Rate Cycles

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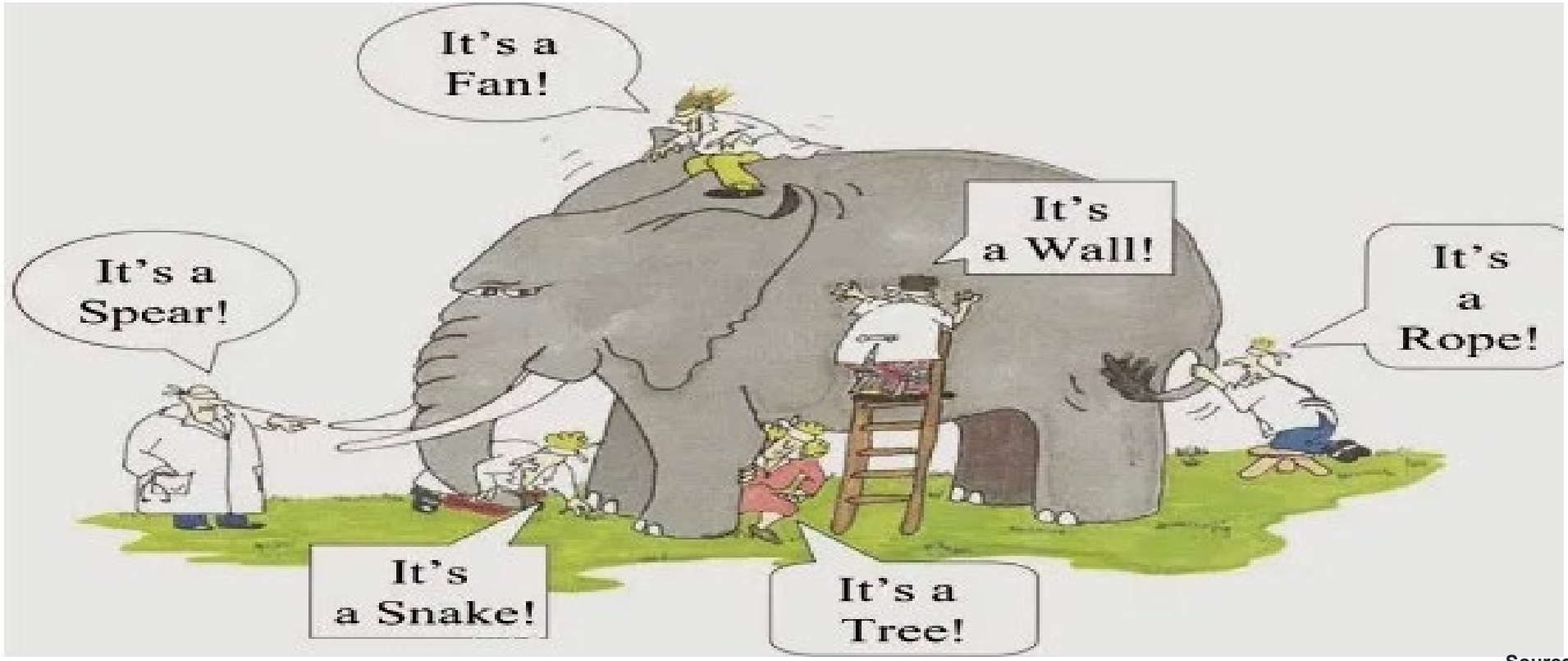
Motivation & Approach

How does today's monetary policy cycle fit in the historical context?

What are the implications for monetary policy today?

- **New application of business cycle methodology to analyze "rate cycles"**
  - Rate cycles consist of a tightening phase and easing phase
  - Based on monthly policy interest rates & QE/QT
  - 24 advanced economies over 55 years
  - Systematic, cross-country database and analysis
- **Rich time-series decomposition of shocks behind interest rate movements**
  - A FAVAR model with 4 global and 3 domestic shocks

Today's Monetary Policy Cycle in Historical Context
Different Perspectives



Parable of ***The Blind Men and the Elephant***

Source:
https://medium.com/betterism/the-blind-men-and-the-elephant-596ec8a72a7d

Key Findings

2020-24 ("pandemic") rate cycle was unprecedented in many dimensions

- Swings in data, delayed response to recovery, most synchronized rate increases & longest hold → largely "caught up"
- Reflected unusual confluence of shocks; dominant role of global demand and supply

But also important similarities to past cycles

- Aggressive tightening post-pandemic reversion to pre-2008 cycles
- Demand shocks still explain majority of variation in interest rates

And continuation of longer-term trend: role of global shocks increasing over time

- Even greater role for rate cycles than business and inflation cycles
- Global supply shocks becoming more important, but global demand shocks still dominate

Outline of Paper

1. **Introduction/Summary**
2. **Defining the Rate Cycles**
3. **Characteristics of Rate Cycles**
4. **Global Synchronization of Rate Cycles**
5. **Shocks Driving Rate Cycles**
6. **Exiting a Rate Cycle:** Holds, premature exits, divergence
7. **Implications for Monetary Policy Today**

Rate Cycles:

Identification and Characteristics

Methodology and Data

Adapt business cycle methodology identifying local peaks/troughs

- Use BBQ algorithm proposed by Bry and Boschan (1971) and developed in Harding and Pagan (2002)
- Set key parameters (allow long cycles, but short phases)
- Incorporate announcement of new asset purchase programs
- Additional criteria, largely to address long periods with no change in policy rates

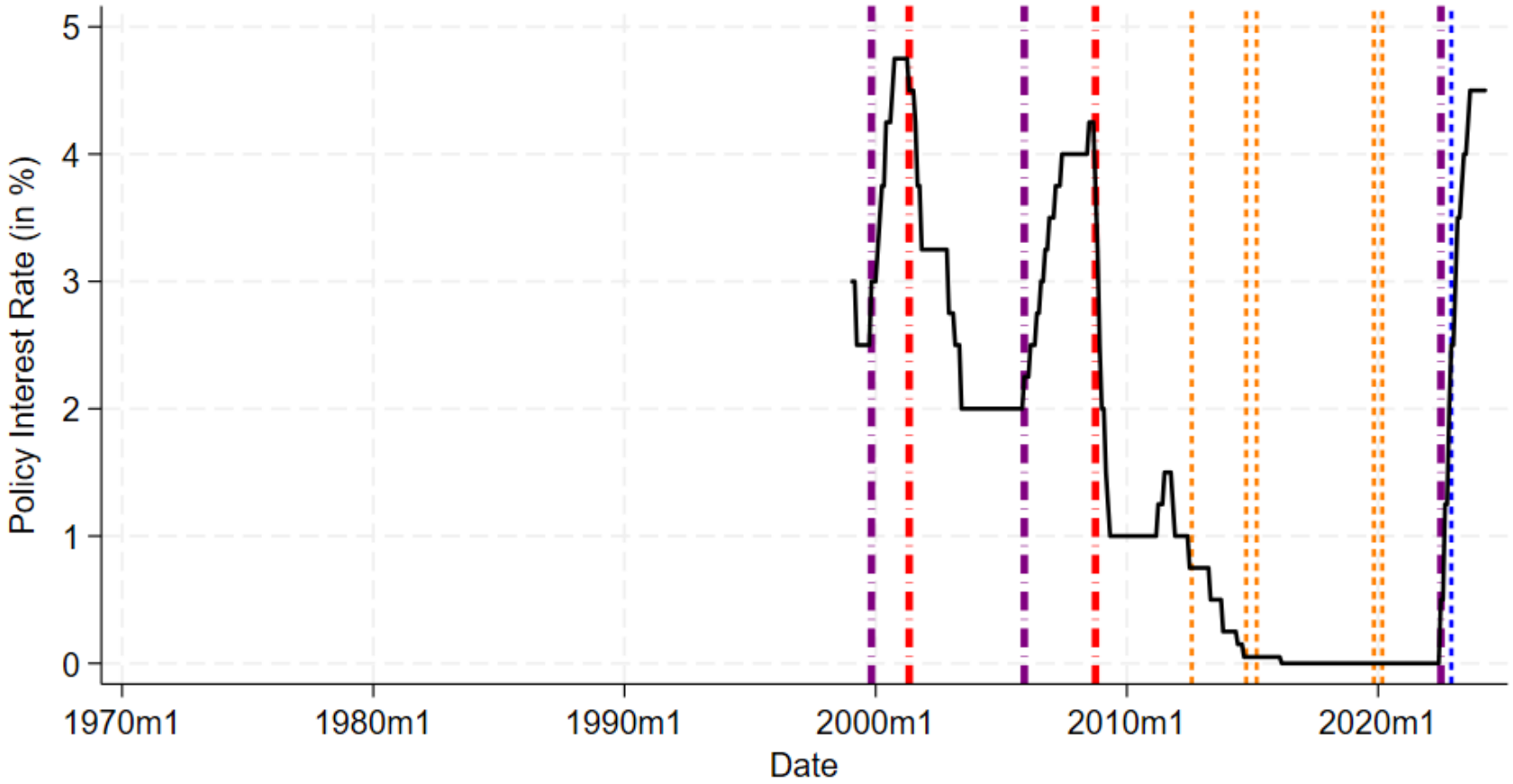
Sample: 24 advanced economies, data from Jan 1970 – May 2024

