



# **Should Monetary Policy Respond to Asset Price Inflation?**

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**May 2022**

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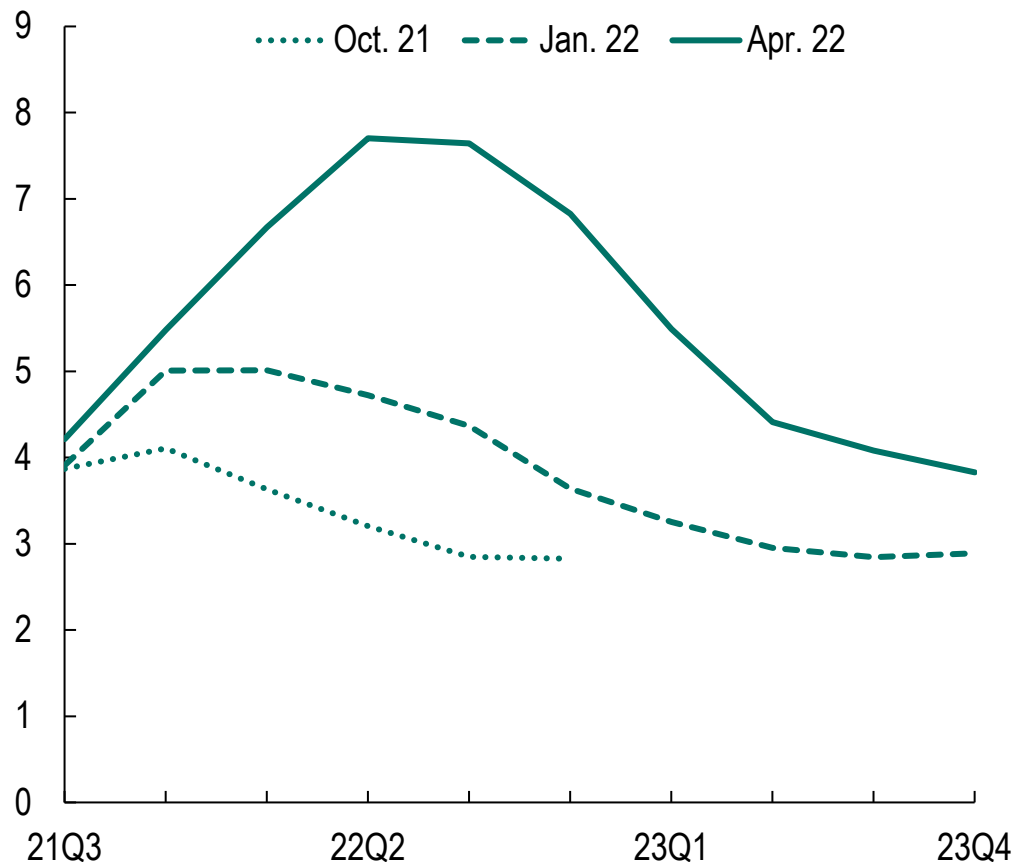
# **(Consumer price) inflation has been low and stable for many years...**

- **Secular stagnation**
  - Summers (2013); IMF (WEO, Oct 2014).
- **Globalization**
  - IMF (WEO, Oct 2018; REO Asia and Pacific, April 2018)
  - Borio and Filardo (2007); Martinez-Garcia and Wynne (2013)
- **Central bank credibility**
  - IMF (WEO, April 2013); Yellen (2015)

## ...but it has now risen sharply...

### Projected inflation paths

(In percent; year-on-year)



Source: IMF World Economic Outlook Apr 2022 and IMF staff calculations.

Note: Global average calculated by using PPP GDP weights.

### Compounding driving factors:

- Supply side: rising commodity prices, supply disruptions, and changes in labor markets.
- Demand side: large fiscal stimulus, accommodative monetary policy, and pent-up demand.

### Significant heterogeneity and uncertainty:

- Upward revisions of IMF inflation projections over time.
- Heterogeneity in driving factors across regions.

## ...raising questions about whether central banks are behind the curve.

- “Most Central Banks Seen as Behind the Curve in Global Survey” (Bloomberg, Mar 22, 2022; [Link](#))
  - “Of 886 investors who took part in Markets Live’s inaugural weekly survey, 73% voted that either “all” or “most” monetary authorities in developed markets haven’t done enough to quell inflation.”
- James Bullard: The Fed is either “far behind the curve” or “behind the curve” (Apr 21, 2022; [Link](#))
  - Fed is “far behind the curve” based on standard Taylor-type monetary policy rules, even if based on a minimum interpretation of persistent component of inflation.
  - “Credible forward guidance means market interest rates have increased substantially in advance of tangible Fed action. This provides another definition of ‘behind the curve,’ and the Fed is not as far behind based on this definition.”

# Why might central banks be behind the curve in terms of CPI inflation?

- Commonly discussed reasons
  - Unique nature of the pandemic shock?
  - High uncertainty and downside risks?
  - Anchored/sticky inflation expectations?
  - Changes in monetary frameworks?
  - A poor measure of  $r^*$ ?

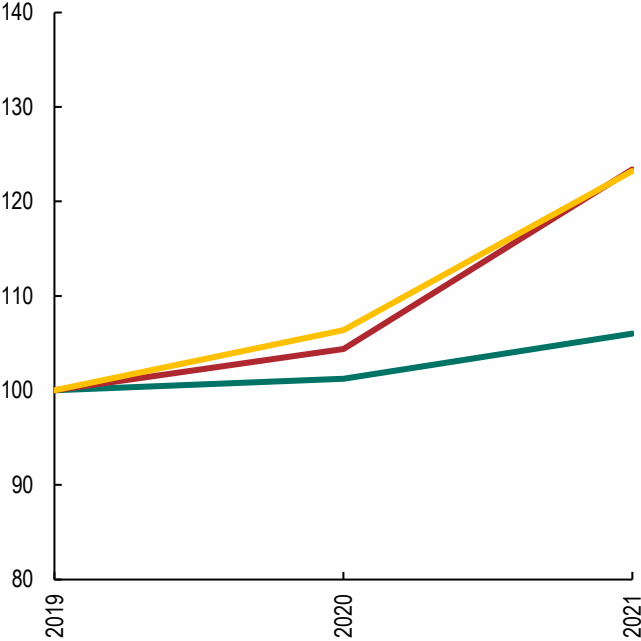
## What about the role of financial stability?

