The Dynamics of Large Inflation Surges

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Outline

- Worldwide **inflation surge** returned inflation-stabilization policies to center stage

- **Question:** What empirical patterns characterize **large inflation surges**?

- Study international evidence in the last three decadest on **large inflation surges**
  - Inflation, inflation expectations, economic activity, government policy

- **Takeaway:** Surges are persistent and governments exhibit "fear of tightening"

Empirical Strategy

- **Data:** Macroeconomic variables and inflation expectations
    - Consensus economics, WDI, WEO, BIS, OECD, national sources

- **Sample:** 55 countries, 1990-2019 (23 developed, 32 emerging economies)

- **Conduct event time study over inflation surges**
    - ▶ **Inflation surge episodes:** Large inflation increases (90th percentile)   More
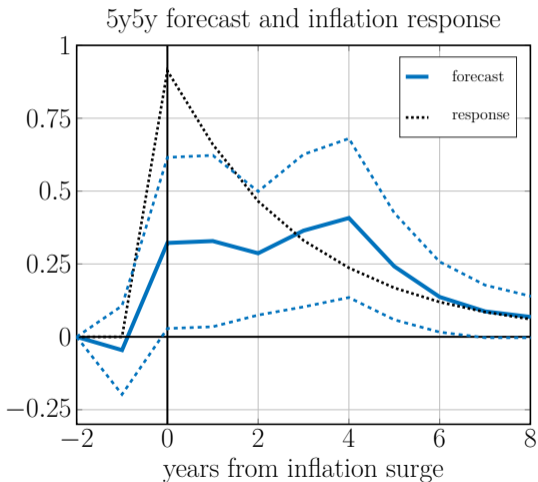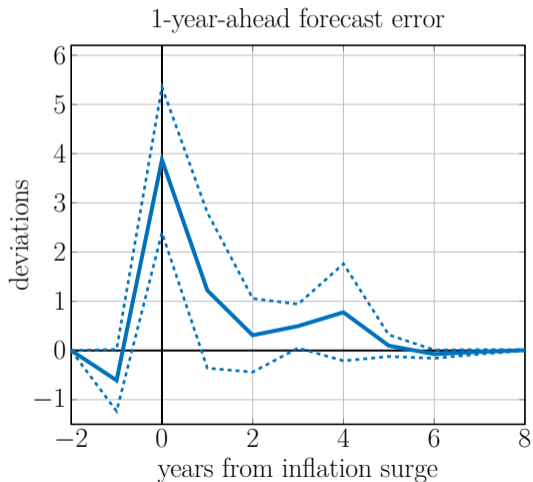   - ▶ Trace macroeconomic dynamics following inflation surge episodes   More

Inflation
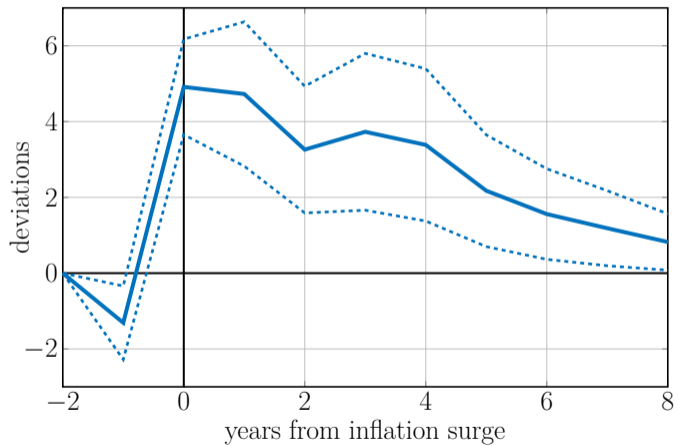
Fact 1

> **Inflation surges tend to be persistent, characterized by slow disinflations**

Inflation Expectation

1-year-ahead forecast error

5y5y forecast and inflation response

Fact 2
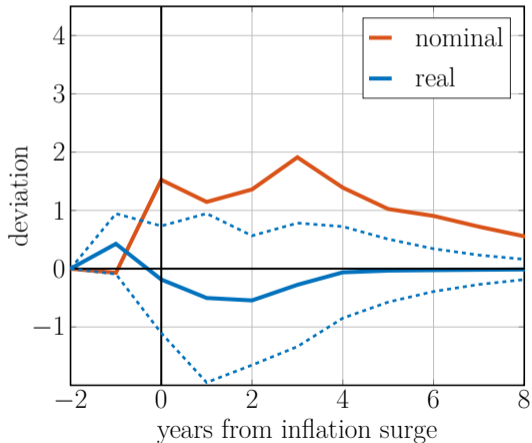
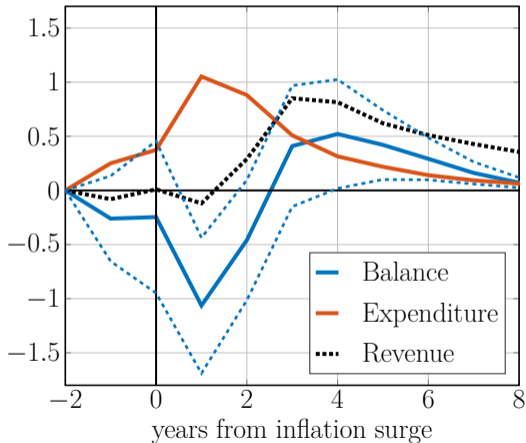Inflation surges are unexpected but followed by a fast catch-up of expectations

