What triggers stock market jumps?

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Abstract

Drawing on next-day newspaper accounts, we develop new evidence about the forces that trigger large daily jumps in national stock and bond markets. We read and code next-day interpretations of 200 or more daily jumps per country in recent decades, yielding five main results. First, the Global Financial Crisis (GFC) of 2008-09 exhibits very high counts of daily equity market jumps around the world. Looking back to 1885 for the U.S., the Great Depression is the only period with equal or greater jump frequency. Second, U.S. developments trigger equity market jumps across the globe, especially during the GFC. Jumps sourced to the U.S. are hugely more important than jumps sourced to Europe except for European countries, where the counts are similar. Third, policy news triggers about 20-25% of equity market jumps in most advanced economies and a larger share in other countries (e.g., China=33%, and India=46%). Fourth, news about the macroeconomic performance and outlook accounts for 23-38% of equity market jumps in advanced economies, and less in other countries. Fifth, for U.S. government bond yields, news about the macroeconomy triggers 65% of the jumps; adding news about monetary policy as well accounts for 93% of the jumps. We also find sharply different jump patterns for bonds versus equities in 1980-82 as compared to 2008-12. These differences suggest that shocks to risk premia and expected returns predominated in 2008-12, whereas shocks to nominal risk-free rates predominated in the 1980-82 period.

Questions

- What triggers jumps in national equity markets?
  - News about macro performance and outlook?
  - Policy-related shocks?
  - War and national security disturbances?
  - What role for domestic shocks as compared to foreign and global developments?
- How central are US developments to equity market jumps worldwide?
- What triggers jumps in government bond and currency markets?

Overview of Empirical Method

Use next-day newspaper accounts to develop evidence about the reasons for jumps

- Choose jump threshold to get daily market moves big enough to attract attention of newspapers
- Codify explanations for jumps offered in next-day articles
- Apply to national equity markets in recent decades for 20-25 countries (13 to date)
- Extend back to the 1930s or earlier in U.S. and U.K. to provide historical perspective
- Compare to government bond and currency markets for the U.S. and U.K.

Preview of Main Findings

1. The Global Financial Crisis (GFC) of 2008-09 exhibits very high counts of daily equity market jumps around the world
   - Looking back to 1885 for U.S., the Great Depression is the only period with equal or greater jump frequency
2. US developments trigger equity market jumps across the globe
   - Especially so during the GFC
   - Vast majority of national market jumps triggered by developments in own region/country or in US
   - Jumps sourced to US are hugely more frequent than jumps sourced to Europe except for European countries, where the counts are similar.

Preview of Main Findings

3. Policy news triggers 20-25% of jumps in most advanced economies and a larger share in other countries (e.g., China=33% and India=46%)
4. News about Macroeconomic Performance and Outlook accounts for 23-38% of jumps in advanced economies and less in other countries.
5. Macro news is the main trigger for bond market jumps in the US (65%). Macro + Monetary Policy News accounts for 93%.
   - UK bond markets show a muted version of the same pattern: Macro = 43%, + Monetary = 67%

How We Characterize Equity Market Jumps

1. Set daily jump threshold
2. Pull dates with market moves > threshold
3. Use newspaper articles to characterize jumps
   A. Go to online newspaper archive
   B. Enter newspaper, date range (next day) and search criteria (e.g., “stock market”)
   C. Select article
4. Read article.
5. Record the reason for the jump, its geographic source, confidence of reporter in explanation, ease of coding for the reader, etc.

Selecting and Coding the Articles

We develop a spreadsheet template and and an extensive Data Construction Guide for our RAs.

The Guide:

- Explains how to find and select newspaper articles
- How to read the articles
- How to code explanations for equity market jumps offered in next-day newspaper accounts
- Defines categories for jumps by reason, and gives examples for each category
- Includes FAQs that arose as we and RAs worked through the news accounts of equity market jumps

Jumps by Reason Template

Policy Categories	**Non-Policy Categories**
Government spending	Macroeconomic news & outlook
Taxes	Corporate earnings & profits
Monetary policy & central banking	Commodities
Trade & exchange rate policy	Unknown/no explanation
Regulation (other than above)	Foreign Stock Markets
Sovereign military & security actions	Terrorist attacks & large-scale violence by non-state actors
Other policy (specify)	Other non-policy (specify)

Selected Category Definitions and Examples from the Data Construction Guide

The examples on the next several slides give an indication of how we provide guidance to the RAs for coding the newspaper articles.

Government Spending

News reports, forecasts, or concerns about government spending and its consequences, including spending matters related to stimulus programs, publicly funded pensions, social security, health care, etc.

Government Spending 1

THE WALL STREET JOURNAL.

Bailout Plan Rejected, Markets Plunge, Forcing New Scramble to Solve Crisis

By Sarah Lueck, Damian Paletta and Greg Hitt

2119 words
30 September 2008
The Wall Street Journal
J
A1
English

WASHINGTON -- The House of Representatives defeated the White House's historic $700 billion financial-rescue package -- a stunning turn of events that sent the stock market into a tailspin and added to concerns that the U.S. faces a prolonged recession if the legislation isn't revived.

The Dow Jones Industrial Average sustained its biggest point drop in history and its biggest closing decline since the day the markets re-opened after the Sept. 11, 2001, terrorist attacks. The Dow, which had opened sharply lower on fears of more possible bank failures, finished the day down 7%, with a 777.68 point drop to 10365.45. Losses to shares on the broader Dow Jones Wilshire 5000 index amounted, on paper, to $1.2 trillion -- eclipsing the size of the proposed bailout package. The Nasdaq Stock Market finished down 9.1%.

The widely watched VIX index, a measure of market volatility often called "the fear index," closed at its highest levels in its 28-year history. In early trading in Asia Tuesday, Japan's Nikkei was off 4.5%, and other markets also were down.

The 228-205 vote, which defied a full-court press from the president and the Treasury secretary, marked a dark moment in a month that has shaken the financial system to its core and forced the government to take a host of ad hoc measures to shore up confidence. Earlier Monday, U.S. authorities helped arrange the sale of Wachovia Corp. to Citigroup Inc., while the Federal Reserve joined other central banks in injecting more funds into credit markets.

The bailout was designed in part to get financial institutions lending again by ridding the market of the toxic mortgage-backed securities and other holdings that lenders fear could cause borrowers to default. If credit markets continue to seize, the impact on businesses and consumers could be widespread. Access to loans would be reduced, crimping spending and investment. Economists said the credit crunch could lead to increased layoffs in the U.S. and prompt a hefty rate cut from the Federal Reserve.

This article is coded as government spending because the first reason listed for the stock market plunge is the rejection of the government's bailout plan. The bailout plan itself involves the government spending money to help the economy, and even though it is a rejection of the plan, it is still coded as government spending.

Taxes

News reports, concerns or events related to current, planned, or potential tax changes (e.g., income tax hikes, payroll tax cuts, corporate tax reform, sales tax change, etc.) and their consequences.

Taxes 2

pg. 35

TOPICS IN WALL STREET.

News, Comment and Incident on the Stock Exchange and in the Financial Markets.

Industrial stocks approached closely the previous low levels of the price averages for this year in the trading yesterday. So far as the average of railway shares was concerned, a new low was actually reached, but the twenty-five industrials were within 62 cents of their extreme low of Oct. 5. Transactions on the Stock Exchange made up a total of 2,250,000 shares, compared with 1,600,000 shares on the day before. United States Steel, Santa Fe, Baltimore & Ohio, International Business Machines, Union Pacific, Eastman, American Can, Westinghouse Electric, du Pont, Lackawanna and a few other stocks went yesterday into new low territory for the year.

A Tax Scare.

If any one influence caused the decline on the Stock Exchange yesterday it must have been the tax feature of Hoover-Mellon recommendations. That, at least, was the subject that received most attention in Wall Street. No one who had read the President's message on the day before could have been deceived as to what was in his mind, but there must have been an impression that the program would be less disturbing so far as the rank and file of the taxpaying public is concerned. There was something of a "tax scare" after the recommendations were made public.

items as not strictly to be classed under the heading of foreign short-term investments in Germany.

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Bonds Weaken Again.

The fact that literally scores of bonds listed on the New York Stock Exchange broke yesterday through their previous resistance points called attention forcibly to the buyers' strike that exists in the bond market as well as in stocks. It was notable that no heavy offerings of bonds appeared but prices weakened for the reason that bids were far below the previous day's levels, so that selling orders "at the market" caught many of these bids, with resultant sharp declines in prices. In the over-the-counter market traders reported little business except in municipal securities and in only the best-rated issues of these.

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Tax Plan Aids the Shorts.

The administration's tax plan, which was laid before Congress yesterday, proved to be a boon to short sellers who had been sniping away more than a week without being able to force leading industrial stocks through resistance points. The selling pressure of the short interest was concentrated yesterday on tobacco, telephone and other issues which appeared to be the hardest hit by the new tax plan. American Tobacco B declined 4⅜ points on the

This article is coded as Taxes because it claims directly that if anything could be cited as a reason it would be the tax bill that was passed. The confidence would be medium to high because the article spends some time discussing the tax bill and claims that the bill was almost certainly the reason, saying *if* any one reason could be cited it would be that one.

Monetary Policy and Central Banking

Actions, possible actions, and concerns related to the conduct and policies of the central bank or other chief monetary authority. Such actions and policies pertain to interest rate changes and monetary policy announcements, inflation control, liquidity injections by the monetary authority, changes in reserve requirements or other bank regulations used by the monetary authority to exercise control over monetary conditions, lender-of-last resort actions, and extraordinary actions by the monetary authority in response to bank runs, systemic financial crisis and threats to the payments system.

Monetary Policy and Central Banking 2

Financial Prices Soar in Reaction To Fed Comment

Financial futures markets soared in reaction to a statement over the weekend by the Federal Reserve Board chairman that the central bank will pay less attention to weekly swings in the money supply.

"The market took that as an implication that the Fed would ease policy," said Dennis Gartman, an analyst for A.G. Becker Inc.

Before Fed Chairman Paul Volcker's weekend statement, participants in the futures market were figuring that an expected surge in the basic money-supply figures this week would prompt another round of credit-tightening actions by the Fed. Futures traders now figure interest rates will probably drift lower.

Prices of interest-rate futures, which move inversely to interest rates, closed up their daily allowable limit. The stock market indexes were also strongly higher on the theory that lower interest rates would enhance an economic recovery by most corporations.

Futures Markets

This article is coded as Monetary Policy because it cites the reason for the market rally as a statement from the Fed that they will pay less attention to weekly swings in the monetary supply, a change in their policy. The confidence and ease of coding would also be high because the article clearly claims the Fed statement is the reason for the jump.

Elections and Political Transitions

News, events and concerns related to elections, election outcomes, assassinations of political leaders, coups, revolutions, and other political leadership transitions.

Elections and Political Transitions 1

THE WALL STREET JOURNAL.

Economic Worries Produce a Rout; A 486-Point Drop Follows Election Day Rally; 'Like a Slap in the Face'

Browning, E S. *Wall Street Journal* [New York, N.Y] 06 Nov 2008: C.1.

Abstract (summary) Translate

The financial-stock decline accelerated after Oppenheimer & Co. analyst Meredith Whitney told CNBC that bank losses and the seizing up of securitization markets will lead to a contraction in mortgage and credit-card lending.

Full Text Translate

In another reminder that breathtaking lurches are the new normal, the Dow Jones Industrial Average plunged 486.01 points, a day after surging 305 points on a wave of global optimism.

Some commentators concluded that Wall Street was welcoming Barack Obama with a Bronx cheer. While polls had favored Mr. Obama for weeks, the reality of a new president and uncertainty about how, and how successfully, he will handle the financial troubles may have contributed to the losses, which left the Dow down 5.1% at 9139.27. Other indexes declined, and European stocks also fell.

It was the Dow's worst percentage decline ever on the day after a presidential election, surpassing the 4.5% drop on the day after Franklin Roosevelt's first election in 1932.

This article is coded as Elections and Political Transitions because it cites Obama's election as the reason for the market movement. It receives a low confidence ranking, because it claims that only "some commentators" came to this conclusion, rather than declaring the reason with greater assurance.

Sovereign Military and Security Actions

Reports and concerns about military actions by sovereign actors including war, invasion, blockade, saber rattling, and large-scale violent suppression of domestic insurrections. Policy responses to terrorist actions that involve large-scale use of military resources also fall into this category.

Sovereign Military and Security Actions 2

THE WALL STREET JOURNAL.

Stocks Plunge As Some Bet On Long War --- More Small Investors Are Selling Shares Short, Despite the Risks; What That Means for the Market

By Jeff D. Opdyke

1157 words
25 March 2003
The Wall Street Journal
J
D1
English

Corrections &Amplifications

THE NUMBER of shares sold short on the New York Stock Exchange for the month through March 14 was nearly eight billion. A Personal Journal article Tuesday incorrectly reported the number as nearly eight million.

(WSJ March, 27, 2003)

STOCKS SHOT UP in recent weeks as investors began betting that a quick war in Iraq would jump-start the economy. Now, a different group of investors is ready to ride the market back down: short sellers.

Yesterday, stocks plunged -- the Dow Jones Industrial Average lost 307 points to close at 8215 -- after the U.S. military suffered some setbacks in Iraq over the weekend. If the war proves longer than expected, the Dow industrials are likely to pile up additional losses in the coming days.

While most investors buy stock and hold on, hoping for the price to rise, short sellers invest in opposite fashion. Shorts operate by borrowing shares they don't own and immediately selling them. Their hope is that shares will tumble, allowing them to buy back the borrowed shares in the future at a lower price. In essence, it is a sell-high, buy-low strategy.

The number of people shorting stocks has surged during the three-year bear market. Just last week, the New York Stock Exchange disclosed that eight million shares are sold short, the highest level since 8.2 million short-sold shares were outstanding in October. The number of short shares outstanding is approaching record levels on the Nasdaq Stock Market, which is expected to release new short numbers today.

This article would be coded as Sovereign Action because it claims that stocks plunged due to the military setbacks in Iraq. Since these are military actions sanctioned by the US government, it is Sovereign Action rather than Non-Sovereign. It would receive a 2 or 3 confidence because it declares that the stocks plunged after the setbacks and correlates projected falls to future losses, but it merely states that the stocks plunged after the actions, not because of them.

Macroeconomic News and Outlook

News relating to macroeconomic forecasts or reports such as inflation, housing prices, unemployment or employment, personal income, industrial production, manufacturing activity, etc.

Also included in this category:

- News about financial crisis developments that does not fall into another category such as Monetary Policy and Central Banking.
- Trade and exchange rate news NOT attributed to policy (e.g., news about trade deficits or currency movements)

Macroeconomic News and Outlook 3

THE WALL STREET JOURNAL.

Monday's Markets

Recession Fears Send Blue Chips Down 269.50 --- Nasdaq and S&P Slide Further In Stocks' Third Straight Session Of Heavy Losses; Bonds Rise Again

By E.S. Browning

1022 words
6 August 2002
The Wall Street Journal
J
C1
English

THE STOCK MARKET'S latest obsession -- the risk of a double-dip recession -- pushed the Dow Jones Industrial Average down more than 3%, its second-sharpest percentage decline of the year, and sent the Nasdaq Composite Index to its lowest close in more than five years.

It was the third consecutive session of heavy losses, which now have taken away most of the 13% rally the industrial average enjoyed at the end of July, and have erased all of the 10% rebound in the Nasdaq.

When the buyers were in charge, late in July, hopes spread that the worst of the bear market was over. That optimism was shattered by news last week that the government had overstated the economy's strength and was revising its numbers. Then manufacturing activity came in weaker than expected and so did employment. Yesterday came another jolt: Last month's activity in the service economy, representing more than half of all economic activity, was weaker than expected.

In July, Federal Reserve Chairman Alan Greenspan reassured Congress that the economy was stronger than the doubters feared. Now, fears are spreading that a second dip into recession, which seemed an outside risk just two weeks ago, might not be so unlikely.

"Greenspan's testimony was pretty bullish. It is very unusual for Greenspan to be caught off base like that," said Alfred Kugel, senior investment strategist at Chicago money-management firm Stein Roe Investment Counsel. "You feel like asking, did anyone know about this or did they just forget to tell him?"

For the day, the Dow industrials fell 3.24%, or 269.50 points, to 8043.63. Of the 1,034 points that the industrial average rose from July 23 through July 31, only 341 points remain. The industrial average is down 20% since the year began and is 32% off its record close, hit in January 2000.

This article claims that the reason for the market move was a fear of a double-dip recession, a change in the Macroeconomic Outlook. Therefore the article would be coded as Macroeconomic News and Outlook. The confidence would be high because the article clearly declares that the fear of recession was the cause for the movement.

Distinguishing Monetary Policy & Central Banking from Macroeconomic News & Outlook 1

Some news articles that discuss market reactions to macro developments also discuss the Fed's normal response to the macro development. Generally, we code an article as Macro News & Outlook if it attributes the market move to news about the macro economy. We code it as Monetary Policy & Central Banking if the article attributes the market move to (a) news about how the Fed responds to a given macro development or (b) news about unexpected consequences of Fed actions.

It is helpful to approach this classification issue from a Taylor Rule perspective. Consider the following cases:

Distinguishing Monetary Policy & Central Banking from Macroeconomic News & Outlook 2

1. Macro news: The market moves because it anticipates or speculates (or sees) that the Fed will respond in its usual manner to news about the macro economy. That is, the market anticipates or speculates that the Fed will respond to macro developments according to a Taylor Rule or other well-defined, well-understood description of the Fed's interest-rate setting behavior.
2. Monetary policy: The market moves because of a surprise change in the policy interest rate -- i.e., a surprise conditional on the state of the macro economy. From a Taylor Rule perspective, we can think of this change as a new value for the innovation term in the Taylor rule.

