

# Revisiting Military Keynesianism: The Cold War and U.S. Labor Markets

Ilyana Kuziemko, Suresh Naidu, Danny Onorato

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# The “Golden Age” of American capitalism

- After World War II, US enjoys nearly three decades of rapid and equitable growth.
- Besides simply GDP growth and historically low inequality, this era witnessed declining white/Black gaps ([Margo 1993](#)) and rising intergenerational mobility ([Jacome et al., 2024](#)).

# Proposed policies behind post-war equitable growth

- Farber et al. 2021:

“A combination of low-skill composition, compression, and a large union income premium made **mid-century unions a powerful force for equalizing the income distribution.**”

- Goldin and Margo 1992:

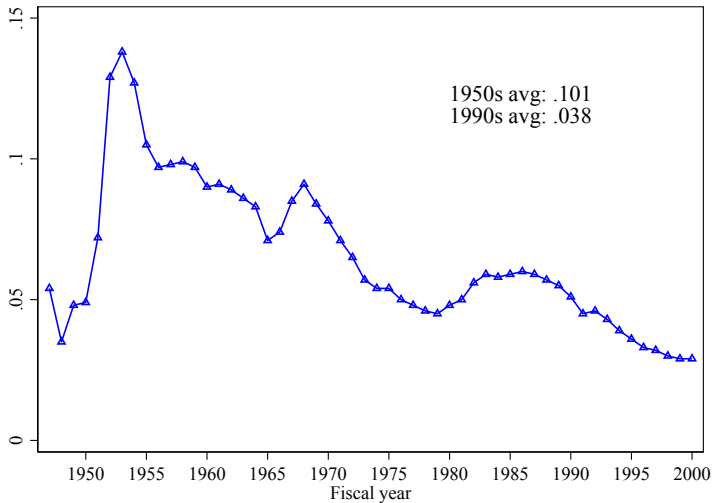
“The **relative demand for less-educated workers** increased during the 1940s and 1950s, and a rising **minimum wage** continued to pull up the bottom of the wage distribution. The **American labor movement was never stronger** than in the 1950s...Finally, and perhaps of most importance, **increases in the supply of educated labor** served to depress the price of skilled labor and retained...the egalitarian impact of the Great Compression.”

- Piketty Saez Stantcheva (2014): historically high top tax rates.

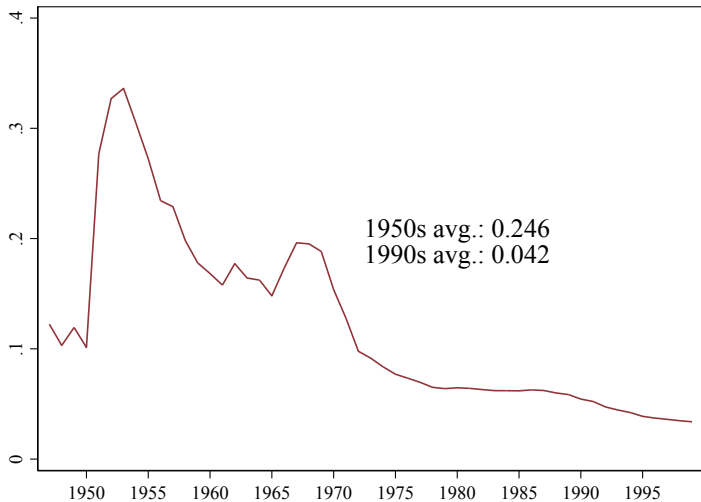
## A forgotten explanation?

- Sustained post-WW2 military spending (even in peacetime) was official U.S. policy (1948 NSC-20; 1950 NSC-68):
  - ▶ “Develop a level of military readiness which can be maintained as long as necessary as a deterrent to Soviet aggression.”
- Procurement spending differentially raises *demand* in low-skill manufacturing sectors.
- Large active-duty population (mostly young men) reduced potential *supply* of low-skill workers.

# Defense share of GDP, FY 1947-onward



# Active-duty share of men ages 18-24, 1947-onward



## Much discussed contemporaneously

- Robert McNamara (Secretary of Defense, 1961-1968) called the Department of Defense a “gigantic WPA.”
- Joan Robinson, 1962:

Keynes' opponents tried to mock him by saying that he advocated curing unemployment by setting men to dig holes in the ground and fill them up again....For our [UK's] full employment we are largely beholden to holes in the ground that Americans dig. In the United States, the declared military budget accounts for nearly 10 per cent of national income, and is equal to 60 per cent of gross investment....[I]n fact Keynesian prosperity has been a by-product of the Cold War.

# “Military Keynesianism”

- Historians (and contemporaneous economists) highlight important role of Cold War in U.S. political economy (“military Keynesianism” or “permanent war economy”).
  - ▶ Recent books: [Brenes 2020](#), [Barker \(forthcoming\)](#). But “war as the only legitimate excuse for creating employment by governmental expenditure” ([Keynes, 1933](#)) is an old argument.
- Idea seems to have faded within modern, more quantitative inequality literature.
  - ▶ But see [Fishback, 2007](#) and [Higgs, 2006](#).
- Our contributions are to *quantify* the Cold-War era roles of:
  - ▶ Military procurement on manufacturing employment and inequality.
  - ▶ Military draft on labor-market tightness.



## Main results: Isolating procurement shifts

- First shift: post-Korea shift toward missile production (Eisenhower's: "New Look").
- Large positive effects on manufacturing share, negative effects on top-ten income share (and related results on employment and inequality).
- Firm-level data: procurement shifts lead to market cap increases, but declines in executive-compensation/market-cap ratio (consistent with Congressional oversight).

## Main results: Isolating procurement shifts (cont'd)

- The 1960s witnesses several shifts: end of “first missile age,” McNamara budget cuts, but then rapid build-up for Vietnam.
  - ▶ For this period, we have more detailed state-year spending data, broken down by R&D versus other.
  - ▶ We replicate most results from Korea-to-Missiles. All effects driven by *non-R&D* component of spending.
- End of *détente* in 1979, Carter/Reagan re-armament [skim/skip].
  - ▶ Most effects replicate, but not the reduction in inequality.
  - ▶ Again, non-R&D key for manufacturing employment.
- End of the Cold War and the “Peace dividend” [skip]
  - ▶ The fall in procurement spending associated with declining manufacturing, rising inequality.

## Main results: Economic and distributional effects

- Combine all episodes in standard two-way fixed effects analysis from FY 1951-2000.
- We estimate that 1950s-1990s decline of military spending explains:
  - ▶  $\approx$  25-35% of decline in manufacturing employment.
  - ▶  $\approx$  10% of rise in top-ten share.
- Both of these effects remain significant and of similar magnitude in just basic aggregate time-series analysis.

## Main results: Draft and labor-market tightness

- Increases in active-duty population during draft era significantly reduced draft-age, male unemployment rates.
- The 1950s-1980s decline in active-duty share of male 18-24 year olds predicts 1.9 pp increase in their relative unemployment rates (79 percent of actual increase).

## Results: Politics of the Cold War

- We show that state-level procurement contracts a strong predictor of support for Korean War and Vietnam wars.
- *Democratic voters* and *union members* differentially support hawkish foreign policy and military spending.
  - ▶ In other NATO allies (Canada, UK, and France) without large military industrial complex, left/center-left voters are more “dovish.”
- Cold War created robust, working-class voting bloc for sustained government spending (at least in the form of military procurement).

# Modern relevance: New Cold War?

- Geopolitical rivalry with China sparks discussion of “industrial policy,” reversing manufacturing decline.
  - ▶ Literature emphasizes trade and automation (Tutor, Dorn, and Hanson 2013, Acemoglu and Restrepo 2020; union organizing (Alder, D.Lagakos, and Ohanian 2023); changes in consumer demand (e.g., Comin, Lashkari, and Mestieri 2021); service-sector cost disease (Baumol, 1961).
- Over several decades, Cold War defense policy built local industrial capacity and created steady demand for manufacturing workers.
- NB: “Cold War” led to a lot of deaths (2-3M in Korea, 1-4M in Vietnam) with historically high civilian-to-combatant ratio, numerous proxy wars, though never a direct US/USSR conflict.
  - ▶ See Malis, Querubin, and Satyanath 2021, Miguel and Roland 2011, Dell and Querubin 2018, Dube, Kaplan, and Naidu 2011.