Long-term expectations tend to exhibit persistent increases

Monetary and Fiscal Policy
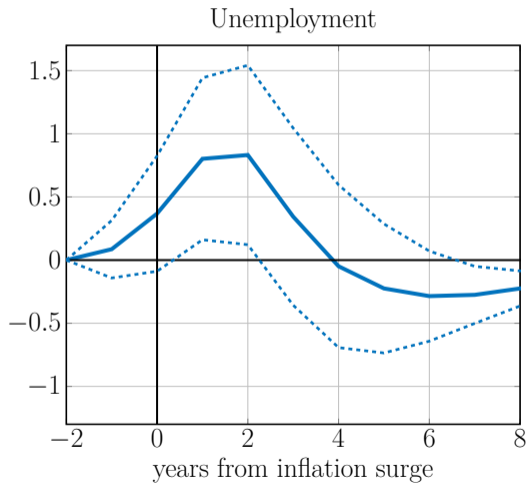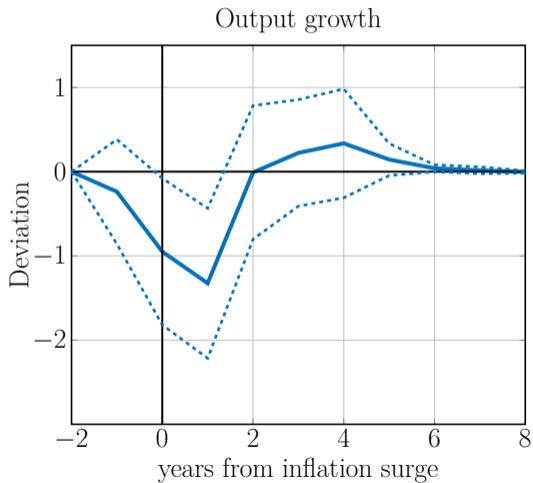

Monetary policy

Fiscal policy over GDP

Fact 3

During inflation surges, there is no tightening in the real interest rate or fiscal balances

Depart from standard textbook policies, exhibit instead "fear of tightening"

Economic Activity

Output growth

Unemployment

Fact 4

Inflation surges are associated with declines of economic activity

Conclusion

- One interpretation [based on the New Keynesian model]

  - Economy faces a significant "cost-push" shock

  - Governments do not respond to "cost-push" shock

  - Fast catch-up of private sector expectations

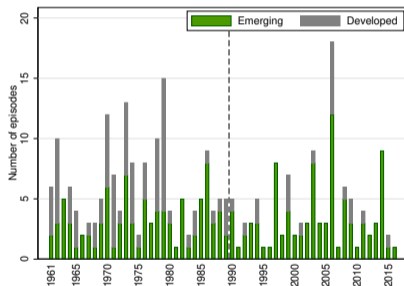 ⇒ Persistence inflation surges

- Paper: `NBER working paper`

Backup

Inflation Surge Episodes

- **Definition:** 2.2% inflation increase (percentile 90th)

(a) Distribution of inflation changes
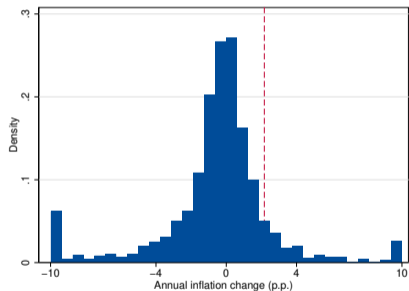
(b) Evolution of inflation surge episodes

- **Number of episodes:** 118; **Median pre-surge inflation:** 3.4%
- **Emerging markets share:** 79%

Empirical Model

- Even time study by estimating (i : country, t : year)

$$y_{i,t} = \alpha_i + \sum_{j=0}^{J} \beta_j y_{i,t-1-j} + \sum_{k=-K_1}^{K_2} \gamma_k D_{i,t-k}$$

  - $y_{i,t}$: variable of interest (inflation, irate, etc.)
  - α_i : country fixed effect
  - $D_{i,t}$: Dummy variable, =1 if inflation surge

- Average dynamic during inflation surge

$$\hat{y}_t = \sum_{j=0}^{J} \hat{\beta}_j \hat{y}_{t-k} + \sum_{k=K_1}^{K_2} \hat{\gamma}_k K_{t-k}$$

  - **Baseline specification:** $J = 4$, $K_1 = 1$, and $K_2 = 4$
  - **Interval confidence:** 1.64 std. with Delta method, clustering at the country-level