Herd Immunity?
A First Shot at Analyzing Forecasts During COVID-19

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What we do, what we don't

- What we do: present ***facts*** about evolution of forecasts from major private and public sector sources during 2020 and compare evolution and magnitude of forecast error with previous recessions and crises
  - Focus is on forecasts for real GDP growth
  - Some results for inflation and fiscal balance
  - If time permits, evidence on forecasts of recovery

- What we don't do: this is ***not*** an assessment of IMF forecasting performance during the pandemic.

  - IMF's Independent Evaluation Office (IEO) has an ongoing evaluation of the IMF's Emergency Response to the Pandemic. Link to the Issues Paper for the evaluation: https://ieo.imf.org/-/media/IEO/Files/evaluations/ongoing/erp-draft-issues-paper.ashx

Relevant findings from the literature

1) “No overshooting”: smooth adjustment of forecasts toward outcome over the course of a recession/crisis year

2) “Herding” between private and public forecasts: near-perfect collinearity between Consensus Forecasts and IMF forecasts

Main findings of this paper

Pre-pandemic

1) "No overshooting": smooth adjustment of forecasts toward outcome over the course of a recession/crisis year

2) "Herding" between private and public forecasts: near-perfect collinearity between Consensus Forecasts and IMF forecasts

During Pandemic

1) "Overshooting": mid-year 2020 forecasts "overshot" the outcome and then back-tracked

2) Some departure from herding:
- Gaps between mid-year Consensus and IMF forecasts
- Increased dispersion within Consensus

REVIEW OF PRE-PANDEMIC FINDINGS

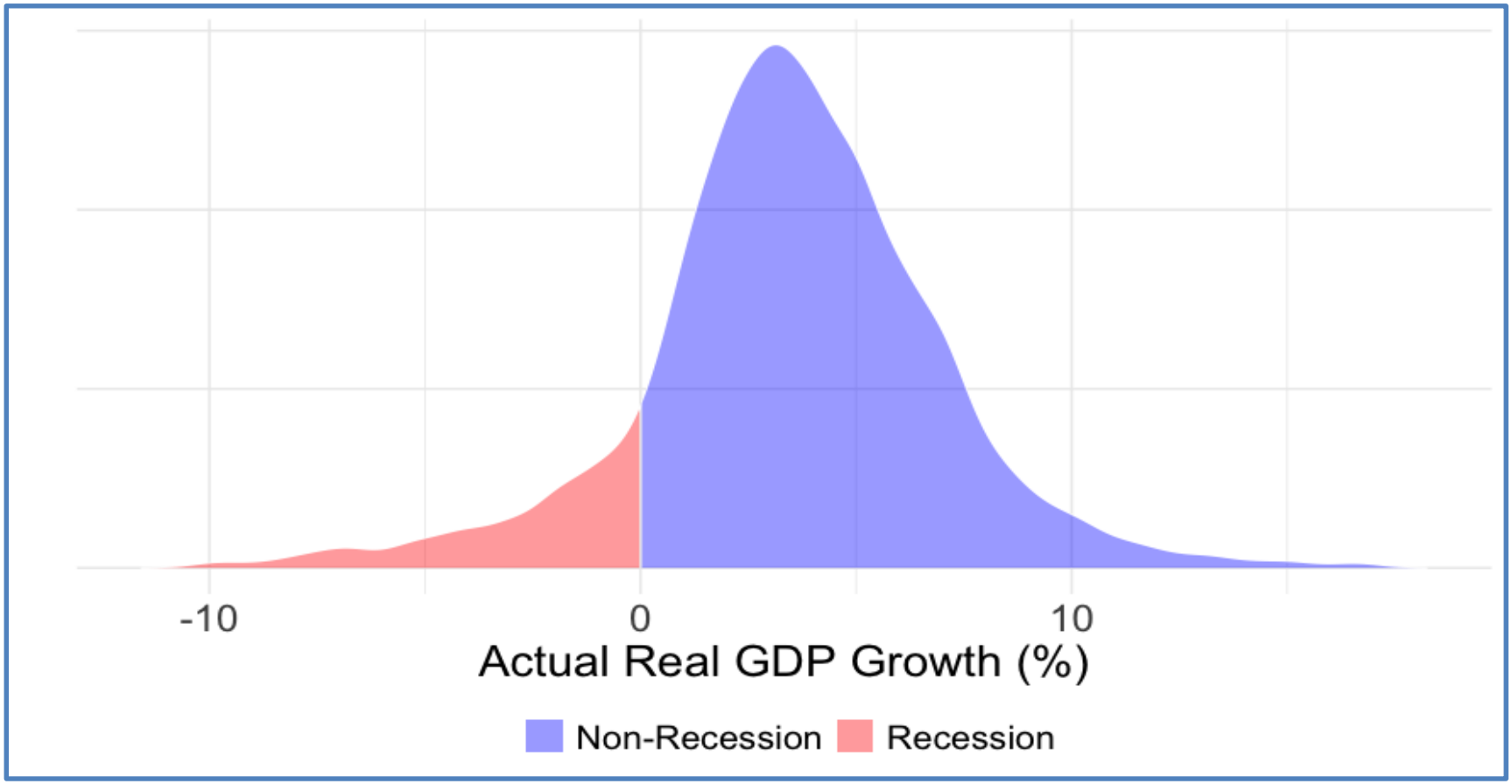
Data set

- Data set (An, Jalles and Loungani, 2019; An, Collodel and Loungani, 2021):
  - WEO and Consensus forecasts, 1990 to 2019

- Definition of recession/crisis: a year in which real GDP falls
  - Gives 159 recession episodes to study for Consensus Forecasts
  - Gives 436 recession **episodes** to study for IMF's World Economic Outlook (WEO) forecasts

  - More precise definitions of recessions (e.g. based on NBER-type dating methodologies) don't affect conclusions—see evidence on this in Loungani, Stekler and Tamirisa, *International Journal of Forecasting*, 2013.

Prevalence of recessions



Forecast evolution during recessions

- It's not surprising that recessions are difficult to forecast in advance
  - But remember Herman Stekler's dictum:

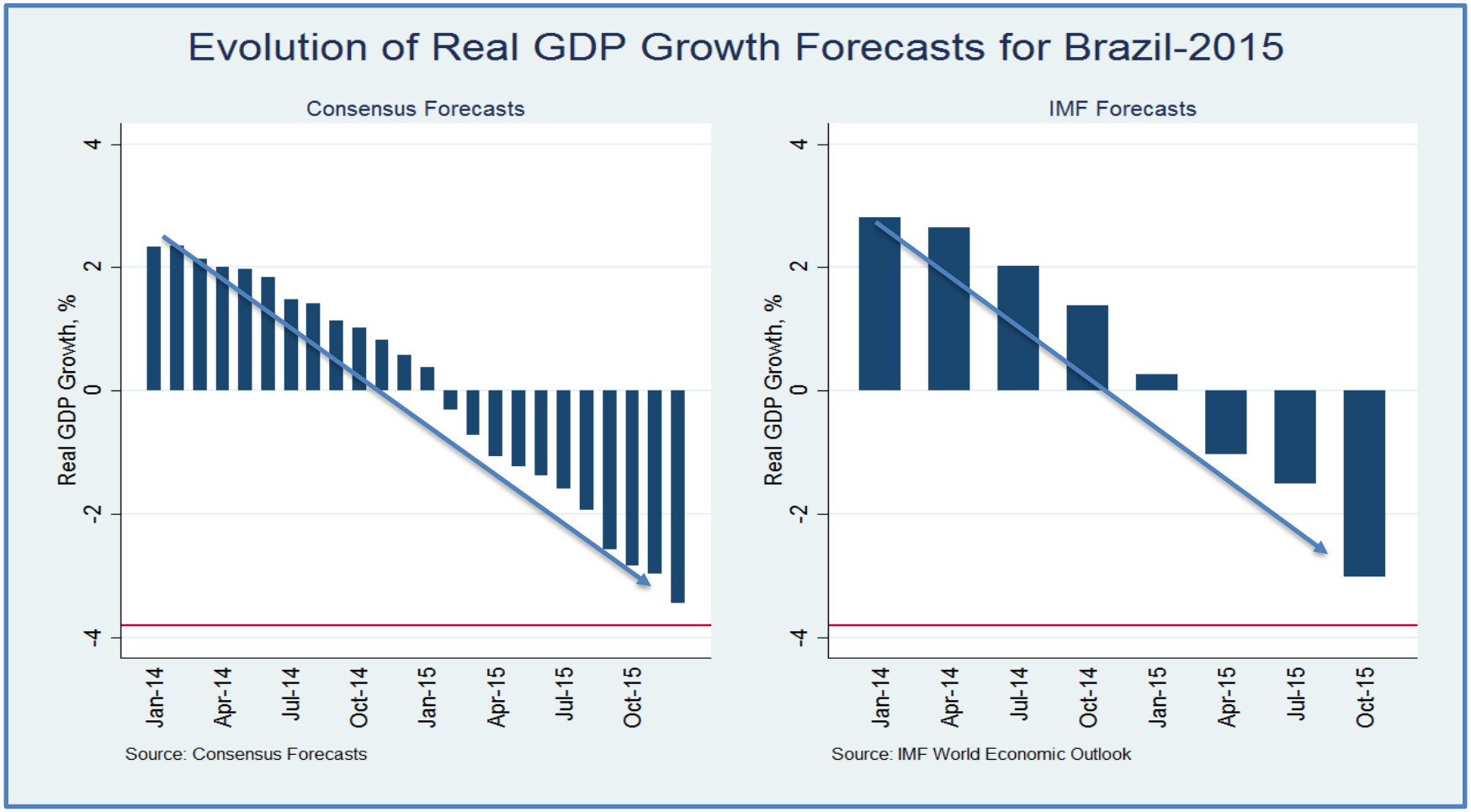
  "forecast recessions early and often"

- Our focus is on evolution of forecasts during the year of the recession

Departures from efficiency

- In the past, forecasters have been reluctant to make sharp revisions in forecasts during recessions (Loungani, 2001; IEO 2014; An, Jalles and Loungani, 2019)
  - successive revisions of forecasts have been highly correlated
- From forecast assessment perspective, the serial correlation in forecast revisions is a departure from efficiency
  - "if I can look at your most recent forecasts and accurately say, "Your next forecast will be 2% lower than today's", then you can surely improve your forecast" (Nordhaus, 1987, p. 673)"
  - Efficient forecasts should "appear **jagged** because they incorporate all news quickly. Inefficient forecasts appear smoother … for they let the news seep in slowly" (Nordhaus)

Example: Brazil 2015 Recession
Evolution of Consensus and IMF Forecasts over 2014-15

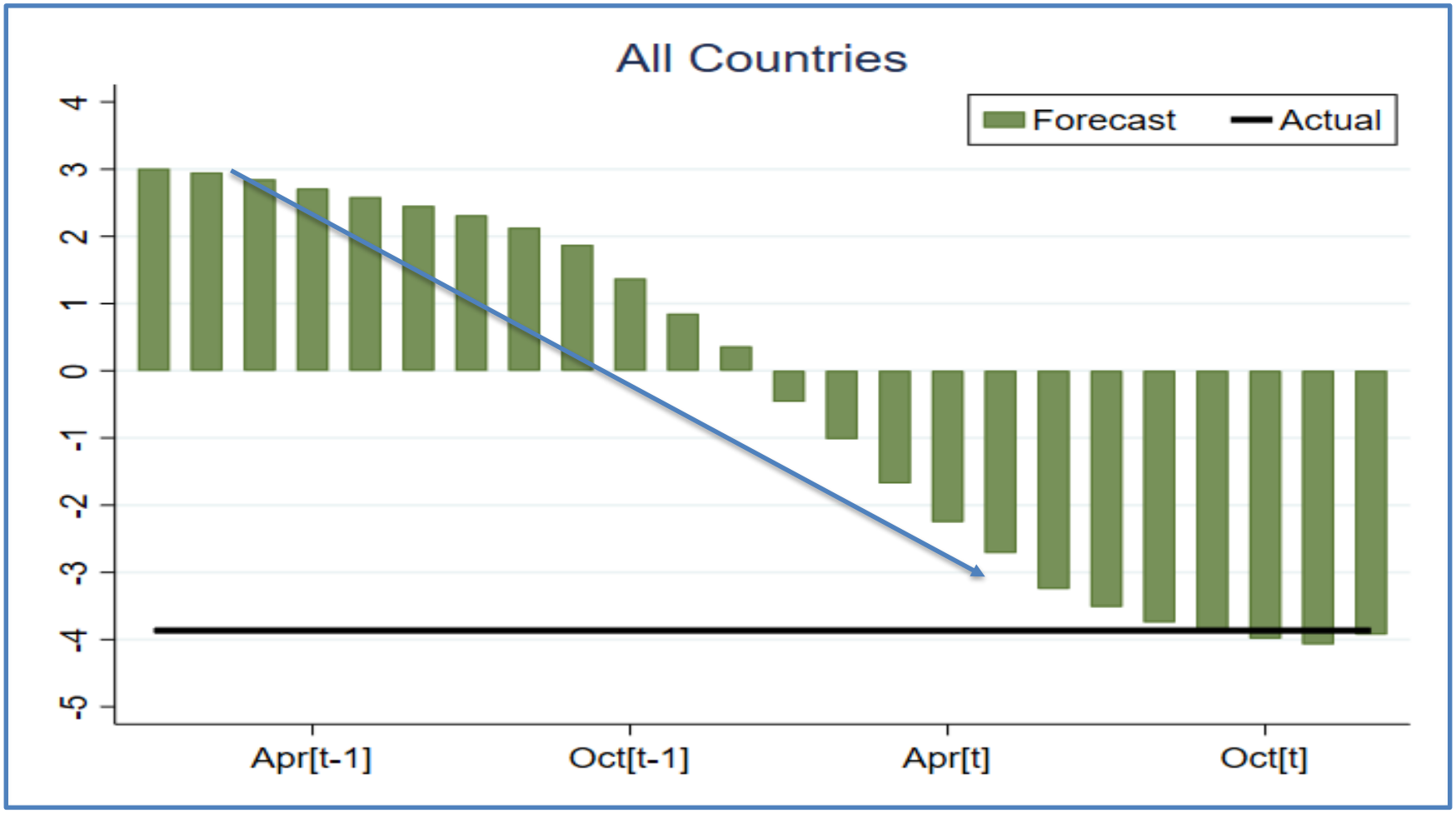


Possible reasons for smooth adjustment

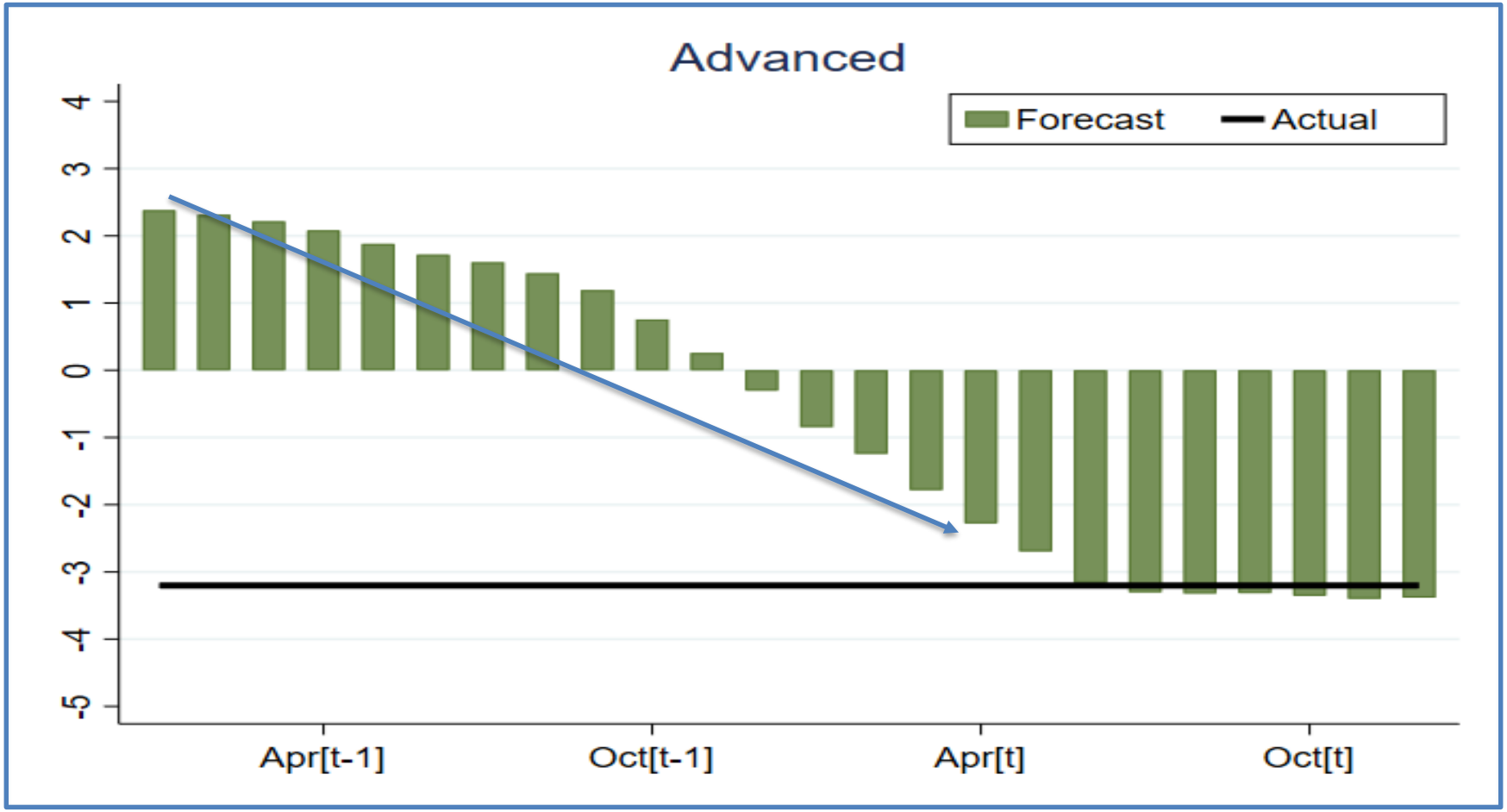
- News arrived in small incremental packets leading to smooth adjustment
  - possible in some cases, unlikely to be true generally
- Forecasters avoided adjustment so as be able to tell a consistent 'story' to customers/clients

  ("You can't handle the truth")
- Baseline forecast changed smoothly but accompanying text becomes more alarmist

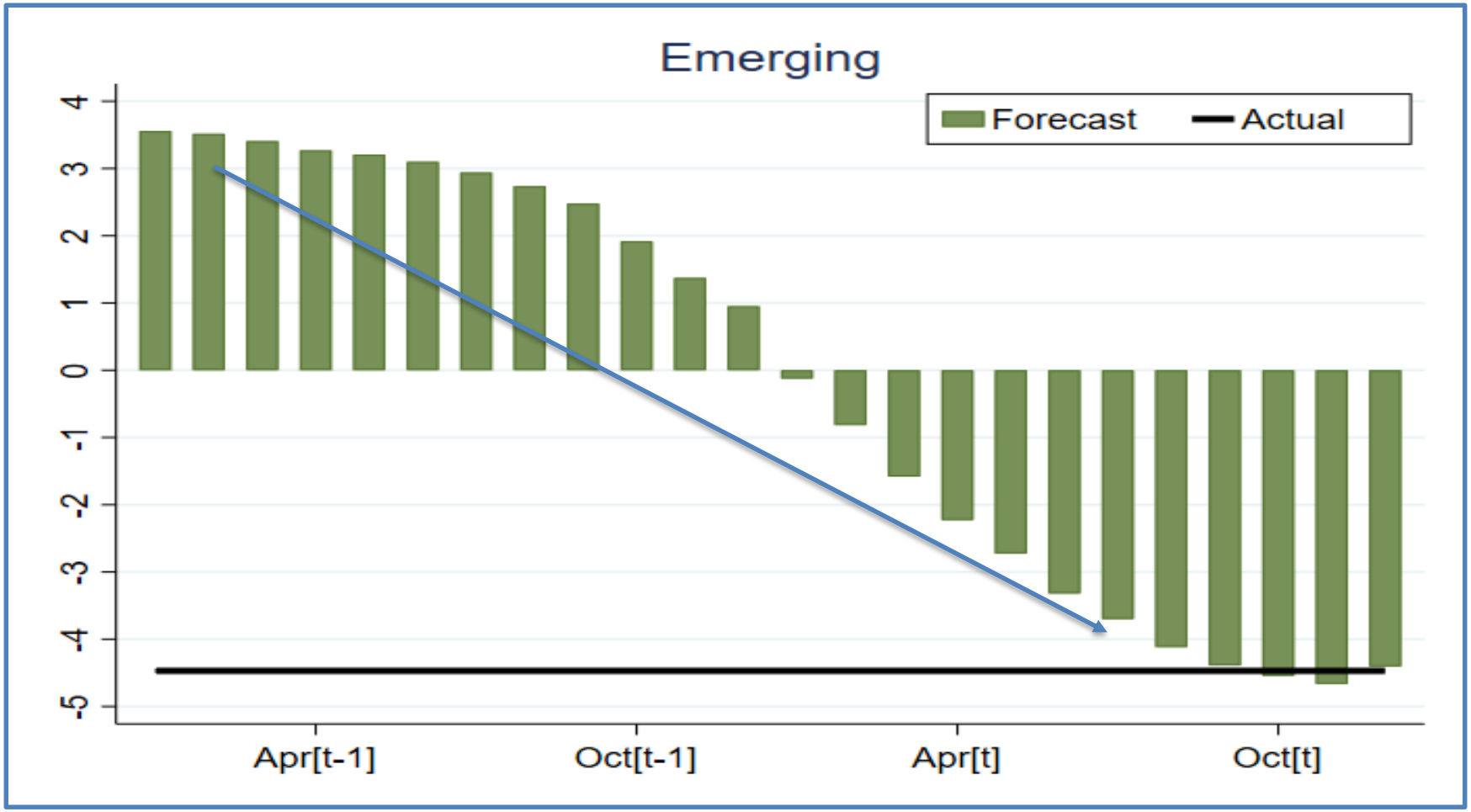
During past recessions, Consensus Forecasts have been marked down smoothly (average of 159 recessions)