- Individual euro area countries through 1998, euro area (ECB) from 1999

Result: series of "rate cycles", consisting of easing & tightening phases

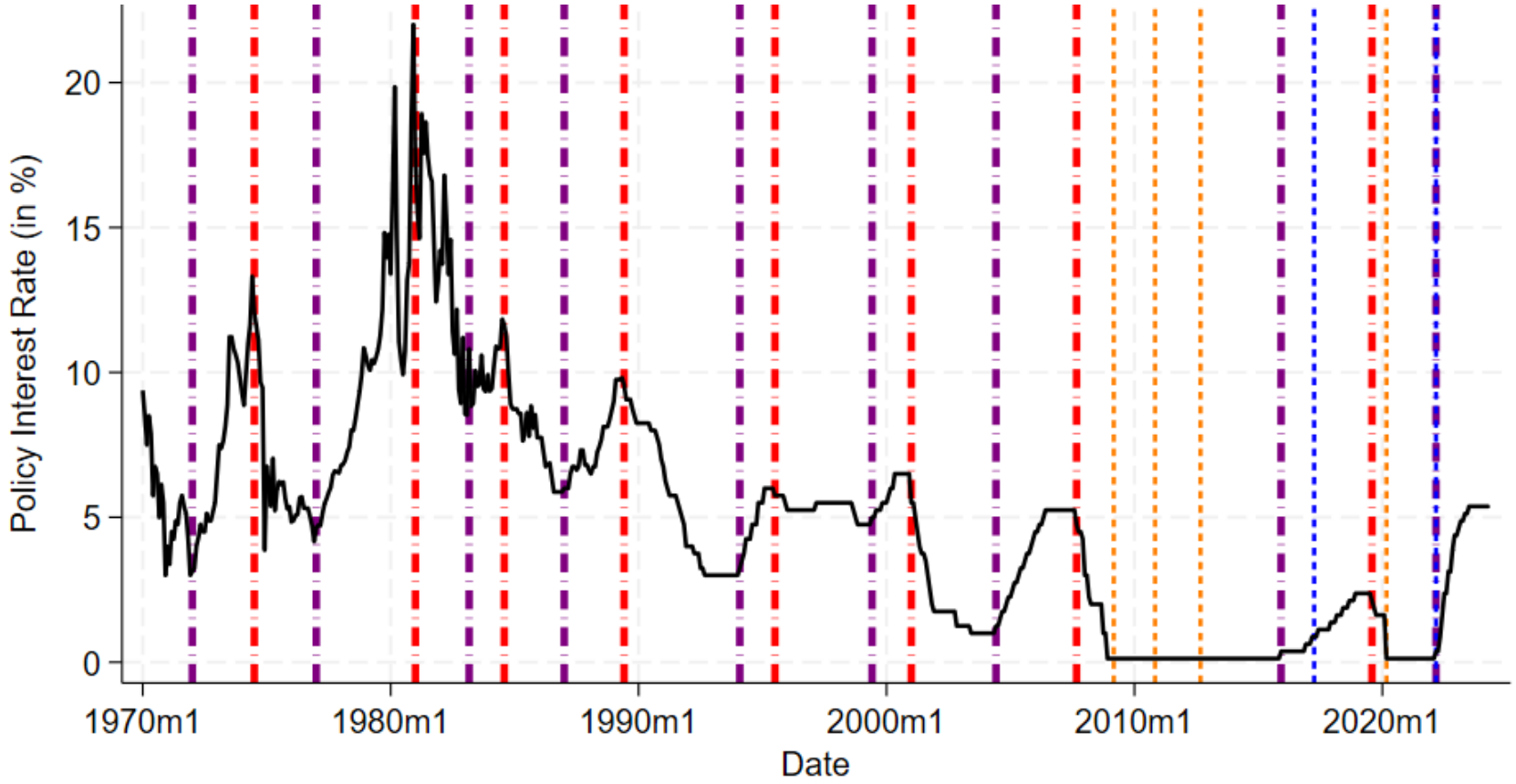
- 212 distinct phases (111 tightening; 101 easing)
- **Useful tool for future research**

Rate Cycles in the Euro Area



Notes: Purple/red are start of hiking/easing phases. Orange/blue are dates of QE/QT announcements.

Rate Cycles in the United States



Notes: Purple/red are start of hiking/easing phases. Orange/blue are dates of QE/QT announcements.

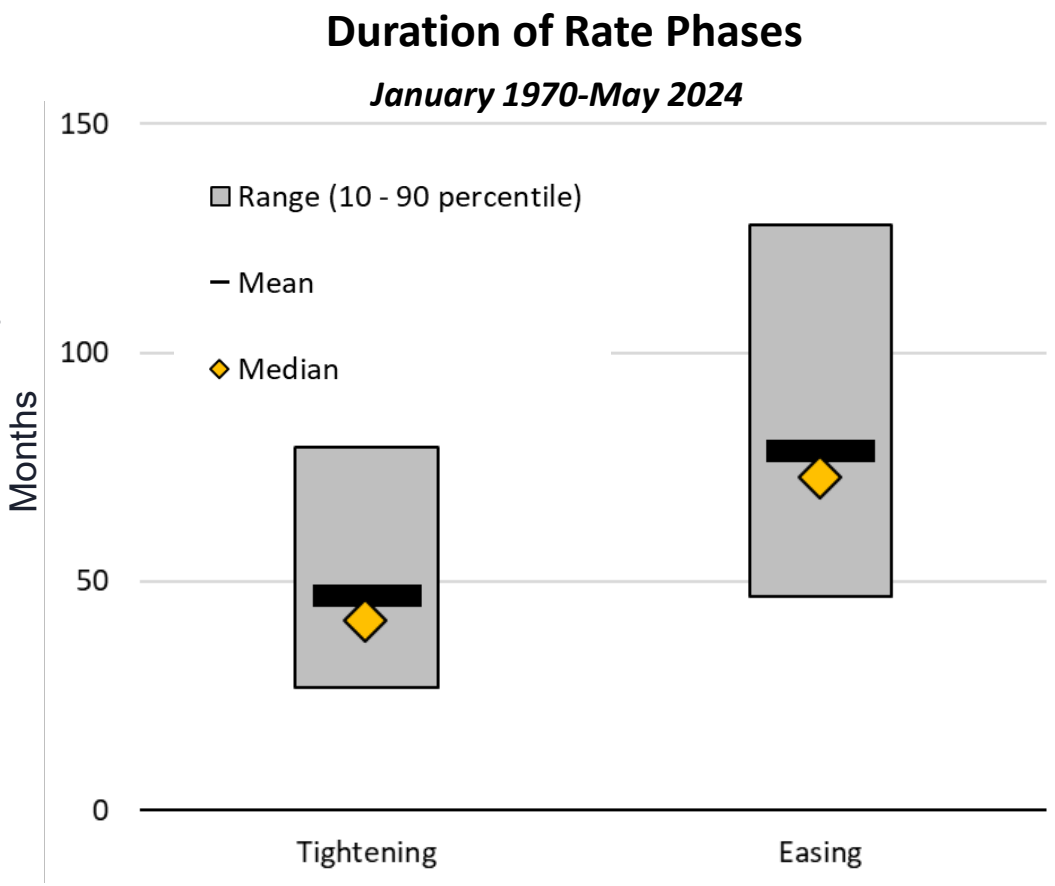
Characteristics of Rate Cycles

Series of statistics across countries & phases

- *Duration*: length of phase
- *Amplitude*: total change in rates
- *Number* of in-sync rate changes
- *Pace*: average size of in-sync rate adjustments
- *Initial velocity*: rate change over 1st 6 months

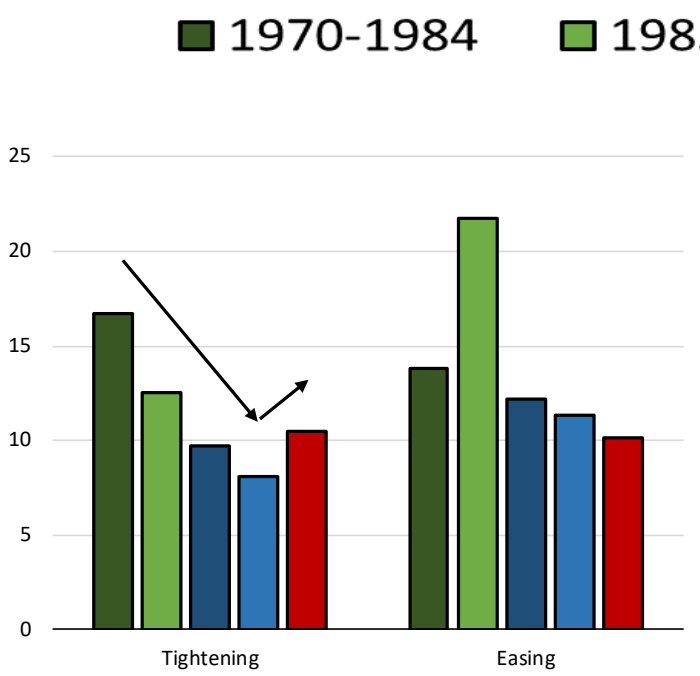
Many comparisons

- Across countries
- Across easing and tightening phases
- Relationship to macroeconomic variables (activity, labor markets, inflation)
- Changes over time

