ASIAN DEVELOPMENT OUTLOOK, SEPTEMBER 2024

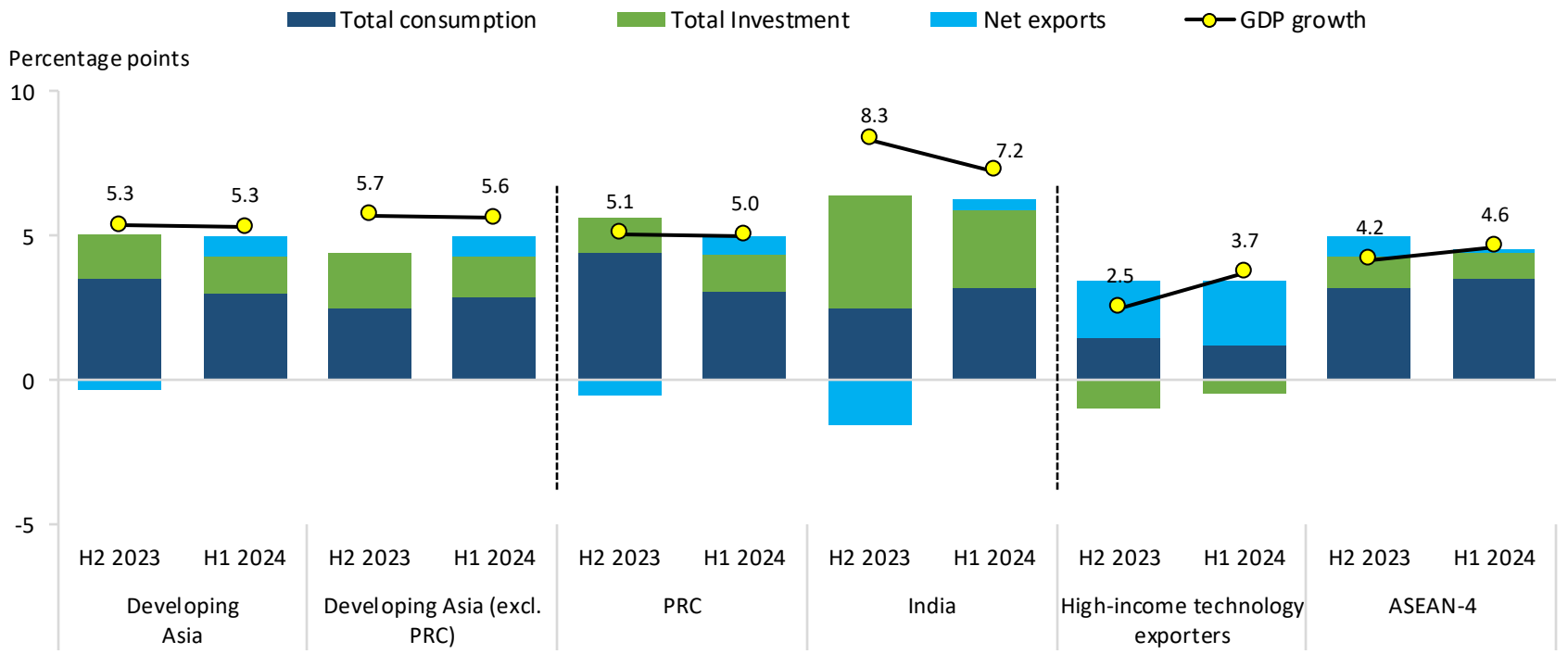
Developing Asia's Economic Outlook and Global Spillovers from Federal Reserve Monetary Policy

Central Bank of Thailand
4 October 2024

Growth momentum continued on stronger exports

Developing Asia's GDP growth remained strong in H1 2024.

Demand-side Contributions to Real GDP Growth

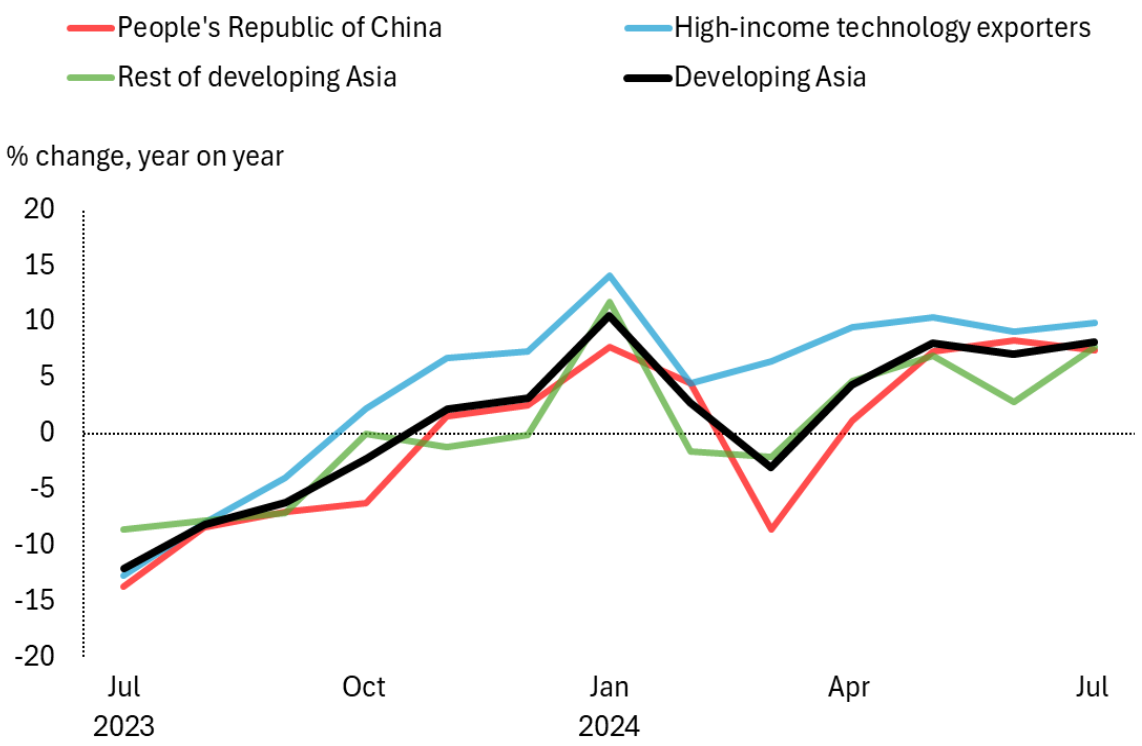


ASEAN = Association of Southeast Asian Nations, GDP = gross domestic product, H = half, PPP = purchasing power parity, PRC = People's Republic of China.
Note: Economies included are those that have available quarterly GDP figures with demand-side breakdown, which account for about 90% of developing Asia. Components do not add up to total due to statistical discrepancy and chain-linking method of GDP estimation and reporting. The regional average is calculated using GDP PPP shares as weights. All data are in calendar years and in non-seasonally adjusted terms. High-income technology exporters include Hong Kong, China; Republic of Korea, Singapore, and Taipei,China. ASEAN-4 includes Indonesia, Malaysia, Philippines, and Thailand.
Source: Haver Analytics.