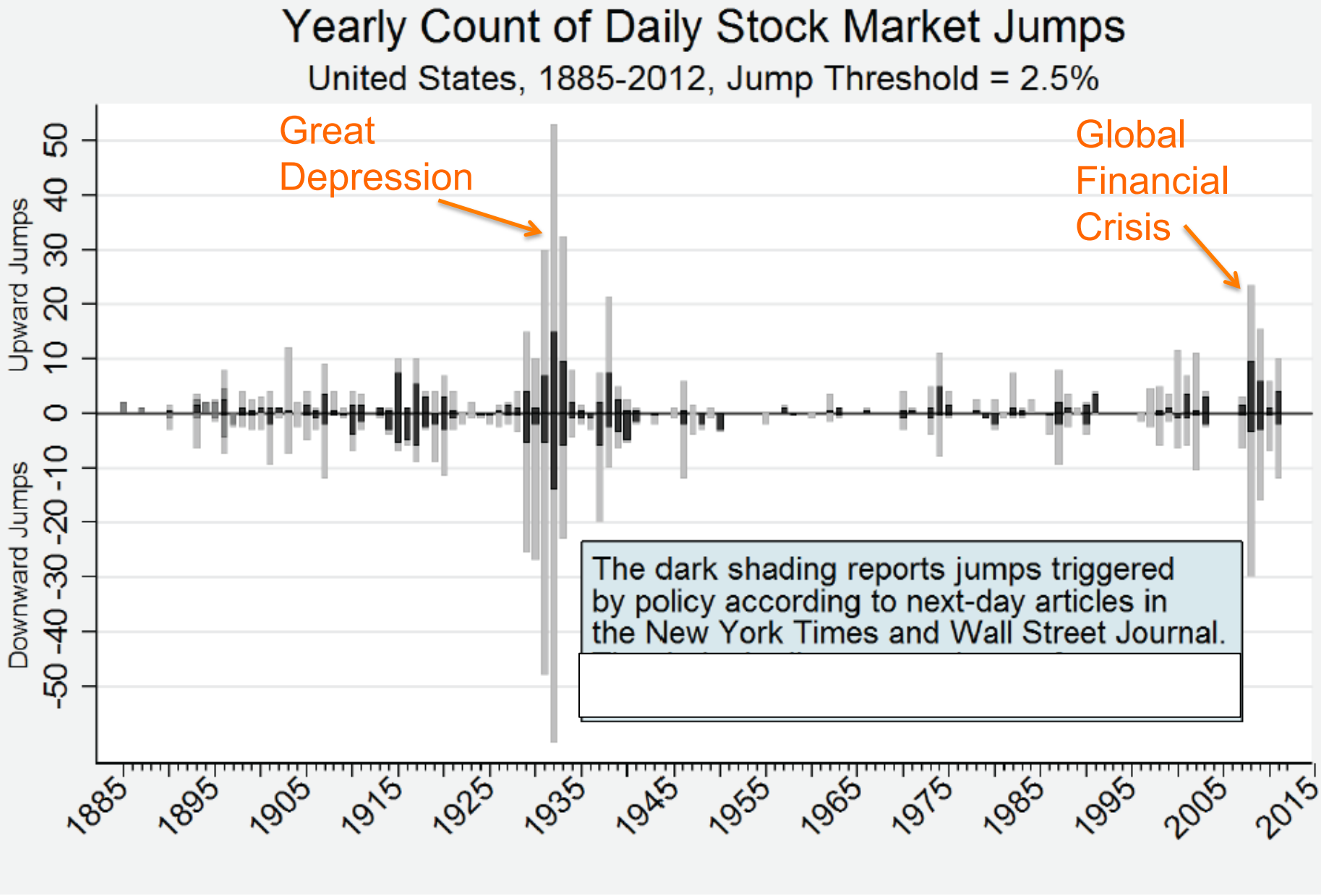
Distinguishing Monetary Policy & Central Banking from Macroeconomic News & Outlook 3

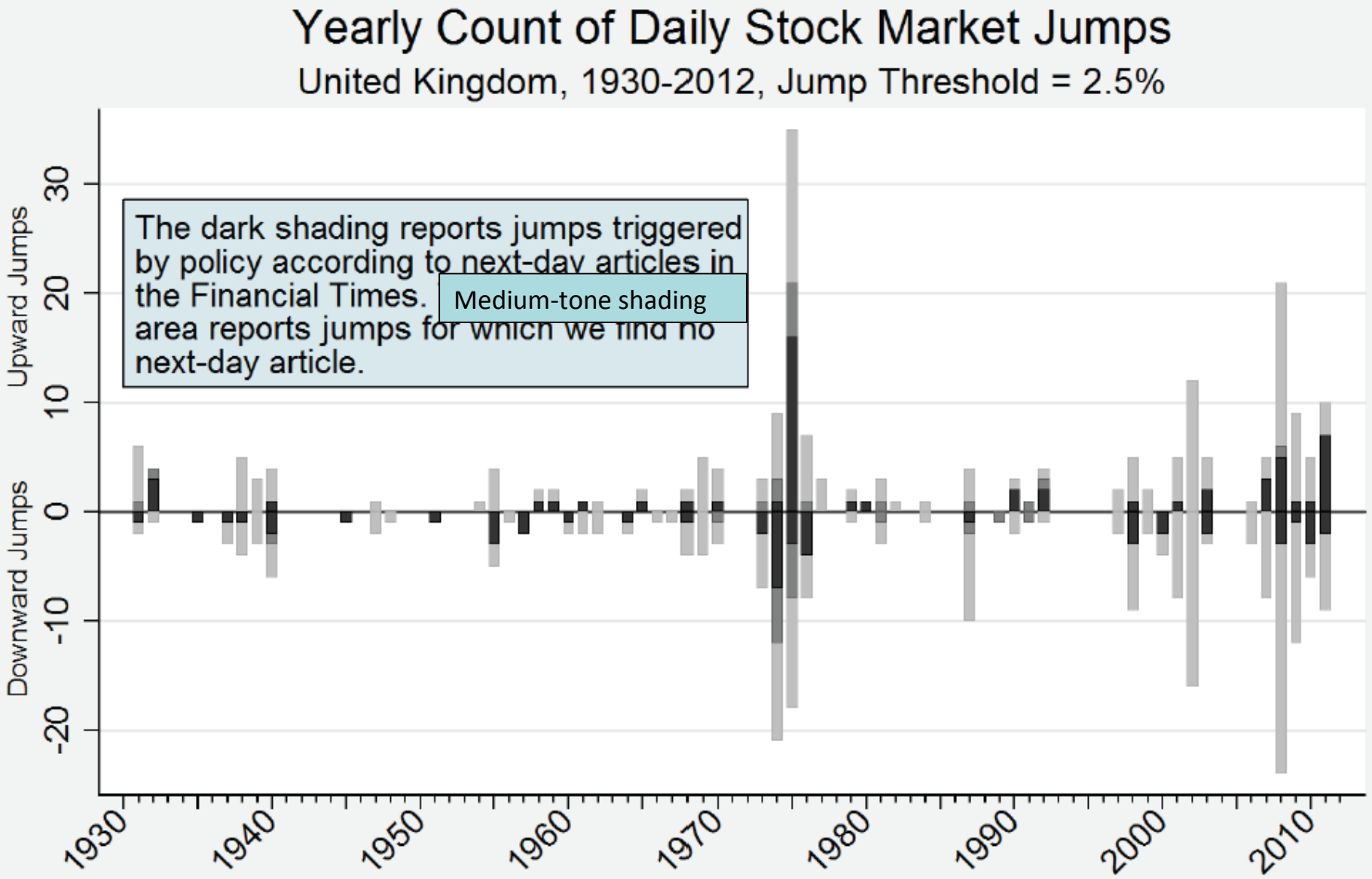
3. Monetary policy: The market moves because of an actual or potential change in the Fed's policy rule. From a Taylor Rule perspective, this event corresponds to an actual or potential change in the form of the Taylor Rule or a change in specific parameter values. A concrete example would be a big market response to proposals to increase the target interest rate.
4. Monetary policy: The market moves because of news that leads to a revised views or concerns about the consequences of the Fed's actual or anticipated actions.

Articles in category 1 get coded as Macro News & Outlook. Articles in categories 2, 3 and 4 get coded as Monetary Policy & Central Banking

Countries, Time Periods & Sources

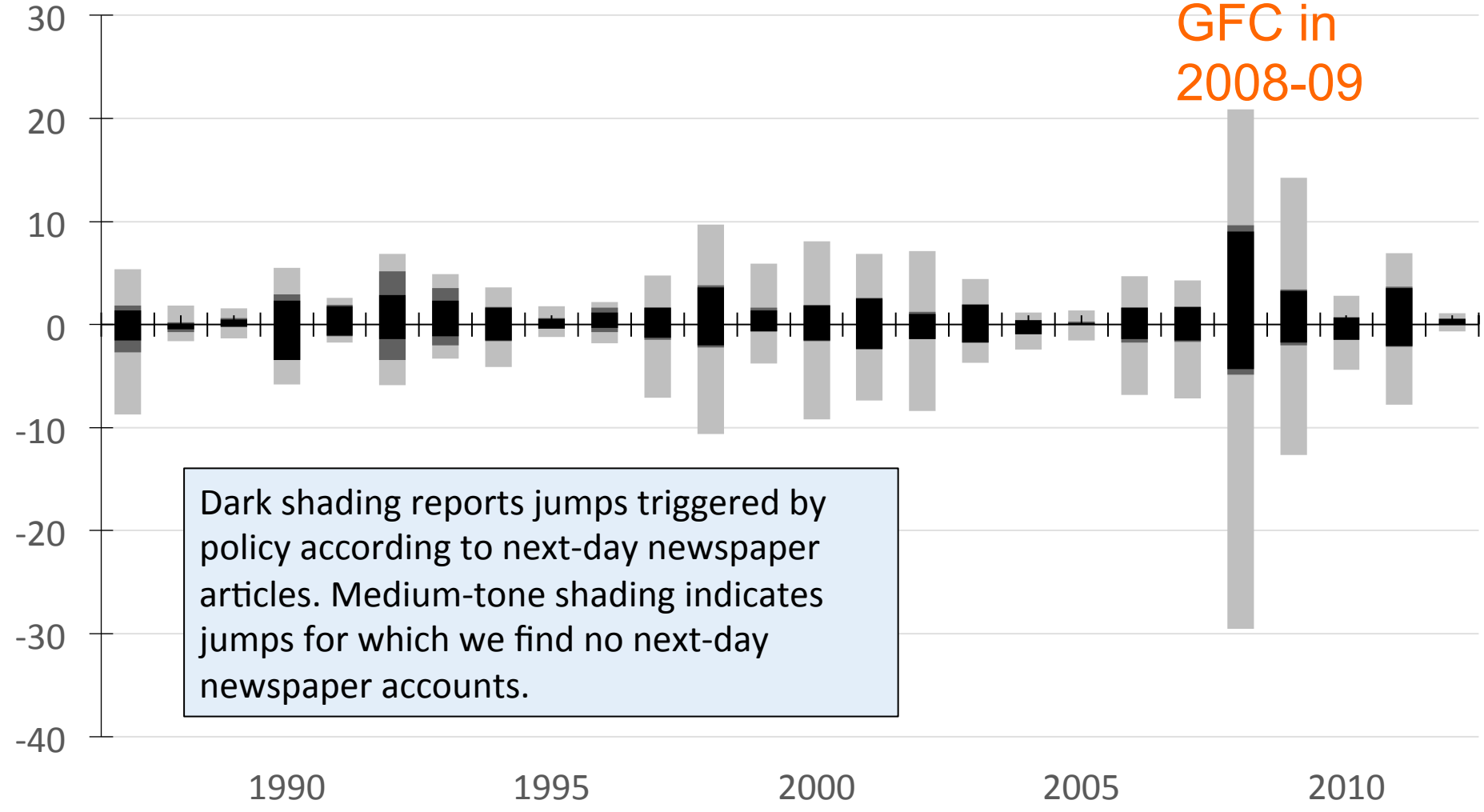
Country	Period	Sources
United States	1885-2011	New York Times, WSJ
United Kingdom	1930-2011	Financial Times (UK Edition)
Australia	1985-2012	Australian Financial Times
Canada	1980-2012	The Globe and Mail
China (Hong Kong)	1988-2012	South China Morning Post
China (Shanghai)	1990-2013	Shanghai Securities Journal +
Germany	1985-2012	Handelsblat, FAZ
India	197902013	Times of India
Ireland	1987-2012	The Irish Times
Japan	1981-2013	Yomiuri and Asahi
Saudi Arabia	1994-2013	Al Riyadh
South Africa	1986-2013	Business Day
South Korea	1980-2013	Chosun Ilbo


Yearly Count of Daily Stock Market Jumps
United States, 1885-2012, Jump Threshold = 2.5%
Great Depression
Global Financial Crisis
Upward Jumps
Downward Jumps
50
40
30
20
10
0
-10
-20
-30
-40
-50
The dark shading reports jumps triggered by policy according to next-day articles in the New York Times and Wall Street Journal.
1885
1895
1905
1915
1925
1935
1945
1955
1965
1975
1985
1995
2005
2015


Yearly Count of Daily Stock Market Jumps
United Kingdom, 1930-2012, Jump Threshold = 2.5%
The dark shading reports jumps triggered by policy according to next-day articles in the Financial Times.
Medium-tone shading
area reports jumps for which we find no next-day article.
Upward Jumps
Downward Jumps
30
20
10
0
-10
-20
1930
1940
1950
1960
1970
1980
1990
2000
2010

Yearly Count of Daily Stock Market Jumps Per Country, 1987-2012, 13 Countries

Australia, Canada, China (HK), China (Shanghai) from 1990, Germany, India, Ireland, Japan, Saudi Arabia from 1994, South Africa, South Korea, UK and USA



Jumps Per Year Attributions by Geographic Source

Time Period	Source Region	Country of Equity Market Jump					
		USA	UK	Germany	Australia	Canada	Ireland
1985-89 to 2007	USA	**4.8**	**2.0**	**6.1**	**0.9**	**3.7**	**2.9**
	Europe	<0.1	2.3	8.8	0.5	0.2	3.5
	Asia	0.1	0.1	1.3	0.3	0.3	0.2
1997-2001, 1997-2002 for US, UK, Ireland, Canada	USA	**11.3**	**6.2**	**9.6**	1.6	**10.6**	3.9
	Europe	None	5.3	9.2	None	0.6	3.7
	Asia	0.3	0.5	3.4	0.2	0.3	0.2
2008 to 2009	USA	**40.0**	**12.0**	**13.5**	**26.0**	**25.5**	**24.3**
	Europe	0.3	**21.5**	**24.0**	0.5	0.8	**34.5**
	Asia	0.3	1.0	2.5	1.5	1.3	0.8
2010 to 2011	USA	**11.5**	1.0	4.0	2.5	5.3	5.3
	Europe	**5.8**	**13.0**	**21.5**	**3.0**	**5.5**	**14.5**
	Asia	0.5	None	2.0	None	None	0.5

Jumps Per Year Attributions by Geographic Source

Time Period	Source Region	Country of Equity Market Jump						
		China (HK)	China (Shanghai)	India	Japan	Saudi Arabia	South Africa	South Korea
1985-1994 to 2007	USA	**3.5**	0.2	1.0	**2.6**	0.1	**2.9**	**3.3**
	Europe	0.4	None	None	0.6	None	0.6	0.2
	Asia	4.8	10.9	10.7	6.2	None	0.7	8.7
1997-2002, 1997-2001 for China (HK)	USA	3.0	None	2.4	**5.9**	0.2	**6.2**	**9.9**
	Europe	0.2	None	None	0.5	None	1.6	0.4
	Asia	**12.0**	**7.5**	**10.6**	**10.3**	None	1.8	**25.4**
2008 to 2009	USA	**13.5**	**3.8**	**9.8**	**18.5**	**4.8**	**24.5**	**7.3**
	Europe	1.0	None	0.3	1.3	0.3	3.8	0.3
	Asia	**10.5**	**18.8**	**13.8**	**14.8**	None	2.8	**5.8**
2010 to 2011	USA	1.5	0.5	0.5	1.0	0.5	4.3	3.3
	Europe	**2.0**	**None**	**None**	**1.8**	**0.5**	**3.3**	**2.5**
	Asia	0.5	2.0	0.8	2.5	0.8	0.8	None

Jumps by Reason: Country Summaries

Country		Australia	Canada	Germany	Ireland	United Kingdom	United States
Jump Threshold		2.5%	2.0%	2.5%	2.5%	2.5%	2.5%
Time Period		1985-2012	1980-2012	1989-2012	1987-2012	1980-2011	1980-2011
Total Jumps		130	400	341	354	225	291
1. Jump Frequency (Per Year)		4.6	12.1	14.2	13.6	7.0	9.1
Of Which:	A. Down Jumps	58%	57%	51%	54%	55%	50%
	B. Policy-Triggered	20%	26%	22%	28%	19%	21%
	C. No Article Found	6%	0%	2%	0%	4%	0%
Jumps by Reason (Per Year)							
2. Government Spending		0.3	0.5	0.4	0.6	0.4	0.4
3. Taxes		0	<0.1	0.1	<0.1	0	<0.1
4. Monetary Policy & Central Banking		0.4	1.6	1.5	1.0	0.8	0.7
5. Trade & Exchange Rate Policy		0	0.1	0.1	0.3	<0.1	0.2
6. Elections & Political Transitions		0.1	0.2	0.5	<0.1	0.1	0.1
7. Regulations		0.1	<0.1	<0.1	0.2	0.1	0.2
8. Military Conflict & Terrorism	A. State Actors	0.1	0.1	0.5	0.3	0.1	0.4
	B. Non-State Actors	<0.1	0.1	0.3	0.1	0.1	<0.1
9. Other Government Policy Matters		0	0.5	0.1	1.4	0	<0.1
10. Macroeconomic News		1.5	2.8	5.5	2.8	2.1	4.5
11. Corporate Earnings		0.1	2.6	1.3	3.5	0.4	0.6
12. Commodities		0.2	1.9	0.3	0.2	0.2	0.2
13. Foreign Stock Markets		1.0	0.4	1.8	1.7	1.2	0.3
14. Other Non-Policy Matters		<0.1	0.7	0.4	0.9	0	0.1
15. Unknown or Not Stated		0.6	0.5	1.2	0.7	1.4	1.4

Row 1.B computed as the sum of Rows 2-7, 8.A and 9, divided by the Total Jumps.

