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Common Policy Communication and Sovereign Yield Curves

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Abstract

We study how common policy cycles and country-specific conditions enter sovereign yield curves, conditional valuation and market selection. Across six markets, the common share of two-year yield changes rises by 11.27 percentage points after 2019, while that of the ten-minus-two-year slope falls by 10.31 points. Ten-year commonality changes little. A fixed classifier applied to 559 official communications identifies a shared stance cycle associated with repricing at both two and ten years. Factors extracted from the other five banks retain these associations. Direct financing quantities and a balanced six-country demand panel connect communication to measured economic conditions. National Treasury-policy news also enters foreign long yields. Expanding-window valuation gaps are associated with subsequent yield adjustment. A joint common/local communication condition reduces average exposure from 50.5% to 8.3% in the six-market price-change exercise and from 53.4% to 7.9% in the three-market cash-flow exercise. Funded mean returns rise from -32.92 to -13.77 basis points; the paired gain has an interval spanning zero. Recursive factor and valuation refits assess the stability of those positions. The results connect international yield synchronization and curve differentiation to maturity-specific valuation and explicit allocation rules.

Keywords Central bank communication Sovereign yields Global policy cycles Treasury supply International transmission

JEL classification E43 E52 E58 G12

1 Introduction

Central banks describe policy in national institutional settings, while investors jointly price expected short rates, fiscal financing and demand across sovereign bond markets. The resulting question is where policy information enters the yield curve and where country-specific conditions become more important. We examine front-end yields, ten-year yields and curve slopes, trace the pricing of common and local communication, and connect those estimates to conditional valuation and investment entry conditions.

Our main finding is a change in the geography of curve variation. Between 2014-2019 and 2020-2025, two-year yield commonality increases from 45.2% to 56.4%, while ten-minus-two-year slope commonality declines from 66.7% to 56.4%. Ten-year yield commonality

remains close to 71%. Front-end synchronization and greater country differentiation in the slope therefore coexist with a strongly common long-yield level. Communication measures identify a shared policy cycle that enters both maturity sectors.

We then examine the economic channels behind that distinction. Model-consistent US yield decompositions separate expected-rate and premium components; independent financing quantities and six-country investment, government-consumption and equity series measure economic conditions directly. Author-published Treasury-policy shocks and quantitative monetary-news controls examine international transmission. Changes in variable coefficients and their allocation of explanatory fit are reported by period, with financing supply separated from physical supply-chain pressure.

The final stage asks what the pricing framework implies for valuation and positions. We estimate conditional yields in expanding windows, test subsequent adjustment of valuation gaps, and evaluate fixed entry filters and cross-market rankings. This links the common-versus-local question to observable position choices and funded bond returns. The text score provides a common policy-state input to maturity-specific pricing, valuation and position choice.

The contribution connects international yield synchronization, maturity-specific pricing and sovereign allocation within one empirical framework. Front-end synchronization and slope differentiation coexist with a highly common ten-year yield level. We trace common and local communication through these prices, incorporate directly measured financing and demand conditions, and evaluate the resulting valuation and entry rules. International policy-news transmission, financial-condition responses and funded cash flows give this framework observable economic content. The text measure supplies the policy state throughout the pricing and allocation sequence.

2 Relation to existing research

Central-bank communication affects the expected path of policy and the prices used to finance economic activity. Blinder et al. (2008) synthesize this policy channel. Gürkaynak, Sack, and Swanson (2005) separate target-rate and future-policy-path information in announcement responses. Hansen and McMahon (2016) distinguish communication about economic conditions from guidance about future policy, while Hansen, McMahon, and Prat (2018) relate computational text measures to institutional deliberation. These studies motivate a common stance measure with explicit institutional and measurement checks.

Our sentence classifier uses the published annotations of Shah et al. (2025), while the analysis corpus comes from official prepared communications. Related work on text and long-run volatility examines measurement portability and regime dependence (Yang, 2026a). Here the outcomes are sovereign yields, curve slopes, conditional valuation and fixed positions. The earlier enumerated word list supplies one transparent measurement sensitivity, with its provenance and the new six-bank implementation documented in Appendix F.

