# ESTIMATING THE EFFECTS OF POLITICAL PRESSURE ON THE FED: A NARRATIVE APPROACH WITH NEW DATA

Thomas Drechsel

University of Maryland, NBER, CEPR

August 2024

#### **MOTIVATION**

- ▶ Renewed attention to the political dimension of U.S. monetary policy
  - ▶ Trump's pressure affected market expectations (Bianchi et al., 2023)
  - Discussions of recent inflation surge, increasingly politicized appointments, ...

#### **MOTIVATION**

- ▶ Renewed attention to the political dimension of U.S. monetary policy
  - ► Trump's pressure affected market expectations (Bianchi et al., 2023)
  - Discussions of recent inflation surge, increasingly politicized appointments, ...
- Relevant empirical research:
  - Cross-country studies, e.g. Alesina and Summers (1993)
  - Estimated regime-switching DSGE models, e.g. Bianchi and Ilut (2017)

#### **MOTIVATION**

- Renewed attention to the political dimension of U.S. monetary policy
  - ► Trump's pressure affected market expectations (Bianchi et al., 2023)
  - Discussions of recent inflation surge, increasingly politicized appointments, ...
- Relevant empirical research:
  - Cross-country studies, e.g. Alesina and Summers (1993)
  - Estimated regime-switching DSGE models, e.g. Bianchi and Ilut (2017)
- ► This paper:
  - ▶ Identifies shocks to political pressure on the Fed over time
  - Quantifies effects on inflation and other macro variables

#### THIS PAPER

- ► Newly collected archival data
  - Personal interactions between U.S. Presidents and Fed Officials 1933–2016
  - ► Amount, length, type of interactions → construct long time series
- Narrative identification
  - ightharpoonup SVAR with narrative sign restrictions ightharpoonup "political pressure shock"
  - Exploit variation from Nixon and Johnson administrations

#### PREVIEW OF FINDINGS

Political pressure shocks . . .

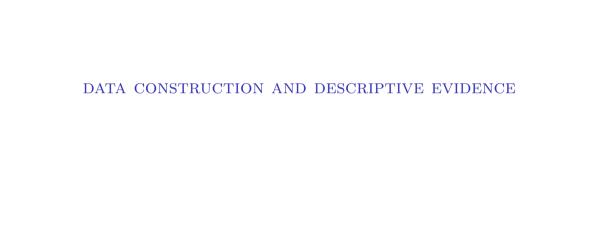
- 1. Strongly and persistently raise inflation
- 2. Have little to no effect on other macro variables
- 3. Differ from expansionary monetary policy shocks
- 4. Materialize throughout 1933-2016 sample, though mostly in 1970's

#### PREVIEW OF FINDINGS

Political pressure shocks . . .

- 1. Strongly and persistently raise inflation
- 2. Have little to no effect on other macro variables
- 3. Differ from expansionary monetary policy shocks
- 4. Materialize throughout 1933-2016 sample, though mostly in 1970's

50% as much pressure as Nixon, for six months, raises U.S. price level by 8%



#### DATA SOURCE

- ▶ Daily calendars of U.S. Presidents provided by *Presidential Libraries*
- Itemized log with time, place, duration, type of interaction, person(s) and title(s)
- Available online or on site quality varies, often manual reading required
- ▶ With RAs, collect all interactions of Presidents with Fed Officials 1933-2016
- ▶ When possible, cross-check with calendars of Fed chairs (from FRASER)

## EXAMPLE OF PRESIDENTIAL SCHEDULE

	E HOUSE		DATE MO. Day, yr.;
TIME From To		PHONE T T	ACTIVETY
5:30		R	The President received a wake up call from the White House signal board operator.
6:06		'	The President went to the Oval Office.
8:00 !	8:01	P	The President talked with the First Lady.
8:08			The President returned to the second floor Residence.
8:15		'	The President and the First Lady had breakfast.
B:31.		ı	The President returned to the Oval Office.
9:10	9:12		The President participates in a photo opportunity with: Mis. Acrd Andrews Palis, Georgia Tim Lawrence, American, Georgia Mis. Tim Lawrence, American, Georgia Mis. Tim (Repple) Lawrence Misrol Lawrence, Gumpher Feell Lawrence, dauphter Lori Lawrence, dauphter Lori Lawrence, dauphter
9:12		İ	The President went to the South Grounds.
9:13	9:20	ļ	The.Fresident motored from the South Grounds to the Shoreham Hotel.
9:20			The President was greeted by:     Clifford L. Alexander, Secretary of the Army     Robert McIncosh, General Manager, Shoreham Hotel  The President, escorted by Secretary Alexander, went to the
			VIP Room.
9:22	9:29		The Fresident net with Secretary Text and Addish Alexander Secretary Text and Addish Alexander Gen. Edward C. Mayer, Chief of Staff, U.S. Army M.S. Edward C. Clarch) Mayor and recipient of the Modal of Noorla, Amy and recipient of the Modal of Noorla, Amy and recipient of Mrs. Matt. Clarcial Dirac Jouniter Driam, daughter Jouniter Driam, daughter Mrs. Spain Rockwell, governess
9:29	9:49		The President participated in a ceremony to present the Medal
	9:49		Ms. Sophia Rockwell, governess

