

Fiscal Assessments through the Lens of Firms: Corporate Perceptions and the Transmission of Fiscal Policy

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Abstract

How do firms' perceptions of the fiscal environment shape the transmission of fiscal policy across countries? We apply natural language processing to more than 390,000 corporate earnings calls from about 14,000 firms across 51 countries over two decades to construct globally comparable Fiscal Perceptions Indicators (FPI) capturing the incidence, risk framing, and tone of fiscal discussions. The indicators contain real-time information about fiscal stress: heightened concern is associated with higher sovereign spreads, weaker investment, and slower output growth. Exploiting externally identified fiscal shocks, we show that fiscal transmission varies systematically with firm sentiment. More favorable perceptions are associated with smaller increases in sovereign spreads and stronger real activity following contractionary fiscal shocks. This conditioning role remains when shocks are simultaneously interacted with initial debt-to-GDP and sovereign spreads. The results identify firm perceptions as a measurable source of heterogeneity in fiscal transmission across countries.

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1 Introduction

Concerns over fiscal sustainability have reemerged as a central challenge for macroeconomic management. Rising debt levels, compounded by shocks such as the global financial crisis and the COVID-19 pandemic, have intensified debates over consolidation strategies, fiscal space, and the risk of fiscal dominance. At the core of these debates lies fiscal credibility: the extent to which private agents believe that fiscal policies are consistent with long-run solvency (e.g., [Calvo \(1988\)](#); [Leeper \(2009\)](#)). Credibility affects borrowing costs and confidence, conditioning whether firms and households interpret fiscal actions as stabilizing or as precursors to future adjustment. Because governments borrow in integrated capital markets, these assessments are priced in sovereign spreads and transmitted to domestic activity, making how the private sector perceives fiscal policy an inherently cross-country, open-economy question.

When credibility is strong, governments retain market access at moderate costs and fiscal interventions transmit more effectively. When credibility is weak, expectations of future adjustment—through higher taxation, inflation, or default—raise risk premia and attenuate the impact of stimulus. Existing evidence shows that confidence conditions the response to fiscal policy: government spending shocks amplify activity when confidence is high and have limited effects otherwise ([Bachmann and Sims, 2012](#)). Progress in quantifying this credibility channel has been hampered by the absence of high-frequency, cross-country measures of how the private sector perceives fiscal risk. Available proxies—sovereign spreads, fiscal rules, or expert surveys—are indirect, slow-moving, or capture institutional assessments rather than private-sector expectations. Yet the effectiveness of fiscal policy hinges on precisely these private expectations of future taxes and spending, which official statistics and forecasts leave largely unobserved ([Leeper, 2009](#)).

We address this limitation by constructing a new set of Fiscal Perceptions Indicators (FPI) using natural language processing applied to more than 390,000 corporate earnings calls from about 14,000 firms across 51 countries over more than two decades. These indicators capture three dimensions of fiscal discourse—incidence, risk, and sentiment—that reflect how frequently fiscal issues are discussed, the extent to which they are framed in terms of risk, and the tone with which they are evaluated. Because firms discuss fiscal matters when these affect investment, financing, or pricing decisions, their communication offers a direct and real-time window into how fiscal actions are perceived.

Unlike traditional proxies that provide indirect or slow-moving signals, these measures capture the expectations channel through which credibility shapes outcomes. Corporate discourse reveals how private agents perceive policy and interpret new information ([Hassan et al., 2024a](#)). Anticipated fiscal adjustments influence decisions before implementation ([Leeper, 2009](#)), and uncertainty over their composition can generate markedly different macroeconomic effects ([Bi et al., 2013](#); [Born et al., 2020](#)). By quantifying these perceptions at high frequency and across countries,

the FPI make the private sector’s assessment of the fiscal environment—and its role in the transmission of fiscal policy—directly observable and comparable across countries and over time.

The resulting indicators reveal that references to fiscal matters vary substantially across countries and over time. The global financial crisis, the European sovereign debt crisis, and the COVID-19 pandemic each generated widespread surges in fiscal discussion, while episodes of domestic fiscal stress, institutional reform, and consolidation gave rise to more-localized patterns. Tracing these shifts shows how fiscal expectations evolve in response to both global shocks and country-specific developments—dynamics often missed by conventional macroeconomic indicators.

Building on these patterns, we establish two central results. First, periods of elevated perceived fiscal risk are systematically associated with weaker GDP growth, lower investment, and rising sovereign spreads. Second, and central to our argument, firm perceptions shape the transmission of fiscal policy itself. Using externally identified government spending shocks, we show that their effects on spreads, output, investment, and consumption vary systematically with the prevailing tone of fiscal sentiment: more favorable perceptions are associated with a more benign response—smaller increases in sovereign spreads and stronger private demand—than less favorable perceptions. Crucially, this conditioning role reflects firm perceptions specifically rather than the initial fiscal position: it persists when the fiscal shock is simultaneously allowed to interact with the country’s lagged debt-to-GDP ratio and sovereign spread, neither of which absorbs the sentiment effect.

These results suggest that how the private sector perceives the fiscal environment is not merely a background condition but must be explicitly accounted for when evaluating the effects of fiscal policy. The effects of a given fiscal action depend on how private agents interpret it—the confidence channel emphasized in the literature on expansionary fiscal contractions ([Alesina et al., 2019](#); [Giavazzi and Pagano, 1990](#)), which has been difficult to test without a direct measure of those beliefs. By supplying such a measure, we provide new evidence on the expectations channel of fiscal policy.

The remainder of the paper is organized as follows: Section 2 reviews related literature. Section 3 describes the data. Section 4 outlines the construction of the FPI. Section 5 presents a simple conceptual framework and its testable predictions. Section 6 validates the indicators against macroeconomic and financial outcomes across countries. Section 7 shows how firm perceptions condition the transmission of fiscal shocks to sovereign spreads and real activity. Section 8 discusses mechanisms, interpretation, and limitations. Section 9 concludes.

2 Related Literature

This paper relates to several strands of research on fiscal policy, sovereign risk, and text-based measurement in macroeconomics.

A first set of studies examines how institutional frameworks, such as fiscal rules, oversight bodies, and procedural constraints, shape fiscal outcomes and borrowing costs. These frameworks are often interpreted as signals of credibility and have been linked to sovereign spreads and debt dynamics (Debrun et al. (2009); Davoodi et al. (2022), Andrián et al. (2024)). More-recent work infers credibility from the gap between governments’ official fiscal targets and the expectations of professional forecasters (End and Hong (2022)); while informative, such measures are anchored to official plans, computed at the country level, and validated ex post against realized track records, rather than reading beliefs directly as they form. This is precisely the gap Leeper (2009) emphasizes: the effectiveness of fiscal policy hinges on private expectations of future taxes and spending, yet official projections condition on current policy and remain silent about the future, leaving those expectations largely unobserved. Our paper fills this gap by introducing a forward-looking, real-time set of fiscal-perception indicators built directly from firm communication, requiring neither an official target nor a professional forecaster as a reference point.

This study also builds on the growing use of text data to quantify macroeconomic and policy-related risks. For example, Hassan et al. (2019) construct a measure of political risk from earnings call transcripts, while Baker et al. (2016) develop the Economic Policy Uncertainty Index from newspapers. Hong et al. (2024) extend this approach to the fiscal domain by constructing a newspaper-based cross-country index of fiscal policy uncertainty, on the basis of which these authors show that fiscal uncertainty dampens activity and raises borrowing costs. More recently, Hassan et al. (2024b) show that firm-level text provides forward-looking signals of macroeconomic and geopolitical risk, often anticipating movements in investment and financial markets. These studies highlight the value of text as a scalable, high-frequency alternative to surveys or market-based proxies, building on now-standard methods for turning unstructured language into quantitative economic measures (Gentzkow et al., 2019). We extend this approach to the fiscal sphere by developing the first globally comparable measure of perceived fiscal risk derived from firm discourse, capturing not only the intensity of discussion (incidence), but also firms’ perceptions of fiscal risk and sentiment.

A third related literature focuses on sovereign risk and its transmission to firms and asset prices. Theoretical models emphasize that sovereign borrowing costs depend on expectations about future repayment, so that beliefs can be self-fulfilling: because expected repudiation is priced into interest rates, public debt can support both a low-spread “good” equilibrium and a high-spread “bad” equilibrium, selected purely by what agents expect (Calvo (1988); Arellano (2008); Arellano and Ramanarayanan (2012)). Fiscal risk is also priced in equity markets: Croce et al. (2021) show, in an endogenous-growth model with recursive preferences, that a more per-

sistent, slowly consolidated public debt worsens the distribution of long-run risk—raising risk premia and the cost of capital while depressing corporate investment. Empirically, sovereign fragility affects firms’ access to credit and investment, particularly where bank–sovereign linkages are strong (Arellano et al. (2017)). While most studies infer perceived risk from market spreads or credit ratings, we contribute a complementary, belief-based indicator that reads how firms themselves interpret fiscal risk—the very expectations that this literature shows can move both spreads and equity prices, and we measure them consistently across a broad cross-section of countries rather than for a single sovereign or market.

Finally, we contribute to a long-standing literature on the state-dependent transmission of fiscal policy. A central theme of this work is that the output effects of fiscal actions are not fixed but depend on the economic and expectational environment. Early contributions document that severe fiscal consolidations can be expansionary when they shift expectations about future policy and solvency (Giavazzi and Pagano, 1990), and a large subsequent literature shows that fiscal multipliers vary with the state of the economy—the business cycle, the fiscal position, and financial conditions (Auerbach and Gorodnichenko, 2012, 2017; Huidrom et al., 2020; Perotti, 1999; Ramey and Zubairy, 2018). The composition and credibility of consolidation plans further shape their macroeconomic costs (Alesina et al., 2019), and when agents anticipate future reversal or adjustment, the effects of current fiscal expansions may be muted or even reversed (Bi et al., 2013; Born et al., 2020). A recurring interpretation across these studies is that private-sector confidence is the channel through which the same policy can be contractionary in one setting and expansionary in another (Bachmann and Sims, 2012). Yet this belief environment is typically inferred indirectly—from realized outcomes or model-based expectations—rather than measured. Our contribution is to bring a direct, high-frequency, cross-country measure of that environment to the data: firm-perceived fiscal sentiment. This allows us to test, rather than assume, whether firms’ perceptions of fiscal actions condition their transmission, and to identify the sign and magnitude of that conditioning effect, and to show that it is not subsumed by conventional summaries of the fiscal position such as the debt-to-GDP ratio and the sovereign spread.

3 Data

Our analysis draws on a panel of quarterly corporate earnings call transcripts from 51 countries between 2002 and 2025. The data, sourced from NL Analytics, include over 390,000 transcripts from approximately 14,000 publicly listed firms.¹

Earnings calls are a uniquely informative window into firm-level economic conditions. Held quarterly and largely unscripted, they pair a prepared management presentation with a live question-and-answer session in which analysts probe executives on the risks, costs, and opportunities facing the firm—eliciting candid, forward-looking discussion of information that is difficult or impos-

¹Appendix Table A1 lists the countries included in the sample and the first quarter covered for each country.

sible to extract from accounting statements or regulatory filings, which mainly record past events (Hassan et al., 2024b). Several features make the resulting text both credible and information-rich. Because participants face legal, reputational, and immediate market consequences for evasive or misleading answers—and because analysts’ questions enter the measures regardless of whether management is forthcoming—call discussions can reasonably be read as reflecting decision-makers’ genuine beliefs (Hassan et al., 2024b). Equally important, the share of a call devoted to a given topic proxies for how much attention firms allocate to it, so the text captures not only what firms know but what they are attending to and how they interpret developments as favorable or adverse (Hassan et al., 2019, 2024a). Finally, because listed firms worldwide hold these calls in English or provide translations, transcripts support directly comparable, high-frequency measurement across thousands of firms in dozens of countries, and call-based measures have been shown to register emerging shocks—from the onset of COVID-19 to the 2022 invasion of Ukraine—in real time, often before they surface in official statistics (Hassan et al., 2024b). These properties make earnings calls a natural source from which to read how firms perceive fiscal conditions.

We use these transcripts to construct the FPI. Relevant content is identified using dictionaries covering four fiscal themes: general fiscal policy, taxation, debt and deficits, and public spending. The dictionaries were developed through an iterative review of transcript language and validated against historical fiscal events. The resulting classifications form the basis for the indicators described in Section 4.

To complement the firm-level text data, we assemble macroeconomic and financial indicators from multiple sources. Quarterly series on real GDP, investment, and consumption are drawn from the National Economic Accounts (NEA) database maintained by the International Monetary Fund (IMF). Country-level equity returns and volatility are computed using MSCI indices obtained from Datastream. Sovereign bond spreads and exogenous fiscal shocks, used in our analysis of transmission heterogeneity in Section 7.1, are taken from Born et al. (2020), who identify discretionary fiscal shocks as forecast errors in government consumption relative to professional expectations. The intensity of fiscal consolidations, used in the validation exercise in Section 6, is measured using the updated action-based consolidation dataset of Adler et al. (2024). These additional data sets allow us to validate the FPI and to examine their role in conditioning the macroeconomic and financial effects of fiscal policy.

4 Measurement of Fiscal Perceptions

We construct a set of text-based indicators to measure firms’ fiscal perceptions using quarterly earnings call transcripts. The methodology classifies fiscal language along three dimensions: frequency, risk framing, and sentiment. Fiscally relevant content is identified as mentioned above by using dictionaries targeting four themes: general fiscal policy, taxation, debt and deficits, and public spending. For each theme, we compute three transcript-level measures: (1) incidence—

whether the theme is mentioned, (2) risk—the share of sentences that include both a fiscal term and a risk-related expression (e.g., “uncertainty,” “instability”), and (3) sentiment—the difference between positive and negative tone within fiscally relevant sentences, normalized by total mentions. In the empirical analysis, the three dimensions are examined individually, rather than combined into a single composite measure.

These measures are aggregated to the country–quarter level by averaging across all firms headquartered in each country. To ensure comparability over time and across countries, we normalize for transcript length and firm coverage. This procedure yields 12 country–quarter indicators: incidence, risk, and sentiment for each of the four fiscal themes. The general fiscal perception indicators capture broad references to fiscal policy, while the tax, debt, and spending indicators focus on specific components. These indicators form the basis for the empirical analysis in Section 6. Appendix A.2 provides additional detail on dictionary construction and classification methods.

4.1 General Fiscal Perceptions

To maintain focus and interpretability, the analysis centers on the General Fiscal Perceptions Indicators (General FPI), which aggregate firm-level discussion across three thematic areas: taxation, debt and deficits, and public spending. The General FPI capture firm-level attention to broad fiscal policy issues through three components: incidence, risk, and sentiment. Incidence is defined as the share of firms in a given country–quarter whose earnings calls mention at least one general fiscal term. Risk captures the intensity with which fiscal topics are framed in terms of uncertainty or vulnerability, measured as the share of sentences that include both a general fiscal keyword and a risk-related expression (e.g., “instability,” “default”). Sentiment reflects the tone of the discussion and is computed as the net difference between positive and negative fiscal sentences, normalized by the total number of fiscally relevant sentences, with higher values indicating a more favorable tone. Each component is calculated at the firm level and aggregated to the country–quarter level by averaging across firms. Together, these measures summarize the salience, risk framing, and evaluative tone of corporate discourse on fiscal matters and serve as the core input for the empirical analysis that follows.

Before turning to the empirical properties of these indicators, Table 1 reproduces eight excerpts from earnings calls of firms headquartered in four of the countries in the sample. They illustrate what the three components are built to capture: fiscal policy enters the calls unprompted and mostly in the prepared remarks, which is what incidence counts; what speakers report as damping activity is typically the uncertainty surrounding taxation or consolidation rather than its level, which is the co-occurrence the risk component isolates; and the direction of the discussion varies, with an austerity programme described as inducing caution and a pension reform as improving the outlook for credit and investment, which is why sentiment is measured as a net difference rather than as a count. Several speakers also state the association examined below in their

own words, describing investment decisions held back for as long as the fiscal outlook remains unclear.

Table 1: Fiscal references in earnings calls: illustrative excerpts

Country, sector, role and date	Excerpt
United Kingdom Construction and infrastructure <i>Chief Executive</i> 12 August 2009	“So dealing first with our markets in the UK, we do of course expect some impacts in the public sector from how the government, whoever that turns out to be, chooses to deal with the task of reducing our fiscal deficit.”
United States Investment banking <i>Chairman and CEO</i> 27 April 2017	“With significantly higher interest rates since last summer, refunding activity is off and uncertainty regarding tax reform is putting a damper on the markets.”
United States Education and training services <i>President</i> 7 February 2013	“We believe that the fear of sequestration and automatically imposed Federal budget cuts may have caused some of our customers to delay their training.”
United Kingdom Consumer finance <i>Finance Director</i> 1 March 2011	“When coupled with the uncertainty of what the Government austerity measures might contain, this translated into cautious customer behavior through most of 2010.”
Brazil Banking <i>CEO, Q&A</i> 5 February 2019	“But the approval of the pension reform will not only guarantee this growth, as will create a whole environment of optimism in the economy which we think will boost demand for credits and investments.”
France Construction and concessions <i>CFO</i> 1 December 2009	“In France, local authorities are partly postponing investments as long as they do not have a clear view on their tax revenues.”
United States Industrial manufacturing <i>President and CEO</i> 3 May 2012	“The magnitude and length of decision deferral is correlated with the anxiety and uncertainty around the will and the judgment to address sovereign debt and deficit spending matters.”
United Kingdom Collective investments <i>Portfolio Manager</i> 18 November 2024	“Higher inflation from greater government stimulus, but also likely to the extent that this fiscal position is sustainable higher economic growth.”

Notes: Excerpts are reproduced verbatim from earnings-call transcripts. Neither the firm nor the speaker is identified; the left-hand column reports the country of headquarters, the sector, the speaker’s role at the time of the call and the date, all from the transcript metadata. Rows marked Q&A come from the analyst question-and-answer session; the rest are prepared remarks. Each excerpt contains at least one term of the General FPI dictionaries (Appendix A.2) and names a government actor or a public aggregate in the speaker’s own country. The excerpts are illustrative, not representative: the indices are computed over all flagged sentences in a country-quarter.

4.1.1 Incidence

The first component of the General FPI measures incidence—the extensive margin of corporate attention to fiscal issues. At the firm level, the indicator equals 1 if the earnings-call transcript contains at least one general fiscal keyword and 0 otherwise. Aggregating across firms within a country–quarter yields the share of firms that reference fiscal topics in that period. This component provides a standardized signal of how widely fiscal matters enter corporate discourse, independent of tone or risk framing. Higher values indicate greater incidence, reflecting periods when fiscal policy is more salient to firms due to uncertainty, exposure, or policy actions.

Incidence varies substantially across countries and over time. In advanced economies, baseline levels are relatively stable but rise sharply around major global events—the 2008–2009 global financial crisis (most visibly in the United States, United Kingdom, Germany, and France), the 2010–2013 euro-area debt crisis (Greece, Italy, Portugal, Ireland, and Spain), and the 2020–2021 COVID-19 pandemic. In emerging markets the pattern is more heterogeneous and often driven by country-specific fiscal stress, though global shocks still generate broadly common surges. Country-level series for all economies are reported in Appendix [A.5](#).

Figure 1 shows a global heatmap of normalized incidence over time. The figure highlights common spikes during the 2008–2009 global financial crisis and the 2020–2021 COVID-19 period, alongside country-specific surges. These patterns indicate that the incidence component of the FPI captures both common shocks and localized fiscal stress. In many countries, incidence remains above prepandemic norms late in the sample, consistent with continued attention to debt paths, consolidation, and the fiscal footprint of pandemic-era measures.

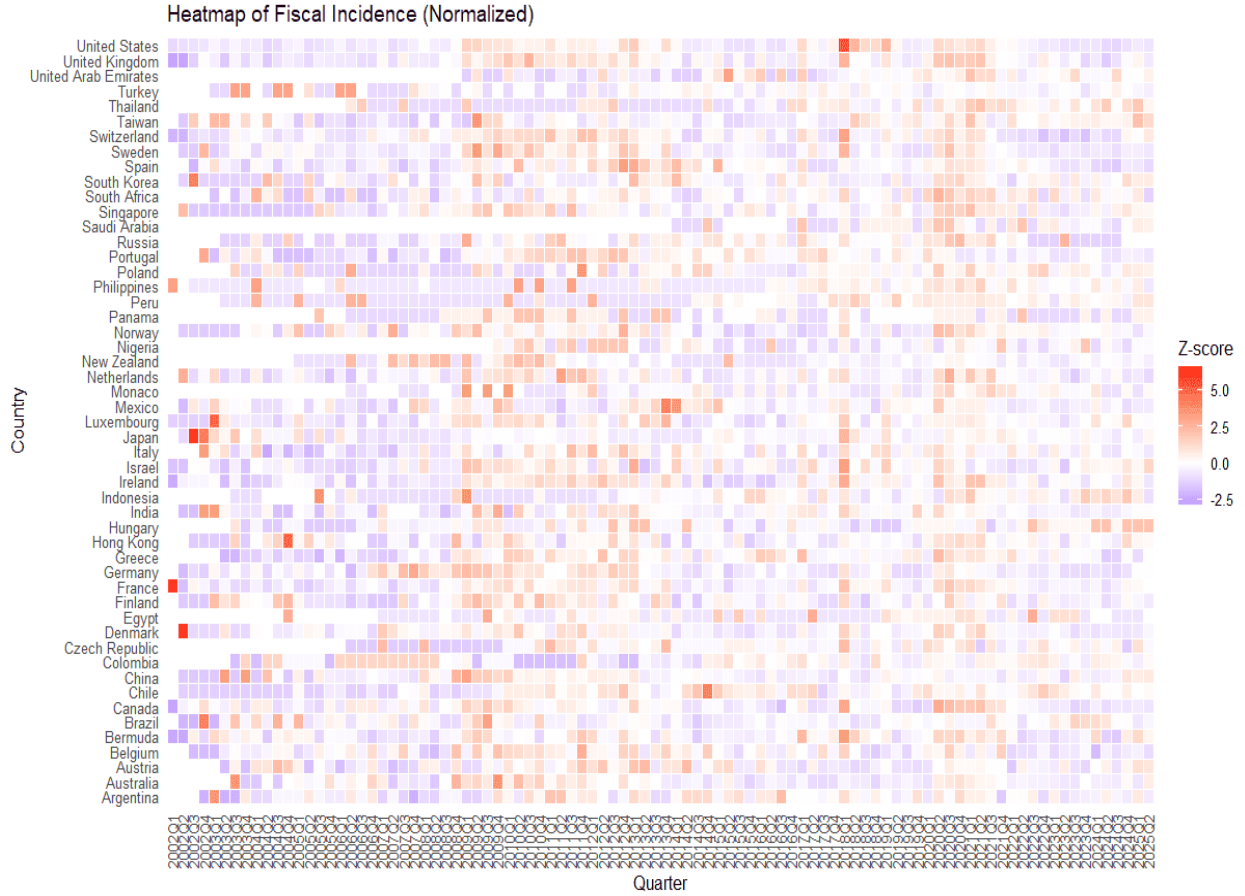


Figure 1: Heatmap of Normalized Fiscal Incidence by Country and Quarter

Source: Authors' calculations.

Note: The heatmap shows the normalized incidence of fiscal policy mentions in earnings calls by country and quarter over the sample period 2002–2025. Incidence is measured as the share of calls referencing fiscal terms (spending, taxation, debt, or deficits). Each country's time series is standardized into z-scores to highlight within-country variation. Warmer colors indicate above-average incidence; cooler colors indicate below-average incidence.

4.1.2 Risk

The second component of the General FPI measures risk framing, the extent to which firms link fiscal issues to risk or uncertainty. A sentence is classified as risk related if it contains both a general fiscal term and a word from a predefined risk lexicon (e.g., “uncertain,” “instability,” “exposure,” “default”).² At the firm level, the indicator is the share of transcript sentences that are jointly fiscal and risk related, normalized by transcript length. Aggregated to the country–quarter, it reflects the intensity of concern rather than the breadth of discussion. Higher values indicate that a larger fraction of corporate discourse frames fiscal policy as a potential source of instability.

²For the full list of terms used to construct the risk component, see Appendix A.3.

While the incidence component captures whether fiscal topics are mentioned and the sentiment component captures evaluative tone, the risk component isolates expressions of uncertainty and vulnerability, which is useful for identifying periods when credibility is in question, and signaling deteriorating expectations ahead of observable stress.

Perceived fiscal risk exhibits pronounced episodes of elevated concern. Among advanced economies, risk rises broadly during the 2008–2009 global financial crisis and, most strongly, during the 2010–2013 euro-area debt crisis, when Greece, Italy, Spain, and Portugal record the highest values in the sample; readings are otherwise low and stable. Emerging markets display greater volatility and more-frequent country-specific spikes—notably in Brazil, Argentina, Turkey, and South Africa—aligned with debt downgrades and widening deficits, alongside a broad, temporary elevation during the COVID-19 pandemic. Country-level series are reported in Appendix A.5.

More broadly, the risk component complements the incidence component by distinguishing attention to fiscal issues from the intensity of perceived threat. Whereas incidence reflects how often fiscal topics enter corporate discourse, the risk component captures whether those topics are framed as sources of instability. Its variation across countries and over time underscores the role of private-sector beliefs in shaping how fiscal conditions are perceived.

Figure 2 shows a heatmap of the normalized FPI risk component across countries and quarters, providing a global view of perceived fiscal vulnerability. Two periods of widespread concern stand out—the 2008–2009 global financial crisis and the 2020–2021 COVID-19 period—both marked by sharp increases in risk-related discourse across most countries. The euro-area sovereign debt crisis is also prominent, with sustained elevations concentrated in Southern Europe from 2010 to 2013. Beyond these shared episodes, the heatmap highlights country-specific spikes in Brazil, Argentina, and Japan, reflecting localized fiscal stress. Toward the end of the sample, a modest but broad-based upward drift is evident, consistent with rising corporate concern over debt dynamics and anticipated fiscal consolidation following pandemic-era expansions.

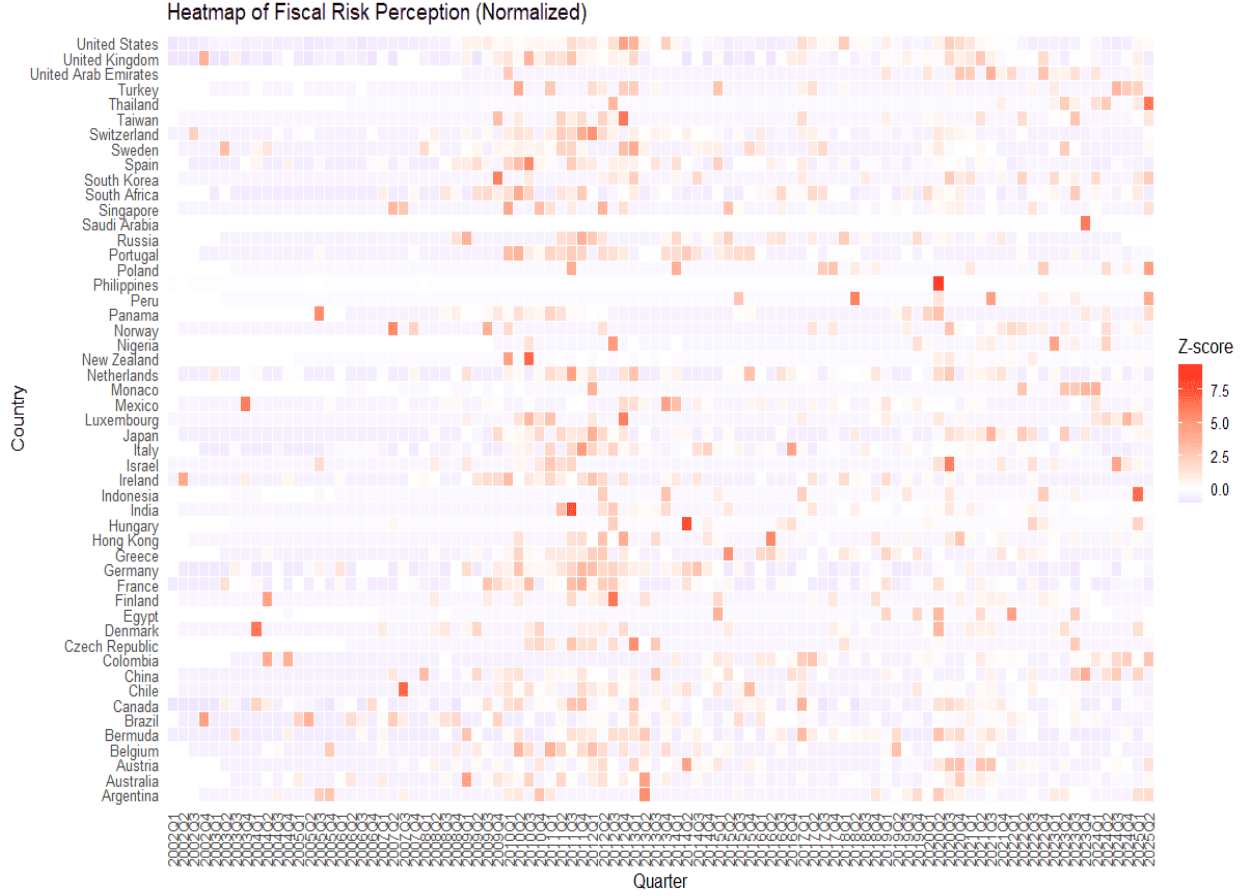


Figure 2: Heatmap of Normalized Fiscal Risk by Country and Quarter

Source: Authors' calculations.

