

MOODY'S

Near-Term Forecasting

Dante DeAntonio, Senior Director-Economic Research

Mark Hopkins, Senior Director-Economic Research

Andrea Pinelli, Economist

Shandor Whitcher, Economist

Please attribute information in this document to Moody's Analytics, which is a division within Moody's that is separate from Moody's Ratings. Accordingly, the viewpoints expressed herein do not reflect those of Moody's Ratings.

October 2025

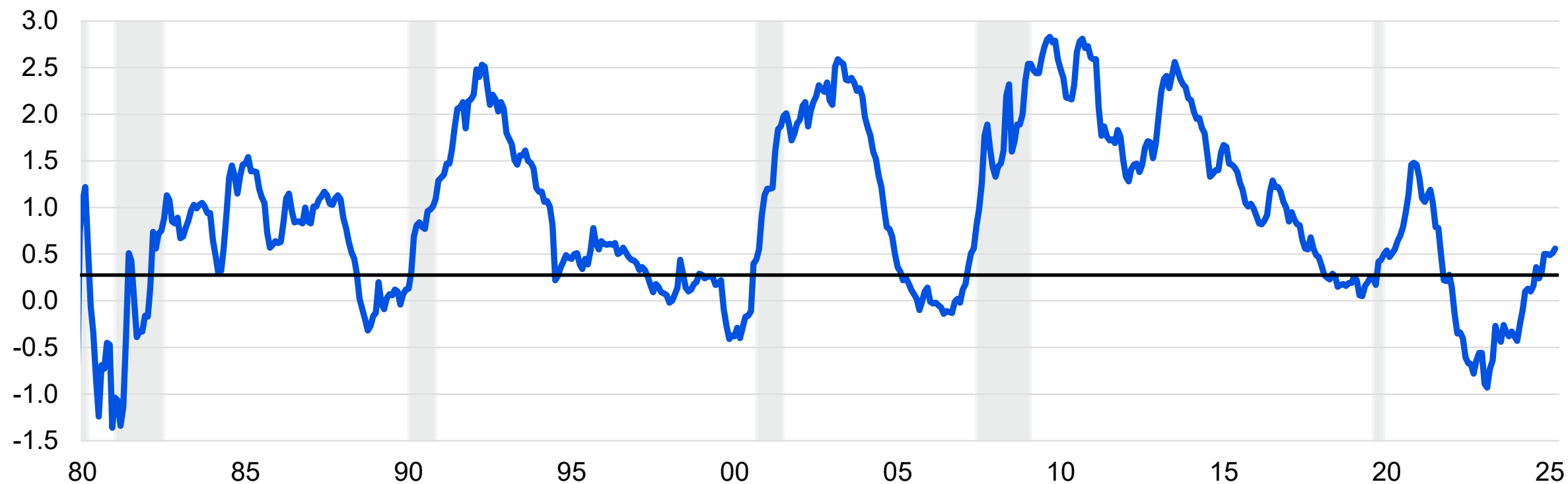
The background of the slide is a dark blue color. It features abstract, wavy, light blue lines that flow across the frame, creating a sense of movement and depth. These lines are more concentrated on the left side and fade out towards the right.

1

Recession Bellwethers Fail to Deliver

A Warning Sign, Historically

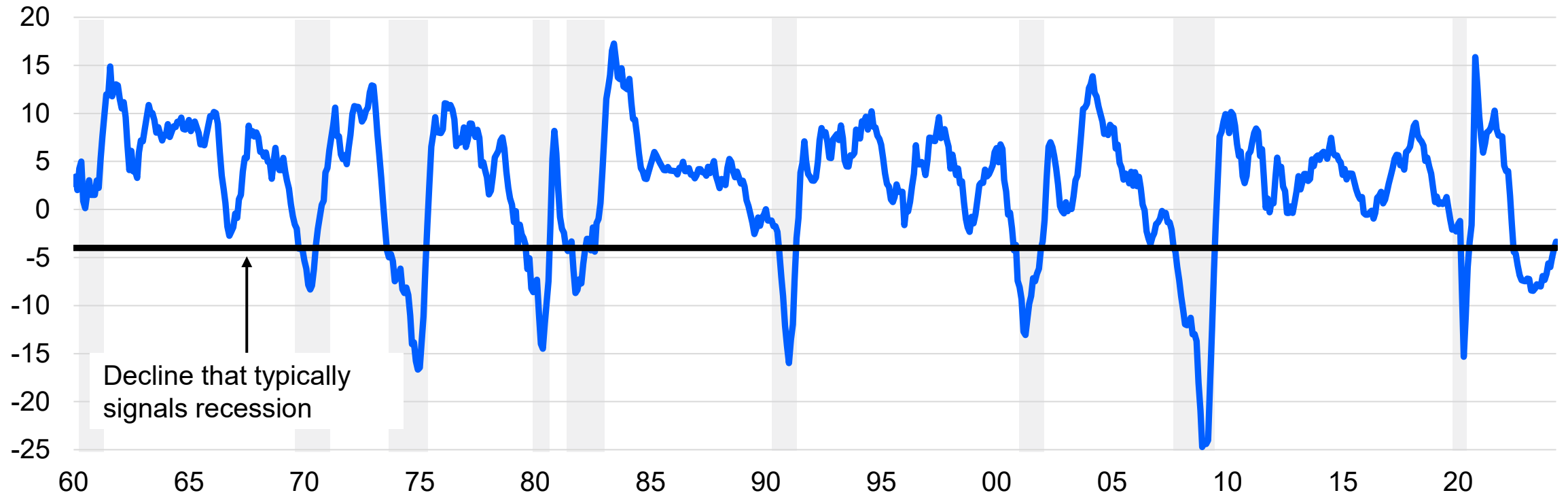
10-yr and 2-yr Treasury yield spread, %



Sources: Federal Reserve, Moody's Analytics

The LEI Has Also Typically Predicted Changes in the Business Cycle

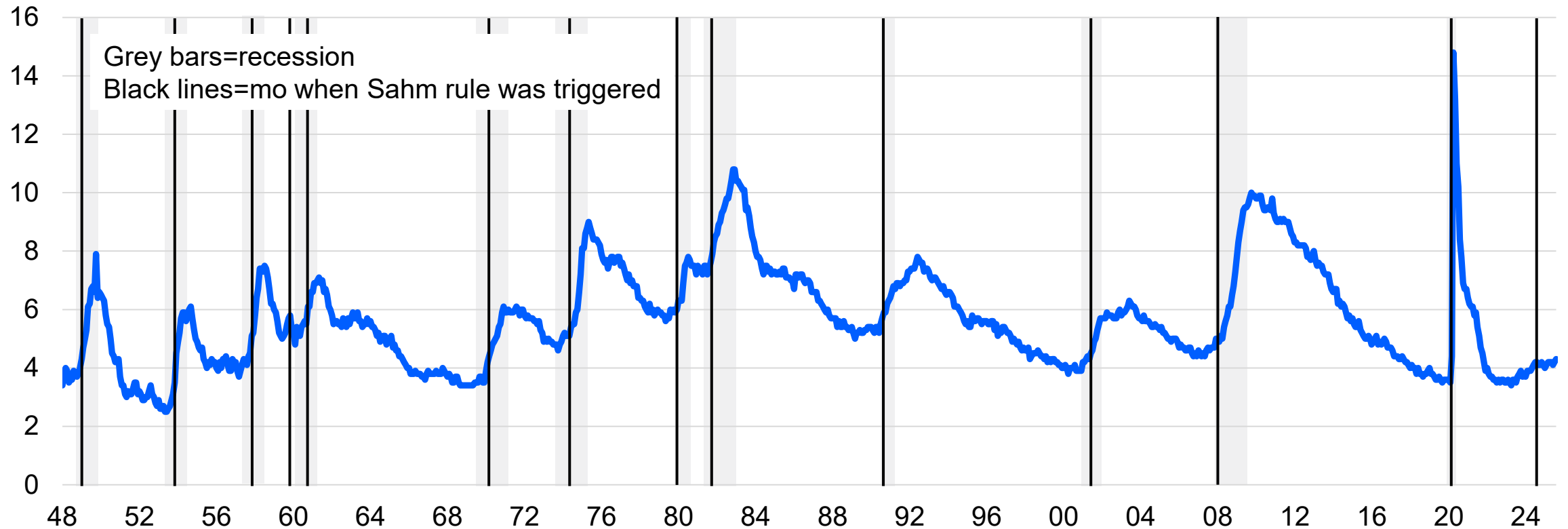
Leading Economic Index, 6-mo annualized change, %