Jumps by Reason: Country Summaries

Country		China (HK)	China (Shanghai)	India	Japan	Saudi Arabia	South Africa	South Korea
Jump Threshold		3.8%	4.0%	3.5%	3.0%	2.5%	2.5%	3.5%
Time Period		1988-2011	1990-2013	1980-2012	1981-2013	1995-2013	1986-2013	1981-2011
Total Jumps		209	346	373	328	288	315	376
1. Jump Frequency (Per Year)		8.7	14.4	11.3	9.9	14.4	11.3	17.9
Of Which:	A. Down Jumps	54%	51%	48%	52%	58%	53%	47%
	B. Policy-Triggered	31%	35%	46%	32%	13%	27%	26%
	C. No Article Found	4%	26%	3%	0%	8%	5%	3%
Jumps by Reason (Per Year)								
2. Government Spending		0.3	0	0.3	0.7	0.1	0.9	0.2
3. Taxes		<0.1	0.3	0.5	0.2	0	9	0
4. Monetary Policy & Central Banking		1.2	0.9	0.8	0.7	0.1	1.0	0.8
5. Trade & Exchange Rate Policy		0.1	<0.1	0.2	0	0	0.3	0.6
6. Elections & Political Transitions		0.3	0	0.9	0.2	0.1	0.3	0.6
7. Regulations		0.2	2.1	1.2	0.1	0.6	0.1	0.6
8. Military Conflict & Terrorism	A. State Actors	0.2	<0.1	0.3	0.6	0.3	0.3	0.8
	B. Non-State Actors	<0.1	0	0.2	0.1	0.4	0.1	0.6
9. Other Government Policy Matters		0.3	1.6	1.1	0.7	0.9	0.3	1.6
10. Macroeconomic News		3.4	0.7	0.8	3.0	1.6	2.5	4.4
11. Corporate Earnings		0.2	0.3	1.2	0.7	1.3	0.6	0.6
12. Commodities		0.1	0.1	0.5	0.1	0.6	1.8	0.5
13. Foreign Stock Markets		1.3	1.0	0.7	1.4	0.7	1.9	2.8
14. Other Non-Policy Matters		0.5	3.4	1.1	1.1	5.5	9.5	3.9
15. Unknown or Not Stated		0.1	0.2	1.5	0.4	1.5	0.3	0.1

Jumps by Reason in 3 Financial Crises

		1997-98, Asian FC		*2008-09, Global FC*		*2010-11, Eurozone Crisis*	
	Countries	Australia, China (HK), China (Shanghai), South Korea, Japan	Other 8 Countries	Germany, United States, United Kingdom	Other 10 Countries	Germany, Ireland, United Kingdom	Other 10 Countries
	Total Jumps	224	194	221	784	126	158
1. Jumps Per Year, Per Country		22.4	12.1	36.8	39.2	21.0	7.9
Of Which:	A. Down Jumps	52%	59%	54%	55%	51%	59%
	B. Policy-Triggered	23%	30%	22%	24%	37%	34%
	C. No Article Found	1%	3%	1%	2%	0%	2%
By Reason Per Year, Per Country							
2. Government Spending		0.7	0.1	**3.5**	**3.3**	1.7	0.9
3. Taxes		0.5	0.2	0	0.2	0	0
4. Monetary Policy & Central Banking		1.6	1.4	**2.8**	2.0	**3.2**	0.9
5. Trade & Exchange Rate Policy		0.3	0.3	0.2	0.1	0.2	0
6. Elections & Political Transitions		0.3	0.6	0.8	0.5	0.2	0.1
7. Regulations		0.5	0.1	0.3	1.1	0.7	0.4
8. Military Conflict & Terrorism	A. State Actors	0	0.2	0	0.1	0	0
	B. Non-State Actors	0	0	0	0	0.2	0.1
9. Other Government Policy Matters		1.3	0.9	0.3	2.5	1.8	0.5
10. Macroeconomic News		**9.0**	**3.3**	**17.2**	**11.1**	**7.3**	**3.6**
11. Corporate Earnings		1.3	0.8	**2.7**	**5.6**	1.3	0.2
12. Commodities		0	0	1.5	**3.7**	0.2	0.4
13. Foreign Stock Markets		2.0	**2.9**	1.8	**4.3**	1.3	0.3
14. Other Non-Policy Matters		4.3	0.4	0.5	2.6	1.2	0.5
15. Unknown or Not Stated		0.4	0.8	4.7	1.8	1.8	0.3

Jumps by Reason in 3 Financial Crises

		1997-98, Asian FC		*2008-09, Global FC*		*2010-11, Eurozone Crisis*	
Countries		Australia, China (HK), China (Shanghai), South Korea, Japan	Other 8 Countries	Germany, United States, United Kingdom	Other 10 Countries	Germany, Ireland, United Kingdom	Other 10 Countries
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	B. Policy-Triggered	23%	30%	22%	24%	37%	34%
	C. No Article Found	1%	3%	1%	2%	0%	2%
By Reason Per Year, Per Country							
2. Government Spending		0.7					
3. Taxes		0.5					
4. Monetary Policy & Central Banking		1.6					
5. Trade & Exchange Rate Policy		0.3					
6. Elections & Political Transitions		0.3					
7. Regulations		0.5					
8. Military Conflict & Terrorism	A. State Actors	0	0.2	0	0.1	0	0
	B. Non-State Actors	0	0	0	0	0.2	0.1
9. Other Government Policy Matters		1.3	0.9	0.3	2.5	1.8	0.5
10. Macroeconomic News		**9.0**	**3.3**	**17.2**	**11.1**	**7.3**	**3.6**
11. Corporate Earnings		1.3	0.8	**2.7**	**5.6**	1.3	0.2
12. Commodities		0	0	1.5	**3.7**	0.2	0.4
13. Foreign Stock Markets		2.0	**2.9**	1.8	**4.3**	1.3	0.3
14. Other Non-Policy Matters		4.3	0.4	0.5	2.6	1.2	0.5
15. Unknown or Not Stated		0.4	0.8	4.7	1.8	1.8	0.3

Policy news plays a greater role during 2010-11 (Eurozone Crisis and ongoing US policy uncertainty) than during the GFC of 2008-09 or the Asian FC of 1997-98.

Jumps by Reason in 3 Financial Crises

		1997-98, Asian FC		*2008-09, Global FC*		*2010-11, Eurozone Crisis*	
	Countries	Australia, China (HK), China (Shanghai), South Korea, Japan	Other 8 Countries	Germany, United States, United Kingdom	Other 10 Countries	Germany, Ireland, United Kingdom	Other 10 Countries
	Total Jumps	224	194	221	784	126	158
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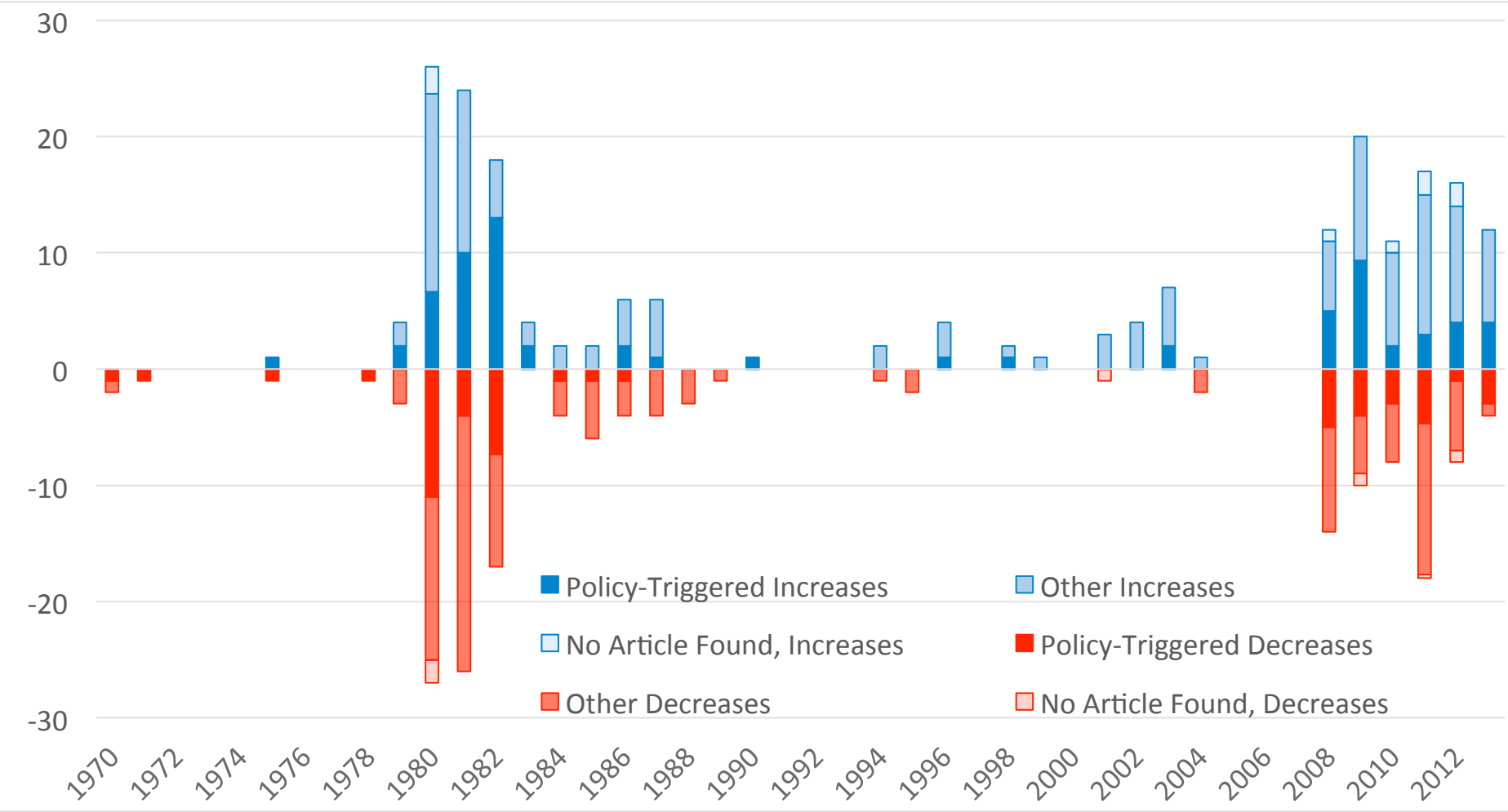
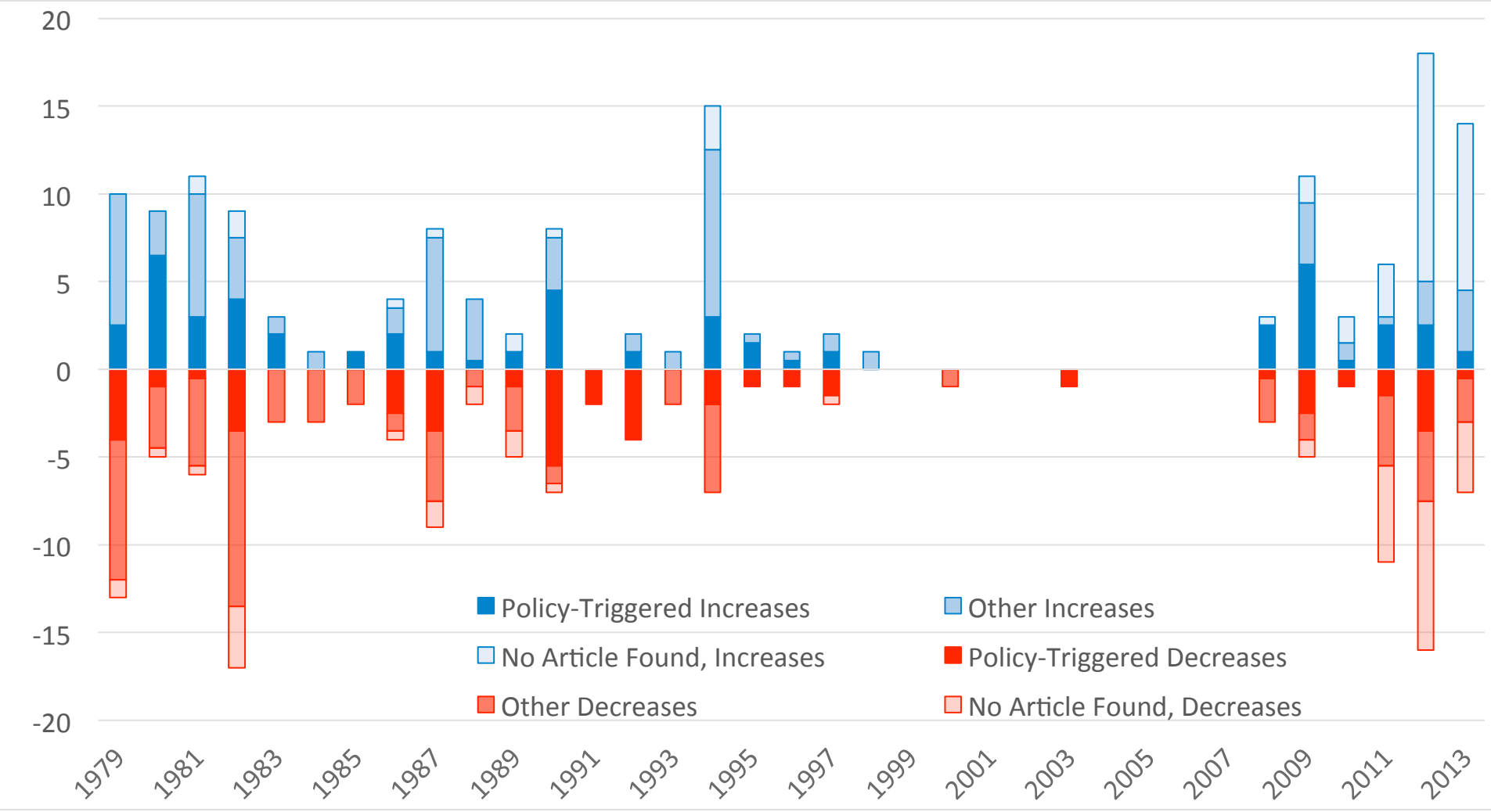
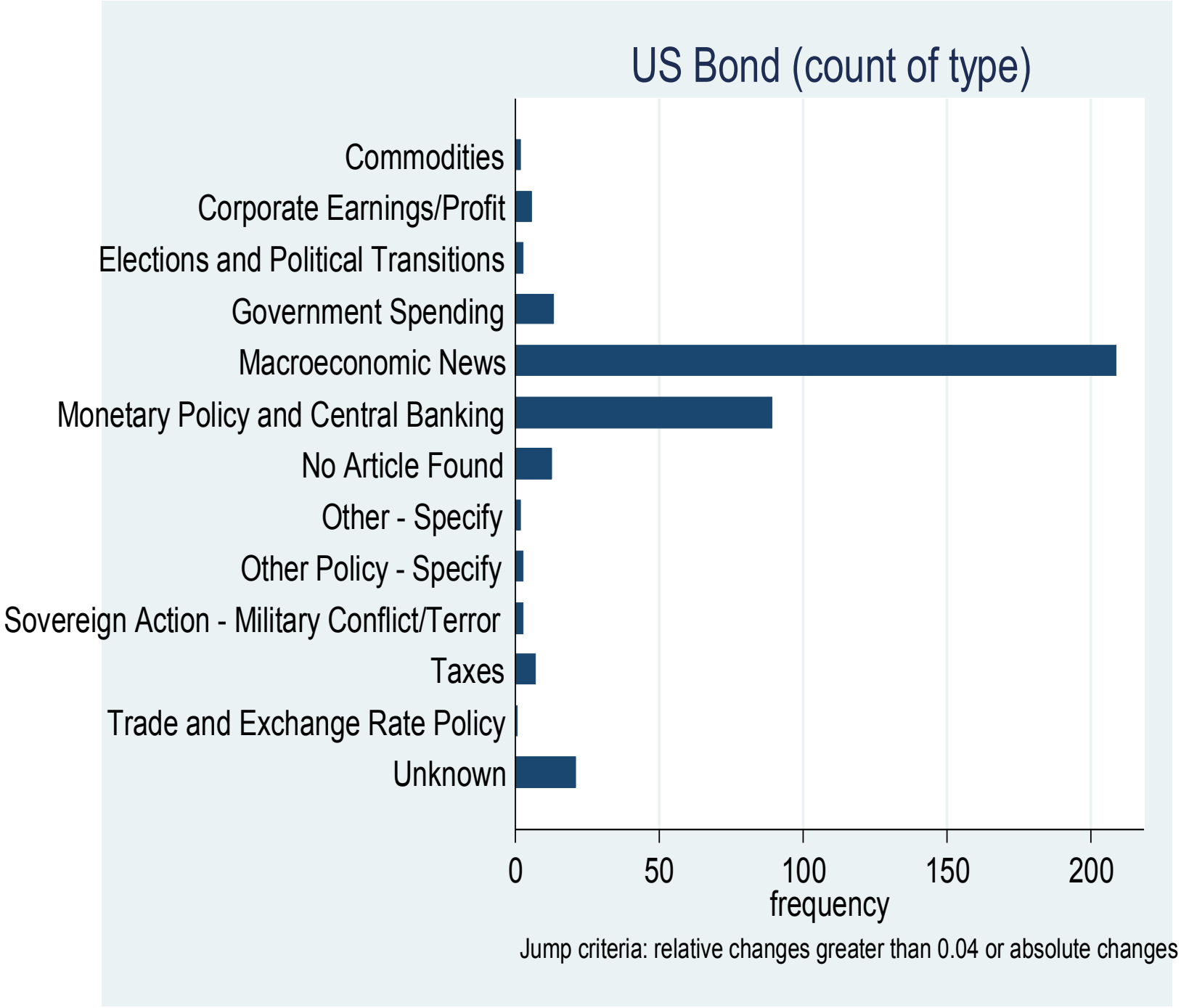
	B. Policy-Triggered	23%	30%	22%	24%	37%	34%
	C. No Article Found	1%	3%	1%	2%	0%	2%
By Reason Per Year, Per Country							
2. Government Spending		0.7	0.1	**3.5**	**3.3**	1.7	0.9
3. Taxes		0.5	0.2	0	0.2	0	0
4. Monetary Policy & Central Banking		1.6	1.4	**2.8**	2.0	**3.2**	0.9
5. Trade & Exchange Rate Policy		0.3	0.3	0.2	0.1	0.2	0
6. Elections & Political Transitions		0.3	0.6	0.8	0.5	0.2	0.1
7. Regulations		0.5	0.1	0.3	1.1	0.7	0.4
8. Military Conflict & Terrorism	A. State Actors	0	0.2	0	0.1	0	0
	B. Non-State Actors	0	0	0	0	0.2	0.1
9. Other Government Policy Matters		1.3	0.9	0.3	2.5	1.8	0.5
10. Macroeconomic News		**9.0**	**3.3**	**17.2**	**11.1**	**7.3**	**3.6**
11. Corporate Earnings		1.3	0.8	**2.7**	**5.6**	1.3	0.2
12. Commodities		0	0	1.5	**3.7**	0.2	0.4
13. Foreign Stock Markets		2.0	**2.9**	1.8	**4.3**	1.3	0.3
14. Other Non-Policy Matters		4.3	0.4	0.5	2.6	1.2	0.5
15. Unknown or Not Stated		0.4	0.8	4.7	1.8	1.8	0.3

