Is This Time Different: Do Bank CEOs Learn From Crisis Experiences?

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"I know we have crises every five or ten years."

Jamie Dimon, J.P. Morgan's chairman and chief executive, 2010

"The reckless loan practices of 20 years ago has made him a ***more conservative and better*** *banker today."*

Pat Hickman, CEO of Happy State Bank in Texas, 2012

Motivation

- **Empirically, we observe cross-sectional differences in bank performance and survivals**
  - GB&T: -25.5% quarterly risk-adjusted return 07-09, fail
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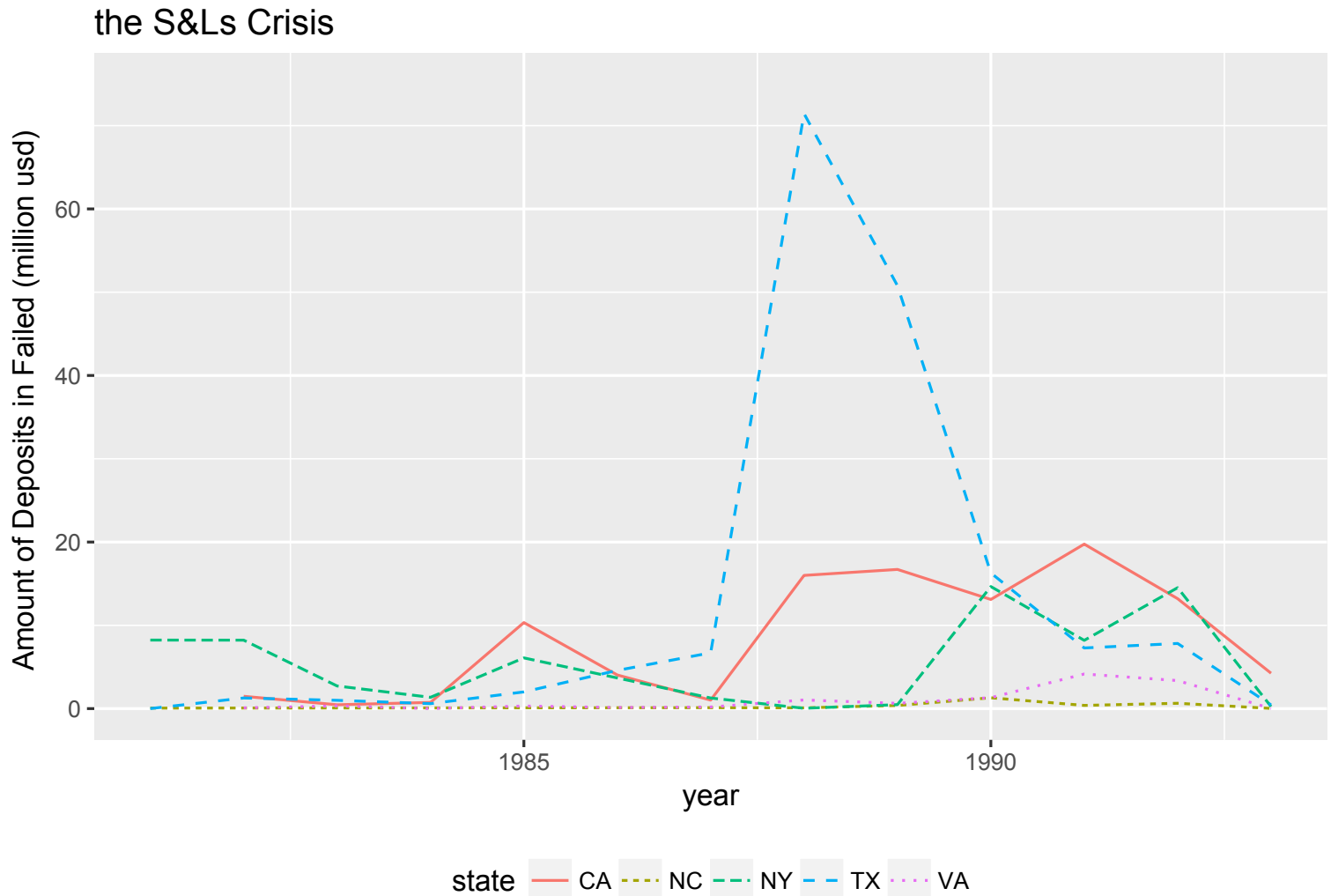
- **We also observe heterogeneity in the risk management and culture of prudence in banks**
  - (Ellul and Yerramilli 2013)
- **This paper asks whether experiencing a more intense banking crisis in the past affects CEOs' management styles and bank survivals in the future**