Note: The heatmap shows the normalized intensity of fiscal risk language in earnings calls by country and quarter over the sample period 2002–2025. Fiscal risk is measured based on the presence of language indicating uncertainty, instability, or concern in discussions of fiscal topics (spending, taxation, debt, or deficits) using a predefined keyword dictionary. Each country's time series is standardized into z-scores to highlight within-country variation. Warmer colors indicate above-average risk; cooler colors indicate below-average risk.

4.1.3 Sentiment

The third component of the FPI measures sentiment, the directional tone of fiscal discourse in firms' earnings calls. Whereas the incidence component captures whether fiscal topics are mentioned and the risk component whether they are framed as sources of uncertainty, the sentiment component assesses whether firms interpret fiscal developments favorably or unfavorably.³ We apply a polarity classifier to all sentences flagged as fiscally relevant. For each transcript, net sentiment is the difference between the counts of positive and negative fiscal sentences, divided by the total number of fiscal sentences; the resulting score ranges from negative to positive values and

³For the positive and negative term lists used in the classification, see Appendix A.4.

is then aggregated to the country–quarter. This dimension complements the risk component by separating anxious framing (high risk) from evaluative tone (negative or positive sentiment). For example, a country may display high incidence and positive sentiment when firms anticipate fiscal reforms favorably or high risk and negative sentiment amid fiscal slippage or sovereign stress. We adopt a single sign convention throughout the paper: higher values of the sentiment indicator denote a more favorable tone, and this original measure is the one used in all correlations, regressions, and impulse-response exercises. The only exception is the sentiment heatmap in Figure 3, where the series is reverse-coded—purely for visual comparability with the risk heatmap—so that, as in the risk heatmap, warmer colors correspond to less favorable conditions.

Fiscal sentiment varies markedly over time, with pronounced deteriorations during major shocks. In advanced economies, tone declines sharply during the 2008–2009 global financial crisis and the 2010–2013 euro-area debt crisis—especially in Southern Europe—and again during the COVID-19 pandemic. Emerging markets show more volatile sentiment and recurrent episodes of strongly negative tone in countries such as Argentina, Brazil, and Mexico, often tied to domestic fiscal stress and reflecting a structurally more skeptical baseline. Country-level series are reported in Appendix A.5.

Figure 3 presents a heatmap of the normalized FPI sentiment component across countries and quarters.⁴ The visualization highlights synchronized downturns during the 2008–2009 global financial crisis and the 2020–2021 COVID-19 pandemic, reflecting widespread negative assessments of fiscal conditions and policy responses across both advanced and emerging economies. Beyond these global shocks, the heatmap reveals regional clusters of persistent pessimism—most notably in Southern Europe during the sovereign debt crisis and in several Latin American and Middle Eastern economies. While some countries gradually return to neutral sentiment following major shocks, others, particularly those facing recurring fiscal instability, remain in consistently negative territory. The cross-country heterogeneity in sentiment underscores the value of firm-level text in capturing the evolution of fiscal tone, which may not be immediately observable in macroeconomic indicators.

⁴For consistency with the FPI risk component, the sentiment measure is reverse coded *for this heatmap only*, such that higher values correspond to more-negative tone; all correlations, regressions, and impulse-response exercises use the original series, for which higher values denote a more favorable tone.

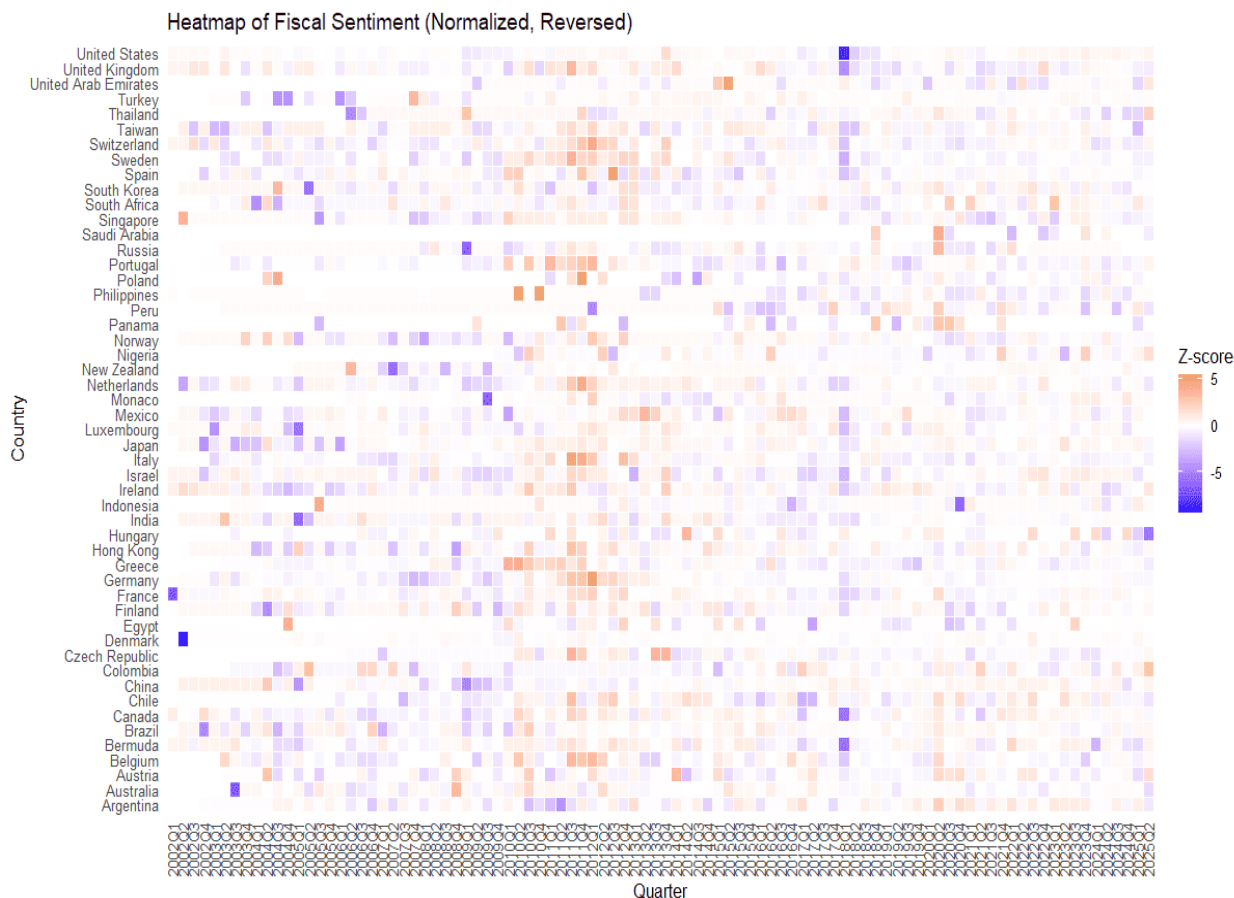


Figure 3: Heatmap of Normalized Fiscal Sentiment by Country and Quarter

Source: Authors' calculations.

Note: The heatmap shows the normalized fiscal sentiment expressed in earnings calls by country and quarter over the sample period 2002–2025. Sentiment is measured based on the polarity of language used in reference to fiscal topics (spending, taxation, debt, or deficits) using a predefined keyword dictionary. The index is reverse coded, such that higher values correspond to more-negative sentiment. Each country's time series is standardized into z-scores to highlight within-country variation. Warmer colors indicate more-negative sentiment; cooler colors indicate more-positive sentiment.

To further disentangle the sources of fiscal concern, we construct three topic-specific sets of the FPI—taxation, debt and deficits, and government spending—each comprising incidence, risk, and sentiment components. The tax indicators isolate language related to tax burdens, tax reform, and revenue-side adjustments. The debt-and-deficit indicators reflect concerns over sovereign debt levels, fiscal imbalances, and long-run debt dynamics. The spending indicators capture perceptions of government expenditures, including anxieties about the scale or persistence of public spending. Detailed results for each set of indicators, including time-series patterns and cross-country variation, are provided in Appendix A.6, Appendix A.7, and Appendix A.8, respectively.

5 A Conceptual Framework

The Fiscal Perceptions Indicators are motivated by a simple premise: the macroeconomic effects of fiscal policy depend not only on the policy itself but on what the private sector believes about the government’s future fiscal path. This section lays out a minimal, deliberately reduced-form framework that makes this premise explicit and yields the predictions we take to the data. Its purpose is to organize the mechanism—how firms’ perceptions of the fiscal environment map into sovereign pricing and real activity—and to motivate the empirical specifications that follow, not to derive quantitative magnitudes or identify structural parameters.

Consider a small open economy whose government finances itself by issuing debt, and let firms and investors form an assessment of whether current fiscal actions are consistent with long-run solvency. We summarize this assessment—firms’ perceptions of the fiscal environment—by a belief state s_{jt} for country j in quarter t , which our sentiment indicator proxies, with higher values denoting more favorable perceptions. We interpret s_{jt} as a measure of how firms perceive fiscal conditions: while these perceptions are shaped by the government’s fiscal credibility, we treat sentiment as a proxy for perceptions rather than as a direct measure of credibility itself. Two features, each grounded in prior work, drive the framework.

Sovereign pricing is belief-dependent. Because expected repayment is priced into borrowing costs, the premium demanded to hold government debt rises when credibility deteriorates; for given fundamentals, beliefs can even select between a low-spread and a high-spread equilibrium (Arellano, 2008; Calvo, 1988). We write the sovereign spread as $r_{jt} = \rho(X_{jt}, s_{jt})$, where X_{jt} collects macroeconomic fundamentals and $\partial\rho/\partial s < 0$: holding fundamentals fixed, more favorable beliefs compress spreads. The same logic extends to equity markets, where heightened fiscal risk raises required returns and the cost of capital (Croce et al., 2021).

Beliefs shape the transmission of fiscal actions. A given fiscal action is interpreted through expectations about future policy. When the fiscal environment is regarded as credible, a consolidation is read as a move toward a sustainable path—compressing risk premia and expected future distortions and crowding in private demand; when credibility is weak, the same action signals stress and reinforces concerns about future taxation or default, raising premia and depressing demand (Bachmann and Sims, 2012; Bi et al., 2013). Letting y_{jt+h} denote a real outcome h periods ahead and ϵ_{jt} an exogenous fiscal shock, this belief dependence takes the reduced form

$$\frac{\partial y_{jt+h}}{\partial \epsilon_{jt}} = \gamma_h + \beta_h s_{jt}, \quad (1)$$

so that the effect of a given shock varies with the belief state. The coefficient β_h is the central object: a belief-dependent transmission mechanism predicts $\beta_h \neq 0$, so that more favorable perceptions imply a more benign response to a given shock. Equation (1) is precisely the object our local-

projection design estimates, and it maps directly into the interaction specification of Equation (2) below.

Together, these two features deliver the paper’s testable predictions.

- P1.** (*Perceptions and outcomes.*) Holding country factors fixed, less favorable fiscal perceptions—greater incidence and risk framing, and less favorable sentiment—are associated with higher sovereign spreads, weaker equity returns, and lower growth in GDP, investment, and consumption.
- P2.** (*Belief-dependent transmission.*) The response of sovereign spreads and real activity to an exogenous fiscal shock varies systematically with the belief state ($\beta_h \neq 0$): more favorable perceptions are associated with a more benign response—smaller increases in spreads and stronger private demand.

We test P1 in a cross-country panel (Section 6) and P2 with a local-projection design that interacts the identified fiscal shock with lagged sentiment (Section 7.1). The framework thus assigns each exercise a clear role: the first validates the indicators as belief proxies with macrofinancial content, and the second isolates their conditioning role in the transmission of fiscal policy.

6 Validating the Fiscal Perceptions Indicators

Before turning to fiscal transmission, we establish that the FPI carry economically meaningful, forward-looking information about the fiscal environment. Guided by Prediction P1, we ask whether firms’ perceptions align with macroeconomic and financial conditions across countries: less favorable perceptions—greater incidence and risk framing, and less favorable sentiment—should coincide with higher sovereign spreads, weaker equity returns, and slower growth in output, investment, and consumption. We document these associations in a cross-country panel, then show that the indicators also forecast future outcomes and track observed fiscal actions, and read this evidence as informational rather than causal; the causal question—whether perceptions shape how fiscal policy transmits—is taken up in Section 7.

To examine the relationship between fiscal perceptions and economic conditions, Table 2 presents the correlation matrix linking components of the FPI with macroeconomic aggregates and financial market indicators, as captured by each country’s MSCI index.⁵ The FPI components display intuitive relationships: higher perceived fiscal risk and broader incidence of fiscal discussion are negatively correlated with output, investment, and equity returns and positively

⁵The MSCI country indices are equity market indices compiled by Morgan Stanley Capital International. They track the performance of large- and mid-cap stocks across developed and emerging markets, serving as a benchmark for equity market conditions.

correlated with financial market volatility. These patterns suggest that heightened attention to fiscal issues, particularly when framed as risk, coincides with weaker macroeconomic performance and greater financial turbulence. In contrast, more-favorable fiscal sentiment is positively associated with real activity and asset prices and negatively correlated with volatility and the other FPI components. This divergence supports the interpretation of sentiment as a distinct dimension of firms' fiscal perceptions. Overall, the results indicate that firm-level perceptions of fiscal conditions are systematically linked to macrofinancial dynamics in ways consistent with the theoretical role of credibility in shaping expectations.

Table 2: Correlation Matrix: Macro (Growth Rates), MSCI, and FPI Variables

	GDP Growth	Capital Growth	Consumption Growth	MSCI Return	MSCI Volatility	Fiscal Incidence	Fiscal Risk	Fiscal Sentiment
GDP growth	1							
Capital growth	0.307***	1						
Consumption growth	0.802***	0.270***	1					
MSCI return	0.315***	0.152***	0.269***	1				
MSCI volatility	-0.182***	-0.086***	-0.145***	-0.116***	1			
Fiscal incidence	-0.052***	-0.038**	-0.050***	-0.020	-0.009	1		
Fiscal risk	-0.043***	-0.014	-0.043**	-0.061***	0.005	0.263***	1	
Fiscal sentiment	0.064***	0.029*	0.081***	0.090***	-0.014	0.104***	-0.096***	1

Source: Authors' calculations.

Note: This table reports pairwise correlations between macroeconomic variables (quarterly growth rates of real GDP, capital formation, and consumption), MSCI financial indicators (returns and volatility), and the components of the FPI: fiscal incidence, fiscal risk, and fiscal sentiment. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Correlations are computed on growth rates rather than levels.

Table 3 reports fixed-effects estimates linking firm-level perceptions of fiscal conditions to quarterly growth in GDP, capital formation, and consumption. A consistent negative association emerges between the incidence component and all three indicators, suggesting that periods of heightened fiscal attention are associated with weaker macroeconomic performance. This pattern is consistent with perceived deterioration in fiscal fundamentals or increased uncertainty around fiscal policy. The sentiment component enters positively and significantly across specifications, indicating that a more-favorable tone in fiscal discussions aligns with stronger growth. The risk component is negatively associated with GDP and consumption growth, though its effects diminish once sentiment is included, highlighting the role of tone in mediating the impact of perceived vulnerability. While the estimates are not causal, the results underscore the informational content of the FPI: firm-level perceptions of fiscal conditions are systematically correlated with near-term macroeconomic outcomes and carry information about the perceived fiscal environment.

Table 3: Fixed Effects Regression Results: Macro Outcomes

Variables	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) Capital	(6) Capital	(7) Capital	(8) Capital	(9) Consumption	(10) Consumption	(11) Consumption	(12) Consumption
Fiscal incidence	-0.115*** (0.038)			-0.116*** (0.039)	-0.431** (0.186)			-0.459** (0.215)	-0.110*** (0.034)			-0.126*** (0.036)
Fiscal risk		-0.056 (0.058)		0.003 (0.064)		-0.203 (0.165)		-0.018 (0.204)		-0.050 (0.044)		0.018 (0.048)
Fiscal sentiment			0.144*** (0.036)	0.167*** (0.037)			0.263** (0.099)	0.301*** (0.101)			0.185*** (0.037)	0.198*** (0.039)
Observations	3,644	3,553	3,635	3,553	3,576	3,497	3,567	3,497	3,400	3,320	3,391	3,320
R-squared	0.003	0.001	0.004	0.008	0.002	0.000	0.001	0.003	0.003	0.001	0.008	0.011
Number of countries	50	44	49	44	47	43	46	43	46	41	45	41

Source: Authors' calculations.

Note: This table reports fixed-effects panel regressions of real GDP, capital formation, and consumption growth on the standardized components of the FPI: fiscal incidence, fiscal risk, and fiscal sentiment. Columns (1)–(4) show results for GDP, (5)–(8) for capital formation, and (9)–(12) for consumption. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4 presents fixed effects estimates relating fiscal perceptions to financial market outcomes. The risk measure is negatively associated with MSCI equity returns, indicating that periods of elevated perceived fiscal risk coincide with weaker market performance. Fiscal sentiment enters positively and significantly, suggesting that a more-favorable tone supports equity valuations. In contrast, the incidence of fiscal discussion shows no robust relationship with financial variables, and results for MSCI volatility are mixed and imprecisely estimated. While the explanatory power here is limited, the overall patterns are consistent with the interpretation that firm-level perceptions of fiscal conditions are reflected in asset price dynamics—in line with macro-finance models in which heightened fiscal risk raises risk premia and the cost of capital (Croke et al., 2021)—reinforcing the informational value of the FPI.

Table 4: Fixed Effects Regression Results: Financial Variables

Variables	(1) MSCI ret.	(2) MSCI ret.	(3) MSCI ret.	(4) MSCI ret.	(5) MSCI vol.	(6) MSCI vol.	(7) MSCI vol.	(8) MSCI vol.
Fiscal incidence	0.001 (0.003)			0.001 (0.003)	-0.030 (0.068)			-0.032 (0.072)
Fiscal risk		-0.005** (0.002)		-0.004* (0.002)		0.005 (0.020)		0.011 (0.009)
Fiscal sentiment			0.013*** (0.002)	0.012*** (0.002)			-0.023 (0.016)	-0.018 (0.022)
Observations	3,002	3,002	3,002	3,002	3,042	3,042	3,042	3,042
R-squared	0.000	0.002	0.012	0.013	0.000	0.000	0.000	0.000
Number of countries	42	42	42	42	42	42	42	42

Source: Authors' calculations.

Note: This table reports fixed-effects panel regressions of MSCI country-level stock returns (columns 1–4) and MSCI return volatility (columns 5–8) on the standardized components of the FPI: fiscal incidence, fiscal risk, and fiscal sentiment. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5 shows that firm-level perceptions of fiscal conditions are systematically related to sovereign borrowing costs. When a larger share of firms discusses fiscal matters, sovereign spreads tend to increase, indicating heightened market sensitivity to fiscal salience. Discourse framed in terms of risk or uncertainty is also positively associated with spreads, suggesting that perceptions of fiscal fragility among firms align with deteriorating sovereign credit conditions. In contrast, a more-favorable sentiment around fiscal policy corresponds to lower spreads, consistent with the notion that positive tone reflects stronger credibility. These patterns are robust across specifications and reinforce the view that firm communication provides forward-looking information about sovereign risk.⁶ Taken together, the associations documented in this subsection—higher

⁶While the patterns documented here are consistent with the role of fiscal perceptions in shaping macroeconomic conditions, we interpret these results as associational rather than causal. Changes in firm perceptions may reflect under-

sovereign spreads, weaker equity returns, and lower growth in output, investment, and consumption when fiscal perceptions are less favorable—confirm Prediction P1.

Table 5: Fixed Effects Regression Results: Sovereign Spreads

Variables	(1) Sovereign Spreads	(2) Sovereign Spreads	(3) Sovereign Spreads	(4) Sovereign Spreads
Fiscal incidence	0.319** (0.119)			0.298** (0.110)
Fiscal risk		0.297*** (0.096)		0.155*** (0.051)
Fiscal sentiment			-0.245** (0.094)	-0.241*** (0.085)
Constant	1.704*** (0.001)	1.674*** (0.004)	1.691*** (0.003)	1.675*** (0.004)
Observations	1,648	1,582	1,648	1,582
R-squared	0.041	0.033	0.025	0.080
Number of countries	30	28	30	28

Source: Authors' calculations.

Note: This table reports fixed-effects panel regressions of sovereign bond spreads on the standardized components of the FPI: fiscal incidence, fiscal risk, and fiscal sentiment. All regressions include country fixed effects, and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

6.1 Predictive and Convergent Validity

The associations documented so far are contemporaneous. A more demanding test of the indicators' informational content asks whether they *forecast* future outcomes and whether they move with independently measured fiscal actions. We take up both questions here, beginning with sovereign spreads—the most direct market price of fiscal risk in an open economy. Table 6 regresses the sovereign spread at horizons of zero to four quarters on the current FPI components, including country and quarter fixed effects and clustering standard errors by country. Greater fiscal incidence and risk, and less favorable sentiment, predict higher future spreads: a one-standard-deviation improvement in sentiment is associated with a spread lower by about 0.14 percentage points one quarter ahead and 0.16 percentage points two quarters ahead, with the predictive content fading by the one-year horizon. This forecasting power is not merely a reflection of spread persistence or of the government's debt burden, since fiscal sentiment continues to predict the next-quarter spread after conditioning on the current spread (column 5) and on the current spread together with the debt-to-GDP ratio (column 6). The indicators thus carry forward-looking information about sovereign risk beyond what is contained in market prices and standard fundamentals.

lying conditions that also influence spreads and activity. We address causality more directly in the shock-interaction framework in Section 7.1.

Table 6: Predictive Validity: Fiscal Perceptions and Sovereign Spreads

	(1)	(2)	(3)	(4)	(5)	(6)
	Spread _t	Spread _{t+1}	Spread _{t+2}	Spread _{t+4}	Spread _{t+1}	Spread _{t+1}
Incidence	0.190** (0.078)	0.198** (0.095)	0.198** (0.081)	0.150* (0.086)	0.016 (0.018)	0.007 (0.019)
Risk	0.072 (0.051)	0.088* (0.051)	0.057 (0.049)	0.051 (0.044)	-0.005 (0.018)	-0.005 (0.019)
Sentiment	-0.105* (0.053)	-0.144** (0.069)	-0.157* (0.078)	-0.119 (0.082)	-0.057* (0.028)	-0.056* (0.029)
Sovereign spread _t					0.898*** (0.052)	0.895*** (0.053)
Debt/GDP						0.320* (0.178)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,582	1,550	1,526	1,481	1,538	1,485
Countries	28	28	28	28	28	27

Source: Authors' calculations.

Note: The dependent variable is the sovereign spread (percentage points) at the indicated horizon. FPI components are standardized within country. All columns include country and quarter fixed effects; standard errors clustered by country in parentheses. Columns (5) and (6) additionally condition on the current spread (and debt-to-GDP), isolating forecast content beyond persistence and fundamentals. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A complementary question is whether the indicators track observed fiscal actions rather than incidental variation. Relating the risk and sentiment components to the intensity of measured fiscal consolidations, Table 7 shows that, within countries, larger consolidations coincide with significantly more fiscal-risk language and less favorable sentiment—precisely the expected pattern. Because consolidations cluster in the post-2010 period, the association is absorbed once quarter fixed effects are added, so we report the country-fixed-effects estimates as the main result; the signs and their significance confirm that the indicators respond to genuine fiscal events.

Table 7: Convergent Validity: Fiscal Perceptions and Actual Fiscal Consolidations

	(1)	(2)	(3)	(4)
	Risk	Risk	Sentiment	Sentiment
Fiscal consolidation	0.795*** (0.179)	0.384 (0.340)	-0.816*** (0.279)	-0.440 (0.303)
Country FE	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes
Observations	438	425	442	429
Countries	21	21	22	22

Source: Authors' calculations.

Note: Dependent variables are the standardized FPI risk and sentiment components; the regressor is the intensity of measured fiscal consolidations. A positive risk coefficient and a negative sentiment coefficient indicate that firms discuss more fiscal risk and express less favorable sentiment when larger consolidations occur. Standard errors clustered by country. Consolidations cluster in the post-2010 period, so the association is absorbed by quarter fixed effects (columns 2 and 4). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The indicators also anticipate the real economy, if more modestly. Table 8 regresses cumulative growth in real GDP and consumption over the following one and four quarters on the

current perceptions, again with country and quarter fixed effects. More favorable sentiment predicts higher cumulative GDP and consumption growth over the year ahead, while greater incidence and risk framing predict weaker growth, with several estimates significant at the five-to-ten-percent level. Although this real-side forecasting power is weaker than for sovereign spreads, it reinforces that firms' fiscal perceptions anticipate, rather than merely reflect, macroeconomic developments.

Table 8: Predicting Real Activity Ahead: Cumulative Growth

	(1)	(2)	(3)	(4)
	GDP $t \rightarrow t+1$	GDP $t \rightarrow t+4$	Cons. $t \rightarrow t+1$	Cons. $t \rightarrow t+4$
Incidence	-0.036 (0.023)	-0.109* (0.057)	-0.020 (0.033)	-0.096 (0.066)
Risk	-0.038 (0.026)	-0.074 (0.044)	-0.062* (0.034)	-0.116** (0.056)
Sentiment	0.040* (0.023)	0.128* (0.073)	0.021 (0.028)	0.128* (0.069)
Country FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	3,553	3,427	3,320	3,203
Countries	44	44	41	41

Source: Authors' calculations.

Note: The dependent variable is the cumulative log change ($\times 100$) in real GDP or consumption from t to the indicated horizon. FPI components are standardized within country. All columns include country and quarter fixed effects; standard errors clustered by country in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Taken together, these exercises deepen the validation of Prediction P1. The fiscal-perception indicators are not only contemporaneously associated with macrofinancial conditions but forecast future sovereign spreads—even beyond spread persistence and fundamentals—and move with observed fiscal actions. We continue to read this evidence as predictive and informational rather than causal; the causal role of firm perceptions in the transmission of fiscal shocks is the subject of Section 7.

7 Firm Perceptions and the Transmission of Fiscal Policy

Having established that firms' fiscal perceptions track macroeconomic and financial conditions across countries, we now test the paper's central claim: that these perceptions condition how fiscal policy transmits (Prediction P2). We interact externally identified fiscal shocks with lagged firm sentiment in a cross-country local-projection design, tracing the responses of sovereign spreads, GDP, investment, and consumption. We first present a baseline specification and then a more demanding one that allows the shock to interact simultaneously with conventional measures of the initial fiscal position, isolating the incremental role of firm perceptions.