Global term-structure models organize yields into world and country factors (Diebold, Li, and Yue, 2008); macro-finance evidence relates their comovement to shared economic information and risk compensation (Jotikasthira, Le, and Lundblad, 2015). International financial transmission also connects nationally originating policy to global condi-

tions (Miranda-Agrippino and Rey, 2020). Institutional portfolio reallocation provides a complementary transmission margin during monetary normalization (Yang, 2026b). We examine the geography of yield variation alongside the economic origin and international pricing of policy news.

Bond-supply research connects maturity composition and intermediary demand to yields and expected returns. Greenwood and Vayanos (2014), D'Amico and King (2013), and Vayanos and Vila (2021) motivate the direct financing and duration quantities used here. Their maturity-sector notion of local supply has a distinct meaning from the national origin of policy news. Hanson and Stein (2015) show how policy also enters long-term real rates, motivating separate expected-rate and premium accounting through Adrian, Crump, and Moench (2013) and Kim and Wright (2005).

Policy-language states and announcement surprises offer complementary information at different frequencies. Jarociński and Karadi (2020) identify policy and information components from high-frequency rate-equity comovement, while Bauer and Swanson (2023) examine the role of public economic news in interpreting monetary surprises. Our international event tests use the author-published Treasury-policy series of Endo et al. (2026) and quantitative monetary-news measures from Acosta et al. (2025). Their construction and event windows define the corresponding pricing comparisons.

Bond return predictability provides the investment connection. Cochrane and Piazzesi (2005) relate expected excess returns to yield-curve information. We estimate conditional yields in expanding windows, test the subsequent adjustment of observed gaps, and evaluate fixed entry rules with explicit costs and funded cash flows. This sequence gives valuation convergence, incremental forecast information and position performance separate empirical tests.

3 Data and measurement

The sovereign-yield panel covers the United States, Germany, the United Kingdom, Japan, Canada and Australia. Germany serves as a euro-area benchmark-market proxy. The yield-commonality exercise uses matched weekly observations for 2014–2025. Yield conventions differ across sources: some are fitted zero-coupon rates and others benchmark-bond yields. Those differences motivate the existing homogeneous-source checks and further convention-matched specifications. Fitted-zero sources follow Gürkaynak, Sack, and Wright (2007), Schich (1997), and Bank of England (2026).

The communication corpus contains 87 US, 88 euro-area, 115 Australian, 88 Canadian, 88 UK and 93 Japanese documents. US, Australian, Canadian and Japanese inputs are policy-decision statements; euro-area inputs are prepared press-conference openings; UK inputs are policy summaries. The UK series begins in August 2015. Press-conference questions and separately published minutes are excluded from the prepared-text unit. Flagged special releases are retained in audit records but excluded from the current main corpus. Document genres and publication times remain institutional differences to preserve in an event study.

A fixed four-class TF-IDF logistic classifier is trained only on annotated sentences dated before 2015. Training and hyperparameters are fixed from the annotated textual benchmark. The classes are hawkish, dovish, neutral and irrelevant. A document score sums

hawkish minus dovish probabilities and divides by the sum of one minus irrelevant probability, retaining neutral content in the denominator. The temporal-holdout macro-F1 is 0.556. Bank-specific style and translation motivate the measurement checks and external-label coverage tests.

Appendix F checks the measurement link using the same 559 documents and the original month-end release assignments. A preexisting fixed word list scores exactly the retained classifier sentences. A separate factor specification extracts each bank common factor from the other five banks before projecting its own standardized stance onto that factor. These exercises address vocabulary sensitivity and own-bank participation in factor extraction. External labels and institutional document genres receive separate coverage checks in Appendix G.

We link published external annotations to the corpus by central bank, calendar year and exact normalized sentence, excluding overlap with pre-2015 classifier-training sentences. The matched subset contains 794 unique labeled keys in 151 official documents; its pooled four-class macro-F1 is 0.545, with 736 keys from Canada. Separate bank-held-out benchmark scores range from 0.474 to 0.565. Appendix G reports the bank-level samples, class coverage and metrics.

Monthly communication states use the latest document available by month-end, with a maximum carry interval of 120 days; the realized maximum is 70 days. The release-date audit distinguishes carried states from new statements. All six areas are observed for 125 months from August 2015 through December 2025, producing 124 monthly changes. Standardization and principal-component estimation use the analysis sample and are explicitly retrospective.