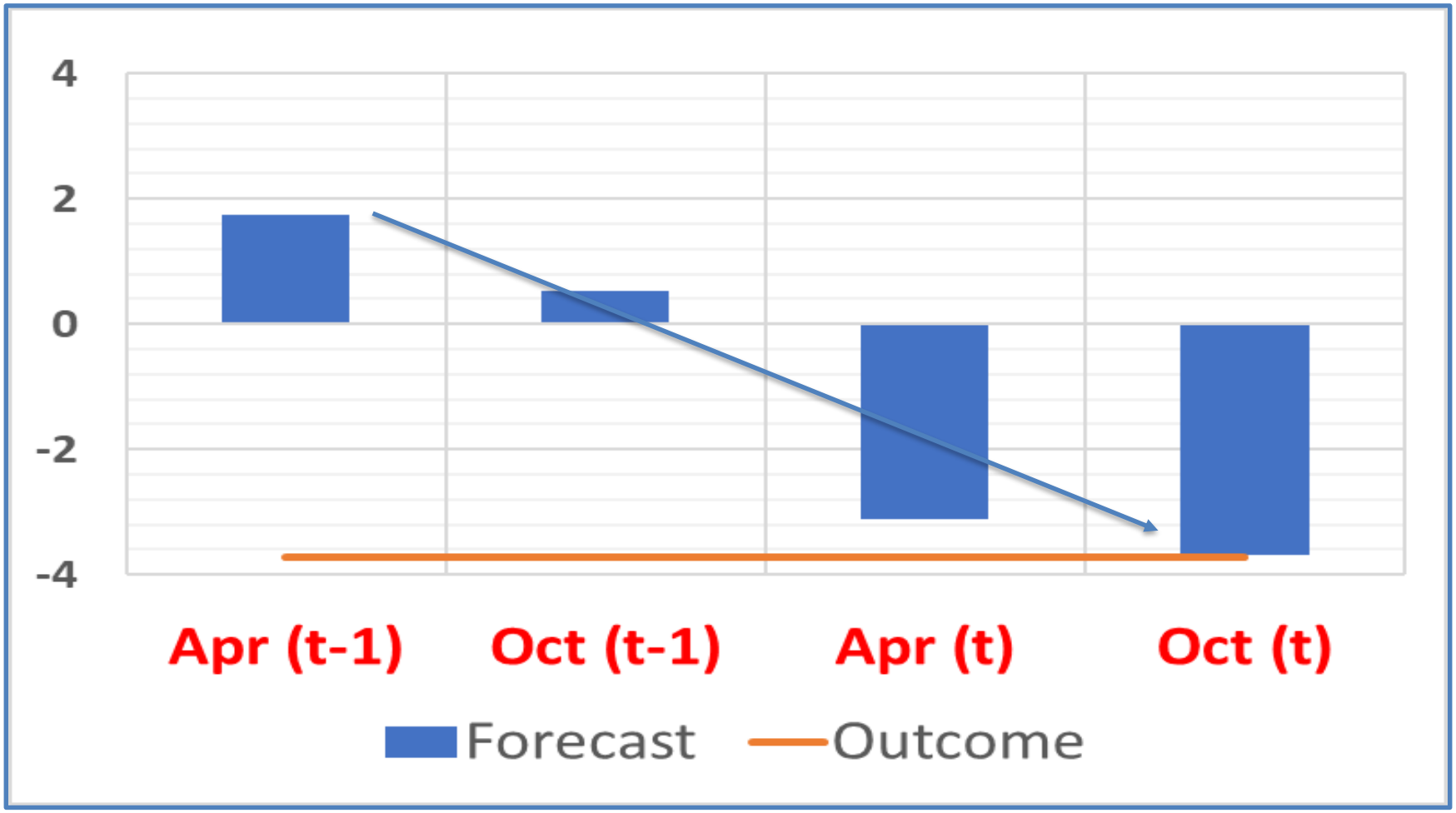
During past AE recessions, Consensus Forecasts have been marked down smoothly (average of 69 recessions)



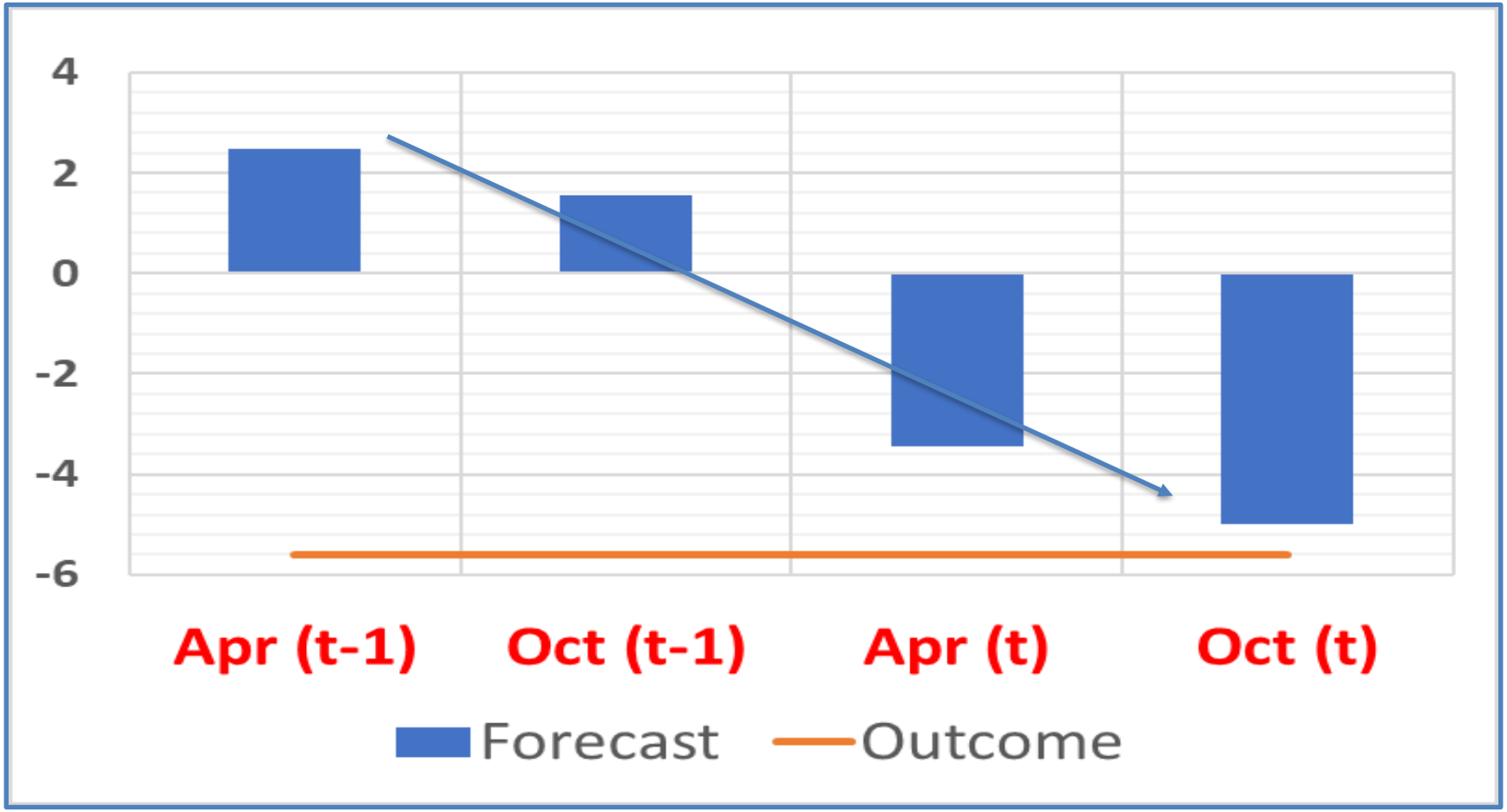
During past EM recessions, Consensus Forecasts have been marked down smoothly (average of 90 recessions)



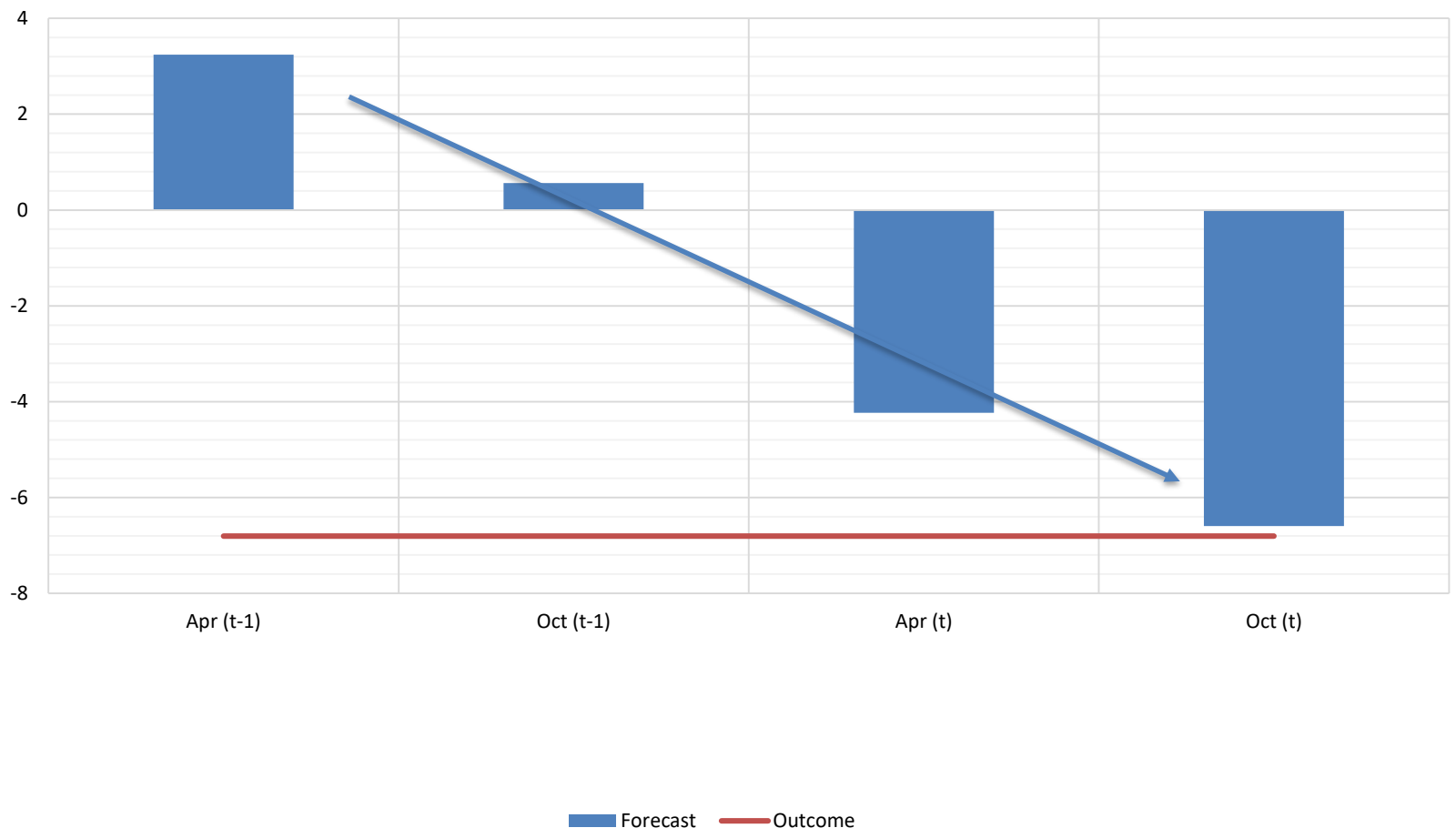
During past AE recessions, WEO forecasts have been marked down smoothly (average of 76 recessions)



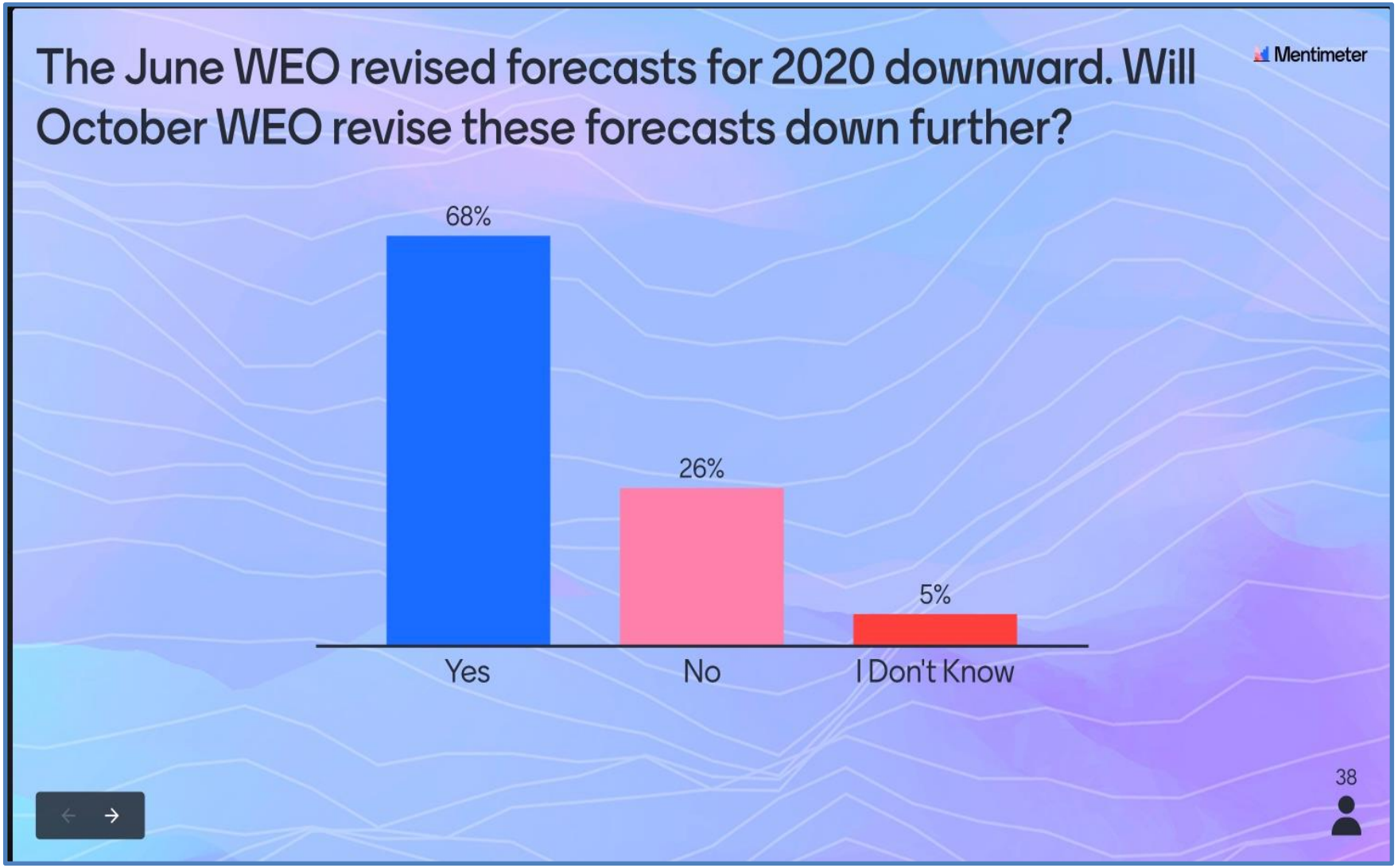
During past EM recessions, WEO forecasts have been marked down smoothly (average of 219 recessions)



During past LIC recessions, WEO forecasts have been marked down smoothly (average of 141 recessions)

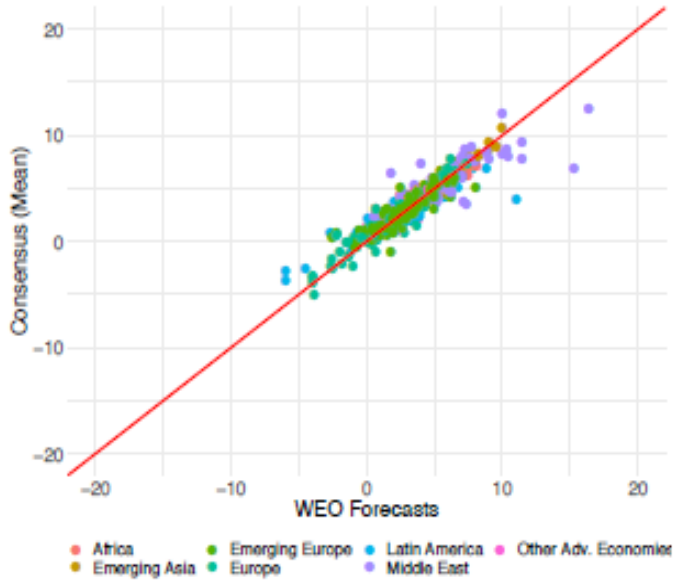


DETOUR: RESULTS OF A POLL CONDUCTED BEFORE THE START OF MY JUNE 2020 PRESENTATION AT THE IMF


The June WEO revised forecasts for 2020 downward. Will October WEO revise these forecasts down further?
Mentimeter
68%
26%
5%
Yes
No
I Don't Know
38

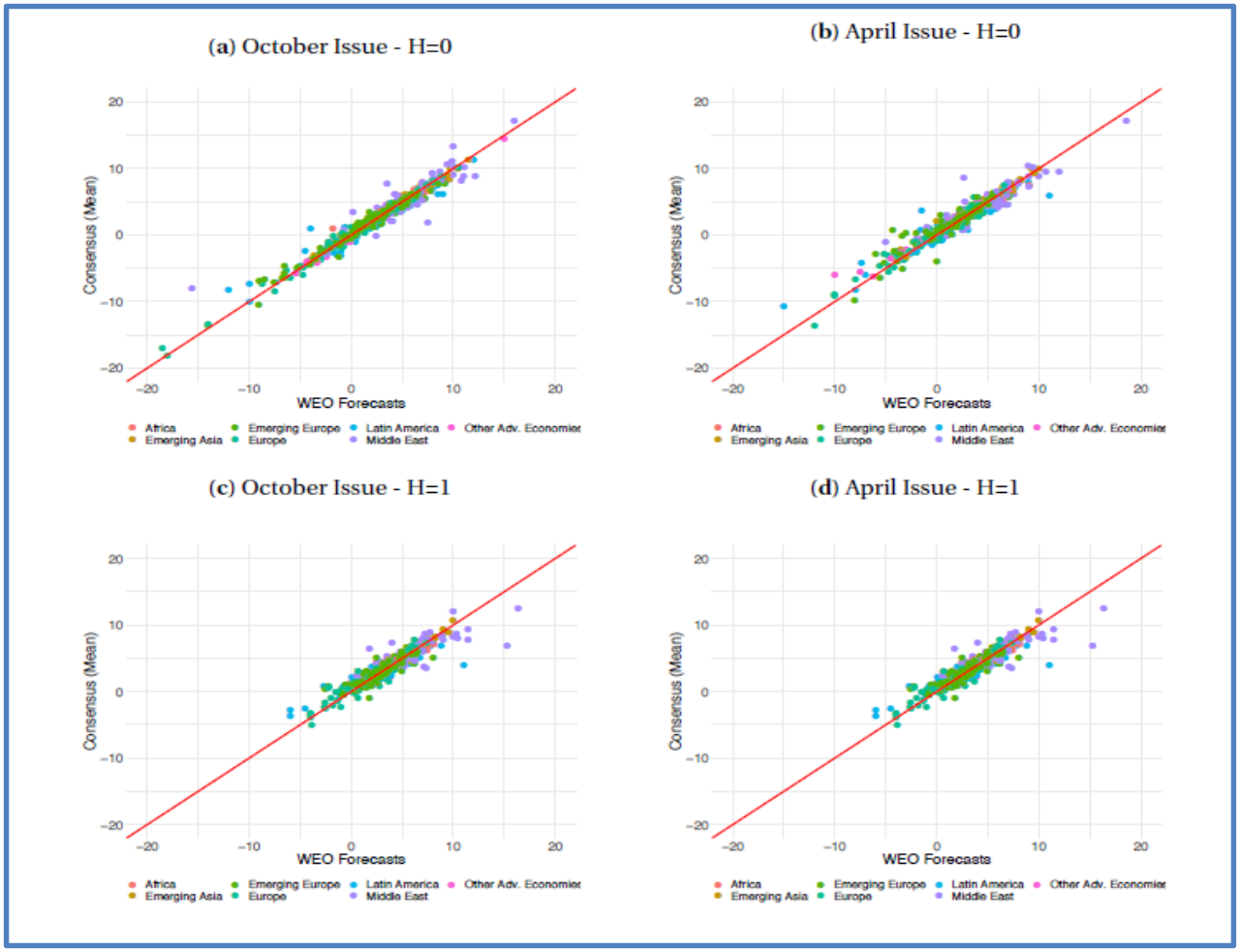
END OF DETOUR

“Herding” (Collinearity) of Forecasts

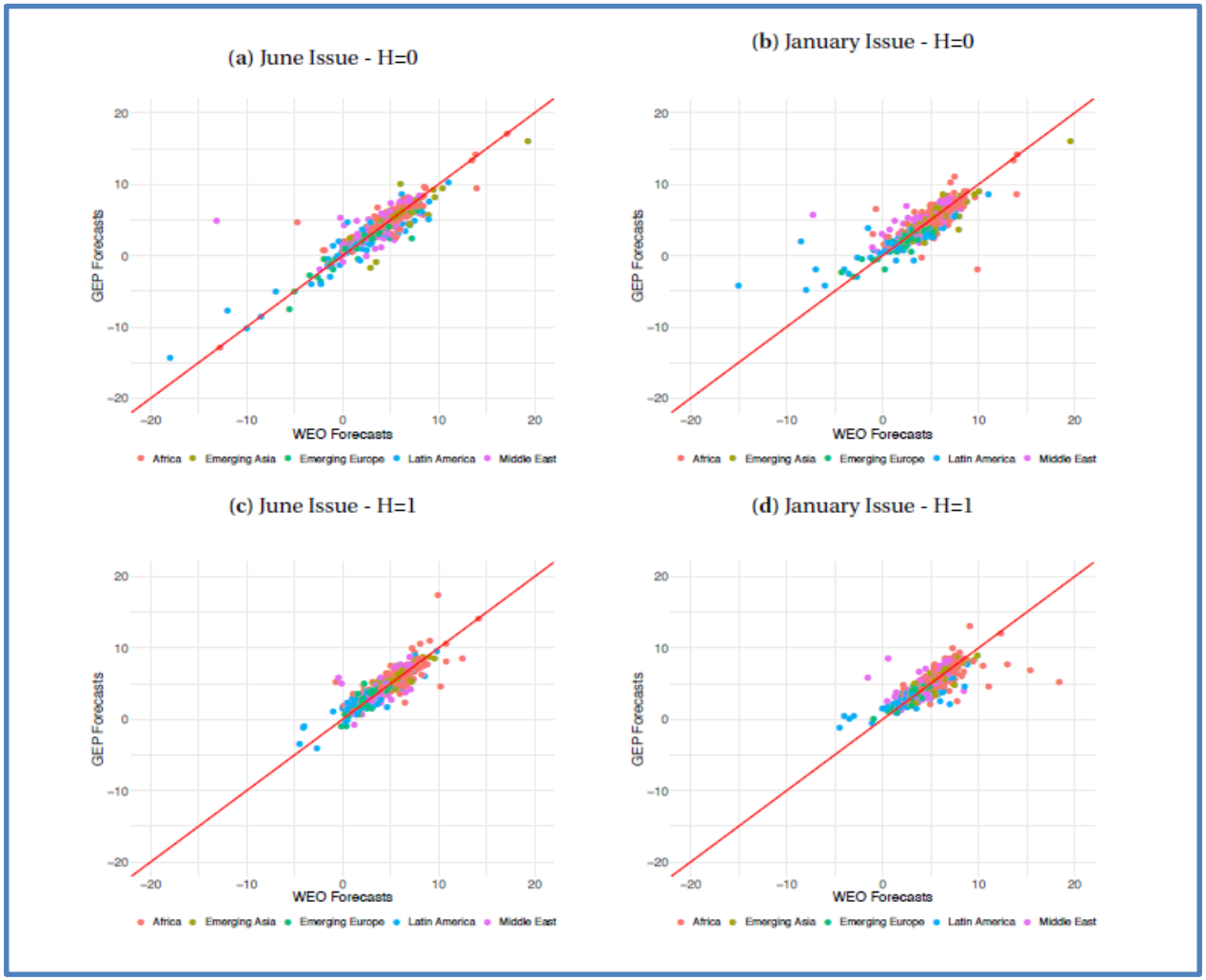


Note: Red line is 45 degrees line. Each dot represents a country-year forecast.