7.1 Baseline Specification: Sentiment-Conditioned Responses

The design rests on externally identified fiscal shocks. We interact the shocks of [Born et al. \(2020\)](#)—one-step-ahead forecast errors of real government consumption growth from Oxford Economics—with our aggregate firm-level FPI sentiment component. These forecast errors isolate the unanticipated component of fiscal policy, capturing discretionary shocks orthogonal to contemporaneous macroeconomic conditions. [Born et al. \(2020\)](#) validate this identification using OECD forecasts and model-based projections, showing that the shocks are not systematically related to expected economic dynamics.⁷ This framework allows us to test whether the transmission of fiscal policy varies with the prevailing tone of firm perceptions.⁸

Our empirical specification follows a local projection framework in which the h -period-ahead response of the dependent variable (sovereign spreads, GDP, investment, or consumption), denoted by y_{jt+h} , is modeled as a function of the interaction between exogenous fiscal shocks and (lagged) firm-level sentiment.⁹ Specifically, we estimate impulse responses, allowing the effect of the fiscal shock to vary with the level of fiscal sentiment in country j at time t , as specified in Equation (2). The sentiment measure is standardized to facilitate interpretation. This approach captures potential heterogeneity in the transmission of fiscal policy depending on the perceived fiscal environment, as captured by firm sentiment.¹⁰

⁷To maintain comparability with [Born et al. \(2020\)](#), we use the same exogenous fiscal shocks, which restrict our sample to 2002Q1–2017Q4. For this exercise, the sample includes the following 21 countries: Argentina, Australia, Austria, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, Thailand, Turkey, United Kingdom, and the United States.

⁸Oxford Economics provides a consistent, quarterly panel of professional expectations across countries; because these forecasts incorporate information available at the time, deviations from realized outcomes reflect genuine surprises.

⁹We interact the fiscal shock with the lagged value of sentiment to mitigate potential endogeneity concerns that could arise if perceptions and shocks occur simultaneously.

¹⁰For GDP, investment, and consumption we report cumulative impulse responses, where the dependent variable in logs is defined as $y_{jt+h} - y_{jt-1}$.

$$y_{jt+h} = \alpha_{jh} + \alpha_{th} + \gamma_h \epsilon_{jt} + \beta^h (\text{sent}_{jt-1} - \mathbb{E}[\text{sent}_{jt}]) \epsilon_{jt} + \Gamma_h' Z_{jt-1} + v_{jt+h}, \quad (2)$$

In Equation (2), y_{jt+h} denotes the outcome variable h periods ahead for country j . The specification includes country fixed effects α_{jh} and time fixed effects α_{th} , which control for unobserved heterogeneity and global shocks common across countries, respectively. The variable ϵ_{jt} is the exogenous fiscal shock, standardized at the country level; all shocks are multiplied by -1 , so positive values correspond to contractionary fiscal policy (i.e., austerity).

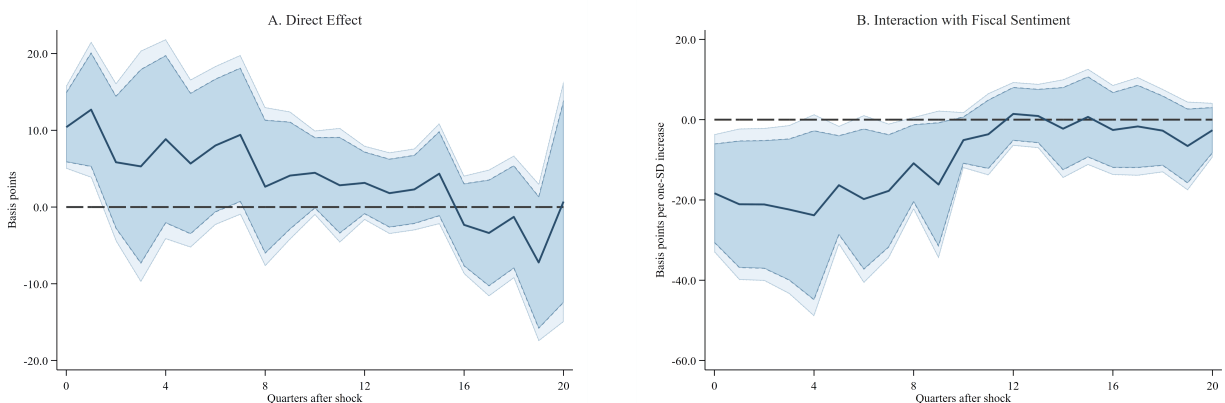
The term $(\text{sent}_{jt-1} - \mathbb{E}[\text{sent}_{jt}])$ captures the demeaned country-level perception of fiscal sentiment and its interaction with the fiscal shock allows the effect of fiscal policy to vary with prevailing sentiment. The coefficient γ_h measures the average effect of the fiscal shock, while β^h captures the extent to which sentiment conditions the response. In the impulse responses that follow, Panel (a) plots γ_h and Panel (b) plots β^h ; the latter reports how the response *shifts* with a one-standard-deviation increase in fiscal sentiment, and is therefore an interaction term rather than a total effect. The total response for a given country is the sum $\gamma_h + \beta^h(\text{sent}_{jt-1} - \mathbb{E}[\text{sent}_{jt}])$; Panel (b) therefore isolates how sentiment shifts the response and should not be read as the response itself. The vector Z_{jt-1} controls for the lagged level of sentiment and macroeconomic fundamentals.¹¹

This design isolates the conditioning role of firm perceptions. The coefficient β^h is identified from within-country covariation between the response to an externally identified fiscal shock and firms' *predetermined* sentiment. Because the shocks are the government-consumption forecast errors of Born et al. (2020)—orthogonal to expected macroeconomic dynamics—and sentiment enters with a lag, the interaction is not driven by the simultaneous determination of perceptions and fiscal actions. The country fixed effects absorb time-invariant differences in average sentiment and fiscal fundamentals, while the time fixed effects absorb shocks common across countries, so β^h reflects how the *same* shock transmits differently when firms enter the period with more or less favorable perceptions. Section 7.2 shows that this conditioning is not a stand-in for the economy's initial fiscal position: it persists when the shock is allowed to interact simultaneously with lagged debt-to-GDP and the lagged sovereign spread. We nonetheless read β^h as the conditioning role of perceptions rather than as a structural or independently manipulable parameter, because sentiment is predetermined but not randomly assigned.

Figure 4 summarizes the impulse response functions for the spread effects of a government expenditure shock. Panel (a) shows the direct effect of the shock on spreads: on average, a contractionary fiscal shock raises spreads by approximately 11–13 basis points over the first quarters, with the response gradually decaying thereafter. Panel (b) plots the interaction term β^h : a one-standard-deviation increase in fiscal sentiment lowers the response of spreads to the shock by up to 21 basis points. The interaction is statistically significant and works in the opposite direction to

¹¹We include lagged debt over GDP levels and the lagged GDP growth to account for business cycle conditions.

the average effect, indicating that the spread response to consolidation is more favorable—smaller, or compressed—when firms view fiscal conditions more positively at the time of implementation.



(a) Spread Response to a Government Expenditure Shock (Direct Effect)

(b) Spread Response to a Government Expenditure Shock (Interaction with Sentiment)

Figure 4: Impulse Responses of Sovereign Spreads to Government Expenditure Shocks

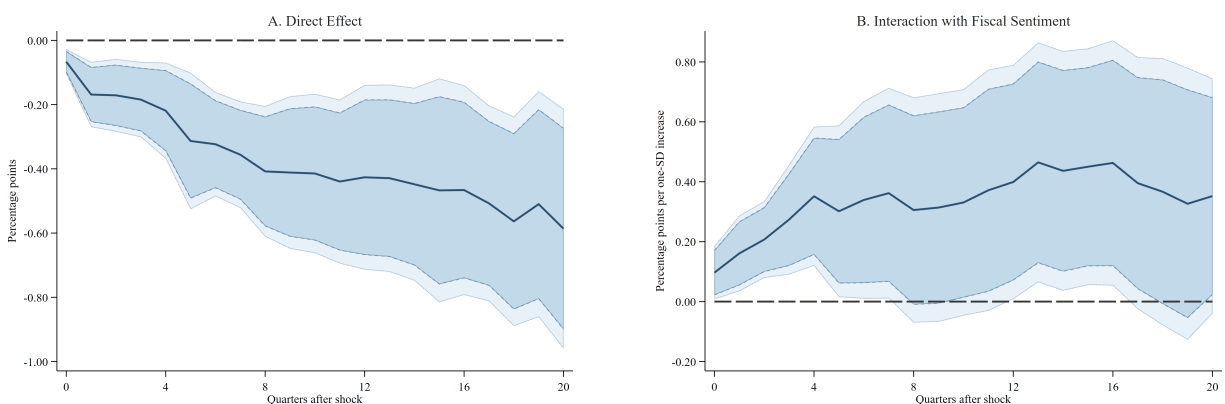
Source: Authors' calculations.

Note: This figure shows impulse response functions from local projections estimating the effect of a government expenditure shock on sovereign bond spreads. Panel (a) presents the average (direct) response. Panel (b) shows the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

Our findings both complement and extend those of [Born et al. \(2020\)](#), whose identified shocks we employ. They show that a cut in government consumption lowers the sovereign default premium when initial fiscal stress is benign but raises it when stress is severe, where stress is measured by the lagged sovereign spread itself. Because that conditioning variable is the very market price the analysis seeks to explain, it compresses beliefs and fundamentals into a single realized outcome and leaves open *why* markets reward or punish consolidation. We condition instead on firm sentiment—a belief measure constructed independently of spreads and observed before the fiscal action—and find that the spread response to consolidation is significantly conditioned by firm sentiment—more favorable perceptions are associated with a smaller, or compressed, spread response. We thereby complement their finding that the effect of consolidation depends on observed fiscal stress by showing that it also varies with firms' perceptions, and we extend the analysis beyond the default premium to the real economy, examining how the perceived fiscal environment relates to the response of GDP, investment, and consumption.

Figure 5 presents the cumulative impulse responses of GDP to a government expenditure shock, separating the average effect (Panel a) from the interaction with fiscal sentiment (Panel b).

The average response is negative and persistent: GDP declines by approximately 0.4 percentage points (p.p.) within the first year and remains below trend over the projection horizon. Panel b plots the interaction term: a one-standard-deviation increase in fiscal sentiment raises the GDP response to the shock by roughly 0.3 p.p. by the fourth quarter, an effect that is statistically significant and persistent. The interaction is positive and works against the average contraction, indicating that the output response to consolidation is substantially less contractionary when firms perceive fiscal conditions more favorably. This underscores the central role of firm perceptions in shaping the transmission of fiscal policy.



(a) GDP Response to a Government Expenditure Shock (Direct Effect)

(b) GDP Response to a Government Expenditure Shock (Interaction with Sentiment)

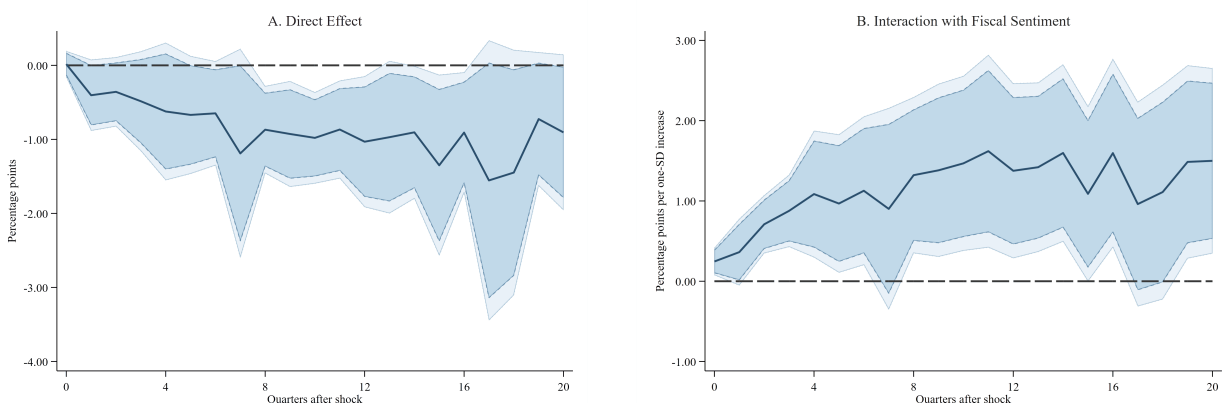
Figure 5: Impulse Responses of GDP to Government Expenditure Shocks

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real GDP. Panel (a) presents the average (direct) response. Panel (b) shows the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

Figure 6 presents the cumulative impulse responses of investment to a government expenditure shock, separating the average effect (Panel a) from the interaction with firm-level fiscal sentiment (Panel b). The average response shows a decline in investment of over 0.5 p.p. within the first two quarters, with negative effects persisting over the projection horizon. Panel b shows a large interaction: a one-standard-deviation increase in fiscal sentiment raises the investment response to the shock by more than 1 p.p. by the third year, statistically significant across most horizons. The interaction is large and positive, indicating that more favorable perceptions are associated with a substantially stronger—markedly less contractionary—investment response. These pat-

terns suggest that the investment response to fiscal consolidation depends importantly on how firms perceive the fiscal environment.



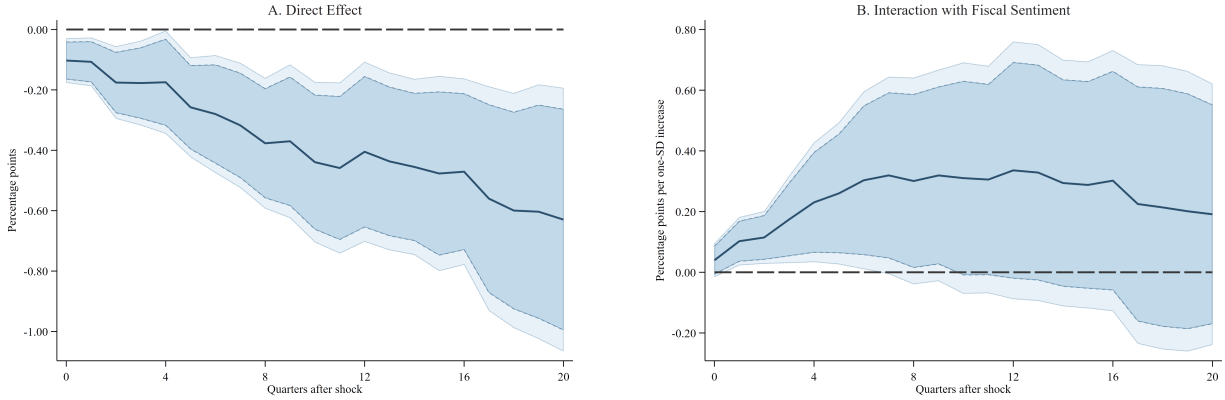
(a) Investment Response to a Government Expenditure Shock (Direct Effect)

(b) Investment Response to a Government Expenditure Shock (Interaction with Sentiment)

Figure 6: Impulse Responses of Investment to Government Expenditure Shocks

Source: Authors' calculations. *Note:* This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real investment. Panel (a) presents the average (direct) response. Panel (b) shows the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

Figure 7 presents the cumulative impulse responses of consumption to a government expenditure shock, distinguishing between the average effect (Panel a) and the interaction with firm-level fiscal sentiment (Panel b). The average response shows an immediate and progressively larger decline in consumption, reaching nearly -0.44 percentage points after three years. This contraction is statistically significant over several quarters, suggesting that fiscal consolidation tends to reduce household spending when fiscal sentiment is not taken into account. In contrast, Panel b shows that a one-standard-deviation increase in fiscal sentiment raises the consumption response by approximately 0.3 percentage points around four quarters after the shock. The positive interaction partially offsets the average decline, indicating that the contraction in consumption is less pronounced when firms perceive fiscal conditions more favorably.



(a) Consumption Response to a Government Expenditure Shock (Direct Effect)

(b) Consumption Response to a Government Expenditure Shock (Interaction with Sentiment)

Figure 7: Impulse Responses of Consumption to Government Expenditure Shocks

Source: Authors' calculations. *Note:* This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real consumption. Panel (a) presents the average (direct) response. Panel (b) shows the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is multiplied by -1 so that it corresponds to a contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

Taken together, these results confirm Prediction P2: the macroeconomic effects of a fiscal shock are not fixed properties of the policy itself but depend systematically on the perceived fiscal environment in which it is enacted, as captured by firm sentiment. Across all four outcomes, more favorable sentiment is associated with a significantly more benign response to the same shock—smaller increases in sovereign spreads and stronger GDP, investment, and consumption. These patterns suggest that firm perceptions of fiscal conditions are reflected in both financial market pricing and real activity, operating through forward-looking expectations. In line with [Bachmann and Sims \(2012\)](#), who show that confidence responses amplify spending multipliers in recessions but not in normal times, our results point to the conditioning role of beliefs in fiscal transmission. This conditioning role has a direct theoretical counterpart in [Bi et al. \(2013\)](#), who show that the macroeconomic effect of a consolidation depends on agents' prior expectations about its timing and composition; firm sentiment provides an empirical counterpart to the belief state their model shows to be decisive. When firms view fiscal conditions more favorably, adjustments are more likely to be interpreted as part of a sustainable fiscal path—supporting lower risk premia and private demand—whereas less favorable perceptions may reinforce concerns about future policy, dampening the response. In this sense, our findings provide direct, belief-based evidence for the confidence channel long conjectured in the literature on the effects of fiscal consolidation ([Alesina](#)

et al., 2019; Giavazzi and Pagano, 1990): the response to consolidation is more favorable when firms regard the fiscal environment more positively.¹²

7.2 Distinguishing Firm Perceptions from Conventional Measures of Fiscal Vulnerability

A natural concern is that firm sentiment may simply proxy for observable indicators of fiscal stress: firms may express less favorable views precisely when public debt is high or when sovereign borrowing costs are already elevated. If so, the conditioning role documented above could reflect well-known heterogeneity in fiscal transmission associated with the initial fiscal and financial position, rather than any independent informational content of firm perceptions. To address this concern, we re-estimate the impulse responses in a more demanding specification that simultaneously allows the effect of the fiscal shock to vary with lagged fiscal sentiment, lagged debt-to-GDP, and the lagged sovereign spread. This exercise provides a direct “horse race” between firm perceptions and the two conventional measures of fiscal vulnerability most emphasized in the literature.

Specifically, we estimate the expanded local projection in Equation (3):

$$\begin{aligned} y_{jt+h} = & \alpha_{jh} + \alpha_{th} + \gamma_h \epsilon_{jt} + \beta_S^h (\text{sent}_{jt-1} - \mathbb{E}[\text{sent}_{jt}]) \epsilon_{jt} \\ & + \beta_D^h (\text{debt}_{jt-1} - \mathbb{E}[\text{debt}_{jt}]) \epsilon_{jt} + \beta_R^h (\text{spr}_{jt-1} - \mathbb{E}[\text{spr}_{jt}]) \epsilon_{jt} \\ & + \Gamma_h' Z_{jt-1} + v_{jt+h}. \end{aligned} \quad (3)$$

Here debt_{jt-1} is lagged debt-to-GDP and spr_{jt-1} is the lagged sovereign spread, each standardized and demeaned within country in the same way as fiscal sentiment. The vector Z_{jt-1} now includes the lagged levels of sentiment, debt-to-GDP, and the sovereign spread, together with lagged GDP growth, so that each interaction is identified while controlling for the direct association of the corresponding state variable with the outcome. As before, the shock is standardized and multiplied by -1 , so positive values denote contractionary fiscal policy. The coefficient β_S^h is the analog of β^h in Equation (2): it measures how the response to the shock shifts with a one-standard-deviation increase in favorable sentiment, now holding constant the heterogeneity associated with debt and initial sovereign stress. As in the baseline, Panels B–D of each figure plot interaction coefficients—the change in the response per one-standard-deviation increase in the corresponding state variable—and should not be read as total responses. The key question is whether β_S^h remains sizable and statistically significant once β_D^h and β_R^h are included; if it does, the sentiment result cannot be attributed solely to highly indebted countries or to countries already facing elevated borrowing costs.

¹²Appendix A.9 presents results separately for advanced and emerging markets.

Figure 8 reports the expanded estimates for sovereign spreads. Panel A shows that the direct effect of a contractionary shock remains positive at short horizons, raising spreads by roughly 8–12 basis points over the first two years. Most importantly, the interaction with fiscal sentiment in Panel B remains negative and statistically significant over the first eight to ten quarters, lowering the spread response by up to about 20 basis points per one-standard-deviation increase in favorable sentiment—very close to the baseline estimate. By contrast, the interactions with debt-to-GDP (Panel C) and with the initial sovereign spread (Panel D) are small and statistically indistinguishable from zero at essentially all horizons. The sentiment channel therefore survives a direct confrontation with the two conventional measures of sovereign stress, indicating that firm perceptions carry information about the transmission of fiscal policy to sovereign risk beyond the government’s initial debt burden and market borrowing costs.

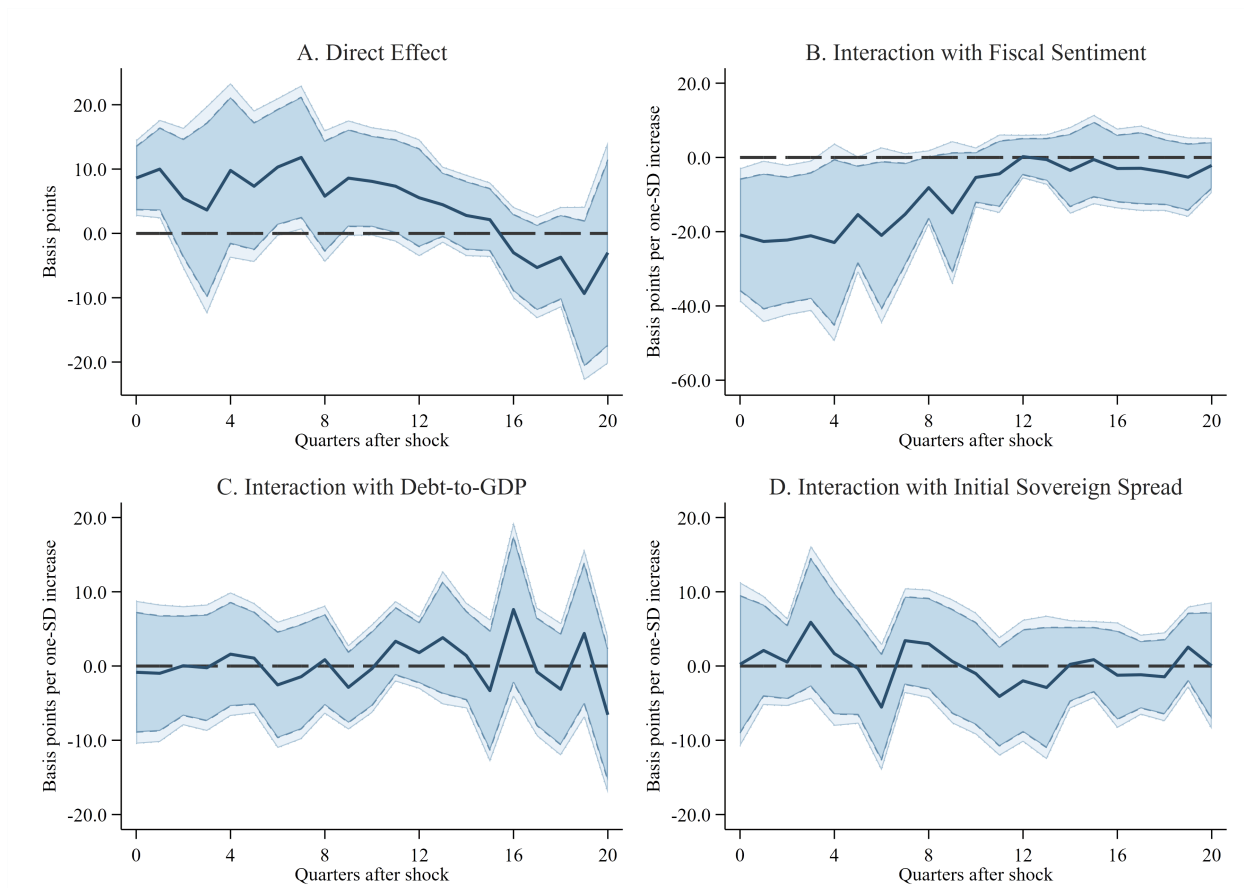


Figure 8: Expanded Impulse Responses of Sovereign Spreads to Government Expenditure Shocks

Source: Authors' calculations.

Note: This figure shows impulse response functions from local projections in which the government expenditure shock is simultaneously interacted with lagged fiscal sentiment, lagged debt-to-GDP, and the lagged sovereign spread, following Equation 3. Panel A reports the direct (average) response; Panels B, C, and D report the interaction coefficients β_S^h , β_D^h , and β_R^h —the change in the response per one-standard-deviation increase in fiscal sentiment, debt-to-GDP, and the initial sovereign spread, respectively—and are not total responses. All interacting variables are standardized and demeaned within country. The shock is standardized and multiplied by -1 , so impulse responses correspond to a one-standard-deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter. All specifications include country and quarter fixed effects, and standard errors are clustered at the country level.

Figure 9 presents the expanded results for real GDP. The direct response in Panel A is negative and persistent, reaching about -0.4 to -0.5 percentage points over the projection horizon, as in the baseline. The interaction with fiscal sentiment in Panel B remains positive and statistically significant over short and medium horizons, raising the GDP response by roughly 0.3 – 0.4 percentage points per one-standard-deviation increase in favorable sentiment. The debt-to-GDP and sovereign-spread interactions (Panels C and D) are not statistically significant at conventional

levels. The stability of β_S^h relative to the baseline indicates that the conditioning role of firm perceptions for output is not driven by differences in initial indebtedness or sovereign stress.

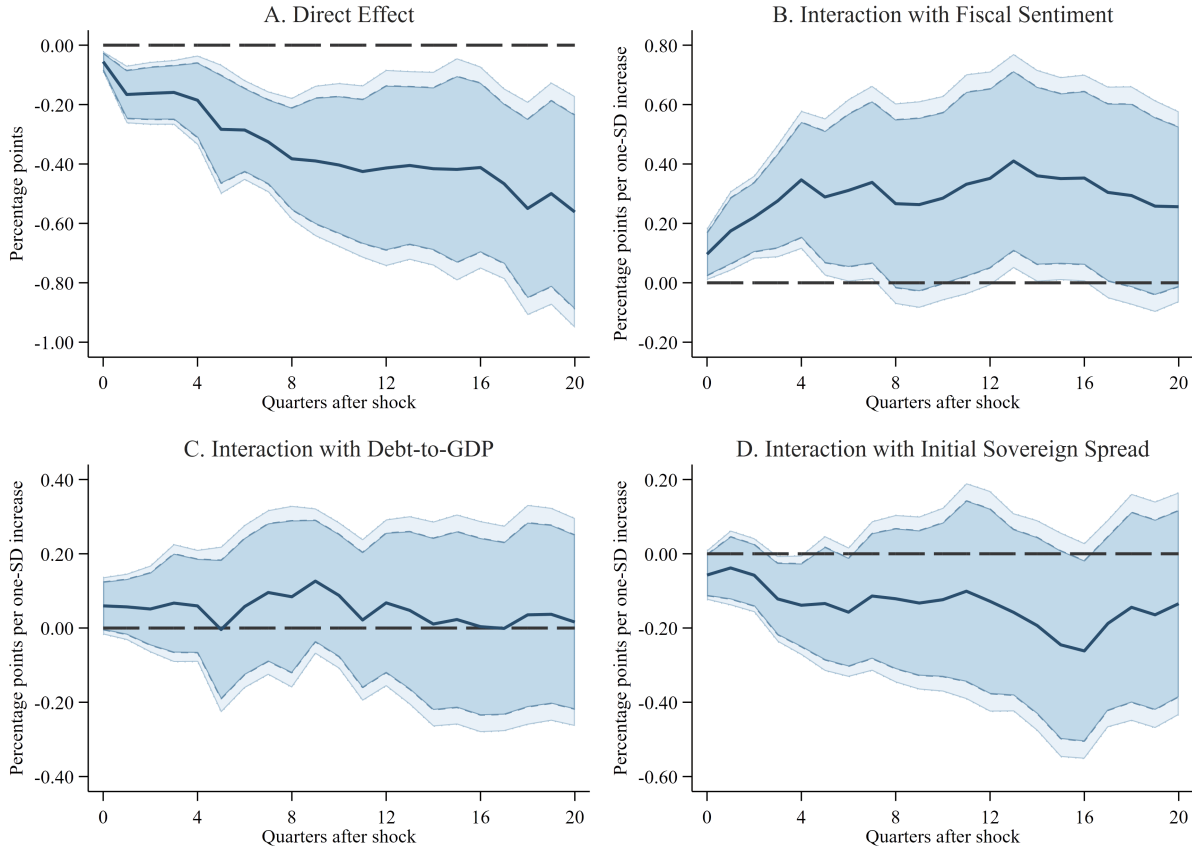


Figure 9: Expanded Cumulative Impulse Responses of GDP to Government Expenditure Shocks

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions for real GDP from local projections in which the government expenditure shock is simultaneously interacted with lagged fiscal sentiment, lagged debt-to-GDP, and the lagged sovereign spread, following Equation 3. Panel A reports the direct (average) response; Panels B, C, and D report the interaction coefficients β_S^h , β_D^h , and β_R^h , which measure the change in the response per one-standard-deviation increase in the corresponding state variable and are not total responses. The dependent variable is the cumulative log change in real GDP from $t - 1$ through $t + h$, multiplied by 100. All interacting variables are standardized and demeaned within country. The shock is standardized and multiplied by -1 . Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter. All specifications include country and quarter fixed effects, and standard errors are clustered at the country level.