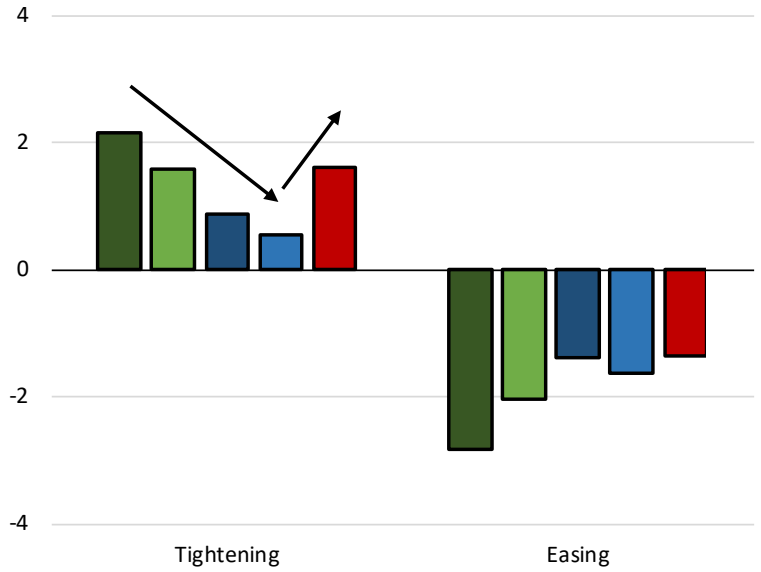


Pandemic Cycle vs. Historical Cycles

Cycle Characteristics

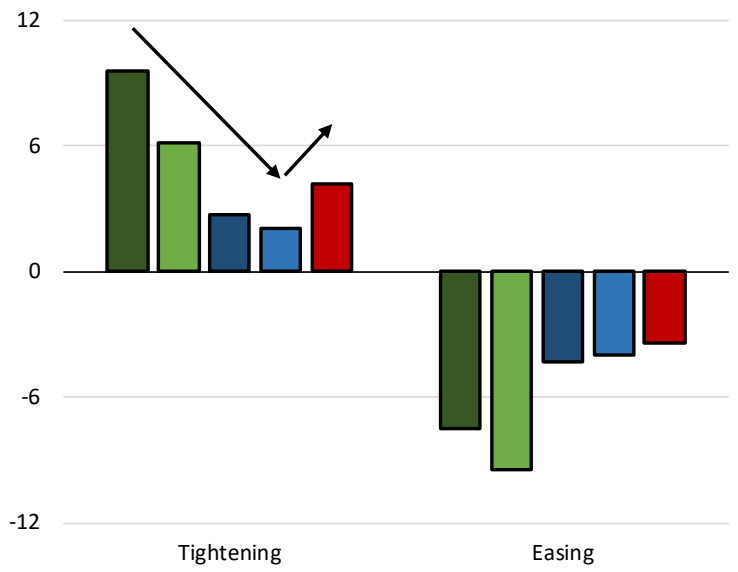


Number of Rate Changes



Initial Velocity

(rate change over 1st 6 months, in percentage points)

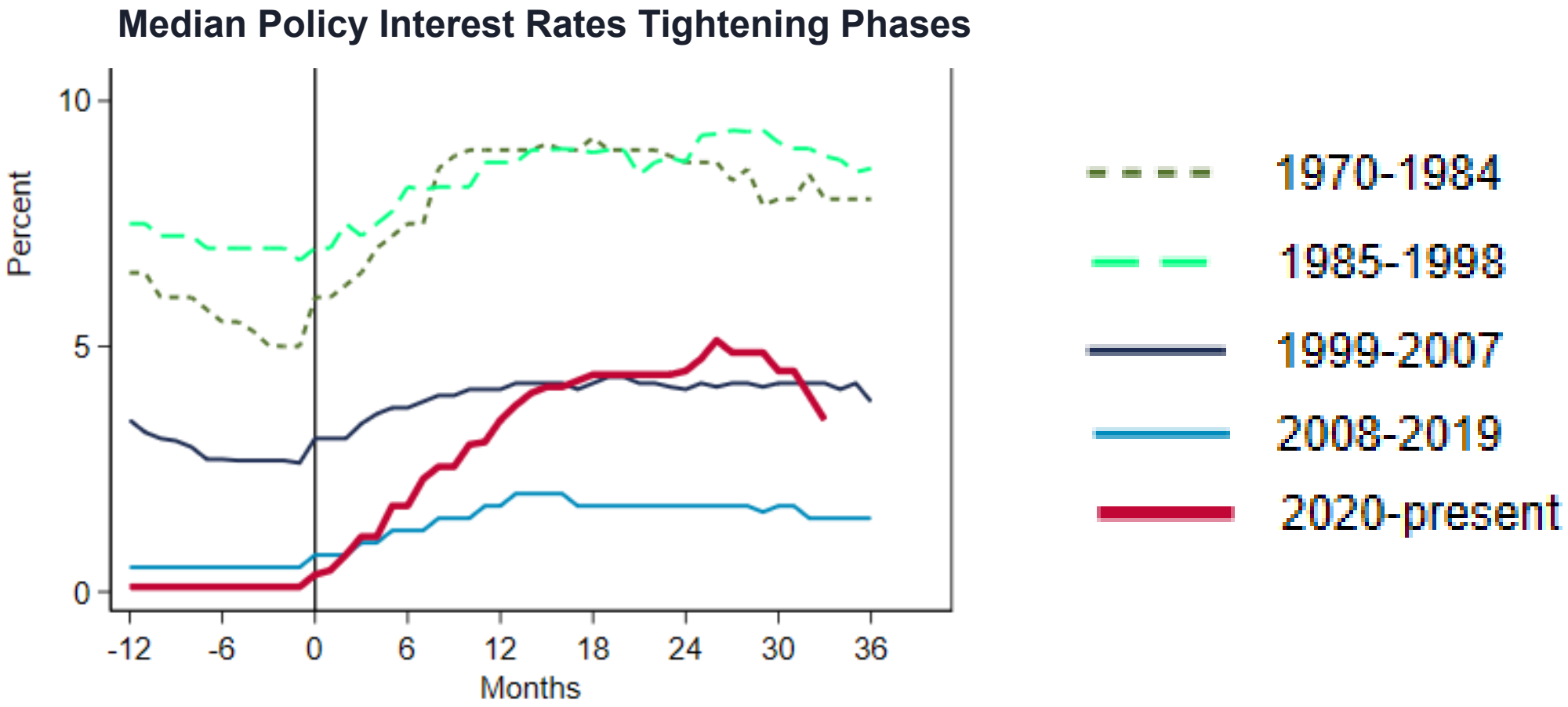


Amplitude

(total rate change, in percentage points)