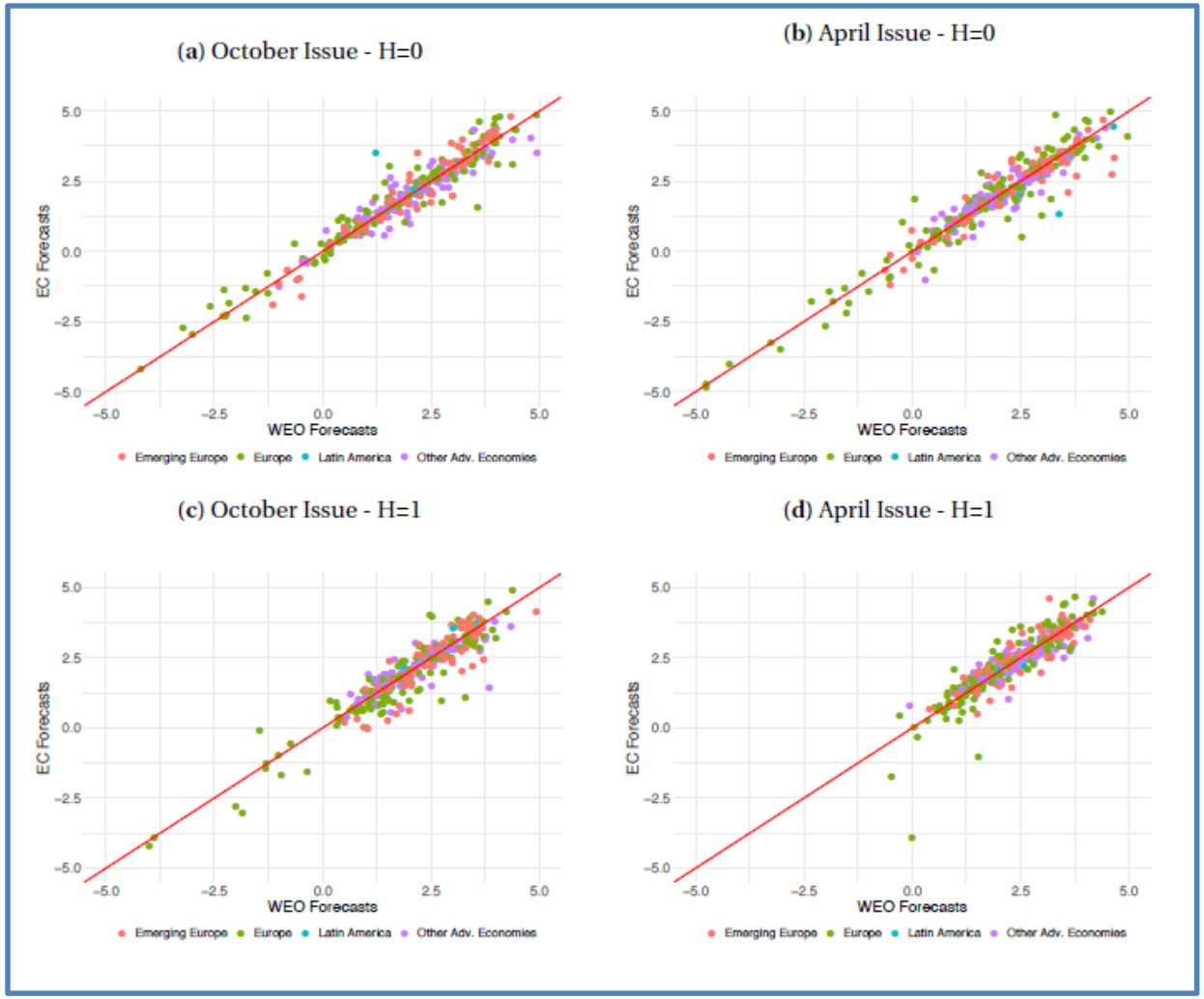
Collinearity of Consensus and IMF Forecasts



Collinearity of IMF and World Bank Forecasts



Collinearity of IMF and European Commission Forecasts



GROWTH FORECASTS DURING THE PANDEMIC: “OVERSHOOTING”

Did forecasters face unprecedented uncertainty during 2020?

- Difficult to measure uncertainty and compare changes over time

- Ahir, Bloom and Furceri try to quantify uncertainty based on text analysis of Economist Intelligence Unit (EIU) reports
  - By this measure, uncertainty higher during 2020 than during previous shocks (e.g. GFC)

Evolution of Forecasts During Pandemic: Data Set

- The ‘event’ being forecast is annual real GDP growth for 2020
- Data set consists of forecasts made over the course of 2020:
  - Consensus Forecasts, 54 countries (advanced & emerging), monthly
  - IMF WEO forecasts, 188 countries, 4 times a year
  - World Bank GEP forecasts, 122 countries (emerging & low-income), twice a year

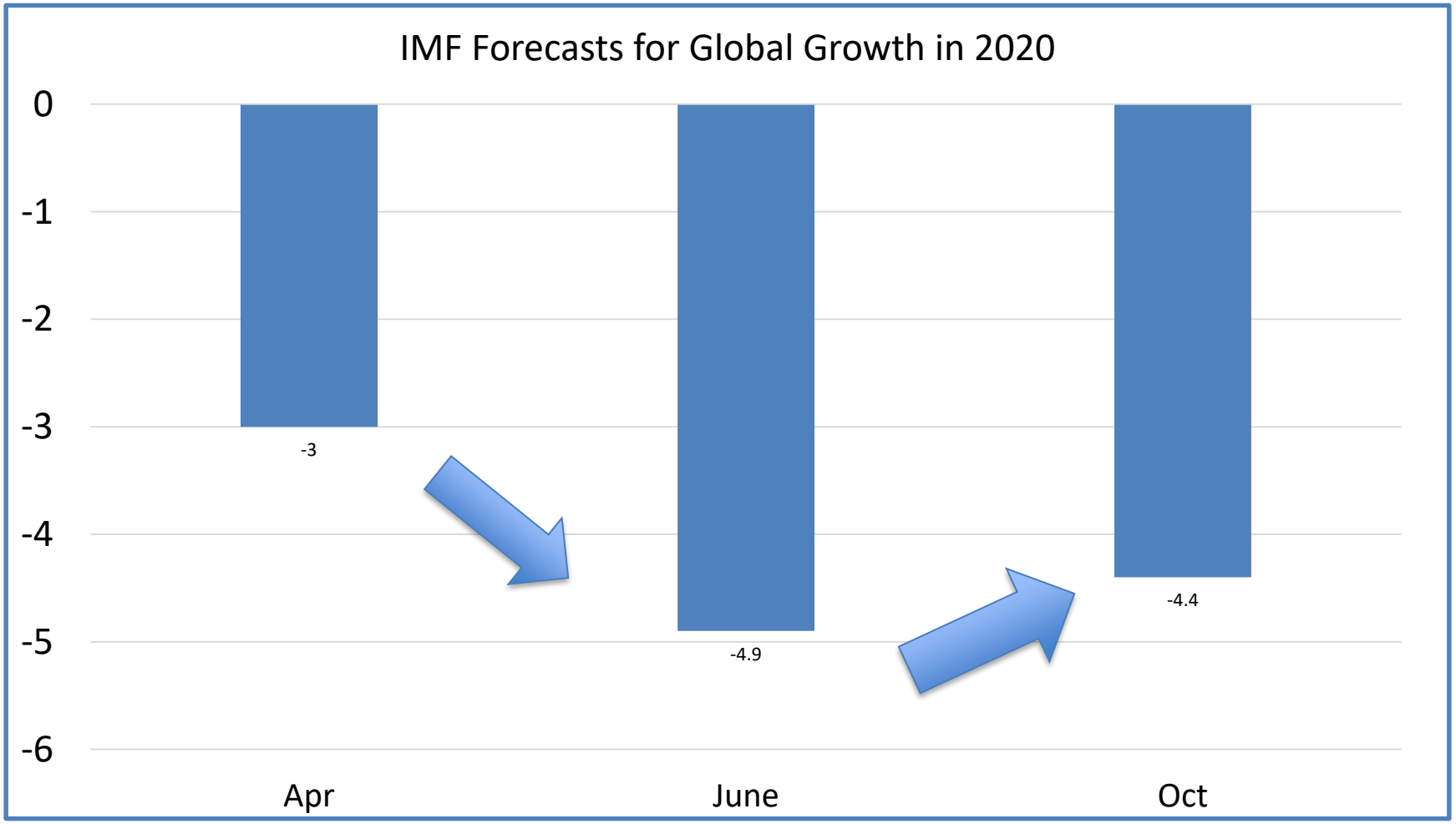
Timing of release of Consensus, WEO and GEP during 2020

- Consensus Forecasts are published around the middle of each month

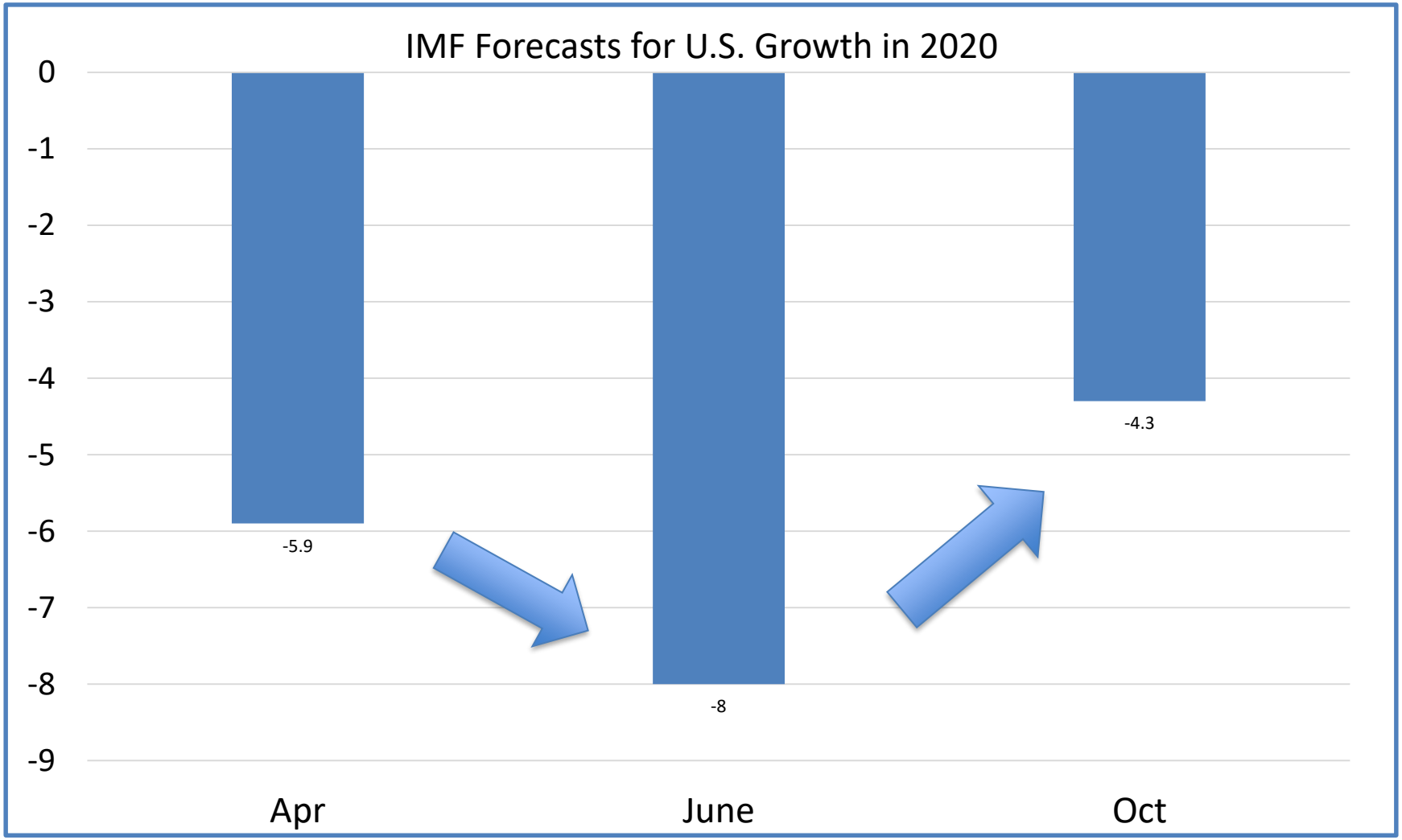
- WEO reports were released on:
  - 14 April 2020
  - 24 June 2020
  - 13 October 2020

- GEP report was released on 8 June 2020

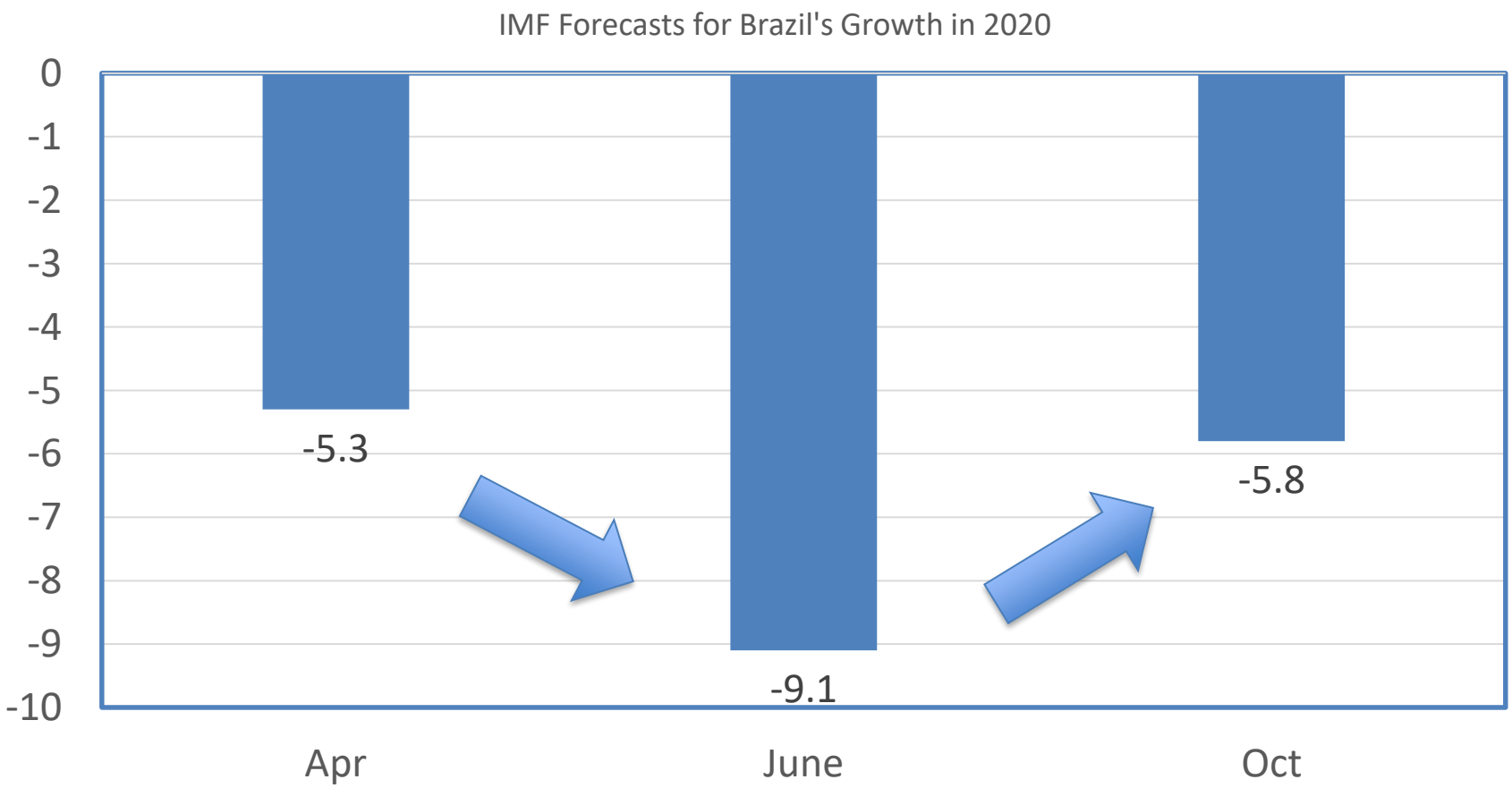
“Overshooting” (“Jaggedness”) in IMF Forecasts for Global Growth in 2020



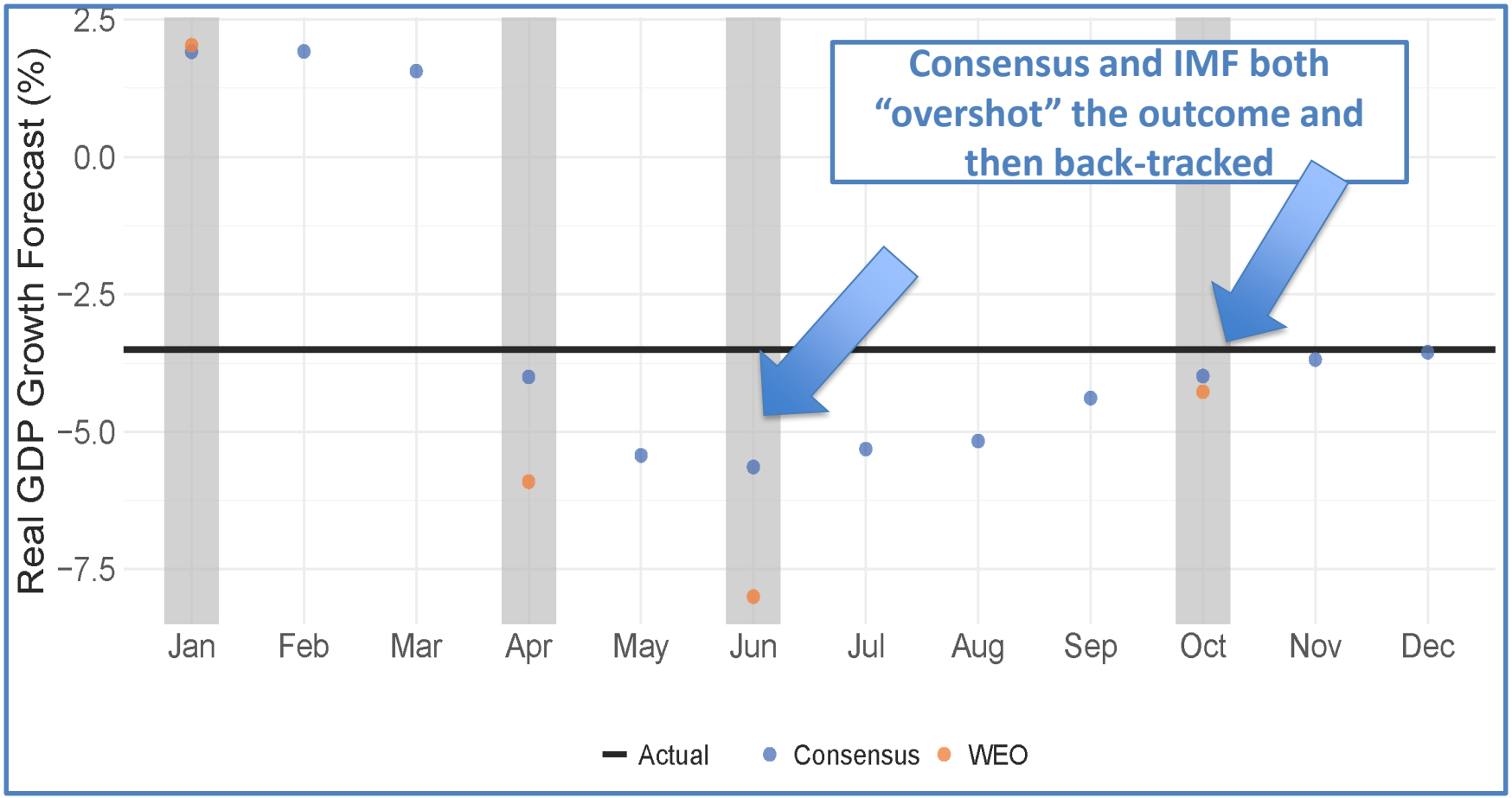
Overshooting in IMF Forecasts for U.S. Growth in 2020



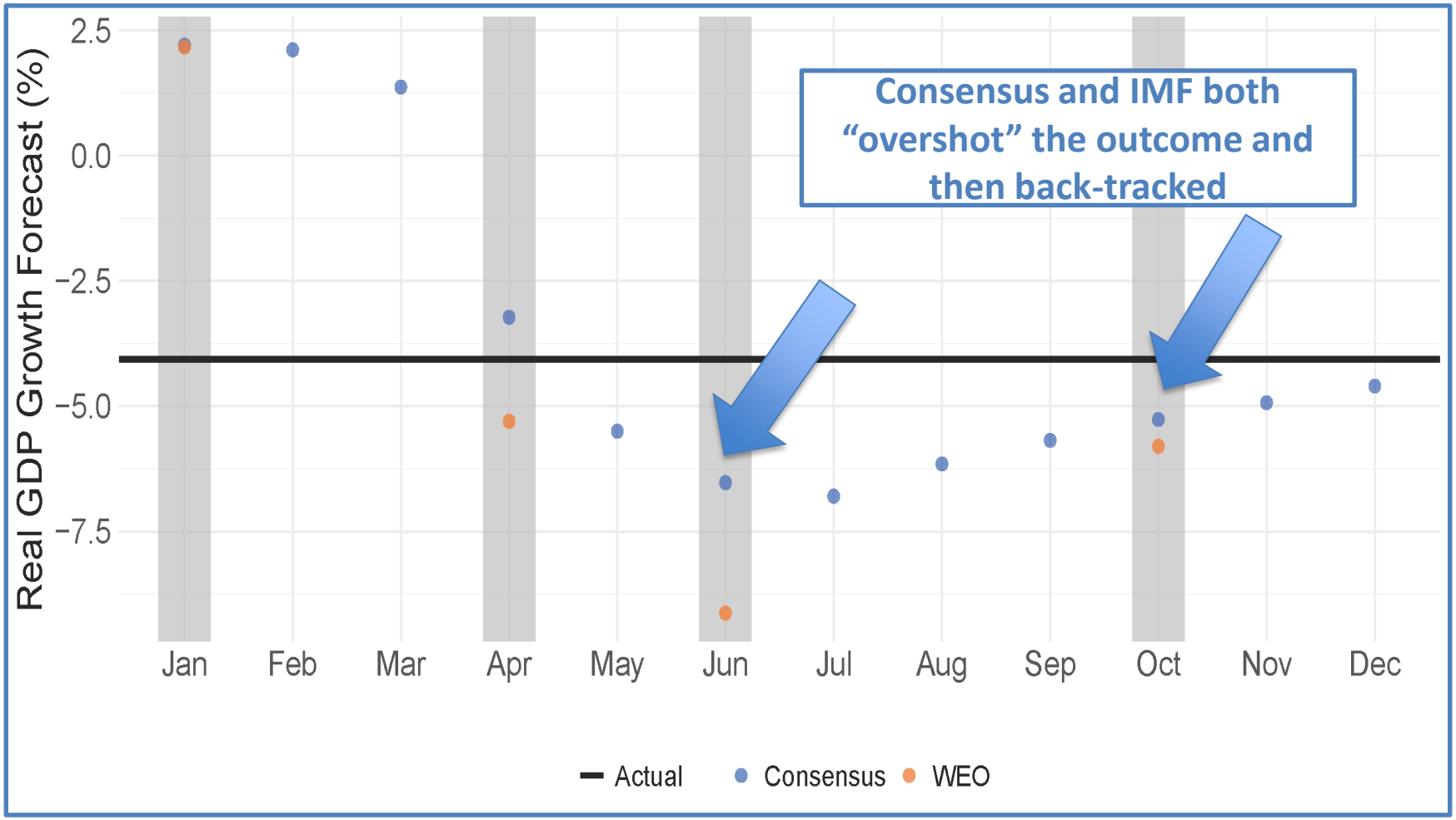
Overshooting in IMF Forecasts for Brazil's Growth in 2020