Sources: The Conference Board, Moody's Analytics

Usually Reliable Sahm Rule Also Sends First False Signal

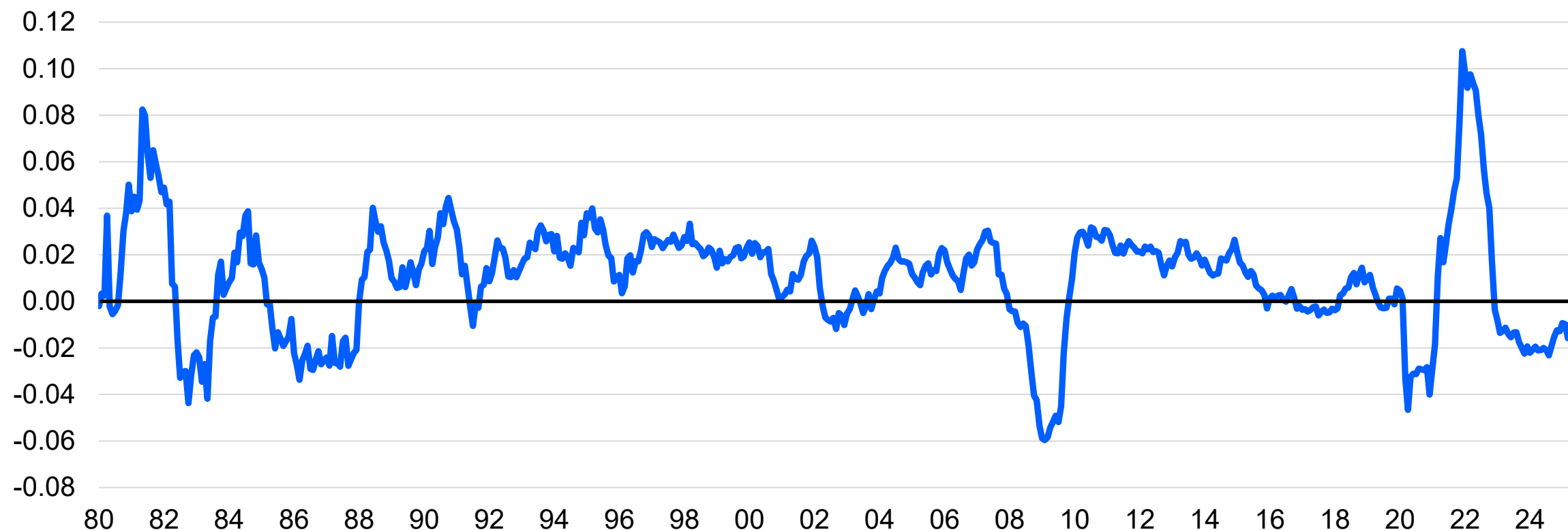
Unemployment rate, %



Sources: BLS, Moody's Analytics

Monthly Revisions to Employment Data Have Turned More Negative...

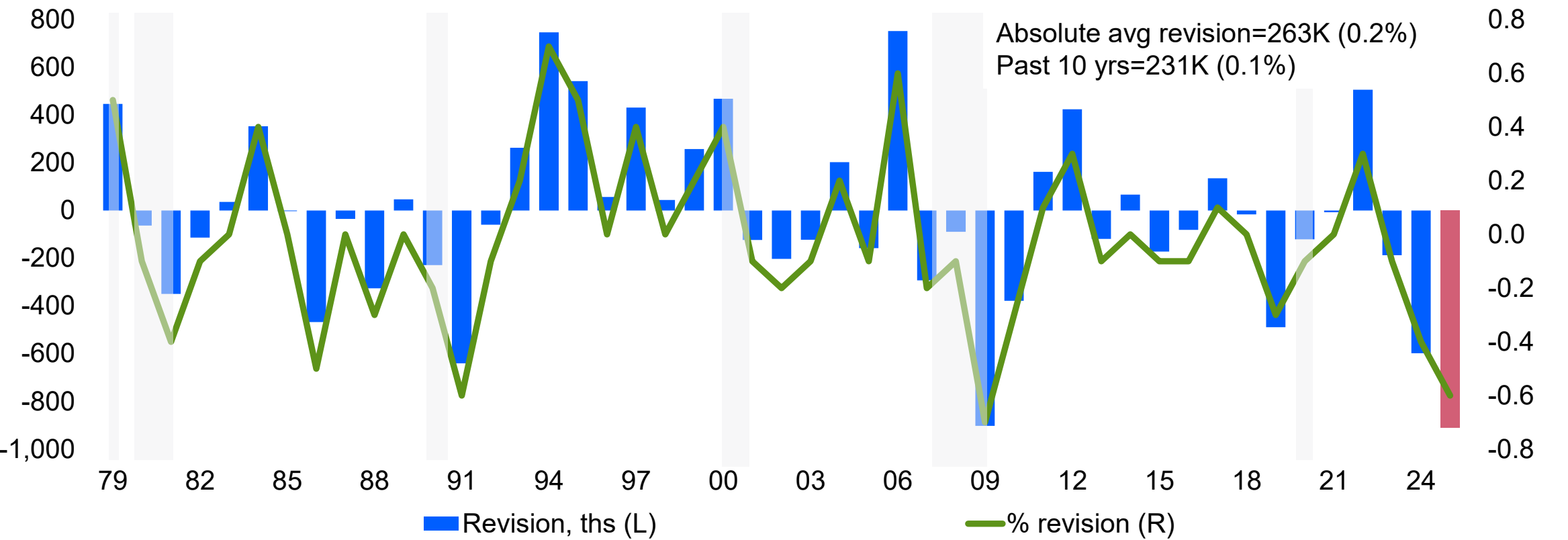
Revisions between first and third estimate, % of total employment, 12-mo MA