# Outline

- 1 Related work
- 2 Data
- 3 Labor market effects of procurement contracts
  - Isolating procurement shifts
    - Korean War to Missile Era
    - End of missile era / McNamara cuts / Vietnam War
    - End of Détente, Carter/Reagan build-up [skip]
    - “Peace dividend” [skip]
  - Pooling all periods
- 4 Labor market effects of Cold-War era draft
- 5 Cold War political coalitions
- 6 Concluding thoughts

# Fiscal multiplier literature

- Large literature using variation in military spending to estimate *fiscal multipliers* (Barro 1984, Ramey 2011, Owyang, Ramey, and Zubairy 2013, Nakamura and Steinsson 2014).
  - ▶ In particular, Nakamura and Steinsson use data from 1966-2006 (see also Hooker and Knetter 1997) to estimate state-level multiplier around 1.5 (see also Brunet 2022 for WW2 regional multipliers).
    - Dupor and Guerrero 2017 find much smaller multiplier when including 1951-1966 data.
  - ▶ Ramey 2011: “narrative” construction of military spending shocks (Korean war especially).



## Fiscal multiplier literature (cont'd)

- Focus on the **medium-run motivates event-study approach**, as well as assessment of pre-trends.
- Relative to multiplier literature, we focus more on **inequality and manufacturing**, not growth of GDP and employment.
  - ▶ [Auerbach et al. \(2022\)](#) uses city-level data on defense spending from 1997 onward; finds DoD spending helps less-educated, non-whites.
- Recent literature has emphasized importance of disaggregating “Big G” ([Cox et al. 2020](#)).
  - ▶ Whenever possible, **we separate R&D and non-R&D components** and show results differ by purpose of spending (we believe novel to the literature).

# Defense R&D spending and innovation and growth

- Effects of competition with Soviets on U.S. innovation (Kantor and Whalley 2023, Gross and Sampat 2023, Gruber and Johnson 2019).
- Effects of military R&D on non-military innovation (Ruttan 2006, Howell et al. 2021, Danzer, Danzer, and Feuerbaum 2023).
- **Our interest is more the *non-R&D* component**, which even at lowest points was  $\approx 80$  % of total procurement spending.

# World War II literature

- A large economic history literature examines the transformational effects of WWII (Fishback and Jaworski 2016). Papers document effects of WW2 on:
  - ▶ Black-white economic gaps: Collins 2003; Aizer et al. 2020
  - ▶ Intergenerational mobility: Garin and Rothbaum 2022
  - ▶ Inequality: Vickers and Ziebarth 2023
  - ▶ Union density: Farber et al. 2021
- But World War II is (let's hope!) *sui generis*, very different from period we study.
  - ▶ During WW2, federal government ran massive deficits, banned production of many goods (e.g., passenger cars), controlled prices, and removed 16 million men from labor market.
- By contrast, **no Cold-War budget deficits until late 1960s, minimal price controls, smaller draft.**

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## Procurement Data

- Contract-level micro-data available from 1966 onward (as in Nakamura and Steinsson, 2014) and for 1940-1945.
- We digitize tables from DoD Reports: has annual contracts *by state* for Army, Navy, Air Force from 1951 to 1981.
  - ▶ Also used by Dupor and Guerrero (2017) in extension of Nakamura Steinson.
- From 1958 onward we hand-entered state-year share of procurement that is for R&D, typically from Congressional hearings and reports.
- Digitized annual firm-level procurement data for top 100 contractors from 1950 onward [preliminary results].

## Other data

- Historical state-year-level outcome data.
  - ▶ From Handbook of Labor Statistics and BLS: manufacturing employment, wages.
  - ▶ From historical UI data, “covered” employment and wages.
  - ▶ From BEA, federal income tax revenue.
  - ▶ From WID, state-year level top10 share and share filing a tax return.
- From Frydman and Molloy (2011), historical firm-level executive salary data.
- Most political data come from harmonizing Gallup surveys.

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# Geopolitics of the era

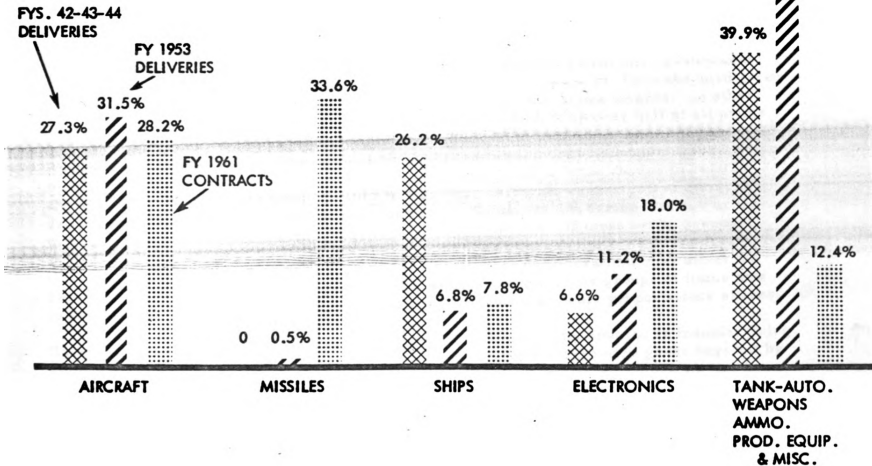
- Post-WW2, military leaders conclude US cannot compete in conventional warfare, so focus on air and nuclear supremacy.
- Korean War a major return to traditional procurement.
- After 1953 Korean armistice, sharp return to nuclear and missile arms race (Eisenhower's "New Look").
  - ▶ Soviets test atomic and hydrogen, thermonuclear, and hydrogen bombs in 1949, 1953 and 1955, resp. Sputnik in 1957.
  - ▶ Fears of "missile gap" during Eisenhower administration.
- Mountain states (plus Cape Canaveral, Florida) have key geographic advantages.



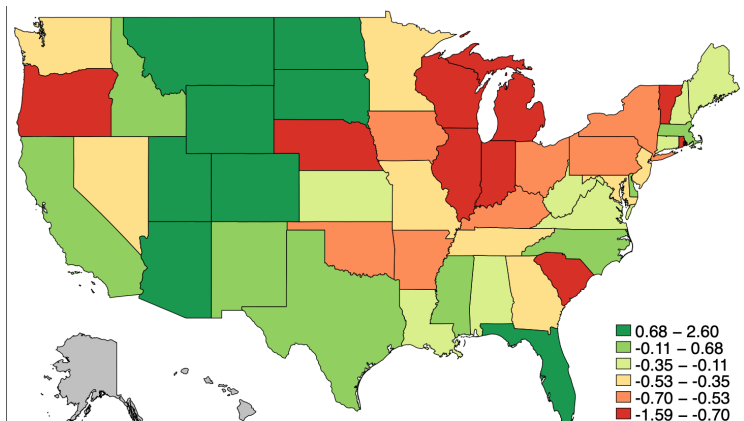
# MILITARY HARD GOODS

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~~263~~  
~~A5~~  
~~1962~~

CHART I



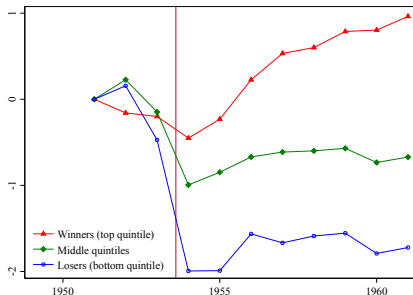
# Map of winners and losers from missiles shift



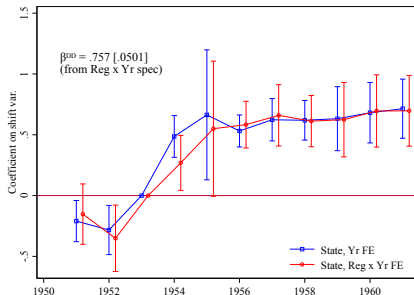
$$\text{“Missile shift” } \Delta_s^{missile} = \log \frac{\text{Procurement}_{s,1954-1961}}{8 \cdot \text{GDP}_{s,1950}} - \log \frac{\text{Procurement}_{s,1951-1953}}{3 \cdot \text{GDP}_{s,1950}}.$$