Figure 10 reports the cumulative investment responses. The investment margin is of particular interest because firms' capital-expenditure decisions are a primary channel through which perceptions of the fiscal environment can shape aggregate demand. Panel A shows a negative direct response, and Panel B shows that the sentiment interaction remains positive and economi-

cally large—on the order of one percentage point per one-standard-deviation increase in favorable sentiment—and statistically significant across most horizons. Consistent with the other outcomes, the interactions with debt-to-GDP and the sovereign spread (Panels C and D) are not statistically significant. Among the four outcomes, the investment response displays the most pronounced sensitivity to firm perceptions, and this sensitivity is essentially unaffected by the inclusion of the debt and spread interactions.

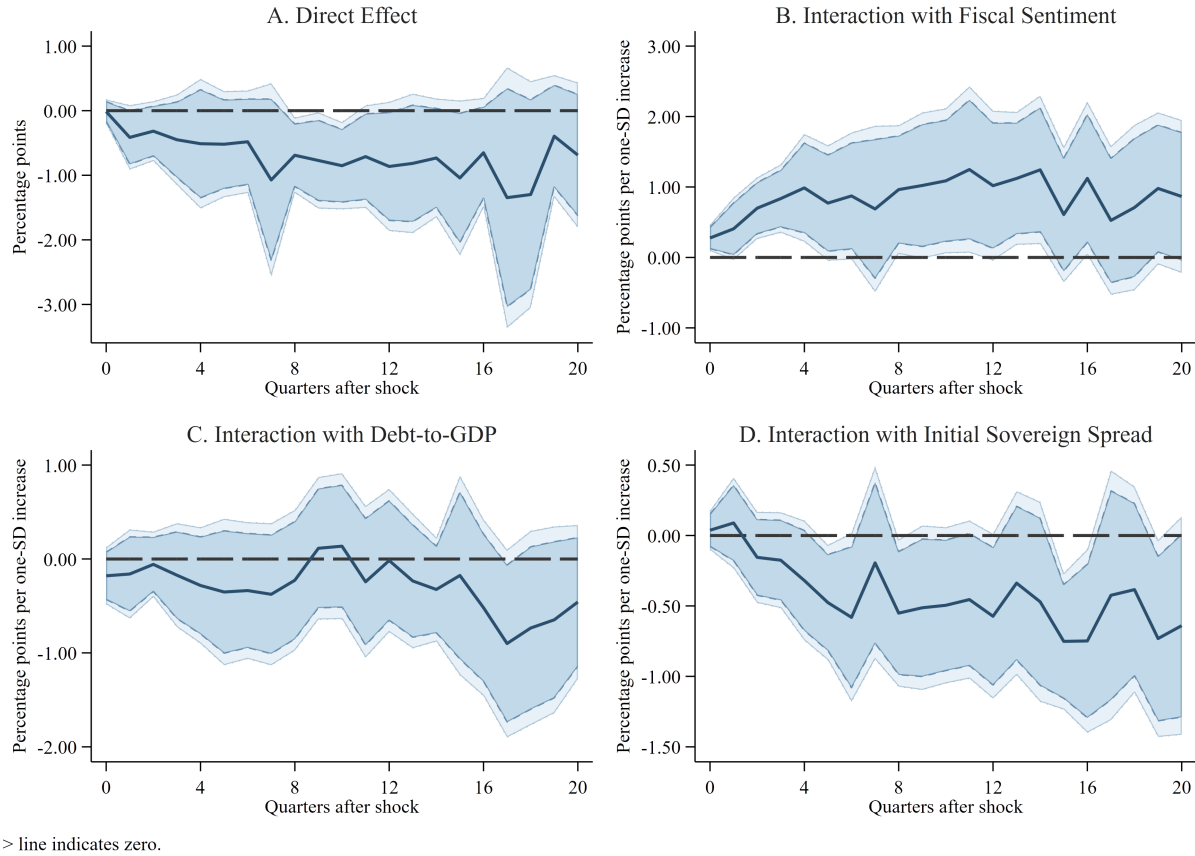


Figure 10: Expanded Cumulative Impulse Responses of Investment to Government Expenditure Shocks

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions for real investment from local projections in which the government expenditure shock is simultaneously interacted with lagged fiscal sentiment, lagged debt-to-GDP, and the lagged sovereign spread, following Equation 3. Panel A reports the direct (average) response; Panels B, C, and D report the interaction coefficients β_S^h , β_D^h , and β_R^h , which measure the change in the response per one-standard-deviation increase in the corresponding state variable and are not total responses. The dependent variable is the cumulative log change in real capital formation from $t - 1$ through $t + h$, multiplied by 100. All interacting variables are standardized and demeaned within country. The shock is standardized and multiplied by -1 . Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter. All specifications include country and quarter fixed effects, and standard errors are clustered at the country level.

Figure 11 reports the expanded results for consumption. The direct response in Panel A is again negative and deepening over the horizon. The interaction with fiscal sentiment in Panel B is positive and statistically significant over short and medium horizons, raising the consumption response by up to about 0.3 percentage points per one-standard-deviation increase in favorable sentiment, before attenuating at the longest horizons. As with GDP, investment, and spreads, neither the debt-to-GDP interaction nor the sovereign-spread interaction is statistically significant. Although the sentiment measure is constructed exclusively from corporate earnings calls, its conditioning role extends to household demand and is robust to the additional interactions.

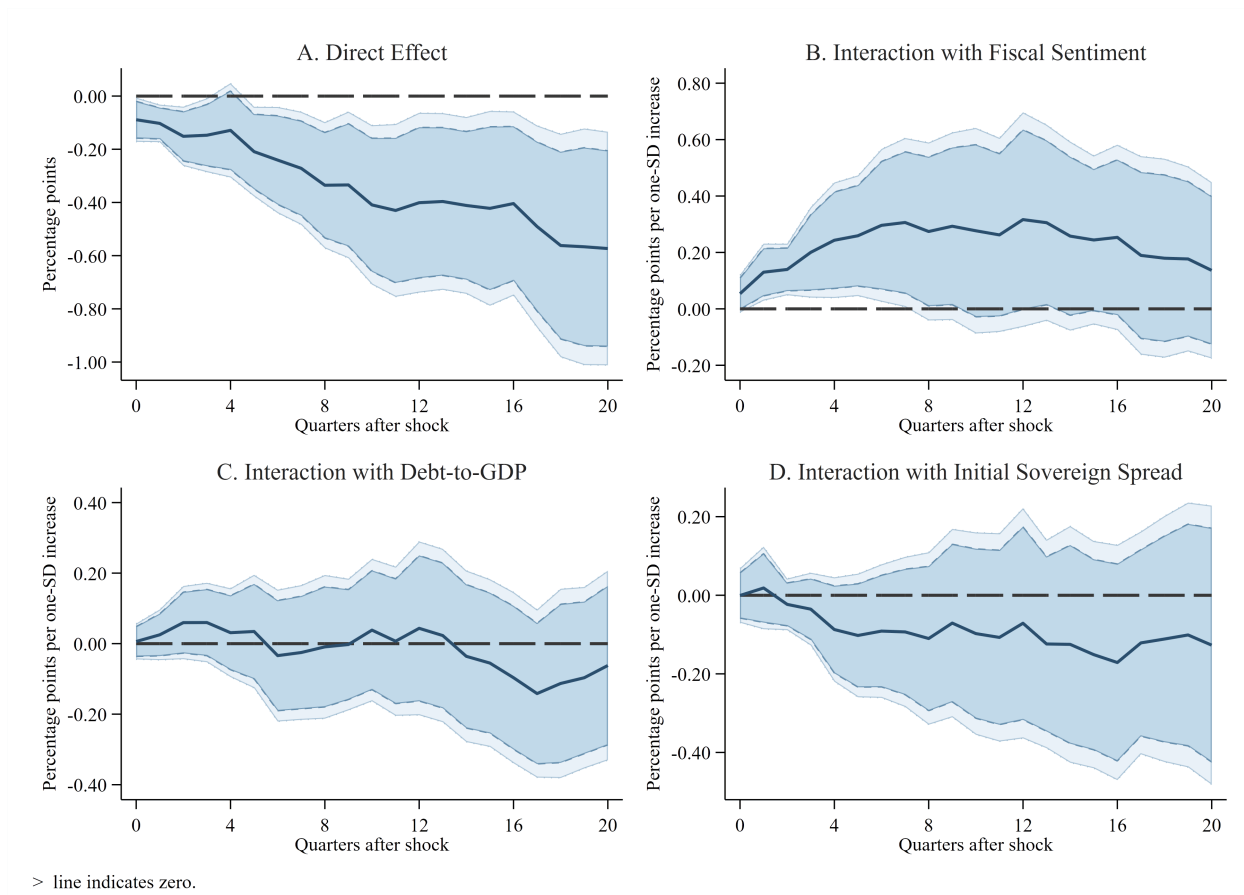


Figure 11: Expanded Cumulative Impulse Responses of Consumption to Government Expenditure Shocks

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions for real consumption from local projections in which the government expenditure shock is simultaneously interacted with lagged fiscal sentiment, lagged debt-to-GDP, and the lagged sovereign spread, following Equation 3. Panel A reports the direct (average) response; Panels B, C, and D report the interaction coefficients β_S^h , β_D^h , and β_R^h , which measure the change in the response per one-standard-deviation increase in the corresponding state variable and are not total responses. The dependent variable is the cumulative log change in real consumption from $t - 1$ through $t + h$, multiplied by 100. All interacting variables are standardized and demeaned within country. The shock is standardized and multiplied by -1 . Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter. All specifications include country and quarter fixed effects, and standard errors are clustered at the country level.

Taken together, the expanded specification delivers a consistent message across all four outcomes: the interaction between the fiscal shock and firm sentiment retains its baseline sign and remains statistically significant at short and medium horizons, whereas the interactions with debt-to-GDP and the initial sovereign spread are uniformly indistinguishable from zero. Firm perceptions thus contain information about how fiscal policy transmits—to sovereign spreads and to the real economy—that is not captured by the two most common summary measures of a country's

fiscal and financial position. This strengthens the interpretation of fiscal sentiment as an incremental conditioning variable rather than a repackaging of observed fiscal stress. We continue to describe these patterns as conditional heterogeneity rather than as a causal effect of sentiment itself: the interacting variables are predetermined but not randomly assigned, so the results identify the information content of firm perceptions for fiscal transmission, not an independently manipulable policy lever.

8 Discussion

The empirical results align with both predictions of Section 5 and, taken together, point to a belief-dependent transmission mechanism for fiscal policy. Fiscal perceptions are systematically related to sovereign spreads, equity prices, and real activity (P1), and the response of the economy to an identified fiscal shock depends on the prevailing belief state (P2). That the conditioning pattern holds with a consistent sign across four separately estimated outcomes—spreads, GDP, investment, and consumption—is difficult to reconcile with a view in which fiscal perceptions are merely a passive reflection of conditions rather than an active input into how policy transmits. Reinforcing this reading, the conditioning role of sentiment is not subsumed by the economy’s initial fiscal position: when the fiscal shock is allowed to interact simultaneously with lagged debt-to-GDP and the lagged sovereign spread, the sentiment interaction retains its sign and significance while those of the two conventional stress measures are statistically indistinguishable from zero. Firm perceptions therefore carry information about transmission that standard summaries of the fiscal and financial position do not.

Why should firm discourse, rather than household surveys or professional forecasts, provide the relevant reading of how the fiscal environment is perceived? Firms are among the marginal agents whose investment, hiring, financing, and pricing decisions transmit fiscal policy to the real economy; their perceptions are therefore decision-relevant rather than incidental, and they discuss fiscal matters in earnings calls precisely when these bear on such decisions. The medium reinforces this advantage. Because a large part of each call is unscripted analyst questioning, fiscal concerns surface under external scrutiny rather than through the frame of a survey instrument, and the attention firms devote to a topic—the share of the conversation it occupies—directly reveals its salience (Hassan et al., 2019, 2024b). Unlike periodic surveys or forecaster panels, the calls are produced continuously, at quarterly frequency, and across a broad cross-section of countries at no elicitation cost, and they record not merely whether firms are aware of fiscal developments but how they interpret them as favorable or adverse. The resulting measure is thus behaviorally proximate to the outcomes of interest, forward-looking, and internationally comparable—properties that credibility measures anchored to official targets or professional forecasts do not share (End and Hong, 2022; Leeper, 2009). A natural objection is that earnings calls reflect the subjective beliefs of corporate decision-makers, which may diverge from objective fundamentals. For our purposes this is a feature rather than a limitation: it is precisely these subjective beliefs that guide firms’ spending, hiring, and investment, and therefore the channel through which the perceived fiscal environment is transmitted to real activity (Hassan et al., 2024b).

The findings also speak to a long-running debate over the size, and even the direction, of the effects of fiscal consolidation. Our evidence points to firms’ perceptions of the fiscal environment as an important part of the answer: the response to consolidation is systematically more benign where firm sentiment is more favorable. This provides an empirical counterpart to the confi-

dence channel posited in the literature on the effects of austerity (Alesina et al., 2019; Giavazzi and Pagano, 1990), and helps rationalize why estimated fiscal multipliers vary so widely across studies and states (Auerbach and Gorodnichenko, 2012; Huidrom et al., 2020; Ramey and Zubairy, 2018): firms' perceptions are a systematic—and, with the FPI, measurable—source of that heterogeneity.

Several caveats bound these conclusions. The panel associations of Section 6 are not causal: perceptions and outcomes are jointly determined, and we read them as evidence on the informational content of the indicators rather than as structural effects. The transmission results rest on the exogeneity of the identified fiscal shocks and are estimated on the subsample for which those shocks are available, so their external validity to other periods and countries should be established with care. The indicators are dictionary-based measures of discourse and capture perceptions rather than the full information set of any agent. Finally, the framework of Section 5 is deliberately reduced-form: it organizes the mechanism and motivates the tests but does not identify deep parameters, and we accordingly refrain from welfare or optimal-policy claims. We view these limitations less as weaknesses of the present measure than as an agenda for research that treats private-sector fiscal beliefs as observable, high-frequency data.

9 Conclusion

This paper develops a novel approach to measuring fiscal perceptions by analyzing the language firms use in quarterly earnings calls. We construct a cross-country set of Fiscal Perceptions Indicators (FPI) that capture the salience, tone, and risk framing of discussions about government debt, taxation, and public spending, providing a high-frequency, scalable measure of how firms perceive fiscal conditions. The indicators are strongly associated with macroeconomic and financial outcomes: periods of heightened fiscal concern coincide with weaker growth, reduced investment, and rising sovereign spreads. These perceptions also condition the transmission of fiscal shocks: the responses of sovereign spreads and real activity to a consolidation are significantly more benign where firm sentiment is more favorable—a conditioning role that survives allowing the same shock to interact with the initial debt-to-GDP ratio and sovereign spread, indicating that firm perceptions carry information beyond conventional measures of fiscal vulnerability. Overall, the patterns suggest that firms' perceptions of the fiscal environment operate as a conditioning variable for both market pricing and the real effects of fiscal policy.

Taken together, the findings point to a belief-dependent transmission channel in which fiscal outcomes are shaped not only by the policy stance itself, but by how that stance is interpreted—a mechanism emphasized by Leeper (2009). This perspective suggests several institutional considerations. While the analysis does not assess specific reforms, the results imply that credibility may be reinforced through fiscal frameworks that establish clear medium-term anchors. Forward-looking expenditure paths tied to debt sustainability, combined with transparent monitoring of

deviations—especially in response to shocks—may enable firms to assess whether fiscal actions are consistent with stated objectives.

More broadly, the results underscore that what matters for transmission is not only the state of the fiscal accounts but how private agents perceive them—a perception that materially alters how fiscal policy transmits. By quantifying these perceptions at scale, the Fiscal Perceptions Indicators offer new empirical traction on how expectations mediate the effects of fiscal policy across countries and over time, and provide a foundation for evaluating how fiscal institutions shape the perceived fiscal environment and, through it, macroeconomic outcomes. More generally, by making private-sector fiscal beliefs observable across countries, the indicators open a route to studying the international dimension of fiscal transmission—how a given fiscal action is priced differently across sovereigns depending on how firms read the fiscal environment.

AI Disclaimer

During the preparation of this work, the authors used Claude (Anthropic) to assist with editing text and checking the internal consistency of the manuscript. The authors reviewed and edited the output as needed and take full responsibility for the content of the published article.

Data availability

The analysis uses proprietary firm-level earnings call transcripts obtained from NL Analytics under a subscription licence, which does not permit redistribution of the underlying text. The data are available to researchers through a subscription to NL Analytics. We provide complete replication code, documentation of variable and index construction, and instructions for obtaining the data, so that all results can be reproduced by researchers with access.

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Appendix: Fiscal Assessments through the Lens of Firms: Corporate Perceptions and the Transmission of Fiscal Policy

Online Appendix—Not for Publication

A.1 Sample Composition by Country

Table A1: Firm Coverage by Country and Sample Start Date

Country	Firms	Start	Country	Firms	Start
Argentina	26	2002q4	Ireland	79	2002q1
Australia	701	2003q3	Israel	137	2002q1
Austria	44	2003q2	Italy	128	2002q4
Belgium	68	2002q3	Japan	349	2002q2
Bermuda	80	2002q1	Luxembourg	41	2002q1
Brazil	274	2002q2	Mexico	110	2002q2
Canada	1090	2002q1	Monaco	10	2006q2
Chile	39	2002q2	Netherlands	118	2002q2
China	288	2002q2	New Zealand	76	2005q1
Colombia	20	2003q3	Nigeria	20	2009q4
Czech Republic	5	2006q2	Norway	199	2002q2
Denmark	75	2002q2	Panama	3	2005q3
Egypt	12	2004q4	Peru	13	2003q2
Finland	106	2002q2	Philippines	32	2002q1
France	207	2002q1	Poland	46	2003q3
Germany	285	2002q2	Portugal	21	2002q4
Greece	57	2003q2	Russia	55	2003q2
Hong Kong	156	2002q3	Saudi Arabia	11	2014q1
Hungary	4	2003q3	Singapore	70	2002q2
India	949	2002q2	South Africa	145	2003q1
Indonesia	23	2003q3	South Korea	58	2002q2
Spain	89	2002q3	Sweden	352	2002q2
Switzerland	143	2002q1	Taiwan	71	2002q2
Thailand	25	2006q2	Turkey	34	2003q1
United Arab Emirates	26	2009q1	United Kingdom	920	2002q1
United States	7647	2002q1			

Note: This table reports the numbers of unique firms by country included in the construction of the FPI, based on corporate earnings call transcripts between 2002 and 2025.

A.2 Data Construction

This appendix provides the fiscal keyword dictionaries used to construct the thematic indicators described in Section 4. Each index captures a distinct dimension of fiscal discussion: general fiscal concerns, taxation, debt and deficit dynamics, and public spending. The dictionaries were developed through an iterative process that combined keyword seeding with validation against actual transcript content across countries and over time. They are designed to reflect how firms refer to fiscal topics in earnings calls and form the basis for the classification of sentence-level content into relevant categories. Risk and sentiment terms, which are applied uniformly across all indices, are sourced from established dictionaries described separately.

The General FPI capture broad references to macrofiscal conditions. It includes terms commonly used to describe government finances, fiscal planning, or fiscal credibility, such as stimulus, infrastructure bill, federal budget, infrastructure spending, government spending, defense spending, infrastructure build, public investment, public spending, government funding, federal funding, government support, government aid, government subsidies, government benefits, government programs, government program, government relief, government assistance, tax deferrals, government funds, fiscal policy, fiscal policies, fiscal spending, fiscal front, public finances, fiscal support, fiscal consolidation, fiscal deficit, fiscal measures, fiscal issues, fiscal challenges, fiscal situation, fiscal position, sovereign risk, austerity programs, sovereign debt crisis, tax revenues, fiscal side, fiscal cliff, government budgets, sovereign debt issues, sovereign debt, government debt, sovereign exposure, public debt, tax policy, potential tax reform, tax policies, tax reform, tax laws, tax changes, fiscal stimulus, tax cuts, tax cut, more stimulus, stimuli, tax reforms, tax bill, fiscal reform, tax law changes, tax increases, tax relief, budget law, pension reform, debt ceiling, federal budgets, government shutdown, fiscal budget, government shutdowns, austerity measures, tax code, sovereign, sovereigns, government bonds, sovereign bonds, government bond, country risk, public bonds, government investment, government measures, government response, government expenditure, new tax law, the tax act, new tax act, tax rate reduction, bonus depreciation, new tax legislation, tax act, transition tax, tax regulations, tax benefit, tax legislation, tax law change, new tax laws, tax rate changes, infrastructure package, regulatory reforms, and debt crisis.

The Tax FPI focus on language related to taxation, revenue collection, and the corporate tax environment. It includes references to tax policy and anticipated or actual tax burdens, including tax, taxes, tax deferrals, tax revenues, tax policy, tax policies, tax reform, tax laws, taxation, tax changes, tax cuts, tax cut, tax reforms, tax bill, tax law changes, tax increases, tax relief, tax code, new tax law, tax rate reduction, new tax legislation, tax act, transition tax, tax regulations, tax benefit, tax legislation, tax law change, new tax laws, and tax rate changes. These terms are chosen to reflect how firms describe both current tax obligations and expectations of future changes to the tax system.

The Debt and Deficit Perceptions Indicators capture concerns about fiscal imbalances and government borrowing. The dictionary includes references to debt accumulation, solvency risks, and fiscal space, including federal budget, fiscal consolidation, fiscal deficit, fiscal issues, fiscal challenges, fiscal situation, fiscal position, sovereign risk, austerity programs, sovereign debt crisis, fiscal side, fiscal cliff, government budgets, sovereign debt issues, sovereign debt, government debt, sovereign exposure, public debt, debt ceiling, federal budgets, government shutdown, fiscal budget, government shutdowns, and debt crisis. These terms are designed to detect whether firms express concern about a country's debt levels or the sustainability of its financing strategy.

The Spending FPI isolate discussion related to government expenditure. It includes terms that reflect both the size and structure of spending programs and concerns about their fiscal implications. Included terms are stimulus, infrastructure bill, infrastructure spending, government spending, defense spending, infrastructure build, public investment, public spending, government support, fiscal spending, fiscal support, fiscal stimulus, more stimulus, government investment, government expenditure, and infrastructure package. These keywords are intended to capture discussions about expenditure-side pressures, including concerns about sustainability, targeting, or political rigidity.

Together, these dictionaries serve as the thematic backbone of the fiscal indicators classification strategy. Sentences containing one or more of the above terms are evaluated in combination with risk and sentiment qualifiers to generate the firm-level measures described in Section 4. Aggregated at the country-quarter level, these indicators serve as the basis for the empirical analysis throughout the paper.

A.3 Fiscal Risk Language—Full Keyword List

The following terms are used to identify fiscal risk language in earnings calls. The list includes synonyms and variants of the concepts *risk*, *risky*, *uncertain*, and *uncertainty*, ordered alphabetically: ambivalence, ambivalent, apprehension, bet, chance, chanciness, chancy, changeability, changeable, changeableness, changeful, chariness, danger, dangerous, debateable, defenseless, dicey, diffidence, disquiet, disquietude, dodgy, doubt, doubtful, doubtfulness, dubiety, dubious, endanger, equivocating, equivocation, erratic, exposed, faltering, fear, fickleness, fitful, fitfulness, fluctuant, fluctuating, gamble, gnarly, hairy, halting, hazard, hazardous, hesitancy, hesitant, hesitating, iffy, imperil, incalculable, incertitude, inconstancy, incredibility, incurable, indecision, indecisive, indeterminable, indeterminacy, indeterminate, inequality, inequity, inescapable, inescapably, insecurity, instability, insurenance, irregular, irresolute, irresolution, jeopardize, jeopardy, likelihood, menace, misgiving, niggle, oscillating, parlous, pending, peril, perilousness, possibility, precarious, precariousness, probability, prospect, qualm, queries, query, question, reservation, risk, risked, riskier, riskiness, risking, risky, scruple, skepticism, speculative, sticky, suspicion, tentative, tentativeness, threat, torn, treacherous, uncertain, uncertainty, unconfident, undecided, undependable, undetermined, unforeseeable, unforeseeable, unknowing, unknown, unpredictability, unpredictable, unreliable, unresolvable, unresolved, unsettled, unstable, unsure, unsureness, untrustworthy, vague, vagueness, vacillating, vacillation, variable, varying, venture, wager, wariness, wavering.

A.4 Sentiment Word Lists

The sentiment analysis conducted in this paper relies on the financial-text-specific dictionaries developed by [Loughran \(2011\)](#). These dictionaries are tailored for financial contexts and are widely used in textual analysis of firm disclosures, including earnings calls.

Examples of Positive Words achievement, adequate, advantage, advantageous, beneficial, bolster, compliance, effective, efficiency, enhance, excellence, favorable, gain, growth, improved, innovation, opportunities, optimistic, outperform, profitable, rebound, recovery, robust, satisfactory, secure, streamline, strength, success, surplus, synergy, transparency, upgrade, valuable.

Examples of Negative Words abandon, adverse, bankruptcy, collapse, crisis, cutbacks, decline, default, deficit, deteriorate, disadvantage, downgrade, failure, fraud, impairment, litigation, loss, misstatement, penalty, recession, restatement, risk, shortfall, slowdown, uncertainty, underperformance, unfavorable, unstable, volatility, weakness.

These word lists are used to measure the tone of fiscal discussions in corporate earnings calls, which are aggregated to construct the Fiscal Sentiment Index. The full dictionaries are available via the authors' website.

A.5 Country-Level General Fiscal Perceptions Indicators

This appendix reports the country-level series underlying the General Fiscal Perceptions Indicators discussed in Section 4. For each component—incidence, risk, and sentiment—we plot the quarterly indicator for every economy in the sample, grouped into advanced and emerging markets. The corresponding country-and-quarter heatmaps are reported in the main text.