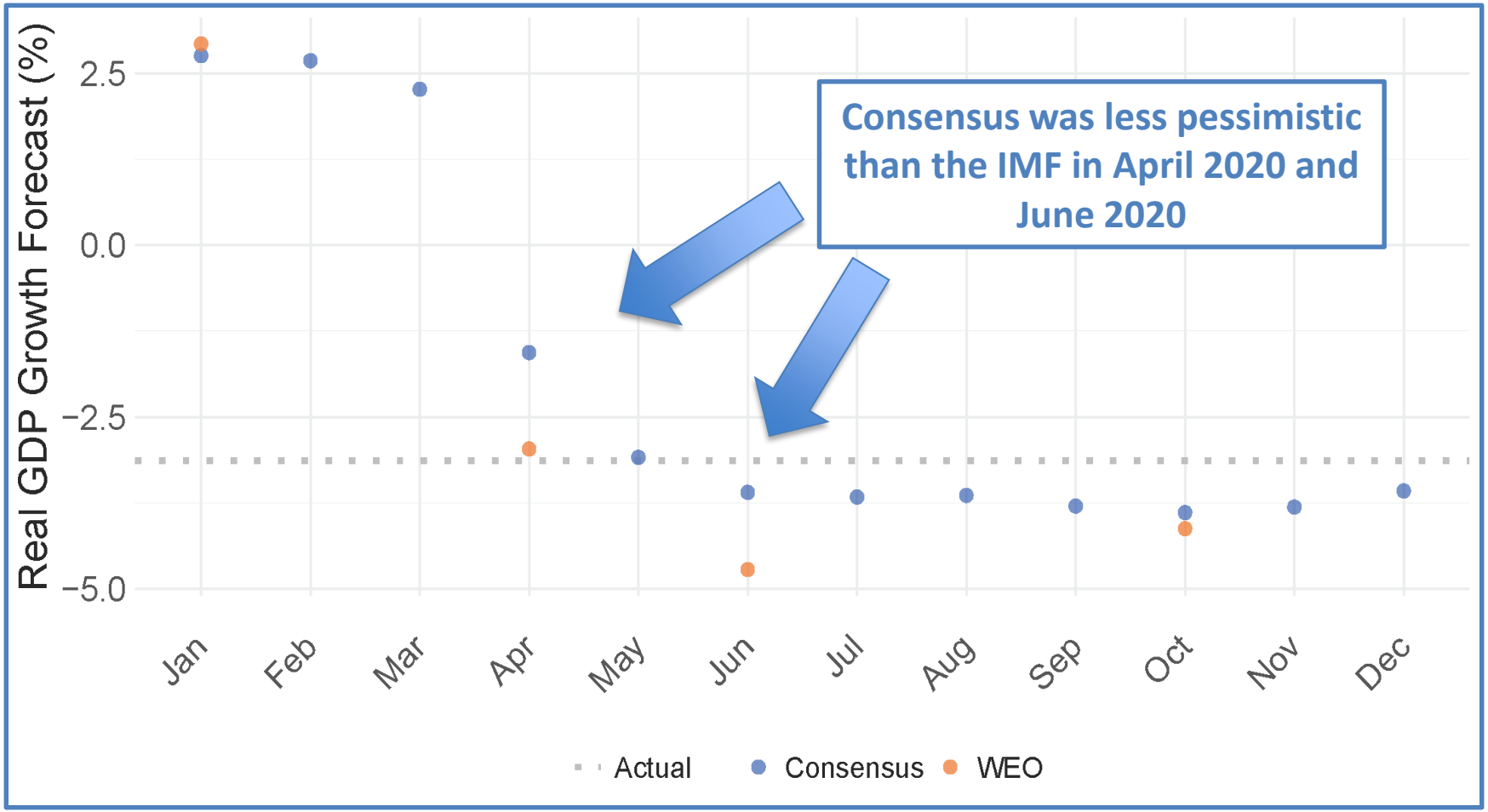
Evolution of Consensus and IMF real GDP growth forecasts during 2020: United States



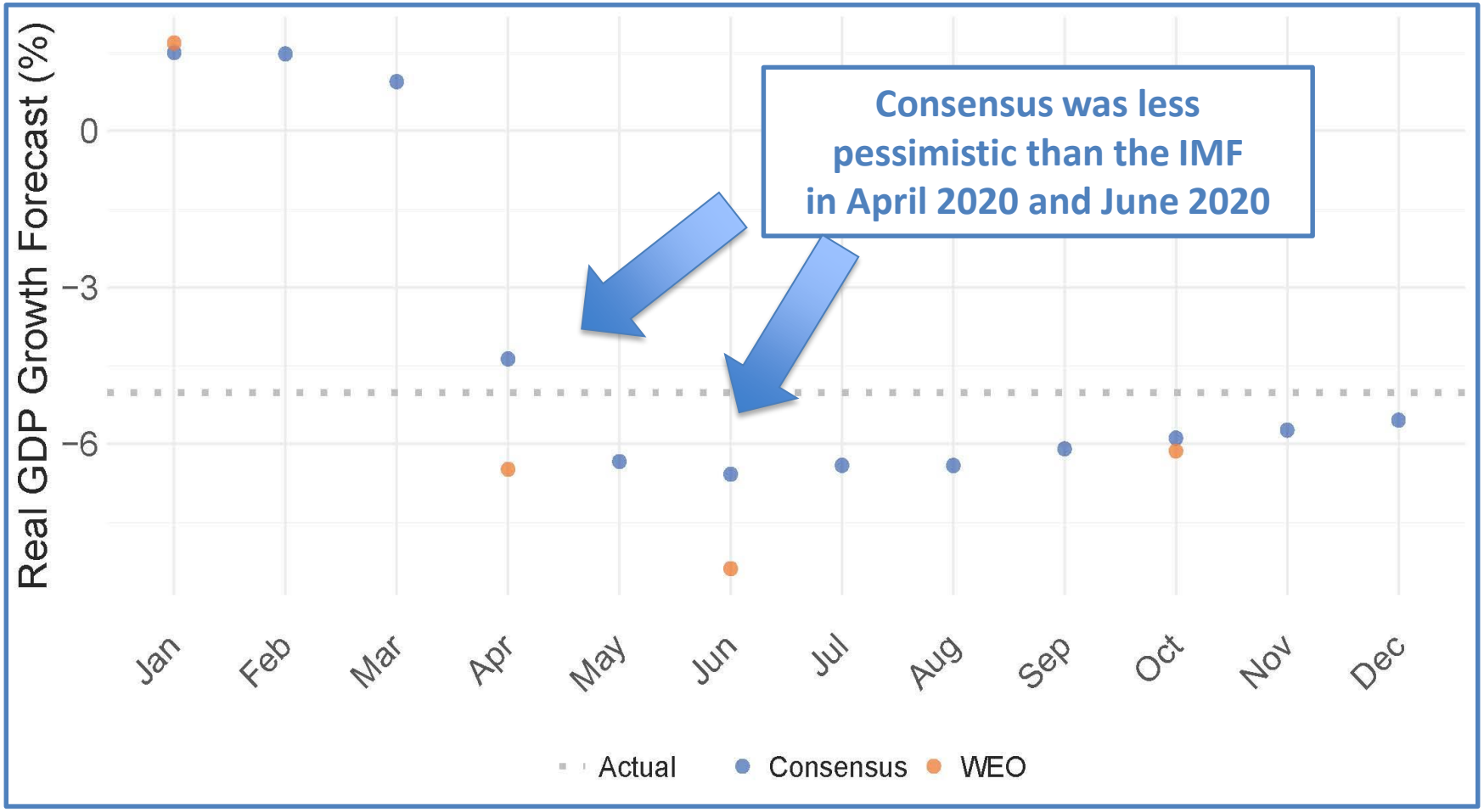
Evolution of Consensus and IMF real GDP growth forecasts during 2020: Brazil



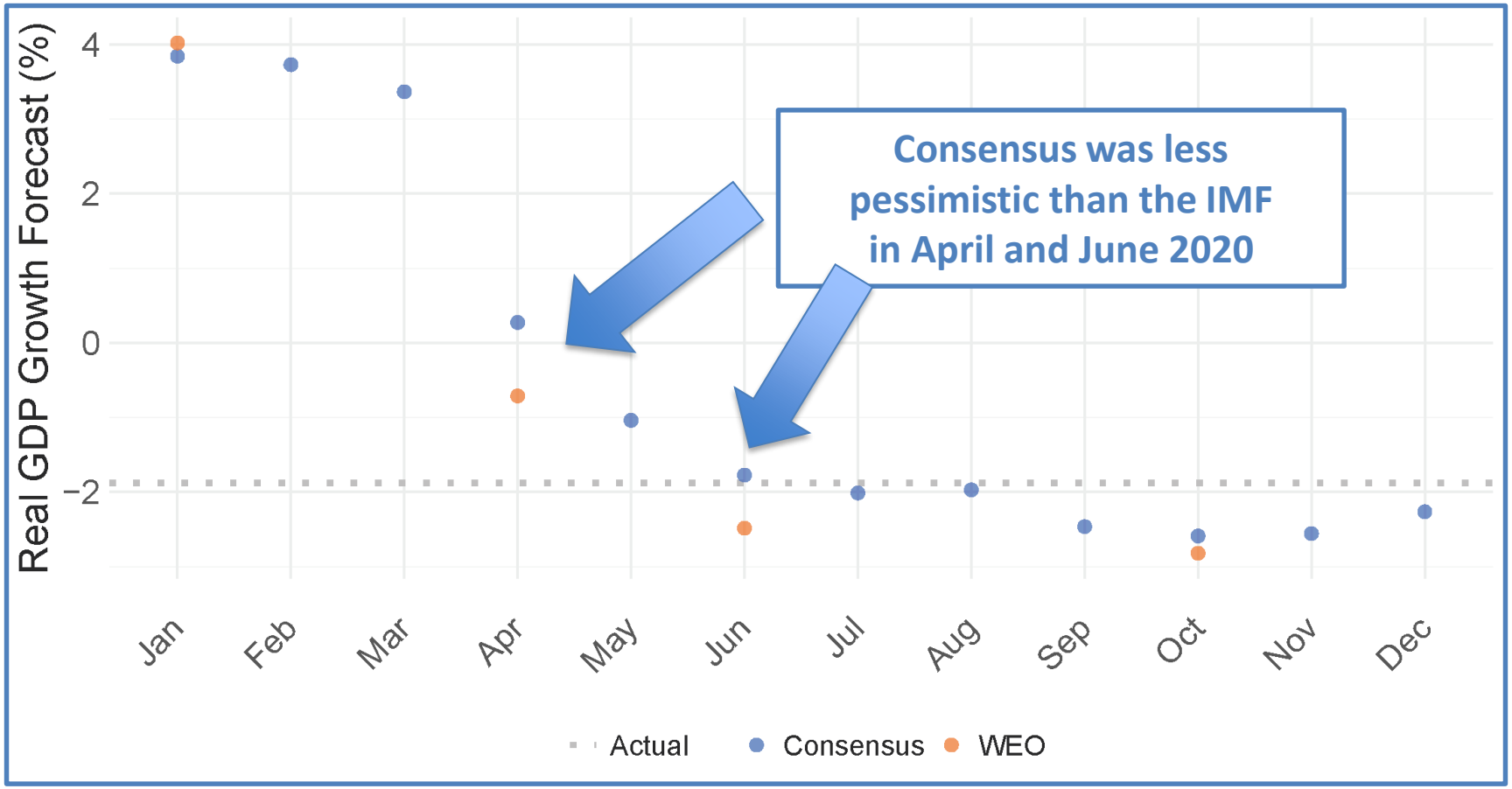
Evolution of Consensus and IMF real GDP growth forecasts during 2020: Global Growth



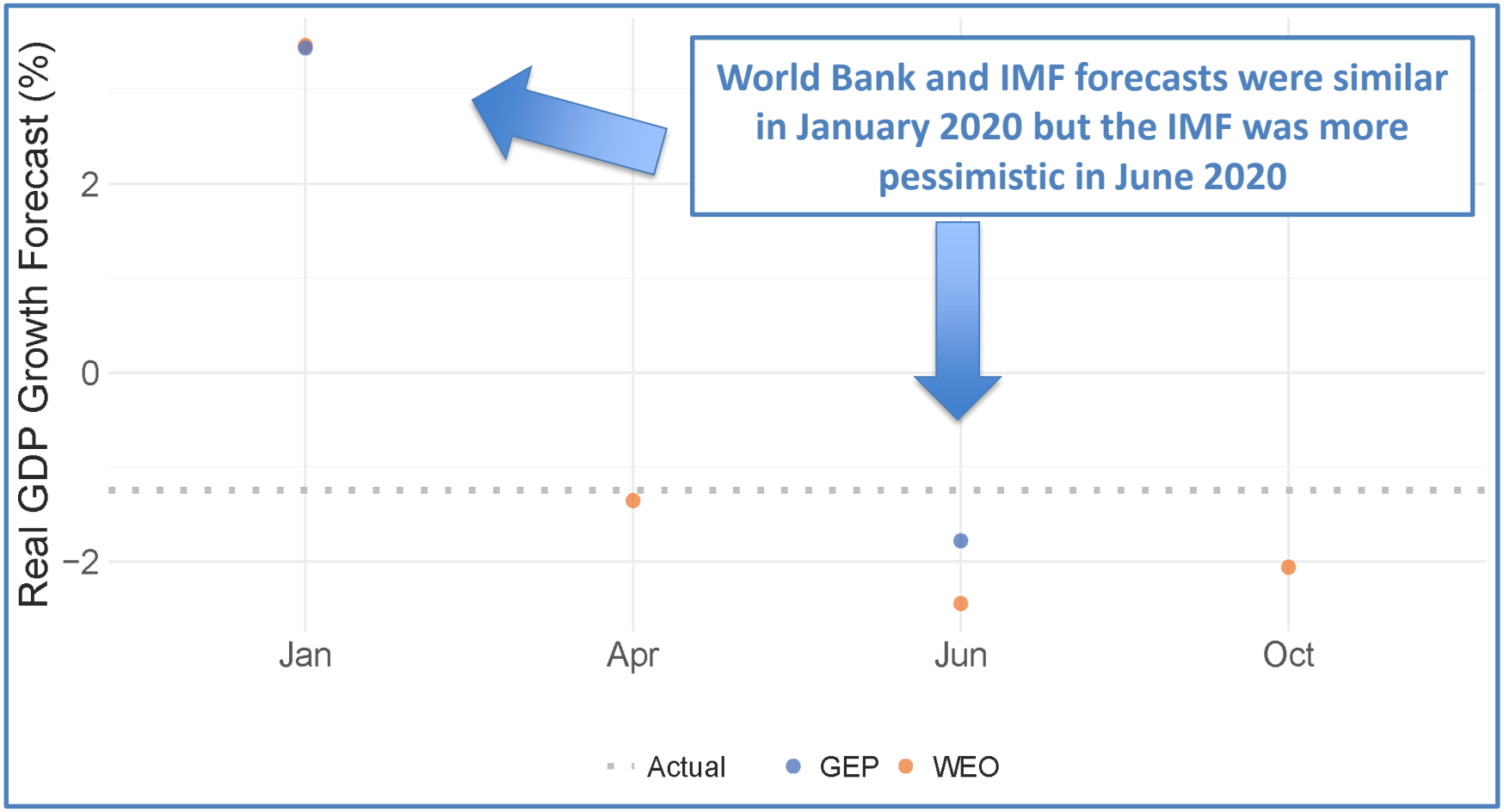
Evolution of Consensus and IMF real GDP growth forecasts during 2020: Advanced Economies



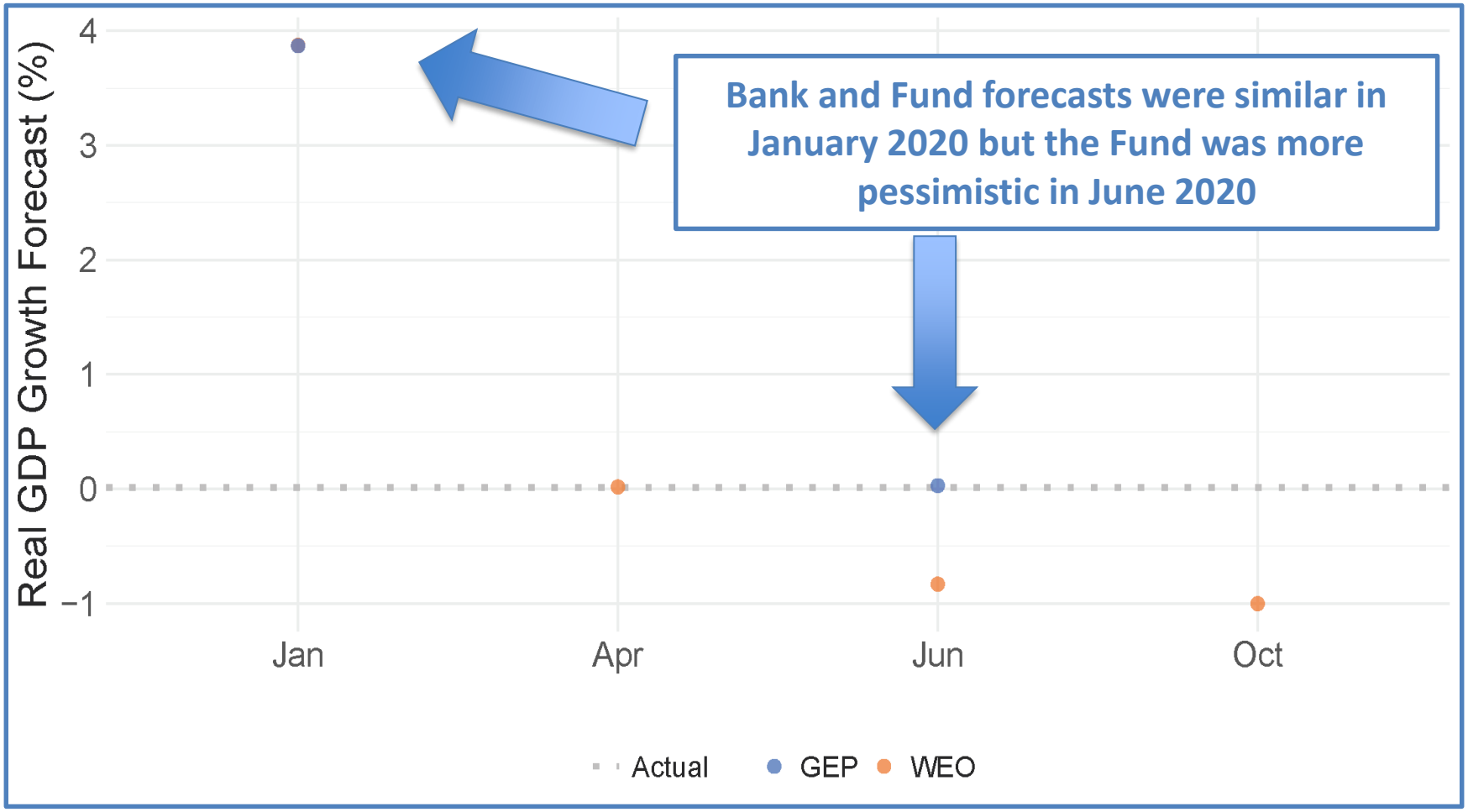
Evolution of Consensus and IMF real GDP growth forecasts during 2020: Emerging Markets



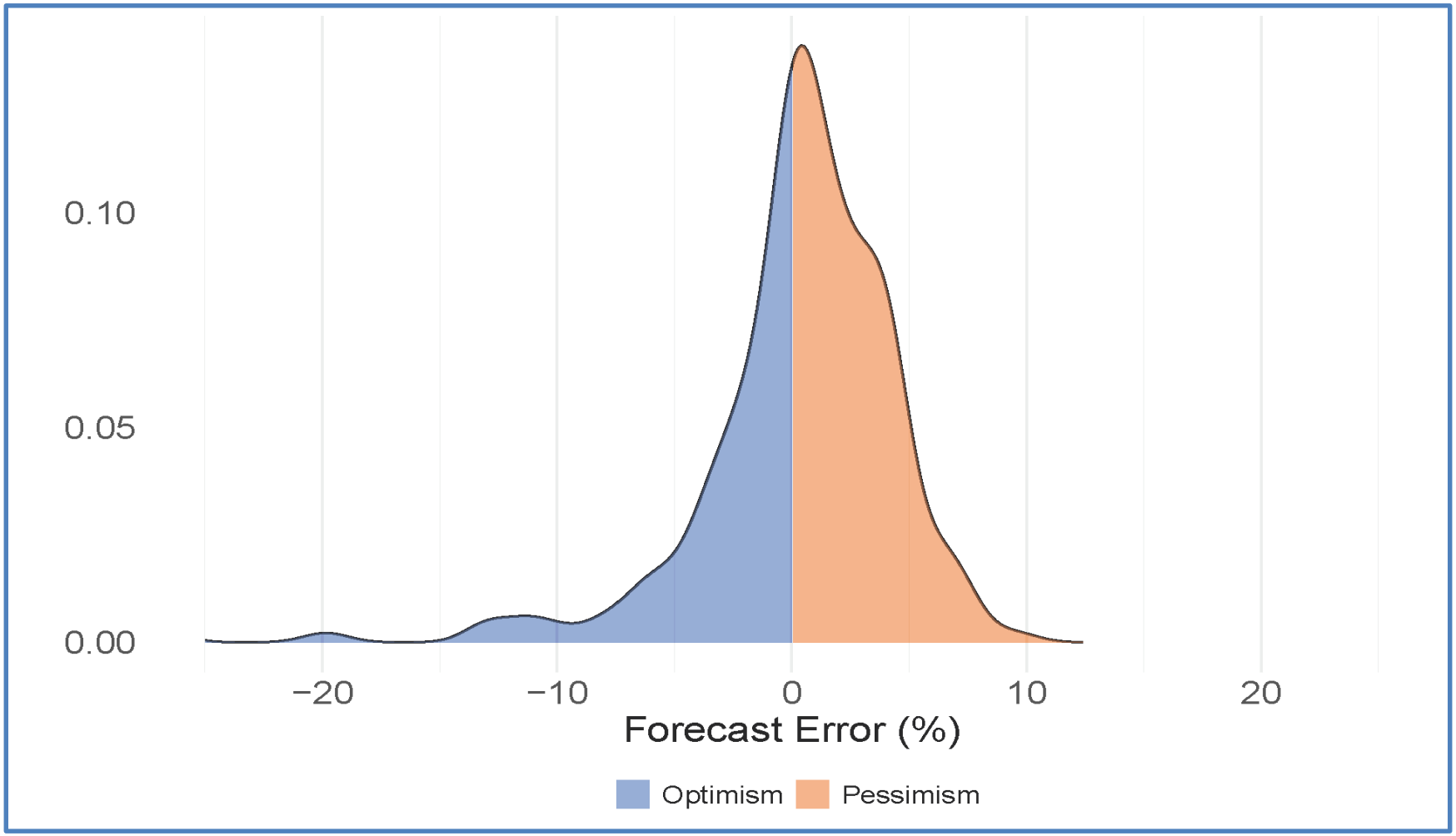
Evolution of World Bank and IMF real GDP growth forecasts during 2020: Emerging Markets