# “First stage”: Log procurement as share lagged GDP

Raw means (1951=0)



Event-study analysis



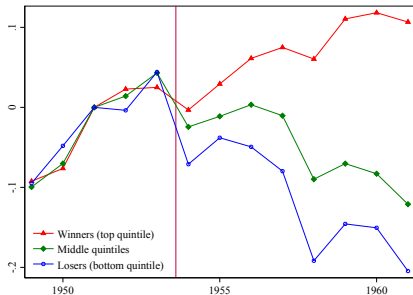
Standard event-study specification:

$$Y_{st} = \sum_{k \neq 1953} \beta_k \Delta_s \mathbb{I}[t = k] + \eta_s + \delta_t + \mu_{r(s),t} + e_{st}.$$

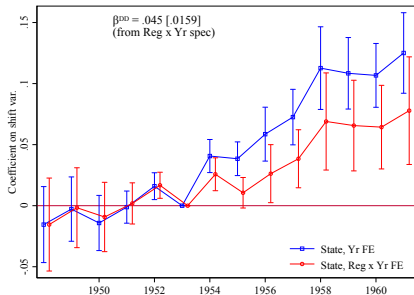
Missile-shift var standardized, so coefficients are in terms of 1 SD difference.

# Manufacturing employment per capita

Raw means (1951=0)

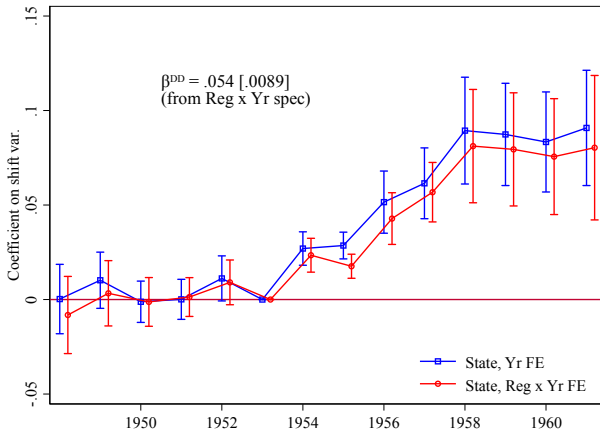


Event-study analysis



Dividing by first-stage magnitude, implied elasticity of manufacturing jobs with respect to military spending is 0.059.

# Log covered employment p.c.



“Covered employment”  $\approx$  “good jobs” (excluded farm laborers, domestic workers).

Raw means

WW2 x Year FE

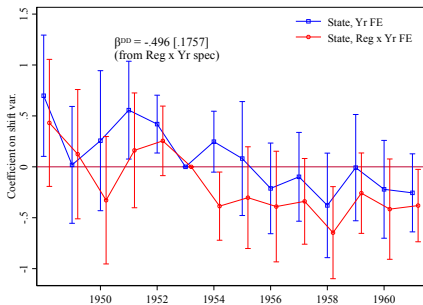
Union density in 1947 x Year FE

# Inequality results

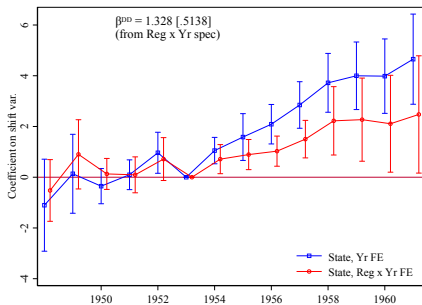
- We focus on the top-ten share, the share filing tax returns.
- Will also examine wages in “covered” and manufacturing sectors.
- In this period only, will consider farm outcomes (right now, only farms per capita).
- Did procurement pull up the bottom of the distribution into better jobs?

# Top-ten share and share filing returns

## Top-ten share



## Share filing returns



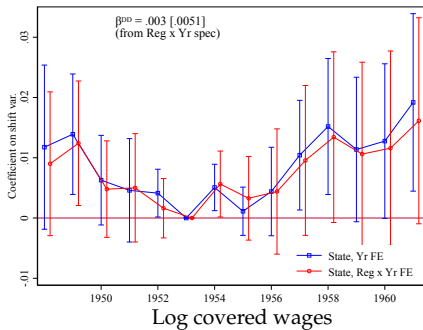
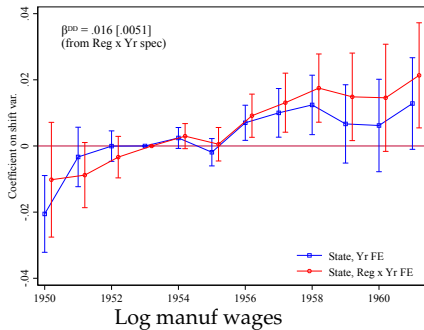
Raw means    WW2 x Year FE

Union density in 1947 x Year FE

Raw means    WW2 x Year FE

Union density in 1947 x Year FE

# No wage declines despite composition effects





# Firm-level outcomes (preliminary)

- Just as procurement shifted geographically, it shifted from automotive to aeronautic firms.

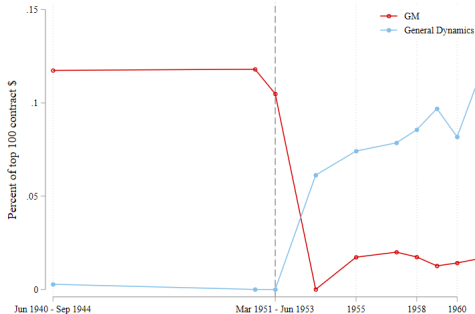


TABLE 1.—100 companies and their subsidiaries listed according to net value of military prime contract awards,<sup>1</sup> July 1, 1957–June 30, 1958

Rank and companies	Millions of dollars	Percent of U.S. total	Cumulative percent of U.S. total
<b>U.S. total</b> <sup>1</sup> .....	<b>221,794.8</b>	<b>100.0</b>	<b>100.0</b>
<b>Total, 100 companies and their subsidiaries</b> <sup>2</sup> .....	<b>16,164.3</b>	<b>74.2</b>	<b>74.2</b>
<b>1. Boeing Airplane Co.</b> .....	<b>2,131.0</b>	<b>9.6</b>	<b>9.6</b>
<b>2. General Dynamics Corp.</b> .....	<b>1,382.6</b>	<b>6.4</b>	<b>16.0</b>
Electronic Control Systems, Inc.....	.6	( <sup>0</sup> )	.....
<b>Total</b> .....	<b>1,383.2</b>	<b>6.4</b>	<b>16.2</b>
<b>3. General Electric Co.</b> .....	<b>783.4</b>	<b>3.6</b>	<b>19.8</b>
<b>4. Lockheed Aircraft Corp.</b> .....	<b>700.8</b>	<b>3.3</b>	<b>23.1</b>
Lockheed Aircraft Service, Inc.....	22.6	.1	.....
Lockheed Aircraft Service International, Inc.....	7.1	( <sup>0</sup> )	.....
Lockheed Aircraft Service Overseas, Inc.....	34.1	.1	.....
Lockheed Air Terminal, Inc.....	.5	( <sup>0</sup> )	.....
<b>Total</b> .....	<b>755.1</b>	<b>3.5</b>	<b>23.3</b>
<b>5. United Aircraft Corp.</b> .....	<b>661.1</b>	<b>3.0</b>	<b>26.3</b>
<b>6. American Telephone &amp; Telegraph Co.</b> .....	<b>.3</b>	<b>(<sup>0</sup>)</b>	<b>26.3</b>
Teletype Corp.....	2.3	( <sup>0</sup> )	.....
Western Electric Co.....	657.2	<b>3.0</b>	<b>26.3</b>
Westrex Corp.....	( <sup>0</sup> )	( <sup>0</sup> )	.....
<b>Total</b> .....	<b>659.8</b>	<b>3.0</b>	<b>29.3</b>
<b>7. North American Aviation, Inc.</b> .....	<b>646.5</b>	<b>3.0</b>	<b>32.3</b>
Astrodyne, Inc.....	1.2	( <sup>0</sup> )	.....
<b>Total</b> .....	<b>647.7</b>	<b>3.0</b>	<b>32.3</b>
<b>8. Douglas Aircraft Co.</b> .....	<b>513.4</b>	<b>2.4</b>	<b>34.7</b>
<b>9. Hughes Aircraft Co.</b> .....	<b>472.6</b>	<b>2.2</b>	<b>36.9</b>
<b>10. Martin Co. (The)</b> .....	<b>400.0</b>	<b>1.8</b>	<b>38.7</b>
Rias, Inc.....	.2	( <sup>0</sup> )	.....
<b>Total</b> .....	<b>400.2</b>	<b>1.8</b>	<b>38.7</b>

- We create firm-level “missile shift” variable to executive pay as a function of procurement awards.
- Congress did not impose a cap on contractor executive pay, but it scrutinized executive salaries for military contractors.