Exports continued to benefit from the expansionary semiconductors cycle

Regional export growth was solid, led by tech exporters…

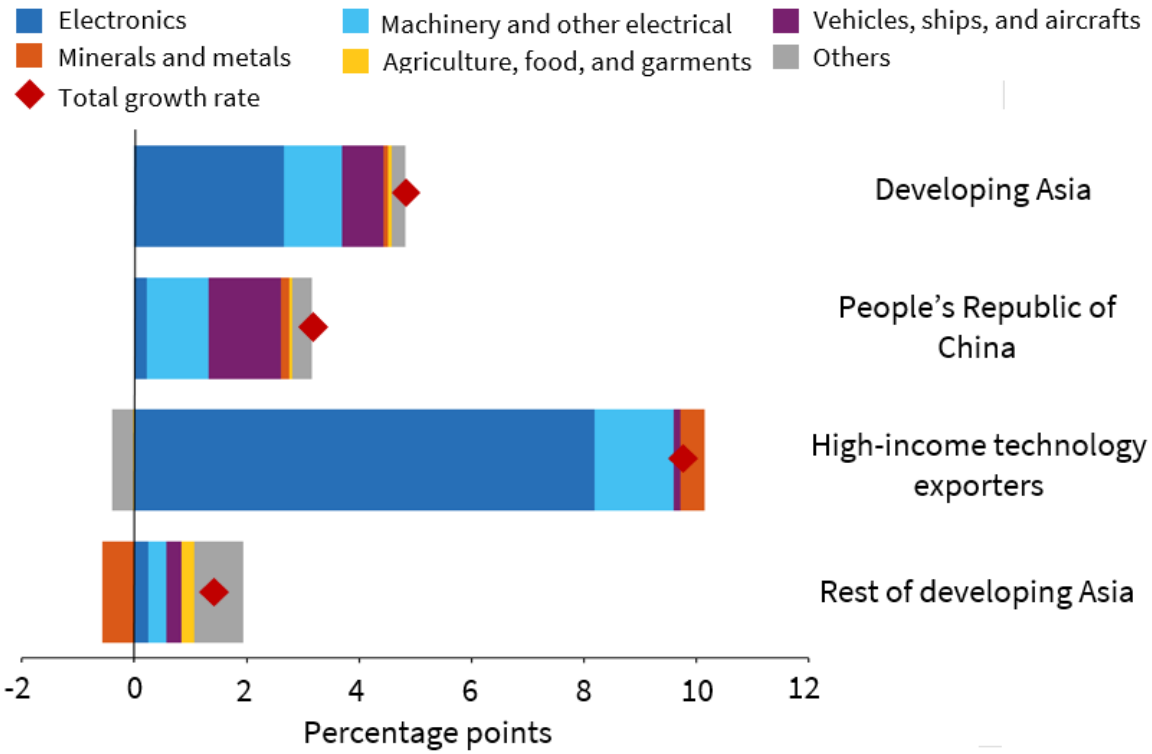
Growth in Nominal Goods Exports in developing Asia



Notes: High-income technology exporters are Hong Kong, China, Republic of Korea, Singapore, and Taipei,China.
Source: CEIC Data Company.

…and supported by strengthening global demand for electronics

Contributions to Export Growth

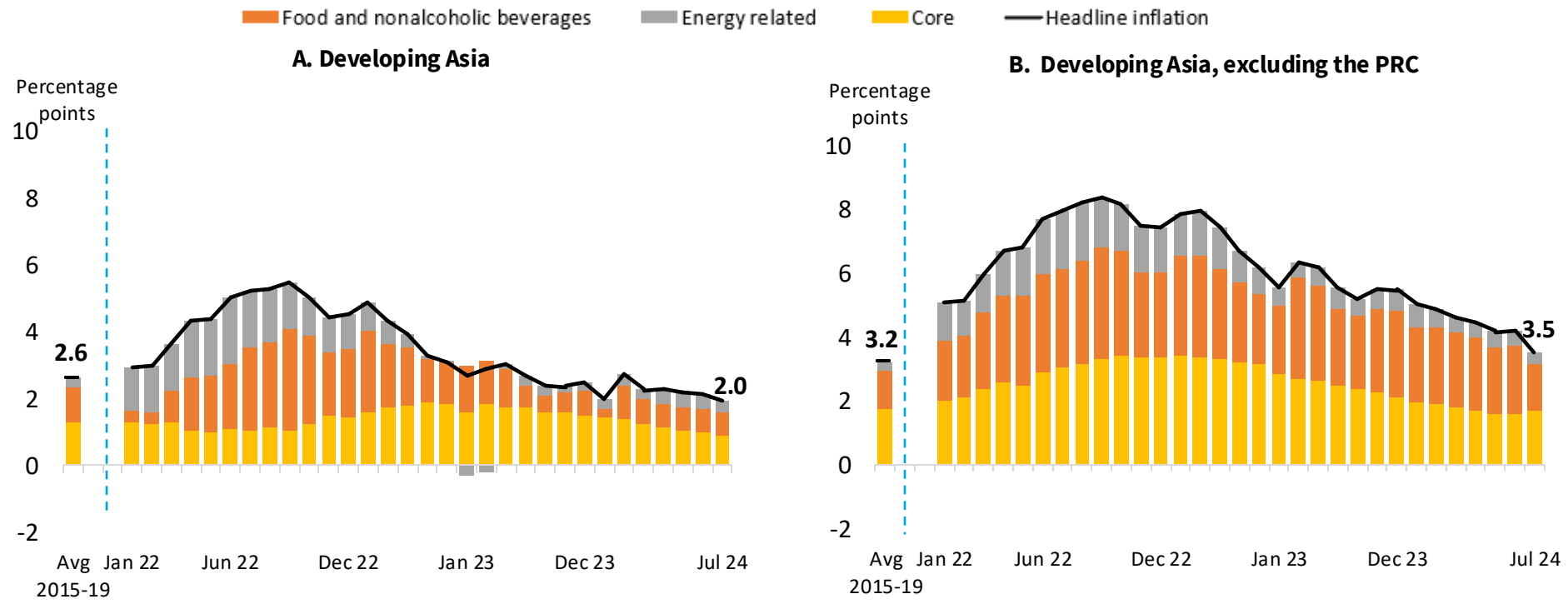


Note: Year-to-date export growths are based on 2023 and 2024 total exports from January to April for India, up to May for Fiji and the Philippines, up to July for Georgia and Malaysia, and up to June for the remaining economies.
Sources: UN Comtrade; International Trade Centre.