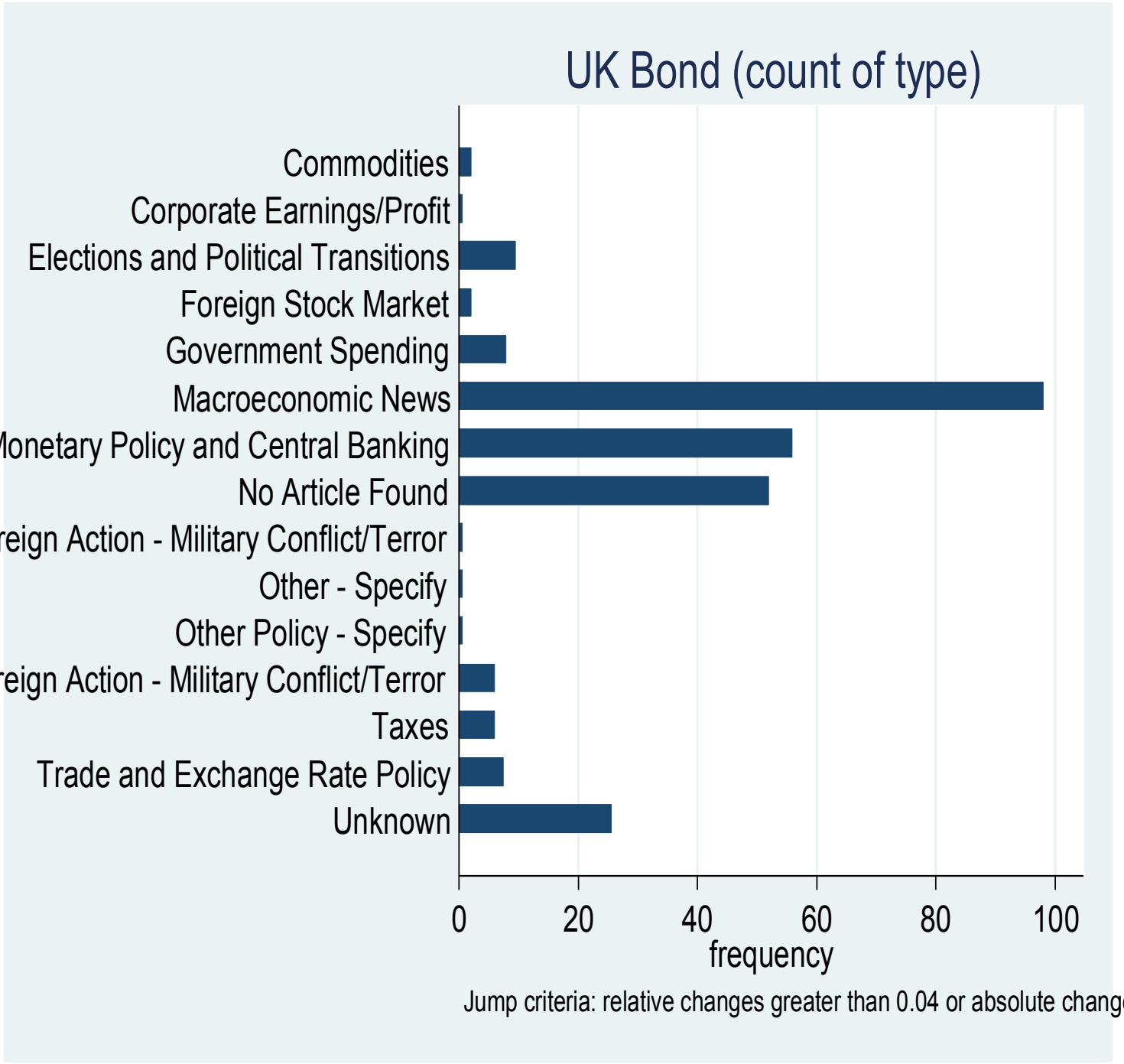
10-Year U.S. Government Bonds, Jumps Per Year, 1970-2013, Jump threshold: |relative yield change| > 0.04 OR |yield change| > 0.2



10-Year U.K. Government Bonds, Jumps Per Years, 1979-2013, Jump threshold: |relative yield change| > 0.04 OR |yield change| > 0.2




US Bond (count of type)
Commodities
Corporate Earnings/Profit
Elections and Political Transitions
Government Spending
Macroeconomic News
Monetary Policy and Central Banking
No Article Found
Other - Specify
Other Policy - Specify
Sovereign Action - Military Conflict/Terror
Taxes
Trade and Exchange Rate Policy
Unknown
0
50
100
150
200
frequency
Jump criteria: relative changes greater than 0.04 or absolute changes greater than 0.2


UK Bond (count of type)
Commodities
Corporate Earnings/Profit
Elections and Political Transitions
Foreign Stock Market
Government Spending
Macroeconomic News
Monetary Policy and Central Banking
No Article Found
Non-Sovereign Action - Military Conflict/Terror
Other - Specify
Other Policy - Specify
Sovereign Action - Military Conflict/Terror
Taxes
Trade and Exchange Rate Policy
Unknown
0
20
40
60
80
100
frequency
Jump criteria: relative changes greater than 0.04 or absolute changes greater than 0.2

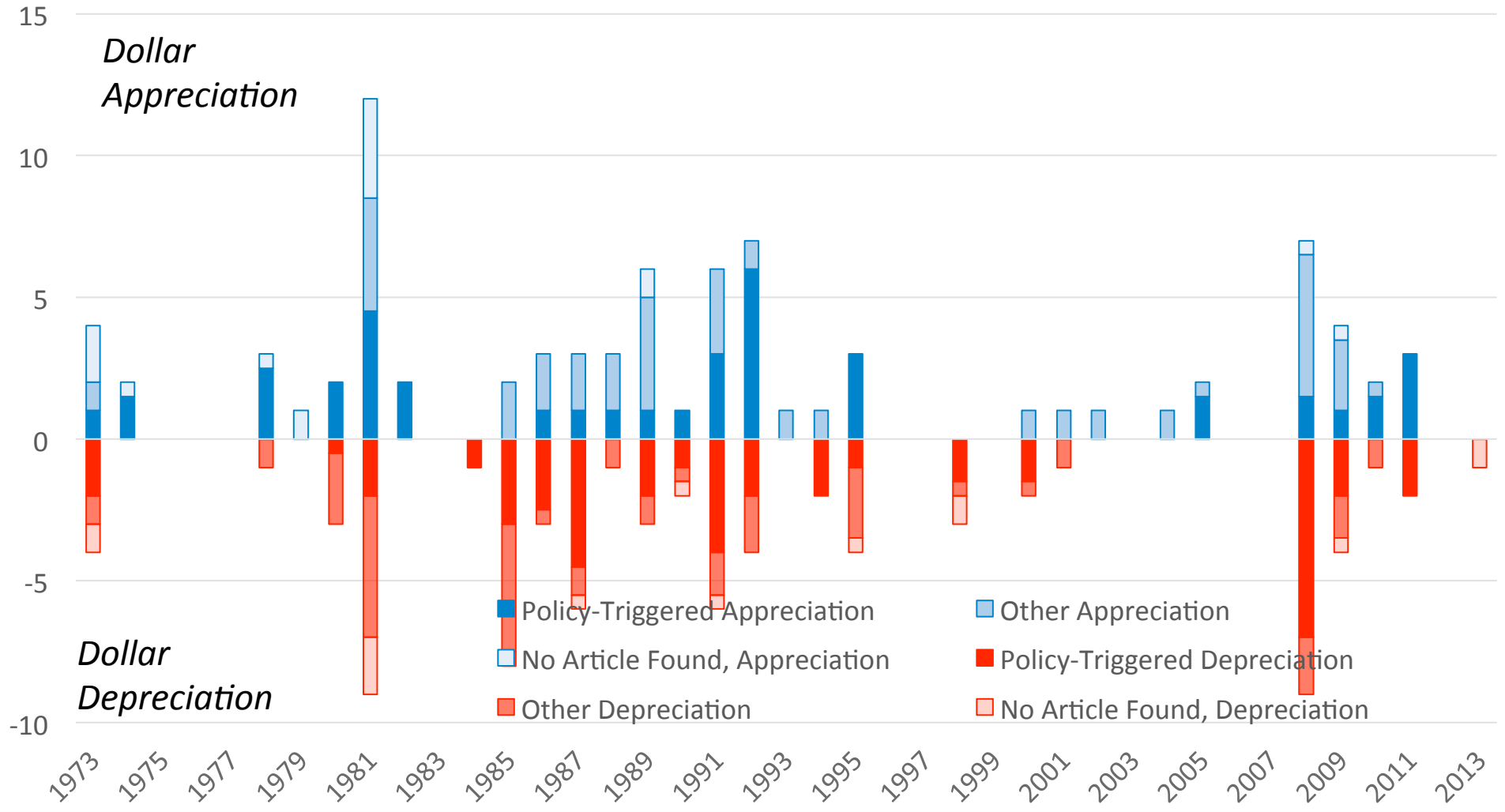
Bonds versus Equities

Jumps in U.S. Bond markets occur more often in 1980-82 than in 2008-12. The pattern is very much the reverse for U.S. equities.

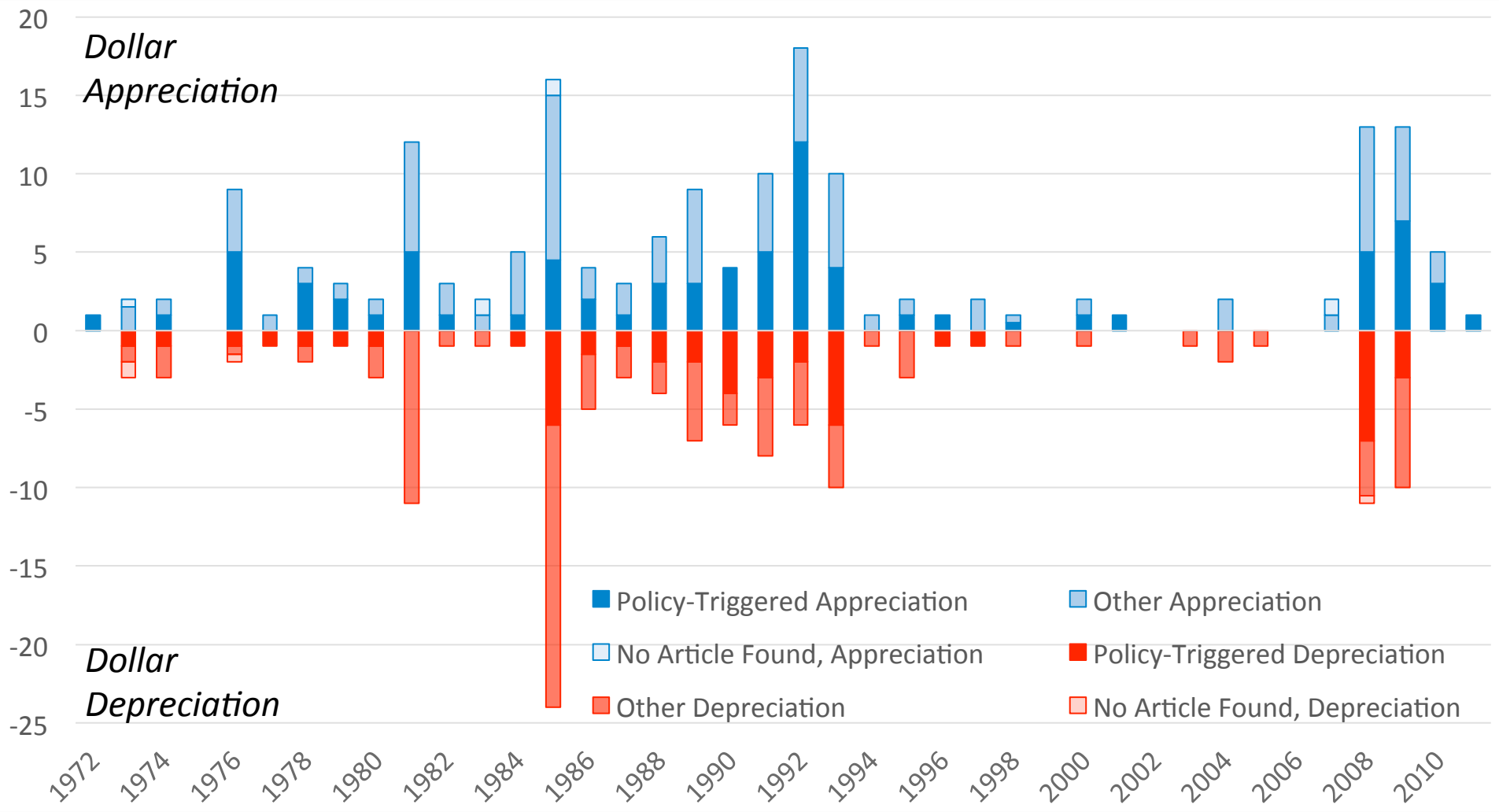
- → Shocks to risk premia and expected returns predominated from 2008-12, while shocks to (nominal) risk-free rates were less important.
- → Shocks to nominal risk-free rates predominated in the 1980-82 period, but shocks to risk premia and expected returns were not so important.