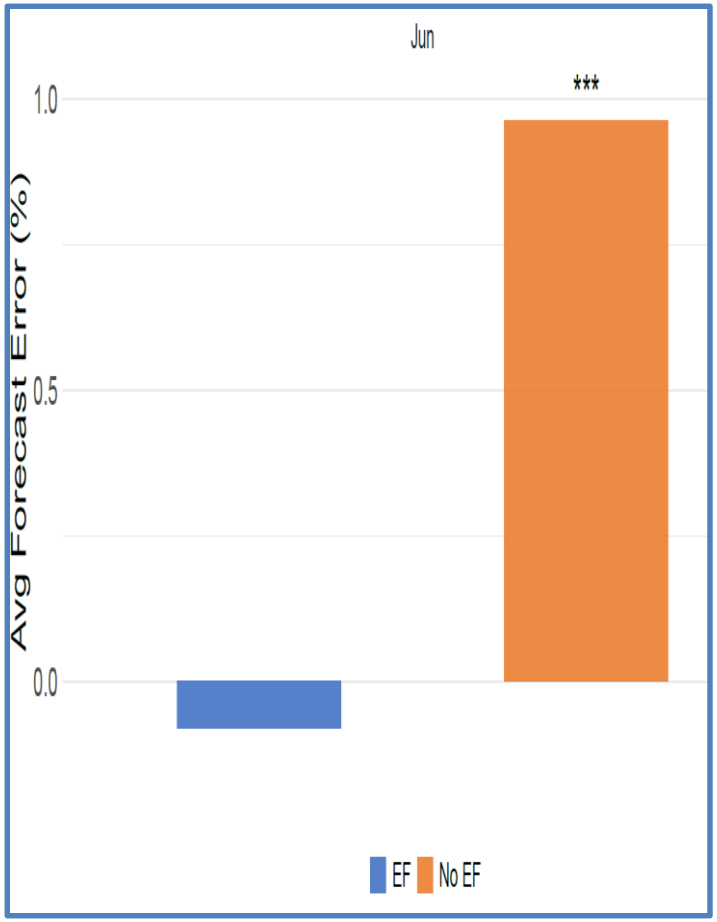
Evolution of World Bank and IMF real GDP growth forecasts during 2020: Low-Income Countries

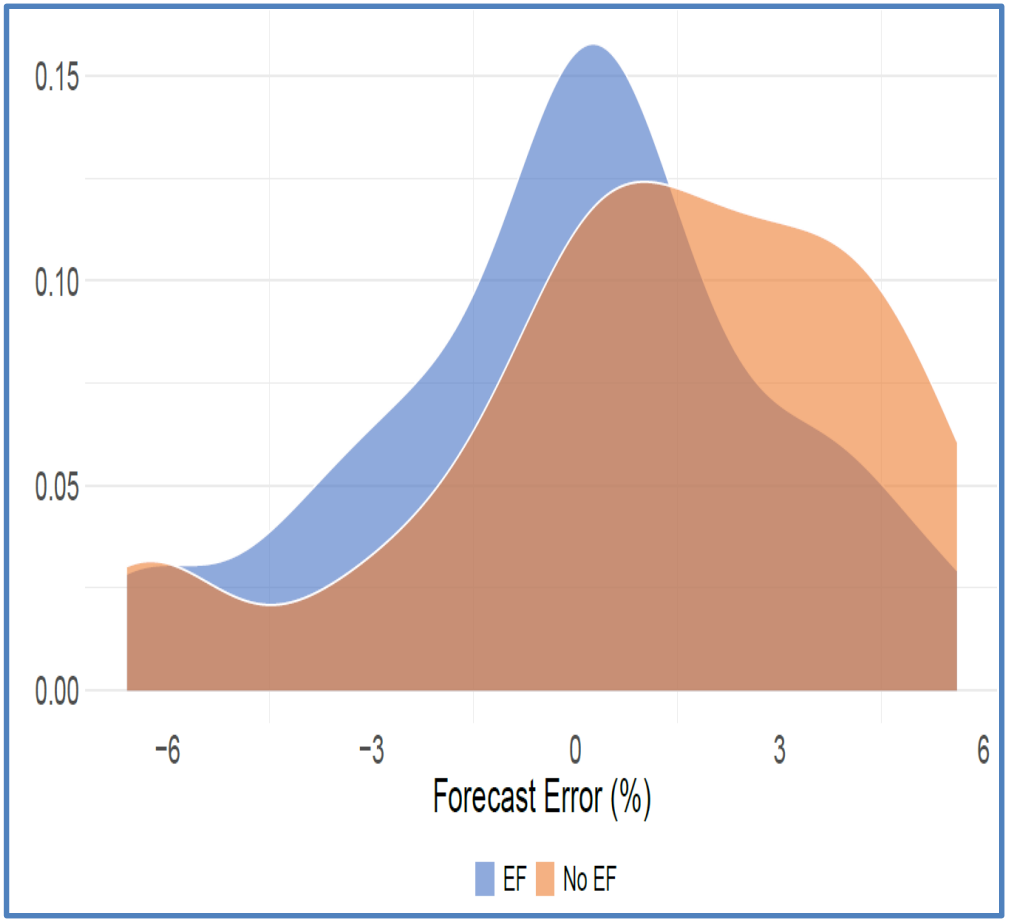


IMF real GDP growth forecast errors: June 2020 forecasts compared with outcomes

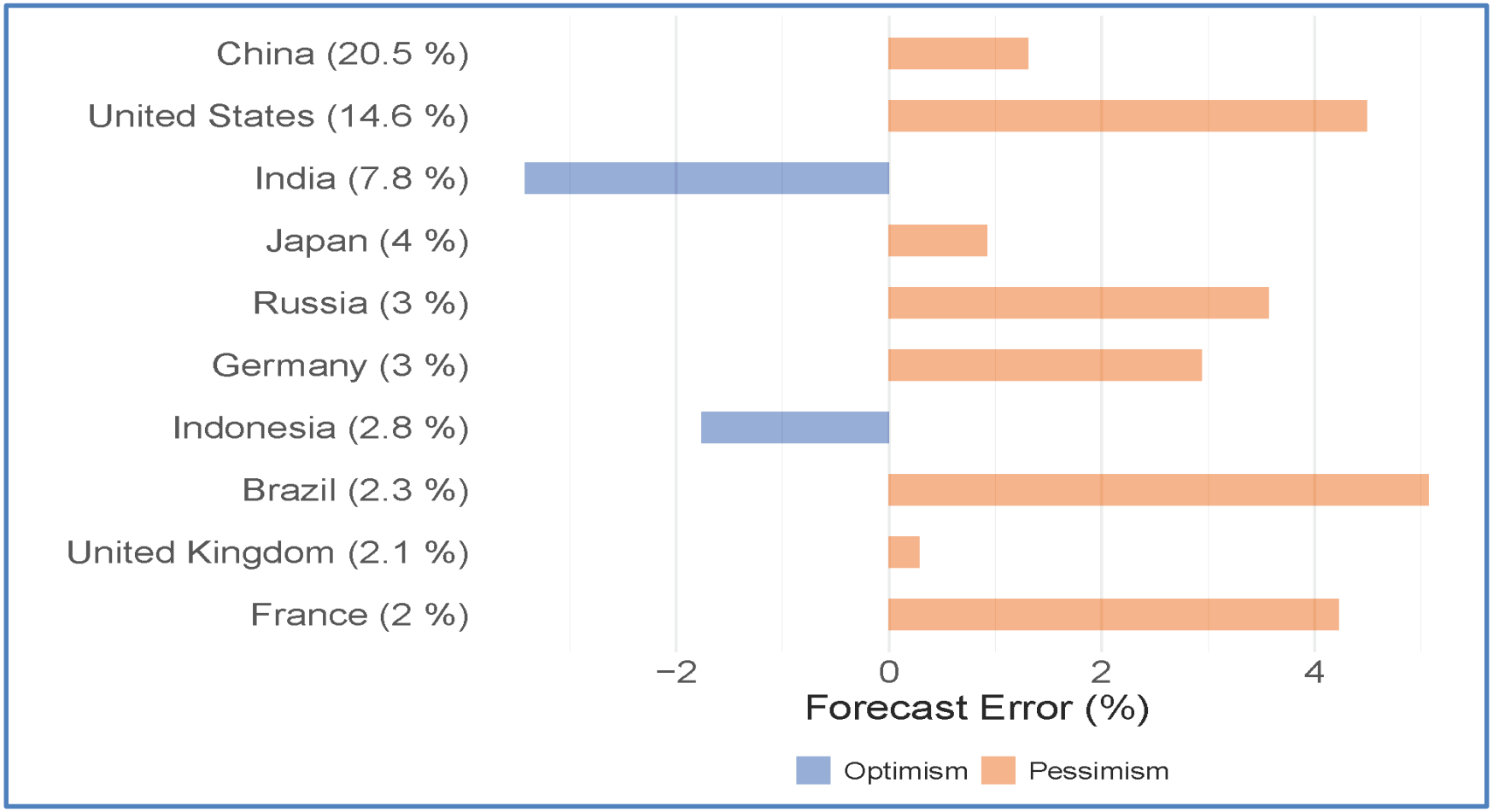


IMF real GDP growth forecast errors: emergency financing cases vs. others

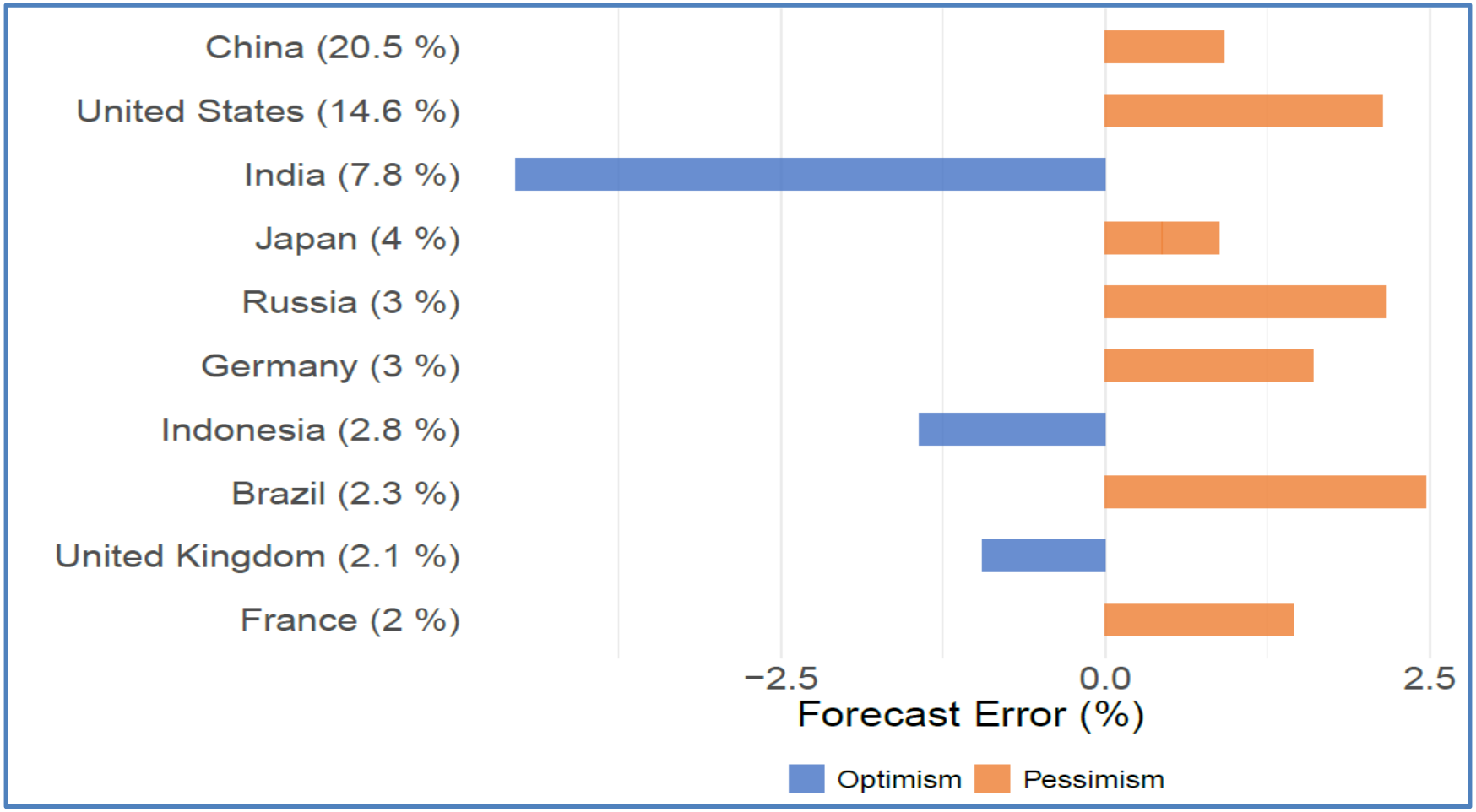




IMF: Errors for countries with largest weights in the global growth forecast (based on June 2020 forecasts)

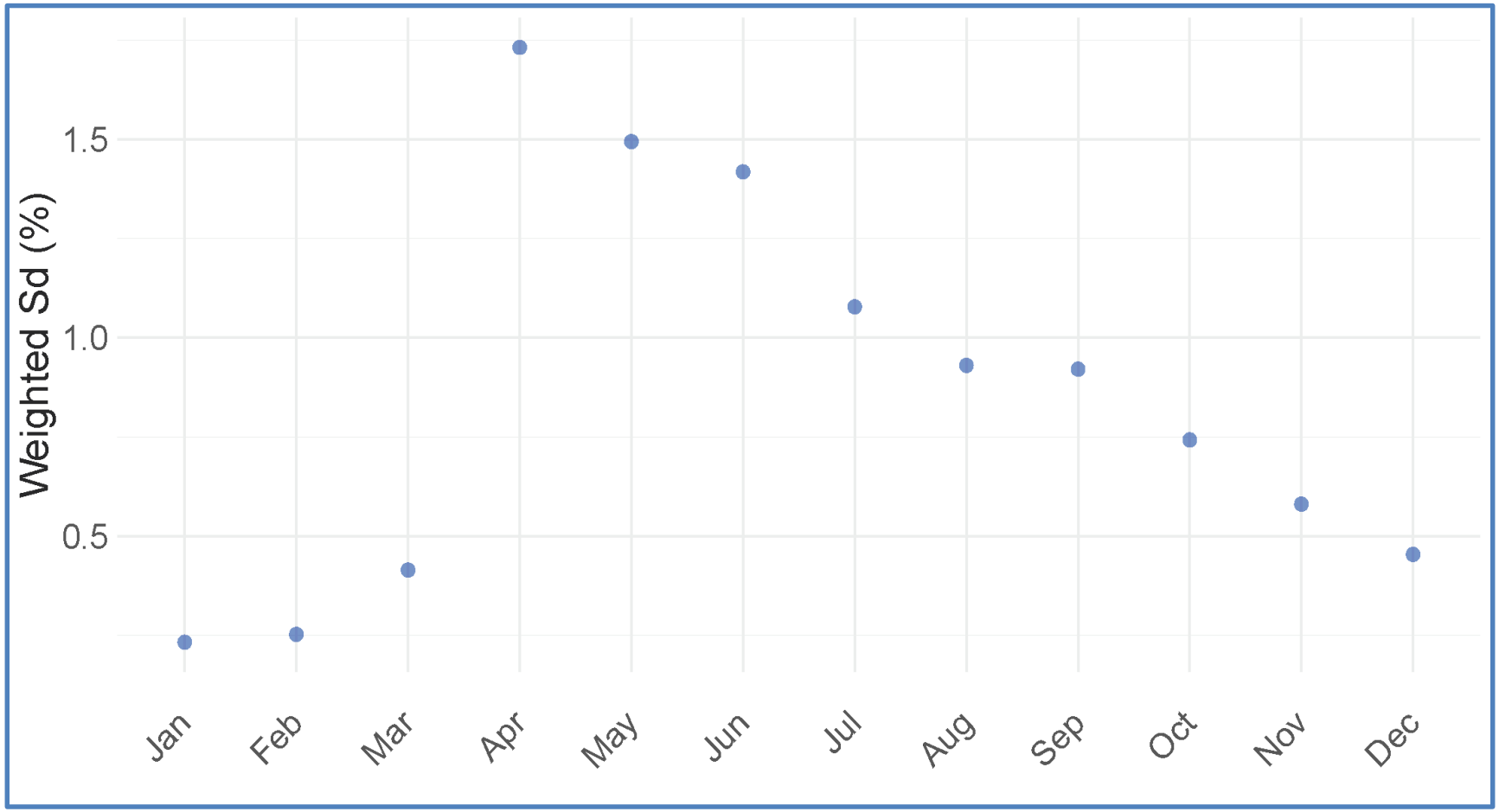


Consensus: Errors for countries with largest weights in the global growth forecast (based on June 2020 forecasts)

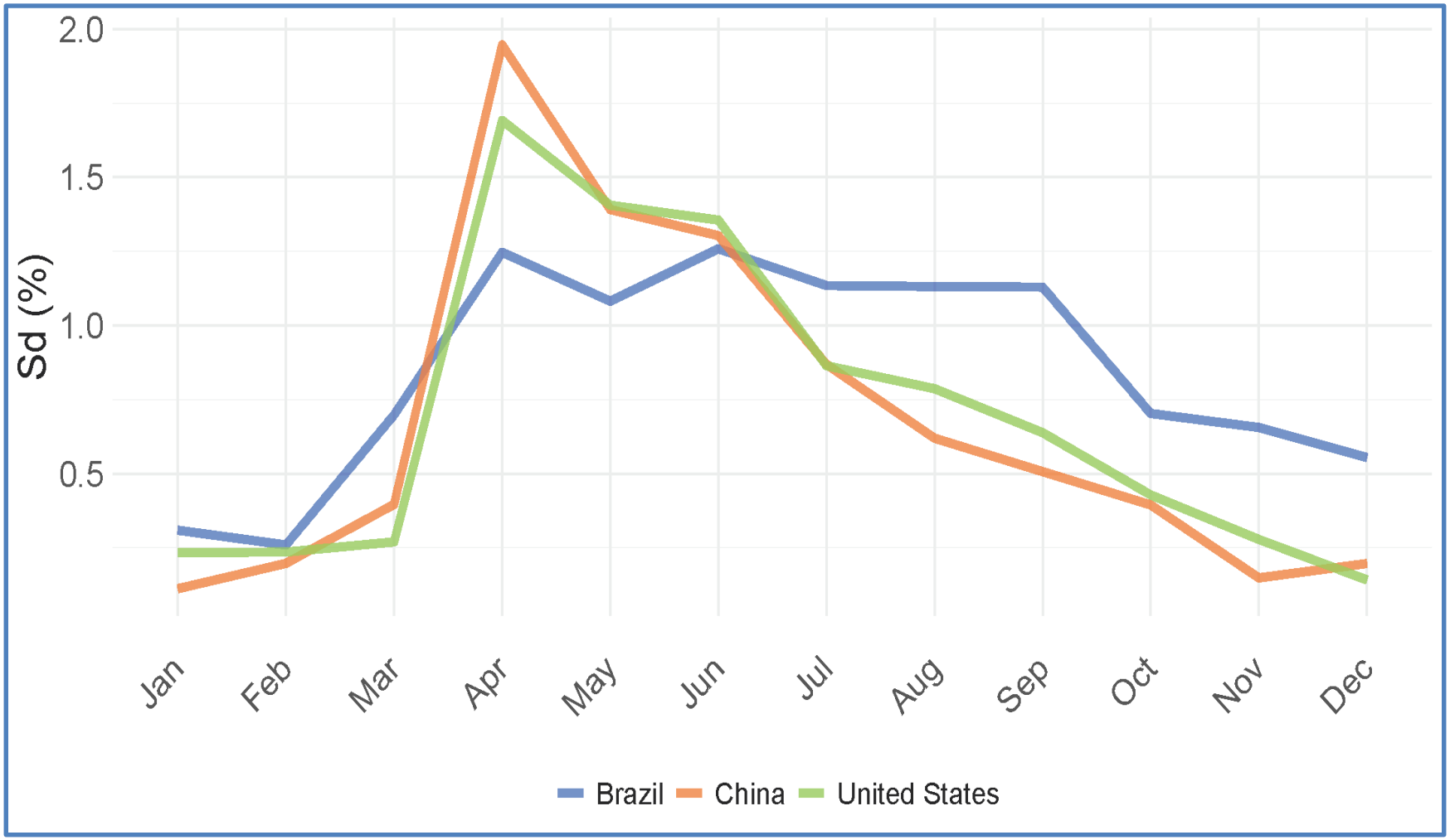


GROWTH FORECASTS DURING PANDEMIC: (DEPARTURE FROM) HERDING

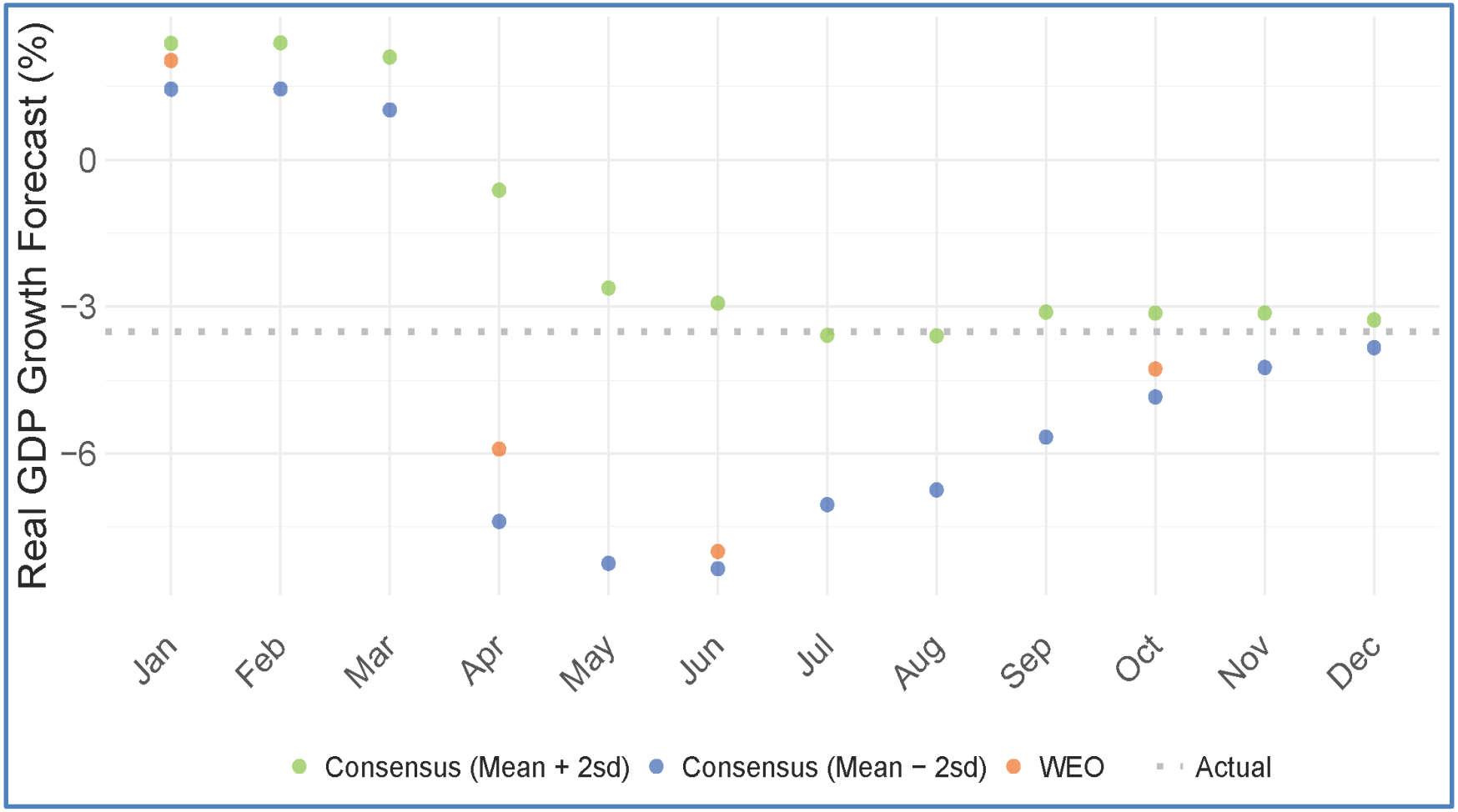
Evolution of standard deviation of Consensus Forecasts: All countries (GDP-weighted)