LOCATION SHOREHA WASHINGT	M HOTEL		ME DAILY BARY OF PRESIDENT JIMMY CARTER  UNITY 19 1960 TITLE UNITY 19 1960 9189 ALL SATURDAY		
TIME From Te		P-Thord	ACTIVITY		
reas	1		The President went to the offstage announcement area.		
9:30	1		The President went to the podium inside the Regency Ballroom.		
9:32	9:38		The President addressed approximately 1,200 guests attending the presentation.		
9:44	1		The President presented the Medal of Honor to Lt. Col. Urban.		
	1		The President returned to his motorcade. He was escorted by Secretary Alexander.		
9149	9153		The President motored from the Shoreham Hotel to the South Grounds of the White House.		
9:54	!		The President returned to the Oval Office.		
10:15	10:35		The President met with Chairman of the Board of Governors of the Federal Reserve System, Paul A. Volcker.		
10:37	10:38	P	The President talked with the First Lady.		
10:40	1	P	The President telephoned his daughter, Mey Carter. The call was not completed.		
10:44	1		The President went to the doctor's office.		
10:52	10:57	n	The President talked with Amy Carter.		
10:59			The President returned to the Oval Office. Enroute, he greated:  Richard J. Queen, released U.S. Hostage Brild Coses, father, resident of Lincolmville Beach, Miss. Barniel (Gearms) Queen Alexander Queen, brother Harrare M. Christopher, Dapty Secretary of State.		
11:02	1	1	The Presidential party went to the Oval Office.		
11:02 \$1:02 11:02 11:02 11:13	11:50 11:50 11:50 11:50 11:50		The President set with:  Mr. and Mrs. Harold Queen Mr. Alexander Queen Deputy Secretary Christopher The First Lady		

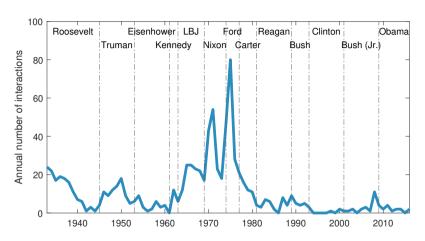
## EXAMPLE OF PRESIDENTIAL SCHEDULE (ZOOMED IN)

THE WHITE HOUSE  THE DAILY DIARY OF PRESIDENT JIMMY CARTER						
LOCATION	4		DATE (Mo., Day, Yr.)			
SHOREHAM HOTEL			JULY 19, 1980			
WASHINGTON, D.C.			TIME DAY			
		-	9:29 a.m. SATURDAY			
_		PHONE				
TIME		P Placed R Rec'd	ACTIVITY			
From	To	1::1				
		1 1	The President went to the offstage announcement area.			
		1 1				
9:30		1 1	The President went to the podium inside the Regency Ballroom.			
9:32	9:38	1 1	The President addressed approximately 1,200 quests attending			
,,,,	7.50	1 1	the presentation.			
	ì	1 1				
9:44		1 1	The President presented the Medal of Honor to Lt. Col. Urban.			
	1	1 1	The President returned to his motorcade. He was escorted by			
		1 1	Secretary Alexander.			
		1 1	oose our manual			
9:49	9:53	1 1	The President motored from the Shoreham Hotel to the South			
	,	1 1	Grounds of the White House.			
9:54		1 1	The President returned to the Oval Office.			
3.74		1 1	the flestwent recurred to the ovar office.			
10:15	10:35	1 1	The President met with Chairman of the Board of Governors of			
	1	1 1	the Federal Reserve System, Paul A. Volcker.			
10:37	10:38	P	Who Despident talked with the Pingt Jady			
10:31	10:30	P	The President talked with the First Lady.			
10:40		P	The President telephoned his daughter, Amy Carter. The call			
	1		was not completed.			
10:44						
.0:44	1		The President went to the doctor's office.			