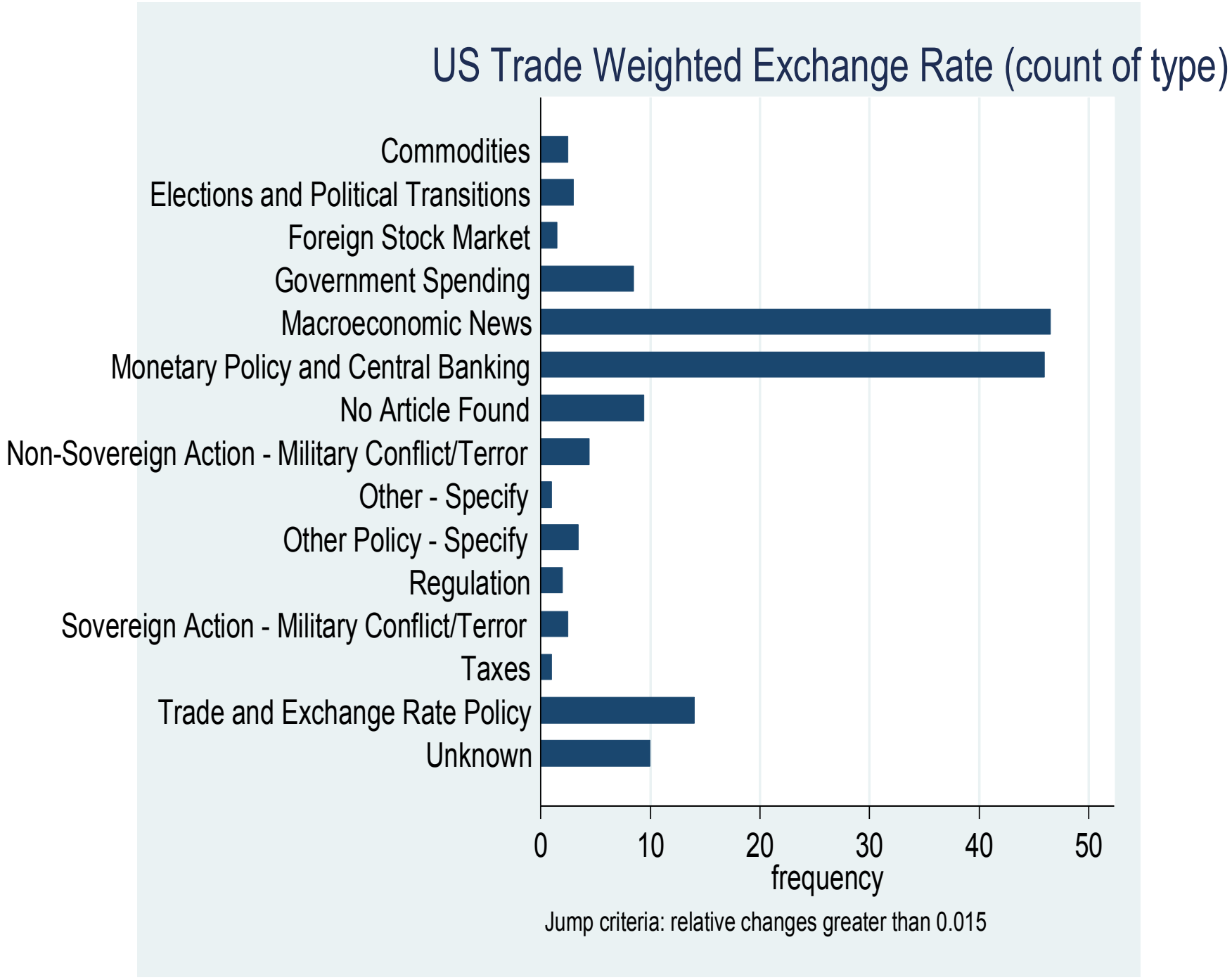
This interpretation aligns with the view that uncertainty about inflation rates was a major factor in the early 1980s but not in the 2008-12 period.

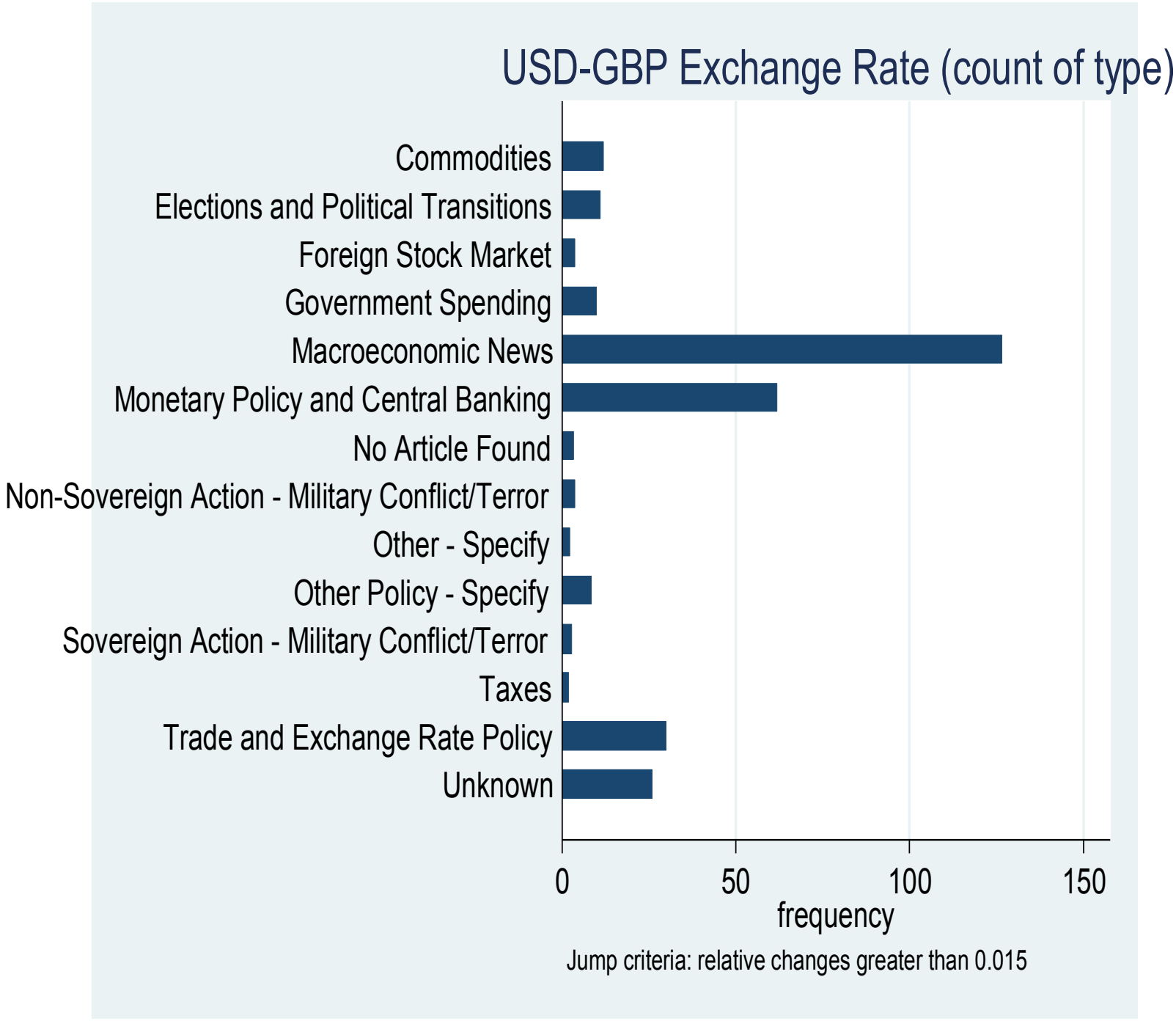
U.S. Trade-Weighted Exchange Rate, Jumps per Year, 1973-2013, Jump threshold: |relative change| > 0.015



USD-GBP Exchange Rate, Jumps per Year, 1972-2013, Jump threshold: |relative change| > 0.015




US Trade Weighted Exchange Rate (count of type)
Commodities
Elections and Political Transitions
Foreign Stock Market
Government Spending
Macroeconomic News
Monetary Policy and Central Banking
No Article Found
Non-Sovereign Action - Military Conflict/Terror
Other - Specify
Other Policy - Specify
Regulation
Sovereign Action - Military Conflict/Terror
Taxes
Trade and Exchange Rate Policy
Unknown
0
10
20
30
40
50
frequency
Jump criteria: relative changes greater than 0.015

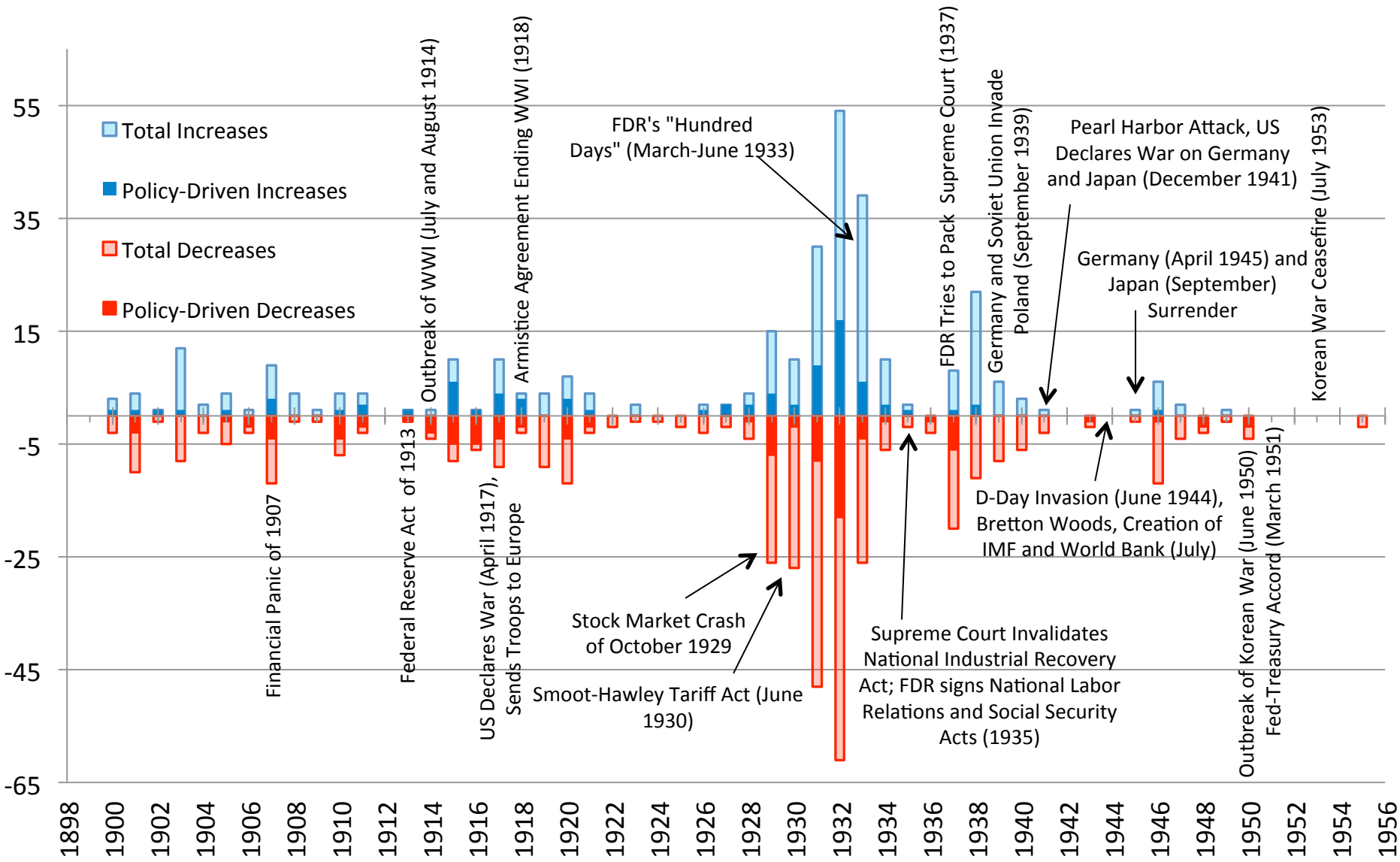

USD-GBP Exchange Rate (count of type)
Commodities
Elections and Political Transitions
Foreign Stock Market
Government Spending
Macroeconomic News
Monetary Policy and Central Banking
No Article Found
Non-Sovereign Action - Military Conflict/Terror
Other - Specify
Other Policy - Specify
Sovereign Action - Military Conflict/Terror
Taxes
Trade and Exchange Rate Policy
Unknown
0
50
100
150
frequency
Jump criteria: relative changes greater than 0.015

Next Steps

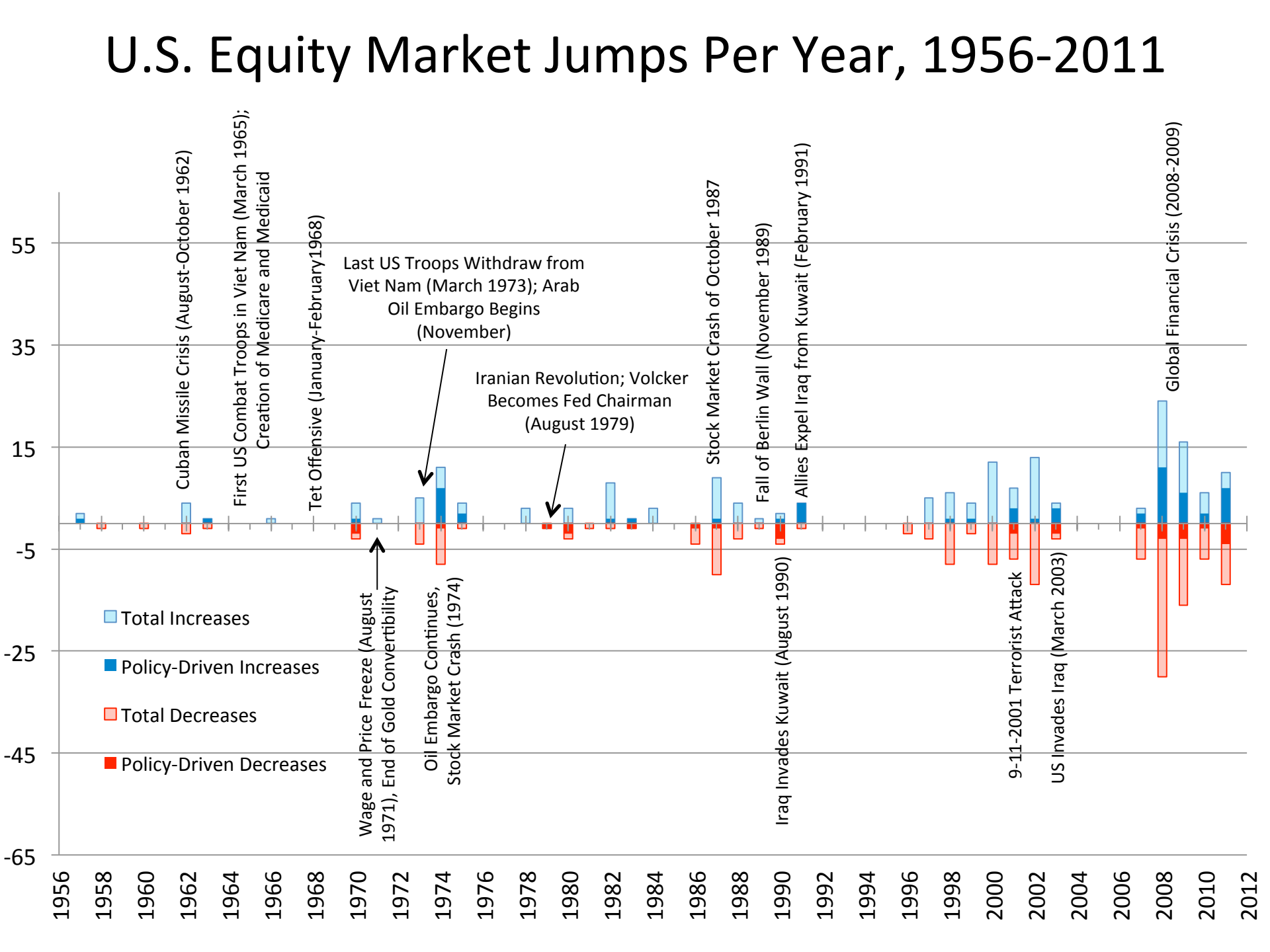
- Construct data for additional countries
- Characterize chief empirical patterns and their implications for the sources of financial market volatility (at daily frequencies)
- Link to theories of asset pricing