A.5.1 Incidence

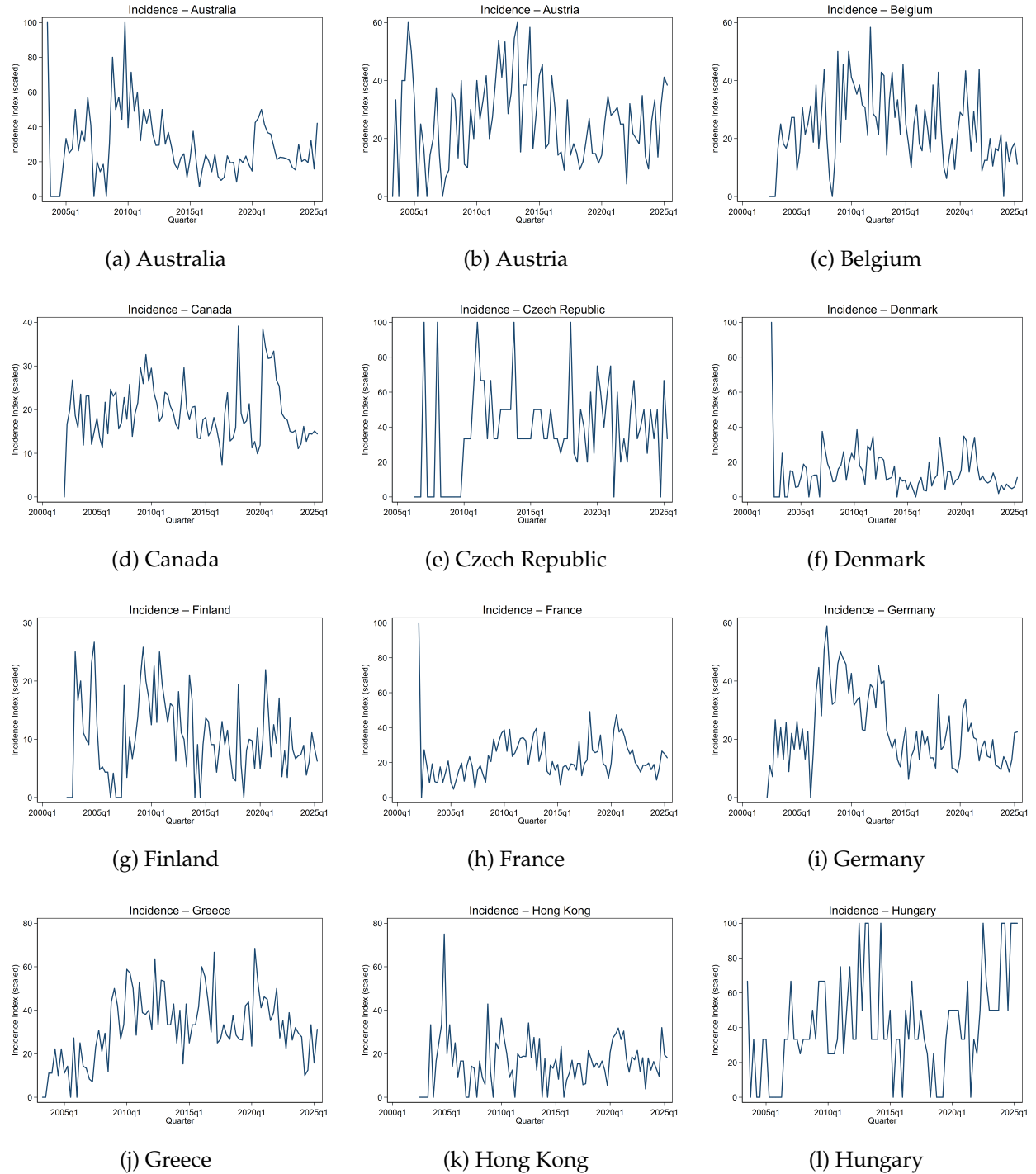


Figure A1: Fiscal Perceptions: Incidence Indicator across Selected Advanced Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing fiscal topics (spending, taxation, debt, or deficits) based on a predefined keyword dictionary.

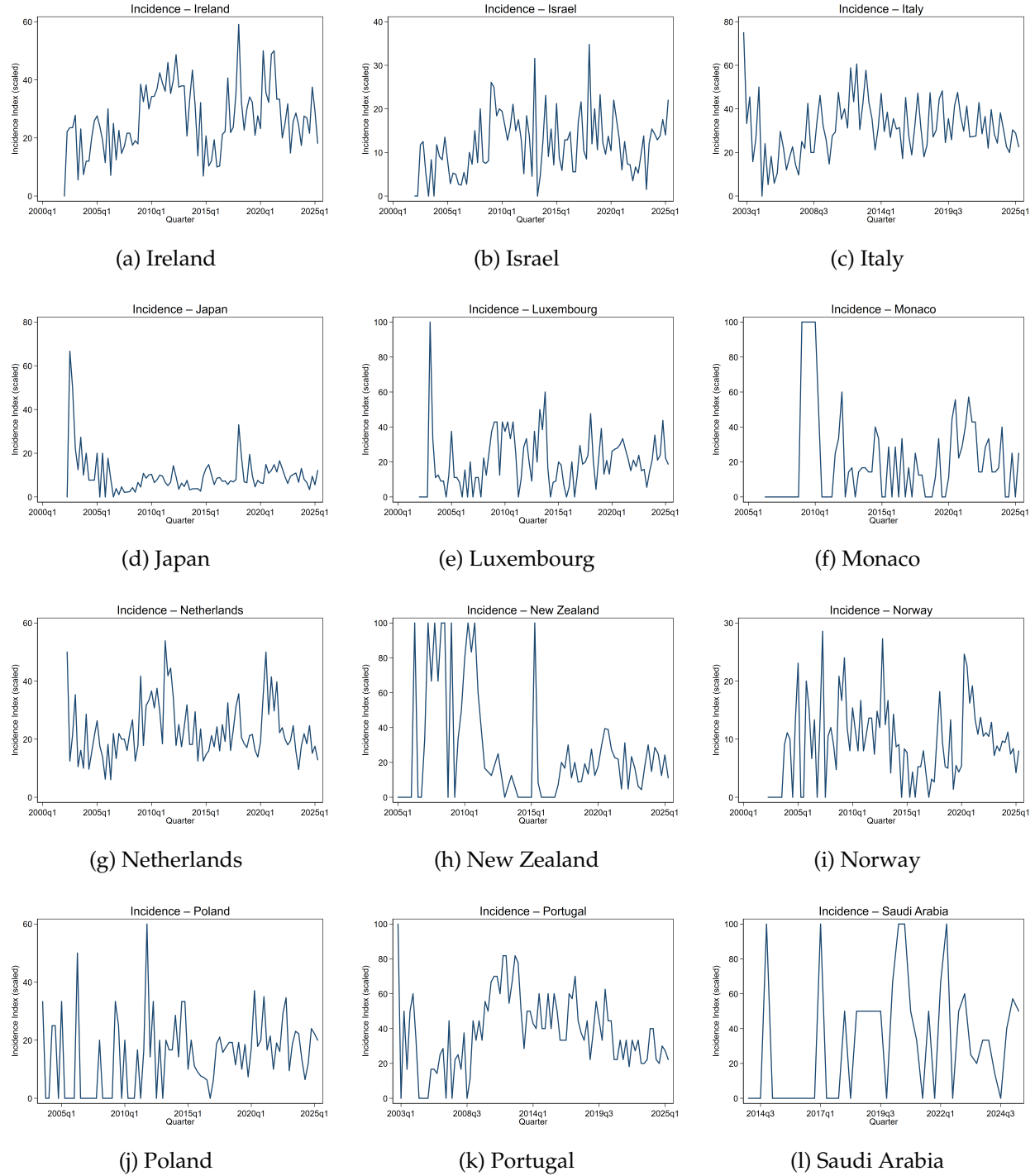


Figure A2: Fiscal Perceptions: Incidence Indicator across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing fiscal topics (spending, taxation, debt, or deficits) based on a predefined keyword dictionary.

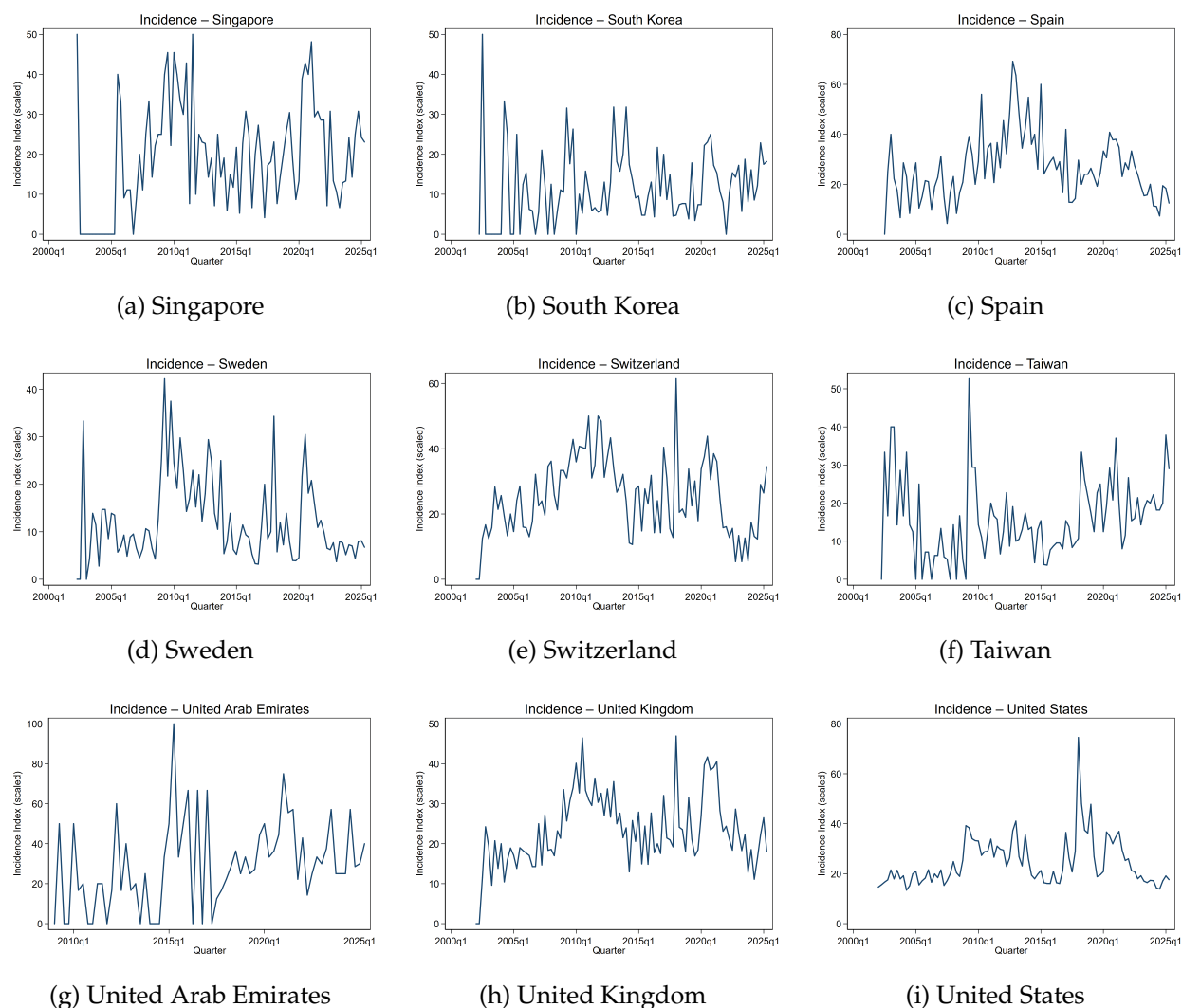


Figure A3: Fiscal Perceptions: Incidence Indicator across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing fiscal topics (spending, taxation, debt, or deficits) based on a predefined keyword dictionary.

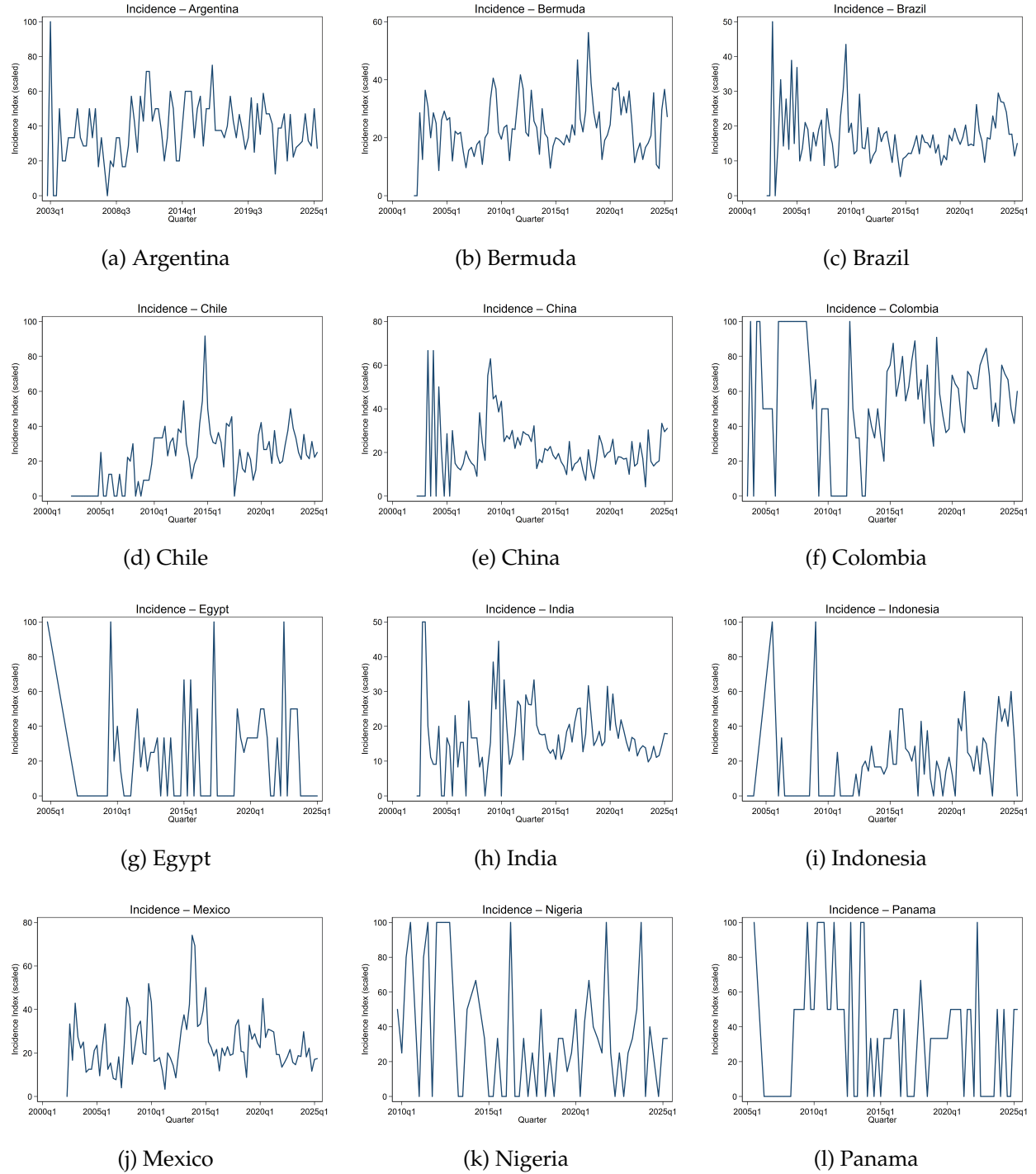


Figure A4: Fiscal Perceptions: Incidence Indicator across Selected Emerging Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing fiscal topics (spending, taxation, debt, or deficits) based on a predefined keyword dictionary.

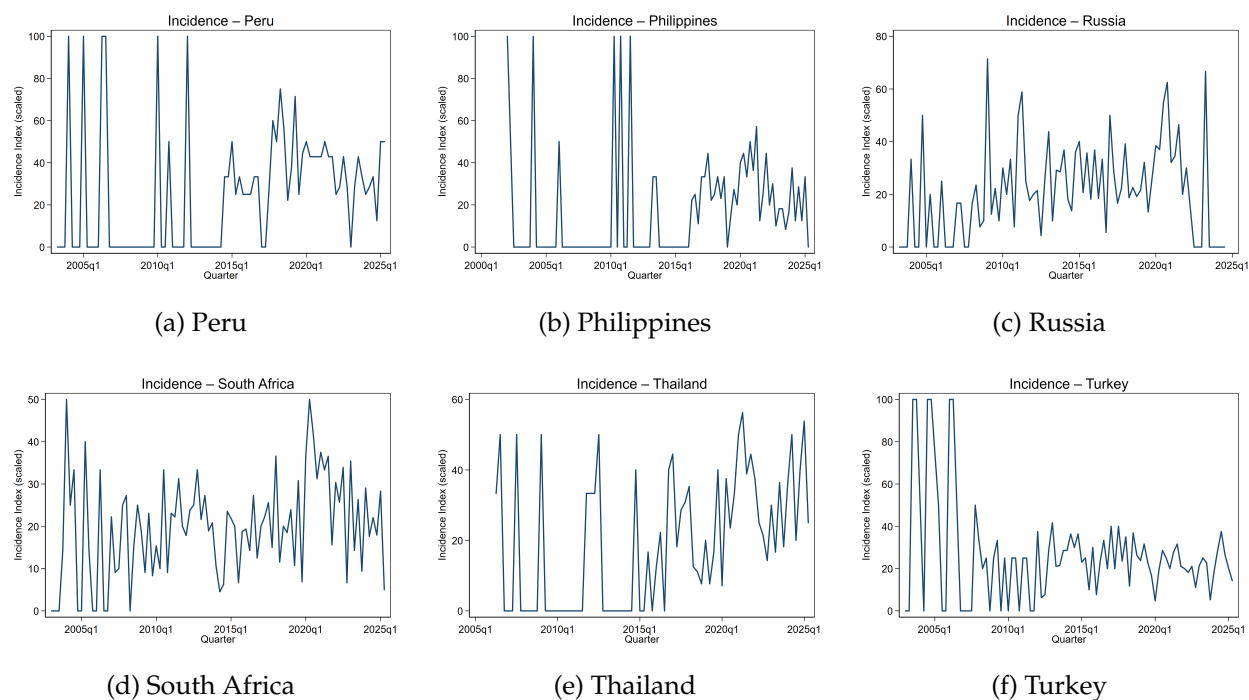


Figure A5: Fiscal Perceptions: Incidence Indicator across Selected Emerging Economies (Continuation)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing fiscal topics (spending, taxation, debt, or deficits) based on a predefined keyword dictionary.

A.5.2 Risk

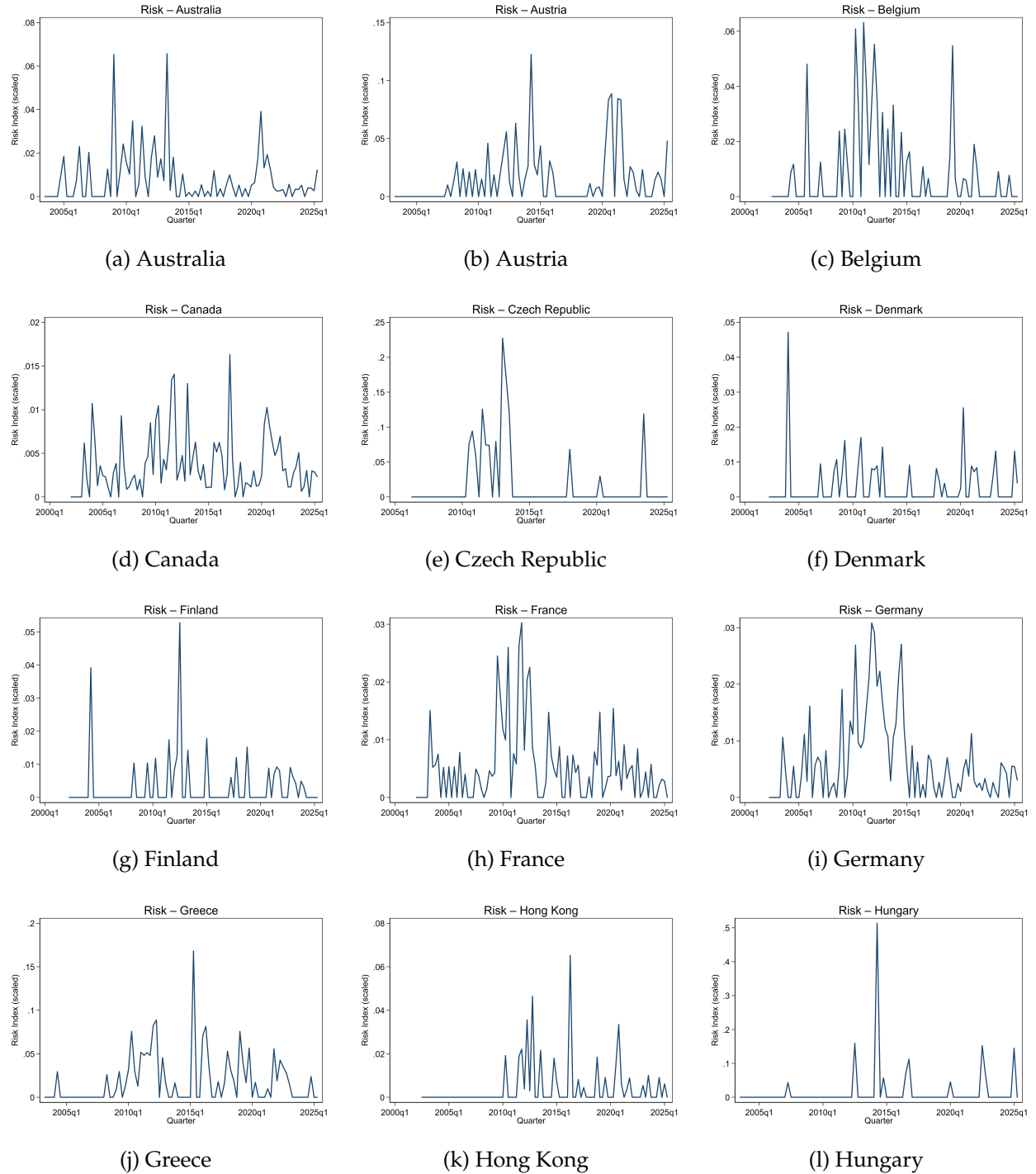


Figure A6: Fiscal Perceptions: Risk Indicator across Selected Advanced Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that reference fiscal policy via risk-related terms across selected advanced economies over the period 2002–2025. Risk is measured as the fraction of calls mentioning fiscal topics (spending, taxation, debt, or deficits) using language associated with uncertainty, instability, or concern, based on a predefined keyword dictionary.

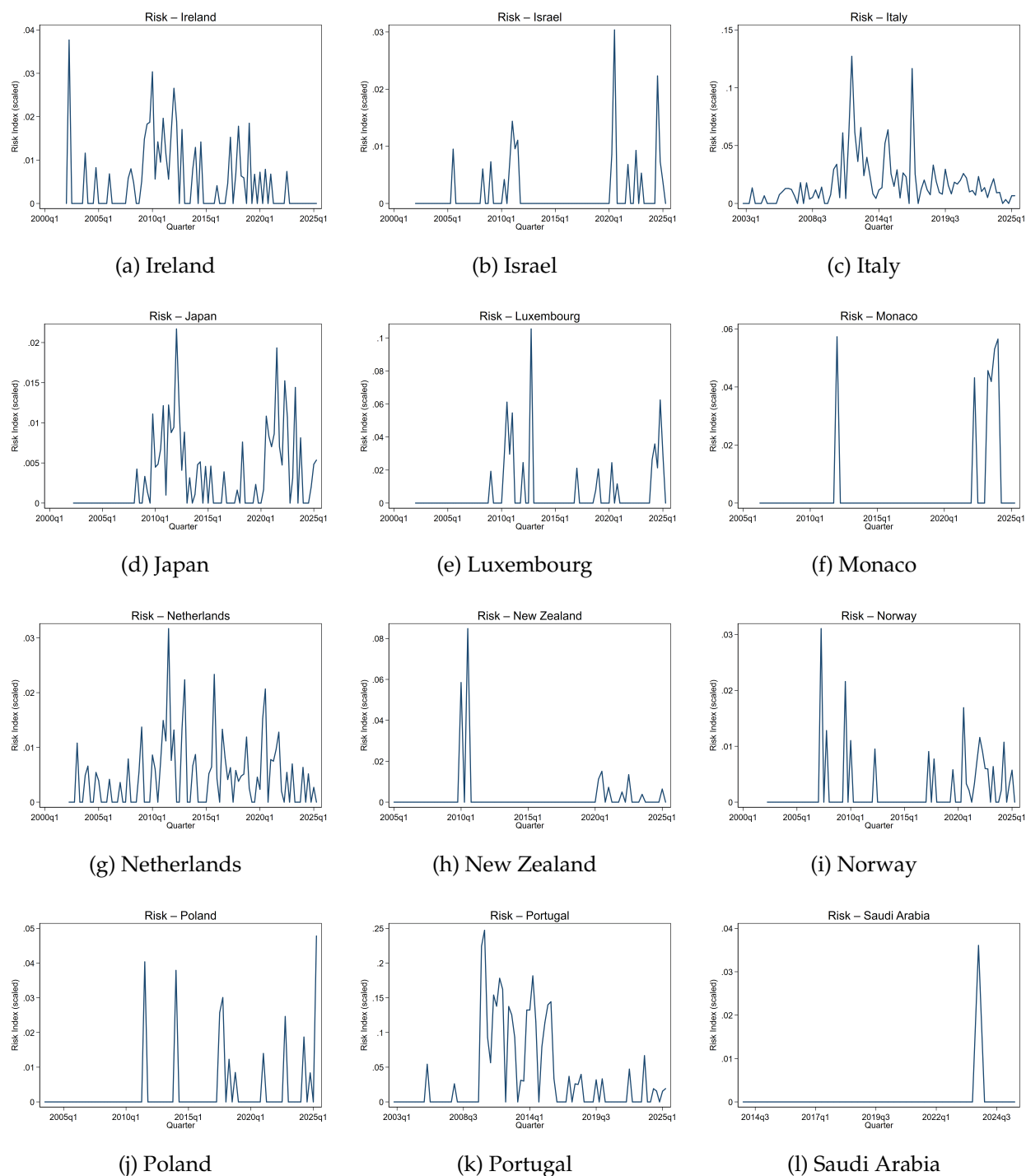


Figure A7: Fiscal Perceptions: Risk Indicator across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that reference fiscal policy in risk-related terms across selected advanced economies over the period 2002–2025. Risk is measured as the fraction of calls mentioning fiscal topics (spending, taxation, debt, or deficits) using language associated with uncertainty, instability, or concern, based on a predefined keyword dictionary.

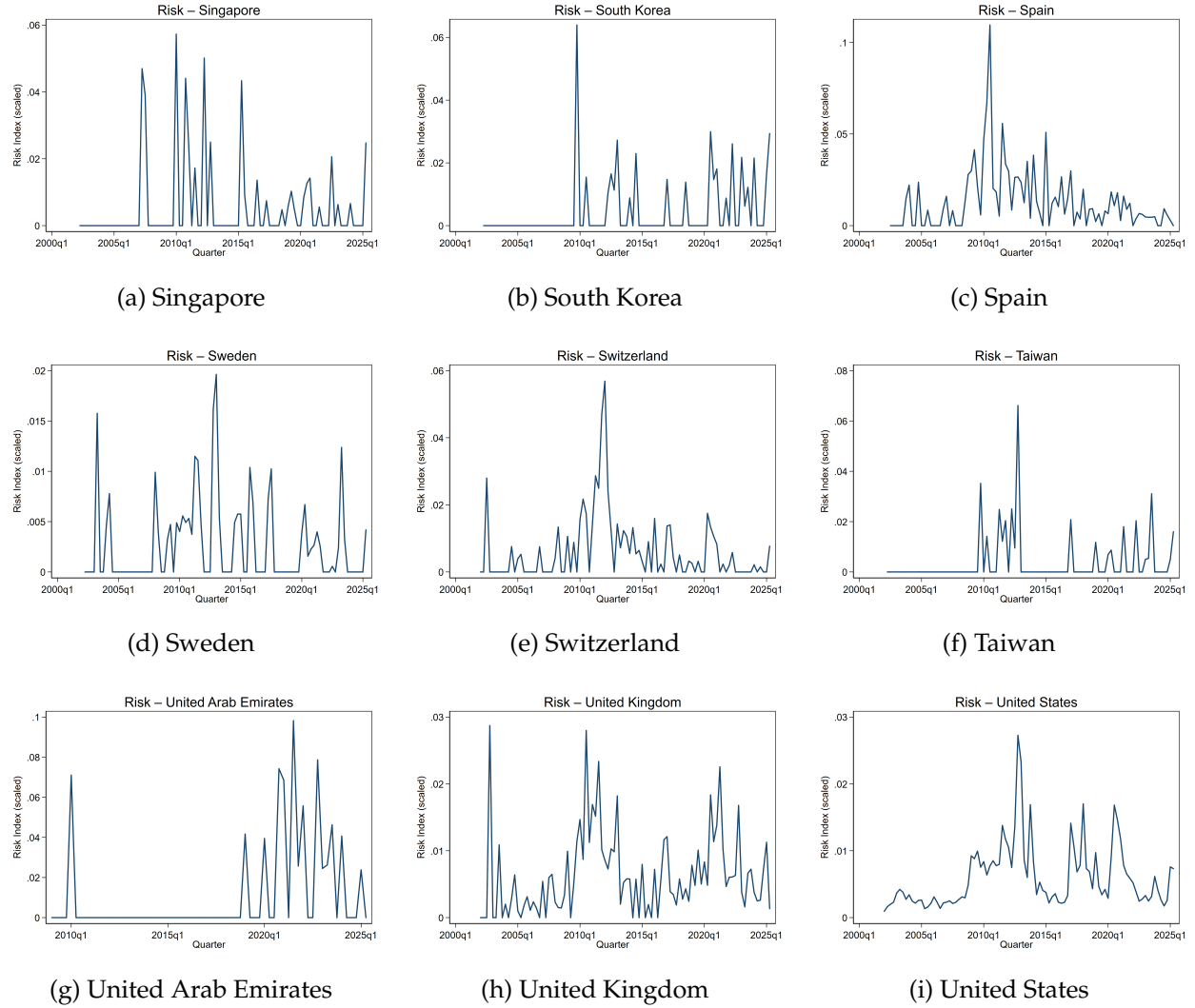


Figure A8: Fiscal Perceptions: Risk Indicator across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that reference fiscal policy in risk-related terms across selected advanced economies over the period 2002–2025. Risk is measured as the fraction of calls mentioning fiscal topics (spending, taxation, debt, or deficits) using language associated with uncertainty, instability, or concern, based on a predefined keyword dictionary.