- Near-term financial-stability concerns may constrain monetary policy from being sufficiently responsive to CPI inflation
  - Stretched asset prices: housing, stocks, bonds, crypto
  - Various pockets of financial vulnerabilities: high level of debts, corporate bond market, NBFIs, commodities traders, leveraged loan markets, etc.
- These observations raise some questions:
  - If incipient asset price bubbles had been dealt with earlier, would central bankers have had more room to maneuver now in confronting rising CPI inflation?
  - **And more broadly, should we be dealing with asset price inflation only with macroprudential tools, or is there also a role for monetary policy?**

# While much of the focus has been on consumer price inflation, asset price increases have been more pronounced.

## Prices - Unites States

(Index 2019= 100)

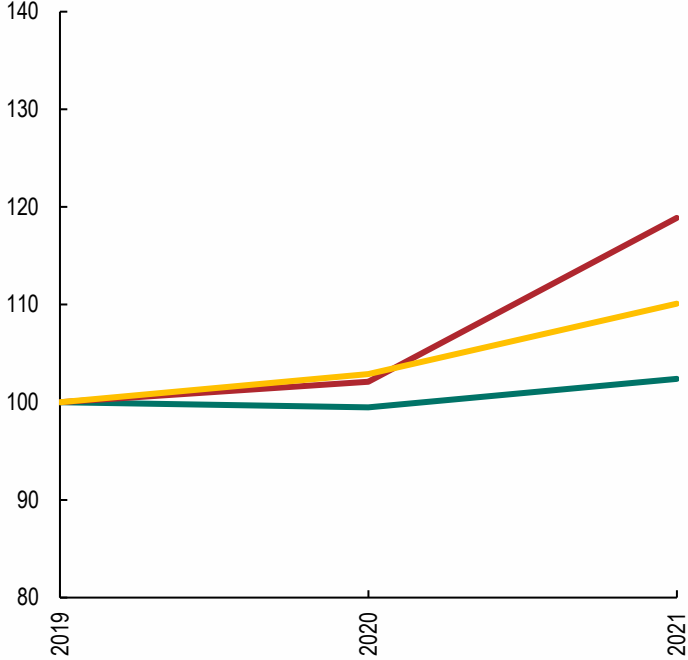


— CPI — Equity prices — House Prices

Source: World Economic Outlook Database April 2022, Haver, BIS.

## Prices - European Union

(Index 2019= 100, weighted avg.)

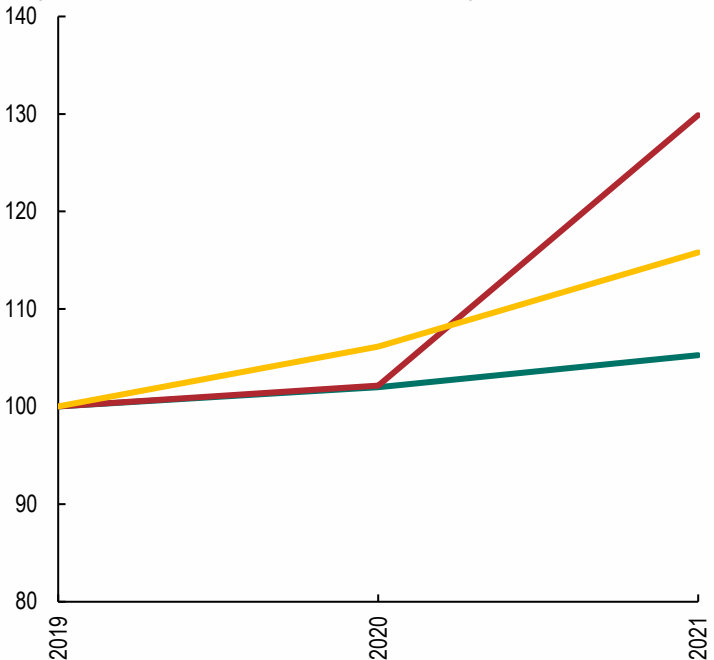


— CPI — Equity prices — House Prices

Source: World Economic Outlook Database April 2022, Haver, BIS.  
 Note: Countries included: Austria, Belgium, Cyprus, Czech Rep, Denmark, Finland, France, Germany, Ireland, Italy, Lithuania, Luxemburg, Malta, Netherlands, Slovak Rep, Slovenia, Spain, and Sweden.

## Prices - Asia

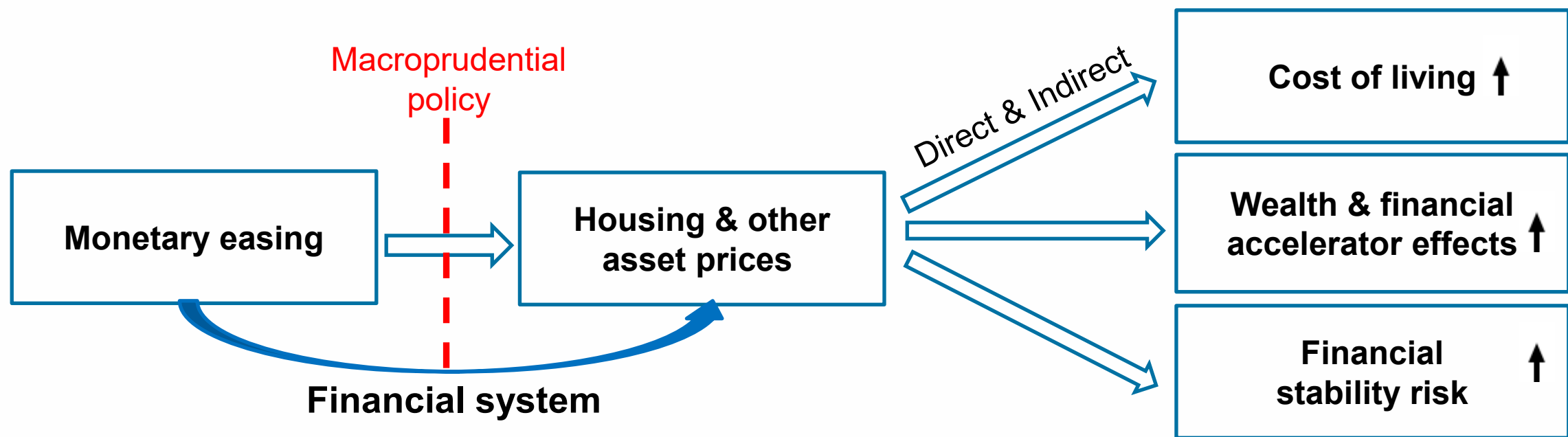
(Index 2019= 100, weighted avg.)



— CPI — Equity prices — House Prices

Source: World Economic Outlook Database April 2022, CEIC and IMF staff calculations.  
 Note: Asia includes a sample 13 economies. From Advanced Asia (7) includes: Australia, Hong Kong SAR, Japan, Korea, New Zealand, Singapore and Taiwan Province of China. From Emerging Market and Developing Asia (6) includes: China, Indonesia, India, Malaysia, Philippines and Thailand. Weighted averages based on nominal gross domestic product in purchasing-power-parity dollars.

# Should monetary policy respond to asset price inflation?



- **Asset price inflation can directly (housing) or indirectly raise cost of living, with purchasing power implications:** Alchian and Klein (1973); Bill Dudley (2020; 2022); Zhou Xiaochuan (2020)
- **Asset prices are part of monetary policy transmission, through wealth and financial accelerator effects.**
- **Asset price inflation raises financial stability risk; macroprudential policies may be insufficient:** Stein (2014); Borio (2014); Cerutti et al. (2017); Bruno, Shim & Shin (2017); IMF (2020).