Pandemic vs. Historical Tightening Phases

Policy Interest Rates

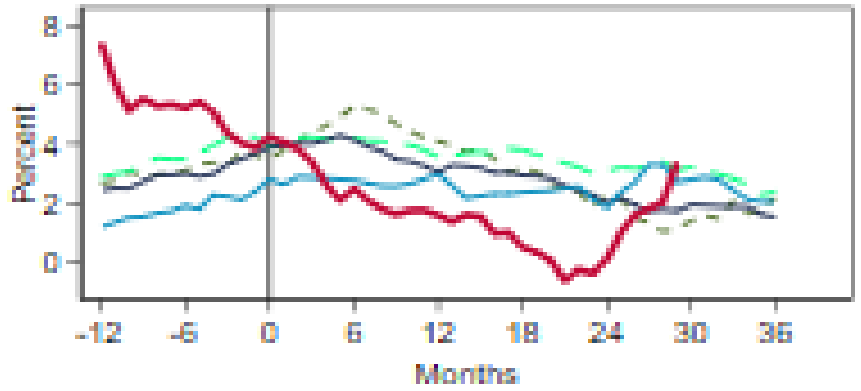


Pandemic vs. Historical Tightening Phases

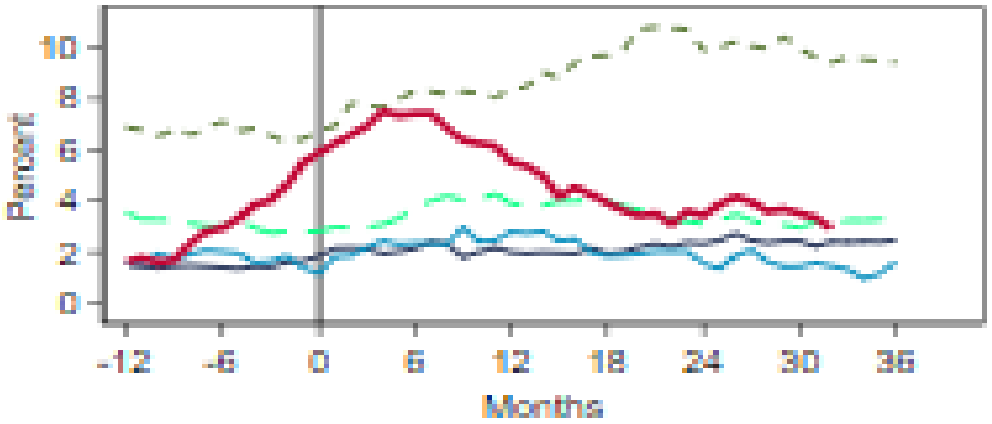
Macroeconomic Variables

1970-1984 | 1985-1998 | 1999-2007 | 2008-2019 | 2020-present

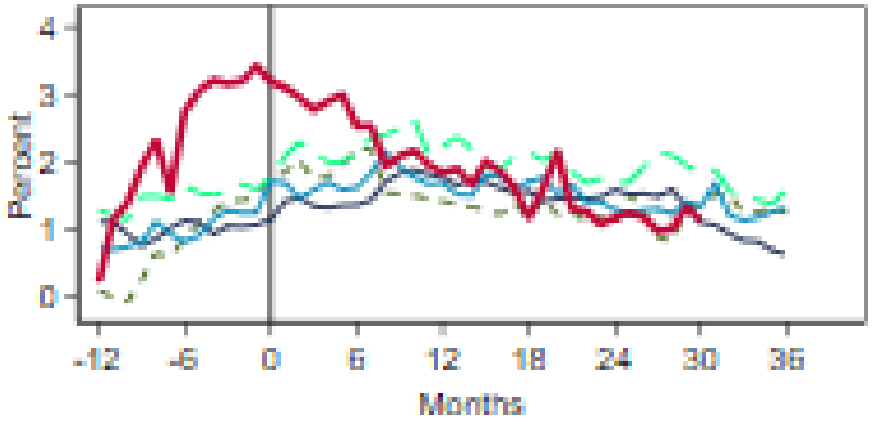
GDP Growth



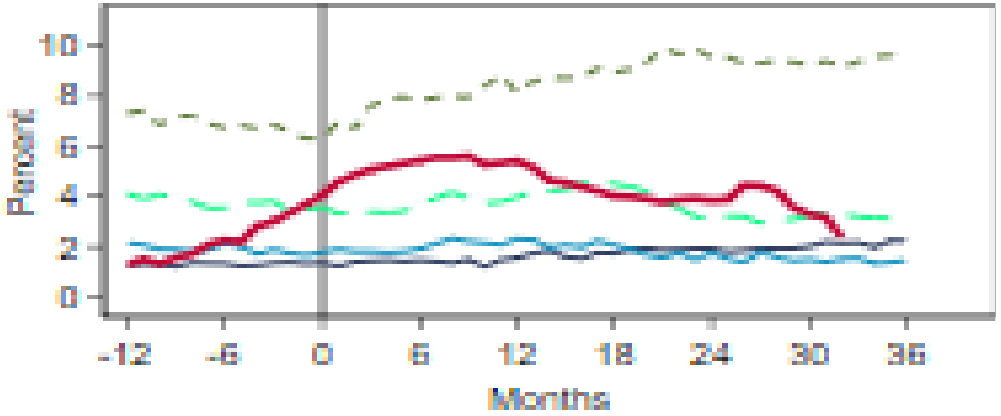
CPI Inflation



Employment Growth



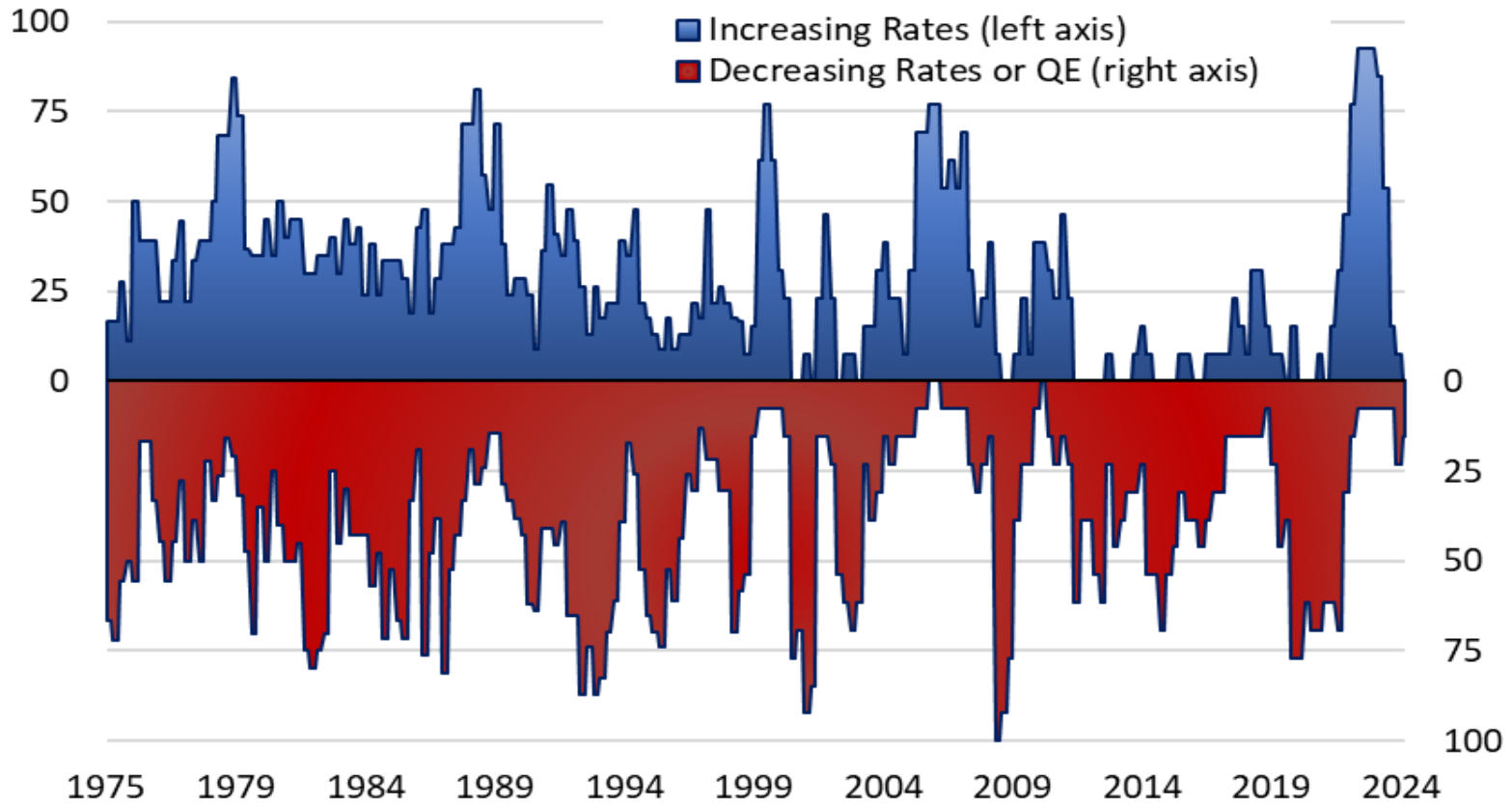
Core Inflation



Rate Cycles: Synchronization and Drivers

“Waves” of Synchronization in Rate Changes

Share of Economies with Changes in the Policy Interest Rate or QE



Recent “tsunami”: most synchronized period of rate increases in sample

Methodology and Data

Dynamic factor model: to analyze importance of global factor in driving rate cycles

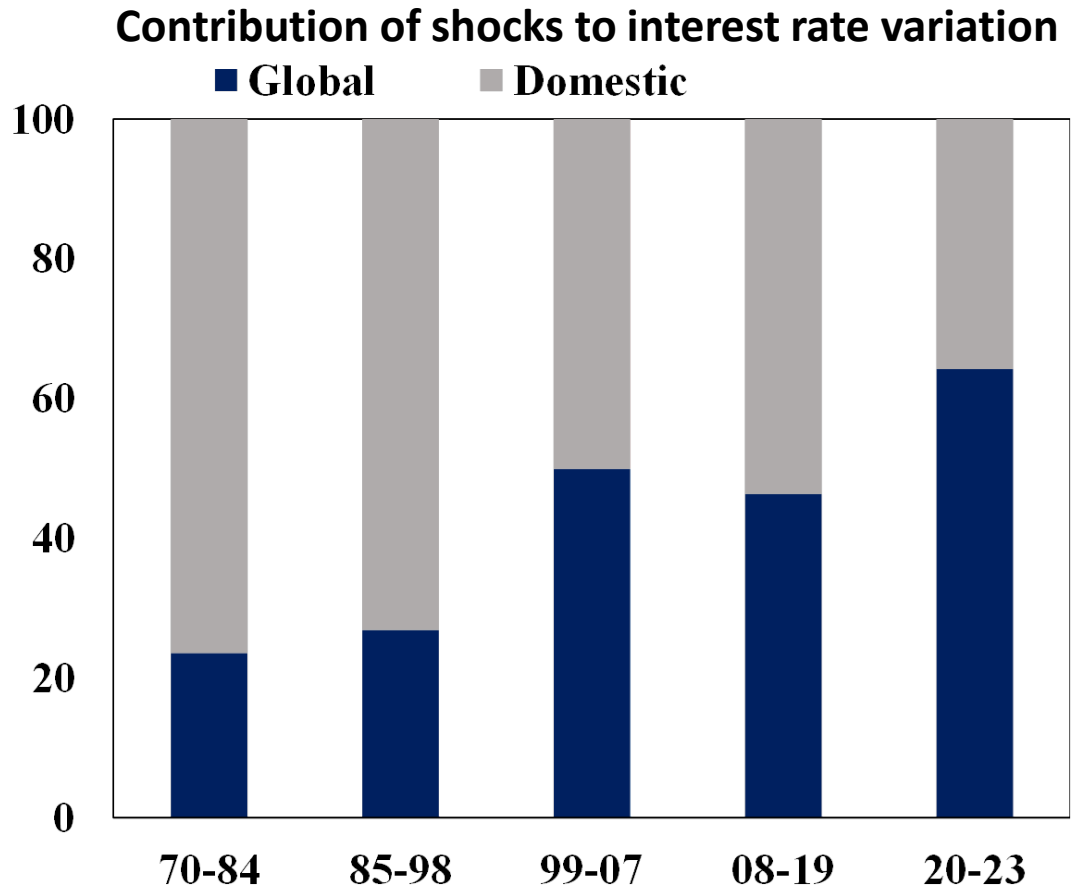
- Monthly data, 1970-2024, 24 advanced economies

FAVAR model: to understand shocks behind interest rate movements

$$B_0 Z_t = \alpha + \sum_{i=1}^{L} B_i Z_{t-i} + \varepsilon_t \qquad \varepsilon_t \sim N(0, \sum_t),$$