Sources: BLS, Moody's Analytics

...And Larger Recent Benchmark Revisions Cloud the Real-Time Picture

Annual benchmark revision to payroll employment



Note: 2025 revision is preliminary

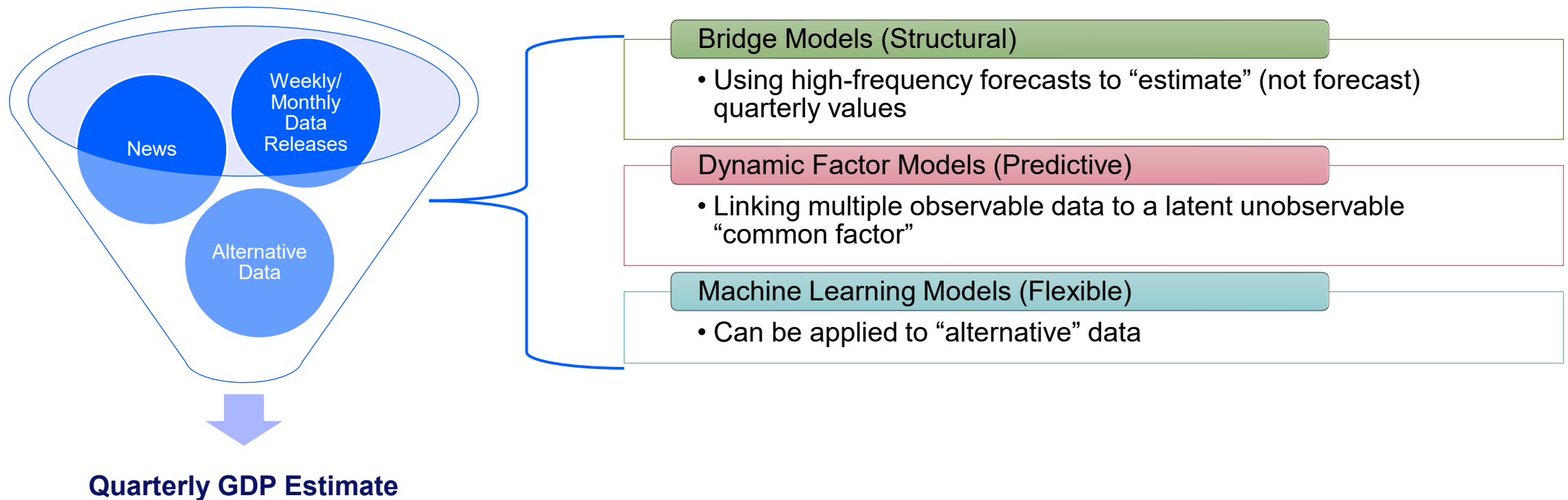
The background is a solid dark blue. Overlaid on this are several layers of thin, light blue wavy lines that create a sense of depth and movement, resembling a stylized landscape or a complex data visualization. A large, white, serif number '2' is positioned on the left side of the image.

2

Nowcasting Models

What Is Nowcasting?

Real-time updating from incoming data of beliefs about this qtr, next qtr...and also last qtr



Mixed-Frequency Dynamic Factor Models

Specification and estimation

- » Denoting GDP growth by y_t and collecting the growth rates of the monthly indicators in z_t , the **basic specification** is:

$$\begin{array}{c} \begin{array}{c} \text{\textit{f}_t is the common factor} \\ \text{\textit{u}_{i,t} are idiosyncratic movements} \end{array} \\ \begin{array}{c} \left[\begin{array}{c} \beta_1 \left(\frac{1}{3} f_t + \frac{2}{3} f_{t-1} + f_{t-2} + \frac{2}{3} f_{t-3} + \frac{1}{3} f_{t-4} \right) \\ \beta_2 f_t \end{array} \right] + \left[\begin{array}{c} \left(\frac{1}{3} u_{1,t} + \frac{2}{3} u_{1,t-1} + u_{1,t-2} + \frac{2}{3} u_{1,t-3} + \frac{1}{3} u_{1,t-4} \right) \\ u_{2,t} \end{array} \right] \end{array} \\ \left[\begin{array}{c} y_t \\ z_t \end{array} \right] = \end{array}$$

- » Where:

$$f_t = \phi_1 f_{t-1} + \phi_2 f_{t-2} + w_t, \quad w_t \sim iid N(0,1)$$

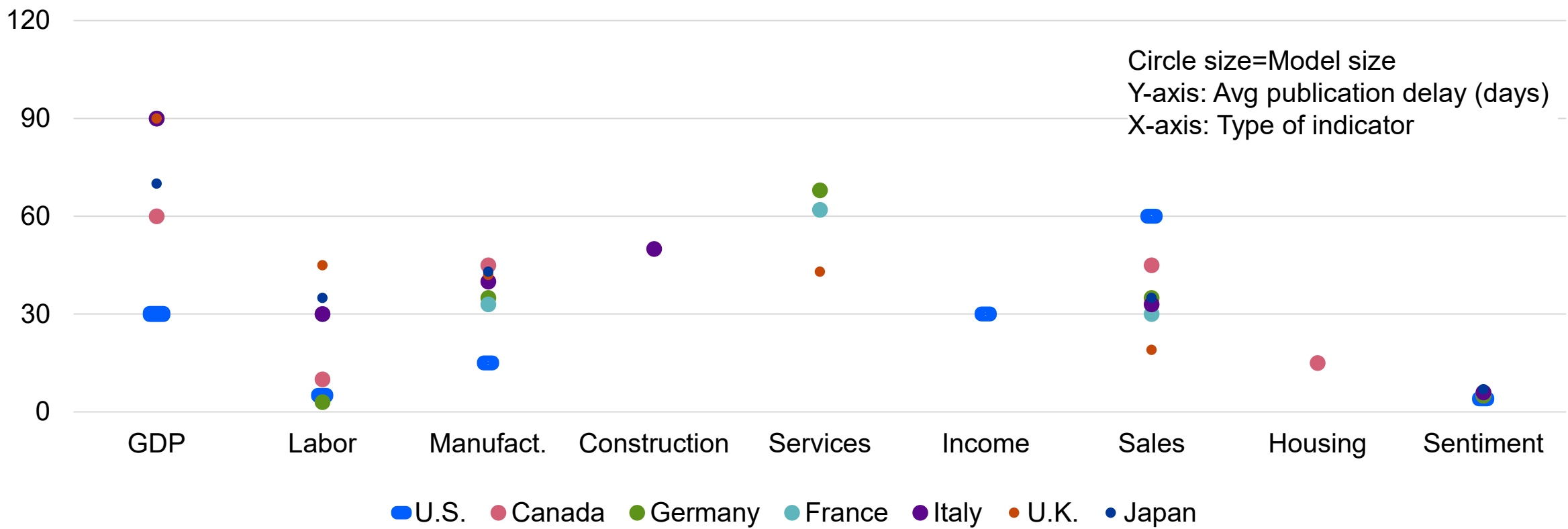
$$u_{i,t} = \psi_{i,1} u_{i,t-1} + \psi_{i,2} u_{i,t-2} + \varepsilon_{i,t}, \quad \varepsilon_{i,t} \sim iid N(0, \sigma_i^2)$$

$$\mathbb{E}(w_t \varepsilon_{i,t}) = 0, \forall i, t$$

- » We also extend this specification to include **preliminary U.S. GDP releases** and **soft indicators** and estimate our models with **Kalman filter** techniques.