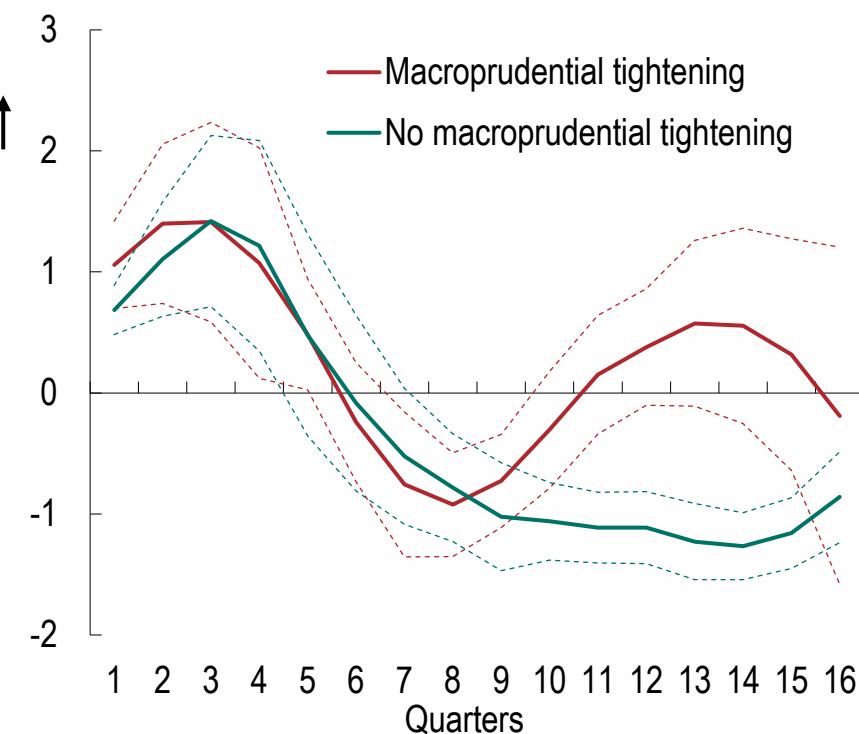
# Should monetary policy respond to asset price inflation?

- **“Conventional” view: A dichotomy**
  - Monetary policy → Price & output stability and macroprudential policy → Financial stability.
  - Taylor (1999), Woodford (2001), Bernanke and Gertler (2001).
- **Bernanke and Gertler (2001):** “Little if any additional gains” from directly responding to asset prices.
  - Exogenous asset bubbles: Gali (2021) incorporates endogenous bubbles (reach different conclusion)
  - Fully rational agents: Caines and Winkler (2021) relaxes this assumption (reach different conclusion)
  - Consider shocks to stock prices: Iacoviello (2005); Notarpietro & Siviero (2015) consider shocks to housing prices (reach different conclusion)
- **IMF (2015):** “It is clear that well-targeted prudential policies (including micro and macroprudential regulation and supervision) should be pursued actively to attenuate the buildup of financial risks. The question is whether monetary policy should be altered to contain financial stability risks. Based on our current knowledge, and in present circumstances, the answer is generally no. But, the door should remain open...”
- **IMF (2020):** “The Integrated Policy Framework (IPF) considers *jointly* the role of monetary, exchange rate, macroprudential and capital flow management policies, and their interactions with each other and other policies,...”

# Should monetary policy respond to asset price inflation?

- **Some recent papers say “yes.”**
  - Adrian and Duarte (2020, NY Fed Staff Reports): “Optimal monetary policy rule *always* depends on financial vulnerabilities... can also be expressed as an *augmented Taylor rule*” (with financial vulnerability).
  - Broadly speaking: Monetary easing → risk premium, risk taking & leverage ↑ → financial vulnerability ↑ → medium-term output volatility ↑
- **But others call for caution.**
  - Tightening macroprudential policies can mitigate the effects of loosening financial conditions on medium-term downside risks (GFSR, April 2021)
  - Svensson (2017): “For representative empirical benchmark estimates and reasonable assumptions the costs of leaning against the wind exceed the benefits by a substantial margin.”
  - Brandao Marques et al. (2020): “...the trade-off for monetary policy tightening to lean against the wind alone generally appears to be unfavorable and is associated with higher losses.”

Impact of loosening financial conditions on 10<sup>th</sup> percentile of GDP growth (with macroprudential vs. without macroprudential tightening)  
(In percentage points)



Source: Global Financial Stability Report April 2021  
Note: The chart shows the term-structure of future Growth-at-Risk associated with one standard deviation easing in financial conditions, under the macroprudential tightening and no tightening regimes.

# Should monetary policy respond to asset price inflation?

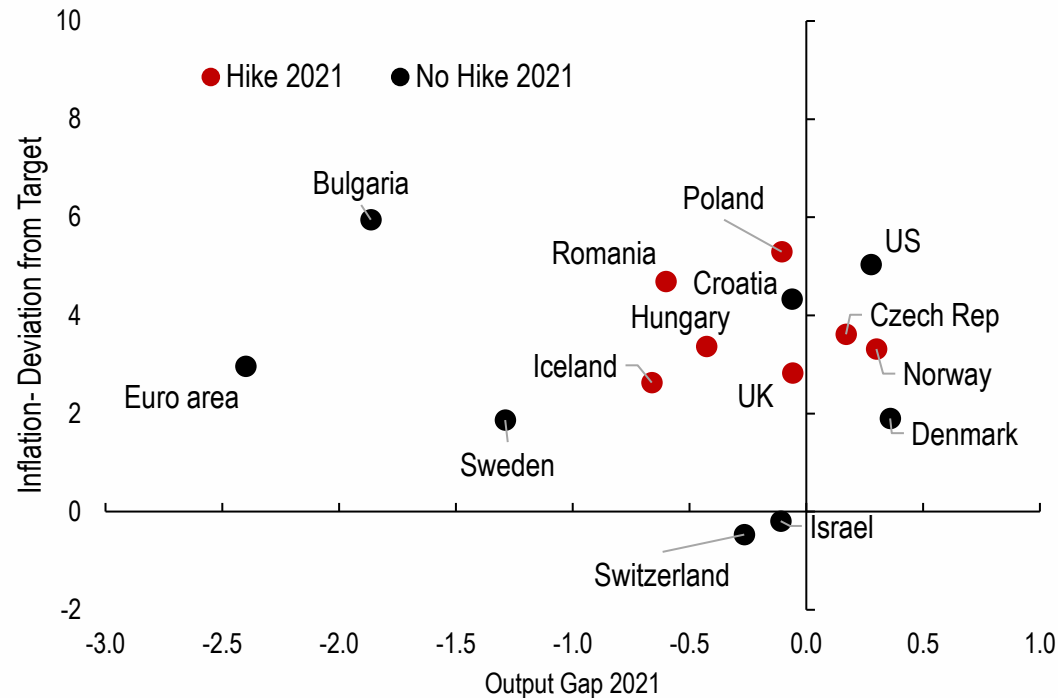
- **Adequacy of macroprudential tool kit is also important.**
  - Macroprudential policies can be “effective”, but they are not “perfect”, and the toolkits need further improvement.
    - Macroprudential policies can be effective: Korinek and Simsek (2016), Jeanne and Korinek (2019), Igan and Kang (2011) and Zhang and Zoli (2014)
    - Leakage through risk migration to other borrowing sectors: Auer et al. (2016), Acharya et al., forthcoming, Bhargava et al. (2021)
    - Migration to non-bank financial sector: Cizel et al. (2019), Claessen et al. (2021)
    - Relative to macroprudential policy, monetary policy “gets in all of the cracks.” (Stein, 2014)
    - There may also be political or institutional impediments to introducing macroprudential policies