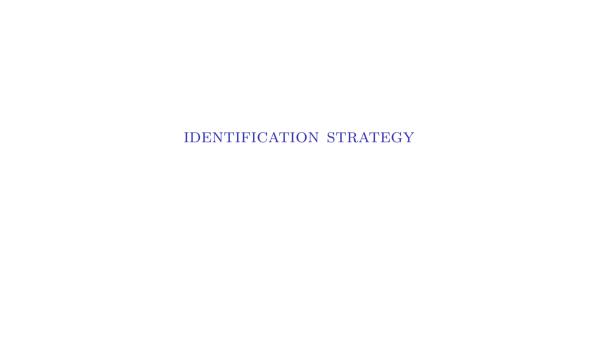
#### BASIC STATISTICS

- ▶ 857 personal interactions from 1933 to 2016
- Average length 53 minutes
- ▶ 92% with Fed chair, 8% with other Fed Officials
- ▶ 36% are 1-on-1 interactions
- ▶ 11% are on Saturdays or Sundays
- ▶ 16% happen in social settings, e.g. dinner
- Enormous variation through time...

#### PRESIDENT-FED INTERACTION COUNT THROUGH TIME



- ▶ Clinton: 6 interactions in 8 years; Nixon: 160 interactions in 5.5 years
- ▶ Second half of 1971: Nixon speaks with Burns on average every 5 days



#### NARRATIVE IDENTIFICATION

- Challenge: personal interactions do not necessarily capture political pressure
- ▶ Solution: find increases in President-Fed interactions that ...
  - ... took place for political reasons only, i.e. is plausibly exogenous
  - ... arguably impacted monetary policy
- Exploit two historical episodes in SVAR
  - Main specification: Nixon's pressure on Burns in 1971
  - ▶ Additional variation: LBJ's pressure on Martin in 1967

#### NARRATIVE IDENTIFICATION: NIXON

- ▶ Before his re-election, Richard Nixon pressured Arthur Burns to ease policy
  - Evidence from "Nixon Tapes" (Abrams, 2006)
  - Evidence from Arthur Burns' "secret diary" (Ferrell, 2010)
- Burns, a Republican and friend to Nixon, arguably gave in to Nixon's pressure
  - ► Corroborated by unsystematic monetary easing in 1971 (Romer and Romer, 2004b)
  - Corroborated by voting patterns in the FOMC (Thornton and Wheelock, 2014)

## NIXON'S APPOINTMENT OF ARTHUR BURNS

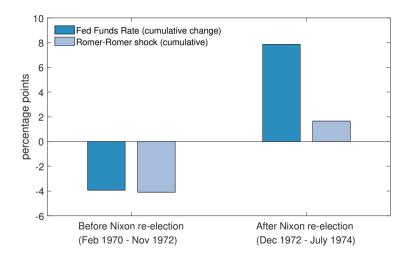


Nixon during Arthur Burns' swearing-in ceremony in 1970: "I respect his independence. However I hope that − independently − he will conclude that my views are the ones that should be followed."

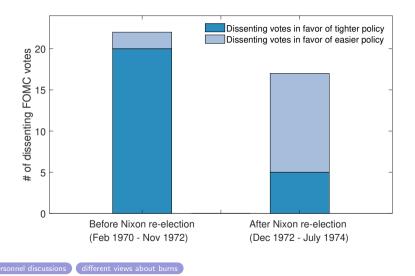
## SOME QUOTES FROM ARTHUR BURNS' DIARY MORE

- "I am convinced the President will do anything to be reelected." (March 1971)
- "I watched his face, as he spoke, with a feeling of dismay; for his features became twisted and what I saw was uncontrolled cruelty." (July 1971)
- "I got a stern letter from the President urging me start expanding the money supply and predicting disaster if this didn't happen." (Oct 1971)
- "President at this meeting again expressed his concern about the money supply. I reminded him that I was looking after that properly." (Nov 1971)

#### NARRATIVE IDENTIFICATION: CORROBORATING EVIDENCE



#### NARRATIVE IDENTIFICATION: CORROBORATING EVIDENCE



13 / 25

#### DEFINITION OF POLITICAL PRESSURE SHOCK

- ▶ Long quarterly data (Ramey and Zubairy, 2018) + President-Fed interactions
- ▶ Use narrative sign restriction method (Antolin-Diaz and Rubio-Ramirez, 2018)