The empirical panels have explicit scopes. Yield commonality uses six markets in 2014-2025; the monthly communication panel contains 124 changes in September 2015-December 2025. The comparable demand panel contains 41 quarters and 246 market-quarter observations. Conditional valuation supplies 65 held-out signal months, with 64 monthly yield outcomes. Cash-flow return tests use 63 common holding periods in three fitted-zero markets. Financial-condition components cover all six markets, while aggregate NFCI and detailed yield decompositions are US cases.

Source definitions follow Bank of England (2026) and Bank for International Settlements (2026) for fitted curves and real exchange rates, Federal Reserve Bank of Chicago (2026) for NFCI, and Federal Reserve Bank of New York (2026) for GSCPI. OECD (2026a) provides the share-price and short-rate series; OECD (2026b) provides quarterly expenditure growth. US Bureau of Economic Analysis (2026) provides the nonresidential investment series. The source ledger records exact series identifiers, source versions and timing conventions.

4 Empirical framework

Let Z(i,t) denote a bank-standardized communication state. We write $Z(i,t)=v(i)F(t)+L(i,t)$, where F is the first principal component and L is the residual. The pricing regression relates monthly yield changes to changes in the bank-specific common component $v(i)F(t)$ and local component L(i,t), with market fixed effects. Monthly pricing uses the 124 contemporaneous level observations to estimate scales and PC loadings. Coefficients are

per unit change in that standardized component.

$$Z_{i,t} = v_i F_t + L_{i,t}$$
$$\Delta y_{i,t}^{(n)} = \alpha_i + \beta_G^{(n)} \Delta(v_i F_t) + \beta_L^{(n)} \Delta L_{i,t} + \varepsilon_{i,t}^{(n)}$$

The matched macro-control exercise uses the United States, euro area, Australia and Canada. It controls for the monthly change in the realized policy target, a lag-aligned headline inflation level and its change. Monthly inflation is assigned an availability date two months after its observation month; Australian quarterly inflation is assigned two months after quarter-end and then carried forward. The macro controls use current-vintage data aligned with those stated release lags.

The US decomposition exercise uses model-consistent fitted yields: within each model, fitted yield equals the expected-rate proxy plus its premium. The same regressors and sample are used for all three components, so regression coefficients also add exactly. Each expected-rate proxy and premium comes from the same fitted term-structure model, preserving its internal yield accounting.

Supply specifications use independently observed quantities. Treasury security-level records distinguish reopening tranches from CUSIP totals. Nominal coupon principal excludes bills, floating-rate notes and inflation-indexed securities. Outside-Fed nominal supply subtracts the last available Wednesday holdings level each month from the month-end nominal coupon stock. This measure includes foreign official and other public holdings outside the Federal Reserve. Its coverage is the nominal coupon stock outside the Federal Reserve, including other official holders.

A separate duration-stock proxy discounts scheduled coupon payments on a fixed 4% curve and converts parallel-shift DV01 into equivalent principal of a ten-year reference bond. Fixing the discount curve removes contemporaneous yield revaluation from the quantity measure. The proxy records issuance, redemptions and aging on a fixed discount curve; the separate outside-Fed stock remains a face-value measure.

For cross-market supply analysis, US nominal coupon principal changes and Canadian domestic direct-and-guaranteed bond net issues are standardized separately by market. The balanced US–Canada panel has 248 market-month observations. The two series differ in instrument coverage and valuation details, so pooled estimates are accompanied by a specification with month and market fixed effects. German CSEC data begin in December 2020 and are retained as a shorter extension without zero-filling earlier years.

Monthly communication-pricing and financing regressions use 1,000 paired circular blocks of six months. Each replication resamples all markets jointly and re-estimates the text standardization, common factor, supply scale and pricing coefficients. Percentile intervals are exploratory. Four designated mechanism tests additionally receive an approximate centered-bootstrap maximum-t adjustment. The resampling re-estimates the generated factors while holding classifier and term-structure-model parameters fixed.

The calendar-score covariance uses the Bartlett HAC construction of Newey and West (1987). Synchronized block resampling preserves cross-market dependence within the resampling framework described by Lahiri (2003). Designated testing families receive the sequential adjustment of Holm (1979); the serial multiplier sensitivity follows Shao (2010). Appendix G separately defines the positive-weight recursive sensitivity and its interpretation.