Mixed-Frequency Dynamic Factor Models

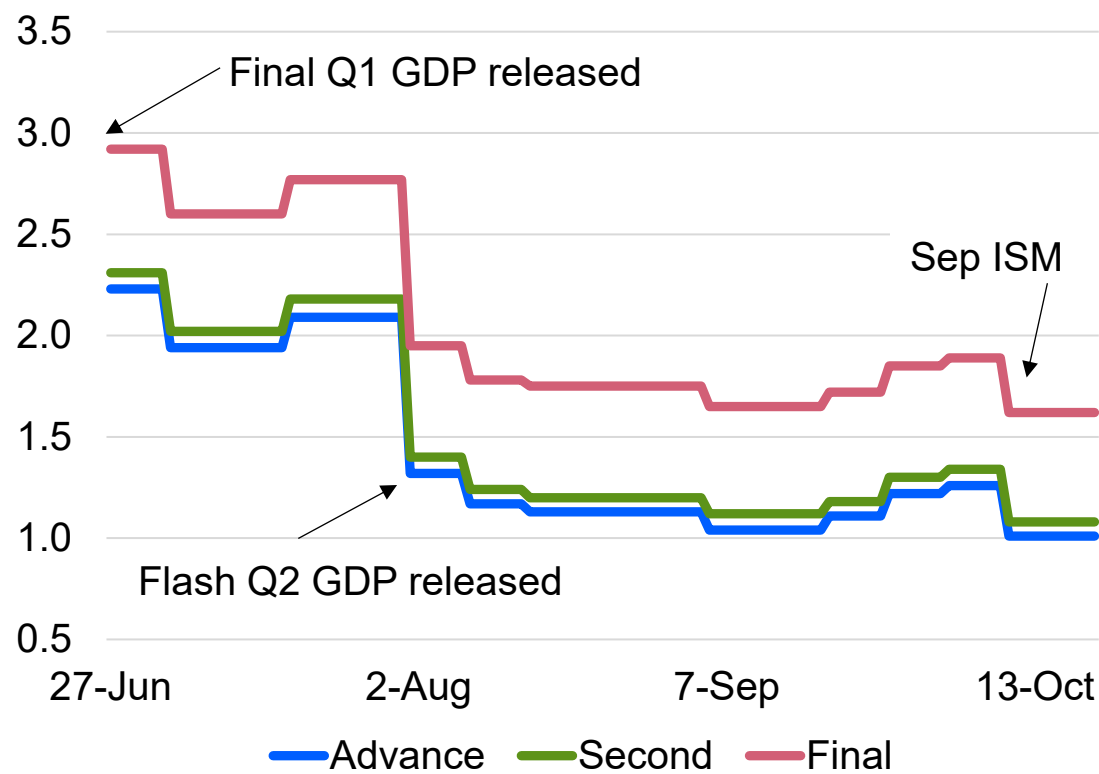
Data description



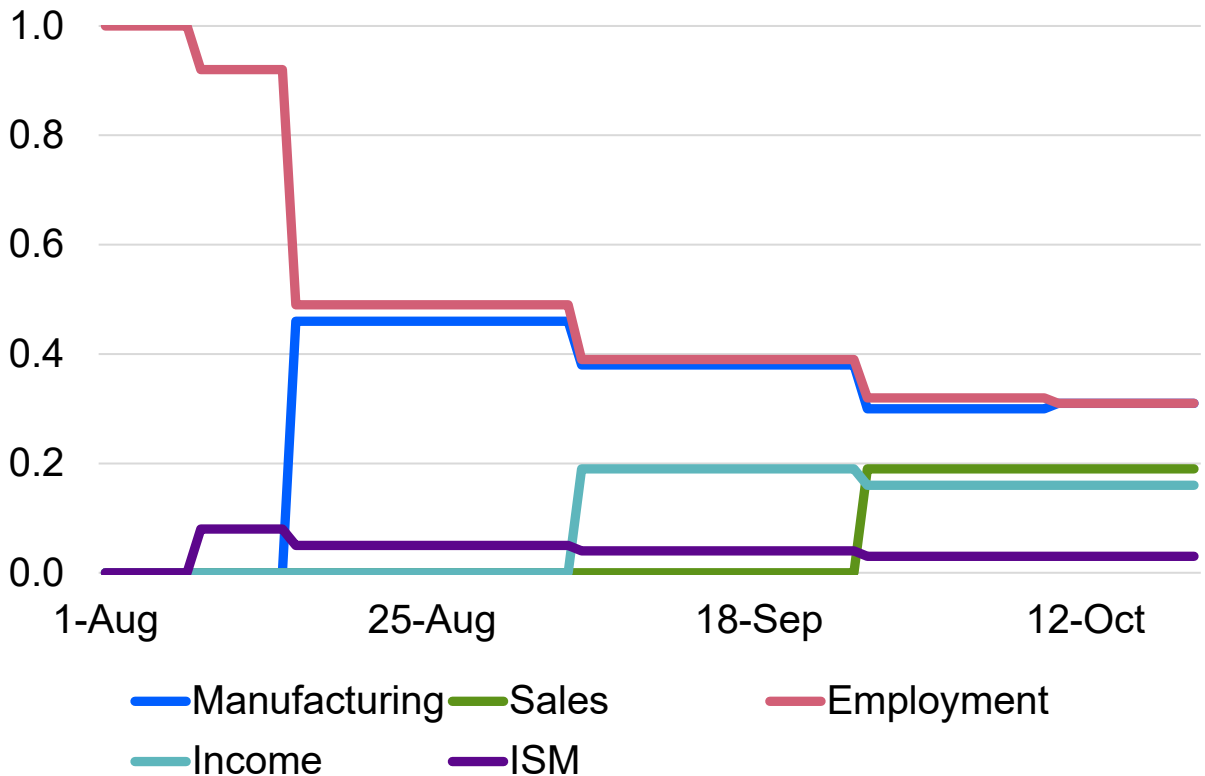
Sources: National statistical offices, Moody's Analytics