Variable	Traditional sign restrictions	Narrative restrictions
President-Fed interaction count	+	1971:Q3, 1971:Q4
Log GDP deflator	+	
3-month T-bill rate	_	
Log real GDP		
Log government expenditures		
Nom. Deficit / Nom. GDP		

▶ SVAR different from event study: can 'detect' shock anywhere in sample

#### POLITICAL PRESSURE VS. MONETARY POLICY SHOCKS

Assume one period;  $\pi$ : inflation, i: interest rates, x: President- Fed interactions

$$\pi = \phi_{\pi i} i + \phi_{\pi x} x + \varepsilon^{\pi}$$

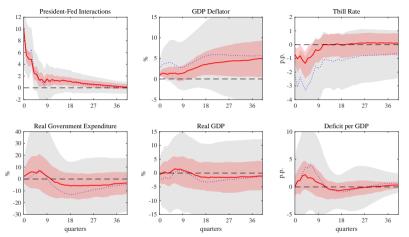
$$i = \phi_{i\pi} \pi + \phi_{ix} x + \varepsilon^{i}$$

$$x = \phi_{x\pi} \pi + \phi_{xi} i + \varepsilon^{x}$$

- ▶ Rewrite second equation:  $i = \frac{\phi_{i\pi} + \phi_{ix}\phi_{x\pi}}{1 \phi_{ix}\phi_{xi}}\pi + \frac{\phi_{ix}\varepsilon^x + \varepsilon^i}{1 \phi_{ix}\phi_{xi}}$
- lacktriangle "Romer-Romer": regress i on  $\pi$  and get residual  $\xi^m=rac{\phi_{ix}arepsilon^x+arepsilon^i}{1-\phi_{ix}\phi_{xi}}$
- ▶ If President has no effect on Fed, then  $\phi_{ix}=0$  and  $\xi^m=\varepsilon^i$
- ▶ Goal is to separately uncover  $\varepsilon^x$  with data on x and appropriate restrictions
- ▶ Transmission is different from  $\varepsilon^i$ , in particular if  $\phi_{\pi x} \neq 0$

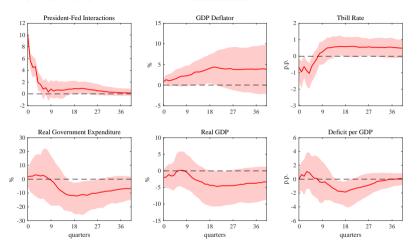


## IRFS OVER 1933-2016 SAMPLE LIGHT



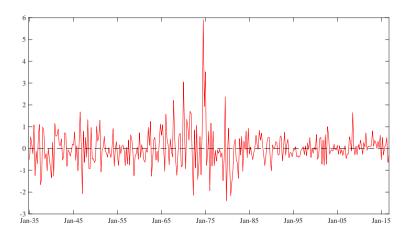
- ▶ 10 more personal interactions per quarter  $\Rightarrow$  price level 5% higher after 10 years
- ► Effect on other variables not distinguishable from zero
- Narrative restriction sharpens identification (red vs. gray bands)

## IRFS OVER 1933-1987 SAMPLE OTHER SAMPLES



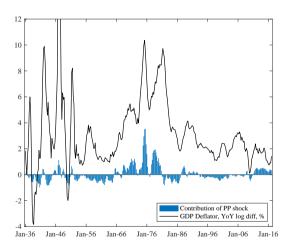
- ▶ In pre-Greenspan sample: negative effect on activity, government spending and deficit
- ▶ Political pressure not "successful"? popularity

## ESTIMATED SHOCKS OVER 1933-2016 SAMPLE



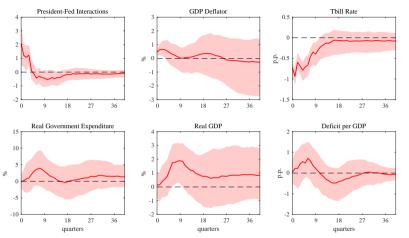
▶ Huge spike in the 1970's, much less volatile after the mid-1980's