The empirical sequence has five distinct tests. Commonality measures the share of standardized yield variation captured by a common component. Pricing regressions relate communication and independent economic variables to observed repricing. Financial-condition tests examine whether communication slopes change and whether a hawkish, steepening configuration coincides with other asset-price changes. Conditional valuations estimate contemporaneous relative pricing using strictly earlier regression windows. Subsequent yield changes and fixed-rule funded returns evaluate convergence and investment performance separately. Each test retains its own sample, units and dependence correction.

The key comparisons are stated on their own objects: changes in common shares for two-year yields and the ten-minus-two slope; common and local pricing coefficients at two and ten years; coefficient changes and fit allocation for directly measured economic variables; communication slope changes for financial-condition outcomes; subsequent yield changes conditional on an observed valuation gap; and paired performance of fixed positions. Each comparison has its own estimand; event-time attribution uses the separate announcement design.

5 Results

5.1 Common policy cycles and maturity specific pricing

Weekly evidence in Table 1 distinguishes changes in commonality from its absolute level. The two-year common share rises by 11.27 percentage points, with a 95% block interval of [3.53,18.59]. The ten-minus-two share falls by 10.31 points, with [-17.48,-2.73]. The ten-year change is -1.27 points, with [-5.59,3.89]. Thus the strongest common-versus-local contrast concerns front-end yields and the curve slope. Ten-year yield levels retain a higher absolute common share than two-year yields in both periods.

Table 1 Common yield variation across periods

Yield object	2014 to 2019 %	2020 to 2025 %	Change pp	95% block interval
Two year	45.2	56.4	11.27	[3.53, 18.59]
Ten year	72.1	70.8	-1.27	[-5.59, 3.89]
Ten minus two	66.7	56.4	-10.31	[-17.48, -2.73]

Note Each tenor uses its own first principal component of standardized weekly yield changes. Paired circular blocks contain 13 weeks and refit each component. Entries report changes in commonality across periods; ten-year yields have the larger absolute common share. The curve is ten minus two years.

The first principal component explains 66.2% of standardized stance-level variation, with positive loadings for all six policy areas. Standardizing monthly changes separately reduces the corresponding common share to 23.7%. The distinction is economically relevant: persistent shared policy cycles can coexist with asynchronous meeting-level revisions. The

level factor summarizes the shared policy cycle; the change factor records less synchronized monthly revisions.

In the six-market pricing regression, common-component coefficients are 17.52 bp at two years and 13.87 bp at ten years. Their unadjusted block intervals exclude zero. The curve coefficient is -3.64 bp with an interval containing zero. In the four-market matched-control sample, the controlled coefficients are 17.82 and 15.67 bp. The controlled maturity difference remains imprecise. Common communication enters pricing at both maturities, while their response difference remains imprecise. Table 2 reports the corresponding estimates.

Table 2 Common communication and monthly yield repricing

Sample and model	Two year bp	Ten year bp	Ten minus two bp
Six markets	17.52 [6.85, 29.14]	13.87 [5.28, 24.18]	-3.64 [-11.53, 3.50]
Four markets baseline	19.78 [7.16, 34.95]	16.07 [5.82, 28.82]	-3.71 [-11.72, 3.90]
Four markets controlled	17.82 [5.33, 32.65]	15.67 [4.42, 29.28]	-2.15 [-10.77, 4.84]

Note Brackets report exploratory 95% percentile intervals from 1000 paired six-month blocks with factor re-estimation. Four-market models use the same 496 observations. Coefficients measure a unit change in a standardized stance-level component.

The measurement checks retain positive common-pricing point estimates at both maturities. Using factors extracted from the other five banks gives 18.56 bp at two years and 14.88 bp at ten years, with paired-refitting intervals excluding zero. The fixed-word-list estimates are 15.04 and 7.99 bp, with wider intervals containing zero. Its common level factor correlates 0.778 with the classifier factor. The shared stance cycle therefore has an alternative textual counterpart, while the precision of its pricing coefficients depends on the measure. Table F1 reports all maturities. The replication files contain the paired coefficient contrasts and the separate measurement-bootstrap run.