Research Questions

- **Main Tests: Do Crises Experiences of CEOs Matter for Banks?**
- **Channel Tests: How do Experiences Matter?**
- **Testing Ground:**
  - I will explain banking outcomes and practices in 1999-2009 using CEOs' *experiences* with the banking crisis in 1985-1990
- **Explore cross-state time varying bank failure rate during Savings and Loan Crisis (S&L).**

Setting - Bank Failure Rates by States during the 1980s

My identification comes from the time-series and cross-sectional differences of state-level bank failure rates during the S&Ls crisis



Preview-Findings

- **This paper proposes an *Intensity* measure for banking crisis experiences at the CEO level**
  → Exploit the variation in state-level bank failure rates during the S&Ls crisis

- **This paper shows that crisis experiences of CEOs affect survival rates and bank management**
  → Characterize bank features associated with experiences: less likely to fail and take less systemic risk

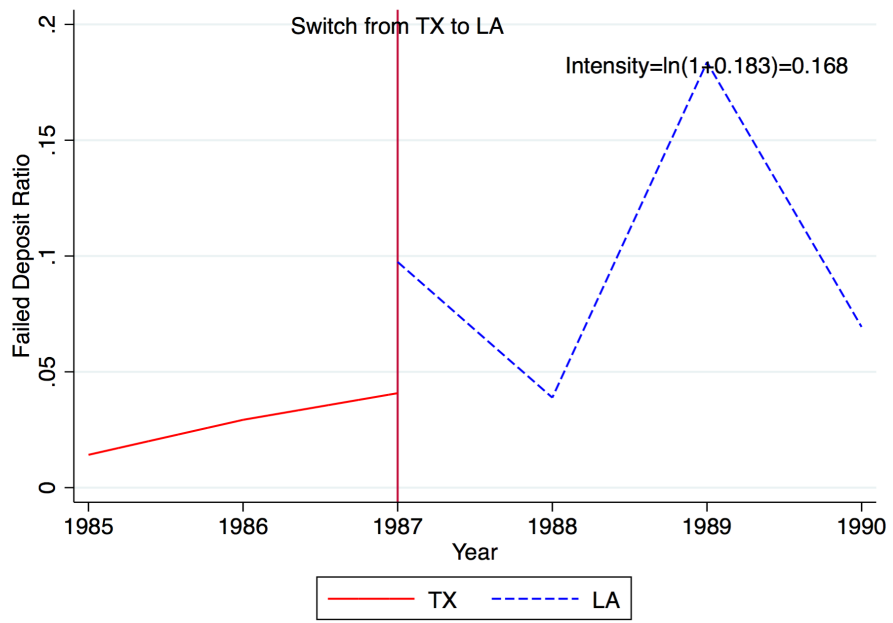
- **This paper demonstrates channels through which experiences matter for banks**
  → Pin-down policy channels: business model exposure to interest rate shocks, credit and liquidity risk management

Independent Variable: Banking Crisis Intensity

- $Intensity_c = \log\left(1 + \max_t\left(\frac{\text{Failed Deposits in Employment State}_{st}}{\text{Total Deposits in Employment State}_{st}}\right)\right)$

S&Ls Graph s : state where CEO was at c : CEO t : year

- An example: XYZ stayed in Texas in 1985 and 1986, and moved to LA in 1987



Identification Strategies

- **Panel regression specification:**

$$Y_{ict} = \alpha + \beta_1 Intensity_c + f_i + f_t + \lambda_1 C_{ct} + \lambda_2 X_{it-1} + \eta_{ict} \quad (1)$$

X : BHC controls C : CEO controls i : BHC c : CEO t : year

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- **Causality? A common issue in CEO literature**

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- **Causality? A common issue in CEO literature**
  - Bank-CEO Matching? State-CEO Matching?
  - Shocks: Unanticipated state level banking crises
  - Test 1: CEO turnovers
  - Test 2: CEO hometown shocks

Sample

- 241 bank holding companies (BHC) from 1999 to 2009
- Key LHS and BHC controls:
  - Annual stock market performance data from Center for Research in Security Prices (CRSP)
  - Annual BHC consolidated financial data from FR Y9C statements and Standard & Poor's Compustat
- Key RHS and CEO controls:
  - CEO-related information from BoardEx
  - Marquis Who's Who.