Mixed-Frequency Dynamic Factor Models

Nowcast, U.S., 2025Q3 GDP growth, %, annualized

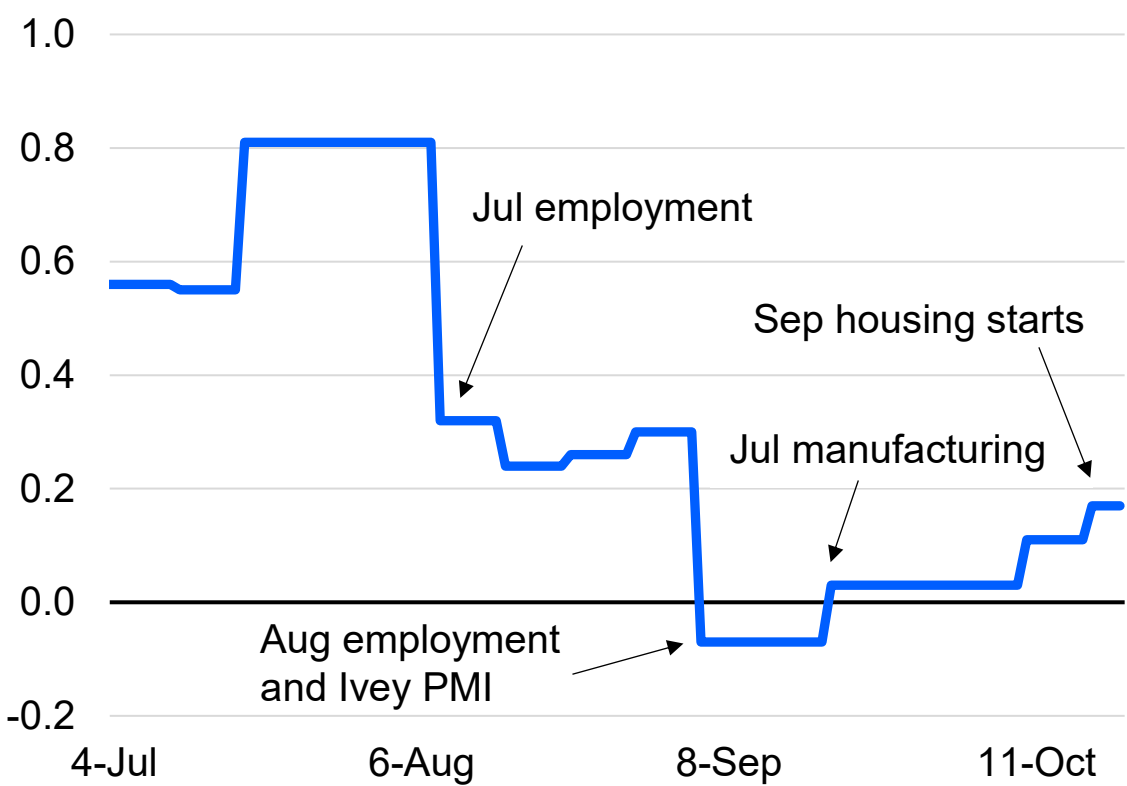


U.S. nowcast indicator weights, 0 to 1

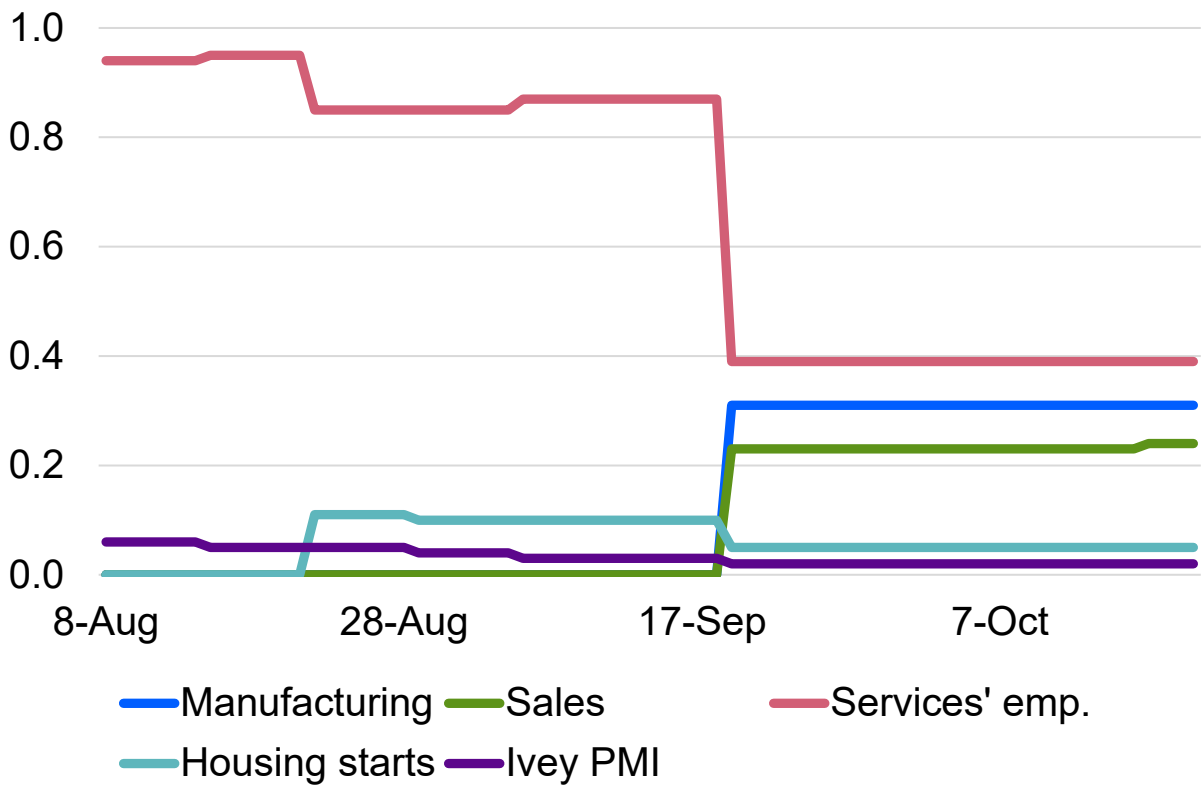


Mixed-Frequency Dynamic Factor Models

Nowcast, Canada, 2025Q3 GDP growth, %



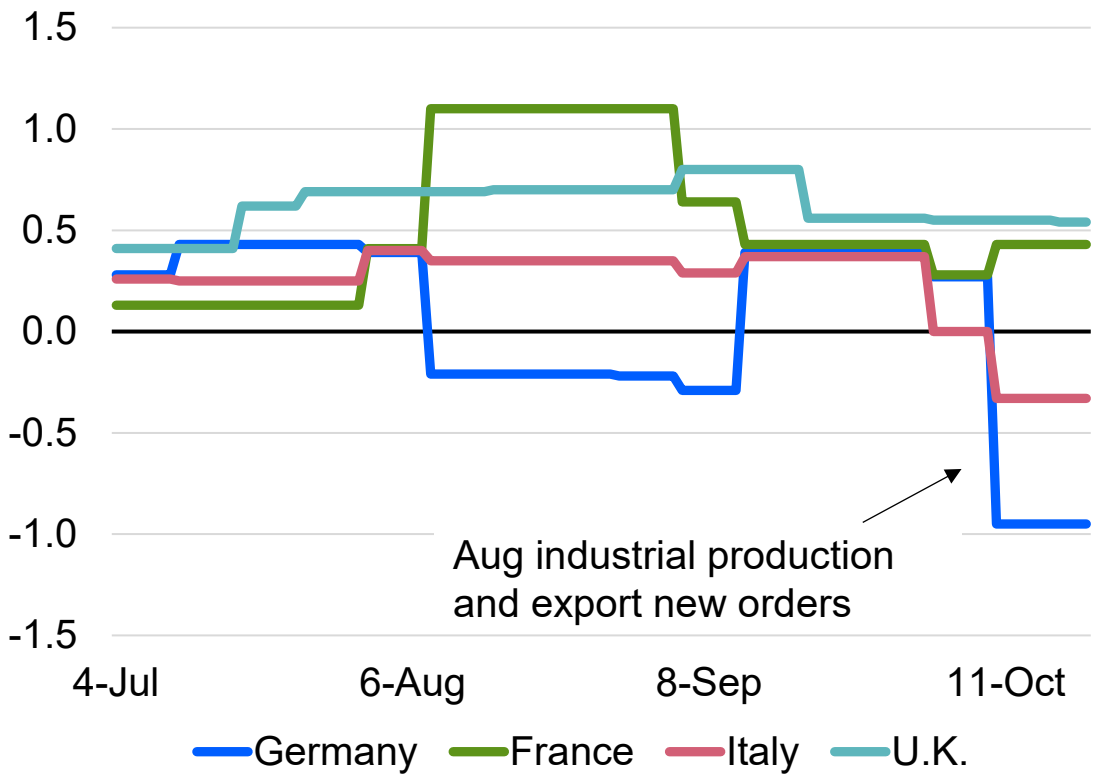
Canada nowcast indicator weights, 0 to 1