# Should monetary policy respond to asset price inflation?

- Potential arguments and evidence supporting “leaning against the wind”:
  - Monetary policy has significant impact on asset prices and financial conditions (Adrian and Duarte (2020))
  - R-star with leverage is higher than R-star without leverage (Juselius et al. (2017), Rafiq (2021))
  - Asset bubbles are endogenous (Gali (2021))
  - Economic agents are not fully rational (Caines and Winkler (2021))
  - Relying on macroprudential policy may be insufficient (Borio (2014), Auer et al. (2016), Acharya et al., forthcoming, Bhargava et al. (2021), Cizel et al. (2019), Claessen et al. (2021))
  - Pre-emptive action could create more room for monetary tightening when CPI inflation rises (like now)
- That said, ***“We are far from a full understanding of the links between monetary policy and financial stability... There is a lively debate... about the extent to which monetary policymakers should take financial stability considerations into account when setting interest rates.”*** (Ben Bernanke, 2020, AER)

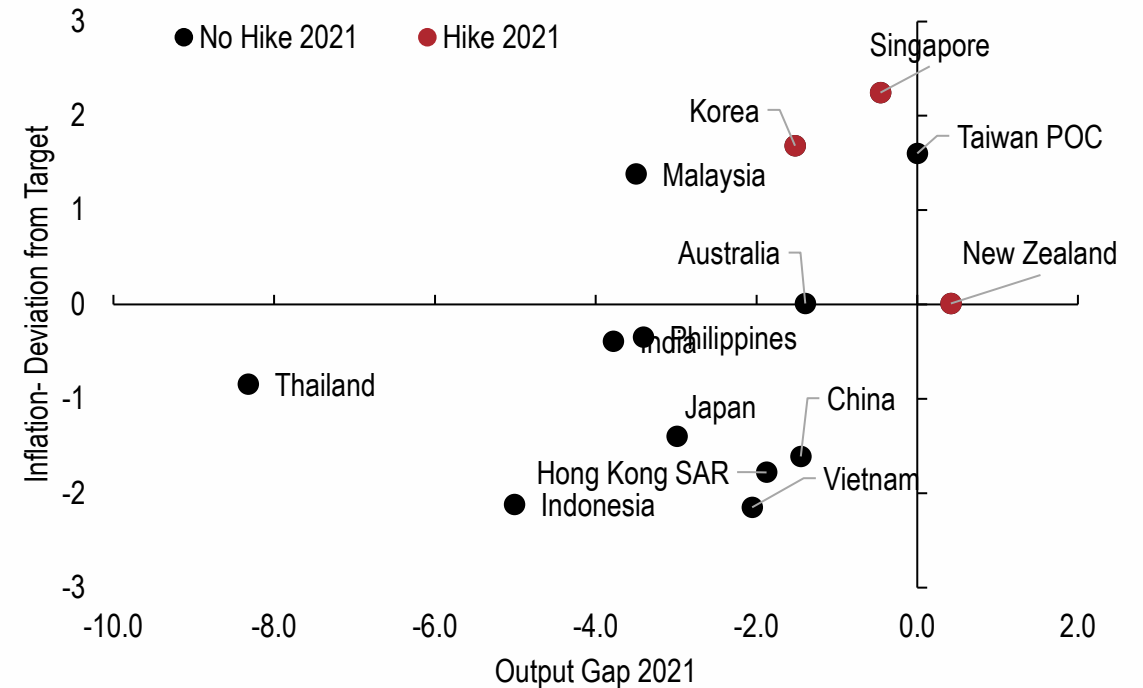
# The case of Asia: Large negative output gaps in 2021

**Inflation-deviation from target and output gap: Non-Asia**  
(In percent)



Source: Haver Analytics, World Economic Outlook Database and IMF staff calculations.  
Note: For non-inflation targeting countries (Bulgaria, Croatia and Denmark) an implicit target is calculated with the long-term average inflation between 2010-19. The rest of the sample uses the upper-bound target inflation range except Iceland, Sweden, UK and US in which the inflation target rate is used.

**Inflation-deviation from target and output gap: Asia-Pacific**  
(In percent)

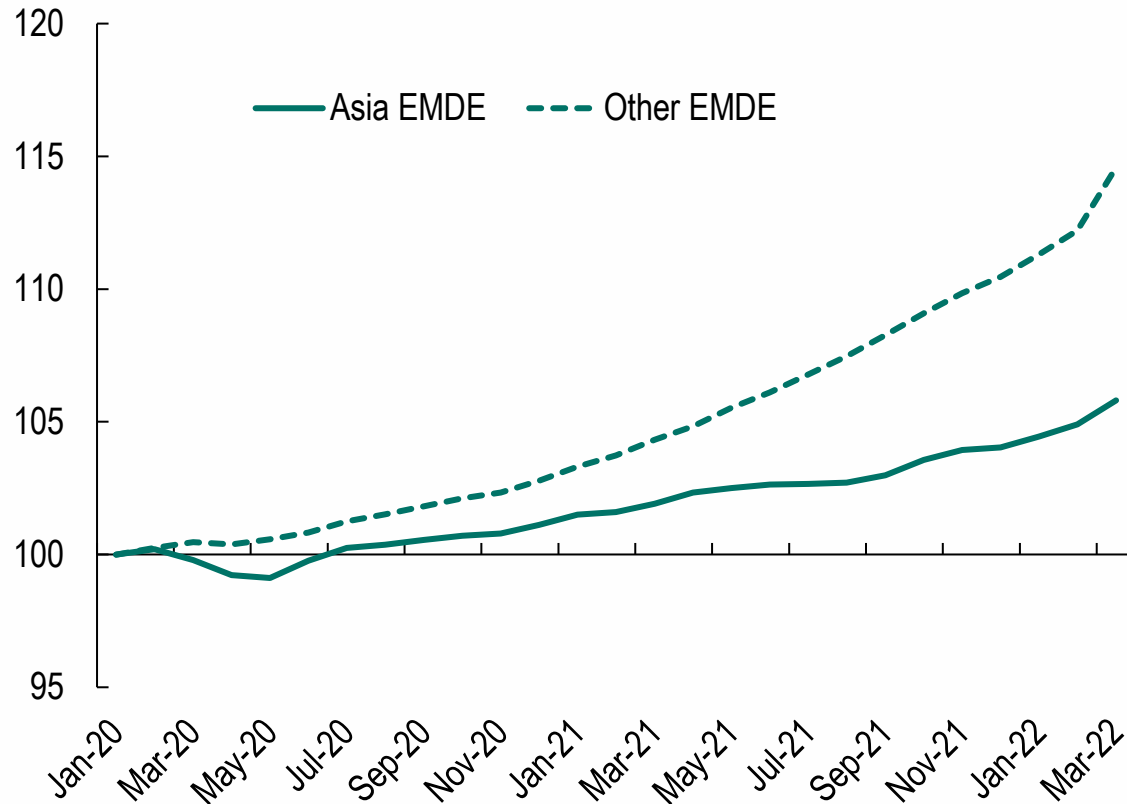


Source: Haver Analytics, World Economic Outlook Database and IMF staff calculations.  
Note: For non-inflation targeting countries (Hong Kong SAR, Malaysia, Taiwan Province of China and Singapore) an implicit target is calculated with the long-term average inflation between 2010-19. The rest of the sample uses the upper-bound target inflation range except Japan and Korea in which the inflation target rate is used.