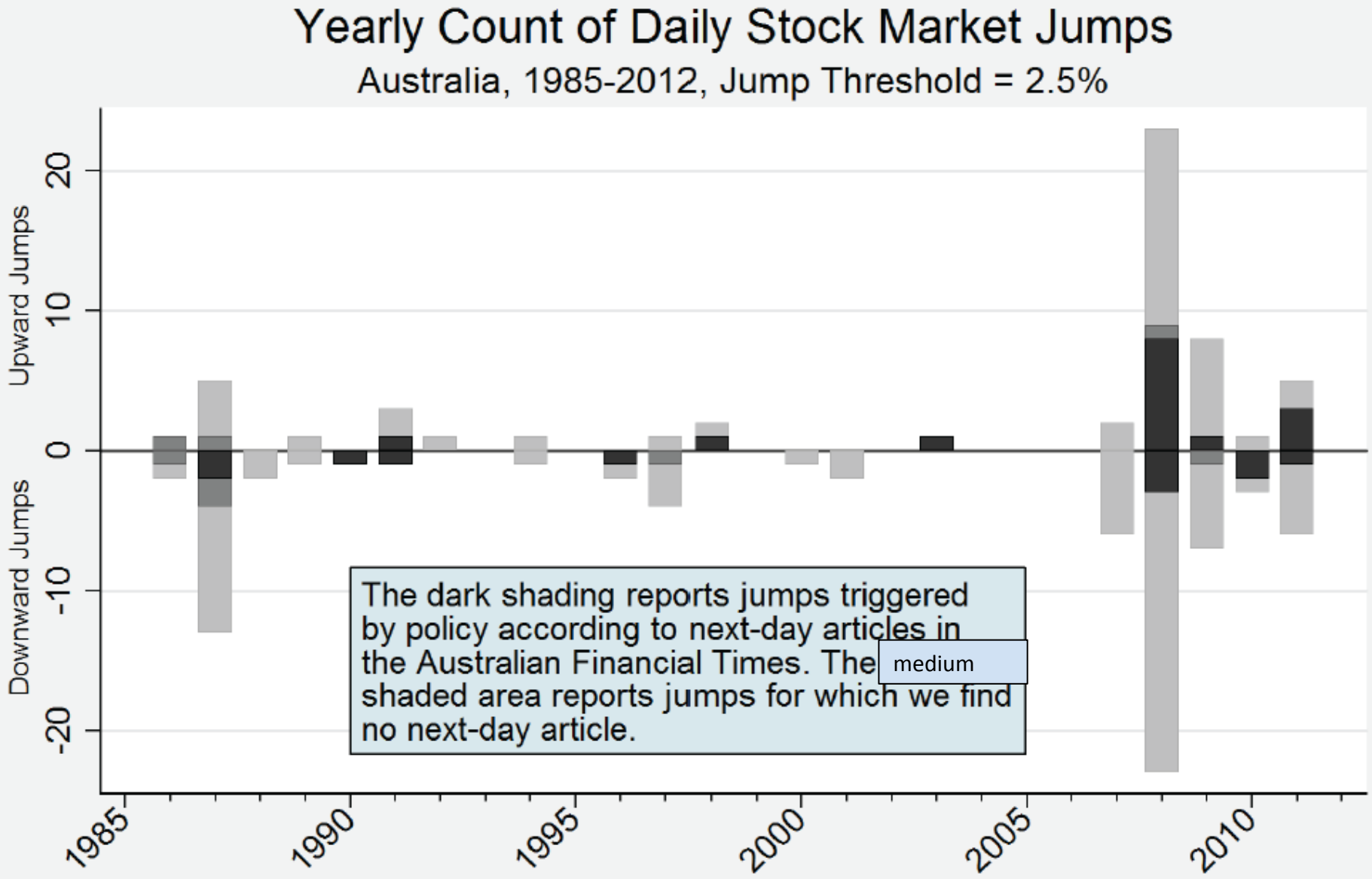
Additional Slides

U.S. Equity Market Jumps Per Year,1900-1955



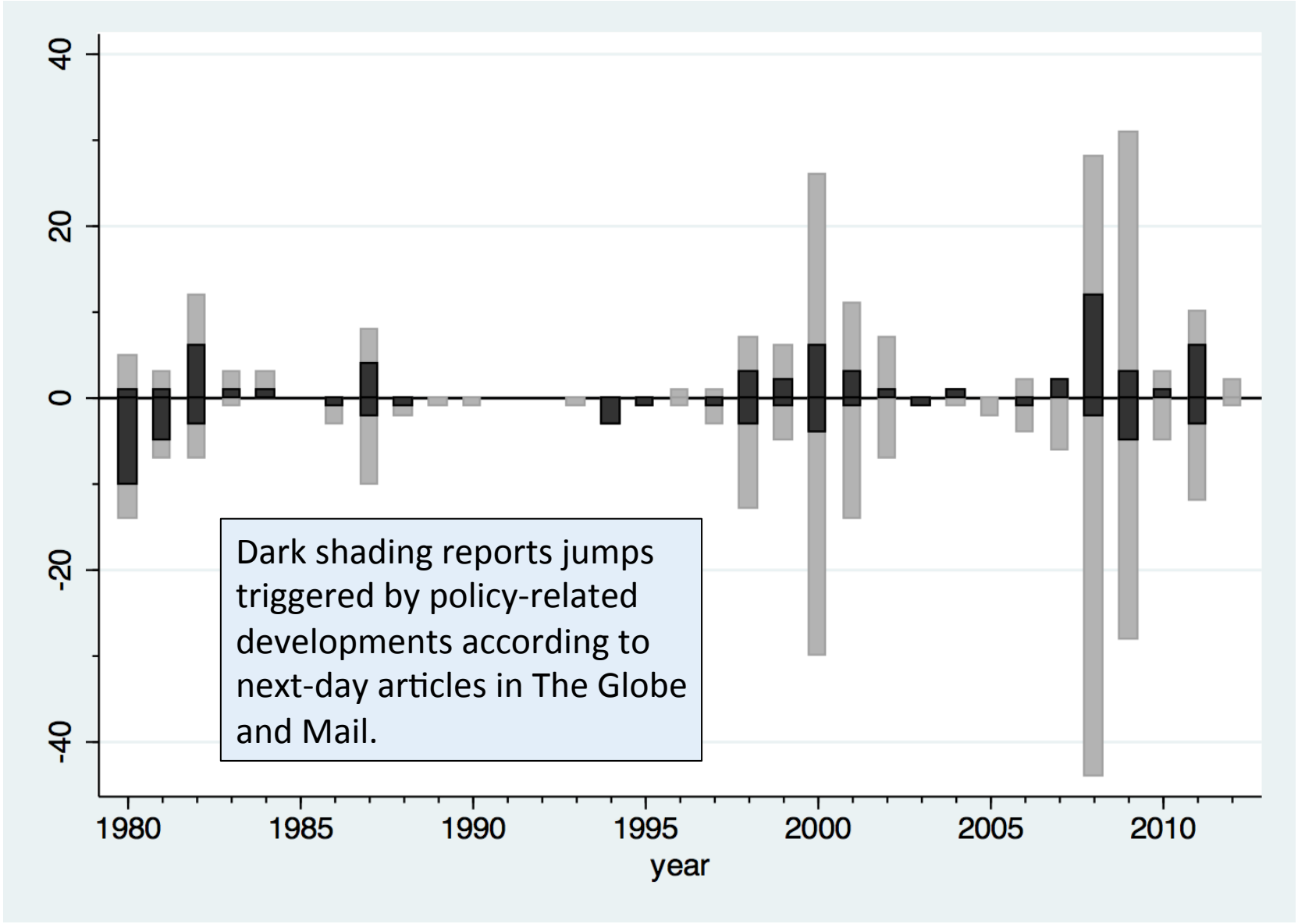
U.S. Equity Market Jumps Per Year, 1956-2011




Yearly Count of Daily Stock Market Jumps
Australia, 1985-2012, Jump Threshold = 2.5%
Upward Jumps
Downward Jumps
20
10
0
-10
-20
1985
1990
1995
2000
2005
2010
The dark shading reports jumps triggered by policy according to next-day articles in the Australian Financial Times. The
medium
shaded area reports jumps for which we find no next-day article.

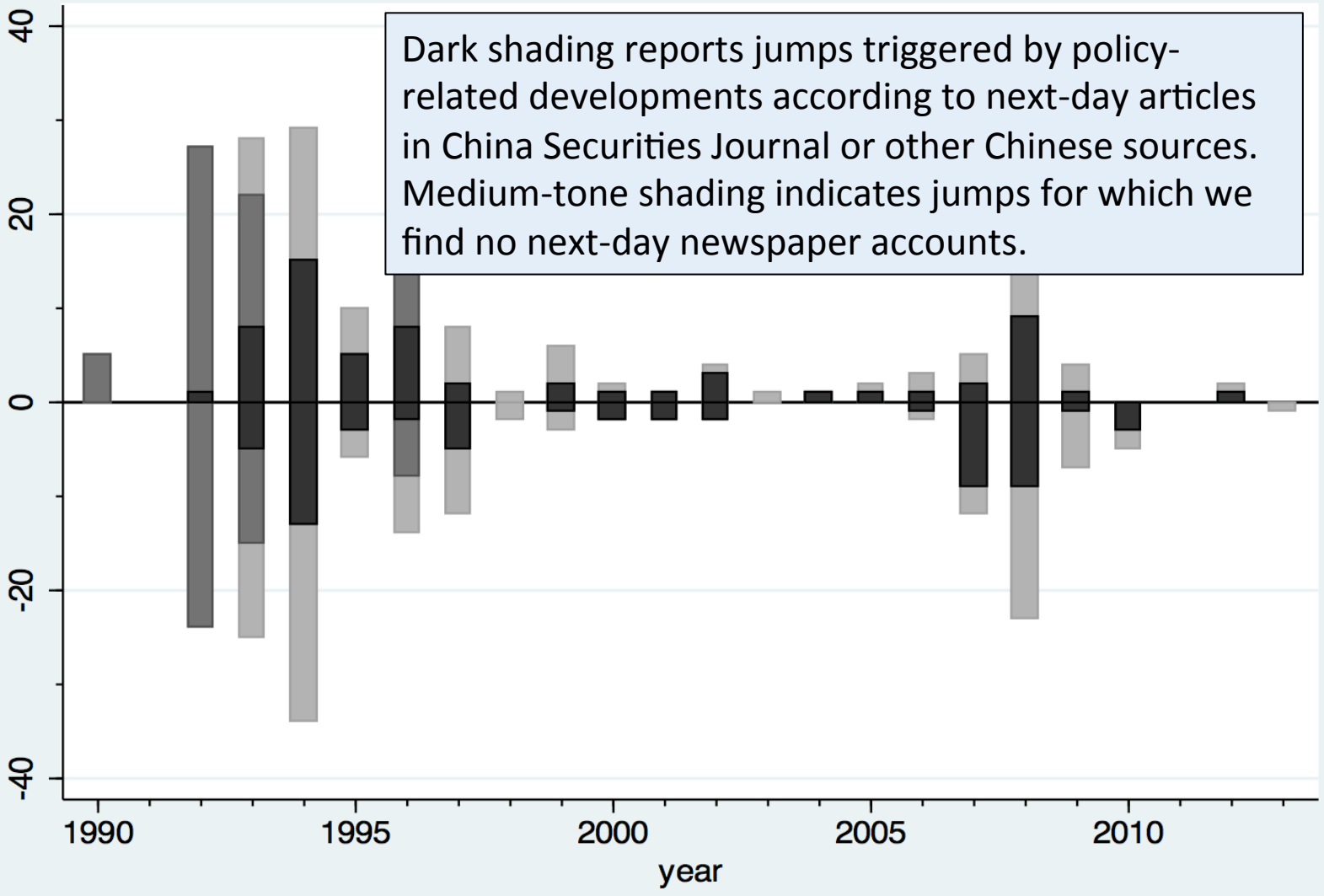
Yearly Count of Daily Stock Market Jumps