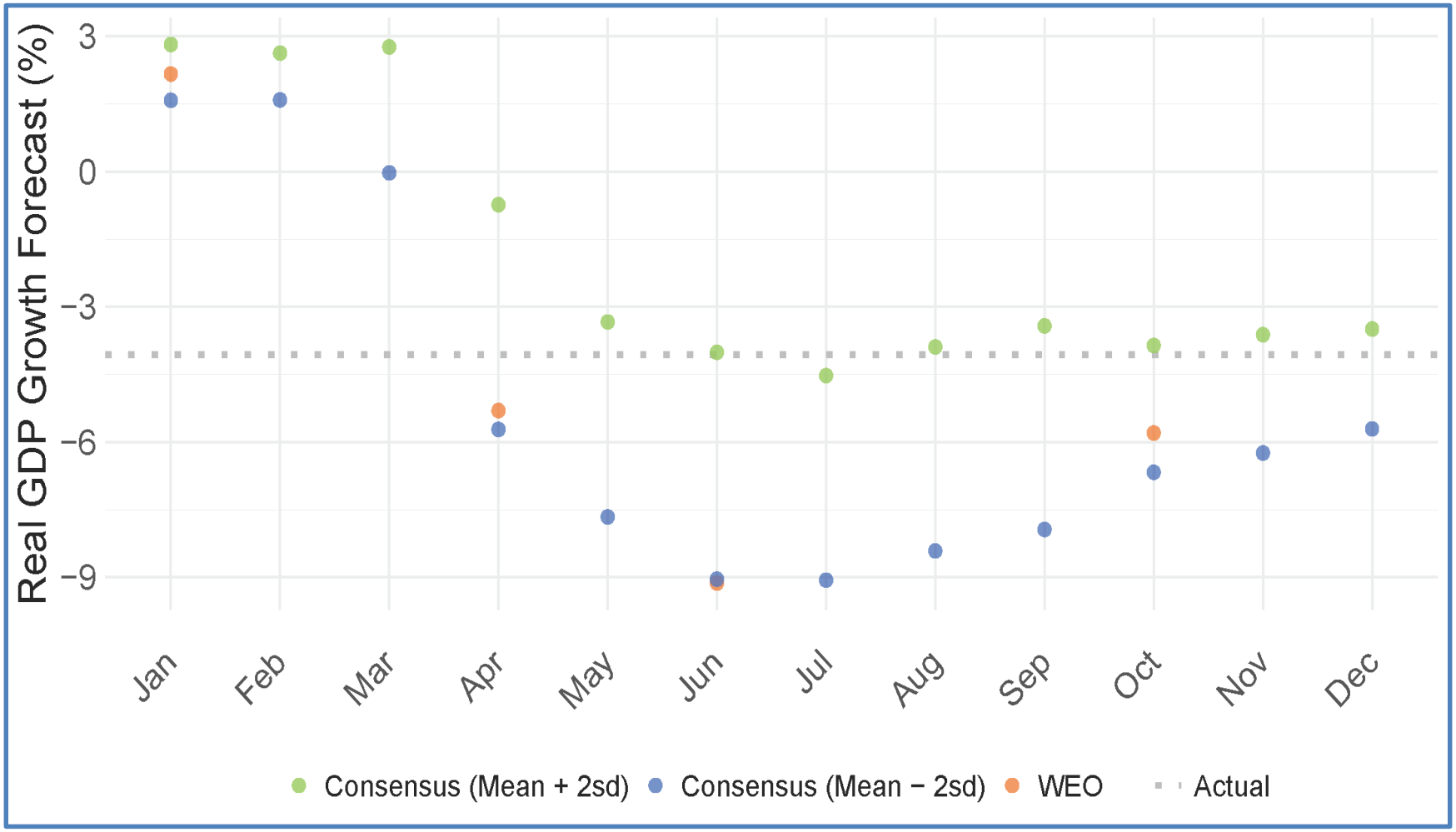
Evolution of standard deviation of Consensus Forecasts: Brazil, China, United States



IMF real GDP growth forecasts during 2020 compared with Consensus 'bands': United States



IMF real GDP growth forecasts during 2020 compared with Consensus 'bands': Brazil



Scenario analysis

- Scenario analysis prominent in WEO and in IMF communications over the course of the pandemic
- June 2020 WEO stressed "there is pervasive uncertainty around this forecast"
    - Listed eight reasons leading to "pervasive uncertainty"
- Upside potential was highlighted as well in June 2020 WEO
  - "The downturn could be less severe than forecast if economic normalization proceeds faster than currently expected in areas that have reopened—for example in China, where the recovery in investment and services through May was stronger than anticipated."
  - "Medical breakthroughs with therapeutics and changes in social distancing behavior might allow health care systems to cope better without requiring extended, stringent lockdowns."

Magnitude of forecast errors

- Forecast errors compared to past recessions
  - For advanced economies, on average:
    - Mid-year error in 2020 recession: ≈ 3 percentage points
    - Mid-year error in past recessions: ≈ 1 ½ percentage points (An, Jalles and Loungani, 2019)
  - For EMs: 1 percentage point in 2020 vs. 3 percentage points in past
  - For LICs: roughly similar performance as in past

Summary

- Both Consensus and IMF departed from past behavior in “overshooting” the outcome in the mid-year forecast

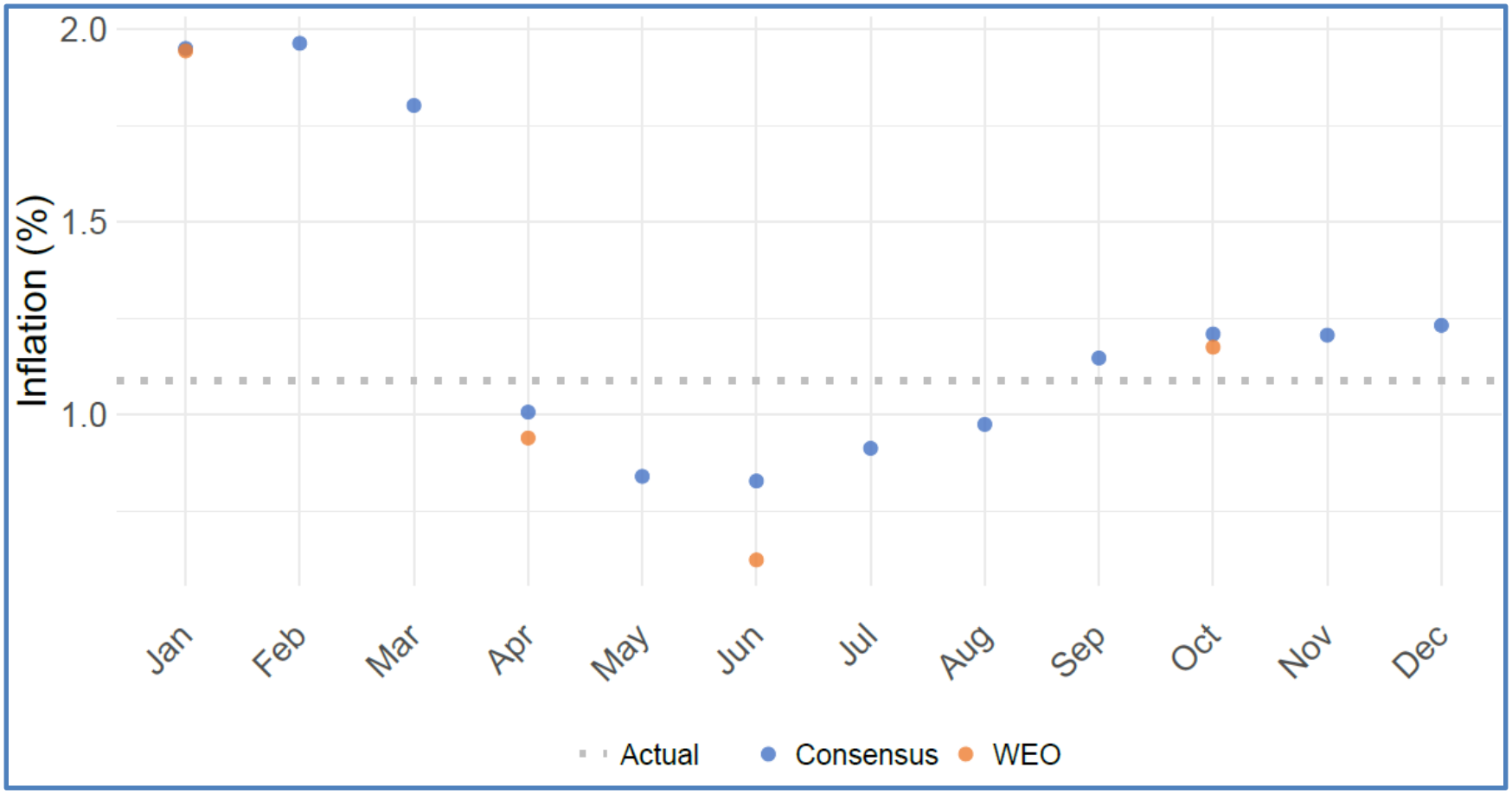
- IMF ‘departed from the herd’ in being more pessimistic than the Consensus in June 2020

INFLATION FORECASTS DURING PANDEMIC

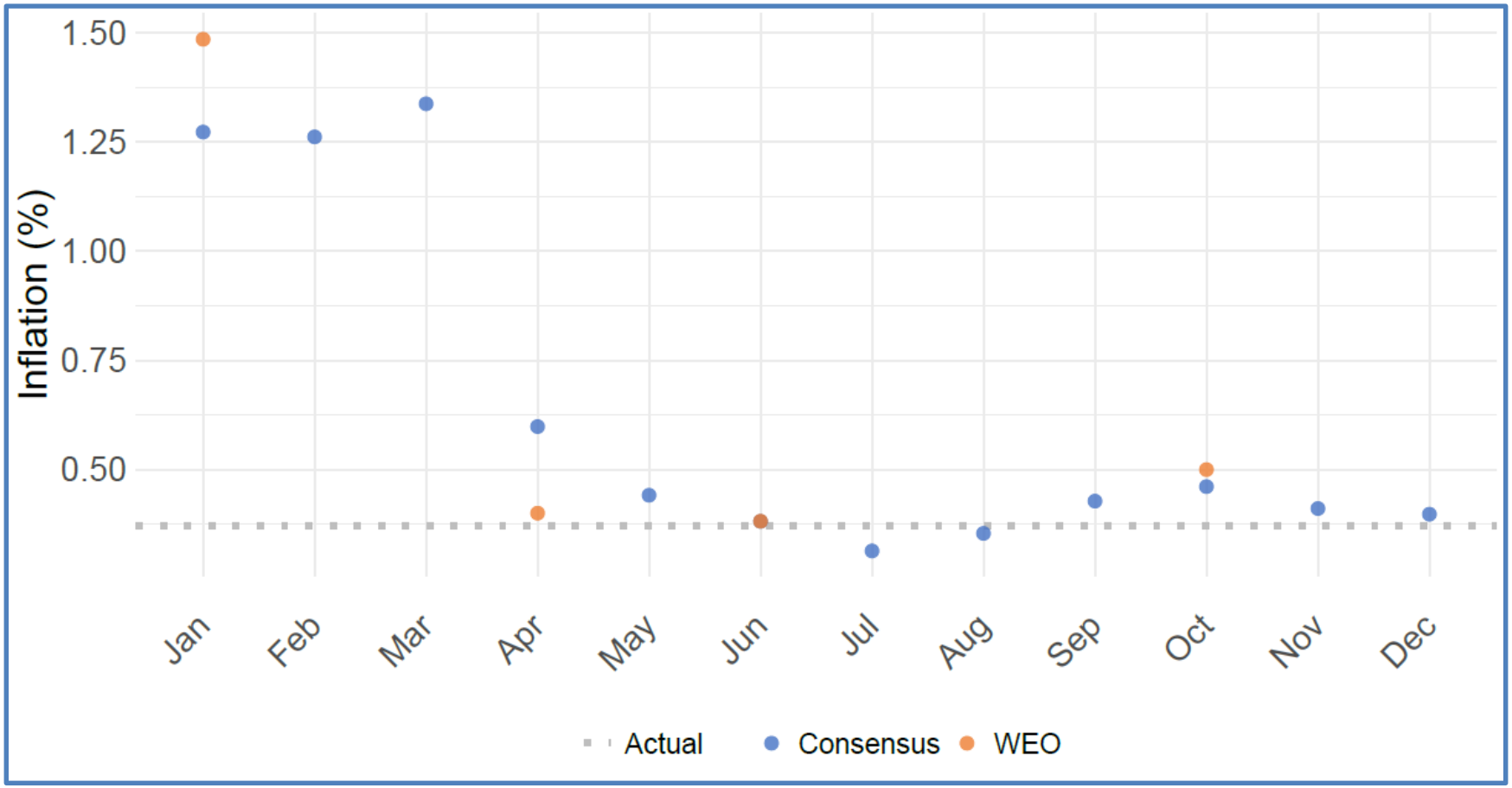
Debate on inflation prospects during 2020

- Demand contraction dampening inflation
- Supply disruptions raising inflation
- Which one would win out?