Main Tests: Do Experiences Matter in Times of Crises? – Survivals

- Question
  - **Are BHCs led more experienced CEOs less likely to fail during the recent crisis? YES**
- LHS Variables
  - **Failure 1**: being closed by FDIC or delisted
  - **Failure 2**: including Troubled Asset Relief Program receivers
- Probit Model
  - **Cross-Sectional Test: Financial Crisis (07-09)**

$$Failure_{ic} = \alpha + \beta_1 Intensity_c + \lambda_1 C_c + \lambda_2 X_i + \eta_{ic}$$

X : BHC controls C : CEO controls i : BHC c : CEO

Main Tests: Do Experiences Matter? – Table 2a

Full-Table

Table 2a: Cross-sectional Probit Regressions of Bank Failure during Financial Crisis (07-09)

	All BHCs				BHCs without CEOs Turnovers during FC			
	*Failure*1	*Failure*1	*Failure*2	*Failure*2	*Failure*1	*Failure*1	*Failure*2	*Failure*2
Intensity	**-0.041****	**-0.019**	**-0.063****	**-0.038***	**-0.052****	**-0.024**	**-0.066****	**-0.050***
	(−2.41)	(−1.45)	(−2.85)	(−1.74)	(−2.55)	(−1.44)	(−2.59)	(−1.74)
CEOAge		−0.002		0.001		−0.002		0.003
		(−0.95)		(0.27)		(−0.78)		(0.57)
HighDegree		0.016		0.050		0.021		0.057
		(0.59)		(0.96)		(0.63)		(0.90)
Female		0.064		0.221**		0.075		0.260**
		(1.44)		(2.30)		(1.30)		(2.15)
Ret_{1998}		−0.077		−0.149		−0.082		−0.142
		(−0.90)		(−1.05)		(−0.69)		(−0.76)
BM_{2006}	0.022	0.014	0.091*	0.072	0.020	0.020	0.100	0.104
	(0.57)	(0.69)	(1.79)	(1.47)	(0.41)	(0.65)	(1.59)	(1.45)
$Size_{2006}$	−0.004	0.017	0.006	0.017	−0.003	0.020	0.007	0.021
	(−0.18)	(0.96)	(0.23)	(0.65)	(−0.12)	(0.88)	(0.21)	(0.61)
$Tier1_{2006}$	1.959	1.120	1.936	−0.401	2.138	1.138	1.044	−1.769
	(1.37)	(1.63)	(1.02)	(−0.20)	(1.24)	(1.18)	(0.47)	(−0.68)
$Beta_{2006}$	−0.007	−0.026	−0.057	−0.070	0.002	−0.025	−0.026	−0.061
	(−0.16)	(−0.73)	(−0.96)	(−1.08)	(0.03)	(−0.54)	(−0.38)	(−0.75)
Observations	198	121	198	121	168	98	168	98

Marginal effects; t statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

At the mean level of Intensity, a marginal increase in intensity is associated with 5% lower probability of bank failure (8.3% on average during 07-09)

Main Tests: Do Experiences Matter in Normal Times? – Survivals

- Question
  - **True for normal times? YES**
- LHS Variables
  - **Failure 1**
  - **Failure 2**
- Probit Model
  - **Panel Test: Post S&L Crisis (99-09)**

$$Failure_{ict} = \alpha + \beta_1 Intensity_c + f_t + \lambda_1 C_{ct} + \lambda_2 X_{it-1} + \eta_{ict}$$

i : BHC c : CEO t : Year

Main Tests: Do Experiences Matter? – Table 2b

Full-Table

Table 2b: Panel Probit Regressions of Bank Failure during Post S&L Crisis (99-09)