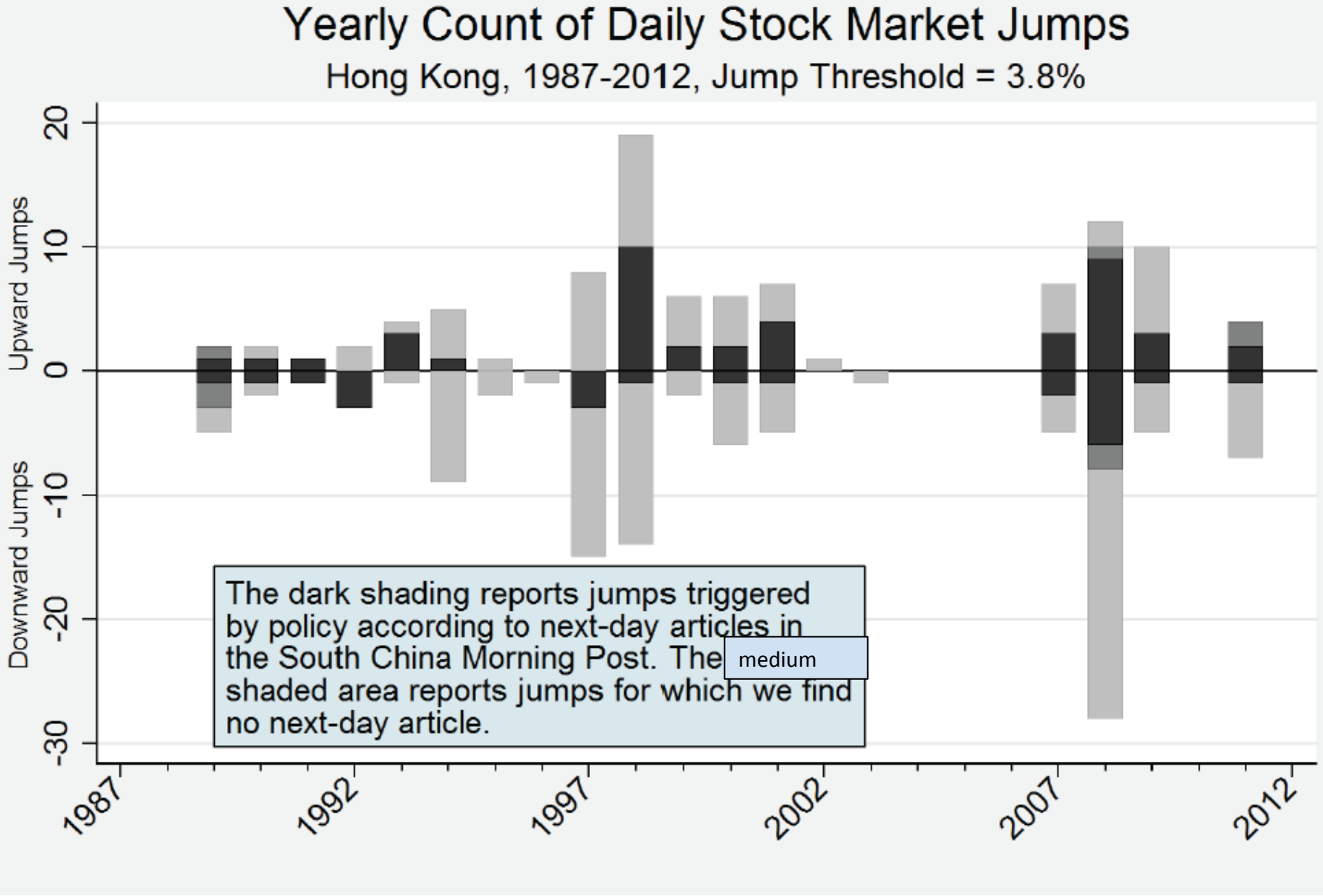
Canada, 1980-2012, Jump Threshold 2.0%

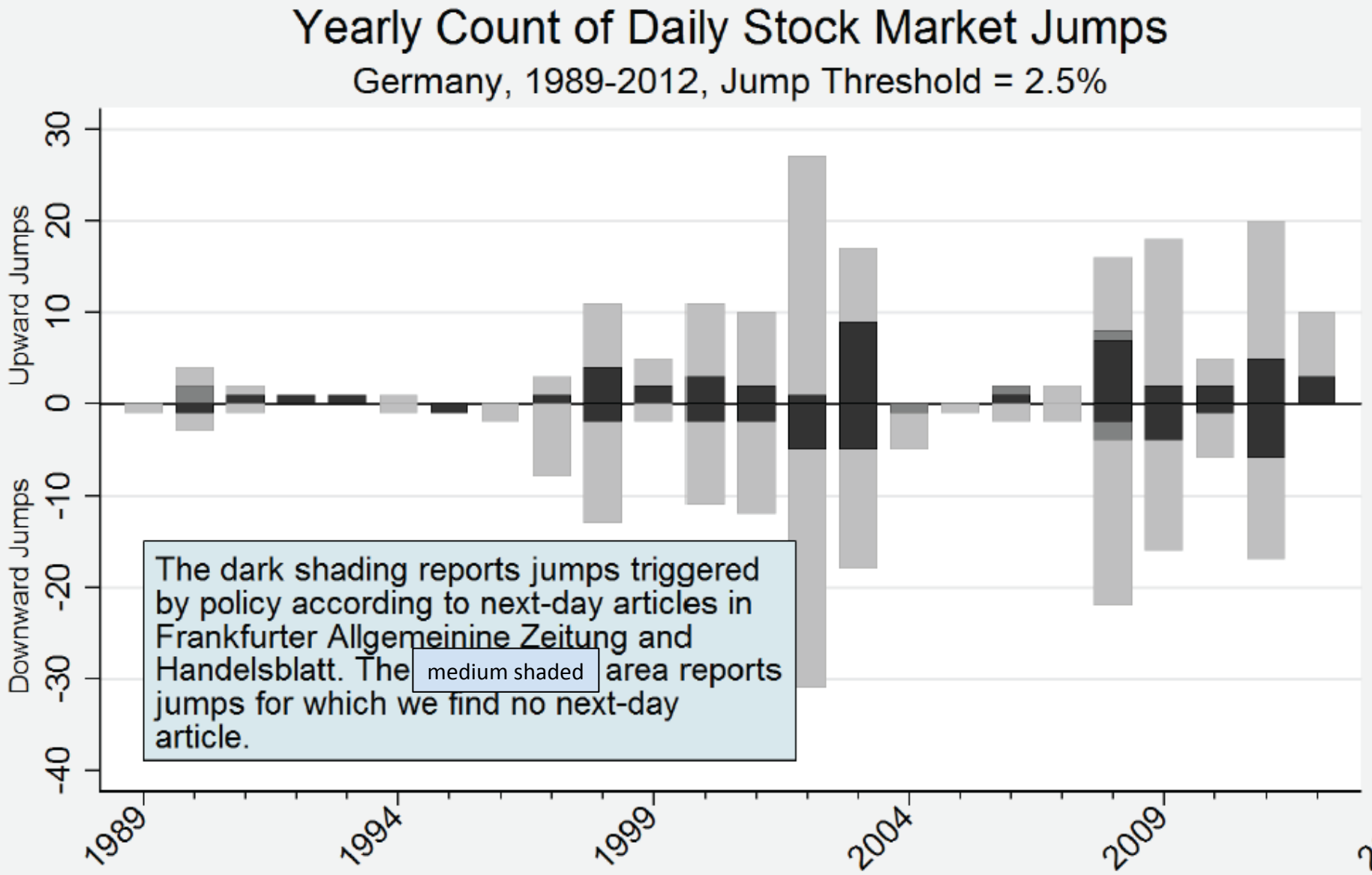


Yearly Count of Daily Stock Market Jumps

China (Shanghai Index), 1990-2013, Jump Threshold 4.0%

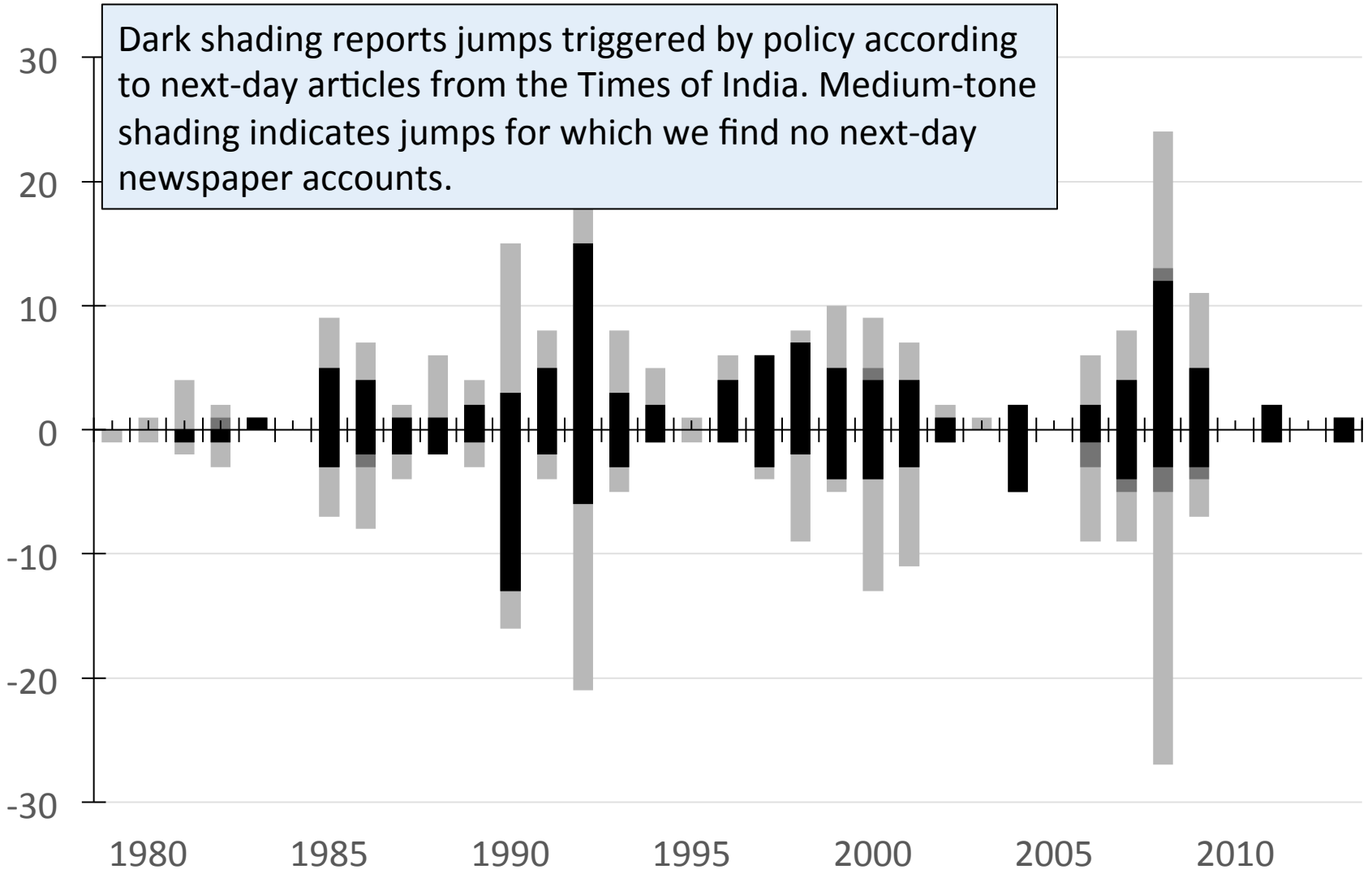



Yearly Count of Daily Stock Market Jumps
Hong Kong, 1987-2012, Jump Threshold = 3.8%
Upward Jumps
Downward Jumps
20
10
0
-10
-20
-30
1987
1992
1997
2002
2007
2012
The dark shading reports jumps triggered by policy according to next-day articles in the South China Morning Post. The
medium
shaded area reports jumps for which we find no next-day article.


Yearly Count of Daily Stock Market Jumps
Germany, 1989-2012, Jump Threshold = 2.5%
Upward Jumps
Downward Jumps
30
20
10
0
-10
-20
-30
-40
1989
1994
1999
2004
2009
The dark shading reports jumps triggered by policy according to next-day articles in Frankfurter Allgemeinine Zeitung and Handelsblatt. The medium shaded area reports jumps for which we find no next-day article.

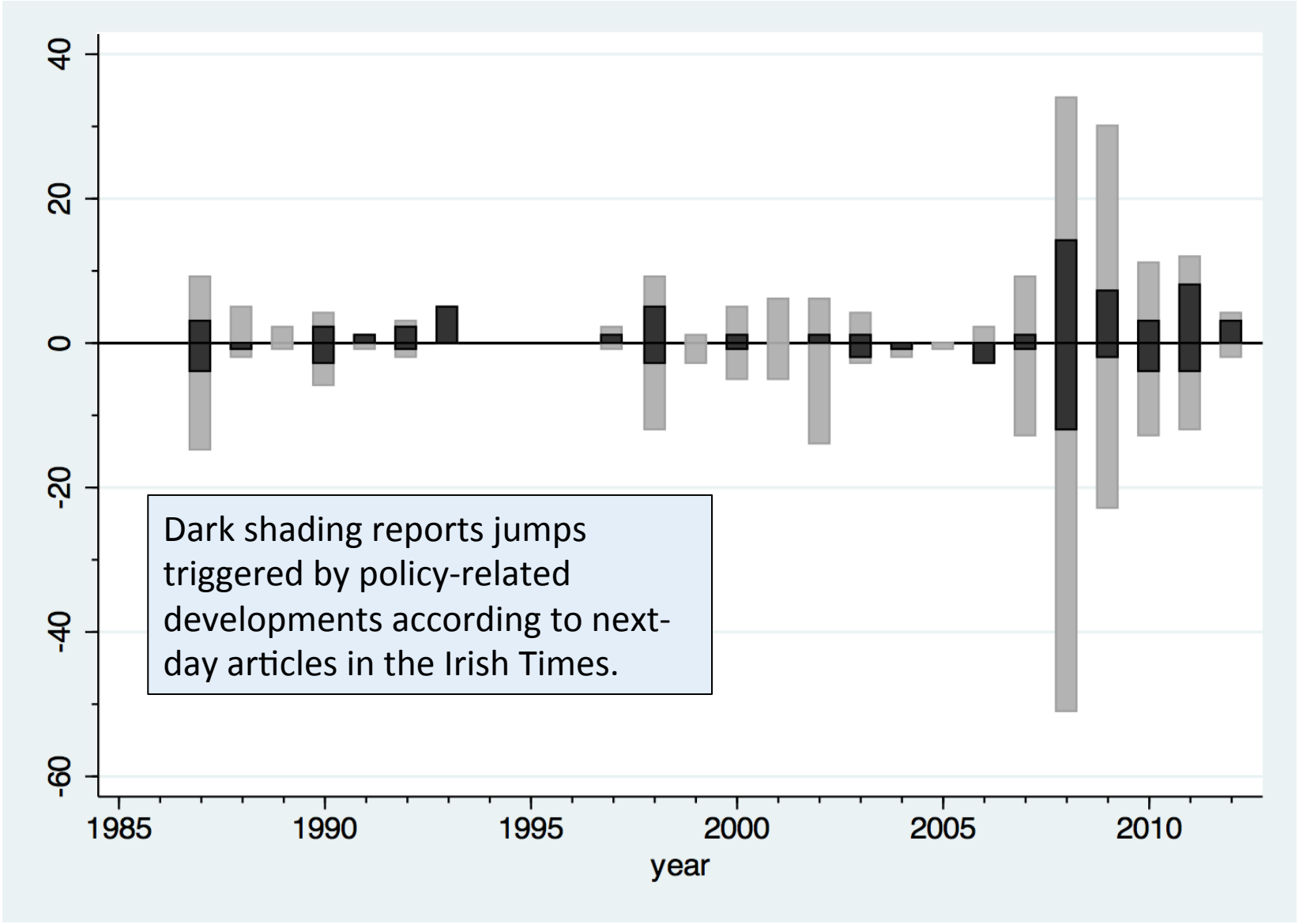
Yearly Count of Daily Stock Market Jumps

India, 1979-2013, Jump Threshold 3.5%



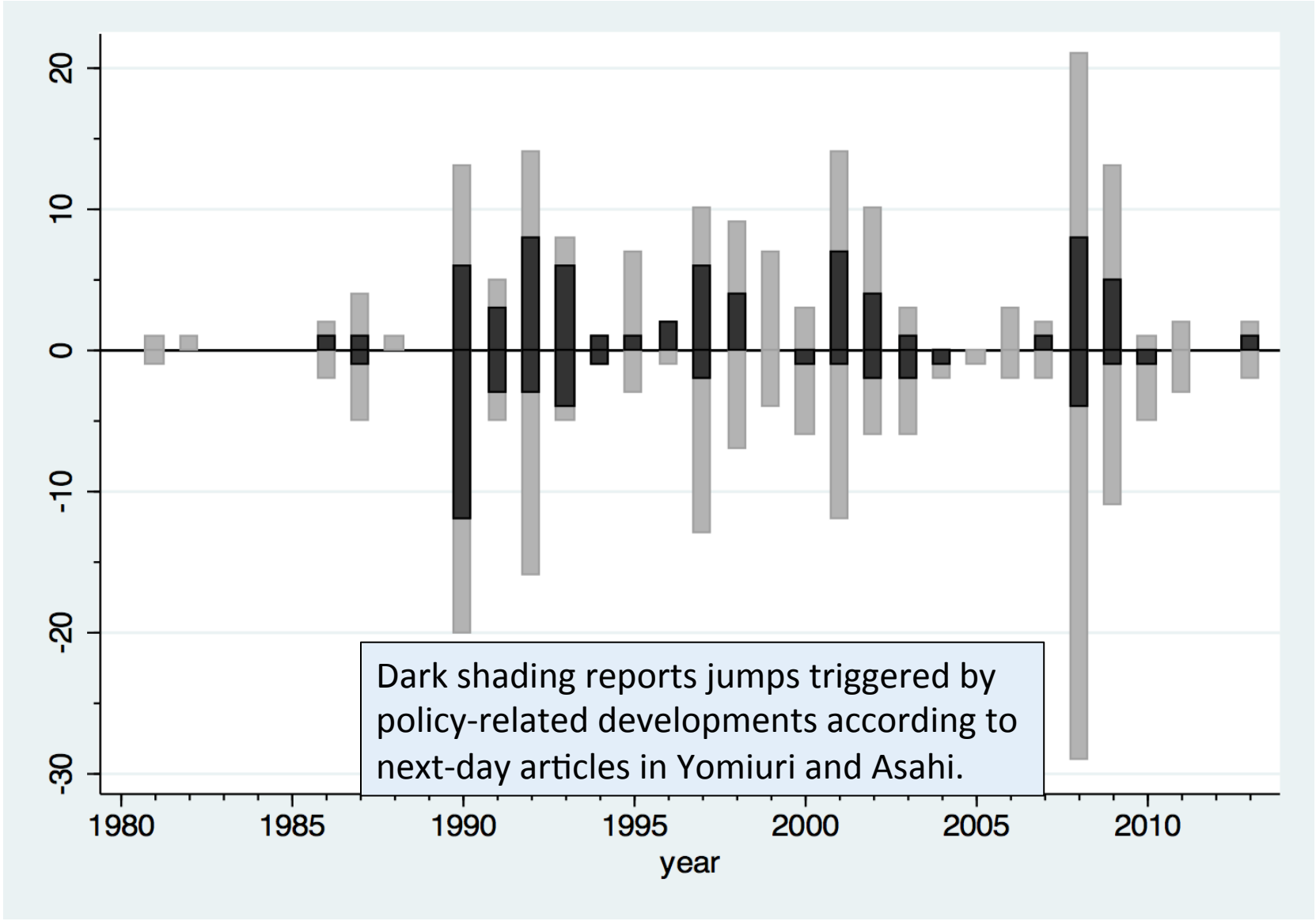
Yearly Count of Daily Stock Market Jumps

Ireland, 1987-2012, Jump Threshold 2.5%



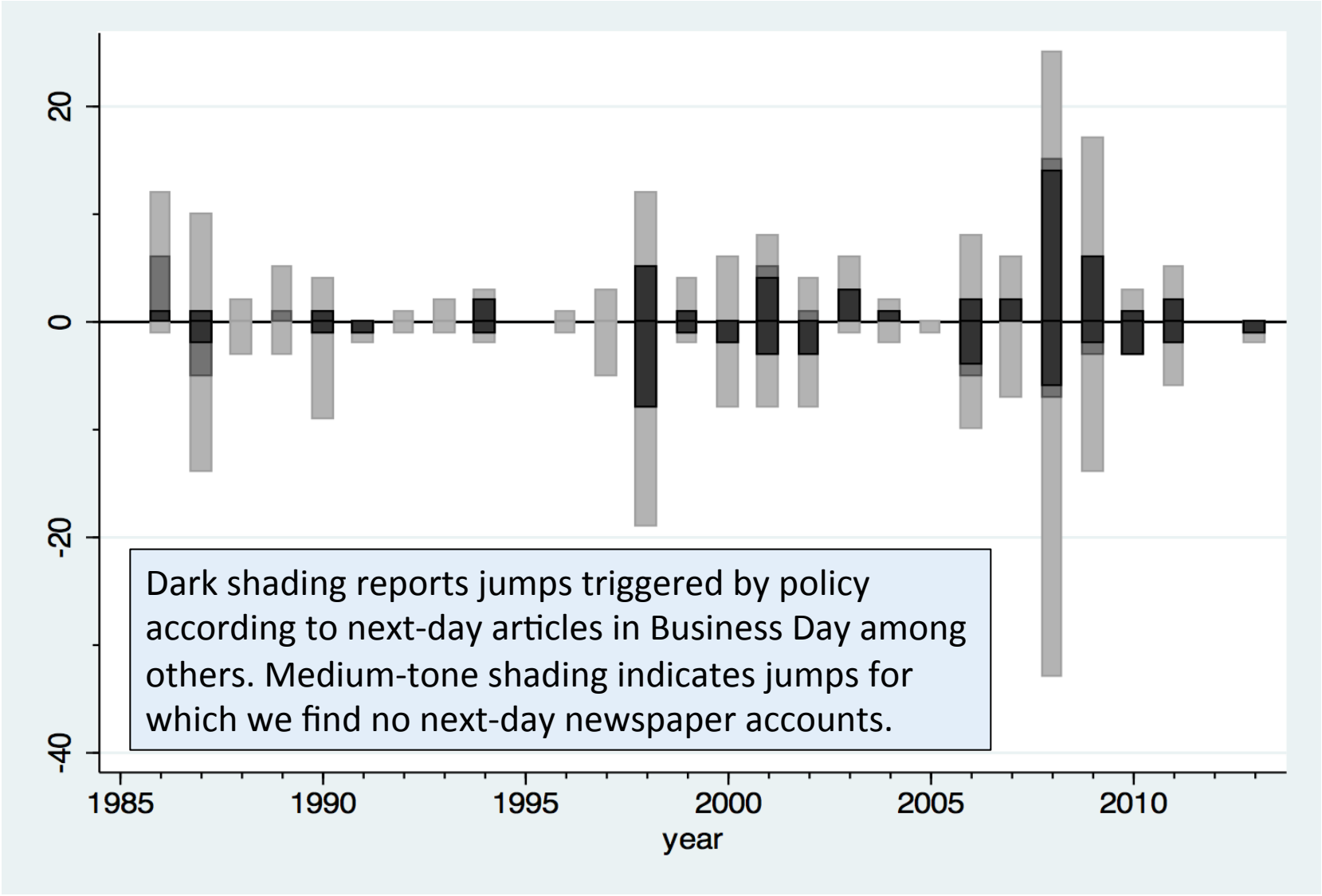
Yearly Count of Daily Stock Market Jumps

Japan, 1981-2013, Jump Threshold 3.0%



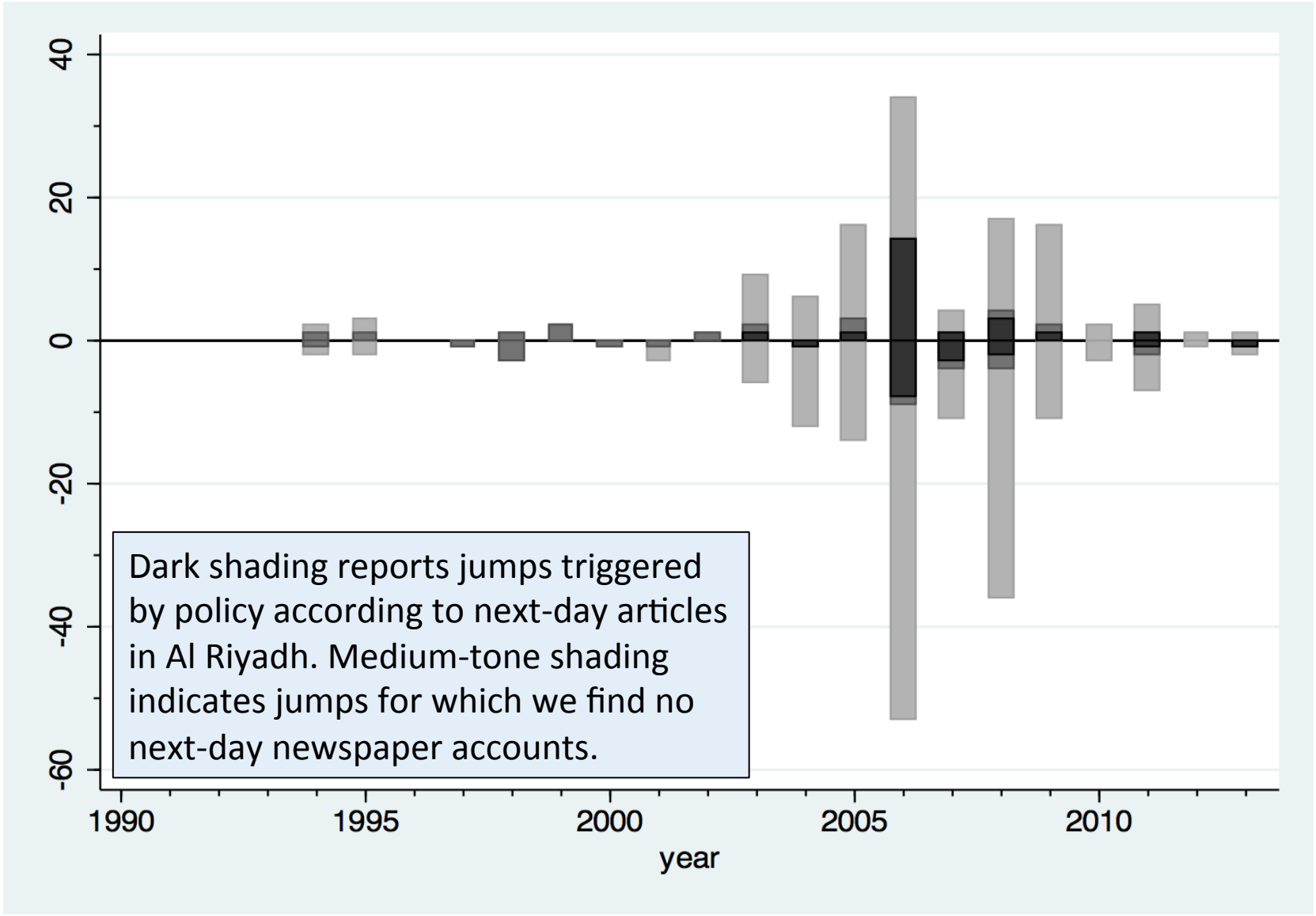
Yearly Count of Daily Stock Market Jumps

