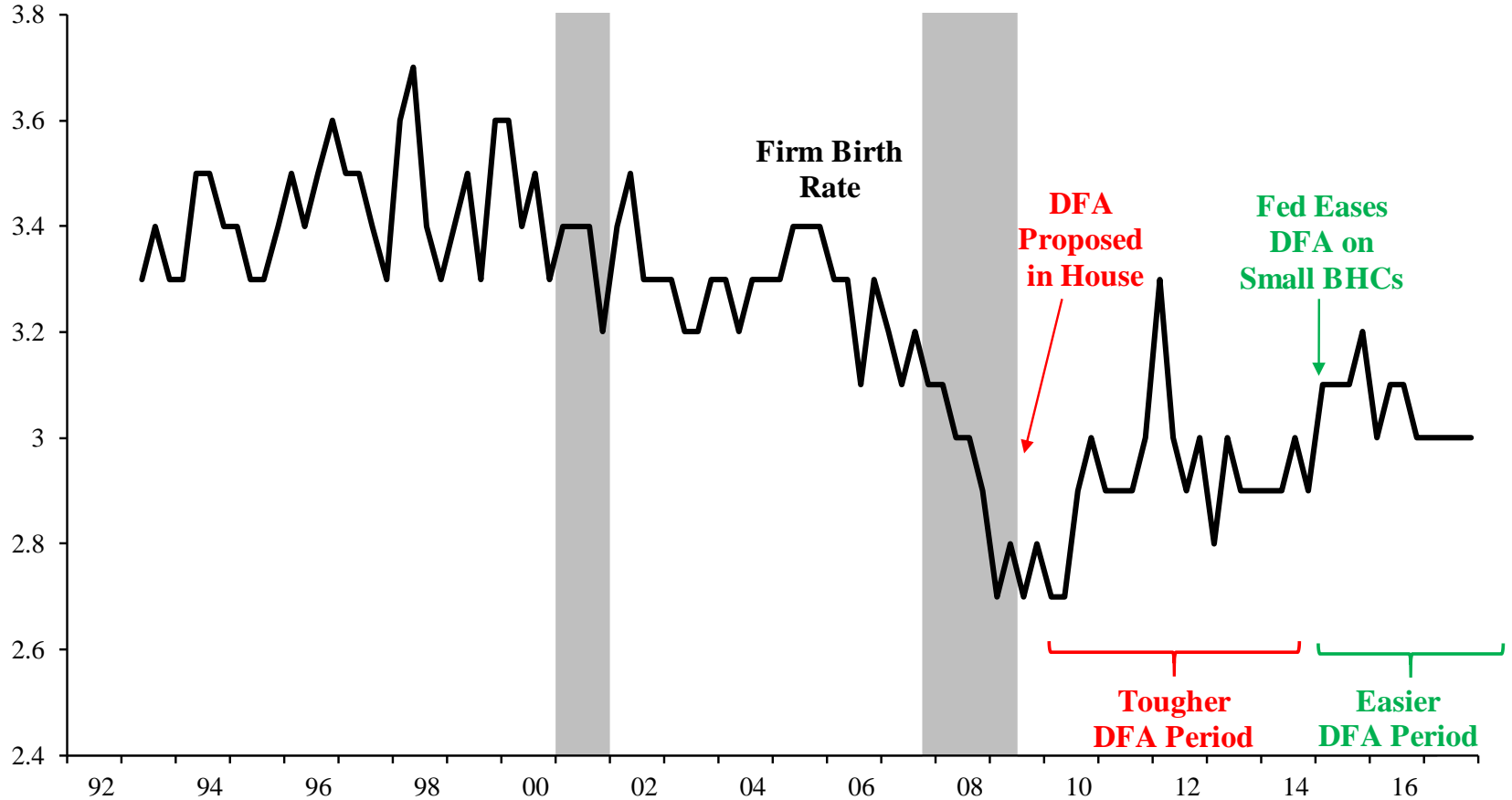

Firm formation per 1,000 (right axis)

Federal Regulations per capita (left axis)

Great Recession, followed by DFA Era

Figure 1: Despite an Economic Recovery, Business Formation Below Pre-Recession (2002-07) Pace

S.A. percent of number of
qtr. t-1 establishments

Firm Birth Rate

DFA Proposed in House (red)

Fed Eases DFA on Small BHCs (green)

Tougher DFA Period (red)

Easier DFA Period (green)

3.8
3.6
3.4
3.2
3
2.8
2.6
2.4

92 94 96 98 00 02 04 06 08 10 12 14 16

Shaded areas denote recessions. Sources: U.S. Bureau of Labor Statistics and authors' calculations.