	*Failure*1	*Failure*1	*Failure*1	*Failure*1	*Failure*2	*Failure*2	*Failure*2	*Failure*2
$Intensity_t$	**-0.004****	**-0.004****	**-0.004****	**-0.005***	**-0.005****	**-0.004***	**-0.005****	**-0.005****
	(-2.30)	(-2.10)	(-2.08)	(-1.89)	(-2.20)	(-1.89)	(-2.23)	(-2.42)
Ret_{1998}				-0.025				-0.056**
				(-1.26)				(-1.99)
BHC Controls	N	Y	Y	Y	N	Y	Y	Y
CEO Controls	N	N	Y	Y	N	N	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1,170	1,108	1,021	1,021	1,170	1,108	1,021	1,021

At the mean level of Intensity, a marginal increase in intensity is associated with 0.5% lower probability of bank failure (3.3% average failure rate)

Take Less Systemic Risk – Methodology

- **Given the experiences of systemic fallout, will CEOs be more averse to systemic risk and uncouple from peers? YES**
- Panel regression specification

$$Y_{ict} = \alpha + \beta_1 Intensity_c + f_i + f_t + \lambda_1 C_{ct} + \lambda_2 X_{it-1} + \eta_{ict}$$

- Firm and year fixed effects, clustering at the CEO level
- Measures of systemic risk
  - CMV_bank (CMV_bankw): stock return co-movement with the banking industry portfolio (weighted) (Barberis et al. 2005)
  - MES_mkt: marginal expected shortfall (Brownlees and Engle 2010, Acharya et al. 2013)

$$MES_{it-1}(C) = E_{t-1}(r_{it}|r_{mt} < C)$$

  - $Beta$: CAPM market beta

Take Less Systemic Risk – Table 3

Full-Table

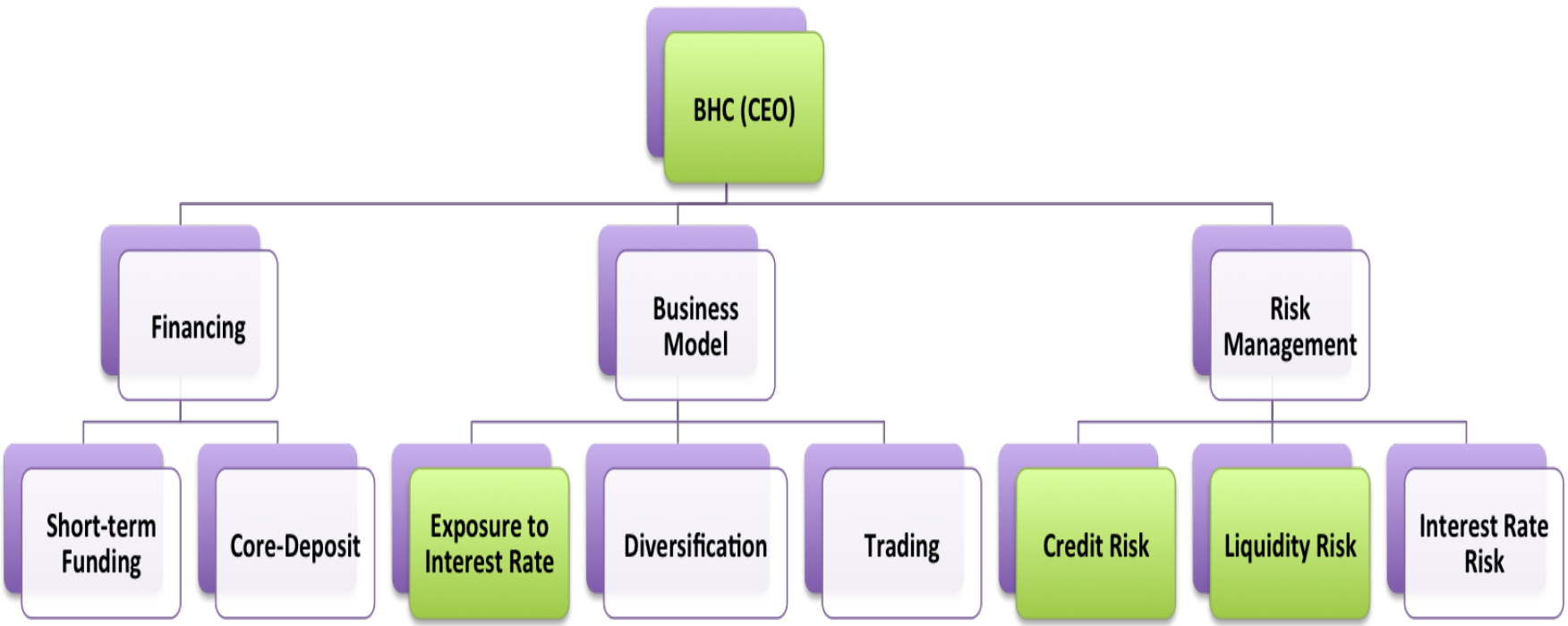
	CMV_bank	*CMV_bank*	*CMV_bankw*	*CMV_bankw*	*MES_mkt*	*MES_mkt*	*Beta*	*Beta*
$Intensity_t$	**-0.024****	**-0.032****	**-0.020***	**-0.025****	**0.002****	**0.003****	**-0.080****	**-0.098****
	(-2.36)	(-3.04)	(-1.83)	(-2.30)	(2.29)	(2.75)	(-2.76)	(-2.86)
BHC Controls	Y	Y	Y	Y	Y	Y	Y	Y
CEO Controls	N	Y	N	Y	N	Y	N	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1499	1197	1499	1197	1498	1196	1489	1189
Adjusted R^2	0.856	0.853	0.878	0.880	0.694	0.718	0.774	0.768