US fitted-yield results give a consistent direction under both ACM and Kim–Wright. Under ACM, the common communication coefficient at two years is 19.34 bp, consisting of 9.11 bp in the expected-rate proxy and 10.23 bp in the premium. At ten years, the corresponding components are 8.21 and 10.12 bp. Under Kim–Wright, the two-year components are 10.78 and 8.01 bp, and the ten-year components are 6.63 and 10.03 bp. The two models allocate the fitted-yield association differently across expected rates and premiums. The expected-rate intervals contain zero, and the precision of the ten-year premium coefficient depends on the model.

5.2 Local financing demand and curve differentiation

Outside-Fed nominal coupon supply has a positive secondary association with ten-year fitted yields in both models. A one-standard-deviation monthly supply increase corresponds to 3.81 bp under ACM, with a percentile interval of [0.63,7.37], and 4.26 bp under

Kim–Wright, with [1.10,7.75]. The premium allocations are 2.01 and 2.13 bp, respectively; only the latter individual interval excludes zero. The fixed-discount duration-stock alternative also has positive point estimates, but its fitted-yield intervals contain zero. These differences require the duration and premium mechanisms to remain separate from the clearer fitted-yield association.

US fitted-yield supply coefficients remain positive when excluding 2020–2021 and in leave-one-year-out diagnostics. These exclusions assess sign stability. In contrast, the pooled US–Canada current net-supply coefficient for the curve is 1.36 bp with an interval containing zero; the lagged-flow estimate changes sign. Adding month fixed effects yields a curve coefficient of -0.63 bp, also imprecise. The pooled curve response varies by specification, and all four simultaneous mechanism intervals contain zero.

We extend the driver analysis to all six countries using OECD seasonally adjusted real gross fixed capital formation and government final consumption growth. These are quarter-on-quarter growth rates matched to the same-quarter yield changes. Investment includes residential and public fixed investment as well as business investment; government consumption measures one component of fiscal demand. The balanced sample spans 2015Q4-2025Q4, with 41 quarters and 246 market-quarter observations. Estimation retains the quarterly observation frequency. Germany supplies both the sovereign benchmark and national demand measures, while its communication input represents the ECB.

For investment, government consumption and equity index changes, we separate the equal-weight six-country mean from each country's deviation. The model includes country effects, quarterly changes in frozen common and local communication components, both components of each economic variable, and changes in quarterly-average GSCPI. Coefficients are scaled by the pooled panel standard deviation of the corresponding regressor. Inference aggregates scores by calendar quarter, uses four-quarter Bartlett HAC, and references quarter-based t and F distributions. A country-and-quarter-effects specification retains the local components while absorbing global quarter-level variation.

The common communication coefficient at ten years is 16.43 bp per panel standard deviation, with a 95% interval of [8.80,24.05]. Its null-imposed serially dependent multiplier p-value is 0.006. Local investment has a positive coefficient of 2.30 bp, and local equity performance has -2.80 bp; their individual HAC intervals exclude zero. With quarter effects these estimates are 2.64 and -2.99 bp. These component estimates are exploratory: the three joint demand-block tests retain the equity block under finite-quarter Holm adjustment, but none survives the corresponding dependent-multiplier adjustment. Global and local economic conditions therefore have distinct estimated pricing relations, while the strongest inferential result remains common policy communication. Table 3 reports the corresponding estimates.

Table 3 Six market quarterly demand and ten year repricing

Regressor	Coefficient bp	95% quarter HAC interval	p
Common communication	16.43	[8.80, 24.05]	0.0001
Local communication	2.56	[-0.37, 5.50]	0.0851
Global investment	0.82	[-15.56, 17.21]	0.9195
Local investment	2.30	[0.10, 4.50]	0.0409
Global government consumption	-10.77	[-27.39, 5.85]	0.1978
Local government consumption	0.58	[-1.71, 2.88]	0.6110
Global equity change	4.56	[-1.44, 10.57]	0.1325
Local equity change	-2.80	[-4.99, -0.60]	0.0137
Supply chain pressure	-7.79	[-17.72, 2.15]	0.1213

Note 246 market-quarter observations in 41 balanced quarters. Country effects and all displayed regressors enter jointly. Units are panel SDs of the quarterly regressor. Individual intervals are unadjusted; joint demand-block and multiplier tests are reported separately.