Financial Regulation and Business Formation

Estimate model of the stationary rate of business formation:

$$Birth_t = \beta_0 + \beta_1 \Delta U_{t-1} + \beta_2 BaaTr_{t-1} + \beta_3 DFASB1_t + \beta_4 DFASB2_t$$
$$\quad\quad\quad (-) \quad\quad\quad (-) \quad\quad\quad (-) \quad\quad\quad (-, weak)$$
$$+ \beta_5 TobinsQ_{t-3} + \beta_6 RegPerCap_{t-1} + \varepsilon_t \quad\quad\quad (8)$$
$$\quad (+) \quad\quad\quad (-)$$

expect $\beta_1, \beta_2, \beta_3, \beta_6 < 0$ and $\beta_5 > 0$.

t-3 lag works best with Tobin's q, some lagged effects.

- *RegPerCap* and DFA raise fixed cost of finance, and thereby the fixed cost of starting a business (Kozniauskas, 2017).

- 8 models estimated reflecting different combinations of regulatory variables and whether Tobin's q effects included.

Financial Regulation & Business Formation: Non-Regulation Model Results

- Models lacking Tobin's q or regulation/time trend have correlated residuals.

- Of models with Tobin's q or regulation/time trend variables,

  - DFASB1 always negative and significant

  - DFASB2 negative but insignificant with *RegPerCap* or time trend

Table 4: Quarterly Models of the Birth Rate of Firms (*Birth*)

		Time Trend	Simple Reg.	Tobin's Q	Reg.Tob.Q	*DFASB1* Tob.Q	DFA Time	DFA ex..
Sample	93:q2-17:q2	93:q2-17:q2	93:q2-17:q2	93:q2-17:q2	93:q2-17:q2	93:q2-17:q2	93:q2-17:q2	93:q2-17:q2
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Constant	3.192**	4.203**	6.155**	2.670**	4.999**	5.635**	3.532**	2.882**
	(36.00)	(25.09)	(8.36)	(15.22)	(5.93)	(13.94)	(19.49)	(30.26)
ΔU_{t-1}	-0.122$^+$	-0.139*	-0.257**	-0.109$^+$	-0.252**	-0.237**	-0.219**	-0.366**
	(1.85)	(2.38)	(4.68)	(1.77)	(4.72)	(4.93)	(4.39)	(7.09)
$\Delta AaaTR_{t-1}$	-0.103$^+$	-0.100$^+$	-0.090	-0.133*	-0.127*	-0.122$^+$	-0.138*	-0.133*
	(1.85)	(1.79)	(1.61)	(2.26)	(2.09)	(1.97)	(2.32)	(2.33)
$TobinsQ_{t-3}$				0.547**	0.310**	0.270**	0.386**	0.446**
				(3.76)	(3.35)	(3.11)	(5.74)	(5.23)
$Time_t$		-0.062**					-0.040**	
		(6.00)					(3.66)	
$RegPerCap_{t-1}$			-5.632**		-3.933*	-5.129*		
			(3.82)		(2.50)	(7.20)		
$DFASB1_t$			-0.173$^+$		-0.221*	-0.164**	-0.214**	-0.366**
			(1.89)		(2.53)	(3.52)	(3.10)	(7.09)
$DFASB2_t$			0.023		-0.103		-0.108	-0.353**
			(0.22)		(0.92)		(1.32)	(4.96)
Adjusted R^2	.764	.788	.797	.780	.814	.814	.829	.799
S.E.	0.117	0.111	0.109	0.113	0.104	0.104	0.100	0.108
P (AR(1)	0.868**	0.652**	0.402**	0.855**	0.345*	0.443**	0.278**	0.438**
D.W.	2.42	2.21	2.06	2.41	2.03	2.02	2.00	2.09
Q(12)	30.14**	21.58**	12.90	26.16**	10.17	10.83	12.28	12.68
Q(12)	56.94**	44.09**	31.02	48.40**	27.14	27.93	29.16	28.01

Notes: $^+$, * and ** denote 90%, 95%, and 99% significance levels, respectively. Absolute t-statistics are in parentheses.

Concluding Comments

- Evidence consistent with concerns that DFA has had unintended consequences of disproportionately affecting small businesses.

- Four types of evidence that DFA & SOX hurt small firms:

  - Small-loan share of C&I loans fell after DFA

    - Aggregated across bank asset categories

    - At bank level with bank controls

  - Bank C&I credit standards tightened more for small firms when DFA most stringent. 2014 Fed easing of small bank regulations softened this effect.

  - DFA slowed business formation during most stringent period.

- Next steps:

  - analyze bank-level data on loan originations to small businesses

  - consider analyzing micro data on business formation or county level effects