One percentage point of RHS (1.005%)state-wise bank failure rate is associated with 3.1 percentage lower co-movement, or one standard deviation of intensity is associated with 1.27*3.1=3.9 percentage point lower co-movement(36.5)

Channel Tests: Policy Framework

So experiences matter more bank survivals and systemic risk taking!

What could be the tapped policies under their influence of experiences?



Channel Tests: Resilience to Interest Rate Shocks

- **Are their business models resilient to interest rate shocks? YES**
- LHS: interest rate betas - absolute value of the BHC stock return sensitivity to Interest Rate Shocks

Table 4: Interest Rate Betas

	Prime_d1	*Prime_res*	*Libor_d1*	*Libor_res*	*Termspread_d1*	*Termspread_res*
Intensity	**-0.005****	**-0.006****	**-0.018****	**-0.016****	**-0.004****	**-0.004****
	(−2.50)	(−2.14)	(−3.16)	(−2.39)	(−2.16)	(−2.09)
BHC Controls	Y	Y	Y	Y	Y	Y
CEO Controls	N	Y	N	Y	N	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y
Observations	1,498	1,196	1,498	1,197	1,483	1,188
Adjusted R^2	0.190	0.184	0.238	0.210	0.058	0.058

Interpretation: one standard deviation of RHS is associated with 0.63 percentage point lower interest rate beta (mean:2.38)

Channel Tests: Credit Risk

- **Are BHCs led by more experienced CEOs more cautious with bad loans? YES**
- LHS: nonperforming loans, net charge-offs, provisions

Table 5: Credit Risk

	Net charge-offs	*Net charge-offs*	*Provision*	*Provision*	*BadLoan*	*BadLoan*
Intensity	**−0.039****	**−0.042****	**−0.050****	**−0.053****	**−0.071**	**−0.092****
	(−2.61)	(−3.06)	(−2.56)	(−2.70)	(−1.51)	(−1.98)
BHC Controls	Y	Y	Y	Y	Y	Y
CEO Controls	N	Y	N	Y	N	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y
Observations	1,498	1,196	1,498	1,197	1,483	1,188
Adjusted R^2	0.551	0.565	0.579	0.581	0.658	0.638

Interpretation: one standard deviation of RHS is associated with 0.053 percentage lower net charge off (mean: 0.25)

Discussion

Channel Tests: Liquidity Risk

- **Are BHCs led by more experienced CEOs hold more liquid assets on the balance sheet? YES**
- *Liquid asset1* (2) = cash + pledged securities + held-to-maturity securities + available-for-sale securities (+ federal funds sold)

Table 6: Liquidity Risk

	Liquid asset1	*Liquid asset1*	*Liquid asset2*	*Liquid asset2*	*US Treasury*	*US Treasury*
Intensity	**0.008***	**0.008***	**0.008***	**0.008***	**0.003***	**0.003***
	(1.83)	(1.83)	(1.69)	(1.68)	(1.91)	(1.85)
BHC Controls	Y	Y	Y	Y	Y	Y
CEO Controls	N	Y	N	Y	N	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y
Observations	1,498	1,196	1,498	1,197	1,483	1,188
Adjusted R^2	0.708	0.721	0.681	0.681	0.750	0.745

Interpretation: one standard deviation of RHS is associated with 2.29 percentage higher liquid asset holdings (mean:35 percentage point)

Endogeneity Test 1 – CEO Turnovers

- Concerns: Bank-CEO matching drives the effect of *Intensity*
- Strategy: Exogenous CEO turnovers that are not driven by bank fundamental or condition changes
- We have 70 BHCs going through exogenous turnovers
- Retirement age is higher in banking
- Turnovers unlikely to be associated with managerial performance or changes of firm conditions.