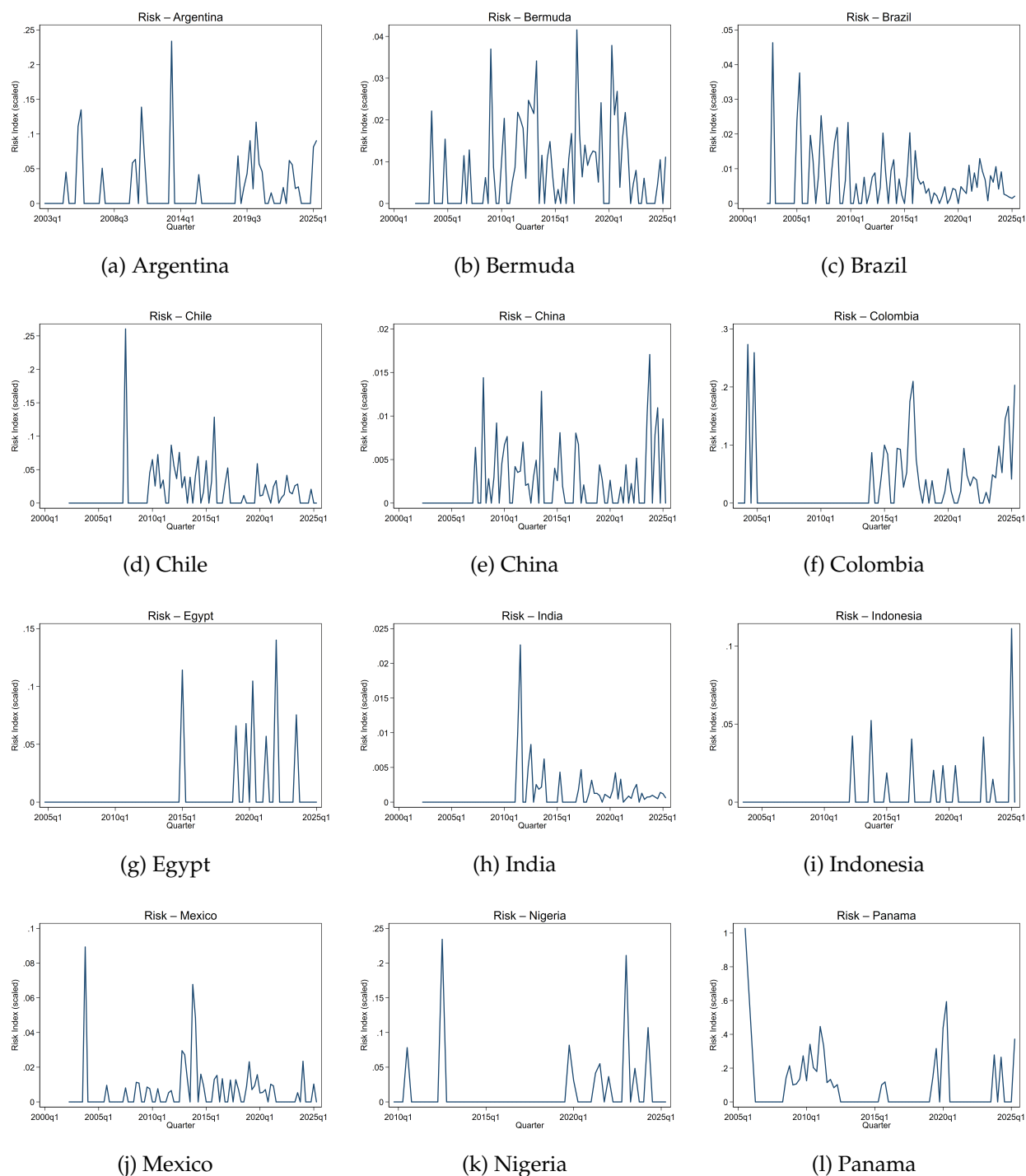


Figure A9: Fiscal Perceptions: Risk Indicator across Selected Emerging Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that reference fiscal policy in risk-related terms across selected emerging economies over the period 2002–2025. Risk is measured as the fraction of calls mentioning fiscal topics (spending, taxation, debt, or deficits) using language associated with uncertainty, instability, or concern, based on a predefined keyword dictionary.

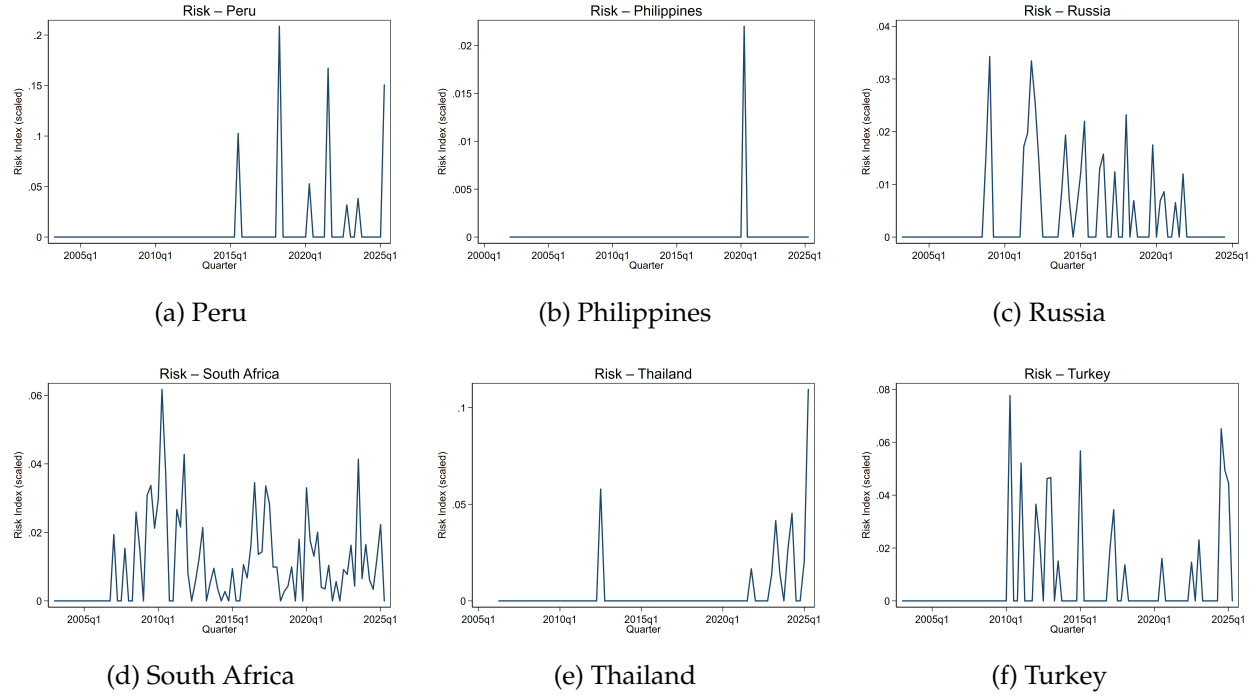


Figure A10: Fiscal Perceptions: Risk Indicator across Selected Emerging Economies (Continuation)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that reference fiscal policy in risk-related terms across selected emerging economies over the period 2002–2025. Risk is measured as the fraction of calls mentioning fiscal topics (spending, taxation, debt, or deficits) using language associated with uncertainty, instability, or concern, based on a predefined keyword dictionary.

A.5.3 Sentiment

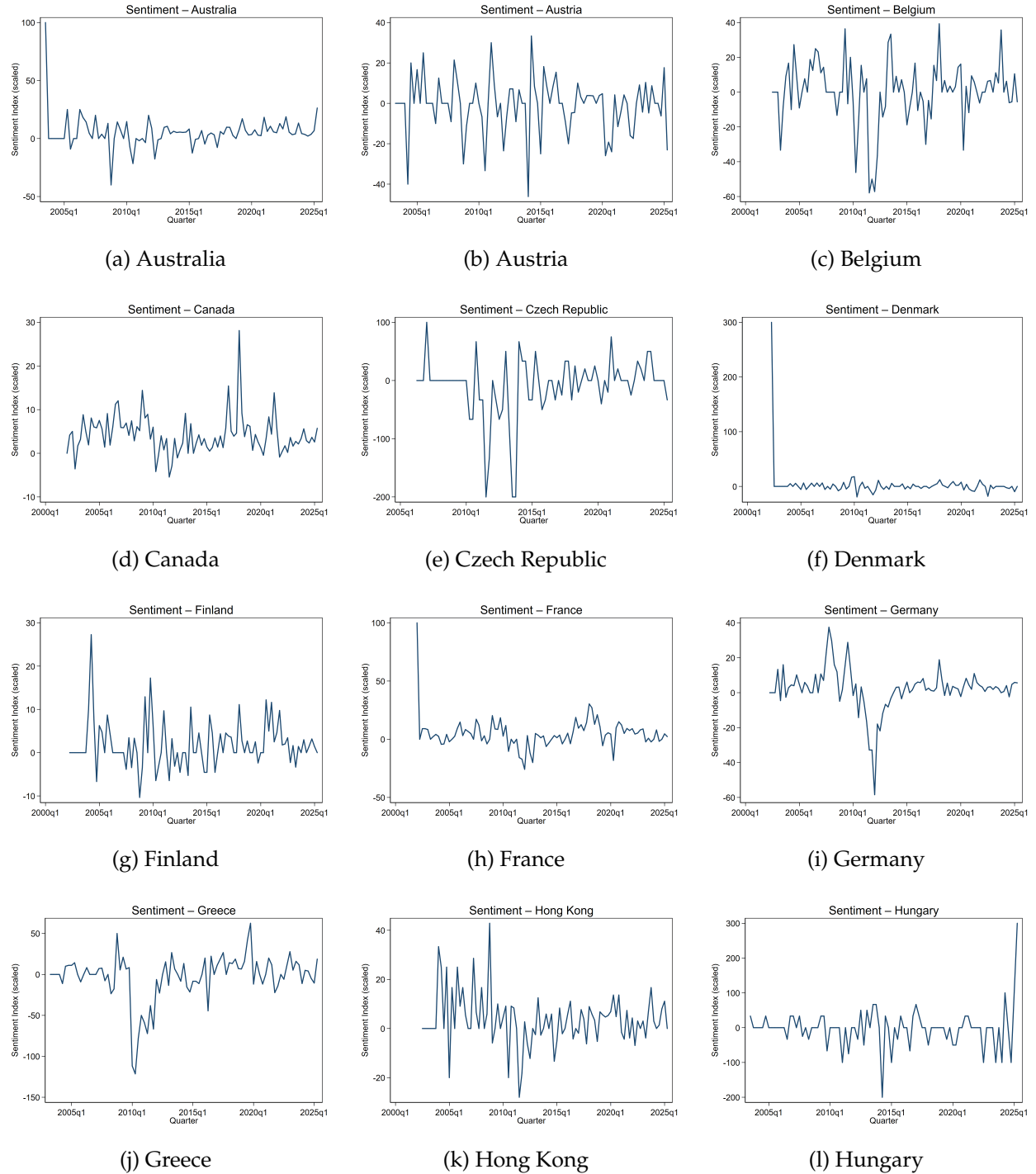


Figure A11: Fiscal Perceptions: Sentiment Indicator across Selected Advanced Economies

Source: Authors' calculations.

Note: This figure shows the quarterly evolution of fiscal sentiment expressed in earnings calls across selected advanced economies over the period 2002–2025. Sentiment is measured based on the polarity (positive or negative tone) of language used in reference to fiscal topics (spending, taxation, debt, or deficits) identified using a predefined keyword dictionary. Higher values correspond to more-positive sentiment.

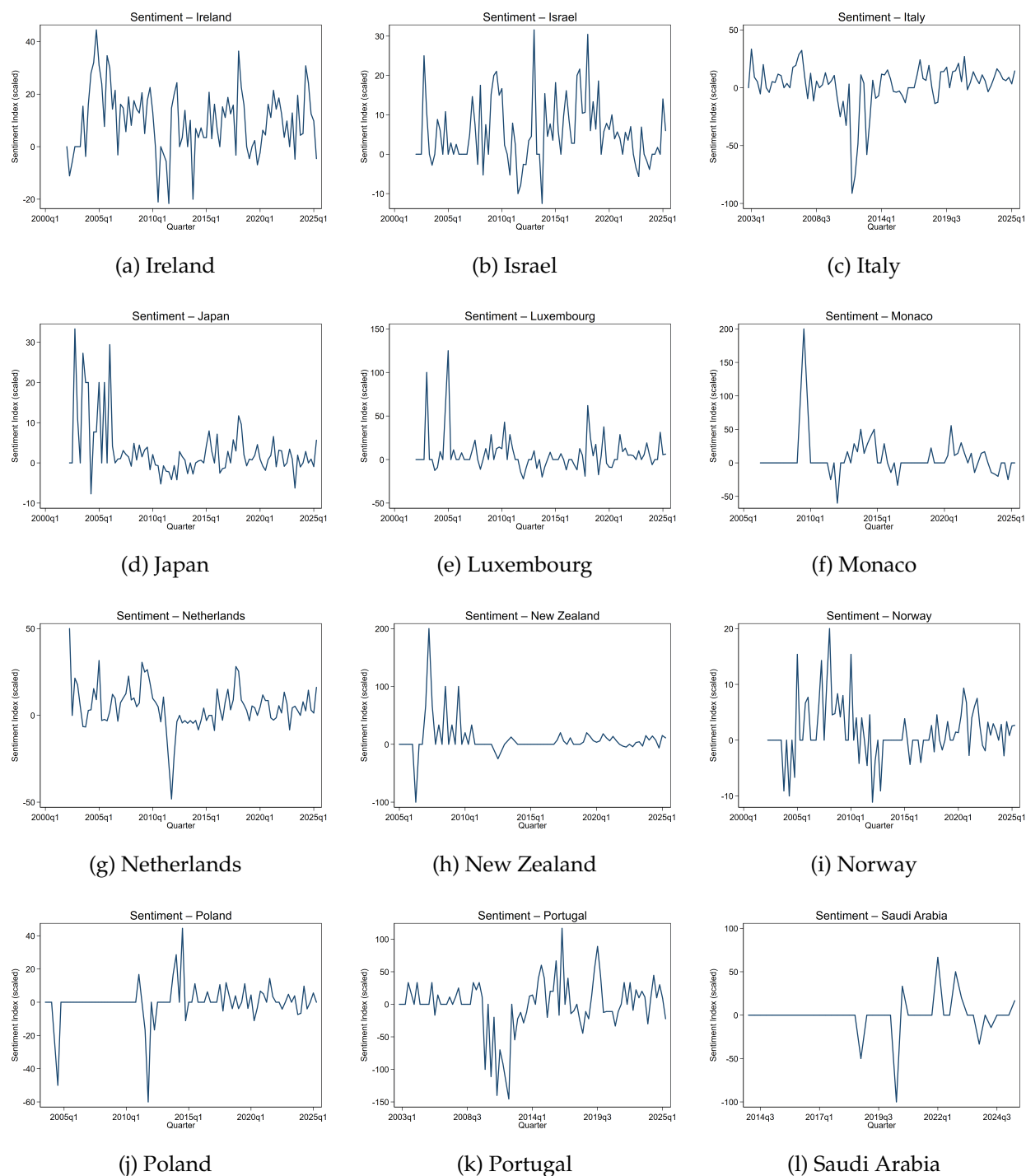


Figure A12: Fiscal Perceptions: Sentiment Indicator across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly evolution of fiscal sentiment expressed in earnings calls across selected advanced economies over the period 2002–2025. Sentiment is measured based on the polarity (positive or negative tone) of language used in reference to fiscal topics (spending, taxation, debt, or deficits) identified using a predefined keyword dictionary. Higher values correspond to more-positive sentiment.

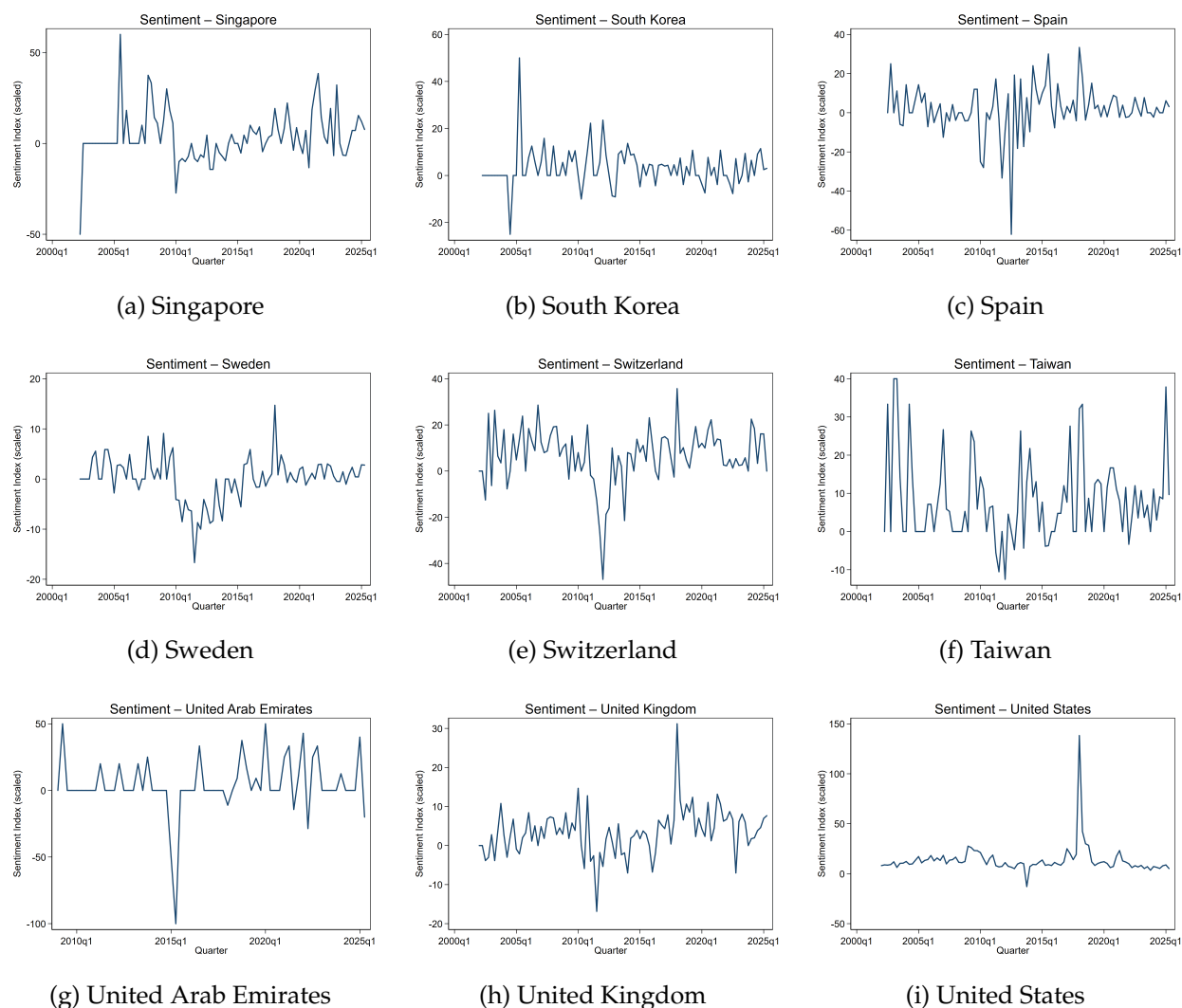


Figure A13: Fiscal Perceptions: Sentiment Indicator across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly evolution of fiscal sentiment expressed in earnings calls across selected advanced economies over the period 2002–2025. Sentiment is measured based on the polarity (positive or negative tone) of language used in reference to fiscal topics (spending, taxation, debt, or deficits) identified using a predefined keyword dictionary. Higher values correspond to more-positive sentiment.

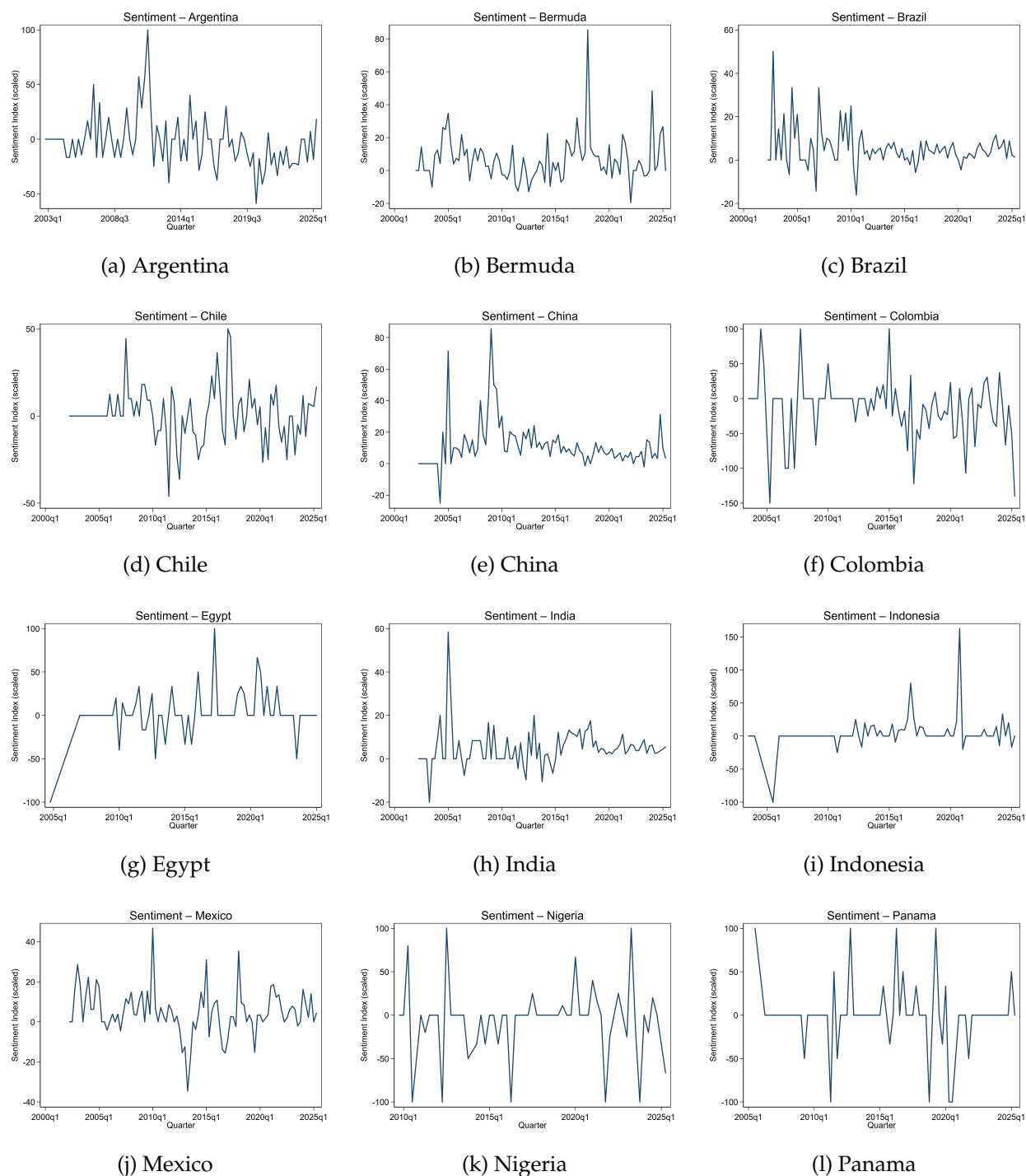


Figure A14: Fiscal Perceptions: Sentiment Indicator across Selected Emerging Economies

Source: Authors' calculations.

Note: This figure shows the quarterly evolution of fiscal sentiment expressed in earnings calls across selected emerging economies over the period 2002–2025. Sentiment is measured based on the polarity (positive or negative tone) of language used in reference to fiscal topics (spending, taxation, debt, or deficits) identified using a predefined keyword dictionary. Higher values correspond to more-positive sentiment.

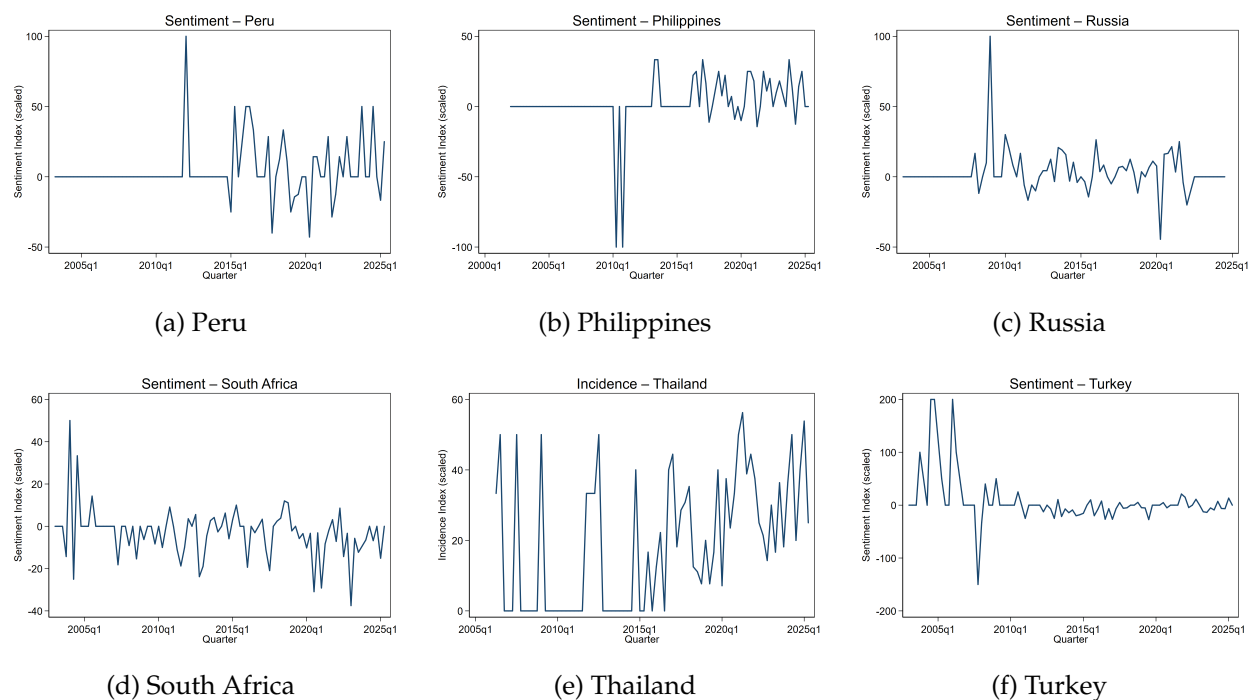


Figure A15: Fiscal Perceptions: Sentiment Indicator across Selected Emerging Economies (Continuation)

Source: Authors' calculations.