INVESTIGATION OF THE PREPAREDNESS  
PROGRAM

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SEVENTH REPORT

OF THE  
PREPAREDNESS INVESTIGATING  
SUBCOMMITTEE

OF THE  
COMMITTEE ON ARMED SERVICES  
UNITED STATES SENATE

UNDER THE AUTHORITY OF

S. Res. 215

(84th Congress, 2d Session)

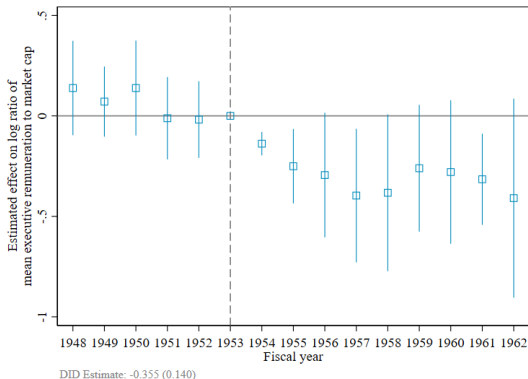
INTERIM REPORT ON THE FACTS WITH RESPECT TO  
REMUNERATION OF OFFICERS AND DIRECTORS  
OF AIRFRAME MANUFACTURERS



*Salaries and bonuses of principal officers in aircraft industry*

	Salary	Bonus or incentive compensa- tion
<b>Beech Aircraft Corp.:<sup>1</sup></b>		
C. A. Beech, president.....	\$99,036.00	-----
J. P. Gates, vice president.....	74,901.00	-----
F. E. Hedrick, vice president.....	72,495.00	-----
C. C. Pearson, vice president.....	58,530.00	-----
All officers and directors.....	421,252.00	-----
<b>Bell Aircraft Corp.:<sup>1</sup></b>		
L. D. Bell, president.....	85,029.00	-----
W. E. Kepner, executive vice president.....	61,057.00	-----
R. P. Whitman, vice president.....	59,328.00	-----
All officers and directors.....	441,914.00	-----
<b>Boeing Airplane Co.:<sup>2 3</sup></b>		
W. M. Allen, president.....	91,557.00	\$19,045.00
W. E. Beall, vice president.....	63,973.00	13,065.00
E. C. Wells, vice president.....	51,644.00	10,555.00
F. P. Landan, vice president.....	40,000.00	8,040.00
J. E. Schaeffer, vice president.....	40,000.00	8,040.00
J. P. Murray, vice president.....	21,657.00	3,000.00
J. O. Yeasting, vice president.....	38,973.00	8,040.00
A. F. Logan, vice president.....	28,986.00	4,810.00
C. B. Gracey, vice president.....	32,987.00	6,735.00
E. M. Nelsen, treasurer.....	22,657.00	3,750.00
J. E. Prince, vice president.....	30,315.00	6,230.00
C. Skeen, controller.....	21,986.00	4,525.00

## Exec. compensation relative to market cap.



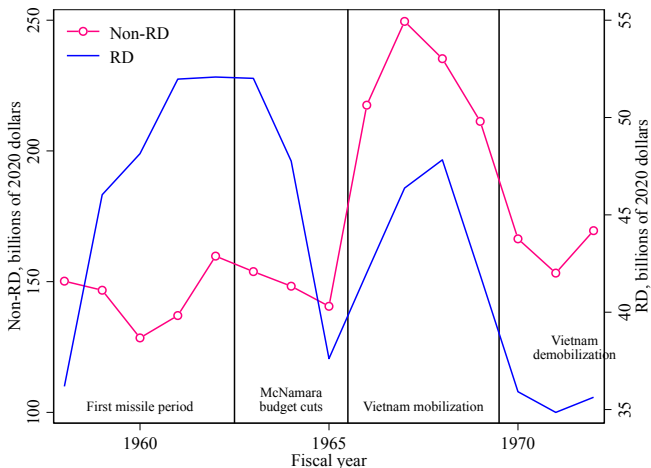
$$\log(w_{ft}^{exec} / V_{ft}) = \sum_{k=1948}^{1962} \beta_k \mathbb{I}[t = k] \Delta_f + \eta_f + \eta_{ind(f),t} + \epsilon_{ft}$$

We follow Edmonds, Gabaix and Landier (2009) and use CEO pay divided by market cap  $V_{ft}$  as the outcome variable. One SD increase in firm-level missile-shift is twice the effect of 1 SD increase in corporate governance index.

## End of first missile era and Vietnam build-up

- Missile /“New Look” era ends in early 1960s.
  - ▶ CIA confirms “missile gap” favors the US, plus Kennedy favored “flexible response” approach that relied on conventional forces.
- McNamara subsequently pushes budget cuts, especially in R&D.
- U.S. involvement in Vietnam slowly grows from 1954 (French defeat) onward.
  - ▶ “Hot war” increases needs for traditional ordnance, jeeps, helicopters, uniforms, etc.

## Spending patterns, 1958-1972



- We instead use a TWFE design and argue that the variation in RD and non-RD relative to state and region  $\times$  year is plausibly identified for this period.

# Regression results, aggregate procurement

	(1)	(2)	(3)	(4)	(5)	(6)
	Manuf pc	Top 10	Ret sh.	CovEmp pc	Log wage	Fed tax
Procurement	0.0580***	-0.272**	1.202***	0.0237***	0.00831**	0.00743
share of lagged GDP (log)	[0.0168]	[0.131]	[0.423]	[0.00856]	[0.00368]	[0.0128]
Observ.	720	720	720	720	720	720
Dept var:						
– log or level	log	level	level	log	log	log
– Mean	4.249	32.93	89.45	12.27	4.647	13.35
– St. dev.	0.605	2.740	8.991	0.232	0.218	1.193

*Notes:* Data from 48 states, 1958-1972. State and region×year FE in all regressions, SEs clustered by state, observations weighted by population.

## Regression results, disaggregated

	(1)	(2)	(3)	(4)	(5)	(6)
	Manuf pc	Top 10	Ret sh.	CovEmp pc	Log wage	Fed tax
Non-RD as share lagged GDP (log)	0.0497*** [0.0149]	-0.278** [0.124]	0.930** [0.404]	0.0172** [0.00784]	0.00671* [0.00370]	-0.00238 [0.0132]
RD as share lagged GDP (log)	0.00723 [0.00599]	0.0311 [0.0474]	0.220 [0.137]	0.00696** [0.00338]	0.000285 [0.00170]	0.00852* [0.00429]
Observ.	706	706	706	706	706	706
Dept var:						
– log or level	log	level	level	log	log	log
– Mean	4.262	32.98	89.41	12.27	4.650	13.37
– St. dev.	0.588	2.716	9.020	0.228	0.218	1.181

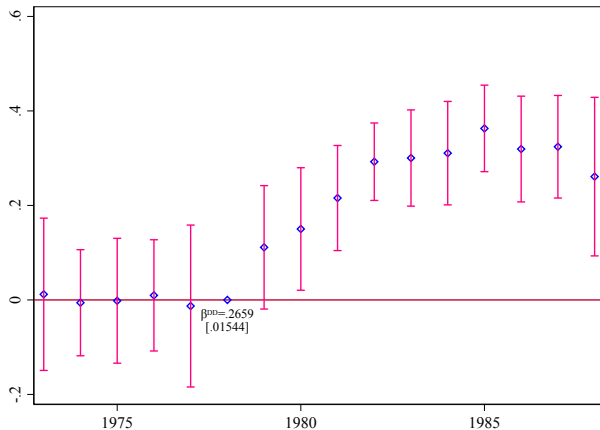
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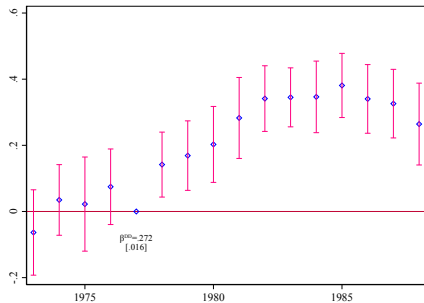
## The reversal of Detente [likely skip]