Table 7: CEO Turnovers

	Failure1	*CMV_bk*	*MES*	*Beta*	*Net charge-offs*	*Liquid asset1*	*Termspread_d1*
$Intensity_t$	$\mathbf{-0.006}^{*}$	$\mathbf{-0.052}^{**}$	$\mathbf{0.002}^{*}$	$\mathbf{-0.101}$	$\mathbf{-0.056}^{**}$	$\mathbf{0.014}^{**}$	$\mathbf{-0.008}^{**}$
	(−1.74)	(−2.35)	(1.67)	(−1.63)	(−3.08)	(2.33)	(−2.16)
CEO & BHC Controls	Y	Y	Y	Y	Y	Y	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y	Y
Observations	432	423	423	423	488	423	396
Adjusted R^2		0.855	0.752	0.760	0.631	0.814	0.094

Endogeneity Test 2: CEO Hometown Shocks

- Concerns: CEOs self select into states in the 1980s and receive corresponding shocks
- Strategy: Places of birth are beyond CEOs' choices but events taking place there remain salient due to connections
- 44 CEOs whose places of birth are identified. 6 cases outside US
- RHS: Bank failure rates of the hometown states during S&Ls crisis

Table 8: Hometown Bank Failures during S&Ls

	CMV_bk	*UST*	*Termspread_d1*	*Net charge-offs*
Intensity_Birth	-0.013**	0.007**	-0.001*	-0.020**
	(-2.52)	(2.58)	(-1.96)	(-2.53)
CEO & BHC Controls	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Observations	118	118	112	118
Adjusted R^2	0.607	0.790	0.043	0.279

Heterogeneous Effects

- Effects on credit and liquidity risks are stronger if CEOs worked for the Banking Sector in 1980s (89%)

Table 9a: CEOs Who Worked for the Banking Sector during S&Ls

	$Netchargeoff$	$Badloan$	$Provision$	$LiquidAsset1$	$LiquidAsset2$	$USTS$
Intensity	**-0.053***	**-0.107****	**-0.058****	**0.015****	**0.010***	**0.008****
	(-1.90)	(-2.46)	(-2.59)	(2.27)	(1.95)	(2.73)
CEO & BHC Controls	Y	Y	Y	Y	Y	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y
Observations	1048	1049	1042	1048	1048	1027
Adjusted R^2	0.653	0.599	0.688	0.904	0.900	0.734

Heterogeneous Effects

- Effects on credit and liquidity risks are stronger if CEOs were in C-suites before (47%)

Table 9b: CEOs Who Held C-suites Positions during S&Ls

	Netchargeoff	*Badloan*	*Provision*	*LiquidAsset*1	*LiquidAsset*2	*USTS*
Intensity	**-0.058***	**-0.111****	**-0.052*****	**0.014**	**0.020***	**0.009***
	(-1.83)	(-2.04)	(-3.57)	(1.36)	(1.70)	(1.72)
CEO & BHC Controls	Y	Y	Y	Y	Y	Y
Year & BHC FEs	Y	Y	Y	Y	Y	Y
Observations	477	478	476	478	478	470
Adjusted R^2	0.681	0.661	0.694	0.928	0.906	0.715

- No differential effects between big and small banks

Findings

- Bank CEOs learn!
  - Banks with CEO experiencing S&Ls crisis are less likely to fail!
  - Those CEOs take lower systemic risks!
- Potential Channels:
  - Business model exposure to interest rate shocks
  - Credit risk
  - Liquidity risk

Implications

- **Should we update agent types in corporate theories if crisis experiences matter?**
- **Is there path dependence of systemic risk taking?**
- **Are we missing element of human capital in the current regulatory landscape?**
- **New source of time-varying managerial traits, manager styles and the culture of prudence**

THANK YOU VERY MUCH!