#### HISTORICAL VARIANCE DECOMPOSITION OTHER DECOMPS



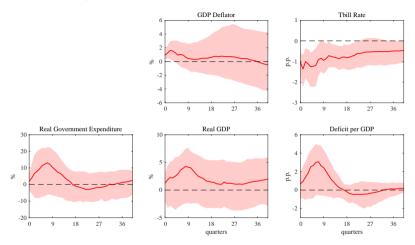
▶ Evidence of political pressure shock affecting 1970s inflation, less elsewhere

## IRFS TO 'STANDARD' MONETARY POLICY SHOCK 1933-1987



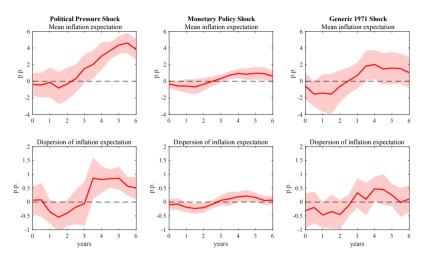
- ▶ In pre-Greenspan sample, monetary easing increases real activity
- Opposite of political pressure shock in same sample
- ▶ Confirms that the transmission of the two shocks is very different

## IRFS TO GENERIC 1971 INFLATIONARY SHOCK



- ▶ Effect on price level smaller and much less persistent (for roughly similar rate reduction)
- ▶ Highlights that personal interaction data key to my results

#### EFFECTS ON INFLATION EXPECTATIONS



▶ Political pressure shock raises inflation expectations and disagreement

#### EFFECTS ON INFLATION EXPECTATIONS

#### INSIDE THE MARKET: Wall Street Fears Whiplash From Nixon-Burns Collision

Schonberger, Ernest A Los Angeles Times (1923-1995): Feb 28, 1971: ProQuest Historical Newspapers: Los Angeles Times ng. Il

#### INSIDE THE MARKET

## Wall Street Fears Whiplash From Nixon-Burns Collision

BY ERNEST A. SCHONBERGER. Times Staff Writer

INVESTORS are suddenly casting a watchful eye for signs of just how serve Board and economic officials within the Nixon Administration. The issue: Just how rapidly should

the economy be pumped up? Some expect a head-to-head fight. Others shrug it off.

Most agree there's little likelihood of an immediate blow to the stock market.

Fed Chairman Arthur F. Burns brought it into the open last week by refusing to pledge further expansion of the money supply in support of President Nixon's goal of rapid economic growth for 1971. The Fed. although it sometimes acts hand-inglove with a presidential administration is a completely independent, semigovernmental agency. Its policies determine the supply of money Administration officials have been

browing between the Federal Re- have to grow 6 to 9% this year to pidly, meet their economic target.

In testimony before the Joint Economic Committee of Congress Burns said rates above 5 or 6% have historically "intensified inflationary pressures" if continued "for a long period of time." He labeled the Administration's goal of a \$1.065 trillion Gross National Product for 1971 "optimistic."

"You would have to term it (Burns' testimony) something of a confrontation," says Richard B. Balley, a trustee for the \$2 billion Massachusetts Investors Trust mutual

That would seem to be the case Both John B. Connally, secretary of the Treasury, and Herbert Stein, member of the President's Council of Economic Advisers, have already reacted to Burns' testimony contentiquely. They insist that the money

serious a confrontation might be claiming the money supply would supply should be expanded more ra-

WALL STREETERS have been suving for a year that the Nixon Administration would pull all economic stops early enough to do some good for the 1972 elections. And the same observers have been saying that this is not in sten with the generally conservative Fed whose members enjoy long term appointments and don't have to seek election.

Claude Rosenberg, president of Rosenberg Capital Management Co. of San Francisco and author of the book, "Stock Market Primer," says future developments between Burns and the Administration will be "very much a key to the stock market." He thinks a confrontation, although not a monumental one, is browing. Underlying this will probably be the Administration's fear

that unemployment won't come

down, says the money manager,

Rosenberg notes that "business can improve on the order of 5 or 10%-without very much increase in employment." And the corollary to that would be little help for the unemployed.

For now, Rosenberg isn't letting the bassle alter his positive attitude toward the stock market and the \$60 million he manages in it.

BUT IT'S HIS feeling that if and when the Administration succeeds in getting business rolling-"let's say in the fall"-the Fed will counteract by hitting the brakes on the money supply.

At that, juncture, investors may have to be quick on the trigger and move at least partly out of stocks and into cash, he feels.

William G. Wagner of Janus Management Co. of Los Angeles is less concerned about the ramifications of Burne' statements.