- Nixon and Kissinger (and Brezhnev) prioritized arms control over human rights, anti-communism.
  - ▶ SALT I (1972) capped number of ICBMs, SLBMs.
  - ▶ ABM treaty (1972) eased fear of first-strike attacks.
  - ▶ Helsinki Accords (1975) further thawed tensions, trade flows increase.
- Carter and Brzezinski (and Brezhnev's generals) took a more hawkish turn.
  - ▶ Detente clearly over by 1979, Soviet invasion of Afghanistan, failure of SALT II.
- Reagan accelerated build-up, revived missile production/defense.
  - ▶ “[I]t had been quite impossible for me at that moment to imagine anything much worse than Carter. But .... Reagan turned out to be far worse and far more threatening.” – Anatoly Dobrynin (Soviet Ambassador to US, in his 1995 memoirs)

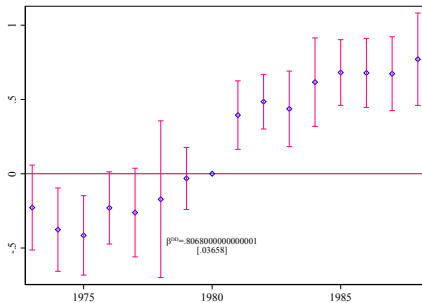
## First stage: Log procurement (total)



## First stage: Broken down by RD



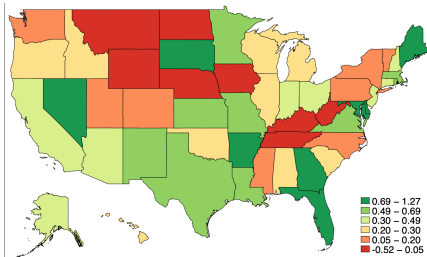
Non-RD procurement



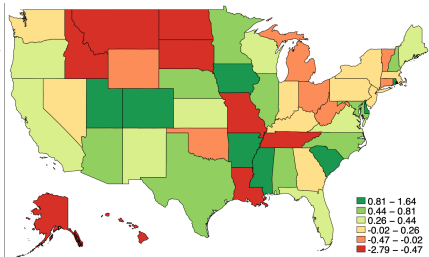
RD procurement

- In results that follow, will show event-study of each shift separately, and also coefficients from a “horse-race” TWFE regression.

# Winners and losers of Carter/Reagan shifts

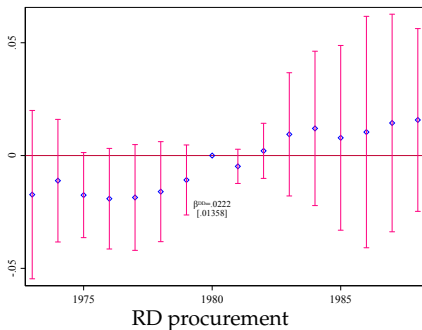
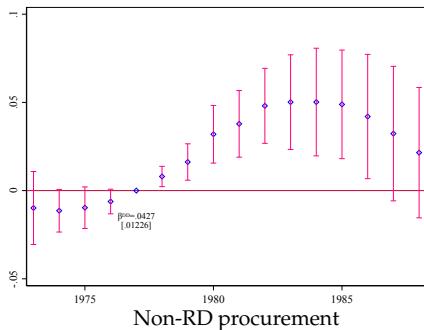


Non-RD shift



RD shift

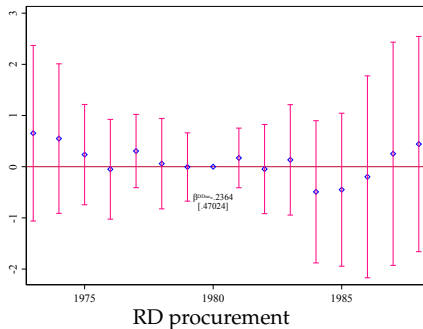
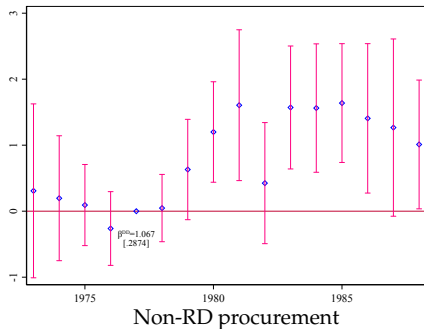
# Log manif employment pc



Estimating  $y_{st} = \beta^{\text{Non-RD}} \ln(\text{Non-RD})_{st} + \beta^{\text{RD}} \ln(\text{RD})_{st} + \eta_s + \delta_{r(s),t} + e_{st}$  yields:

$$\beta^{\text{non-RD}} = .0341^{**}[0.0142], \quad \beta^{\text{RD}} = .0145[0.0154]$$

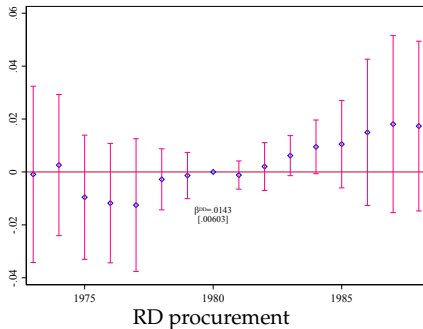
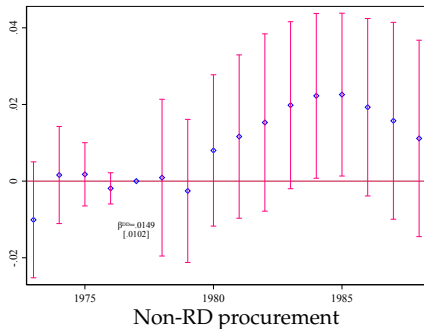
# Share filing returns



Estimating  $y_{st} = \beta^{\text{Non-RD}} \ln(\text{Non-RD})_{st} + \beta^{\text{RD}} \ln(\text{RD})_{st} + \eta_s + \delta_{r(s),t} + e_{st}$  yields:

$$\beta^{\text{non-RD}} = 1.0434^{***} [.3889], \quad \beta^{\text{RD}} = -.3776 [.4910]$$

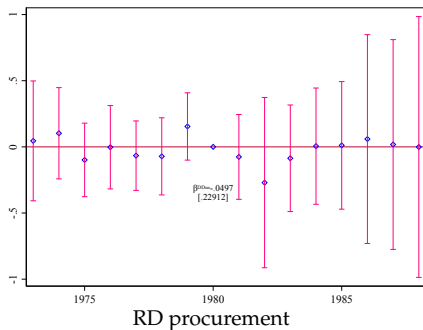
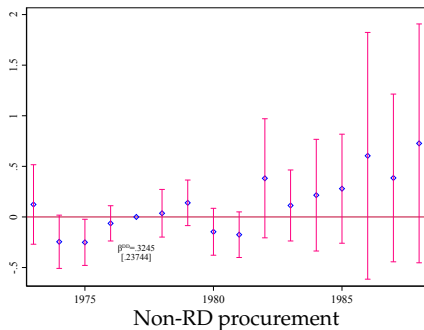
# Log covered employment p.c.



Estimating  $y_{st} = \beta^{\text{Non-RD}} \ln(\text{Non-RD})_{st} + \beta^{\text{RD}} \ln(\text{RD})_{st} + \eta_s + \delta_{r(s),t} + e_{st}$  yields:

$$\beta^{\text{non-RD}} = .01738^{**} [.0078], \quad \beta^{\text{RD}} = .0153^{**} [.0075]$$

# Top-ten share



Neither term significant in TWFE regression.