Inflation continues to ease as price pressures subside

Inflation in across developing Asia continues to decline, reflecting the impact of past monetary tightening and easing global commodity prices

Contributions to Inflation, developing Asia

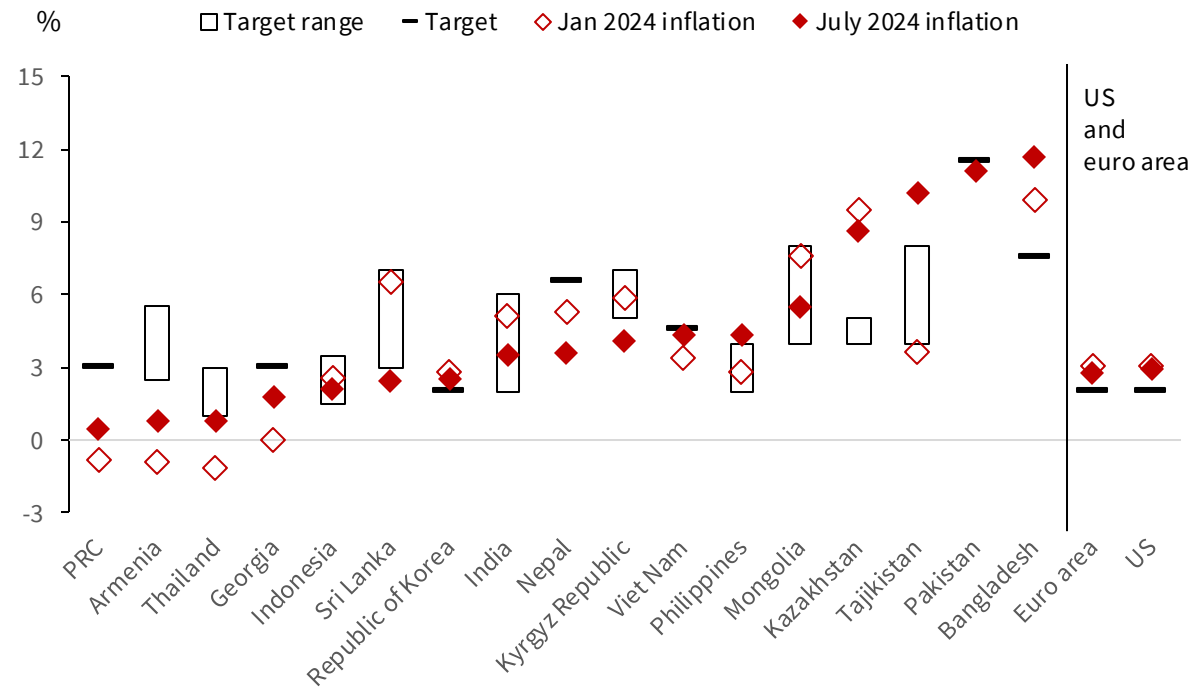


PRC = People's Republic of China, Avg = average.
Notes: Core inflation excludes volatile components, i.e., energy and fuel. Regional average is calculated using GDP PPP shares as weights and covers 22 economies.
Sources: Staff calculations using data from Haver Analytics; CEIC Data Company; official sources.

Lower inflation and stronger currencies are creating conditions for monetary easing

Inflation is within target for most inflation-targeting economies

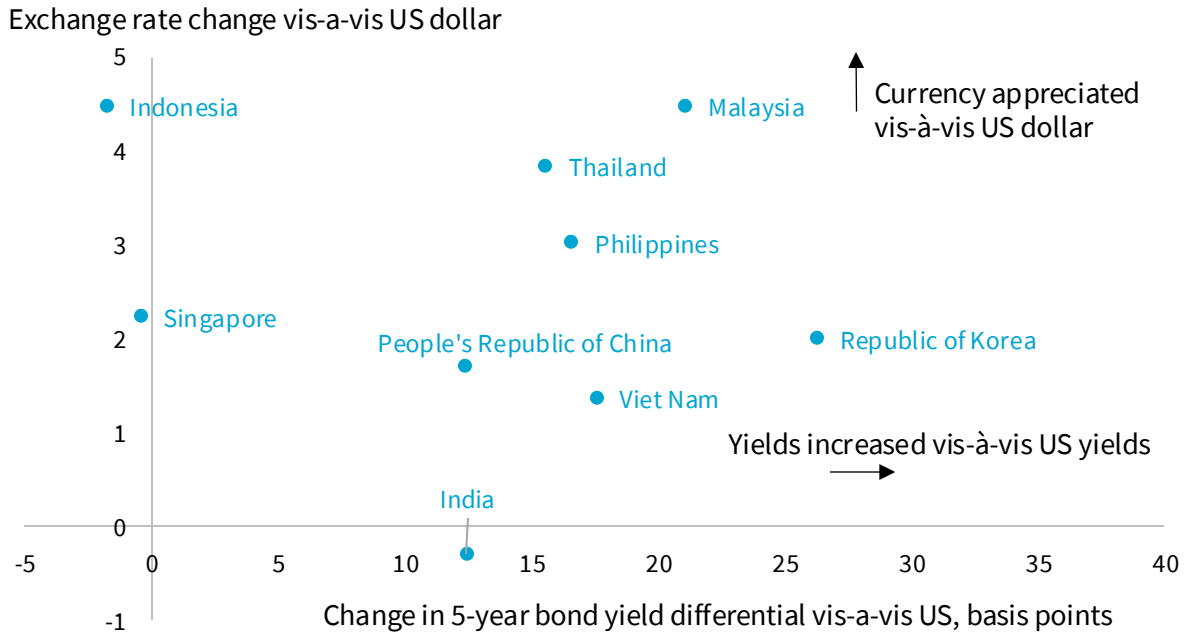
Inflation and Inflation Targets



PRC = People's Republic of China, US = United States
Note: January inflation for Pakistan was 28.3% and is omitted due to the axis scale. Latest data for Armenia and Tajikistan are for June, all other economies use July data.
Source: CEIC Data Company. Official Sources.