"I don't think there's any signiffcant conflict," he says, "It's not important if they're going to push up the money supply greatly (5 or 6%) or very greatly (more than 6%). Who cares-so long as it's going up a large amount."

At any rate, that influences his stock market thinking for much of 1971 and into 1972. He recognizes that any money management errors are apt to be on the side of overexpansion. However, "after the election, we've got to watch out," he

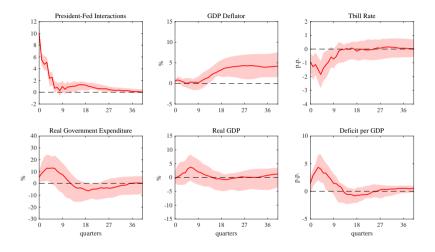
Joseph F. Dorsey, president of Argus Research Co. in New York. thinks there's "no big dispute." As he sees it, the Fed has been working on conservative projections-"don't forget that the money supply grew very slowly in January." Therefore, the Fed has leeway to move more in the direction of the Administration's goals and still stay within the annual rate of 5 or 6%, he says.

Please Turn to Page 2, Col. 3

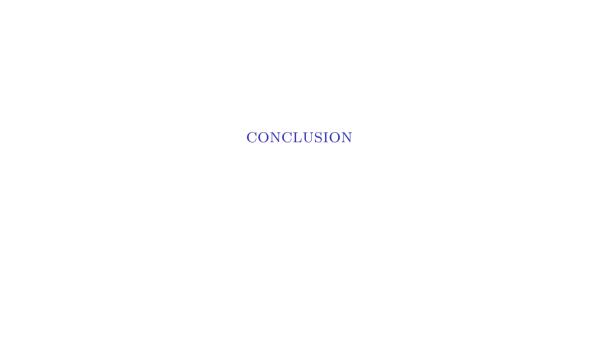
Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Pressure is definitely observed by the public systematic

## IRFS TO POL. PRESSURE SHOCK IDENTIFIED FROM NIXON + LBJ



► Similar inflation response, tighter posterior bands



#### CONCLUSION

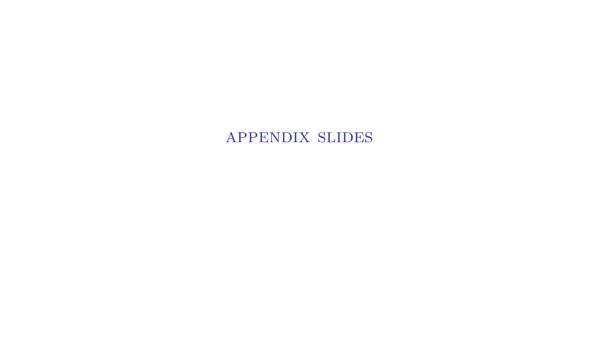
- Novel data and narrative identification → political pressure shocks
- Quantitative results
  - ▶ President acts 50% as bad as Nixon for 6 months  $\Rightarrow$  price level rises by 8%
- Benefits of central bank independence often highlighted using cross-country data;
   I provide supporting evidence for the US through time
- ► I make the new time series available on my website

## REFERENCES I

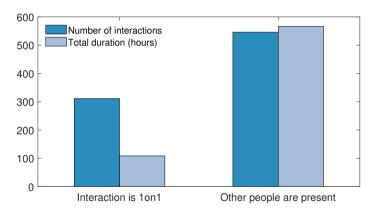
- ABRAMS, B. A. (2006): "How richard nixon pressured arthur burns: Evidence from the nixon tapes," *Journal of Economic Perspectives*, 20, 177–188.
- ALESINA, A. AND L. SUMMERS (1993): "Central bank independence and macroeconomic performance: some comparative evidence," *Journal of Money, credit and Banking*, 25, 151–162.
- Antolin-Diaz, J. and J. F. Rubio-Ramirez (2018): "Narrative Sign Restrictions for SVARs," *American Economic Review*, 108, 2802–29.
- BIANCHI, F., R. GOMEZ-CRAM, T. KIND, AND H. KUNG (2023): "Threats to central bank independence: High-frequency identification with Twitter," *Journal of Monetary Economics*.
- BIANCHI, F. AND C. ILUT (2017): "Monetary/fiscal policy mix and agents' beliefs," *Review of economic Dynamics*, 26, 113–139.
- Delong, J. B. (1997): "America's peacetime inflation: the 1970s," in *Reducing inflation: Motivation and strategy*, University of Chicago Press, 247–280.
- Ferrell, R. H. (2010): Inside the Nixon administration: the secret diary of Arthur Burns, 1969–1974, University Press of Kansas.
- HETZEL, R. L. (1998): "Arthur Burns and inflation," FRB Richmond Economic Quarterly, 84, 21-44.
- MELTZER, A. H. (2009): "A History of the Federal Reserve, Volume 2, Book 2, 1970-1986," Chicago/London.
- RAMEY, V. A. AND S. ZUBAIRY (2018): "Government spending multipliers in good times and in bad: evidence from US historical data," *Journal of political economy*, 126, 850–901.