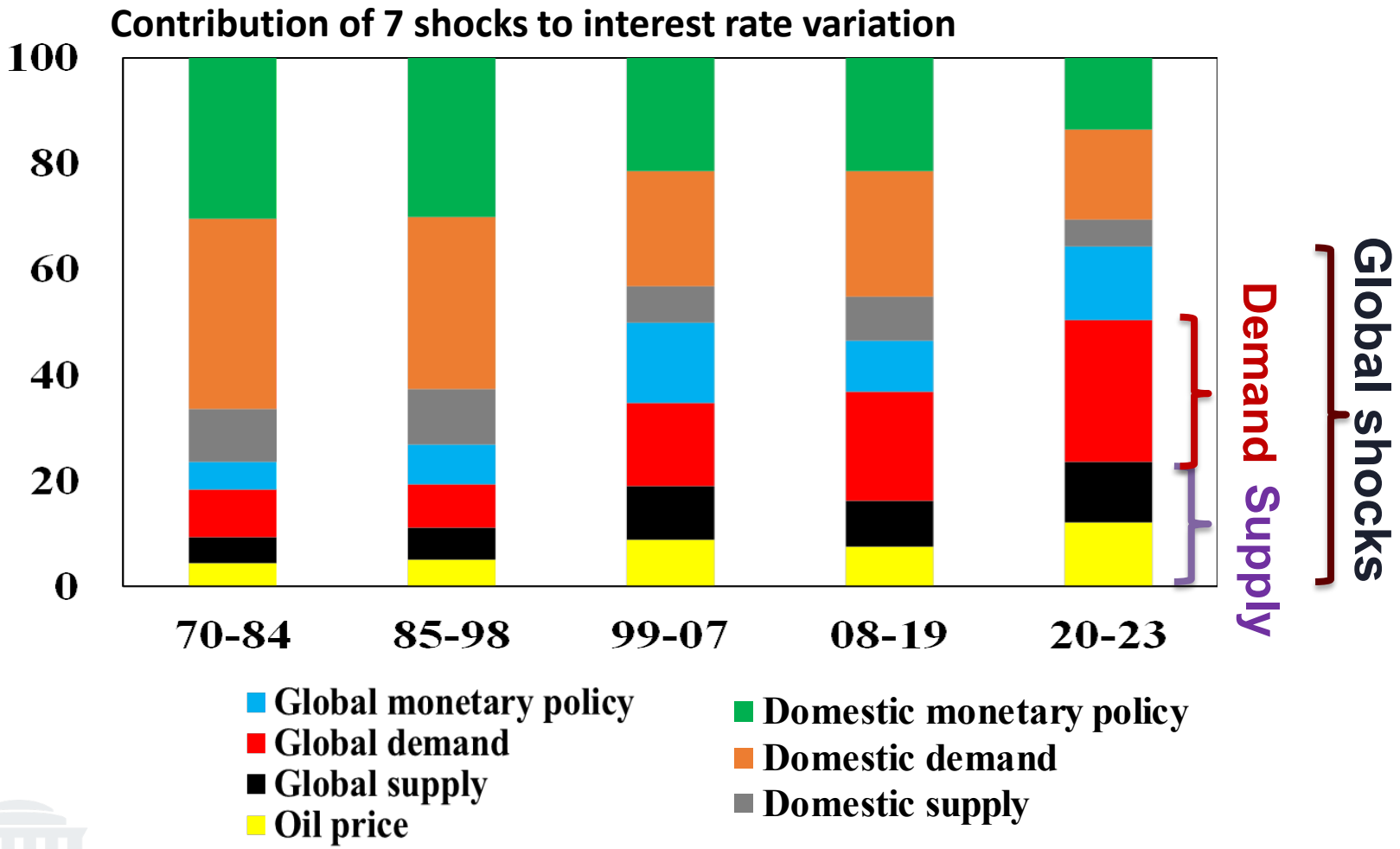
- Z_t: global interest rates, global inflation, global output growth, oil price growth, domestic interest rates, domestic inflation and domestic output growth
- **Rich set of shocks**
  - 4 global shocks: demand, supply, monetary policy, oil prices
  - 3 domestic shocks: demand, supply, monetary policy
- Monthly data on shadow interest rates, 1970-2023, 5 major advanced economies (G5)

Role of Global Shocks Increasing over Time



- 2020-23: first period global shocks explain >50% of variation in interest rates
- Even greater contribution of global shocks to tightening phases, (explains 75% of rate increases since 2020)

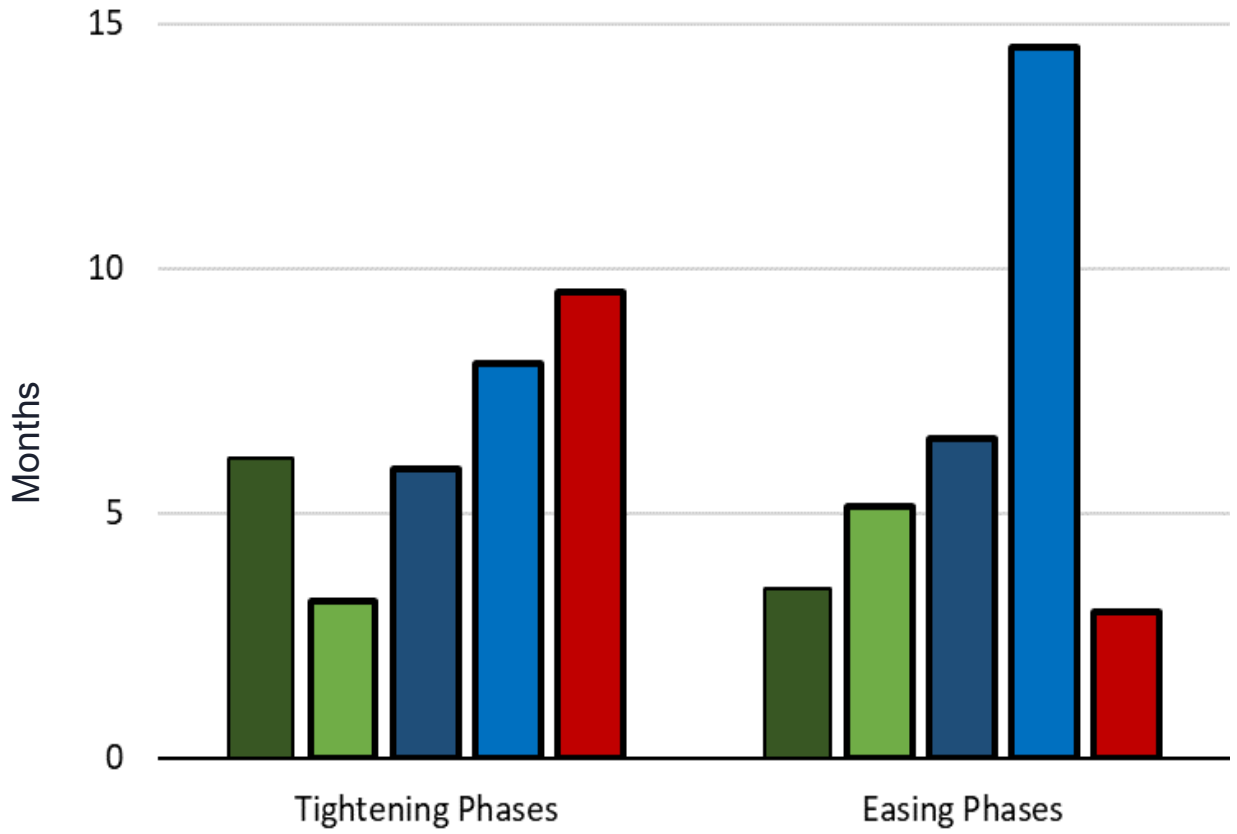
Largest Contribution from Global Demand Shocks
Also Increased Role for Oil/Global Supply



- 2020-23: role of oil and global supply shocks highest in sample
- But global demand shocks continue to outweigh that of other global shocks

Exiting a Rate Cycle

Post-Pandemic Cycle Stands Out
Holding Periods



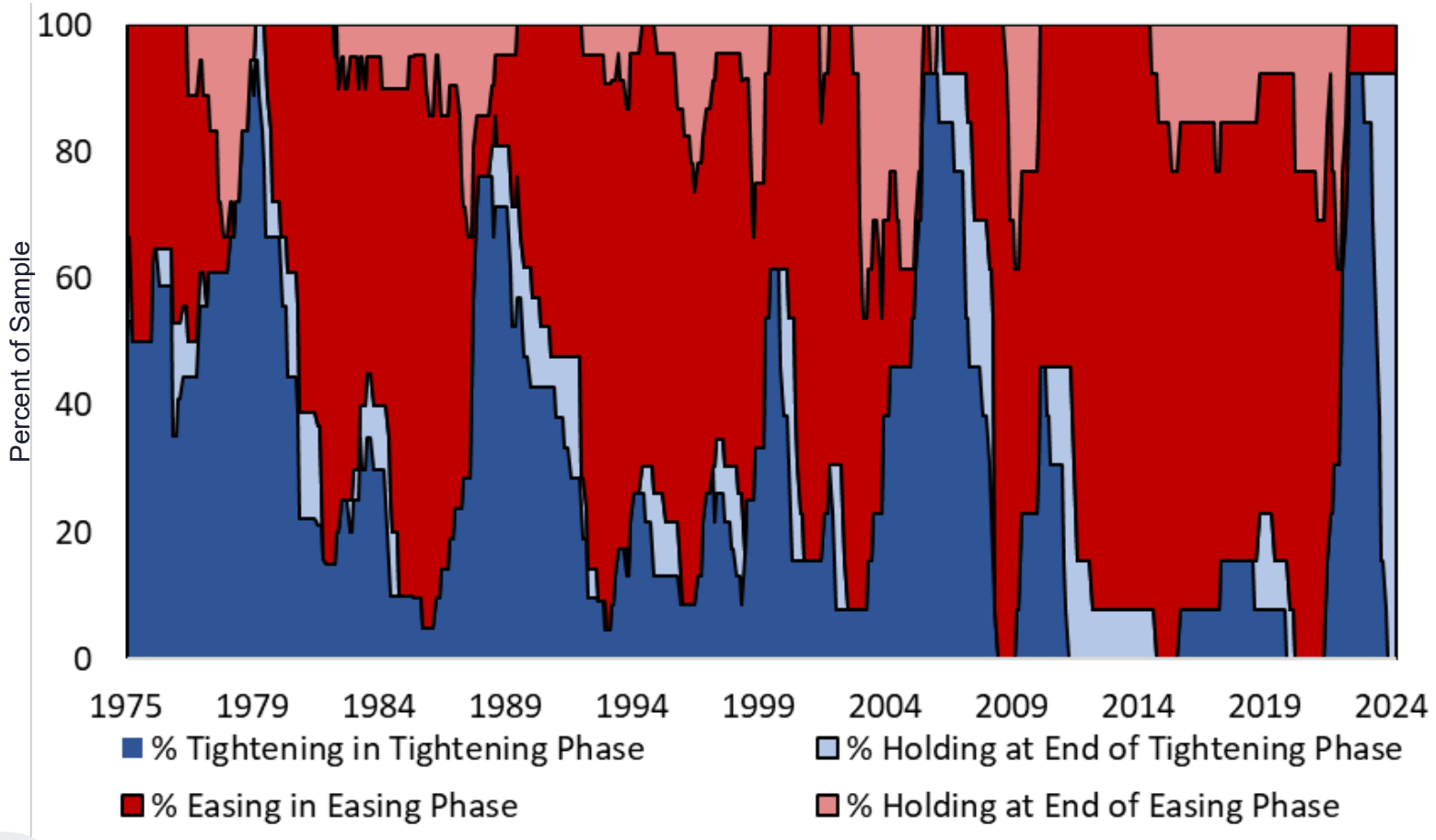
Median Hold Duration*

- **Shortest hold** between actively easing to raising interest rates
- **Longest hold** after raising rates