South Africa, 1986-2013, Jump Threshold 2.5%



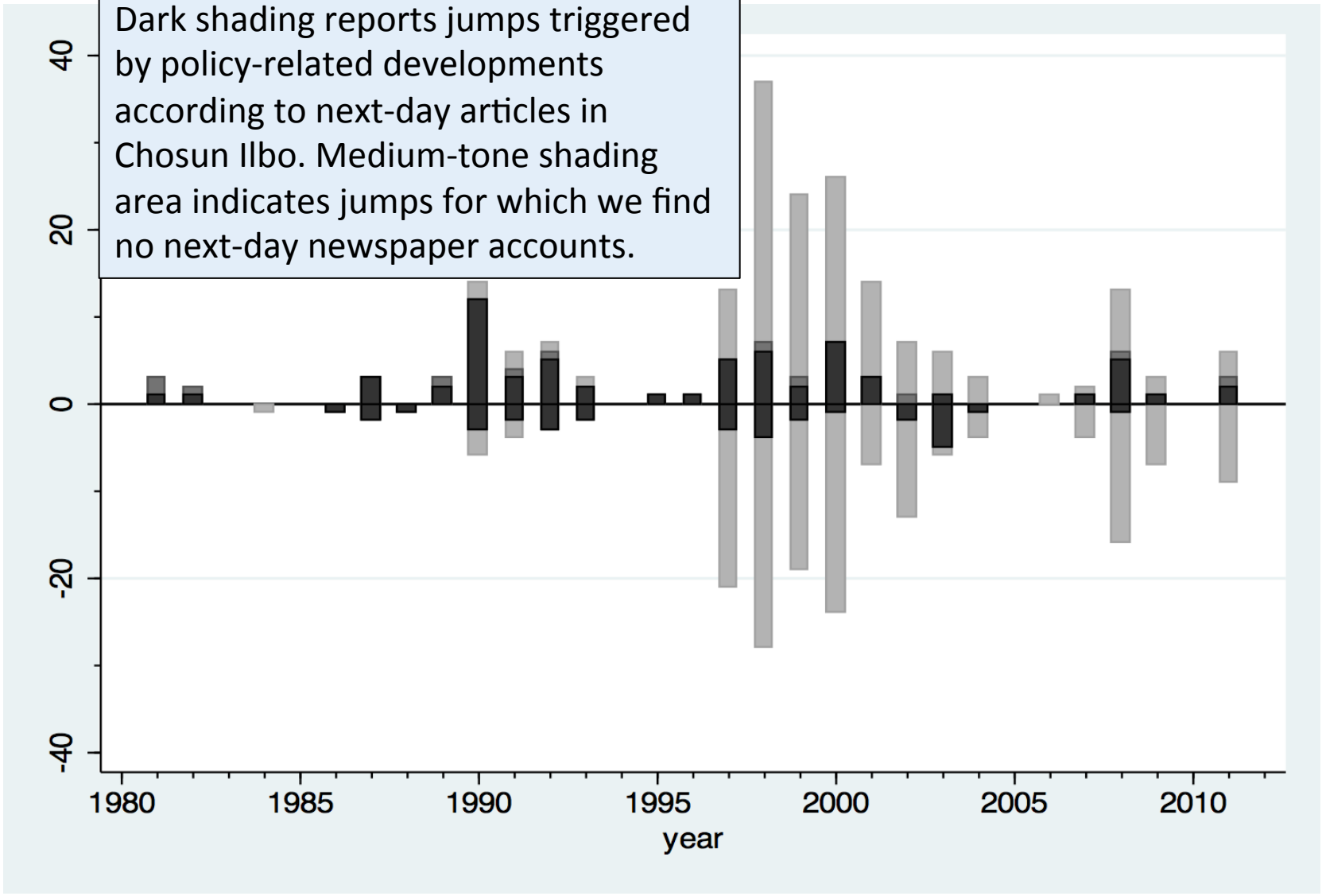
Yearly Count of Daily Stock Market Jumps

Saudi Arabia, 1994-2013, Jump Threshold 2.5%



Yearly Count of Daily Stock Market Jumps

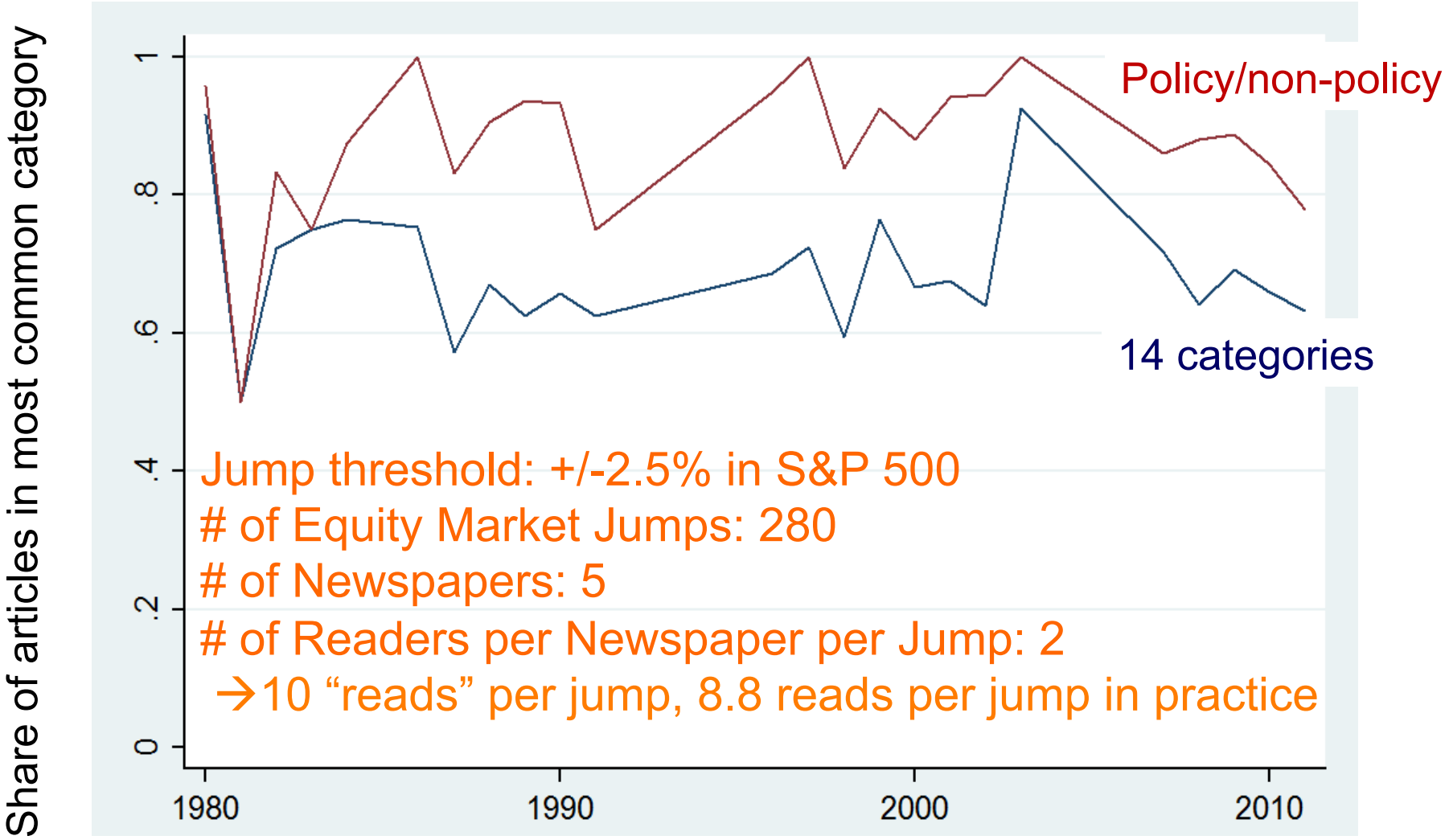
South Korea, 1980-2011, Jump Threshold 3.5%



Robustness to Newspapers and Coders

- Two potential concerns about the method:
  - Results for a given jump may depend heavily on which newspaper we consult
  - Different readers may code the same jump differently, even when reviewing the same newspaper
- To evaluate these concerns:
  - Consult 5 newspapers (Boston Globe, LA Times, NY Times, WSJ, Washington Post) for each jump that occurred in the United States from 1980 to 2011.
  - Assign 2 readers to each newspaper for each jump
  - Yields (up to) 10 reads per jump event
  - Quantify extent of agreement across newspapers and readers for 280 jumps

High Rates of Agreement about Jump Reason across Newspapers and Readers: United States,1980-2011



Notes: The chart plots average rates of agreement about the reason for daily equity market jumps across 5 newspapers, with two readers per paper per jump. Thus, we have a maximum of 10 (5 times 2) readings for each of 280 jumps of greater than +/-2.5% in the S&P 500 Index. In practice, the average number of readings per jump is 8.8, because we do not always find a next-day news article about the jump in every newspaper. The newspapers are the Boston Globe, Los Angeles Times, New York Times. Wall Street Journal and the Washington Post. For the 16 individual categories, we report the fraction of readings attributed to the most commonly attributed reason for the jump event. The plots interpolate across years with no jumps.

Number of Daily Stock Market Jumps Per Year, Germany, 1989 to 2012

Jump Threshold = +/-2.5%		1989-2007	1989-1996	1997-2001	2002-2003	2008-2009	2010-2011	1989 2012
Total Jumps		211	18	86	93	72	48	341
1. Jump Frequency (Per Year)		11.1	2.3	17.2	46.5	36	24	14.2
Of Which:	A. Down Jumps	54%	50%	53%	53%	53%	48%	51%
	B. Policy-Triggered	21%	28%	21%	22%	21%	29%	22%
	C. No Article Found	2%	11%	0%	0%	4%	0%	2%
Jumps by Reason (Per Year)								
2. Government Spending						2.5	2.0	0.4
3. Taxes		0.1		0.2	0.5			0.1
4. Monetary Policy & Central Banking		0.9	0.1	1.8	3.0	3.5	4.5	1.5
5. Trade & Exchange Rate Policy		0.2	0.3		0.5			0.1
6. Elections & Political Transitions		0.5	0.1	1.2	1.0	1.0		0.5
7. Regulations							0.5	<0.1
8. Military Conflict & Terrorism	A. State Actors	0.6	0.1	0.4	4.5			0.5
	B. Non-State Actors	0.4		0.2	3.0			0.3
9. Other Government Policy Matters		0.1			0.5	0.5		0.1
10. Macroeconomic News		3.9	0.6	6.2	16.5	15.0	11.5	5.5
11. Corporate Earnings		1.1		1.0	6.5	4.0	1.0	1.3
12. Commodities		0.3	0.1		1.0	1.0		0.3
13. Foreign Stock Markets		1.9	0.3	4.6	5.0	3.0	0.5	1.8
14. Other Non-Policy Matters		0.1			1.0	1.5	2.0	0.4
15. Unknown or Not Stated		0.9	0.4	1.6	3.5	2.5	2.0	1.2
Jumps by Geographic Source (Per Year)								
16. United States		5.8	0.5	9.6	24.5	13.5	4.0	6.1
17. Europe		5.8	1.4	9.2	24.5	24.0	21.5	8.8
18. Asia		1.1		3.4	1.0	2.5	2.0	1.3
19. Other		2.3	0.3	4.4	9.0	3.5	0.5	2.2
20. Not Specified		0.2	0.3			1.5		0.3

Notes: Row 1.B computed as the sum of Rows 2-7, 8.A and 9, divided by the Total Jumps.
Jumps by Reason and Geographic Source assigned based on next-day news articles in *Die Frankfurter Allgemeine Zeitung* and *Handelsblat.*

Jumps Per Year Attributions by Geographic Source

Time Period	Source Region	Financial Market and Country of Jump			
		US Bonds	UK Bonds	US Trade-Weighted Exchange Rate	USD-GBP Exchange Rate
1973-2013, 1979-2013 for UK Bonds	US	8.4	0.7	3.1	3.0
	Europe	0.2	4.1	0.7	3.1
	Asia	<0.1	<0.1	0.2	0.1
1980-1982	US	44.7	2.7	7.3	4.7
	Europe	None	10.7	1.0	3.3
	Asia	None	None	None	None
2008 to 2009	US	35.5	1.0	9.5	7.0
	Europe	0.5	5.5	3.5	12.5
	Asia	0.5	None	0.5	None
2010 to 2011	US	21.5	1.0	2.0	1.0
	Europe	2.5	2.5	2.0	1.5
	Asia	0.5	None	0.5	None

Jumps Per Year Attributions by Geographic Source

Time Period	Source Region	Country of Equity Market Jump					
		USA	UK	Germany	Australia	Canada	Ireland
1985-89 to 2007	USA	**70.9%**	**35.3%**	**54.7%**	**36.7%**	**46.7%**	**37.0%**
	Europe	1.0%	40.1%	79.0%	20.4%	2.2%	44.1%
	Asia	1.5%	1.8%	11.7%	12.2%	3.9%	1.9%
1997-2001, 1997-2002 for US, UK, Ireland, Canada	USA	**77.9%**	**55.5%**	**55.8%**	80.0%	**48.8%**	41.3%
	Europe	None	47.5%	53.5%	None	1.0%	35.5%
	Asia	2.1%	4.5%	19.8%	10.0%	4.2%	2.2%
2008 to 2009	USA	**93.0%**	**36.4%**	**37.5%**	**85.2%**	**38.9%**	**34.8%**
	Europe	1.0%	**65.2%**	**66.7%**	1.6%	1.1%	**48.9%**
	Asia	1.0%	3.0%	6.9%	4.9%	1.9%	1.8%
2010 to 2011	USA	**65.7%**	6.7%	16.7%	33.3%	35.0%	21.9%
	Europe	**33.1%**	**86.7%**	**89.6%**	**40.0%**	**36.7%**	**59.4%**
	Asia	2.9%	None	8.3%	None	None	2.1%

Jumps Per Year Attributions by Geographic Source

Time Period	Source Region	Country of Equity Market Jump						
		China (HK)	China (Shanghai)	India	Japan	Saudi Arabia	South Africa	South Korea
1985-1994 to 2007	USA	**49.1%**	1.0%	8.1%	**25.5%**	1.1%	**30.9%**	**24.4%**
	Europe	5.6%	None	None	6.1%	None	6.8%	1.7%
	Asia	67.3%	67.6%	84.5%	60.5%	None	7.0%	63.3%
1997-2002, 1997-2001 for China (HK)	USA	16.9%	None	17.1%	**35.1%**	8.3%	**42.5%**	**25.5%**
	Europe	1.1%	None	None	3.0%	None	10.9%	1.1%
	Asia	**67.4%**	**100%**	**74.7%**	**60.9%**	None	12.1%	**65.%**
2008 to 2009	USA	**49.1%**	**15.6%**	**28.2%**	**50.0%**	**11.9%**	**55.1%**	**37.2%**
	Europe	3.6%	None	1.0%	3.4%	1.0%	8.4%	1.3%
	Asia	**38.2%**	**78.1%**	**39.9%**	**39.9%**	None	6.2%	**29.5%**
2010 to 2011	USA	27.2%	20.0%	33.3%	18.2%	5.9%	50.0%	43.3%
	Europe	**36.4%**	**None**	**None**	**31.8%**	**5.9%**	**38.2%**	**33.3%**
	Asia	9.1%	80.0%	50.0%	45.5%	8.8%	8.8%	None

Our Work on Policy Uncertainty

In "Measuring Economic Policy Uncertainty," we

1. Show that policy-related uncertainty varies a lot over time and, in the U.S., reached historically high levels during the 1930s Great Depression and from 2008 to 2012.
2. Provide evidence that high levels of policy uncertainty (a) drive high option-implied stock return volatility, and (b) lead businesses and households to cut back on spending, investment and hiring.
   - Larger effects for firms with greater exposure to government policy

- This paper: Quantify the frequency of national equity market jumps triggered by policy news
  - Higher economic policy uncertainty → greater frequency of policy-driven equity market jumps