Appreciating exchange rates and growing yield differentials with the US suggest more easing on the horizon

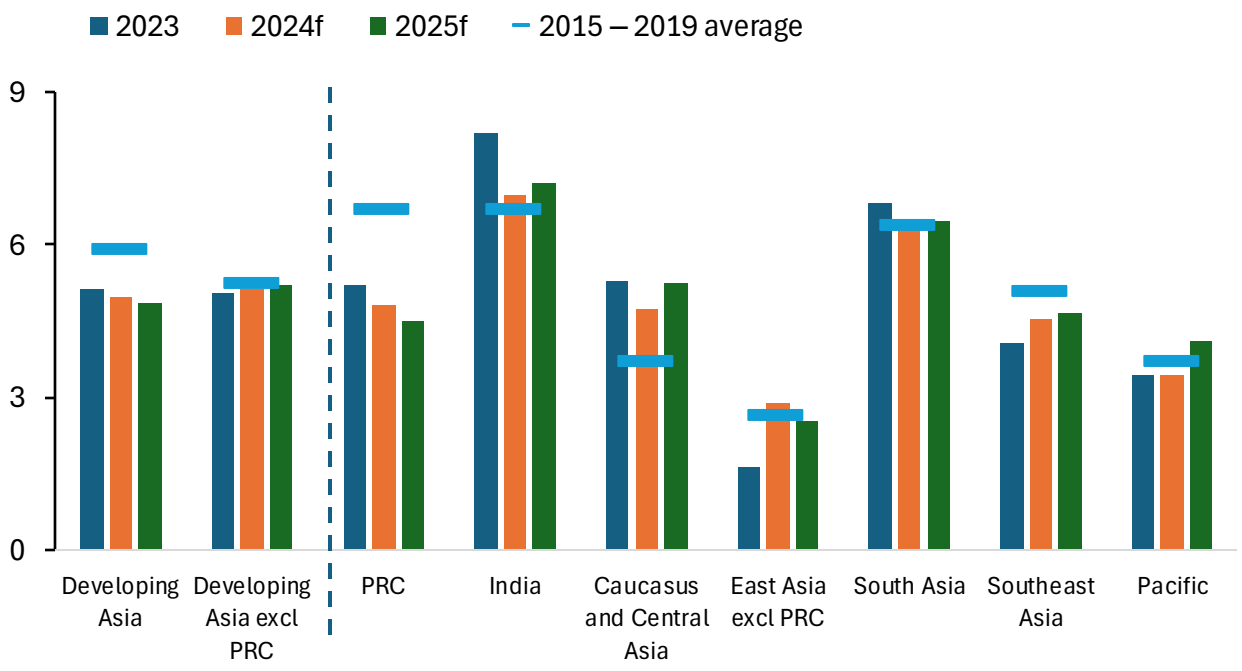
Change in Exchange Rates and Yield Differentials, 1 Aug –3 Sep



US = United States
Source: ADB calculations using data from Bloomberg.

Developing Asia's growth forecast is raised slightly to 5.0% in 2024 and maintained at 4.9% for 2025

Growth in developing Asia is expected to remain solid and is close to pre-pandemic rates for the region excluding PRC.



f= forecast; PRC = People's Republic of China.
Source: *Asian Development Outlook* database.

	GDP Growth				
	2023	2024f		2025f	
Subregion/Economy		*Apr*	*Sep*	*Apr*	*Sep*
Developing Asia	**5.1**	**4.9**	**5.0**	**4.9**	**4.9**
Developing Asia excluding the PRC	**5.1**	**5.0**	**5.1**	**5.3**	**5.2**
Caucasus and Central Asia	**5.3**	**4.3**	**4.7**	**5.0**	**5.2**
Kazakhstan	5.1	3.8	3.6	5.3	5.1
Uzbekistan	6.0	5.5	6.0	5.6	6.2
East Asia	**4.7**	**4.5**	**4.6**	**4.2**	**4.2**
People's Republic of China	5.2	4.8	4.8	4.5	4.5
Republic of Korea	1.4	2.2	2.5	2.3	2.3
South Asia	**6.8**	**6.3**	**6.3**	**6.6**	**6.5**
India	8.2	7.0	7.0	7.2	7.2
Pakistan	-0.2	1.9	2.4	2.8	2.8
Southeast Asia	**4.1**	**4.6**	**4.5**	**4.7**	**4.7**
Indonesia	5.0	5.0	5.0	5.0	5.0
Malaysia	3.6	4.5	4.5	4.6	4.6
Philippines	5.5	6.0	6.0	6.2	6.2
Singapore	1.1	2.4	2.6	2.6	2.6
Thailand	1.9	2.6	2.3	3.0	2.7
Viet Nam	5.1	6.0	6.0	6.2	6.2
Pacific	**3.4**	**3.3**	**3.4**	**4.0**	**4.1**
Fiji	7.5	3.0	3.4	2.7	2.9
Papua New Guinea	2.0	3.3	3.2	4.6	4.5

Near-term risks

- **Rising protectionism**
  - Depending on the outcome of the US presidential election, an increase in protectionism and trade fragmentation could materialize.
- **Geopolitical tensions**
  - Escalations could lead to renewed supply chain disruptions, higher food and energy prices, and increased global economic uncertainty.
- **PRC property market fragility**
  - Further deterioration in PRC's property market could weaken growth prospects in PRC.
- **Weather-related events, impending La Niña**
  - Adverse weather conditions and impacts of climate change could constrain food supply and push up commodity prices. On the other hand, higher than expected rainfall and cooler temperatures due to La Niña is an upside risk to the outlook.