1970-1984
1985-1998
1999-2007
2008-2019
2020-2024 (May)

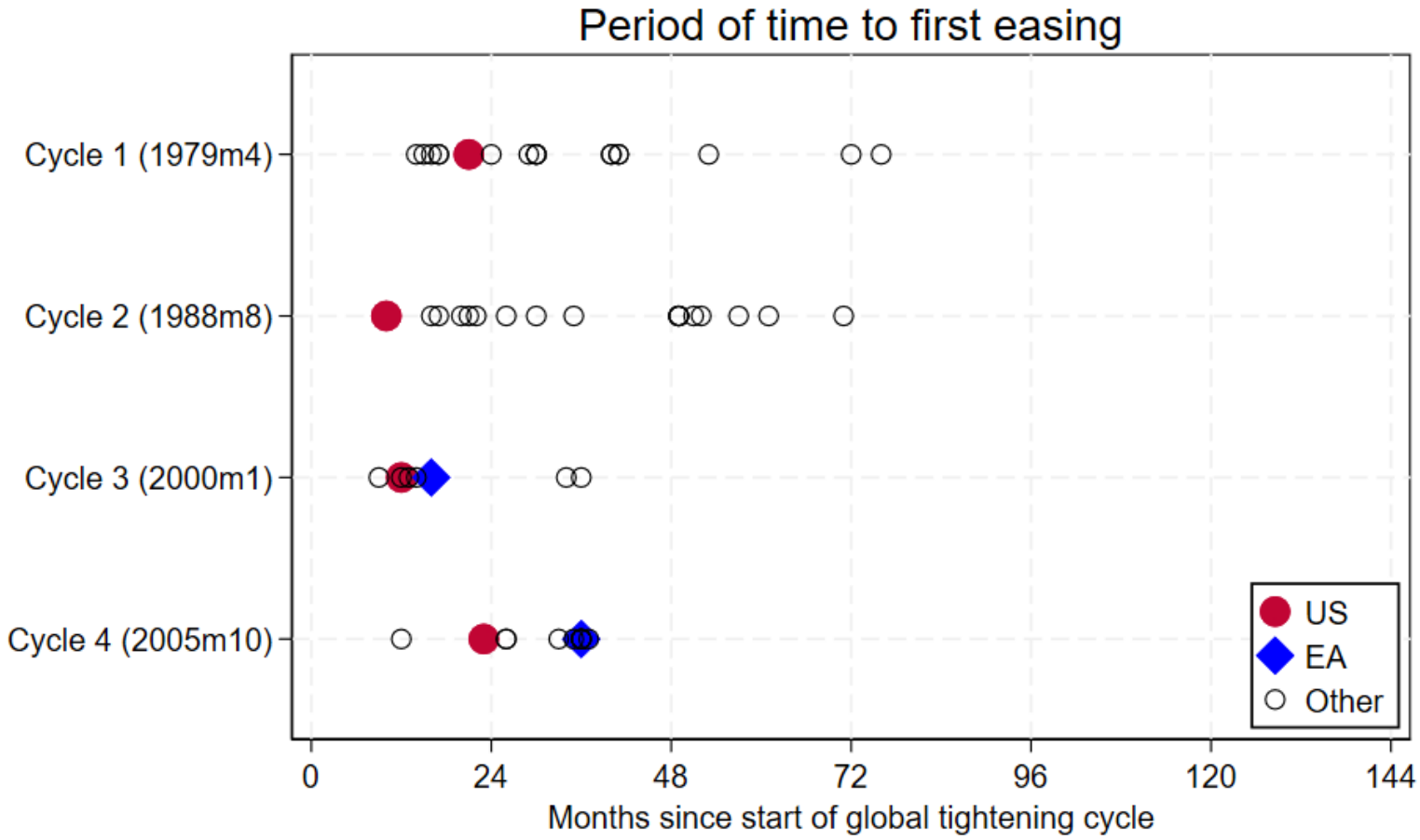
* Hold defined as period with no rate changes and no asset purchases

Today's Holding Period in Historical Context



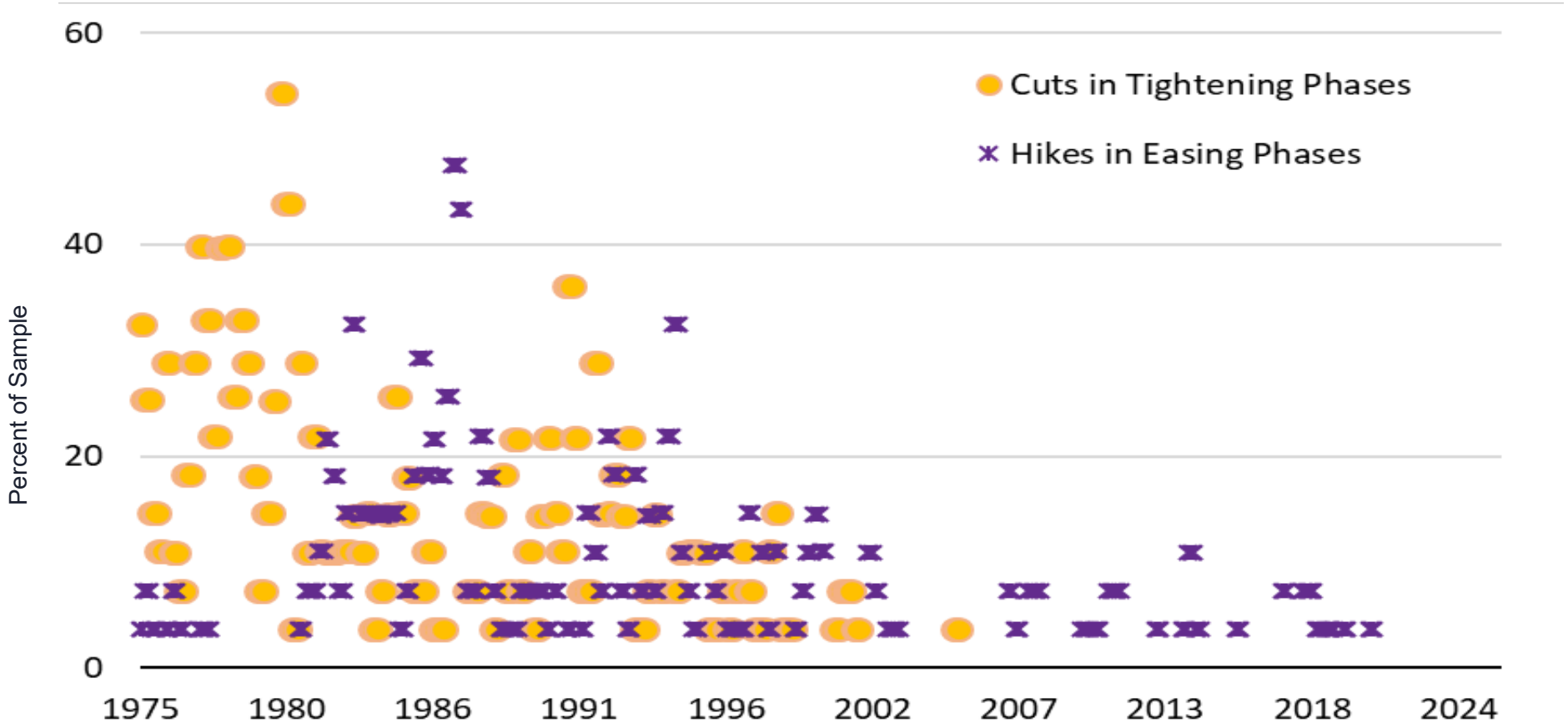
- Short, widespread hold after *Highly Synchronized Tightening* is typical
- As of May 2024: longer and more synchronized global hold (for now)

Exits from *"Highly Synchronized Tightening"*



- Often substantial divergence in timing of first rate cut
- US is often, but not always a "first mover"
- "Early easers" had similar activity (GDP growth/IP) but much lower inflation (CPI and core)

Premature Adjustments Less Common



* Premature adjustments are “out-of-sync” rate adjustments, i.e., raising rates during an easing cycle or cutting rates during a tightening cycle