# Inflation in Asia has been relatively subdued...

## EMDEs. Headline consumer price index

(January 2020 = 100)

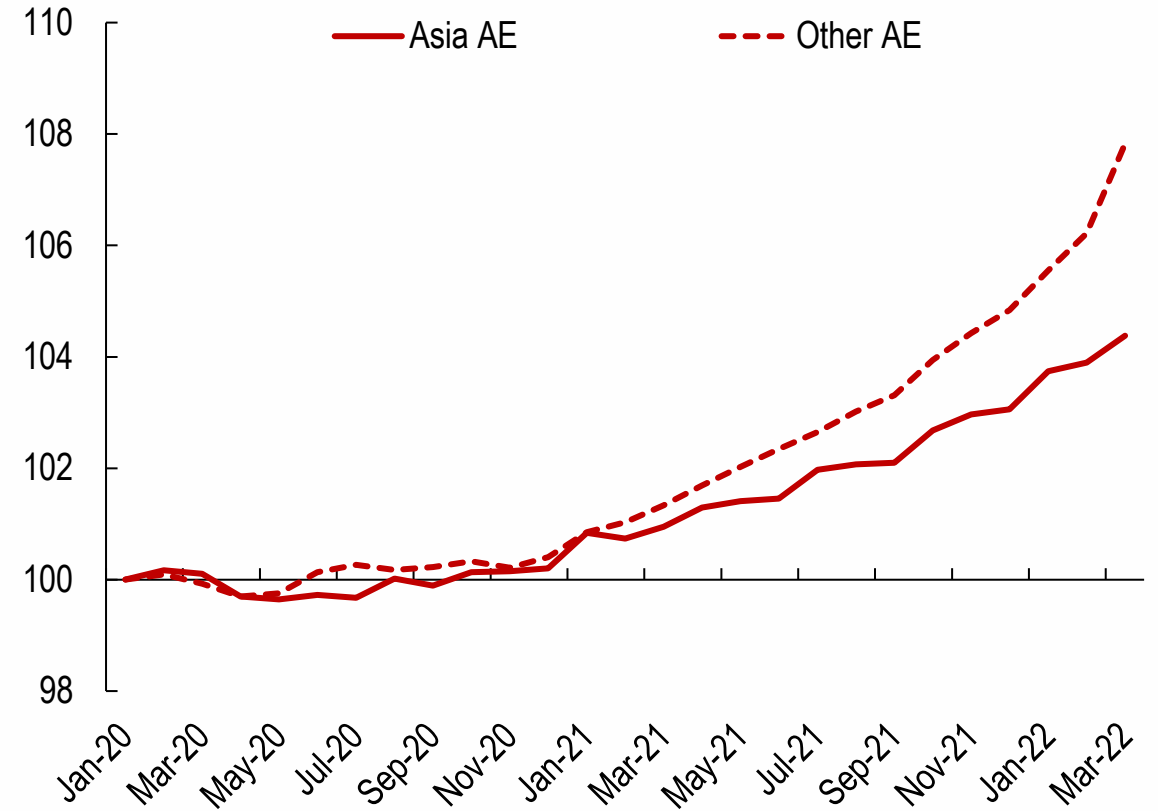


Source: Haver Analytics and IMF staff calculations.

Note: Aggregated indices by simple average. Asia EMDE includes: China, India, Indonesia, Philippines Thailand and Vietnam. Other EMDE includes Brazil, Chile, Colombia, Hungary, Mexico, Peru, Russia and South Africa. EMDE=Emerging Market and Developing Economies.

## AEs. Headline consumer price index

(January 2020 = 100)



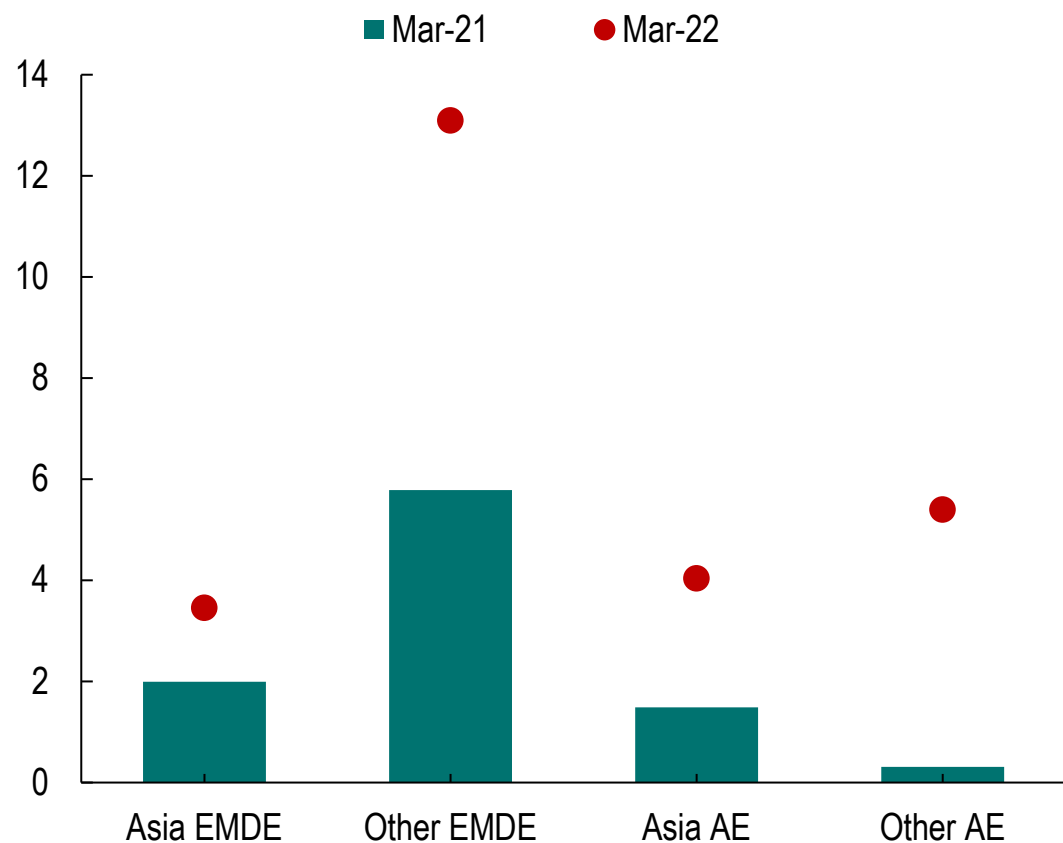
Source: Haver Analytics and IMF staff calculations.

Note: Aggregated indices by simple average. Asia AE includes: Australia, Hong Kong SAR, Japan, Korea, New Zealand, Macao, Singapore and Taiwan Province of China. Other AE includes Belgium, Canada, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom and United States. AEs= Advanced Economies.