## End of the Cold War [skip]

- From 1985 onward, non-RD spending falls dramatically as Cold War ends (with small break during Gulf War I).
- RD spending falls too, but later and less dramatically.
- For now, have only done TWFE analysis for this period.

## Regression results, 1985-2001

	Log manuf. pc		Top ten share	
	(1)	(2)	(3)	(4)
Non-RD as share lagged GDP (log)	0.0478* [0.0278]	0.0580** [0.0256]	-1.145** [0.487]	-0.778* [0.461]
RD as share lagged GDP (log)	0.00830 [0.00936]	0.0109 [0.00677]	-0.0548 [0.117]	-0.0532 [0.130]
Observ.	760	760	760	760
Fixed effects	Reg x Yr	Div x Yr	Reg x Yr	Div x Yr
DV mean	4.129	4.129	39.90	39.90
DV sd	0.445	0.445	4.134	4.134

*Notes:* Results for 48 continuous states. State and year fixed effects in all regressions; observations weighted by population. Standard errors clustered by state.

## Summarizing procurement results

- Final exhibit is to examine 1951-2000 in pooled TWFE regression.
- As a way to understand magnitudes, we use these coefficients to gauge the share of manufacturing decline and inequality increased “explained” by the decline in procurement.
- In the 1950s, procurement averaged 5.6 percent of GDP, in 1990s 1.8 percent.

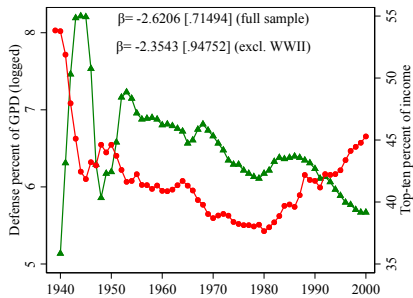
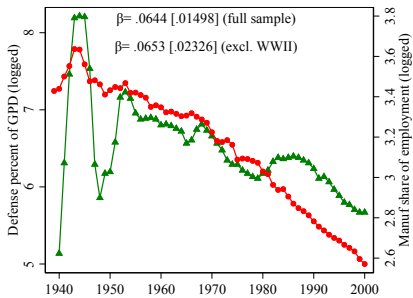
# Effects of procurement on manufacturing, inequality

	Manuf emp per cap			Top ten share		
	(1)	(2)	(3)	(4)	(5)	(6)
Procurement share of lagged GDP (log)	0.0922*** [0.0237]			-0.535** [0.220]		
Log proc. share of GDP (two-yr avg.)		0.102*** [0.0278]			-0.618** [0.263]	
Two-yr avg def sp, as pct state GDP			155.9*** [48.44]			-18.35*** [5.280]
Obs.	2394	2347	2352	2394	2347	2352
Share exp.	0.306	0.358	0.230	0.0750	0.0915	0.106

Notes: All regressions have state and region x year FE, are weighted by state population and have SEs clustered by state. "Share explained" given by

$$\beta \cdot \Delta_{\text{Spending}}^{1990s-1950s} / \Delta_{\text{Dept. var}}^{1990s-1950s}$$

# Relationships apparent in the aggregate time-series



Reported coefficients are from a regression that controls for linear time trend. Note relationship is weakest during 1970s and early 1980s (oil crises and Volcker shock).

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- 2 Data
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  - Isolating procurement shifts
    - Korean War to Missile Era
    - End of missile era / McNamara cuts / Vietnam War
    - End of Détente, Carter/Reagan build-up [skip]
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## Background on military draft

- Compulsory draft ends in January 1973.
- But until then, millions of men conscripted into active duty service during the Cold War, even in peacetime.
- From 1947-1972, large shares of young men in active duty at any given moment:
  - ▶ Ages 16-17: 1.8 percent
  - ▶ Ages 18-19: 14.0 percent
  - ▶ Ages 20-24: 19.8 percent
  - ▶ Ages 25-34: 5.8 percent
  - ▶ Ages 35-44: 2 percent
  - ▶ Ages 45 above:  $\approx 0$  though can do more formal approximation.
- Men ages 18.5-26 most at risk of being drafted (“inducted”) but technically at risk at older ages and volunteering allowed at age 17 (strategic advantages).

## Empirical approach

- Eventually, hope to estimate state-year unemployment effects by instrumenting for state-year active duty using variation in exact birth-cohort size.
  - ▶ Still searching for historical state-year active duty numbers.
- For now, will model unemployment by age-group  $a \times$  year  $t$  as a function of active-duty risk:

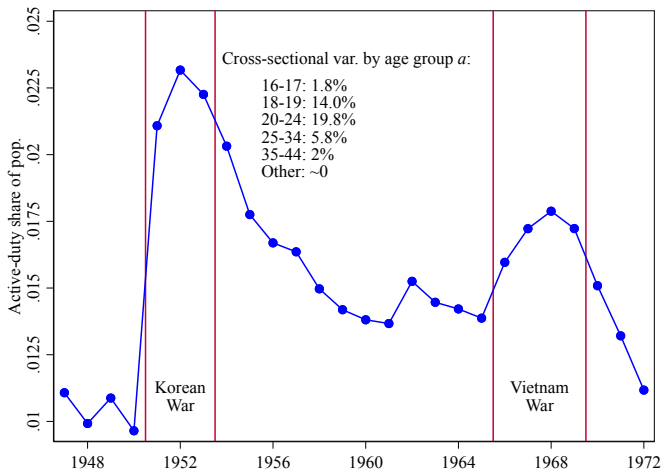
$$UnEmp_{at} = \beta Share_a \times ActiveDuty_t + \mu_a + \delta_t + e_{at},$$

where  $Share_a$  is average active-duty share by age group from 1947-1972;  $ActiveDuty_t$  is a measure of national active-duty needs (either active-duty share of population or dummy for “hot wars,” 1951-1953 and 1966-1969).

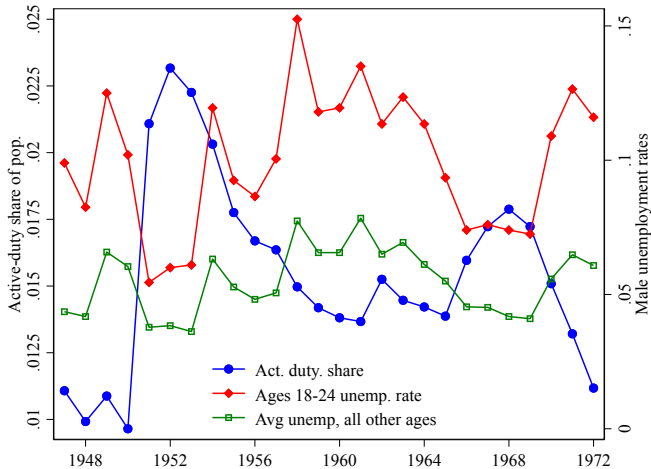
- We use female unemployment as placebo.



# Depicting identifying variation



# Depicting identifying variation



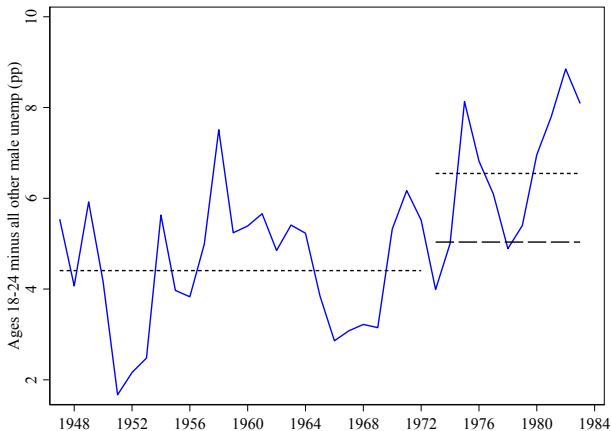
# Unemployment as a function of active-duty risk

	Dept var.: Age-group-specific unemp. rate					
	(1)	(2)	(3)	(4)	(5)	(6)
Age-based risk (a) x Std. act duty share (t)	-5.407*** [1.577]	-0.348** [0.152]	-2.504 [1.675]	-0.175 [0.169]		
Dummy 18-24 (a) x Std. act duty share (t)					-0.952*** [0.254]	
Dummy 18-24 (a) x War years (t)						-2.512*** [0.369]
Level or log?	Level	Log	Level	Log	Level	Level
Mean, dept. var.	6.789	1.669	7.173	1.795	6.789	6.789
Sample	Male	Male	Female	Female	Male	Male
Observations	182	182	182	182	182	182

*Notes:* Unit of observation is an age category x year (1947-1972, inclusive). Age categories are: 16-17; 18-19; 20-24; 25-34; 35-44; 45-54; 55-64. All regressions include age-category and year FE. Robust standard errors in brackets. In col. (6), “war years” are peak active-duty years for Korea (1951-1953) and Vietnam (1966-1969).