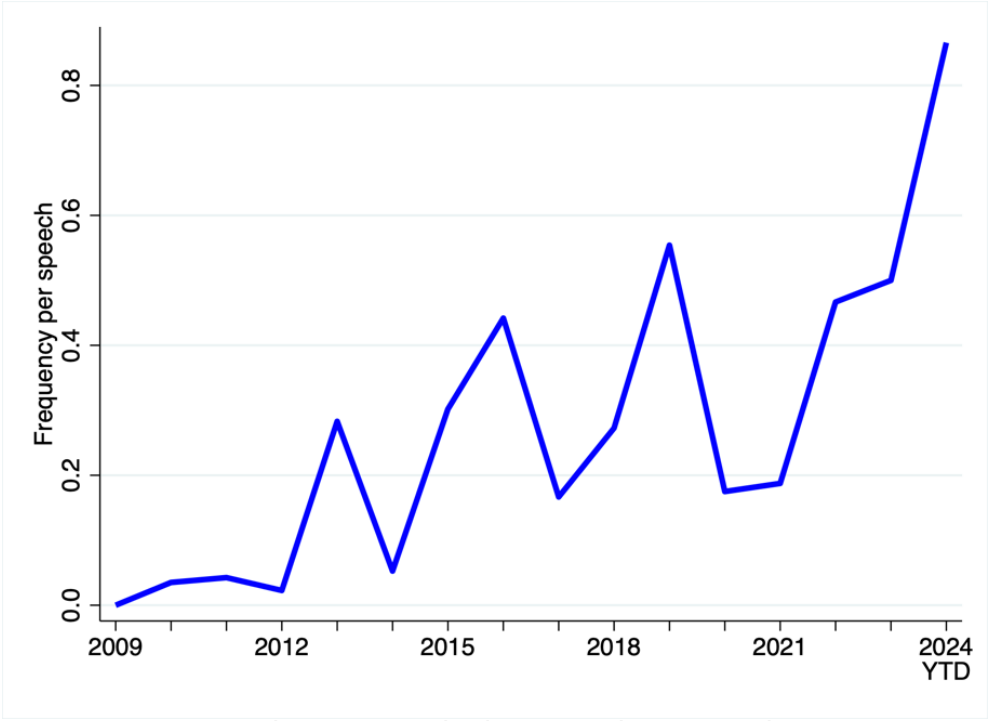
Letting the Data Speak: Global Spillovers of Data-Dependent Federal Reserve Monetary Policy

At various times in past years, Fed governors have increasingly stressed that Fed policy is data-dependent

"The time has come for policy to adjust. The direction of travel is clear, and the timing and pace of rate cuts will depend on incoming data, the evolving outlook, and the balance of risks."

Jerome H. Powell, Chairman, Board of Governors of the Federal Reserve System (23 August 2024)

Frequency of Data-Dependent-Related Keywords in Speeches by Fed Governors



Source: Asian Development Outlook, September 2024 Edition.

Research questions

- Does the Fed's responsiveness to changes in the US economy—what is referred to as Fed's *data dependency*—fluctuate over time?
- How do financial markets in other countries react to inflation-driven and employment-driven Fed policy tightenings?
- Are there differences in responses across countries based on fundamentals?

A novel methodological approach

- **Focus on US data releases rather Fed meetings** => when Fed is data-dependent, it changes stance based on incoming data => market participants anticipate that

- Economic data releases have effects on financial markets depending on their information content for (i) real economy and (ii) Fed's future MP

  ⇒ Disentangle between (i) and (ii) using variables measuring extent of Fed's **data-dependency** and **relative attentiveness** to inflation and employment data

- Study effects of *expected* Fed response to inflation and employment data on bond yields, exchange rates, stock markets and default probabilities in 108 countries

Preview of results

- **Fed data dependency varies greatly over time** => tends to be low when policy rate is close to zero and increases around turning points

- **An expected data-driven Fed tightening has negative spillovers** => bond yields, USD exc. rate, default probabilities ⬆, stock markets & portfolio inflows to EMs ⬇

- **Strong fundamentals reduce spillovers** => healthy current account & budget balances reduce spillovers, high external debts & inflation rates amplify them

Contribution: vast literature studying spillover effects of Fed policies, but..

- Focus is on Fed meetings to identify *exogenous* shocks
- Hoek et al. (2022) and Arteta et al. (2023) study spillovers of *inflation* and *growth* shocks => find growth shocks to be benign
- This chapter: 1st to focus on data releases => find even Fed responses to fast employment growth to have negative spillovers

Paper	Type of Monetary Policy Action Considered	Identification	Main Results
Aizenman, Binici, and Hutchinson (2016)	QE announcements	Announcement dummies in a daily panel	QE announcements + QE tapering –
Arteta, Kamin, and Ruch (2023)	Reaction, growth and inflation shocks	Comovement of US interest rates, inflation swap rates and equity prices in a monthly sign-restricted Bayesian VAR	Reaction/inflation shocks – growth shocks +
Bowman, Londono and Sapriza (2015)	QE announcement days	Identification-through-heteroskedasticity method in days of QE announcements	Tightening –
Bruno and Shin (2015)	Monetary policy changes (no distinction)	Change in federal funds rate in a monthly VAR	Tightening –
Chari, Lundblad, and Stedman (2020)	QE announcement days	Change in implied yield on five-year Treasury Futures in 1-day window around QE announcements	Tightening –
Ciminelli, Rogers and Wu (2022)	Reaction shocks and information shocks	Heteroskedasticity-based, partial least squares approach for reaction shocks, information shocks identified as residual (time of FOMC announcements)	Reaction shocks – information shocks neutral
Fratzscher, Lo Duca, and Straub (2018)	QE announcements	Announcement dummies	QE announcements +
Hoek, Kamin and Yoldas (2022)	Reaction and growth shocks	Comovement of 2-year US treasury yields and US equity prices in tight window around FOMC meetings and NFP employment data releases	Growth shocks + reaction/inflation shocks –
Iacoviello and Navarro (2019)	Reaction shocks	Residual in a regression of various controls on change in federal funds rate at quarterly frequency	Tightening –
Pinchetti and Szczepaniak (2024)	Information shocks	Comovement between US equities and interest rates around FOMC meetings	Information shocks +