# ...partly because food inflation was lower than in other regions (in particular, in EMDEs)...

## Food CPI

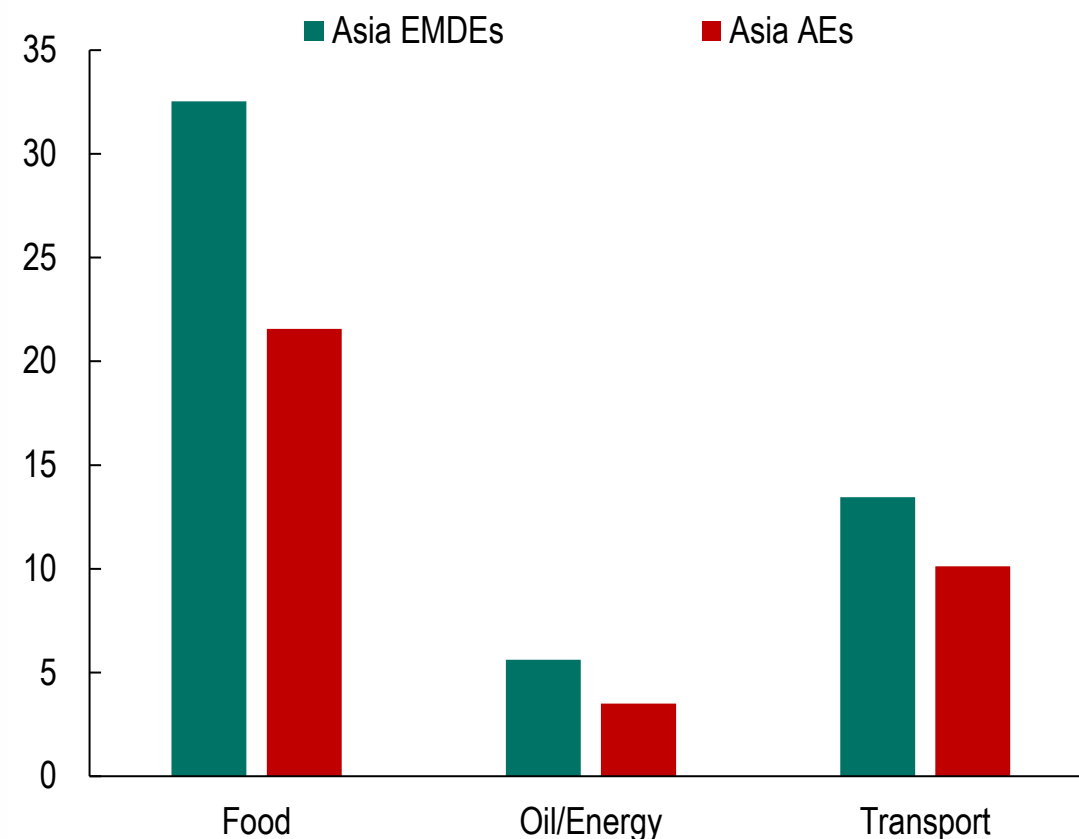
(In percent change year-on-year)



Source: Haver Analytics and IMF staff calculations.

## Share of goods in CPI basket

(In percent)

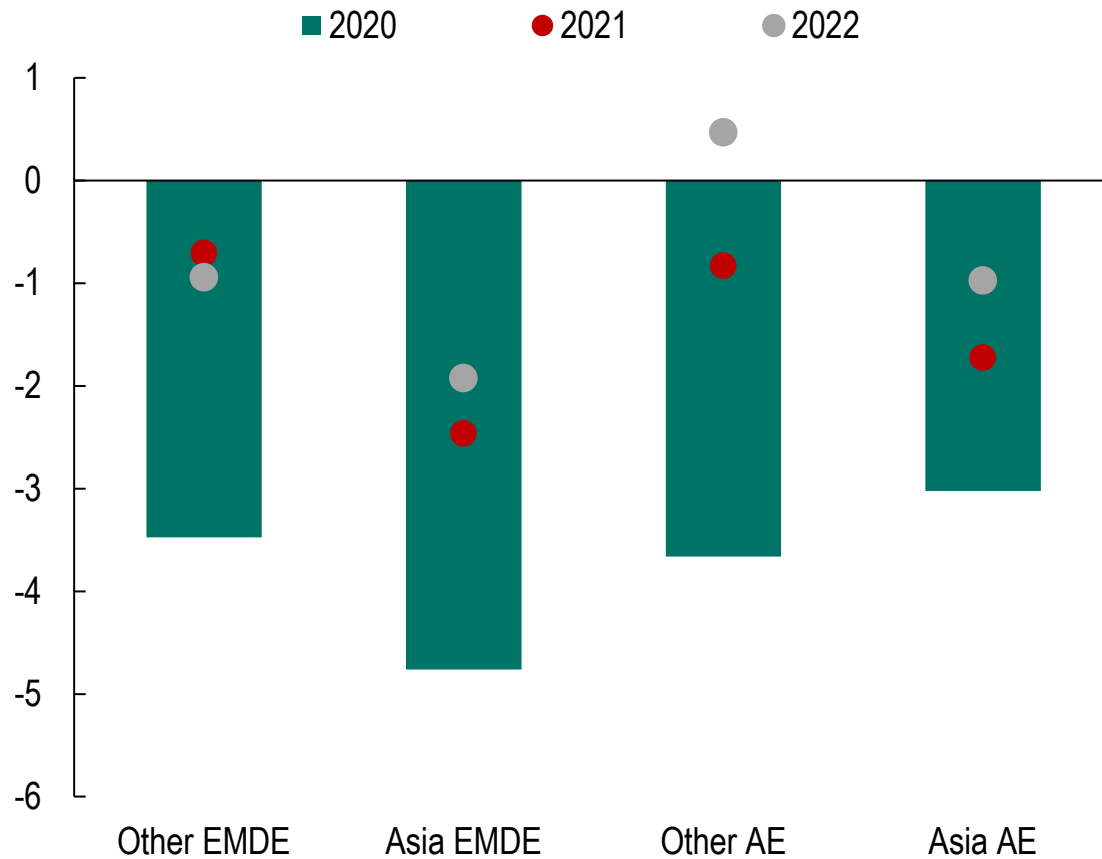


Sources: Haver Analytics and IMF staff calculations.

Note: Data as of April 2022.

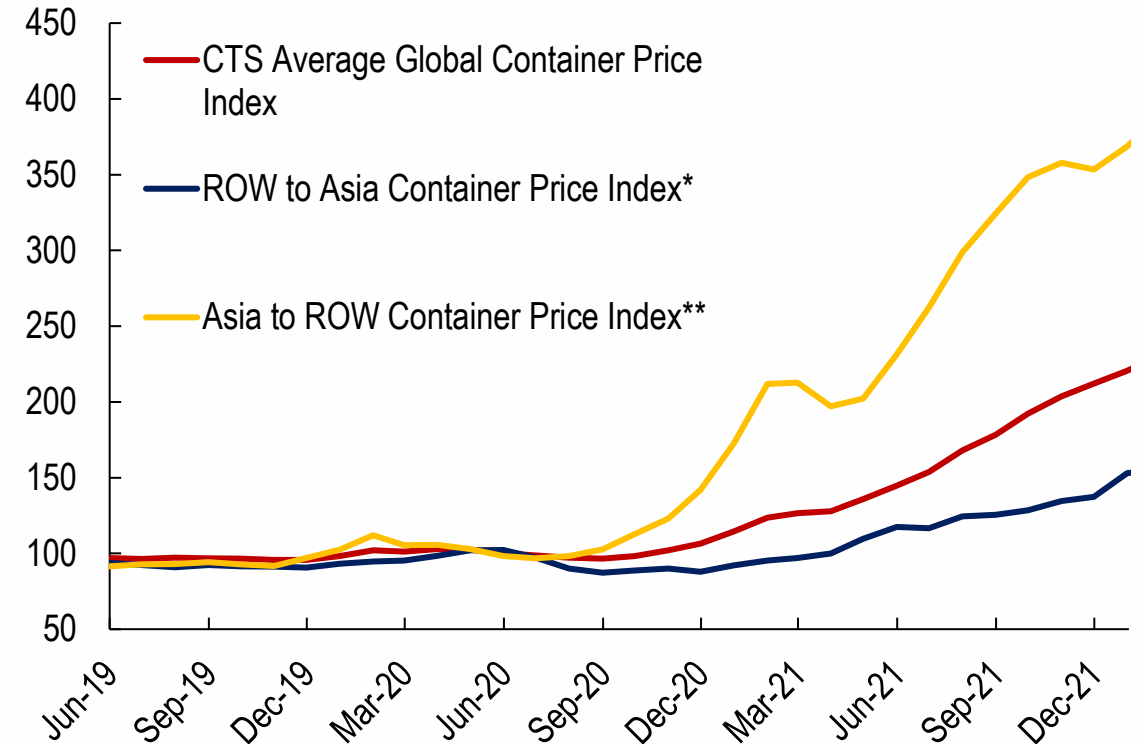
# ...but also because of more economic slack and smaller supply disruptions.