## Assessing magnitudes

- Male 18-24 differential unemployment rises post Cold War draft.
- Using the col. (5) coefficient, the decline in the active duty share accounts for 79 percent of this rise.



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# Cold War political coalitions

- Did procurement spending create pro-war constituencies?
  - ▶ Did state-level spending increase support for specific conflicts?
  - ▶ Did union members differentially support defense spending?
- How do these results compare to other rich democracies without a “military industrial complex”?

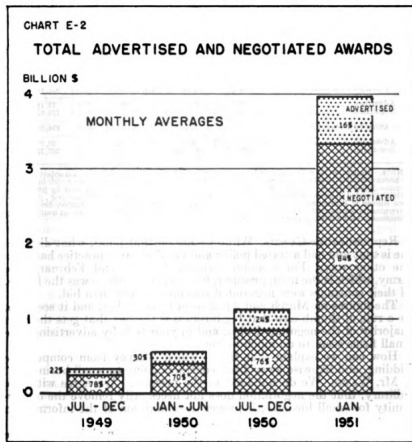
# Support for wars as function of procurement

	Dept. var.: Support for escalation/continuation (binary)					
	(1)	(2)	(3)	(4)	(5)	(6)
Log Korea spending (std.)	2.368*** [0.705]	2.488*** [0.464]	2.394*** [0.556]			-0.0418 [0.835]
Log Viet. spending (std.)			0.146 [0.570]	1.928** [0.743]	1.536*** [0.561]	1.554** [0.682]
Mean, DV	49.14	49.27	49.27	60.86	60.86	60.86
Period	Korea	Korea	Korea	Vietnam	Vietnam	Vietnam
Covariates?	No	Yes	Yes	No	Yes	Yes
Div x Yr FE?	No	Yes	Yes	No	Yes	Yes
Observations	16077	15702	15702	41359	41359	41359

*Notes:* Results from regressing  $Support_{is} = \beta Procurement_s + \gamma X_i + e_{is}$ . Covariates: sex, race, and age-in-ten-year-bin fixed effects. All regressions have survey-date fixed effects; standard errors clustered by state. Data from Gallup and ANES.

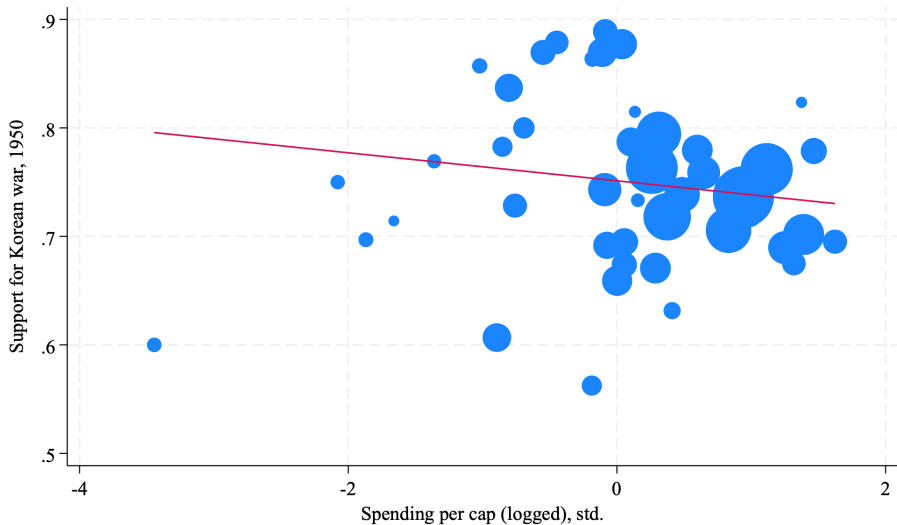
# Using 1950 as placebo test for Korea results

- North invades South Korea on June 25, 1950.
- Truman does not declare state of emergency until December 16, 1950; procurement jumps in January 1951.
- But Gallup asks Americans what should be done between July and November 1950 (pre procurement jump).
- Note Vietnam escalation more gradual, dates back to 1954.

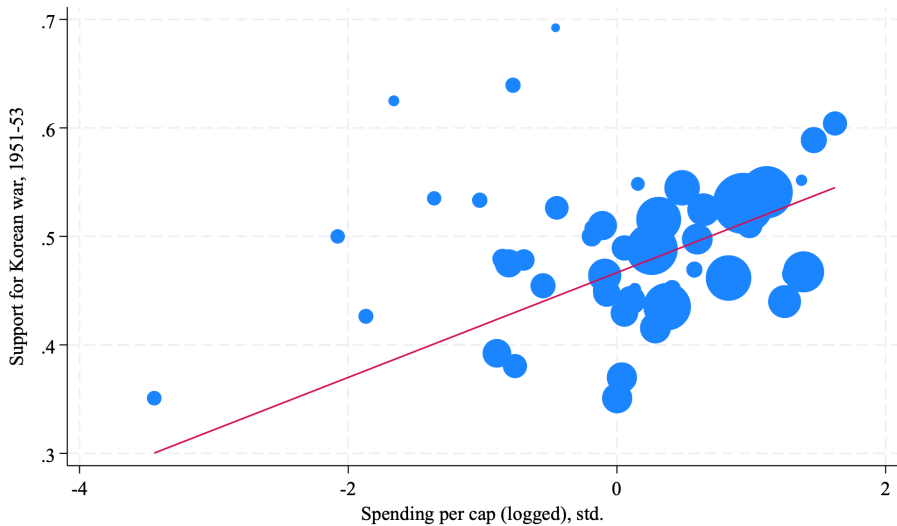




# Support *in 1950* on FY 1951-53 procurement



# Support in 1951-53 on FY 1951-1953 procurement



## Support for military intervention, spending by individual characteristics

	Mil spending			Korean War			Vietnam War		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Union	4.903**			2.852**			3.216***		
Household	[2.400]			[1.412]			[1.175]		
Democrat		5.519***	5.832***		8.956***	9.292***		0.680	0.254
		[0.918]	[0.978]		[0.981]	[1.068]		[1.294]	[1.569]
DV mean	45.61	50.52	50.21	54.30	55.79	56	61.68	60.38	60.45
Ex. South	No	No	Yes	No	No	No	No	No	Yes
Observ.	4892	11615	10399	11158	21707	19025	19258	37992	28710

*Notes:* All regressions have survey (subsuming year) and state fixed effects. Military spending questions, 1947-1955.

## Opposite result holds among key NATO allies

	(1) Canada	(2) France	(3) UK
Identifies with left- or center-left party	-0.0325*** [0.0121]	-0.140*** [0.0242]	-0.109*** [0.0144]
DV Mean	0.498	0.427	0.234
Year FE?	Y	Y	Y
Years	1951-60	1955-59	1954-57
N. Surveys	6	5	4
Observ.	6901	1733	3200

*Notes:* Data from 15 Gallup surveys in Canada, France and UK. Various questions about hawkish foreign policy.