## REFERENCES II

- ROMER, C. D. AND D. H. ROMER (2004a): "Choosing the Federal Reserve Chair: Lessons from History," *Journal of Economic Perspectives*, 18, 129–162.
- ——— (2004b): "A New Measure of Monetary Shocks: Derivation and Implications," *American Economic Review*, 94, 1055–1084.
- THORNTON, D. L. AND D. C. WHEELOCK (2014): "Making sense of dissents: a history of FOMC dissents," Federal Reserve Bank of St. Louis Review, 96, 213–227.

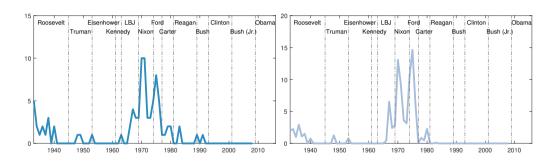


### SUMMARY STATS: 10N1 VS OTHER



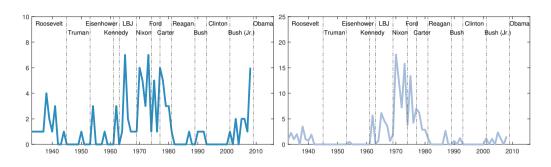


# WEEKEND INTERACTIONS: COUNT AND LENGTH (IN H)



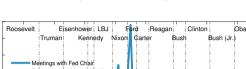


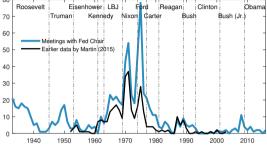
# SOCIAL INTERACTIONS: COUNT AND LENGTH (IN H)





# COMPARISON WITH MARTIN (2015 EER) BACK





- Cover longer time period and calendars that are only physically available (Bush)
- Include wider set of Fed Officials
- Collect interaction characteristics: length, social nature, weekday, etc.
- Going to higher than annual frequency
- Most importantly, use formally for identification

### MORE INFORMATION ABOUT BURNS' DIARY BACK

- ► The diary only became public in 2008
- Entries cover meaningful interactions and/or when Burns was worried or angry
- ► For example, large gap in entries before November 1970; it is a good guess that pressures start around there
- ▶ Burns himself writes in 1973 that "August 15, 1971 was a definite and decisive turning point in the President's state of mind."
- Also, there is a big break between February and September 1972
- Burns stopped writing the diary altogether after Nixon resigned

## MORE QUOTES FROM BURNS' DIARY BACK

- ▶ "He was still the emperor, and I should therefore toe the mark." (July 1971)
- ► "There was little room for any doubt (...) that he was governed mainly, if not entirely, by a political motive; (...) that the kind of changes we were discussing (...) were essential for the campaign of 1972" (Aug 1971)
- "President called and asked me to come over within an hour. Hastily rearranged my schedule and spent an hour and quarter with him." (Sep 1971)
- "What a dangerous game RN is playing" (Nov 1971)
- "Clearly he wants power (...) but I don't think he has any positive idea at all as to what to do with this power." (Sep 1972)

#### BURNS AND NIXON ACTIVELY DISCUSSED FED PERSONNEL

- "Some talk followed about the inadequacies of Hayes and Brimmer. And the President indicated he would do what he could to rid me of Brimmer." (Jan 1972)
  - Alfred Hayes: NY Fed President. Andrew Brimmer: Member of Federal Reserve Board.
- "We talked about personnel problem at Fed. President knew that Rogers would not have Brimmer for U.N. We talked about an ambassadorship; President thought that Sweden – preferably Austria – would be possibilities. I expressed strong doubt about Brimmer accepting an African post." (Feb 1972)