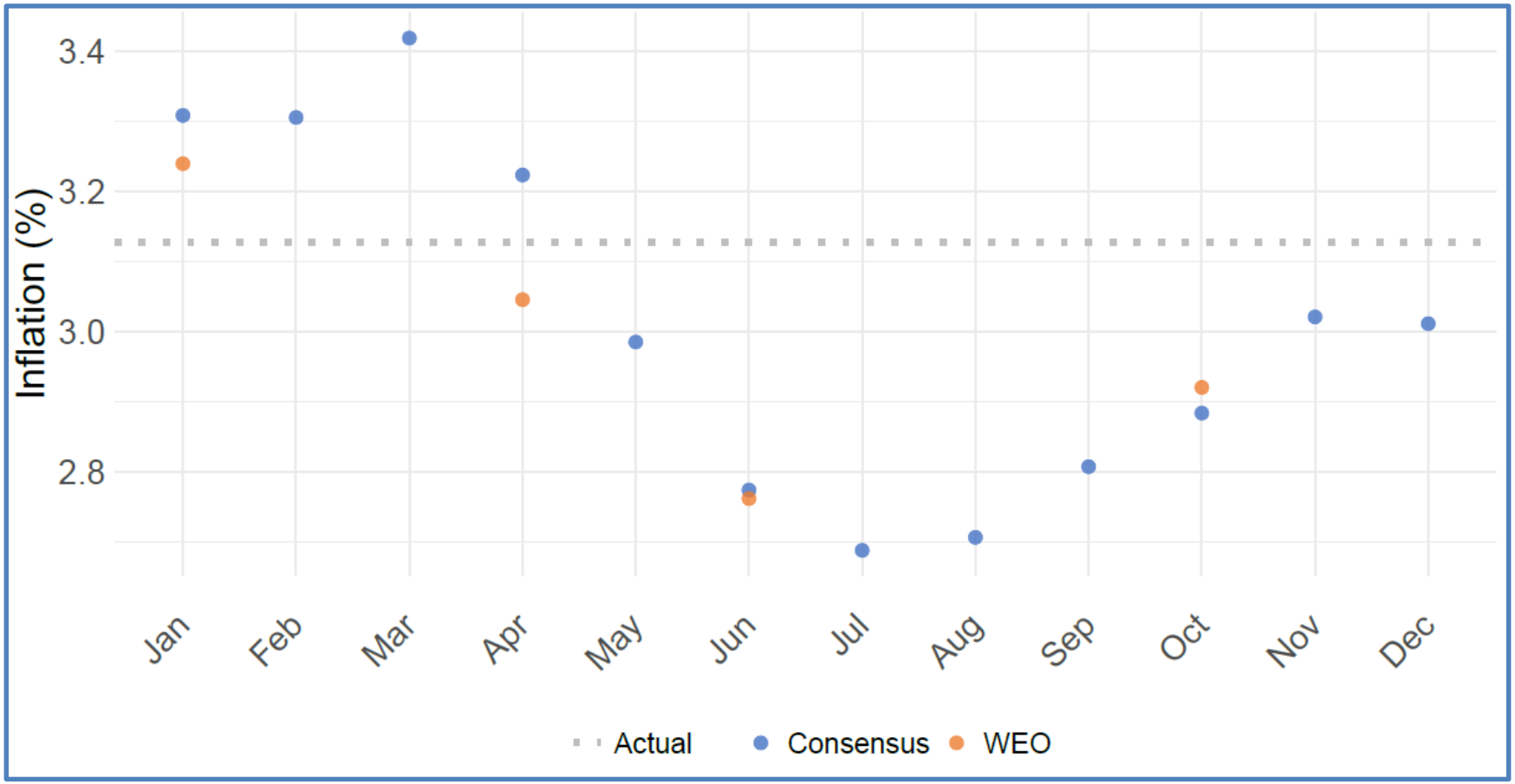
Inflation Forecasts: Global Average



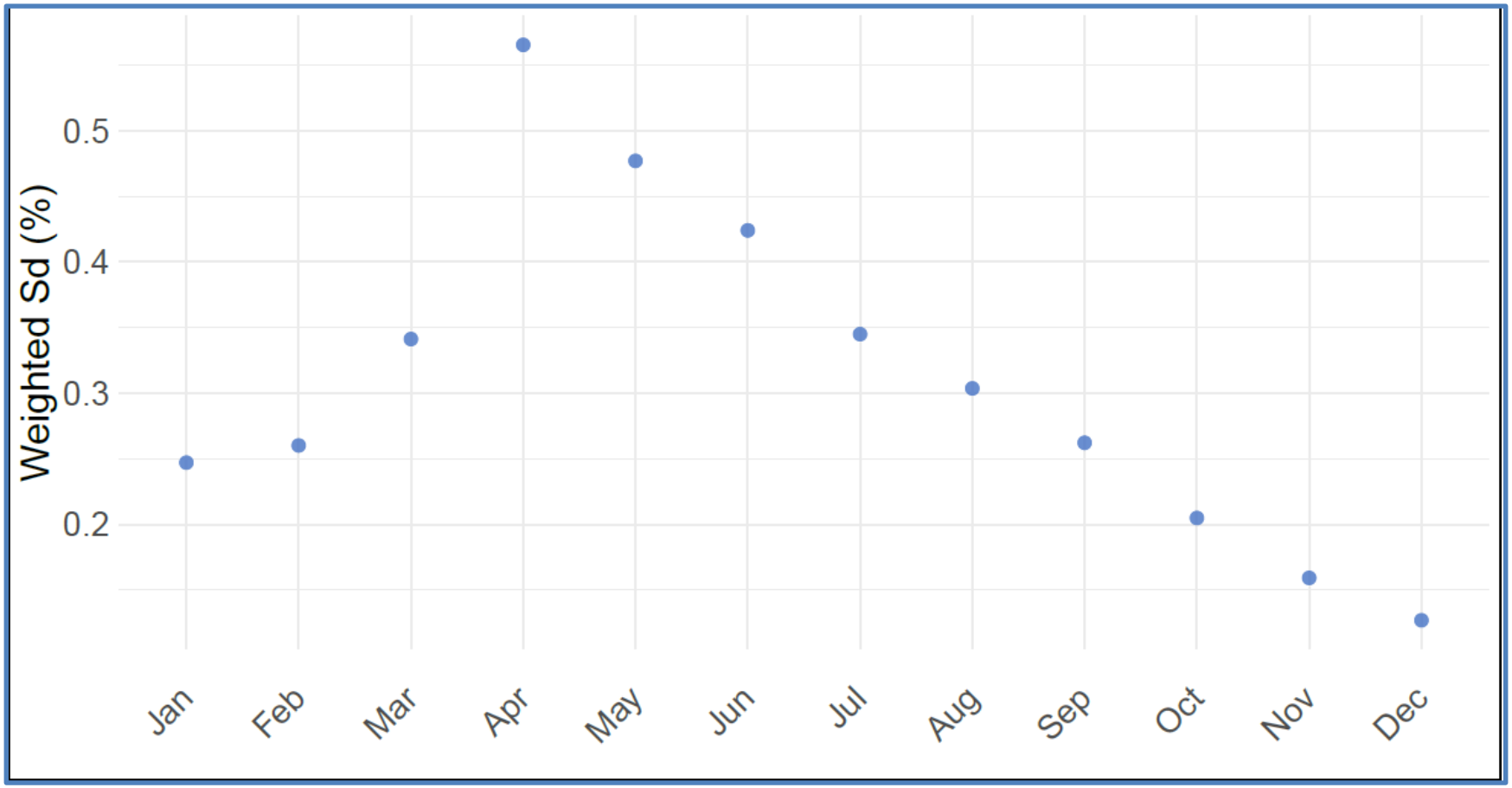
Inflation Forecasts: Advanced Economies



Inflation Forecasts: Emerging Markets

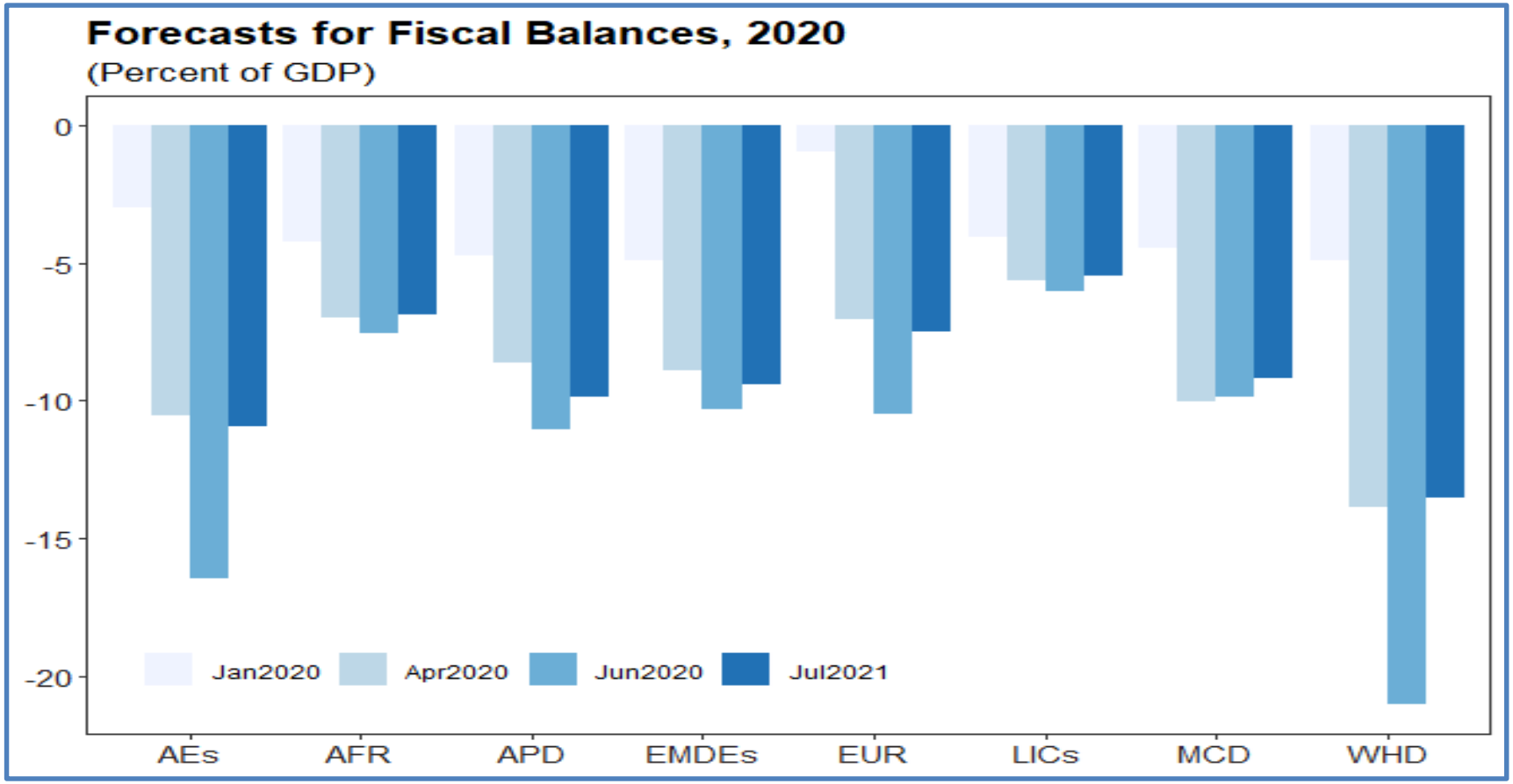


Dispersion in inflation forecasts: Global Average

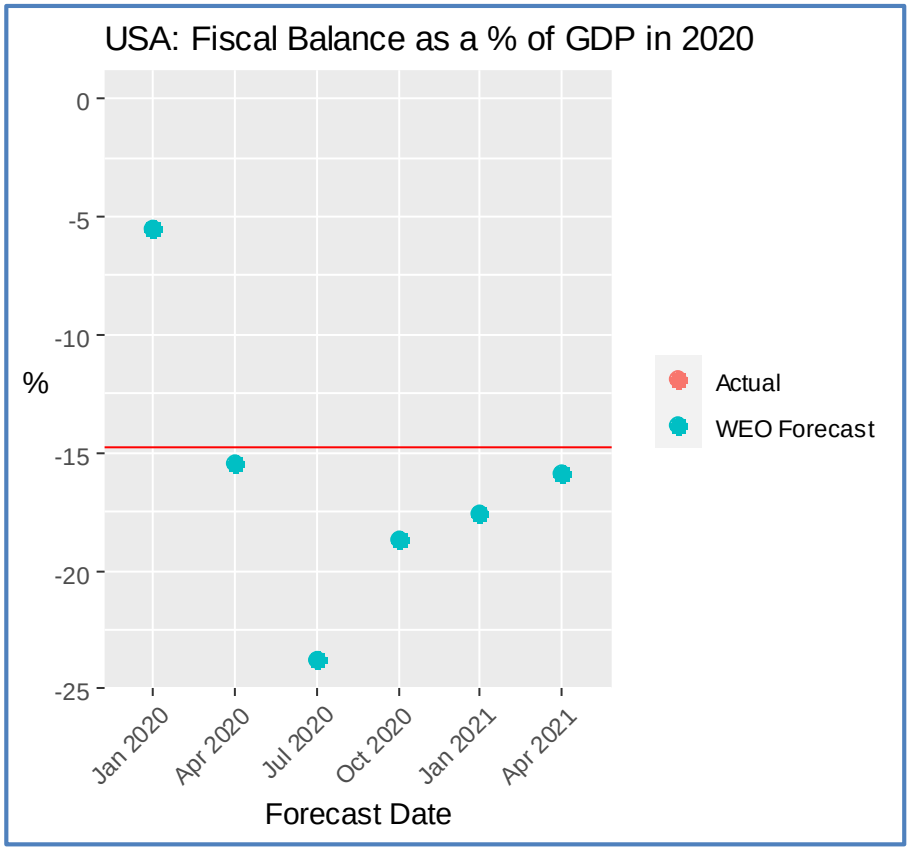


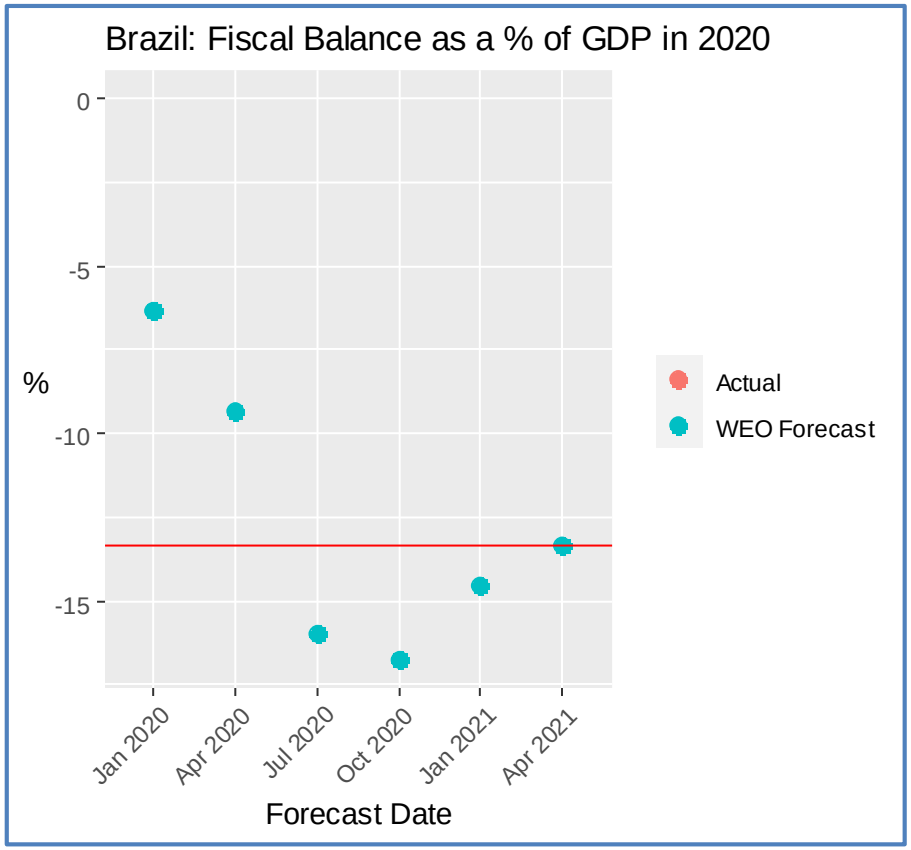
FORECASTS OF FISCAL BALANCES DURING THE PANDEMIC

Overshooting in IMF forecasts of fiscal balance

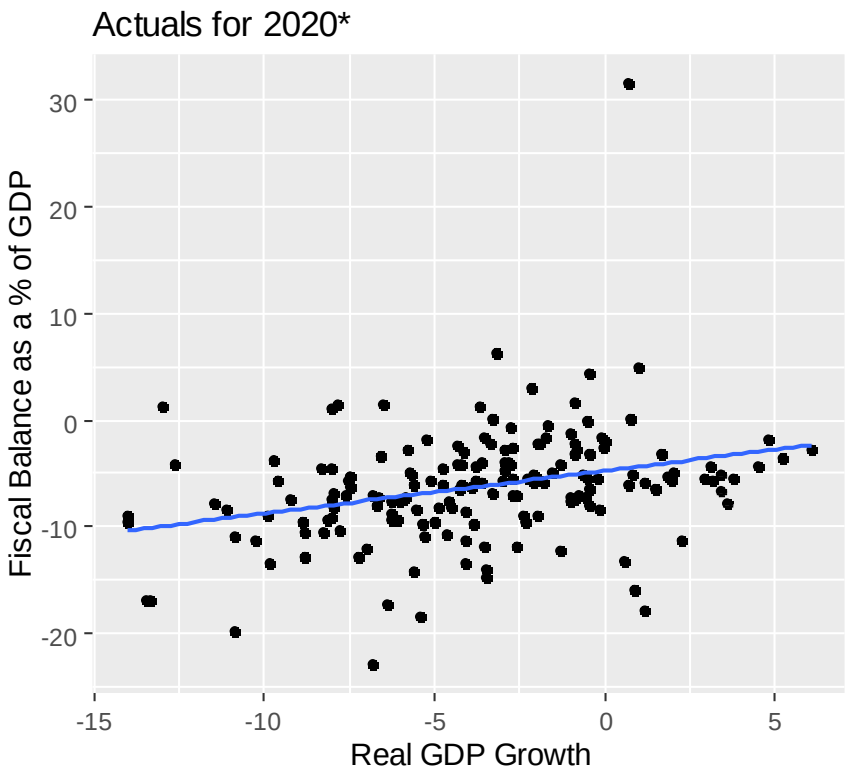


Overshooting in IMF fiscal forecasts: United States and Brazil

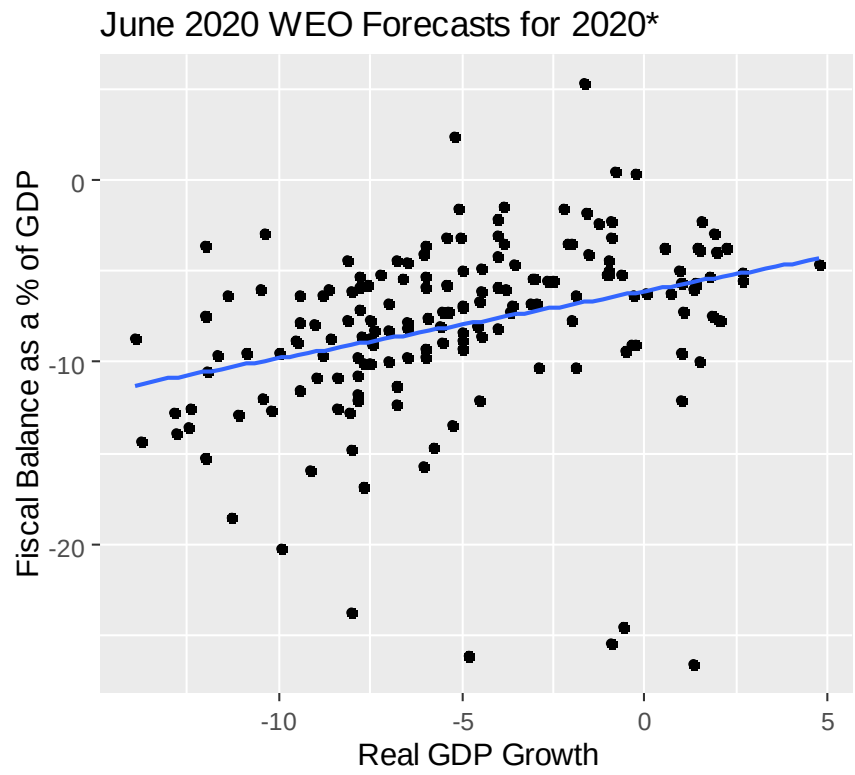




Correlation of growth and fiscal outcomes and forecasts



* Excludes countries if GDP & balances measured over different periods. Excludes countries whose real GDP growth is below -15% or above 15%.



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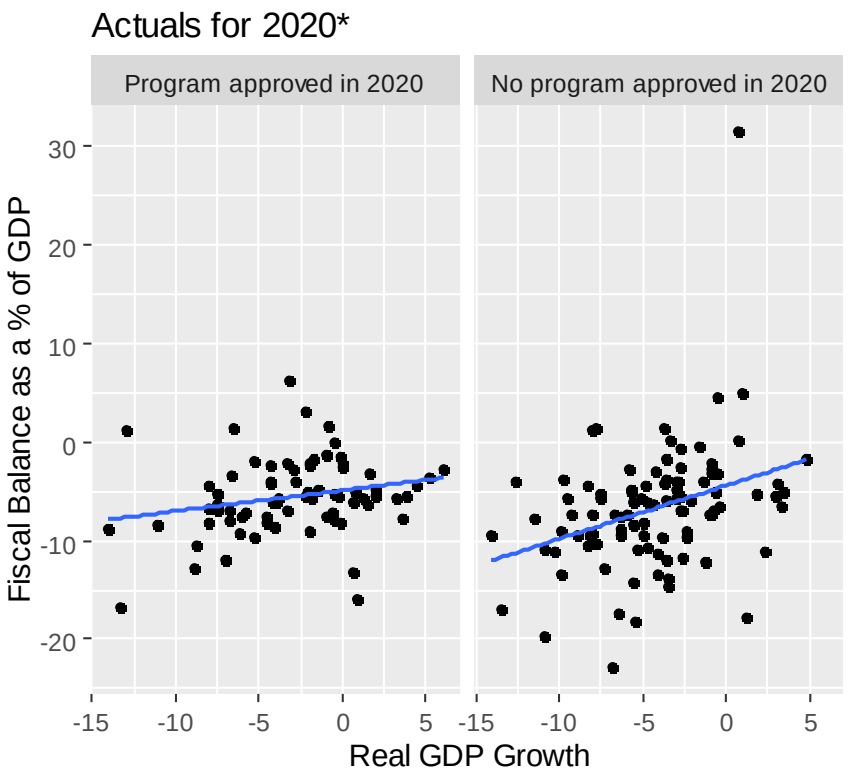
Correlation of growth and fiscal outcomes and forecasts: Program vs. non-program cases



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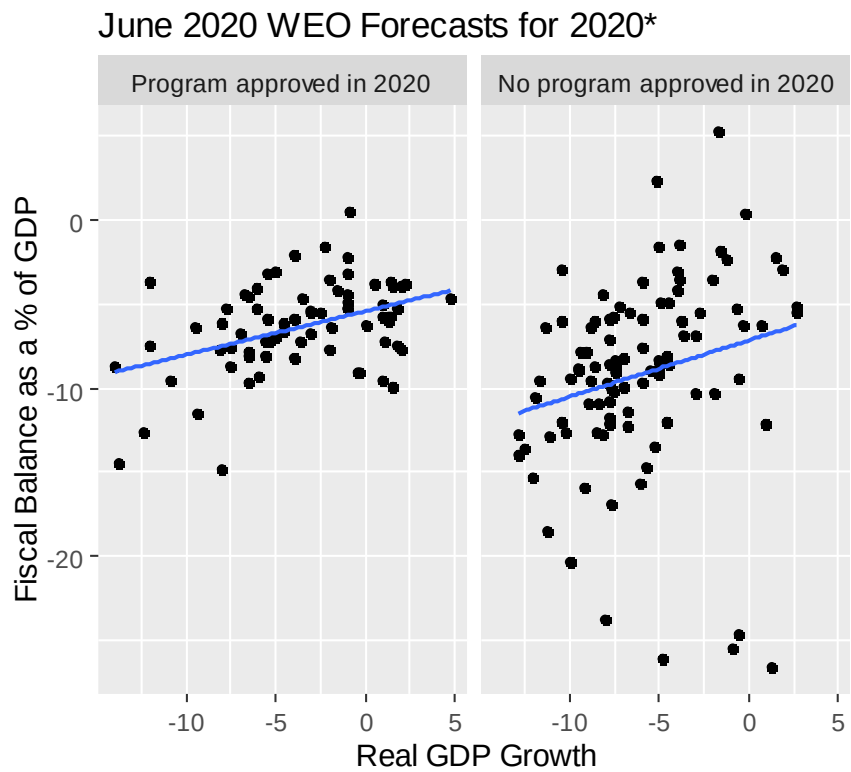
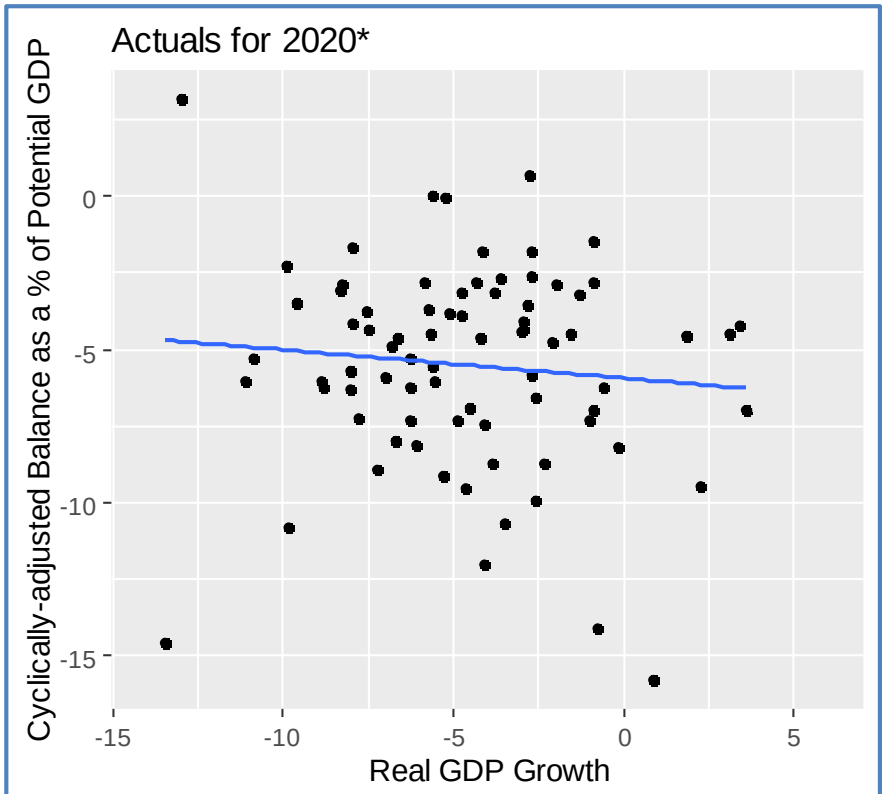


* Excludes countries if GDP & balances measured over different periods. Excludes countries whose real GDP growth is below -15% or above 15%.

Correlation of growth and structural fiscal balance outcomes and forecasts



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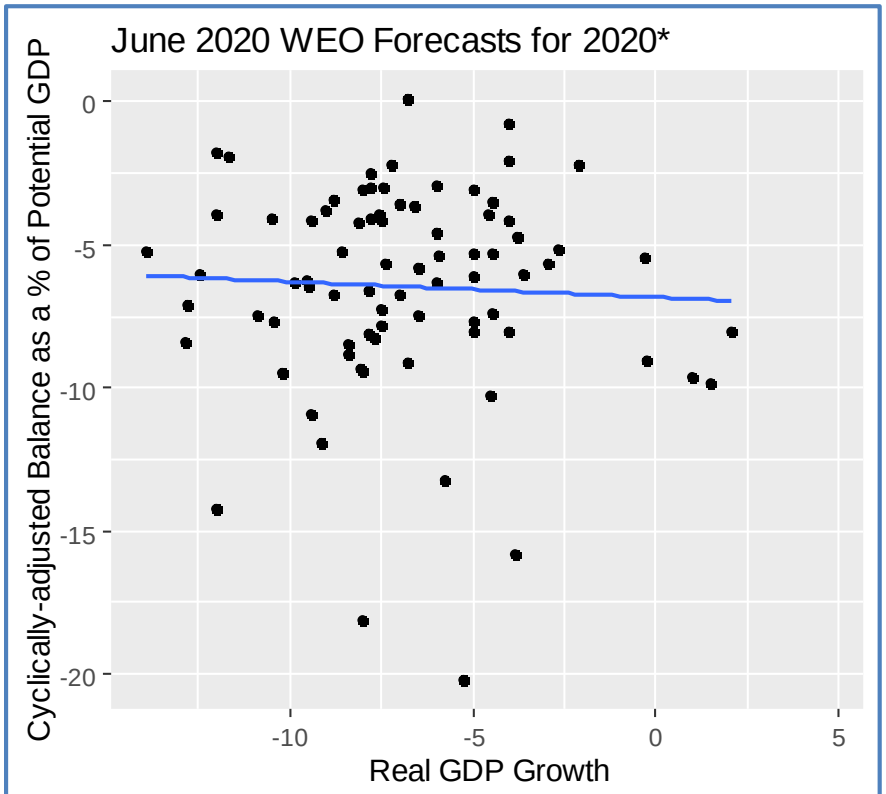
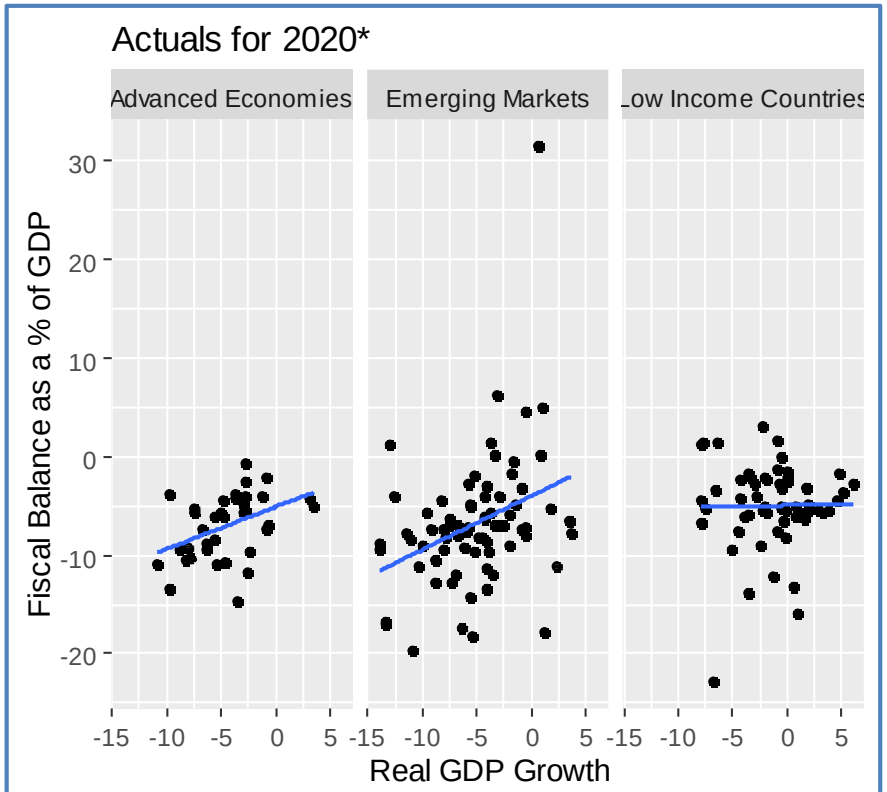


* Excludes countries if GDP & balances measured over different periods. Excludes countries whose real GDP growth is below -15% or above 15%.