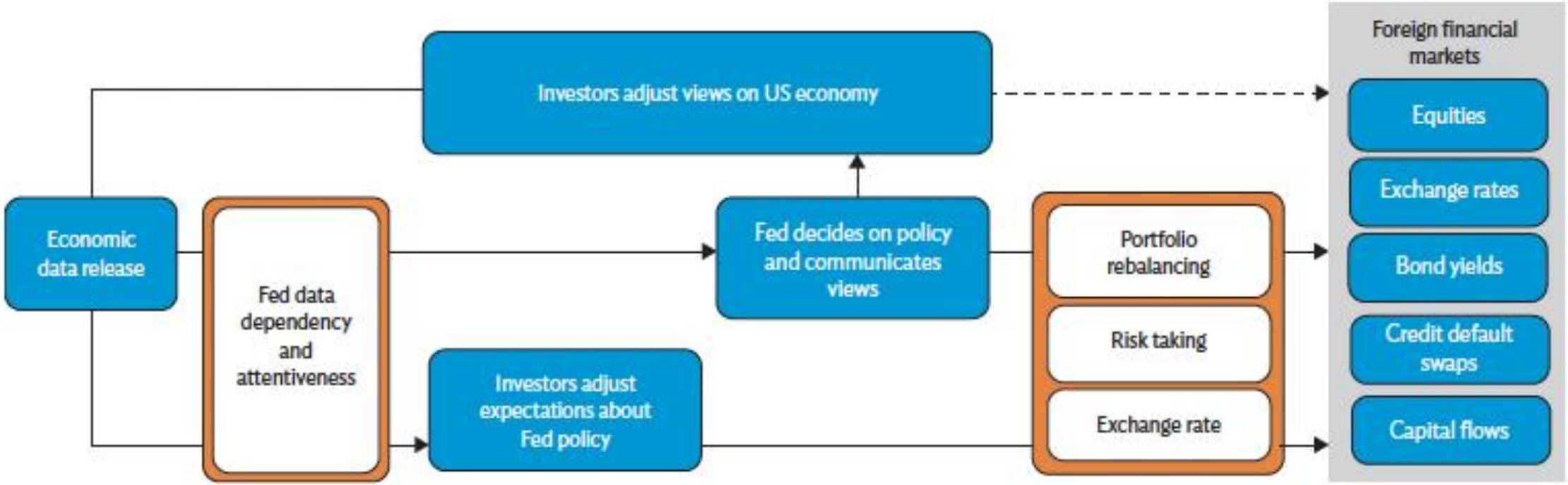
Source: Asian Development Outlook, September 2024 Edition.

Rest of the talk

- Conceptual framework
- Measuring Fed data dependency
- Stylized facts
- Methodology
- Empirical results
- Scenario analysis

Conceptual framework

If investors understand and anticipate the Fed's reaction function and the Fed's data dependency is high, US economic data releases impact foreign markets by shifting expectations of Fed policy



Source: Asian Development Outlook, September 2024 Edition.

Fluctuations in Fed data dependency

- *"economic conditions [...] are likely to warrant exceptionally low levels of the federal funds rate for an **extended period**"* (Mar '09 to Jul '11, open-ended forward guidance)

  => Fed is saying no change in rates for a long time

- *"economic conditions [...] are likely to warrant exceptionally low levels for the federal funds rate at least **through late 2014**"* (Aug '11 to Oct '12, calendar-based forward guidance)

  => no change in rates for at least two years (no matter the data)

- *"In determining the extent of additional policy firming that may be appropriate to return inflation to 2 percent over time, the Committee will take into account […] economic and financial developments."* (June '23) => *Economic data informs future policy*

Measuring Fed data dependency

- Fed data dependency ($FedDD_t$) measured as *absolute difference between 1-year ahead federal funds future rate and current effective rate*

  $\Rightarrow$ capture how much Fed is expected to change policy

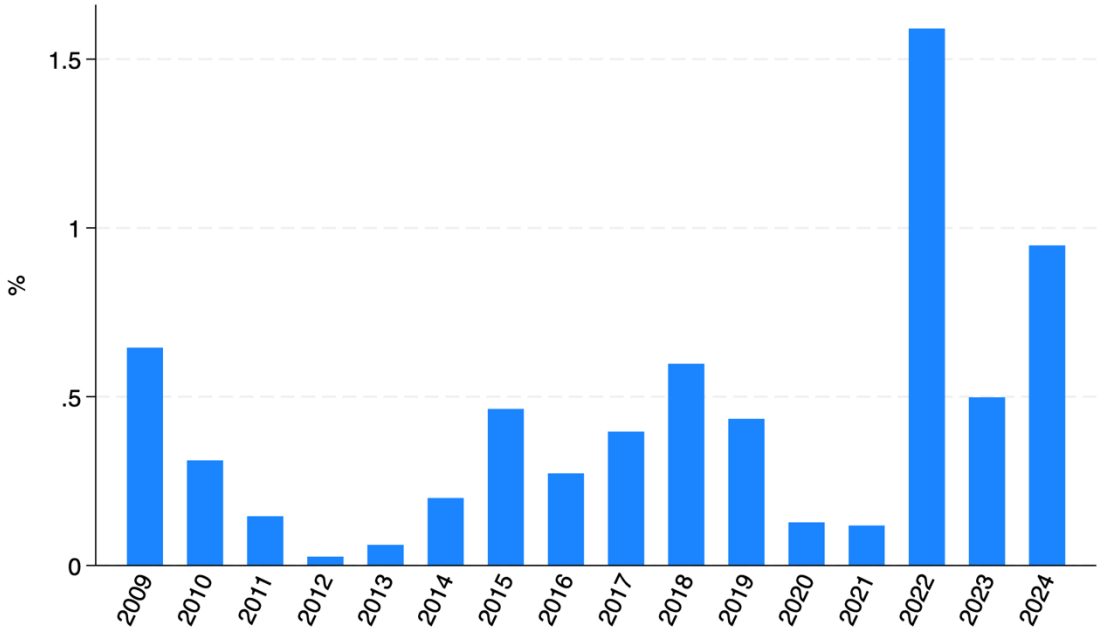
  $\Rightarrow$ when Fed expected to change policy, data inform exact realization

- Attentiveness to inflation/employment data measured as "absolute gaps" from target:

$$\pi_{gap} = |\pi - 2| \quad ; \quad U_{gap} = |U - U^*|$$

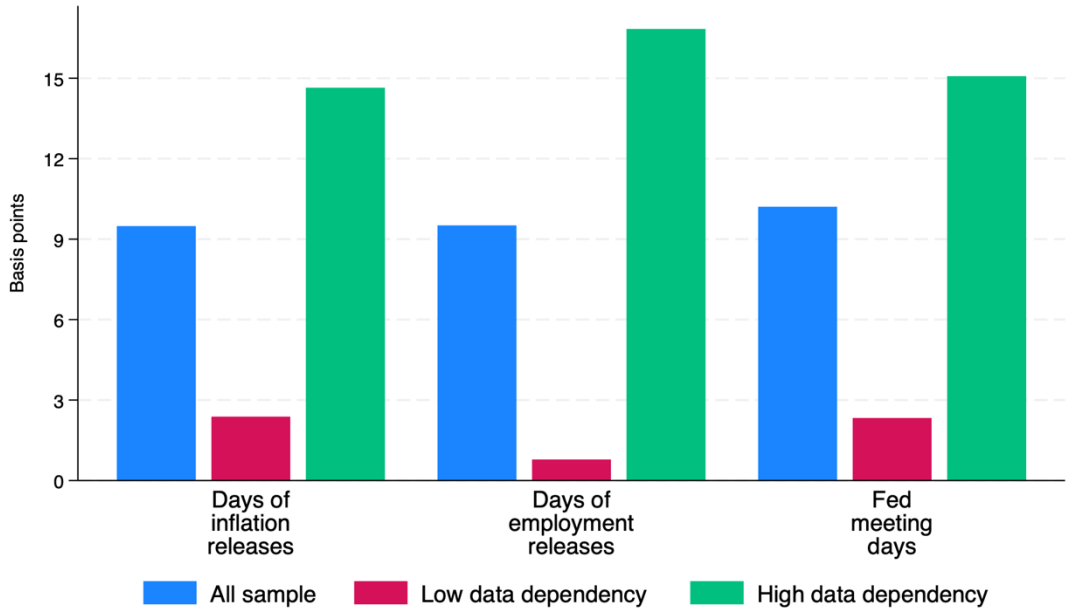
Stylized facts

1. Fed data dependency varies widely over time



Source: Asian Development Outlook, September 2024 Edition.

2. Inflation and employment data releases move monetary policy expectations as much as Fed meetings



Source: Asian Development Outlook, September 2024 Edition.

Regression specification

Estimate the following regression specification:

$$y_{i,t+1} - y_{i,t-1} = \alpha_i + \sum_{j=NFP,\pi} \left(\beta^j NEWS_t^j + \theta^j NEWS_t^j * FedDD_{t-1}^j\right) + \rho FedDD_{t-1}^j + \varepsilon_{i,t}$$

where:

subscript *i* denotes countries, *t* denotes time (daily panel)

α_i are country fixed effects

$y_{i,t}$ is the variable of interest at market close (log stock market index, bond yield, log exchange rate, etc.)

$NEWS_t^j$ measures news content of US labor (j=1) and inflation (j=2) data releases

$FedDD_t^j$ is extent of inflation/employment-specific Fed data dependency

$$\Rightarrow FedDD_t^{\pi} = FedDD_t * \frac{\pi_{gap}}{U_{gap}+\pi_{gap}}; FedDD_t^{NFP} = FedDD_t * \frac{U_{gap}}{U_{gap}+\pi_{gap}}$$

OLS, country and time clustered standard errors

Measuring economic news

- Market participants react to deviations of data release from median economist expectation (**surprise**)

$$News_t^j = \frac{\overbrace{Release_t^j - median(E_i\left[Release_t^j\right])}^{surprise_t^j}}{\sigma_{surprise^j}}$$

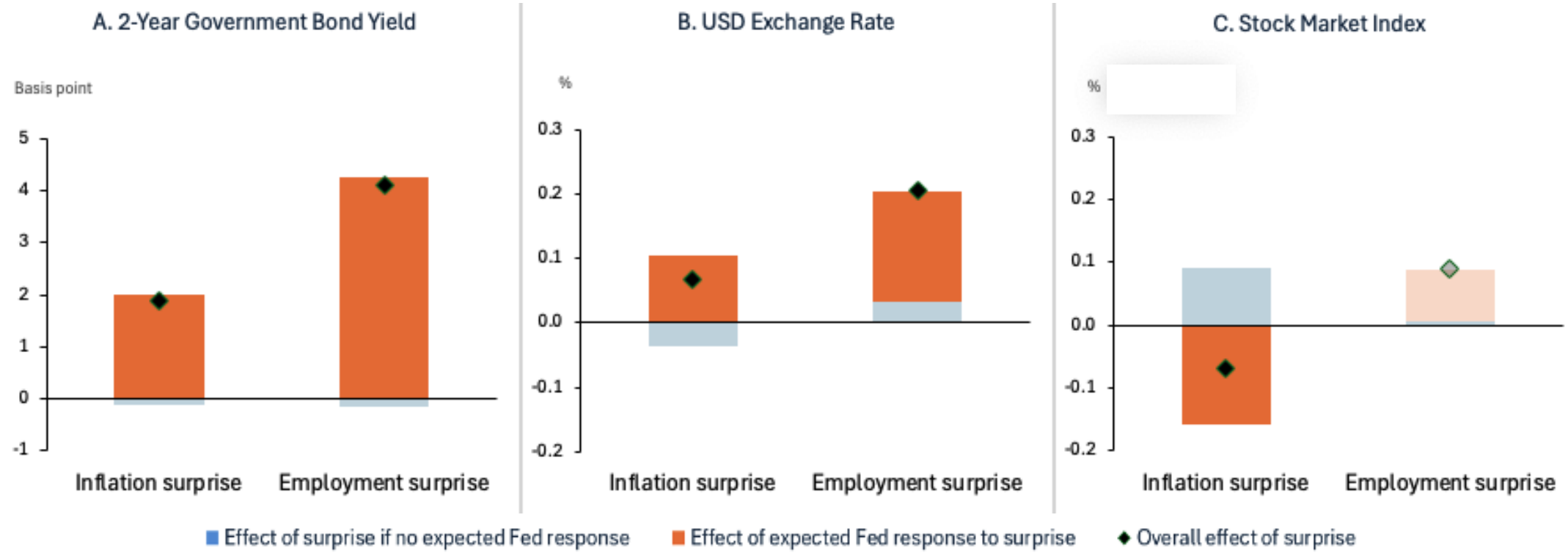
- Focus on:

  Month-on-month headline inflation release (news = 0.1 p.p. higher than expected)

  Nonfarm payroll (NFP) employment (news = 100,000 higher than expected)

Expected data-driven tightening negatively affects debt, currency & stock markets