Summary and Implications for Policy Today

What the Paper does NOT do

“Rates” based on policy interest rates

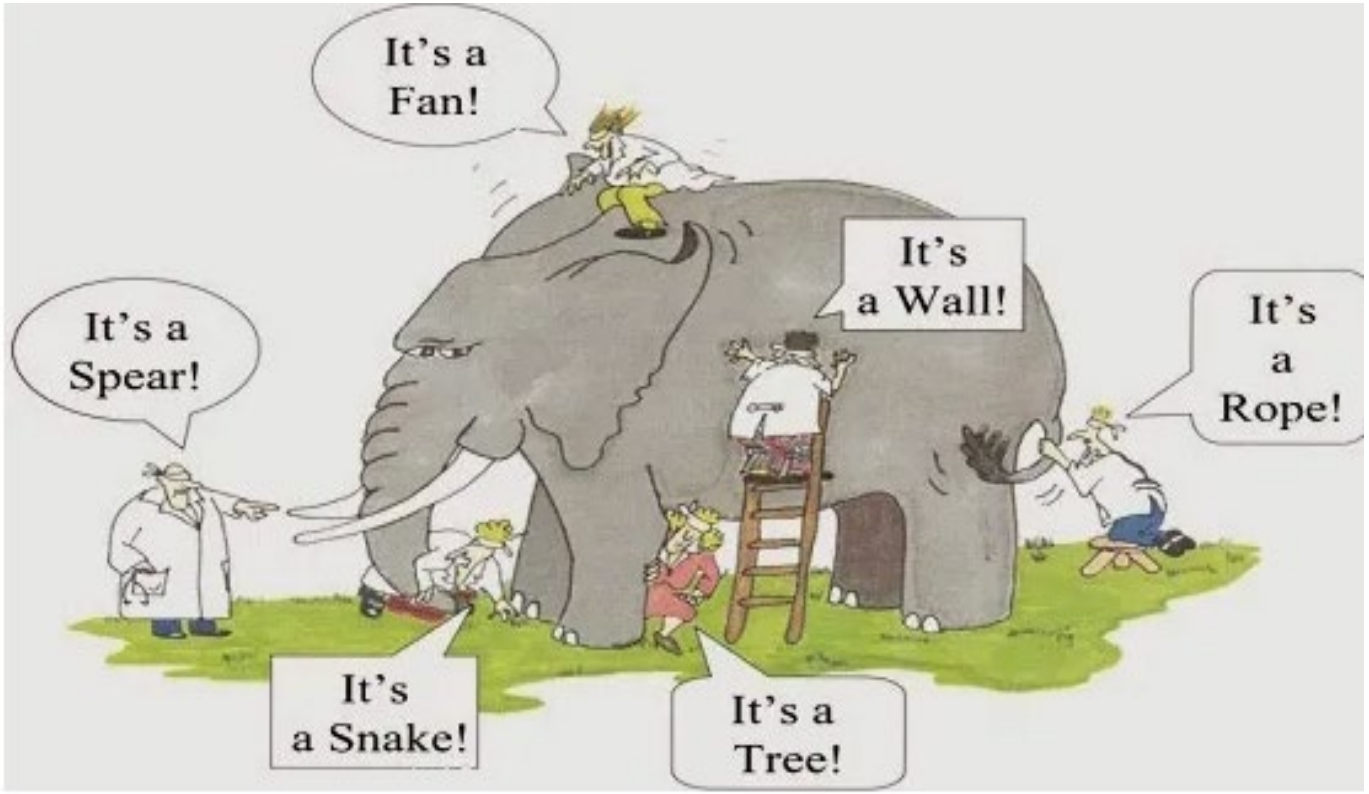
- Supplemented with information on QE/QT
- Does not measure the monetary policy stance, neutral rate

Does not adjust for changes in monetary targets, tools & frameworks

- Have been important changes in many economies over time

Focus on advanced economies (IMF/WB definitions)

Back to the Blind Men and the Elephant



Best comparison? Depends on perspective:

- Unprecedented?
- Similar to pre-2008 cycles?
- Reflects slower moving changes over time?

Answer: all the above

Implications for Monetary Policy Today

Recalibration of rates going forward should be cautious and gradual

- Normalizing, but uncertainty if rate cycle will continue to follow pre-2008 patterns
- Adjustments will reflect domestic circumstances, potential for substantial divergence

Monetary policy decisions will increasingly be influenced by global shocks

- In order to achieve mandates focused on domestic inflation

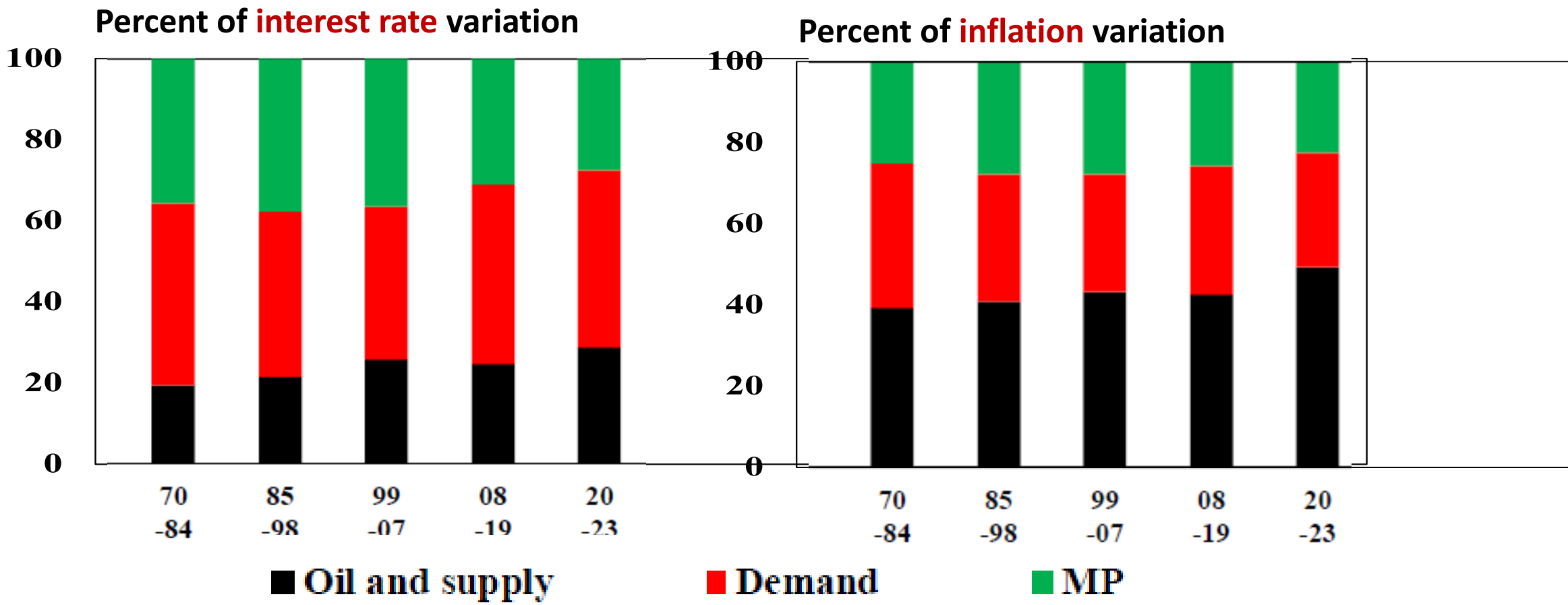
Increasingly important to differentiate between global demand and supply shocks

- “Global” shock ≠ global supply shock
- May imply different monetary policy responses

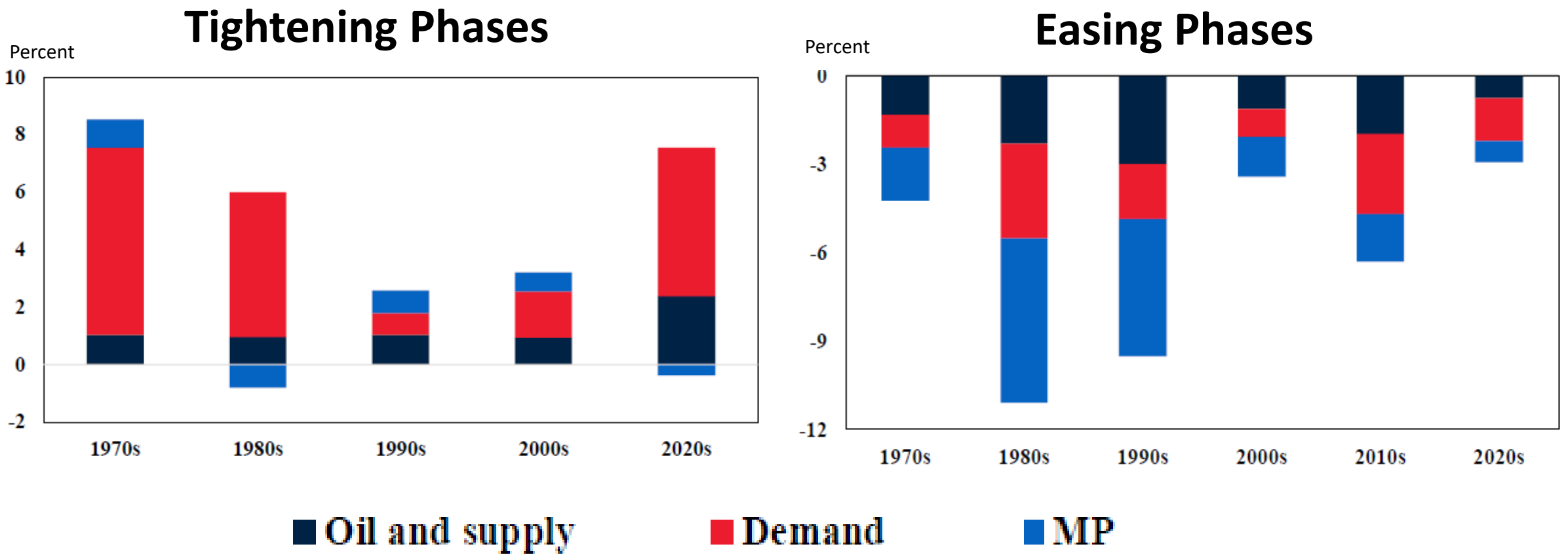
Thank you!