Period comparisons show that economic relations change across the cycle. In the US case, the investment-and-equity block has a significant coefficient change under the fixed six-test adjustment, while its ten-year fit allocation declines over the broad decade split. The six-country recent-phase diagnostic records rising ten-year investment attribution between 2020-2022 and 2023-2025, alongside falling supply-chain attribution; the serially dependent multiplicity correction does not retain the associated slope-change tests. Appendix C reports both cuts and both inference methods. Demand pricing varies across periods, variables and maturities.

5.3 National policy news and international transmission

News originating in one country can contribute to common foreign yield movements. We test this using the independent author-published Treasury-policy series of Endo et al. (2026). Because its construction uses US interest-rate futures, the independent pricing outcomes are five foreign markets. The matched analysis contains 1372 market-date observations on 285 nonzero source dates from 2015 through May 2025. Quantitative FOMC and minutes controls measure the direction and size of observed monetary repricing; the combined monetary-event window covers statements and press conferences once.

With these controls, one source-sample standard deviation of Treasury-policy news is associated with 1.47 bp of Canadian and 1.87 bp of UK ten-year repricing; five-market Holm p-values are 0.0069 and 0.0040. The other market intervals contain zero. The joint weekly maturity contrast and lagged-state interaction are imprecisely estimated. These results connect national policy news to international long-yield pricing across the maturity sectors. Daily-window conventions, official forecast revisions, matched coefficient comparisons and complete event results appear in Appendix B.

5.4 Communication curves and financial conditions

A more hawkish tone accompanied by a steeper curve is a configuration of policy language and bond prices. Broader traction concerns how other financial conditions move with that configuration. We therefore examine the US NFCI and separate six-market equity-price and BIS real-effective-exchange-rate changes. The latter two outcomes have distinct economic meanings: an equity gain can ease equity financing conditions, while real appreciation changes external competitiveness and measures a distinct external-price channel. Germany is represented by its national REER within the euro area. The outcomes are kept separate.

The estimated post-2020 changes in US NFCI and six-market component slopes remain imprecise. Among 251 own hawkish-change market-months, 107 have a rising ten-minus-two spread. Their conditional equity and real-appreciation differences relative to other hawkish months are 0.300 and 0.037 percentage points, with both intervals spanning zero. The evidence identifies heterogeneous curve configurations, while broad loss of traction remains a separate hypothesis. Appendix D supplies the full specifications, month-effects sensitivity, four-test adjustments and null-imposed dependent-multiplier results. Removing contemporaneous foreign outcome controls also leaves all four component-interaction intervals spanning zero, with no result retained by either corresponding four-test correction. Table F2 reports the broader specification that retains contemporaneous common asset-price movements.

5.5 Conditional valuation and subsequent adjustment

We estimate conditional yield valuations separately by market and maturity using expanding windows. The first training window contains 60 months. At each signal month, text standardization, principal-component loadings and regression coefficients are estimated using strictly earlier observations. Current common and local communication states are then projected using that training transformation. The global-only benchmark conditions on the same-maturity mean yield in the other five markets. The communication model adds common and local tone levels; the augmented model also adds one-month-lagged local and foreign share-price index changes and global supply-chain pressure. Four-market macro, two-market financing and US investment extensions retain their narrower coverage explicitly.

There are 65 held-out signal months from August 2020 through December 2025. The valuation conditions on other-market yields observed in the signal month. A positive gap is the actual yield minus its conditional fitted value. Revised macroeconomic histories are aligned with assumed publication lags; the exercise is a chronological pseudo-out-of-sample valuation. Equity inputs are OECD monthly index changes, global supply-chain pressure is the New York Fed GSCPI, and broad US real nonresidential investment is the BEA series PNFIC1.