Correlation of growth and fiscal outcomes and forecasts: country groups



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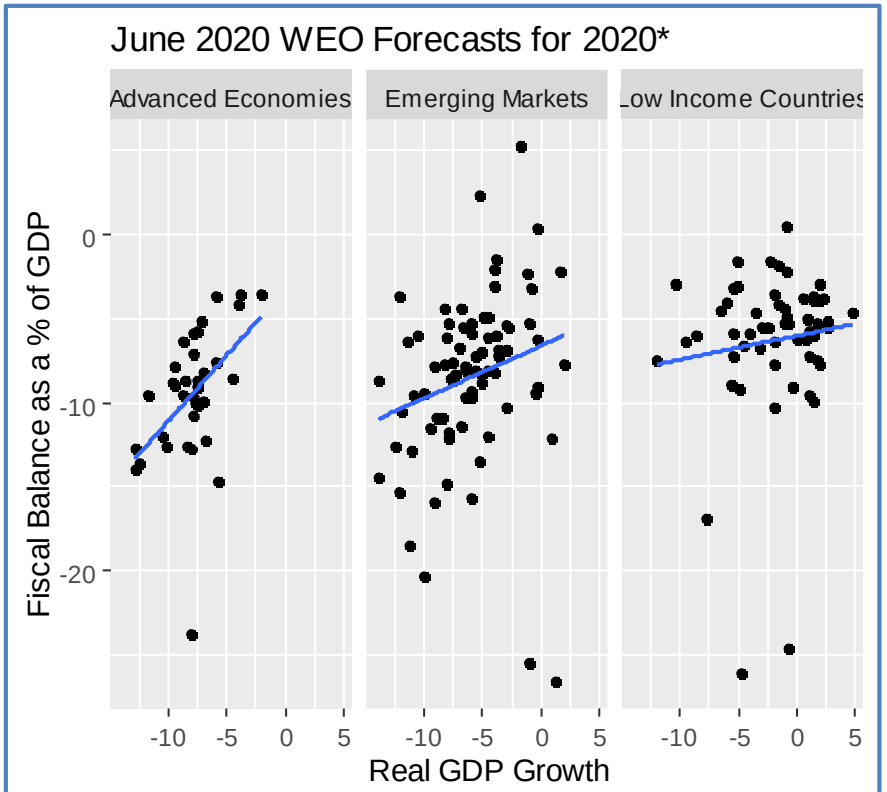

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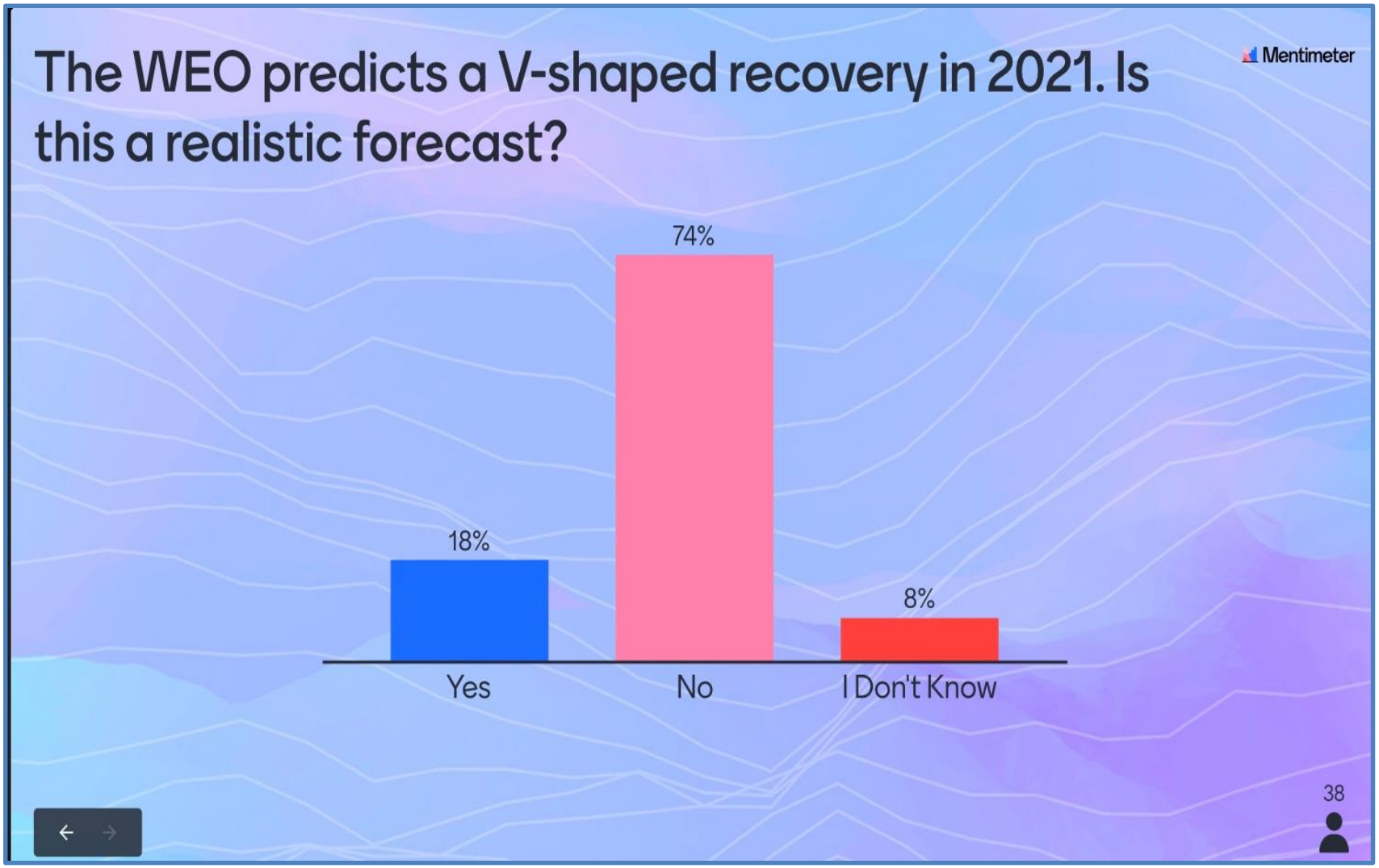
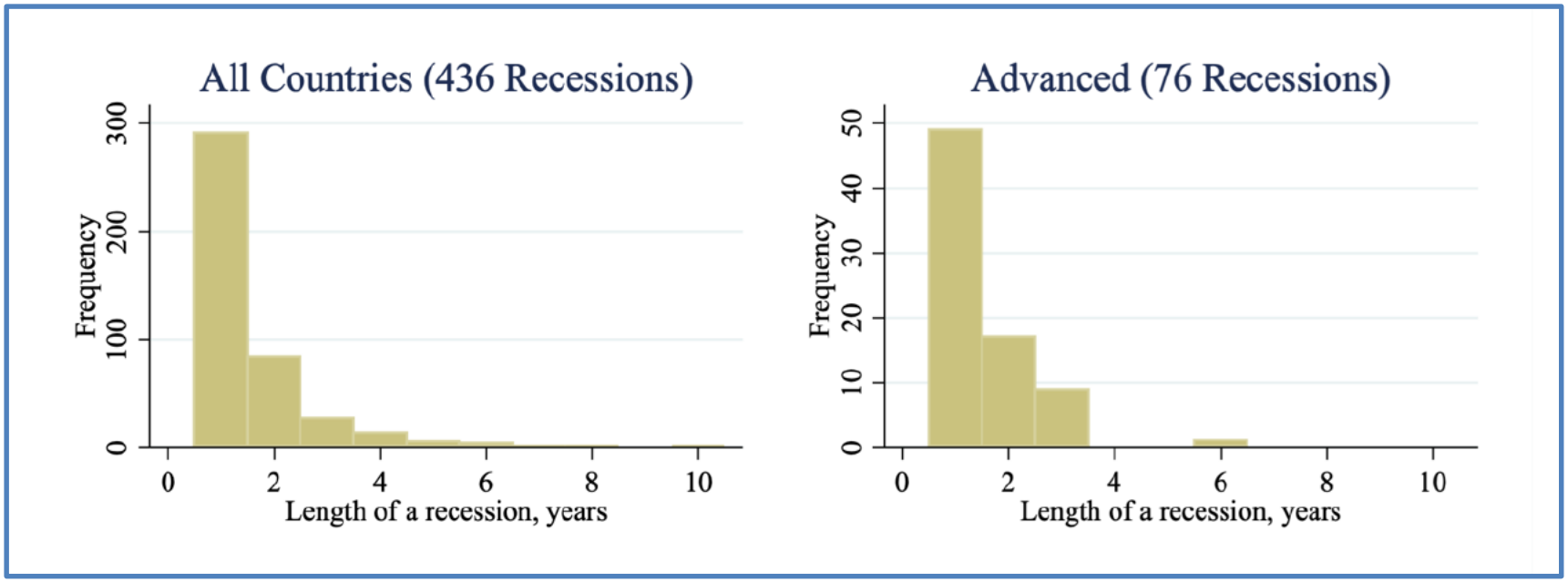
Questions	Tentative Answers
How well did forecasters do during 2020?	On average, error for advanced countries was larger than in past recessions. On average, smaller error than in past for EMs; similar error to past for LICs. • Open question: was uncertainty about economic outcomes during the pandemic similar to what forecasters faced in the past?
Did forecasters herd?	There was a significant increase in the dispersion of forecasts within Consensus from April to July 2020. The IMF also departed from Consensus by being somewhat more pessimistic in June 2020, particularly for some major economies, and then back-tracked in October 2020. • Open question: was this an efficient response to uncertainty or a result of a more top-down approach?

FORECASTS OF RECOVERY

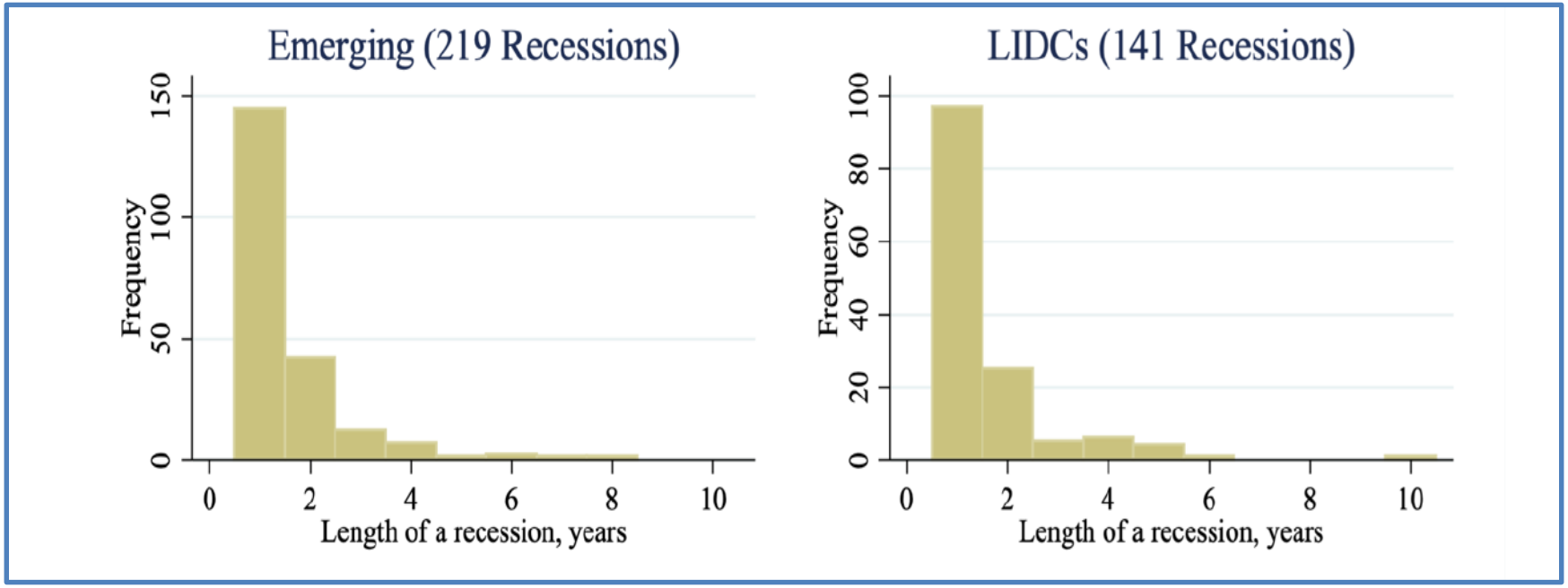
RESULTS OF A POLL CONDUCTED BEFORE THE START OF MY JUNE 2020 PRESENTATION AT THE IMF


The WEO predicts a V-shaped recovery in 2021. Is this a realistic forecast?
Mentimeter
74%
18%
8%
Yes
No
I Don't Know
38

About 70 percent of past recoveries have been V-shaped …



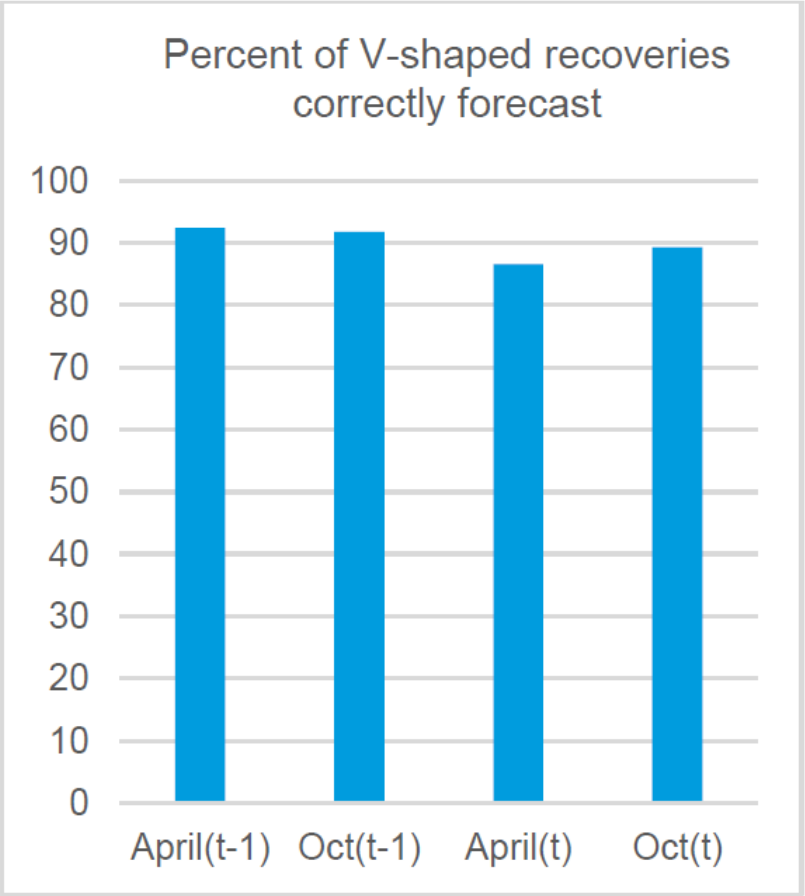
… in EMs and LICs as well, about 70 percent of past recoveries have been V-shaped

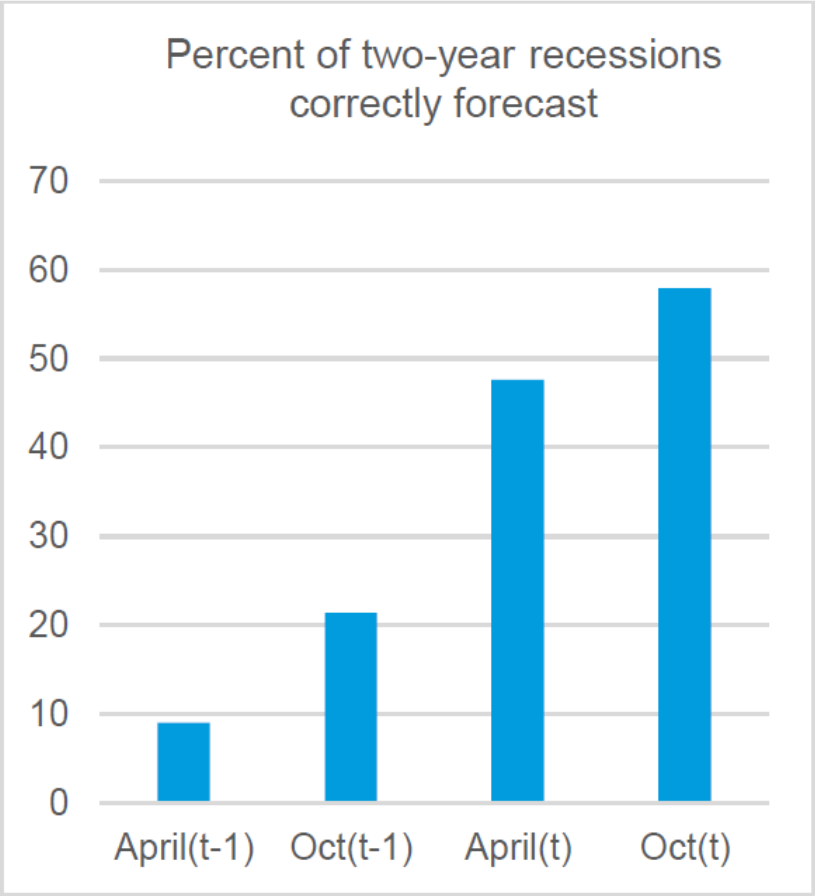


The balance of error

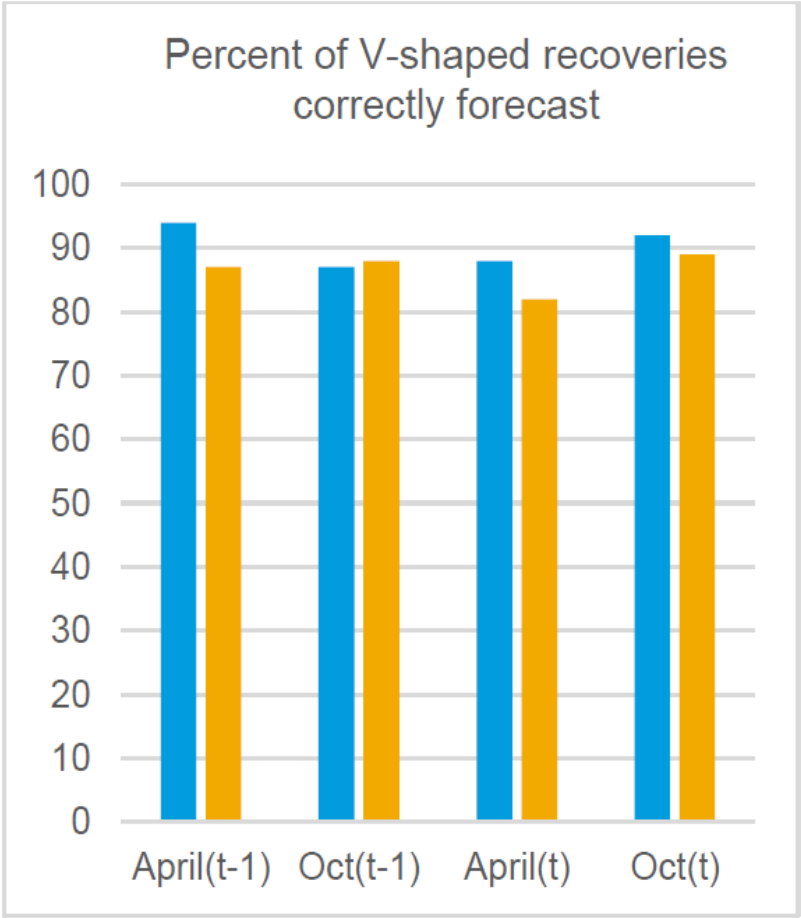
Actual	Apr[t-1]		
	Recovery	Recession	Total
Recovery	269	22	291
Recession	132	13	145
Total	401	35	436

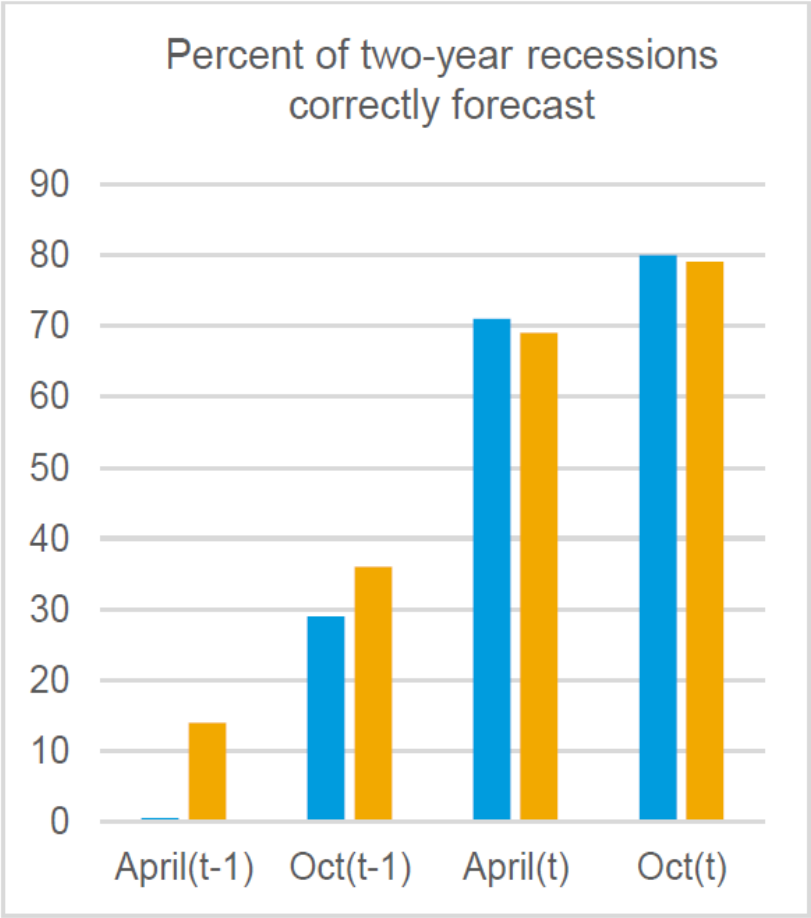
Forecasters are poor at predicting if the shape of the recovery will depart from V-shaped





Consensus and IMF forecasts are equally poor at predicting departures from V-shaped recoveries (Consensus shown in blue)





Why does this evidence matter?

- V-shaped recovery for 2021 was a smart bet, but there was substantial uncertainty around the forecast

- Around the trough, policy decisions should take into account the worse-case scenarios and not just the baseline forecast. Particularly important for fiscal policy.

A lesson from history …

- In 2010, many governments withdrew fiscal stimulus guided by forecasts of a strong recovery that proved too optimistic.

- IMF supported this turnaround in fiscal stance
  - IEO (2014) was critical of the Fund's decision
  - MD statement: "*Considering the information and* ***growth forecasts*** *available in 2010*, I strongly believe that advising economies with rapidly rising debt burdens to move toward measured consolidation was the right call to make."

- IMF fiscal policy advice during the pandemic: discussed in IEO webinar


ECONOMIC
FORECAST