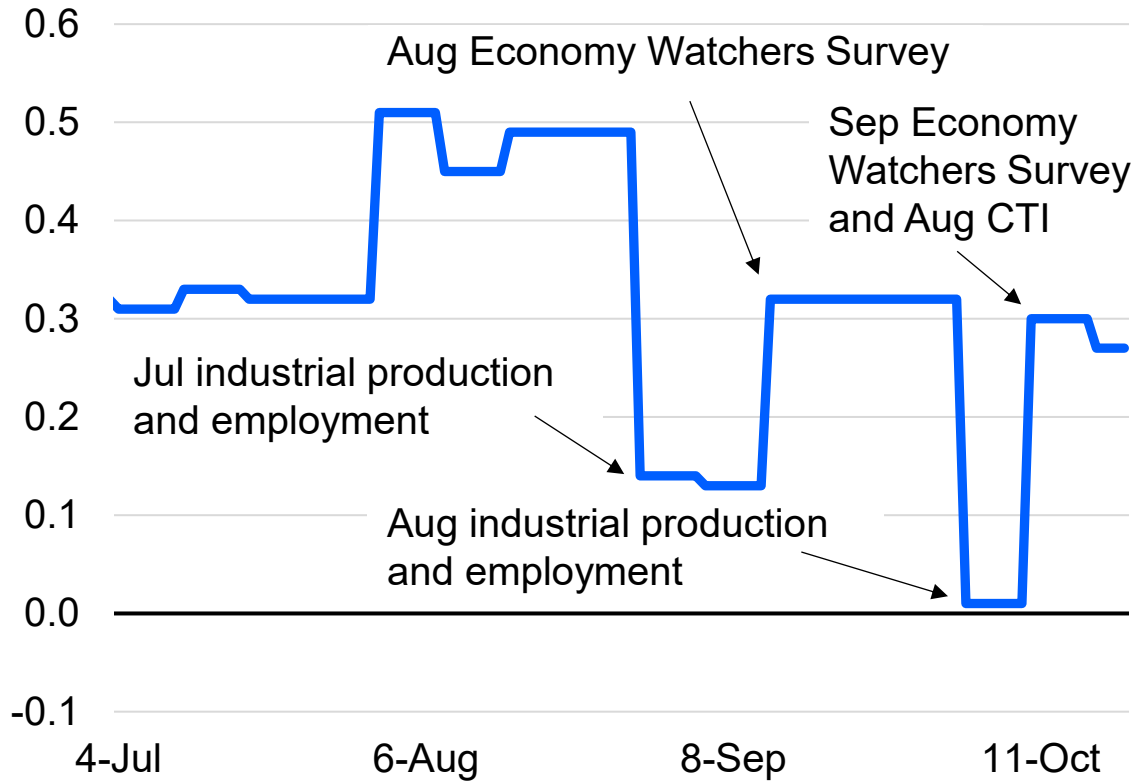
Source: Moody's Analytics

Mixed-Frequency Dynamic Factor Models

Nowcast, Europe, 2025Q3 GDP growth, %



Nowcast, Japan, 2025Q3 GDP growth, %



Source: Moody's Analytics

Mixed-Frequency Dynamic Factor Models

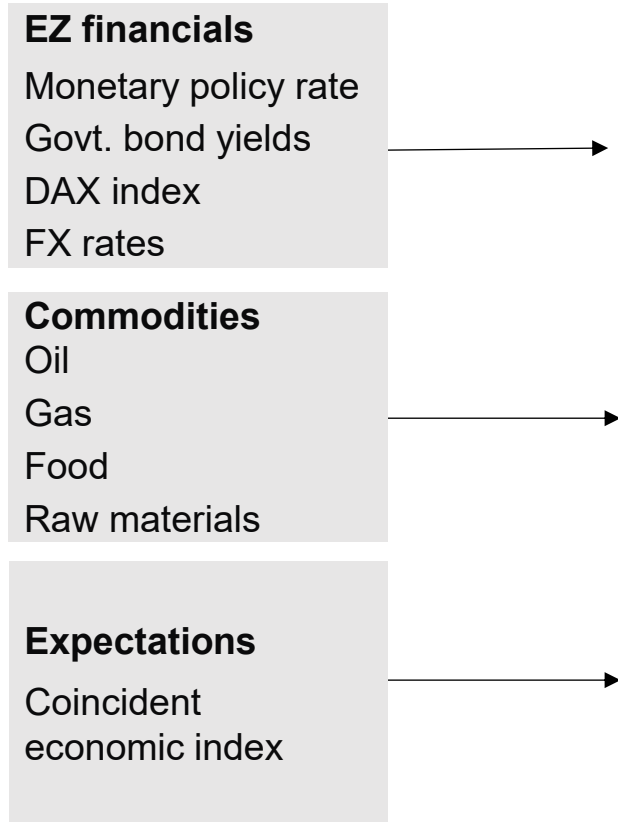
GDP nowcasts as of Oct 17, 2025

	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
United States							
• Real GDP growth – Advance, % annualized	3.0	2.2	1.4	1.0	1.1	1.3	1.8
• Real GDP growth – Second, % annualized	3.3	2.3	1.5	1.1	1.2	1.4	1.8
• Real GDP growth – Final, % annualized	3.8	3.0	2.1	1.6	1.8	2.0	2.4
Real GDP growth – Final, %							
• Canada	-0.4	-0.1	0.2	0.2	0.2	0.4	0.7
• Germany	-0.3	-0.3	-0.7	-1.0	-1.4	-0.9	-0.1
• France	0.3	0.4	0.6	0.4	0.3	0.3	0.5
• Italy	-0.1	0.1	-0.1	-0.3	-0.5	-0.1	0.2
• United Kingdom	0.3	0.2	0.4	0.5	0.7	0.6	0.6
• Japan	0.5	0.7	0.6	0.3	-0.1	0.0	0.2