EXTRA

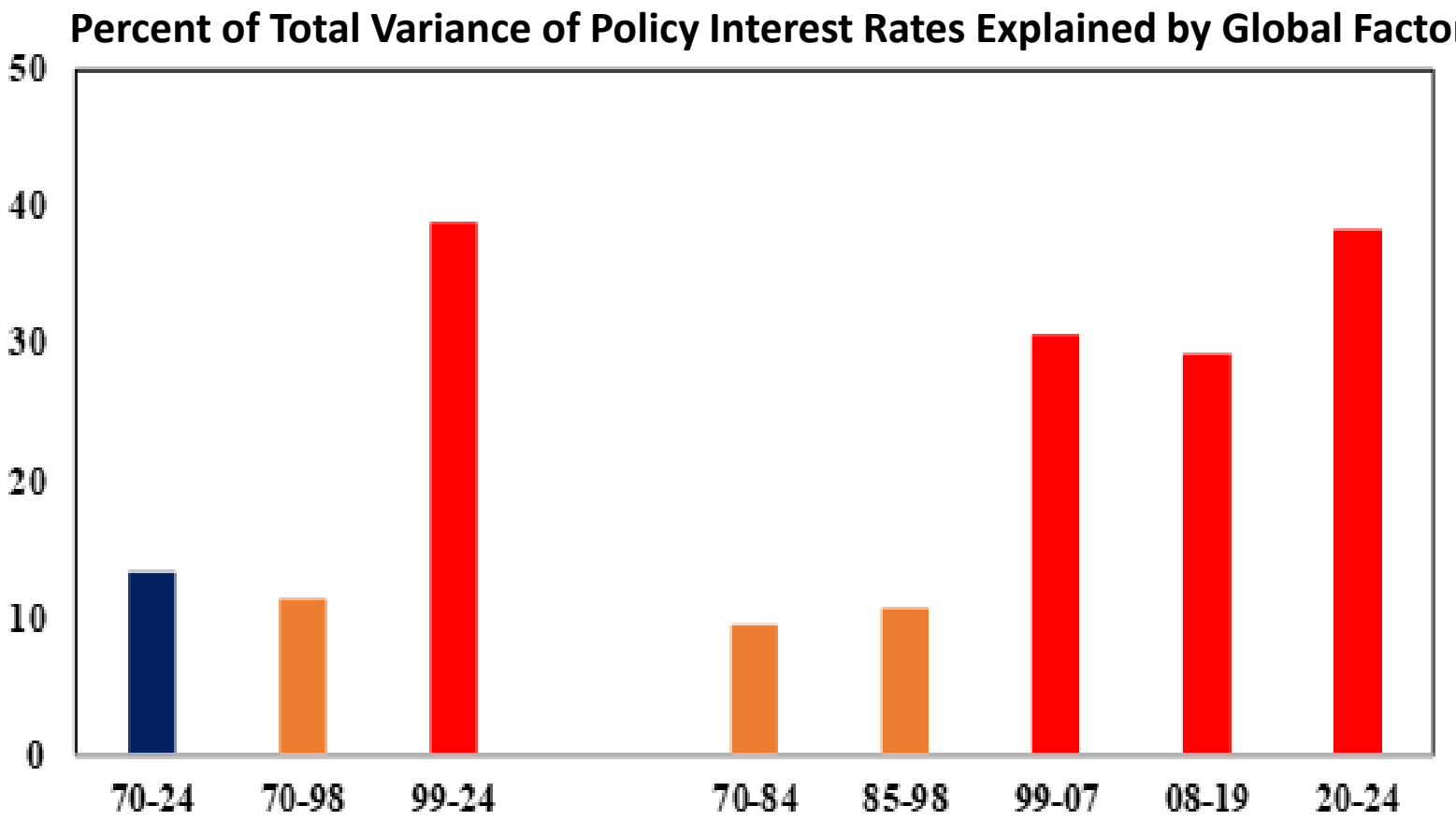
Contribution of Shocks to Variation in Interest Rates vs. Inflation (*All Phases*)



Contributions of Shocks to Interest Rates



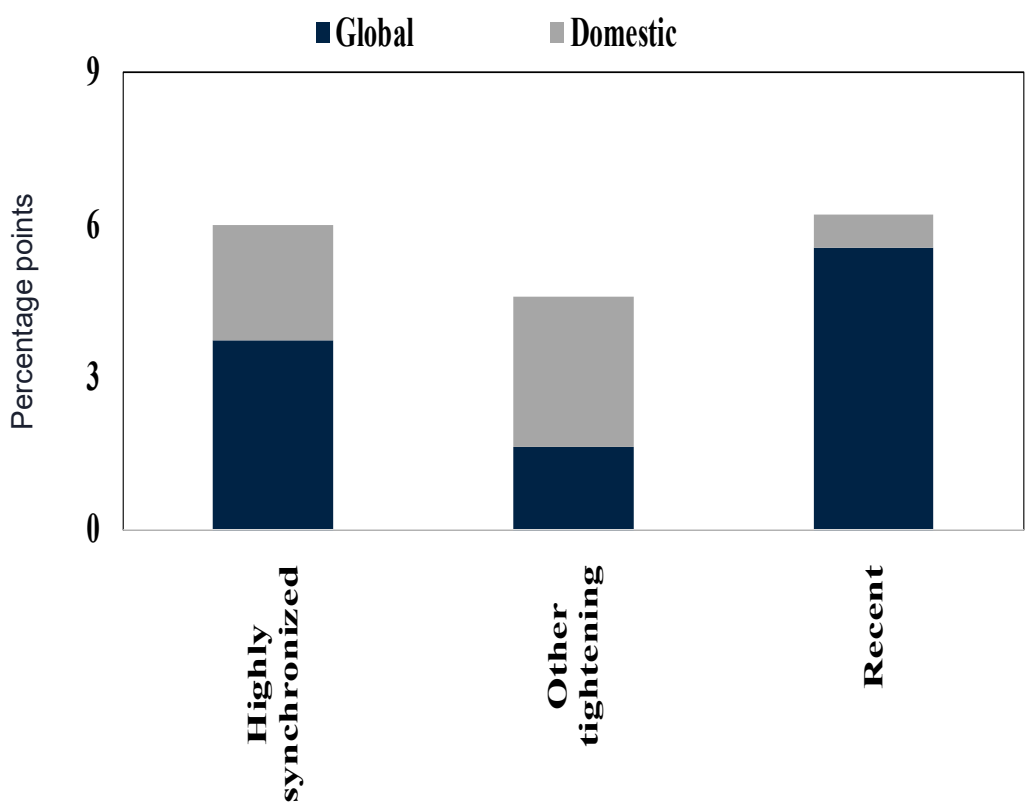
Role of Global Factor Increasing Over Time

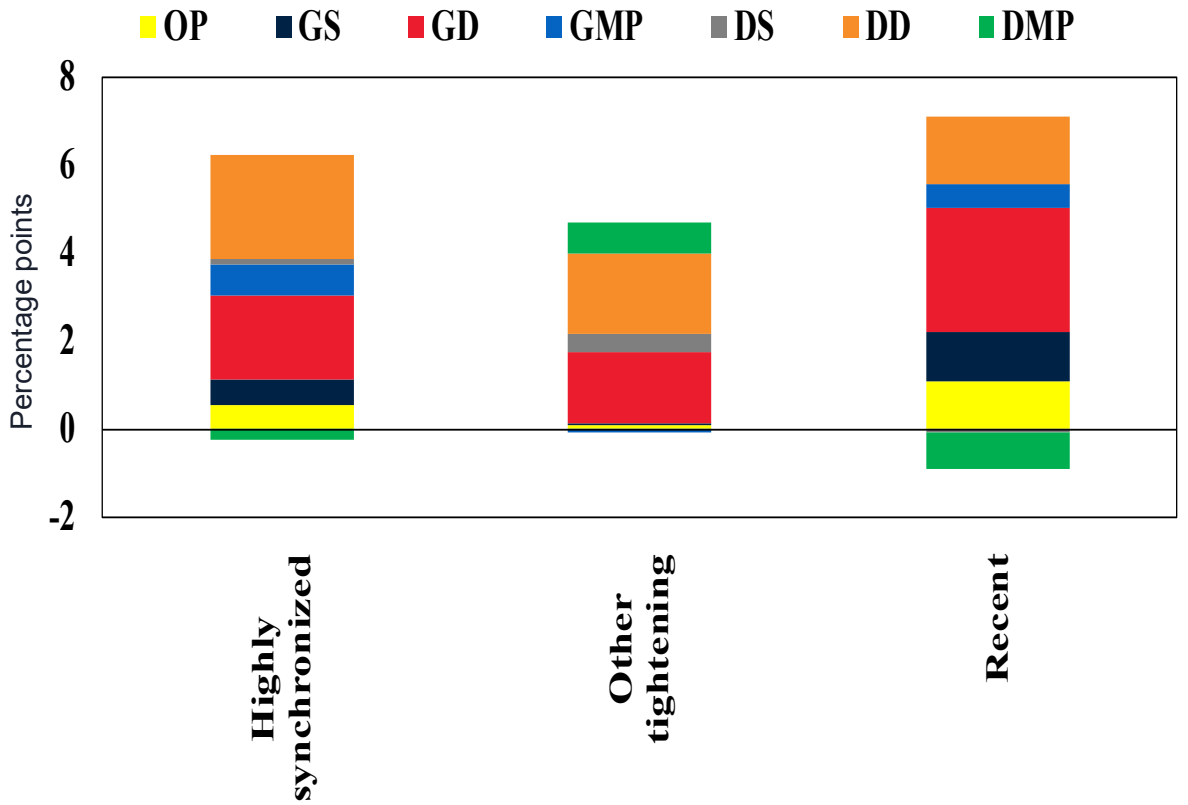


Interest rates are now **more "globalized" than output growth and inflation** by most measures

Post-Pandemic Tightening Phase Stands Out

Even Compared to Highly Synchronized Tightening Periods





Preliminary Adjustments