**Output gaps**  
(In percent)



Source: IMF World Economic Outlook Apr 2022 and IMF staff calculations.

**Container price index**  
(Index January 2019 = 100)



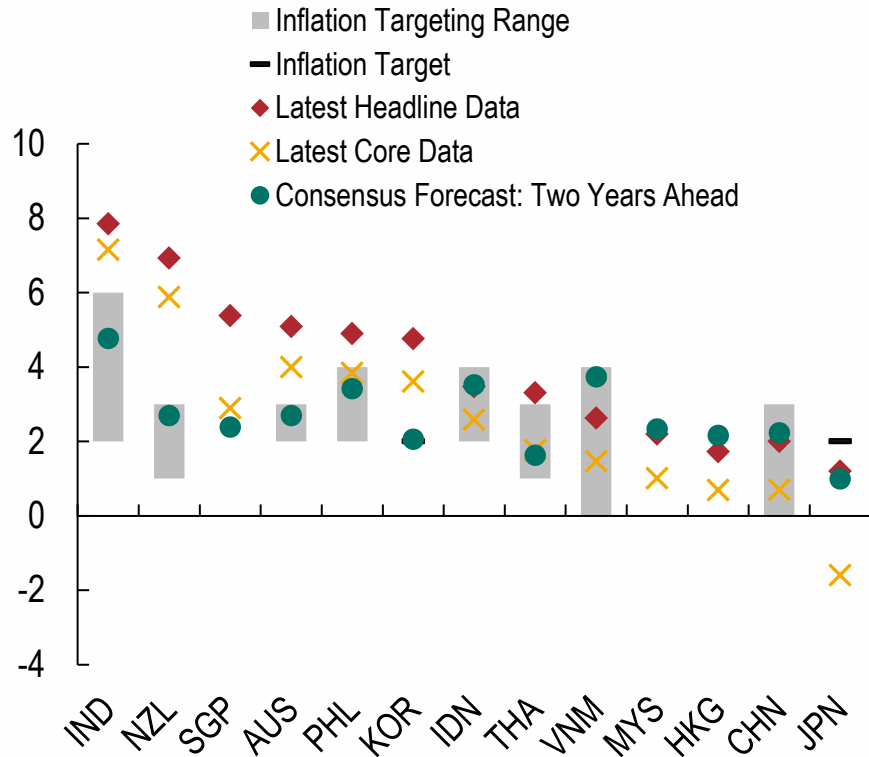
Source: Bloomberg and IMF staff calculations.

Note: \*ROW to Asia Container Price Index is the simple average of South, Central and North America to Asia Container Price Indexes. \*\*Asia to ROW Container Price Index is the simple average of Asia to Europe, North America, Australasia & Oceania and the Indian sub continent indexes.



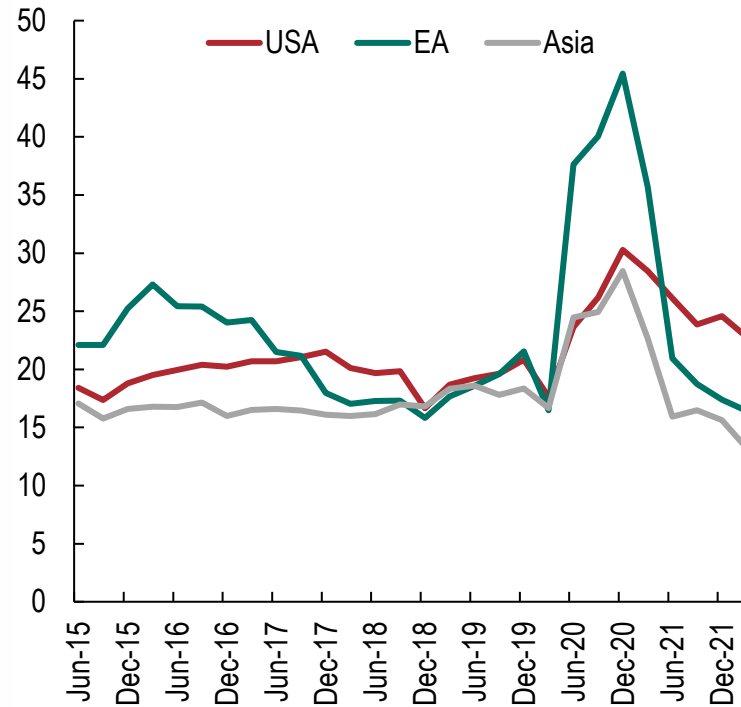
# Inflation in Asia, however, is on the rise, and there are pockets of vulnerabilities in asset prices (e.g., EA's housing price)

## Expected inflation (In percent)



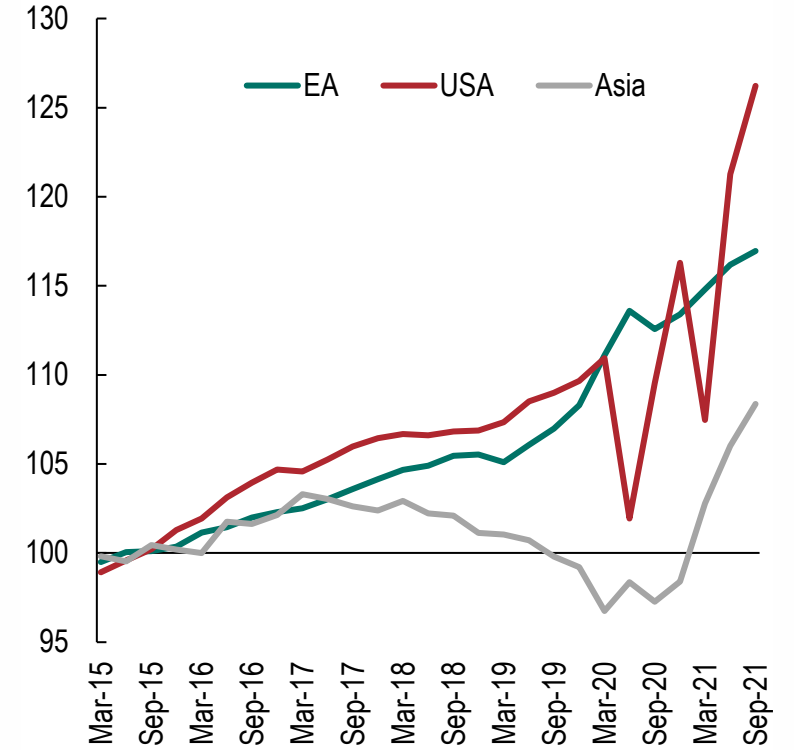
Source: Consensus Forecasts, Haver Analytics and IMF staff calculations.  
 Note: Consensus Forecasts data as of Apr 18<sup>th</sup>, 2022. Latest Headline and Core data as of Apr 2022 except AUS, HKG, JPN, MYS, NZL and SGP which reflect March data. Target ranges apply to core inflation in some countries.