Sources: National statistical offices, Moody's Analytics

Bridge Models

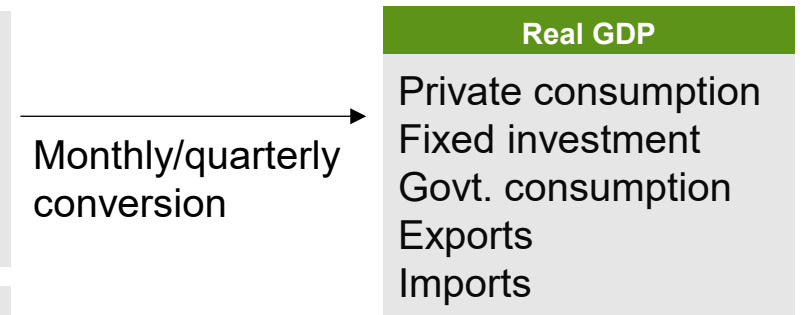
Forecast out monthly exogenous drivers



Monthly forecasts for key sectors

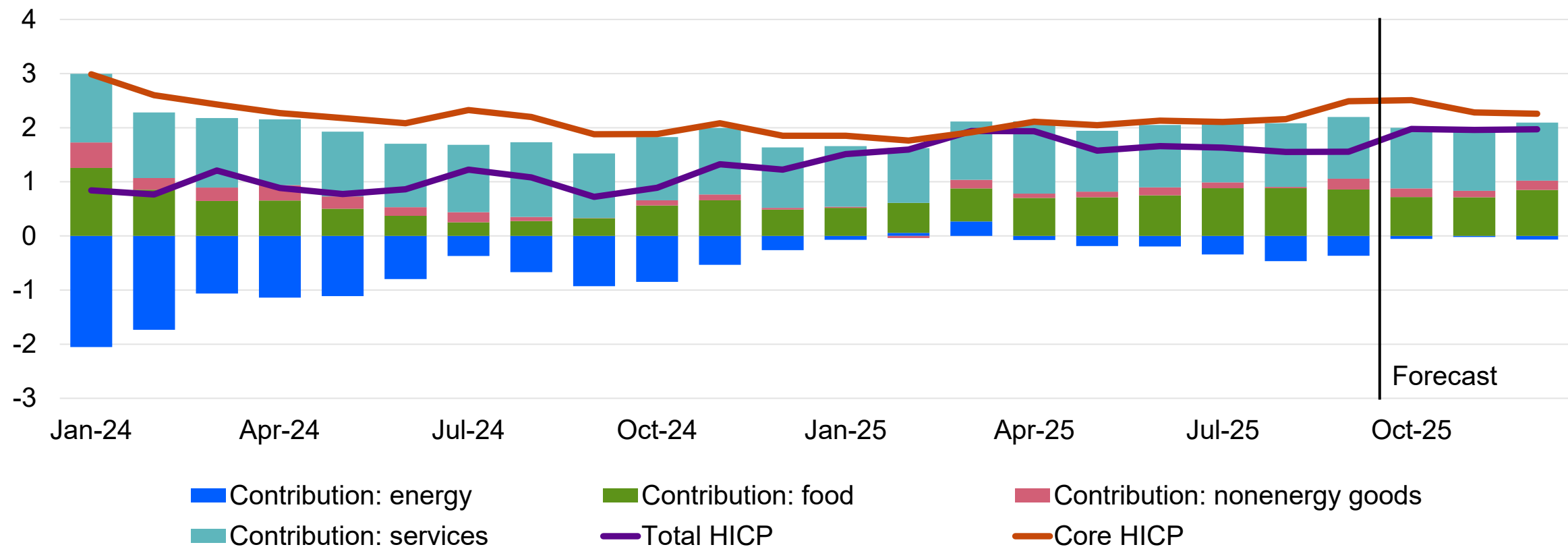


Quarterly GDP & components



Bridge Models

Italy harmonized CPI, % change yr ago; contributions, ppts



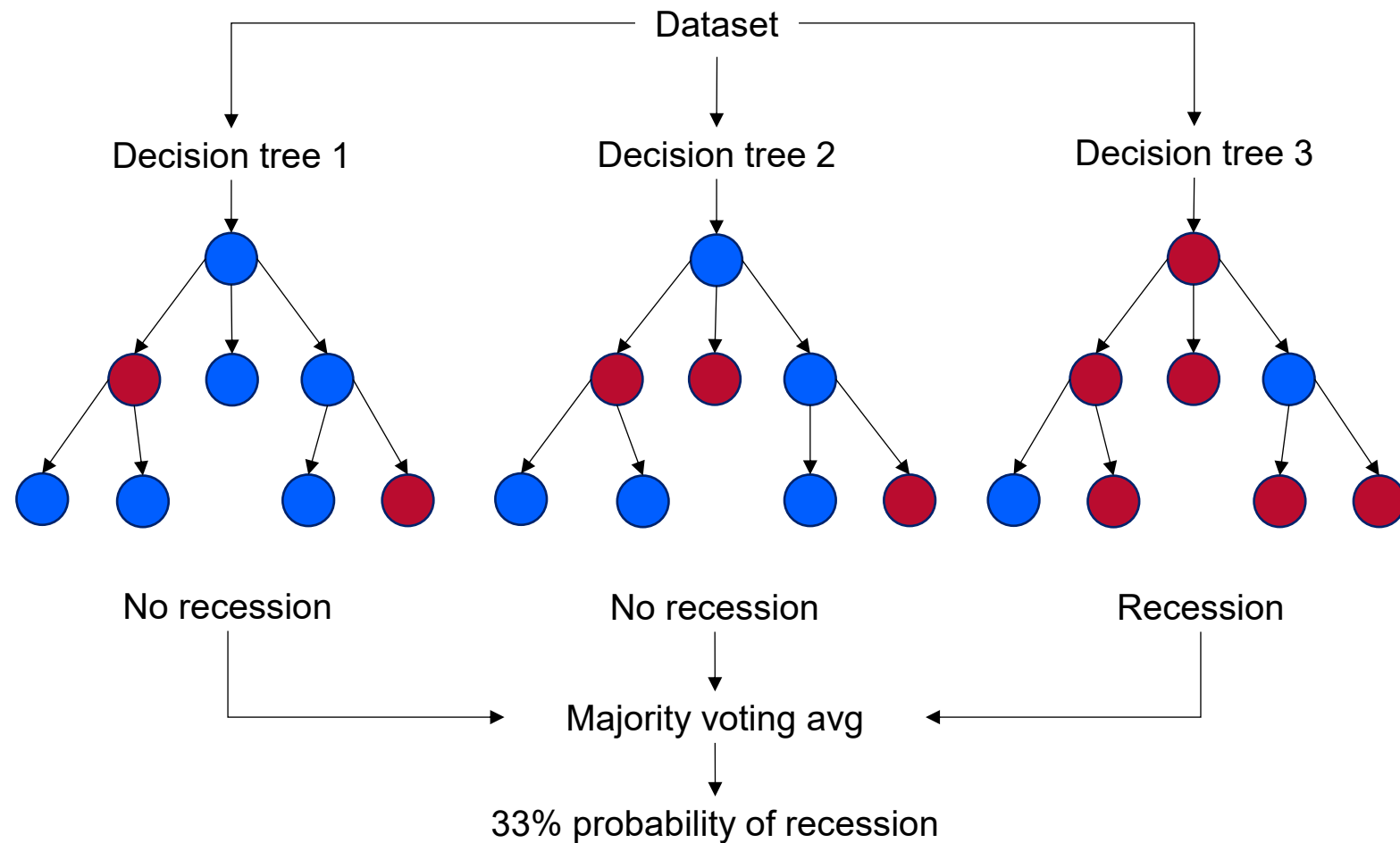
Sources: Eurostat, Moody's Analytics

The background of the slide is a dark blue color. It features abstract, wavy, light blue lines that create a sense of movement and depth. These lines are concentrated in the upper left and right areas, with some lines extending across the middle of the slide. The overall effect is modern and professional.