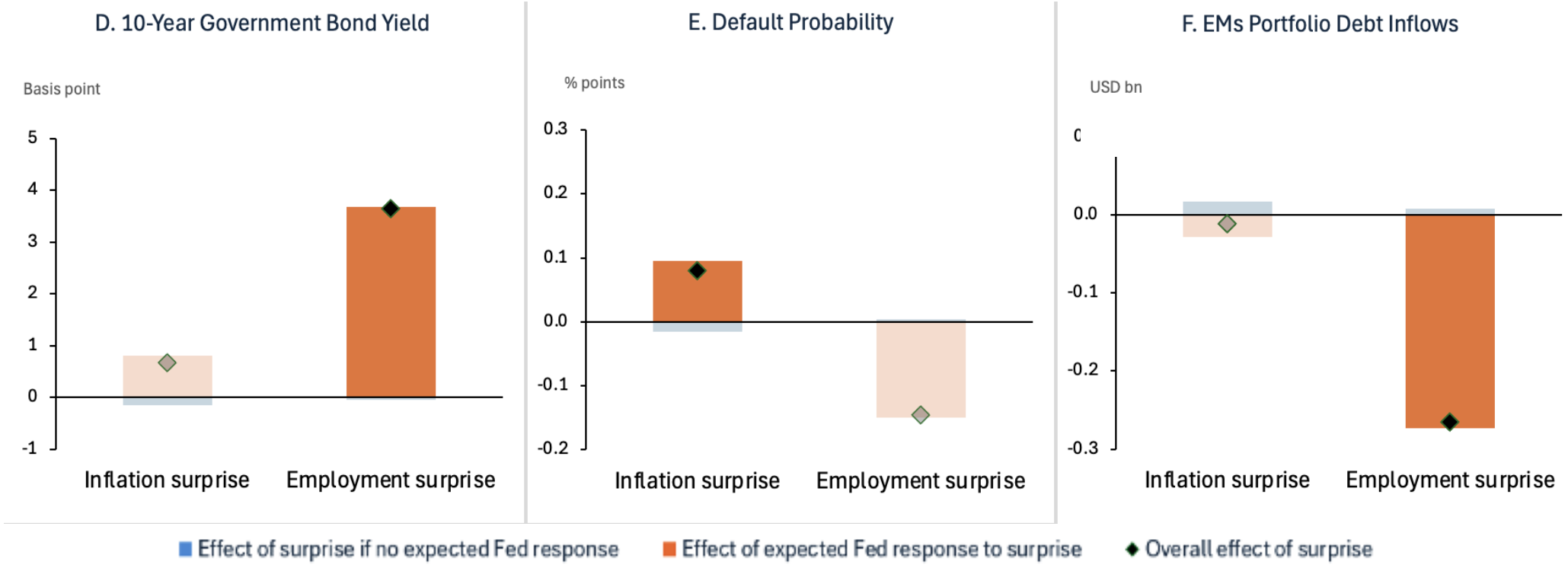
Effects of a 1-standard-deviation inflation/employment positive surprise on foreign financial variables, when the Fed is highly data dependent



Note: Darker-colored bars indicate statistical significance at the 90% confidence interval.
Source: Asian Development Outlook, September 2024 Edition.

Some negative effects also on long-term yields, default probabilities & EMs flows

Effects of a 1-standard-deviation inflation/employment positive surprise on foreign financial variables, when the Fed is highly data dependent



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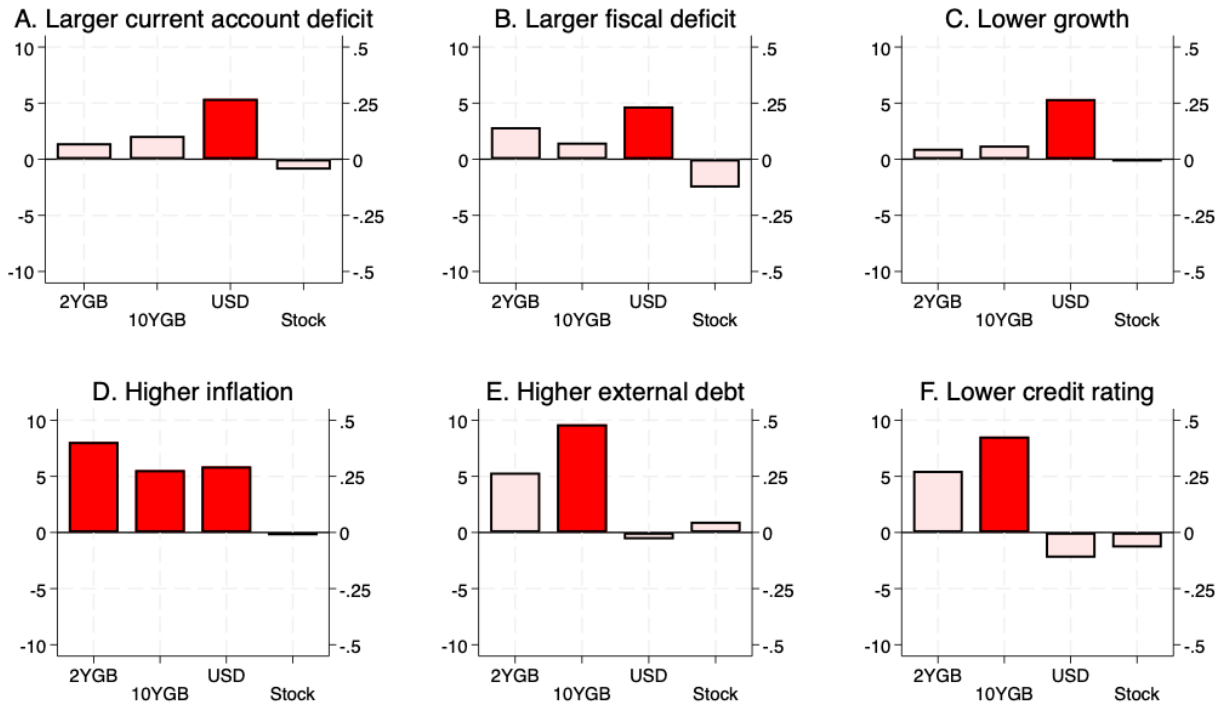
Source: Asian Development Outlook, September 2024 Edition.

Weak fundamentals amplify spillovers

Differences between Economies with Different Fundamentals, Expected Fed Response to Employment Surprises



Note: Darker-colored bars indicate statistical significance at the 90% confidence interval.
Source: Asian Development Outlook, September 2024 Edition.

A US slowdown could ease international financial conditions considerably

- **Rebounding inflation scenario (US inflation to rebound to 2.9% by end-2024)**
  - Short-term foreign government bond yields up 70 basis points
  - Local currencies down almost 4% vis-à-vis USD, stock markets down by 5.5%
  - Government default probabilities up 3.3 percentage points

- **Slowdown (zero US net job gains and inflation down to 2.1% by end-2024)**
  - Short- and long-term bond yields down 95 and 30 basis points
  - Local currencies and stock markets up by about 4% to 5%
  - Government default probabilities down 2.8 percentage points

- **External debts, inflation and current account and fiscal deficits amplify spillovers**

THANK YOU!

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