Note: This figure shows the quarterly evolution of fiscal sentiment expressed in earnings calls across selected emerging economies over the period 2002–2025. Sentiment is measured based on the polarity (positive or negative tone) of language used in reference to fiscal topics (spending, taxation, debt, or deficits) identified using a predefined keyword dictionary. Higher values correspond to more-positive sentiment.

A.6 Tax Fiscal Perceptions Indicators

This appendix presents the main empirical results based on the Tax FPI, which isolate the effects of tax-related fiscal perceptions on macroeconomic and financial outcomes.

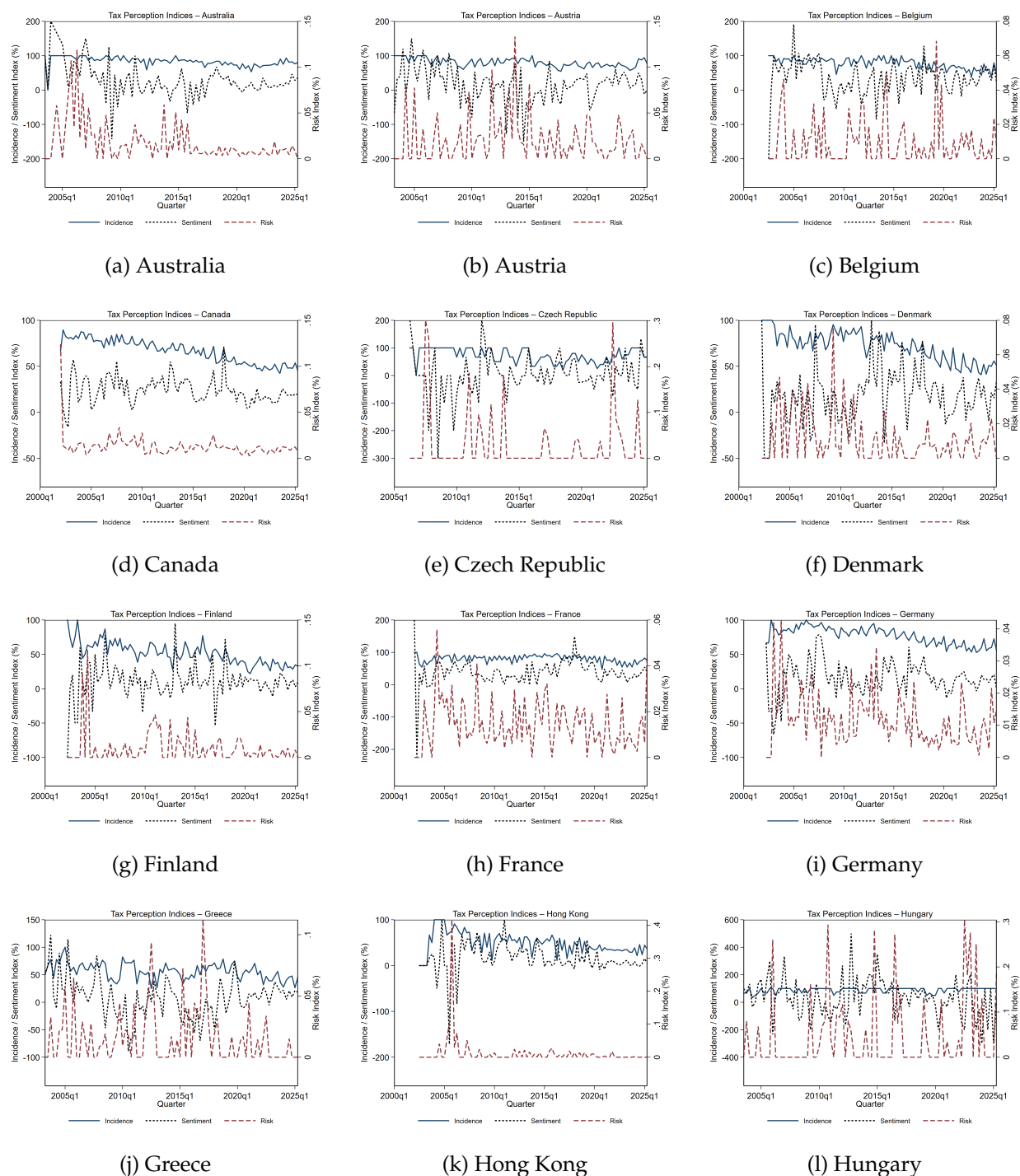


Figure A16: Tax Fiscal Perceptions Indicators across Selected Advanced Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms related to taxation across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing taxation, based on a predefined keyword dictionary.

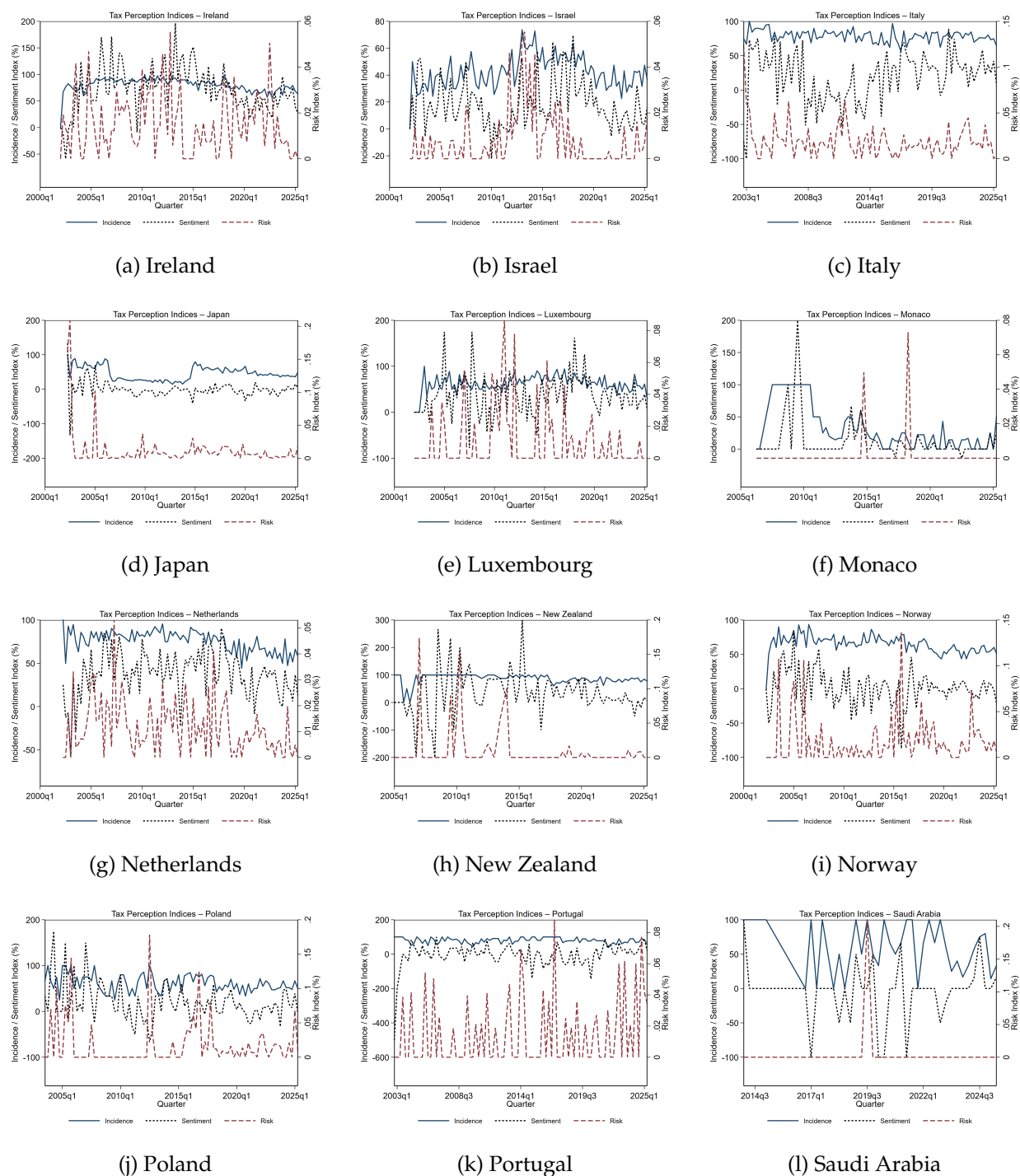


Figure A17: Tax Fiscal Perceptions Indicators across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing taxation, based on a predefined keyword dictionary.

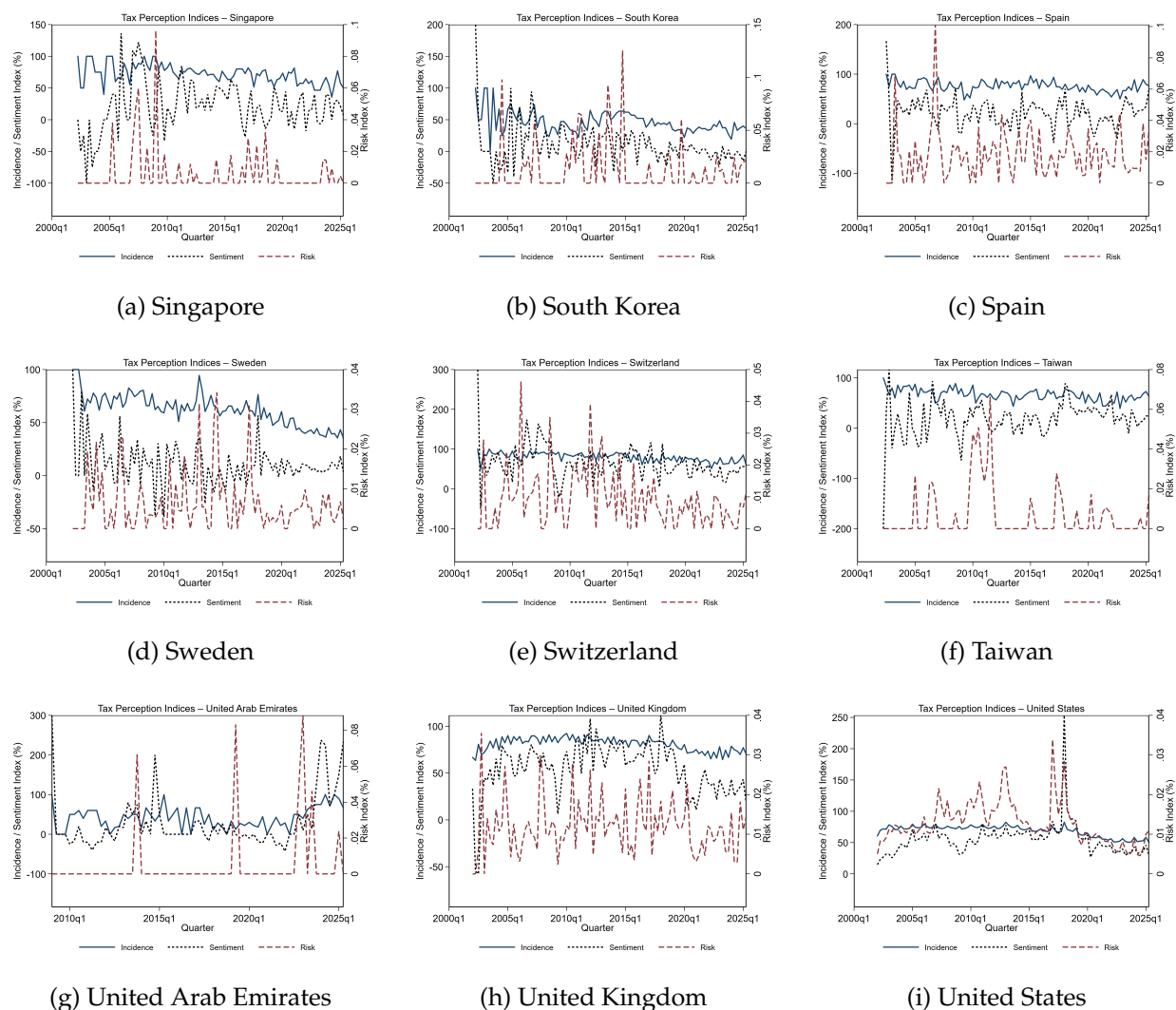


Figure A18: Tax Fiscal Perceptions Indicators across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing taxation, based on a predefined keyword dictionary.

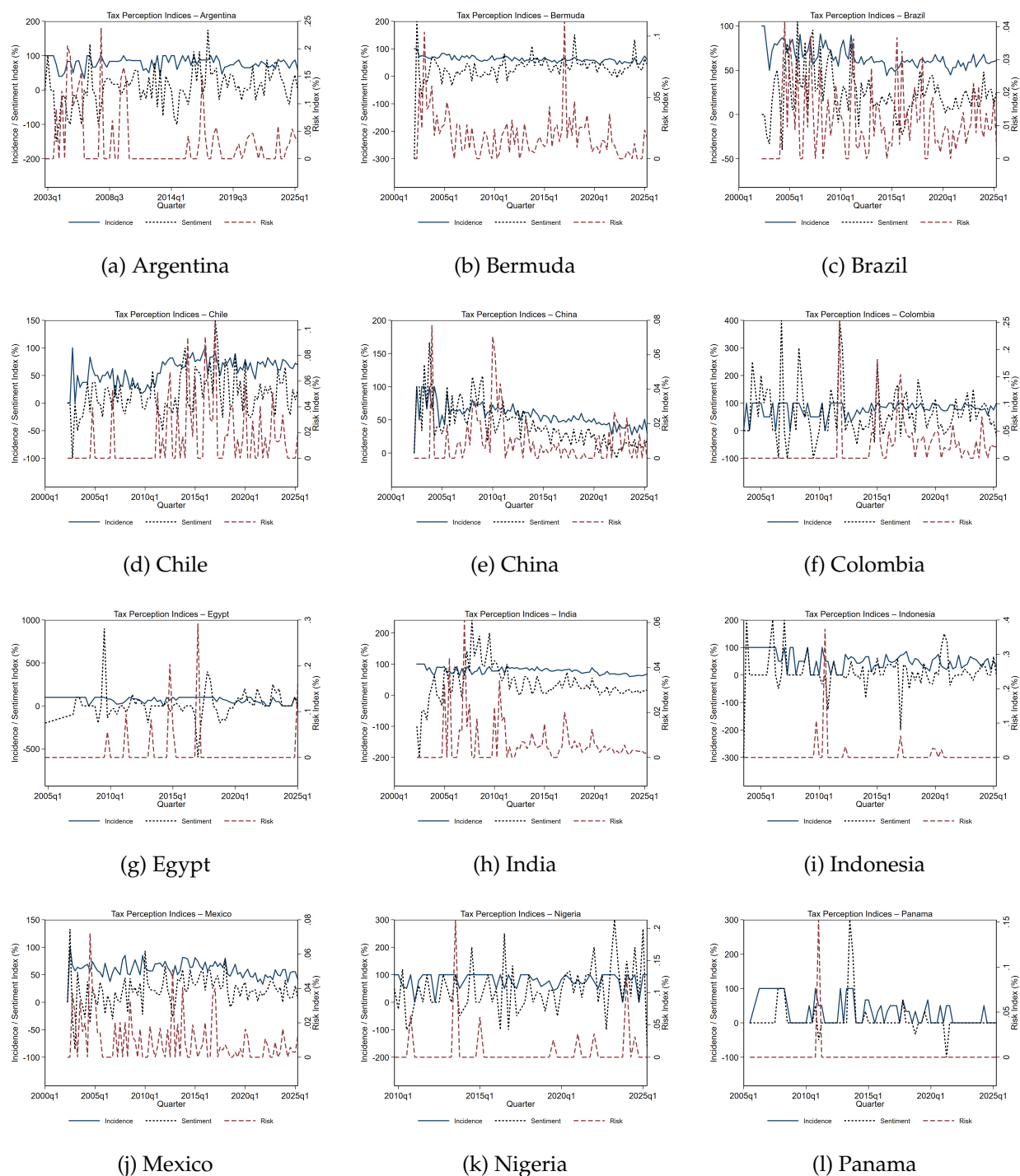


Figure A19: Tax Fiscal Perceptions Indicators across Selected Emerging Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing taxation, based on a predefined keyword dictionary.

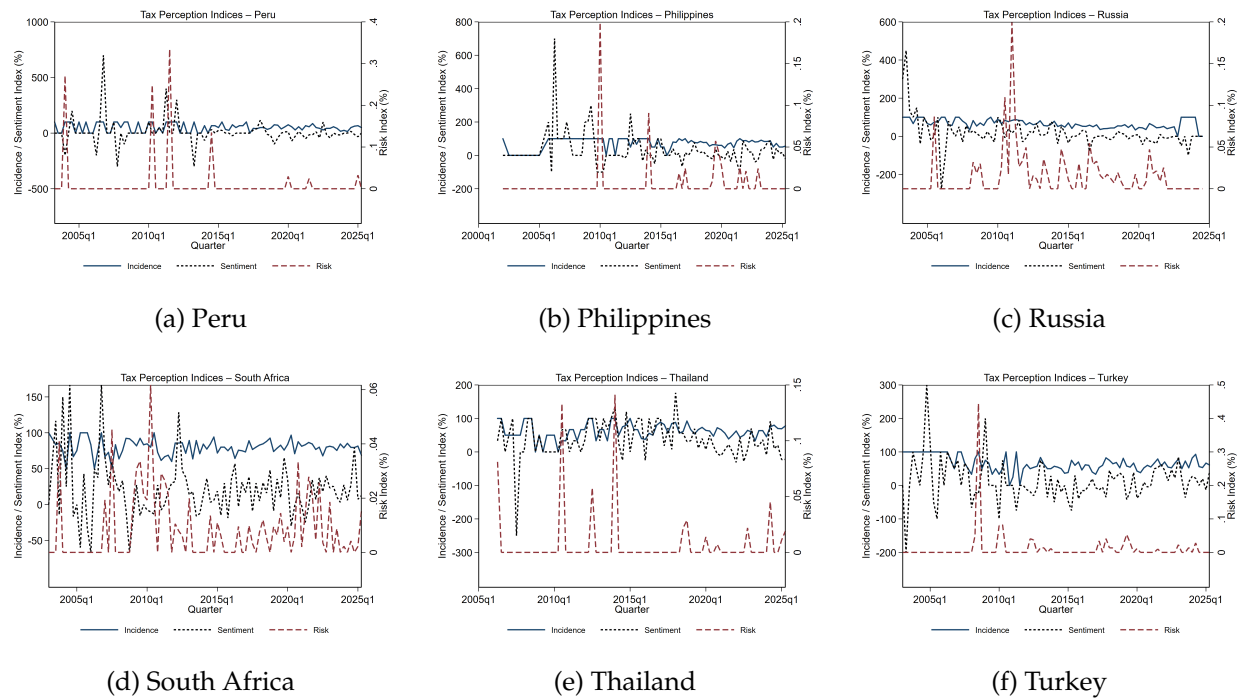


Figure A20: Tax Fiscal Perceptions Indicators across Selected Emerging Economies (Continuation)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing taxation, based on a predefined keyword dictionary.

Table A2: Correlation Matrix: Macro Growth, MSCI, and Tax FPI Variables

	Real GDP growth	Capital formation growth	Consumption growth	MSCI Return	MSCI Volatility	Tax FPI Incidence	Tax FPI Risk	Tax FPI Sentiment
Real GDP growth	1							
Capital formation growth	0.307***	1						
Consumption growth	0.802***	0.27***	1					
MSCI return	0.315***	0.152***	0.269***	1				
MSCI volatility	-0.182***	-0.086***	-0.145***	-0.116***	1			
Tax FPI incidence	0.000591	0.00602	-0.0136	-0.0182	0.029	1		
Tax FPI risk	-0.0109	-0.00238	-0.0173	-0.00551	0.0764***	0.16***	1	
Tax FPI sentiment	0.0409*	0.00662	0.0389*	0.036*	0.0322	0.165***	-0.0472***	1

Source: Authors' calculations.

Note: This table reports pairwise correlations between the quarterly growth rates of the macroeconomic variables (real GDP, capital formation, and consumption, each measured as $100 \times \Delta \ln$), MSCI financial indicators (returns and volatility), and the components of the Tax FPI: Tax incidence, Tax risk, and Tax sentiment. The macroeconomic aggregates enter in growth rates rather than in levels, so that the reported associations are not driven by the common trend shared by the three real series. Because correlations are computed pairwise, the number of observations varies across cells, ranging from 2,390 to 5,830. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A3: Fixed Effects Regression Results—Macro Outcomes: Tax FPI

Variables	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) Capital	(6) Capital	(7) Capital	(8) Capital	(9) Consumption	(10) Consumption	(11) Consumption	(12) Consumption
Tax incidence	0.008 (0.032)			-0.002 (0.034)	0.066 (0.074)			0.070 (0.076)	-0.018 (0.032)			-0.033 (0.034)
Tax risk		-0.019 (0.032)		-0.021 (0.034)		-0.020 (0.081)		-0.035 (0.084)		-0.020 (0.031)		-0.014 (0.034)
Tax sentiment			0.083*** (0.026)	0.086*** (0.027)			0.065 (0.075)	0.057 (0.076)			0.072*** (0.025)	0.081*** (0.024)
Observations	3,644	3,608	3,645	3,608	3,576	3,540	3,577	3,540	3,400	3,364	3,400	3,364
R-squared	0.000	0.000	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002
Number of countries	50	48	51	48	47	45	48	45	46	44	46	44

Source: Authors' calculations.

Note: This table reports fixed effects panel regressions of real GDP, capital formation, and consumption growth on the standardized components of the Tax FPI: Tax incidence, Tax risk, and Tax sentiment. Columns (1)–(4) show results for GDP, (5)–(8) for capital formation, and (9)–(12) for consumption. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A4: Fixed Effects Regression Results—Financial Variables (Tax FPI)

Variables	(1) MSCI Ret.	(2) MSCI Ret.	(3) MSCI Ret.	(4) MSCI Ret.	(5) MSCI Vol.	(6) MSCI Vol.	(7) MSCI Vol.	(8) MSCI Vol.
Tax incidence	-0.002 (0.002)			-0.003 (0.002)	0.057 (0.047)			-0.004 (0.024)
Tax risk		-0.001 (0.002)		-0.001 (0.002)		0.202 (0.207)		0.201 (0.208)
Tax sentiment			0.006*** (0.002)	0.006*** (0.002)			0.067 (0.087)	0.057 (0.081)
Observations	3,002	3,002	3,002	3,002	3,042	3,042	3,042	3,042
R-squared	0.000	0.000	0.002	0.002	0.000	0.004	0.000	0.004
Number of countries	42	42	42	42	42	42	42	42

Source: Authors' calculations.

Note: This table reports fixed effects panel regressions of MSCI country-level stock returns (columns 1–4) and MSCI return volatility (columns 5–8) on the standardized components of the Tax FPI: Tax incidence, Tax risk, and Tax sentiment. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5: Fixed Effects Regression Results—Sovereign Spreads (Tax FPI)

Variables	(1) Sovereign Spreads	(2) Sovereign Spreads	(3) Sovereign Spreads	(4) Sovereign Spreads
Tax incidence	0.029 (0.109)			0.056 (0.116)
Tax risk		-0.010 (0.048)		-0.018 (0.058)
Tax sentiment			-0.156* (0.083)	-0.162* (0.083)
Constant	1.694*** (0.025)	1.693*** (0.004)	1.707*** (0.004)	1.687*** (0.024)
Observations	1,648	1,624	1,648	1,624
R-squared	0.000	0.000	0.010	0.011
Number of countries	30	29	30	29

Source: Authors' calculations.

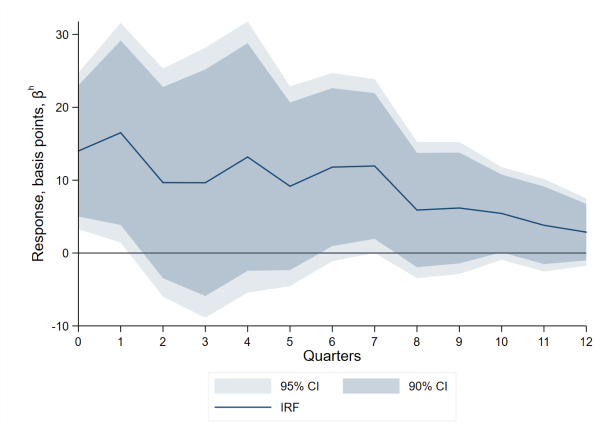
Note: This table reports fixed effects panel regressions of sovereign bond spreads on the standardized components of the Tax FPI: Tax incidence, Tax risk, and Tax sentiment. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A6: Fixed Effects Regression Results—Country and Time Fixed Effects (Tax FPI)

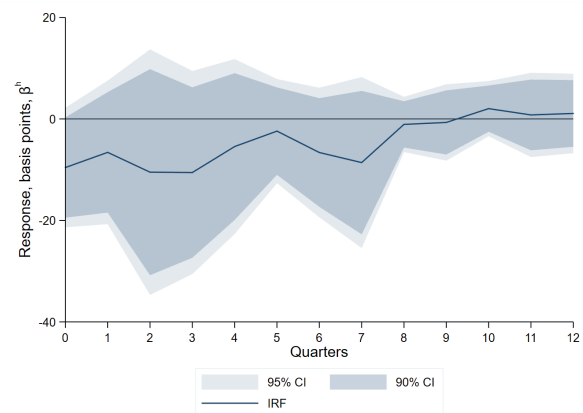
Variables	(1) GDP	(2) Capital	(3) Consumption	(4) MSCI return	(5) MSCI volatility	(6) Sovereign spreads
Tax incidence	-0.033 (0.029)	0.087 (0.105)	-0.064** (0.029)	-0.003 (0.002)	0.020 (0.017)	0.088 (0.102)
Tax risk	-0.042* (0.022)	-0.040 (0.085)	-0.022 (0.022)	-0.002 (0.002)	0.229 (0.225)	-0.002 (0.037)
Tax sentiment	0.015 (0.018)	-0.026 (0.102)	0.019 (0.021)	0.003*** (0.001)	0.069 (0.078)	-0.064 (0.062)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,608	3,540	3,364	3,002	3,042	1,624
R-squared	0.000	0.000	0.000	0.002	0.004	0.006
Number of countries	48	45	44	42	42	29

Source: Authors' calculations.

Note: This table reports two-way fixed effects panel regressions of the macroeconomic growth rates, the MSCI financial indicators, and sovereign bond spreads on the standardized components of the Tax FPI: Tax incidence, Tax risk, and Tax sentiment, entered jointly. Relative to the country fixed effects specifications reported above, these regressions add time fixed effects, so the estimates are identified from variation within a country relative to the common movement across countries in the same quarter. Standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.



(a) Spread Response to a Government Expenditure Shock (Direct Effect)

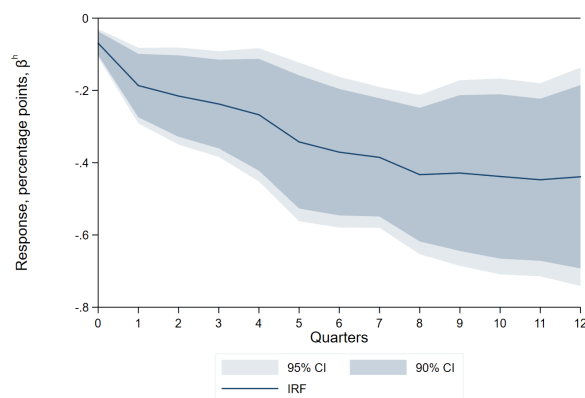


(b) Spread Response to a Government Expenditure Shock (Interaction with Tax Sentiment)

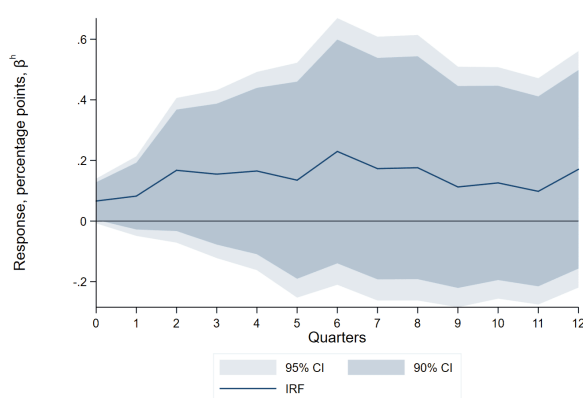
Figure A21: Impulse Responses of Sovereign Spreads to Government Expenditure Shocks (Tax FPI)

Source: Authors' calculations.