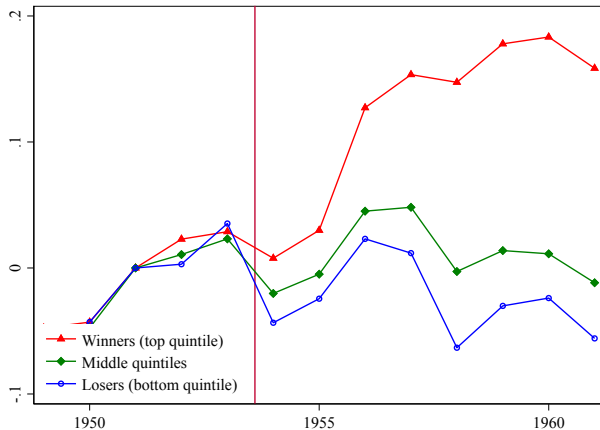
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## Summary of results

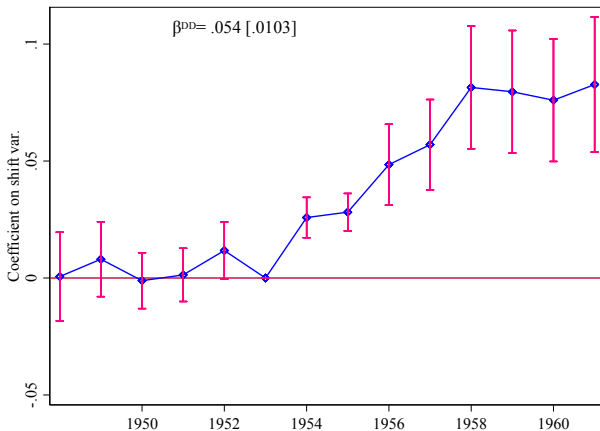
- Isolating shifts in military priorities, we show that defense spending boosted manufacturing employment and reduced inequality during peak years of Cold War.
- The 1950s-1990s decline in procurement spending can explain 14-30 percent of decline in manufacturing employment per cap and 9-16 percent of the rise in the top-ten share.
- Support for Korean and Vietnam Wars increase with local procurement.
- *Organized labor* and a *left-wing political coalition* pushed military spending and intervention (unique to the US).

# Covered employment per capita (raw means)



Back

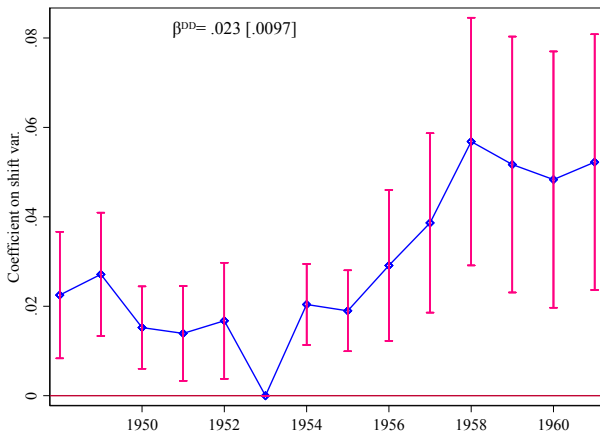
# Covered employment pc, with WW2 x Year FE



Back

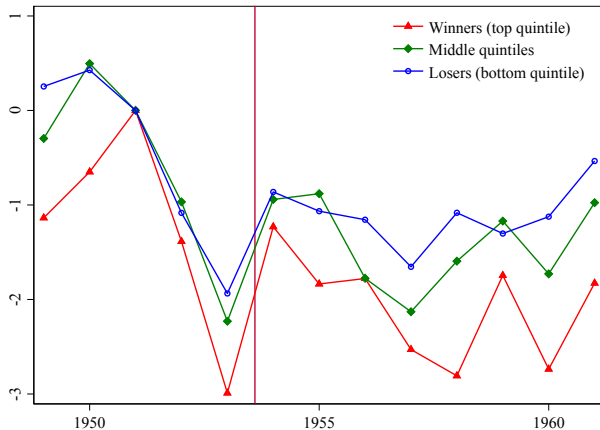


# Covered employment pc, with 1947 union density x Year FE



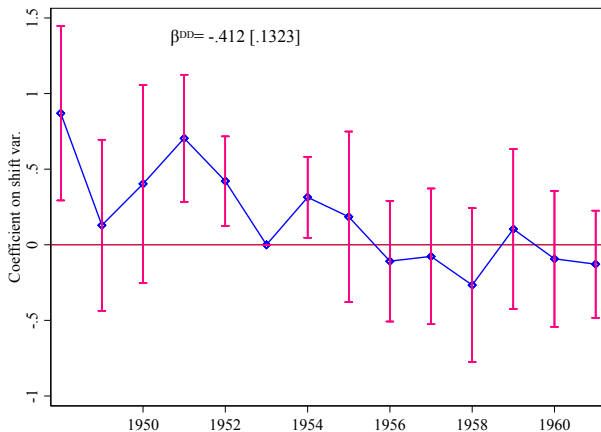
Back

# Top ten income share (raw means)



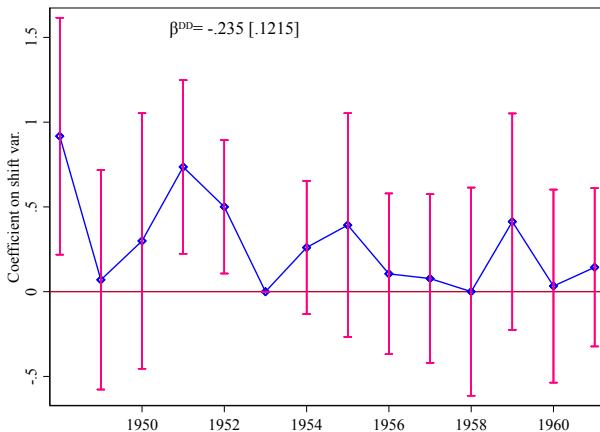
Back

# Top ten income share, with WW2 x Year FE



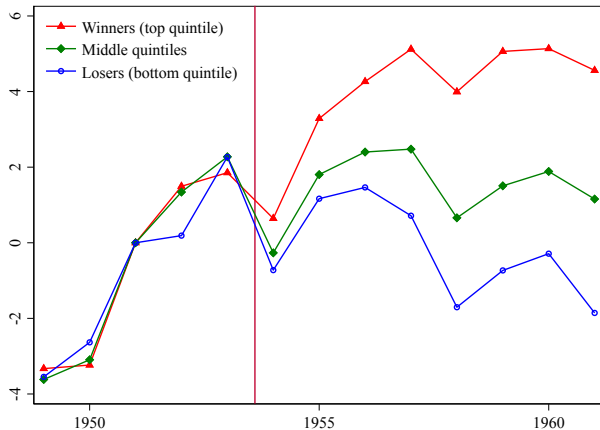
Back

# Top ten income share, with 1947 union density x Year FE



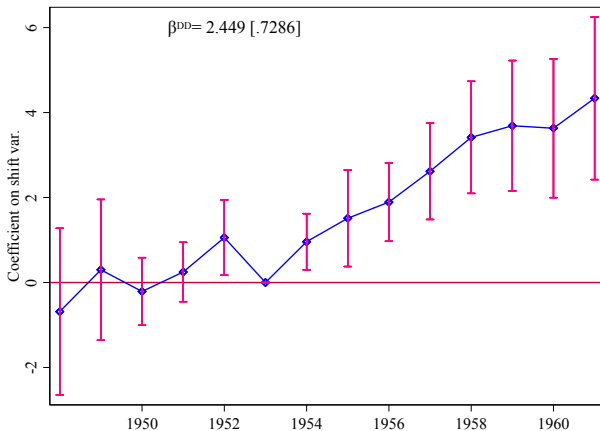
Back

# Share of pop with income tax return (raw means)



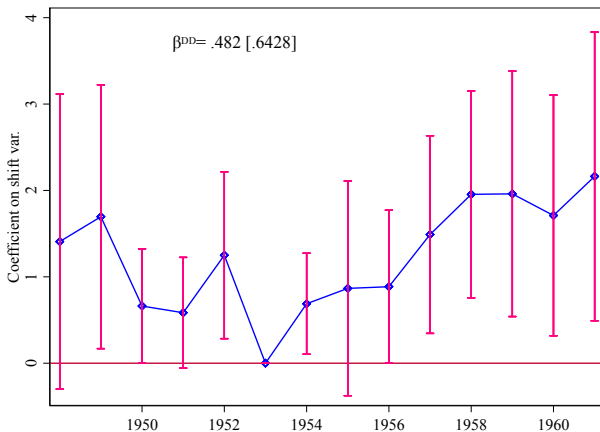
Back

# Share with tax return, adding WW2 x Year FE



Back

# Share with tax return, adding 1947 union density x Yr FE



Back