## Corporate Price to Earnings (In percent)



Source: OECD and IMF staff calculations.  
 Note: Asia weighted average of Australia, Japan, Korea and New Zealand.

## House Price to Income Ratio (In percent)



# In addition, both private and public debt has increased in Asia, posing several policy challenges and risks.

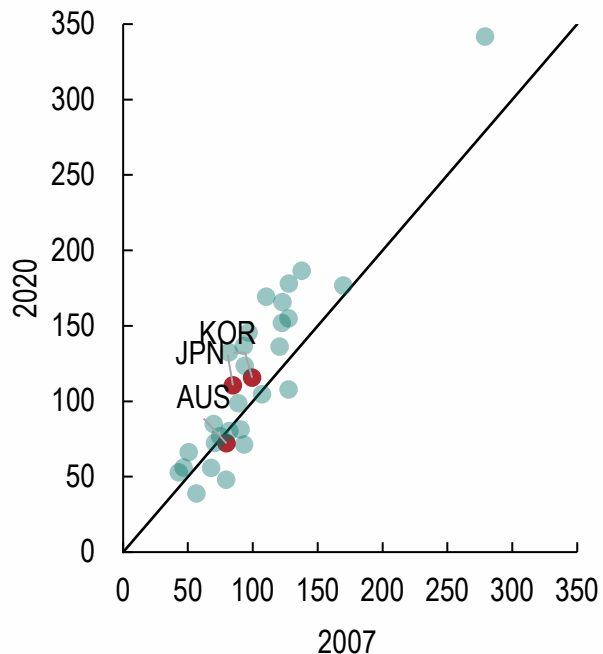
## Non-Financial Corporate Debt, Loans and Debt Securities

(In percent of GDP)

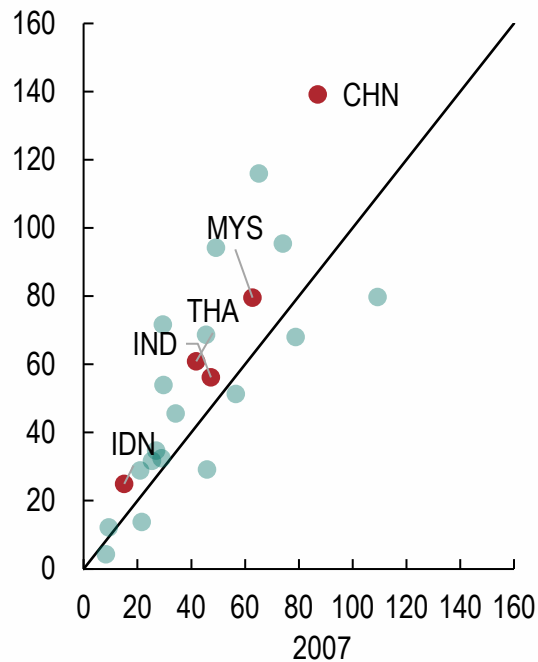
## General Government Debt

(In percent of GDP)

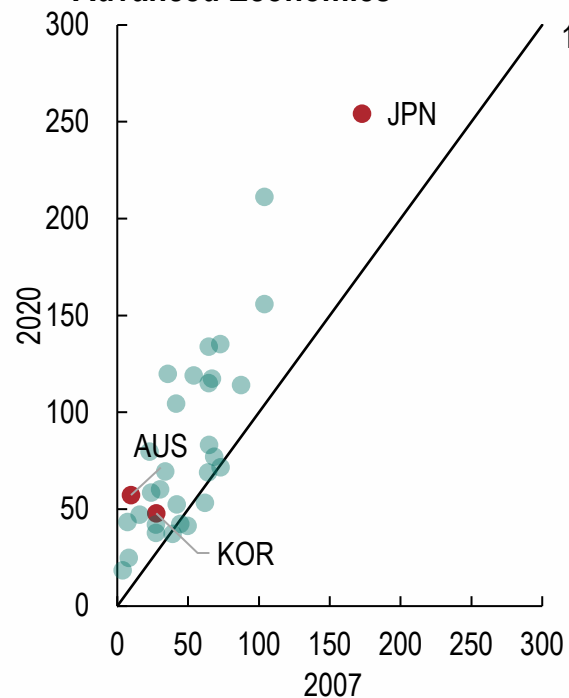
Advanced Asia vs Other Advanced Economies



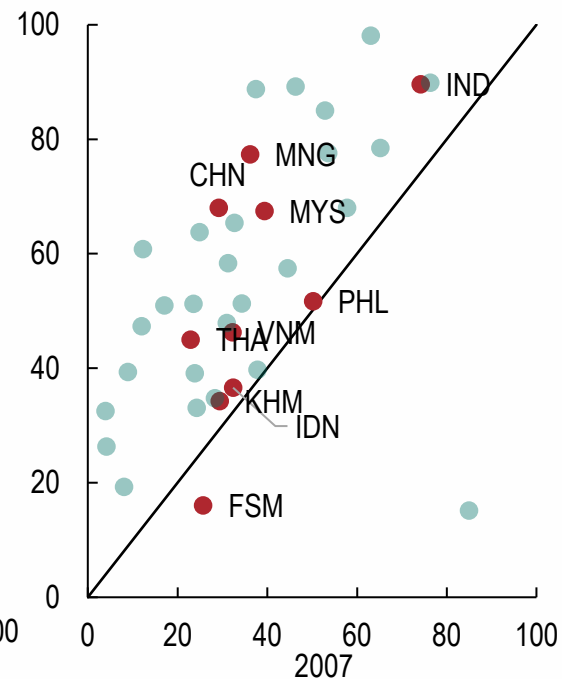
Emerging Asia vs Other Emerging Economies



Advanced Asia vs Other Advanced Economies



Emerging Asia vs Other Emerging Economies



Source: IMF Global Debt Database and IMF staff calculations.

## Conclusions

- Rising CPI inflation has made some wonder if central banks are behind the curve.
- Could near-term financial-stability concerns be one factor constraining more aggressive rate hikes to control CPI inflation? This raises the question of whether monetary policy should have “leaned against the wind” on asset prices, especially in the several years prior to the pandemic.
- There is a rich debate on whether monetary policy should take into account asset price inflation or financial stability considerations, and there are good reasons to keep an open mind about new evidence and new arguments.
- In Asia, CPI inflation has been more moderate but is on the rise, and there are also pockets of financial vulnerabilities, posing difficult policy challenges.