#### DIFFERENT VIEWS ON WHETHER BURNS GAVE IN TO PRESSURE

- Accounts that agree with the view I portray here:
  - ► Abrams (2006), Meltzer (2009)
- Different, at at least more nuanced, views:
  - DeLong (1997), Hetzel (1998), Romer and Romer (2004a)
  - Main argument is that Burns had a "nonmonetary view of inflation"
  - These accounts were provided before Burns' diary was made public in 2008
- One has to acknowledge: 1970's stagflation was a pretty new challenge



#### DIFFERENT VIEWS ON WHETHER BURNS GAVE IN TO PRESSURE

- ► FOMC voting behavior at least hard to reconcile with the "nonmonetary" view being the standard view of the time
- Romer-Romer easing shock: policy easing was nonsystematic!
- Burns' diary makes clear there was a multidimensional discussion between Burns and Nixon, touching on fiscal policy, restructuring the intl. monetary system, etc.
  - Burns cared deeply about some of those issues
  - Conceivable that increase in monetary supply was part of a "give and take"
- ► Even if Burns did not cave, expectations of economic agents could have been changed by Nixon's behavior to the degree that it was publicly observable
  - Burns' diary makes clear that Press was well aware of the pressures (see next slide)
  - ► See also Bianchi, Gomez-Cram, Kind, and Kung (2023)

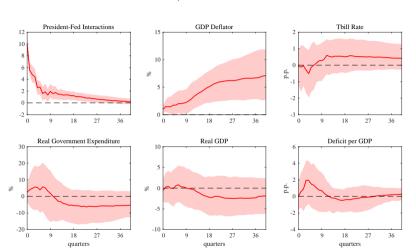


### PUBLIC KNOWLEDGE OF NIXON'S PRESSURE

- Some quotes from Burns' diary about the public's perception
  - "The confrontation reported or predicted by the Press did not come off."
  - "(...) the White House children ought to stop the dangerous game of feeding gossip and fabrication to the Press."
  - "Recently, a journalist came to see me and told me that some White House operatives (specifically, Haldeman and Shultz) had their bayonets out for me."

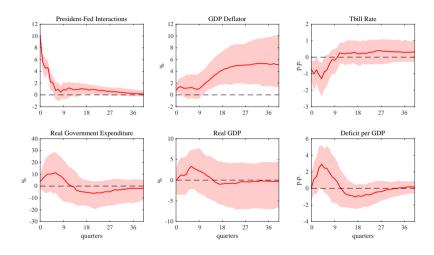


## IRFS OVER 1933-2016 SAMPLE, 'LIGHT' RESTRICTIONS BACK



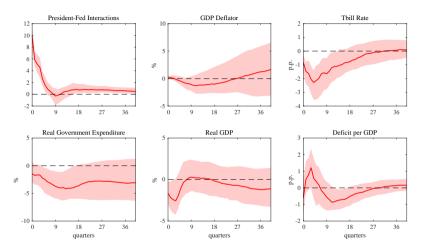
▶ Stronger effect when interest rate unrestricted ⇒ price level 7% higher after 10 years

### IRFS OVER 1933-2008 SAMPLE BACK



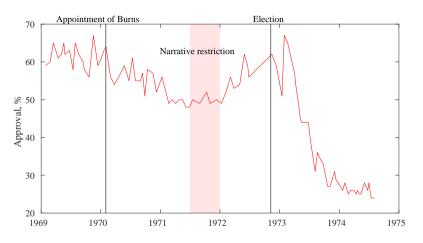
▶ Stopping before 2008 gives similar to stopping in 2016

## IRFS OVER 1952-2016 SAMPLE BACK



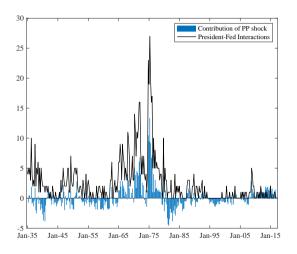
- ► Starting after 1952 gives different results
- ▶ Variation from before the Treasury-Fed accord appears to be important for the results

## NIXON'S POPULARITY BACK

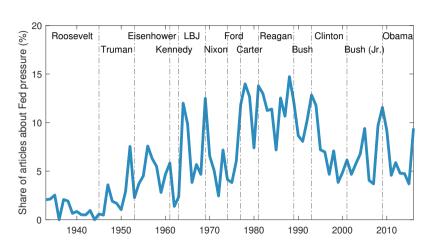


► Source: Gallup Polls

#### HISTORICAL VARIANCE DECOMPOSITION: INTERACTION VARIABLE



#### SYSTEMATIC EVIDENCE BACK



Systematic search of NY Times, Wash Post, WSJ