3

Measuring Recession Risk

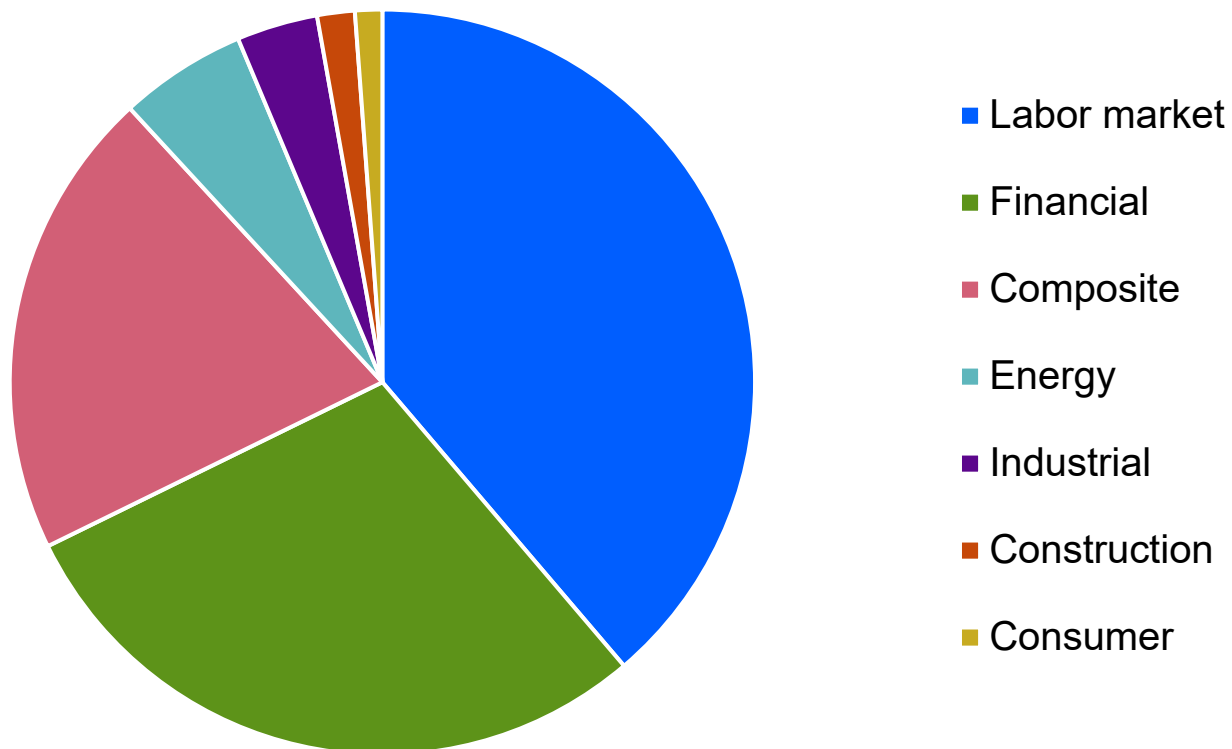
Model Architecture



Source: Moody's Analytics

Labor and Financial Variables Have Outsize Predictive Power

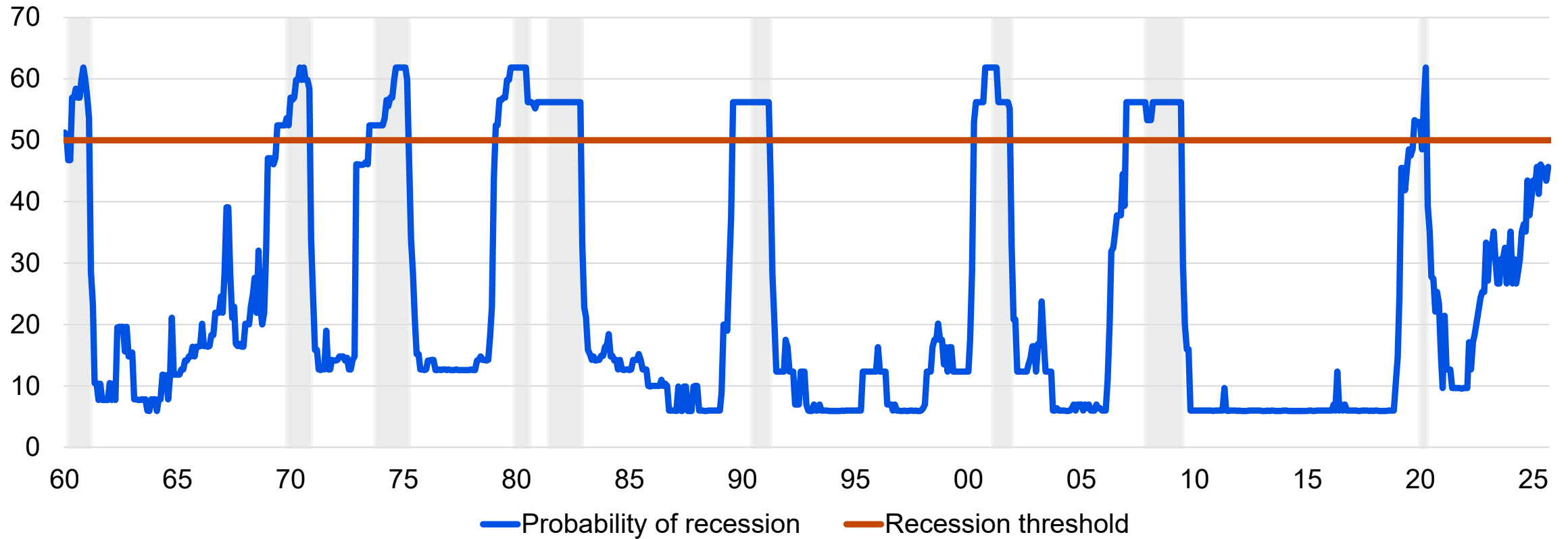
Model importance share by variable category, %



Source: Moody's Analytics

Recession Odds Elevated...

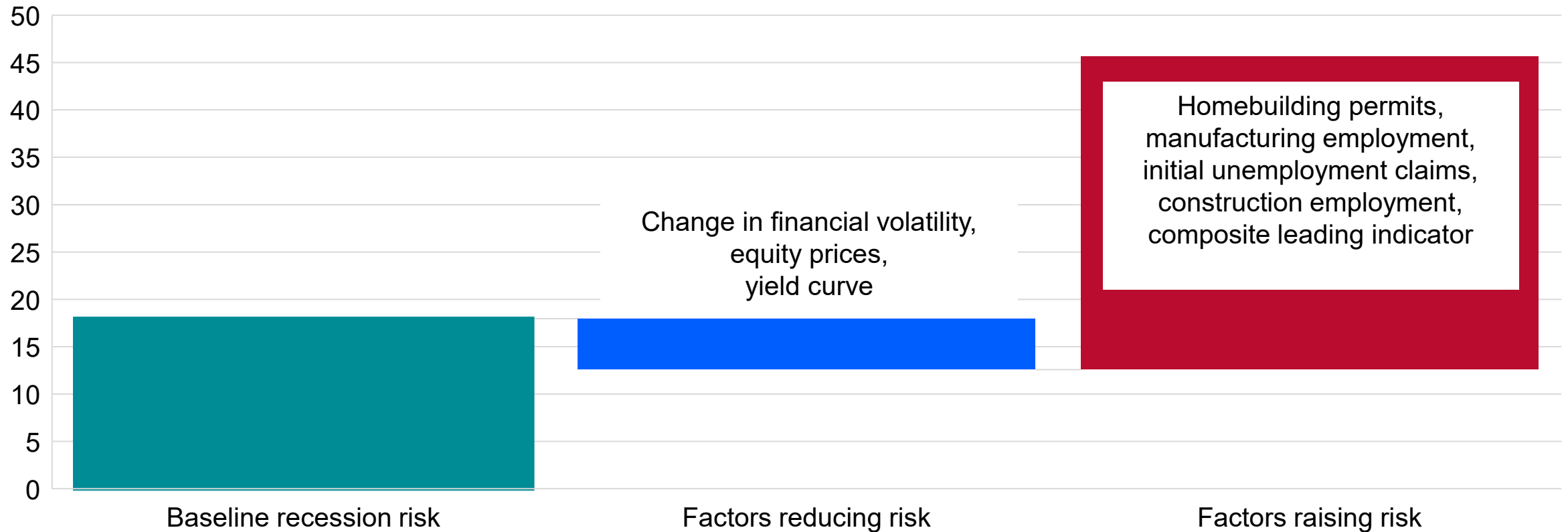
Estimated probability of recession in next 12 mo, %



Source: Moody's Analytics

...As Real Economy Softens

Estimated probability of recession in next 12 mo, %



Source: Moody's Analytics

MOODY'S

Thank you!

Check out our podcast for weekly updates:

Contact Us

Email	helpeconomy@moodys.com
U.S./Canada	+1.866.275.3266
EMEA	+44.20.7772.5454 (London) +420.234.747.505 (Prague)
Asia/Pacific	+852.3551.3077
All Others	+1.610.235.5299

www.economy.com



Please attribute information in this document to Moody's Analytics, which is a division within Moody's that is separate from Moody's Ratings. Accordingly, the viewpoints expressed herein do not reflect those of Moody's Ratings.

© 2025 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and all MCO entities that issue ratings under the "Moody's Ratings" brand name ("Moody's Ratings"), also maintain policies and procedures to address the independence of Moody's Ratings' credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at ir.moody.com under the heading "Investor Relations — Corporate Governance — Charter and Governance Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions and Net Zero Assessments (as defined in Moody's Ratings Rating Symbols and Definitions): Please note that neither a Second Party Opinion ("SPO") nor a Net Zero Assessment ("NZA") is a "credit rating". The issuance of SPOs and NZAs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs and NZAs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.