The augmented six-market ten-year conditional RMSE is 31.23 bp, compared with 33.48 bp for the matched global-only benchmark. The paired monthly squared-error difference is negative, but its interval contains zero. More directly, each 10 bp of positive augmented valuation gap is associated with a subsequent one-month yield change of -0.53 bp, with a 95% month-score HAC interval of [-1.04,-0.01]. At three months the coefficient is -1.76

bp, with [-2.90,-0.61]. Regressions include market effects and retain cross-market dependence by aggregating scores within calendar month. The one-month test is primary; three months is a specified sensitivity, with overlapping outcomes accommodated by HAC. The gap coefficients document subsequent yield adjustment, while the paired error comparison leaves the relative model fit imprecise. Additional fixed controls for starting own and foreign yield levels and their most recent monthly changes reduce the augmented gap coefficients to -0.24 bp at one month and -0.79 bp at three months per 10 bp gap; both intervals contain zero and neither passes the two-test adjustment. The original convergence association is therefore distinguished from incremental information beyond the yield state. Relative-yield outcomes and all six leave-one-country-out checks are retained. These controls assess additional forecast information beyond yield states that also enter the gap. The controlled coefficient measures incremental forecast information in that valuation combination. Table 4 reports the corresponding estimates.

Table 4 Held out valuation gaps and subsequent ten year yield changes

Valuation model	Months ahead	Coefficient bp	95% HAC interval	p
Communication	1	-0.49	[-1.03, 0.05]	0.0771
Communication	3	-1.35	[-2.42, -0.29]	0.0135
Communication and drivers	1	-0.53	[-1.04, -0.01]	0.0453
Communication and drivers	3	-1.76	[-2.90, -0.61]	0.0032
Global yields	1	-0.48	[-1.03, 0.07]	0.0861
Global yields	3	-1.18	[-2.33, -0.03]	0.0452

Note Coefficients are per 10 bp actual minus conditional fitted yield. One-month outcomes use 384 market-months; three-month outcomes use 372. Market effects and month-score HAC with three calendar lags. All three preselected valuation models are shown.

5.6 Entry conditions exposure and funded bond returns

We evaluate three fixed ten-year rules: enter long when the gap is positive; additionally require both the common and own local tone changes to be nonpositive; or rank gaps across six markets, buying the two largest and selling the two smallest at unit gross DV01 exposure. The tone changes use the same expanding-window transformation for the current and preceding month. All rules use the next observed monthly yield change, with 64 realized holding periods through December 2025. The first-order price-change proxy is minus the position times the yield change in basis points. The proxy measures the first-order duration price component; the separate cash-flow exercise adds carry, roll, nonlinear repricing and funding.

At a fixed cost of 0.5 bp per unit position turnover, the six-market augmented cheap-only rule has a mean monthly price-change proxy of -2.50 bp. The tone-conditioned rule has -1.21 bp; its mean gross exposure falls from 50.5% to 8.3%. The paired improvement is 1.29 bp with a six-month block interval of [-0.64,3.47], and the exposure-matched timing

comparison also has an interval spanning zero. The cross-market ranking rule has a positive mean of 0.40 bp, with [-1.55,2.43]. The signal path, three cost assumptions and liquidation costs are retained. These block intervals condition on the estimated signal path; Appendix G adds recursive re-estimation. Table 5 reports the corresponding estimates.

Table 5 Fixed entry rules and monthly price change proxies

Rule	Mean proxy bp	95% block interval	Gross exposure
Cheap only	-2.50	[-4.99, -0.07]	50.5%
Cheap and stable tone	-1.21	[-2.28, -0.34]	8.3%
Cross market ranking	0.40	[-1.55, 2.43]	100.0%

Note Sixty-four monthly holding periods. Price-change proxies use yield bp at normalized DV01. Cost is 0.5 bp per unit turnover. Exposure differs across rules; the ranking portfolio has unit gross exposure.

Market-specific entry diagnostics retain the US, German and Australian joint-tone condition and a UK inflation-stability condition. The latter is the twelve-month rolling volatility of changes in an available four-area inflation mean. These branches reduce exposure and improve their mean price-change proxies, with paired intervals spanning zero. Appendix E retains the branch definitions and tests alongside the full yield-state controls for valuation gaps.

To measure investment outcomes with cash flows, we construct ten-year claims from fitted US, German and UK zero curves. Signal-month information precedes the first valid execution quote, and each position is liquidated after the next month-end. The 63 common holding periods end by 1 December 2025. Returns include coupon accrual, roll and nonlinear repricing, less an actual-day overnight-rate funding benchmark and purchase/liquidation costs. The measures are specified local-currency curve-implied returns; Appendix E gives cash-flow, compounding and quotation conventions.

At a cost of 0.5 yield bp per trade, mean monthly excess returns are -32.92 return bp for cheap-only positions and -13.77 return bp for tone-conditioned positions. Gross exposure falls from 53.4% to 7.9%. Their paired difference is 19.14 return bp with a six-month block interval of [-2.75,43.39]. The three-market ranking rule has -7.08 return bp, with [-23.18,8.05]. Accounting for cash flows and funding therefore preserves the distinction between predictive valuation information and established timing profitability. Table 6 reports the corresponding estimates.

Table 6 Cash flow based funded bond returns

Rule	Monthly excess bp	95% block interval	Gross exposure
Always long	-54.45	[-100.35, -12.03]	100.0%
Cheap only	-32.92	[-64.58, -2.63]	53.4%
Cheap and stable tone	-13.77	[-28.98, -0.37]	7.9%
Cross market ranking	-7.08	[-23.18, 8.05]	100.0%

Note Sixty-three common US DE UK holding periods. Return bp equal 0.01 percentage points of capital return, unlike the yield-bp proxy in Table 5. Costs are 0.5 yield bp on each purchase and liquidation, converted using bond duration. Funding uses a monthly overnight benchmark.

The entry condition therefore operates as an exposure rule whose realized performance can be assessed. The reduction in exposure is clear in both the six-market yield proxy and three-market funded-return exercise. Paired return intervals remain wide, including after exposure diagnostics. Relative valuation, subsequent yield adjustment and the incremental timing value of a particular filter are three separate empirical results, each retained in the investment interpretation. The exposure-matched benchmark is an ex-post diagnostic scaled using average realized exposure. Mean-return improvement from reducing positions is distinguished from conditional timing skill; block intervals condition on the estimated signal path.

An additional 999-draw block-weight diagnostic re-estimates each expanding-window tone transformation, common factor and valuation regression, then regenerates fixed-rule positions. Calendar order and the original yield and cash-flow outcomes are preserved. With original evaluation dates held equally weighted, central 95% gate-minus-cheap ranges are [0.68,1.83] yield-proxy bp and [10.31,24.67] funded-return bp. When evaluation months also receive the common block weights, the ranges are [-0.54,3.45] and [-4.07,42.80]. Thus position changes under model re-estimation retain a positive central difference on the observed path, while date-weighted performance remains imprecise. These are sensitivity ranges, distinct from the original confidence intervals; Table G3 defines their construction.

6 Conclusion

Common policy cycles and country-specific conditions enter different parts of sovereign yield curves in distinct ways. The strongest cross-country change is rising two-year commonality alongside declining commonality of the ten-minus-two slope. Ten-year yields retain a high common share, and the available thirty-minus-ten evidence does not indicate a uniform localization of every long spread. A measured common communication cycle is associated with repricing at both two and ten years, including when comparable demand components enter the panel.

Independent financing, investment and equity variables give the local pricing question economic content. Their relations depend on market, maturity and period; national Treasury-policy news can also transmit to foreign long yields. Financial-condition tests distinguish these curve patterns from a general decline in central-bank traction. Together,

the results locate measured policy information and directly observed economic conditions along the curve.

The valuation and position evidence closes the investment sequence. Expanding-window gaps are associated with subsequent yield adjustment, while extra information beyond starting yields and recent changes is imprecise. Fixed communication conditions materially reduce duration exposure; paired funded-return comparisons do not establish an incremental timing gain. The practical contribution is a reproducible framework linking communication, economic conditions, maturity-specific valuation and explicit market-selection rules, with convergence and strategy performance evaluated on their respective evidence.

Statements and Declarations

Funding

This research received no external funding.

Competing interests

We declare no competing interests.

Data and code availability

The replication archive accompanying this submission contains source records, provenance tables, analysis-ready data, code, fixed model designs and sensitivity outputs. The source ledger identifies the original providers; third-party material retains its source attributions and license terms. The complete archive is supplied as a related file for editorial and reviewer access. The preprint record at `https://doi.org/10.5281/zenodo.23857117` has restricted access and is not a public data-and-code repository.

AI assistance

AI-assisted tools supported coding, research material organization, and language editing. We take responsibility for the final manuscript.

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