Note: This figure shows impulse response functions from local projections estimating the effect of a government expenditure shock on sovereign bond spreads. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Tax fiscal sentiment, estimated using the interaction specification in Equation 2. Tax fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) GDP Response to a Government Expenditure Shock (Direct Effect)

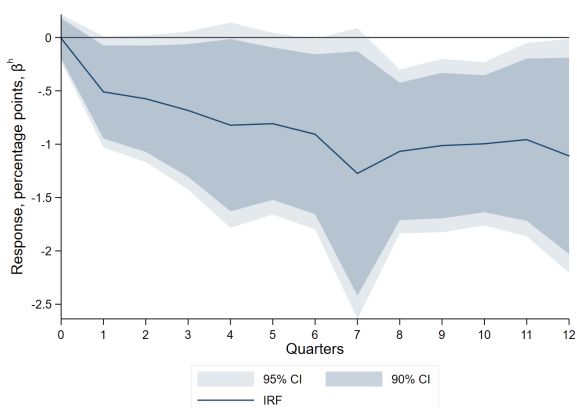


(b) GDP Response to a Government Expenditure Shock (Interaction with Tax Sentiment)

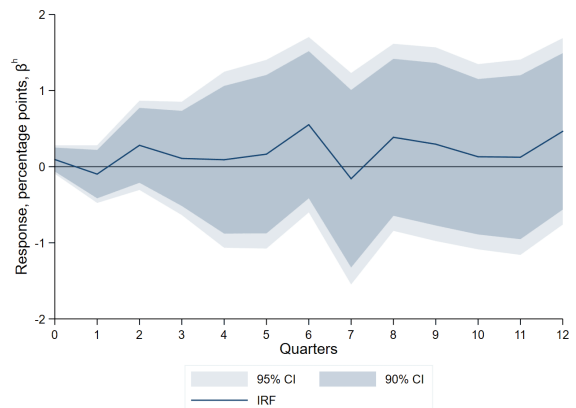
Figure A22: Impulse Responses of GDP to Government Expenditure Shocks (Tax FPI).

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real GDP. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Tax fiscal sentiment, estimated using the interaction specification in Equation 2. Tax fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) Investment Response to a Government Expenditure Shock (Direct Effect)

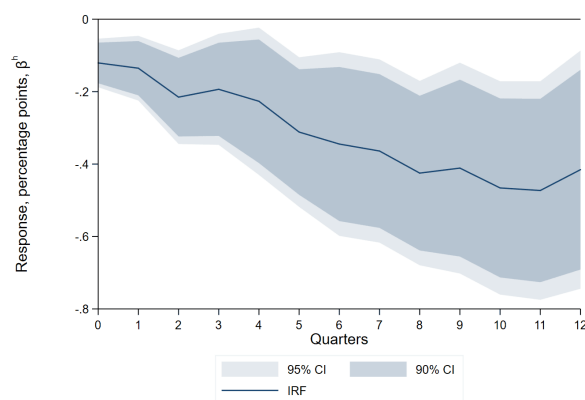


(b) Investment Response to a Government Expenditure Shock (Interaction with Tax Sentiment)

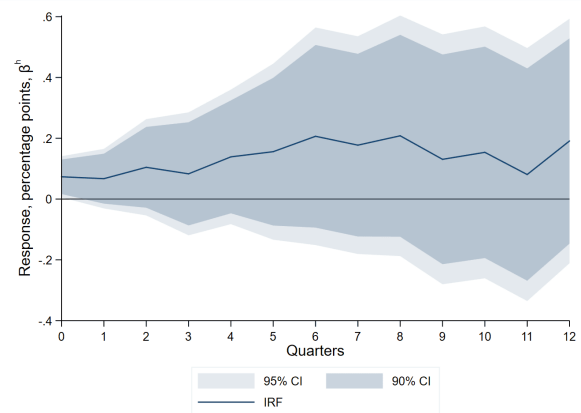
Figure A23: Impulse Responses of Investment to Government Expenditure Shocks (Tax FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real investment. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Tax fiscal sentiment, estimated using the interaction specification in Equation 2. Tax fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) Consumption Response to a Government Expenditure Shock (Direct Effect)



(b) Consumption Response to a Government Expenditure Shock (Interaction with Tax Sentiment)

Figure A24: Impulse Responses of Consumption to Government Expenditure Shocks (Tax FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real consumption. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Tax fiscal sentiment, estimated using the interaction specification in Equation 2. Tax fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is multiplied by -1 so that it corresponds to a contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

A.7 Debt and Deficit Fiscal Perceptions Indicators

This appendix presents the main empirical results based on the Debt and Deficit FPI, which isolate the effects of debt- and deficit-related fiscal perceptions on macroeconomic and financial outcomes. The specifications follow those in the baseline analysis.

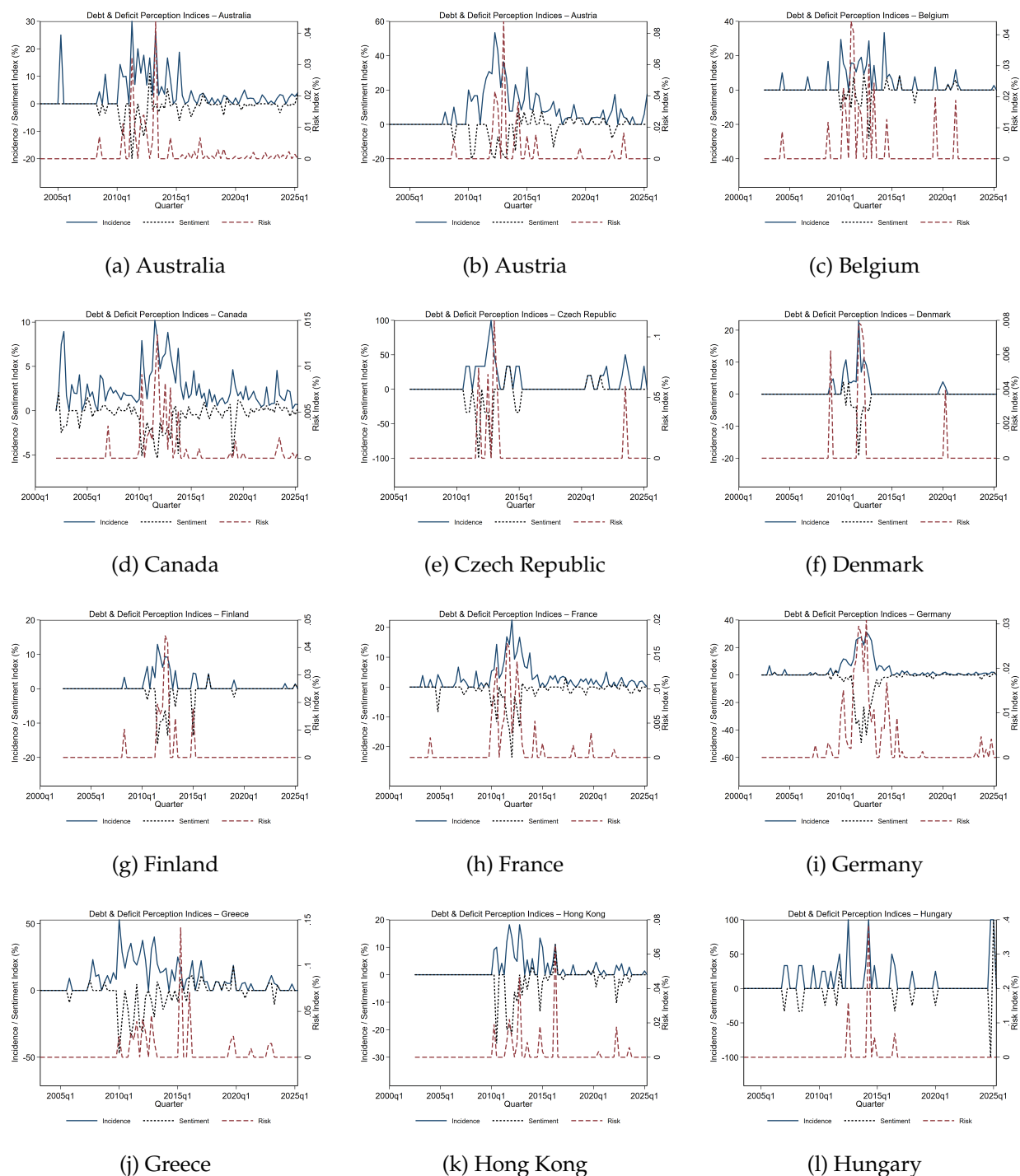


Figure A25: Debt and Deficit Fiscal Perceptions Indicators across Selected Advanced Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing debt and deficits, based on a predefined keyword dictionary.

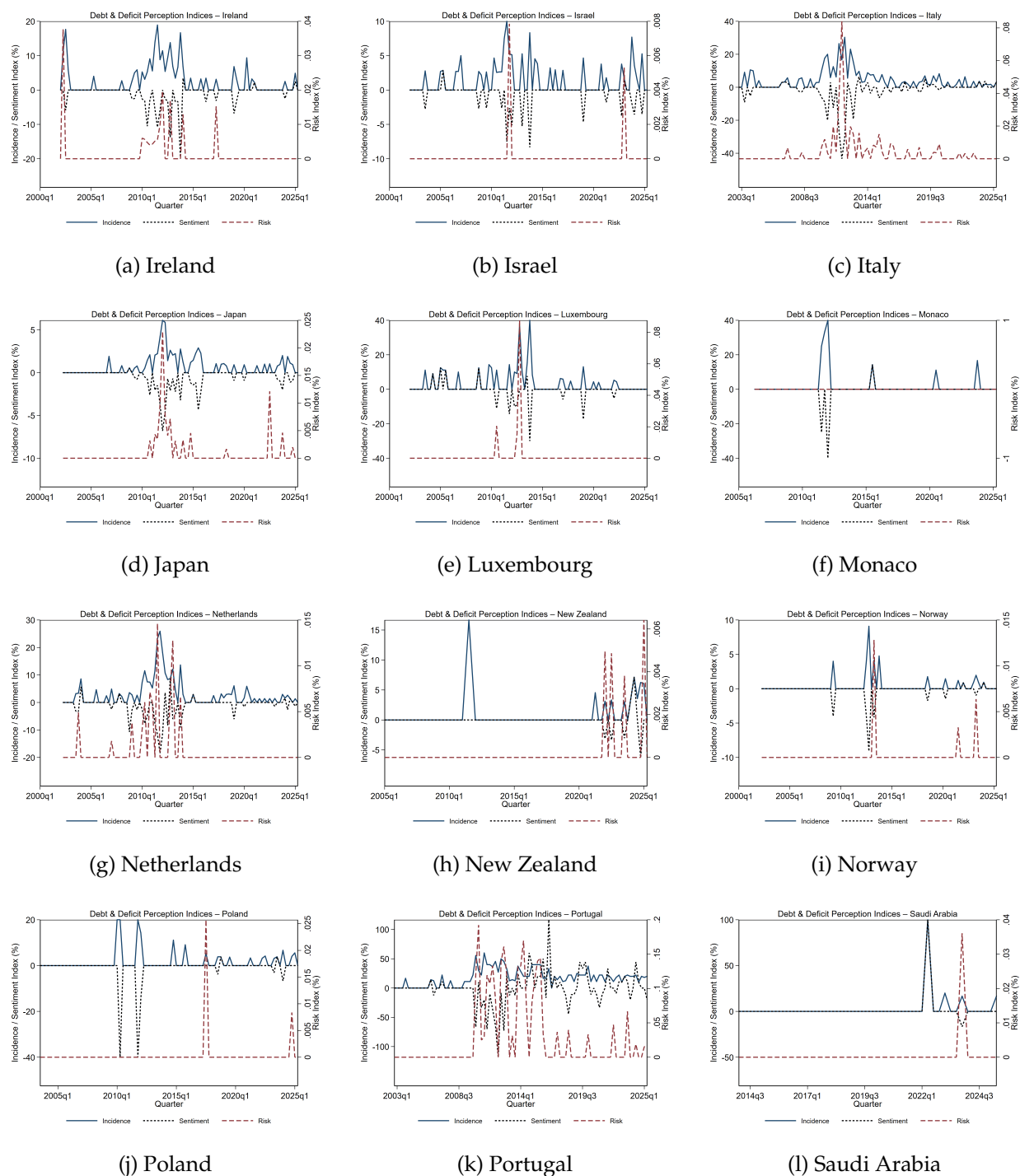


Figure A26: Debt and Deficit Fiscal Perceptions Indicators across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing debt and deficits, based on a predefined keyword dictionary.

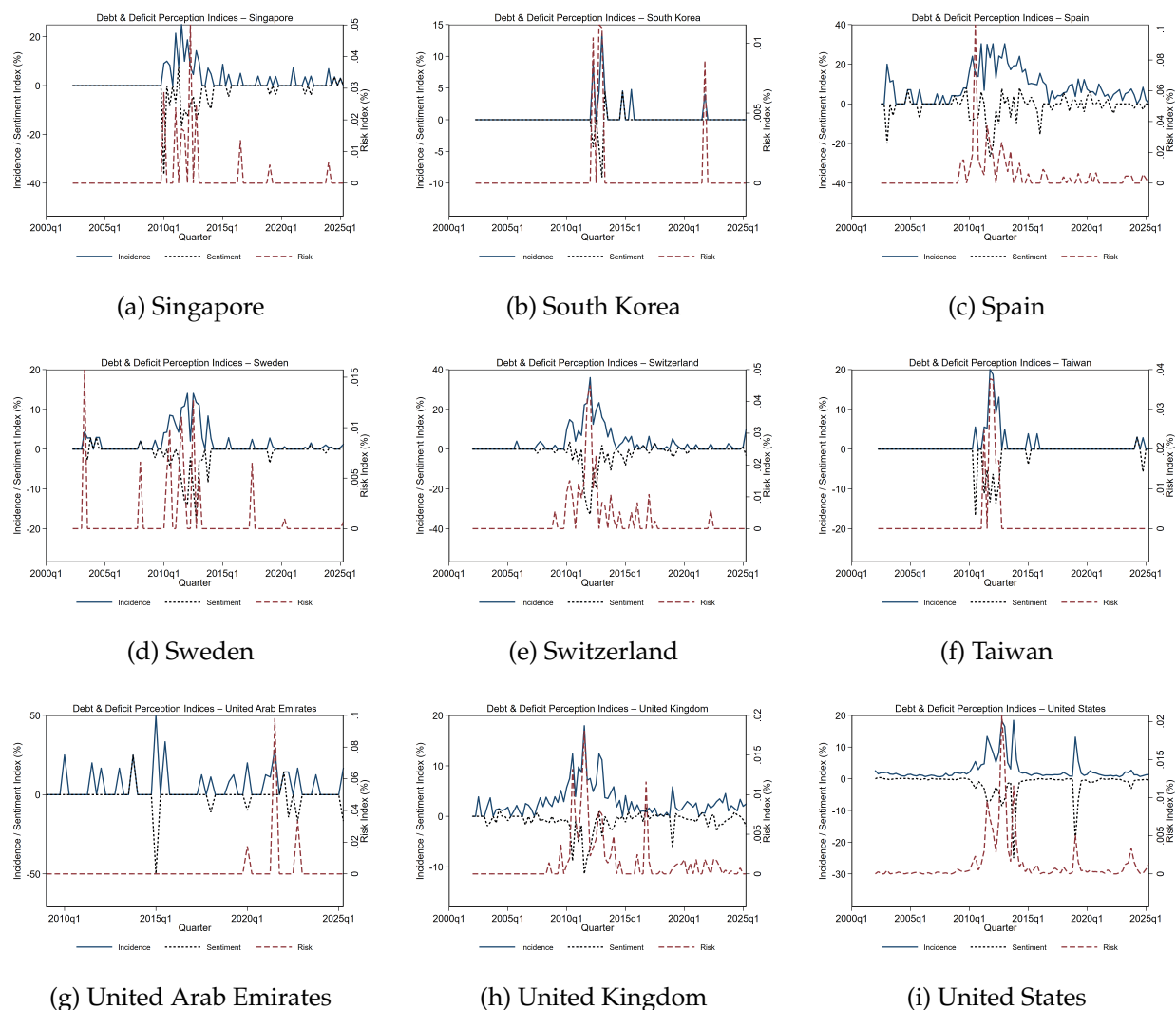


Figure A27: Debt and Deficit Fiscal Perceptions Indicators across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing debt and deficits, based on a predefined keyword dictionary.

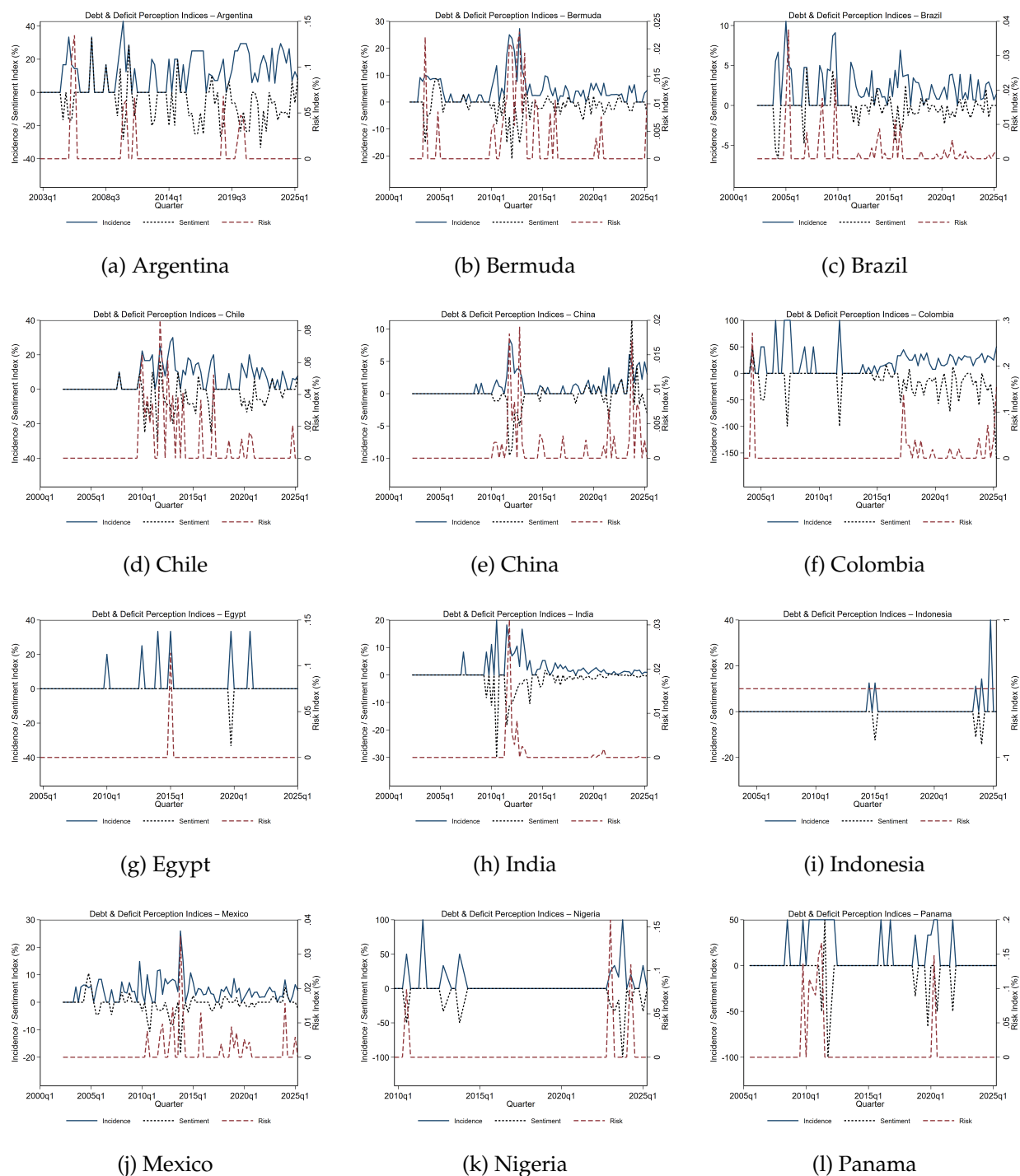


Figure A28: Debt and Deficit Fiscal Perceptions Indicators across Selected Emerging Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing debt and deficits, based on a predefined keyword dictionary.

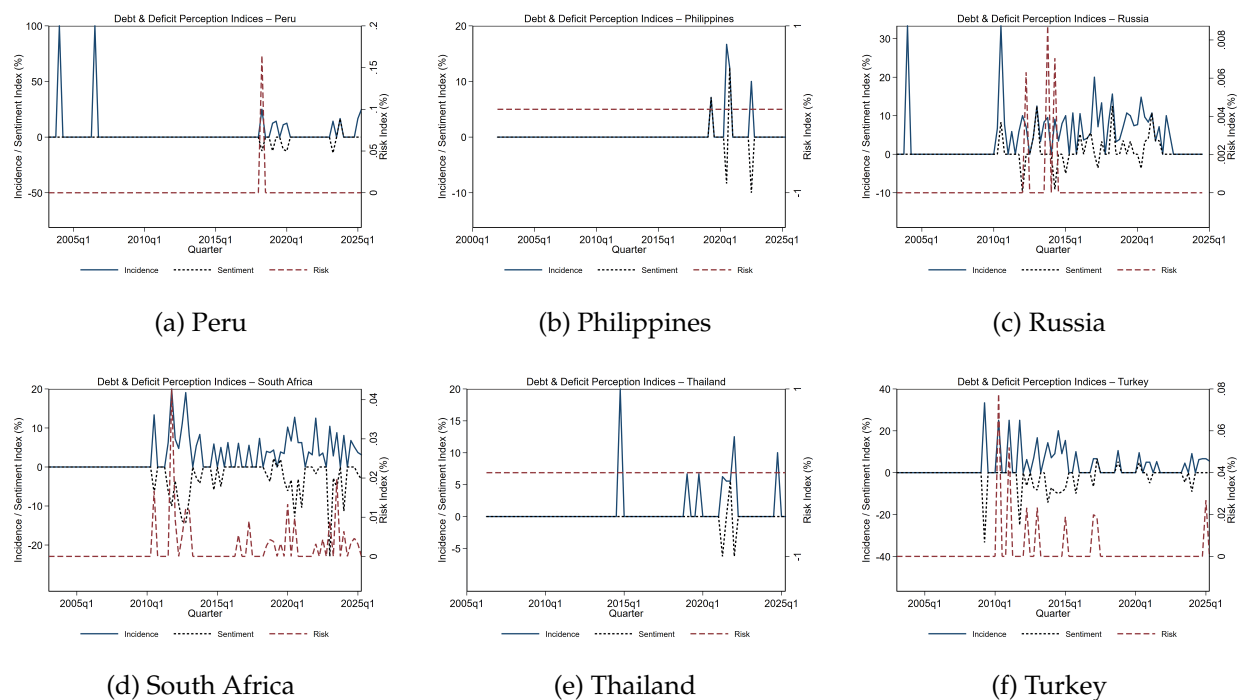


Figure A29: Debt and Deficit Fiscal Perceptions Indicators across Selected Emerging Economies (Continuation)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing debt and deficits, based on a predefined keyword dictionary.

Table A7: Correlation Matrix: Macro Growth, MSCI, and Debt & Deficit FPI Variables

	Real GDP growth	Capital formation growth	Consumption growth	MSCI Return	MSCI Volatility	Debt Deficit FPI Incidence	Debt Deficit FPI Risk	Debt Deficit FPI Sentiment
Real GDP growth	1							
Capital formation growth	0.307***	1						
Consumption growth	0.802***	0.27***	1					
MSCI return	0.315***	0.152***	0.269***	1				
MSCI volatility	-0.182***	-0.086***	-0.145***	-0.116***	1			
Debt deficit incidence	-0.0446**	-0.0372*	-0.0344*	-0.0373*	0.00873	1		
Debt deficit risk	-0.0284	-0.00432	-0.0357*	-0.0552**	0.00327	0.405***	1	
Debt deficit sentiment	0.051**	0.0226	0.055**	0.0335	-0.00682	-0.345***	-0.153***	1

Source: Authors' calculations.

Note: This table reports pairwise correlations between the quarterly growth rates of the macroeconomic variables (real GDP, capital formation, and consumption, each measured as $100 \times \Delta \ln$), MSCI financial indicators (returns and volatility), and the components of the Debt & Deficit FPI: Debt & Deficit incidence, Debt & Deficit risk, and Debt & Deficit sentiment. The macroeconomic aggregates enter in growth rates rather than in levels, so that the reported associations are not driven by the common trend shared by the three real series. Because correlations are computed pairwise, the number of observations varies across cells, ranging from 2,390 to 5,830. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A8: Fixed Effects Regression Results—Macro Outcomes (Debt & Deficit FPI)

Variables	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) Capital	(6) Capital	(7) Capital	(8) Capital	(9) Consumption	(10) Consumption	(11) Consumption	(12) Consumption
Debt deficit incidence	-0.073* (0.038)			-0.041 (0.040)	-0.223* (0.132)			-0.555 (0.362)	-0.074** (0.035)			-0.035 (0.049)
Debt deficit risk		-0.024 (0.026)		0.017 (0.026)		0.236 (0.196)		0.544 (0.340)		-0.054** (0.025)		-0.013 (0.031)
Debt deficit sentiment			0.080** (0.034)	0.048 (0.042)			0.123 (0.076)	0.016 (0.147)			0.090*** (0.028)	0.059 (0.038)
Observations	3,614	3,225	3,605	3,225	3,547	3,225	3,538	3,225	3,370	3,133	3,361	3,133
R-squared	0.001	0.000	0.001	0.001	0.001	0.001	0.000	0.003	0.001	0.001	0.002	0.002
Number of countries	48	38	47	38	46	38	45	38	44	37	43	37

Source: Authors' calculations.

Note: This table reports fixed effects panel regressions of real GDP, capital formation, and consumption growth on the standardized components of the Debt & Deficit FPIs: Debt & Deficit incidence, Debt & Deficit risk, and Debt & Deficit sentiment. Columns (1)–(4) show results for GDP, (5)–(8) for capital formation, and (9)–(12) for consumption. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A9: Fixed Effects Regression Results—Financial Variables (Debt & Deficit FPI)

Variables	(1) MSCI Ret.	(2) MSCI Ret.	(3) MSCI Ret.	(4) MSCI Ret.	(5) MSCI Vol.	(6) MSCI Vol.	(7) MSCI Vol.	(8) MSCI Vol.
Debt deficit incidence	-0.004** (0.002)			0.001 (0.003)	0.004 (0.018)			-0.003 (0.015)
Debt deficit risk		-0.007*** (0.002)		-0.007*** (0.002)		0.009 (0.014)		0.007 (0.008)
Debt deficit sentiment			0.004** (0.002)	0.002 (0.003)			-0.007 (0.015)	-0.008 (0.011)
Observations	3,002	2,826	3,002	2,826	3,042	2,864	3,042	2,864
R-squared	0.001	0.005	0.002	0.005	0.000	0.000	0.000	0.000
Number of countries	42	39	42	39	42	39	42	39

Source: Authors' calculations.

Note: This table reports fixed effects panel regressions of MSCI country-level stock returns (columns 1–4) and MSCI return volatility (columns 5–8) on the standardized components of the Debt & Deficit FPI: Debt & Deficit incidence, Debt & Deficit risk, and Debt & Deficit sentiment. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A10: Fixed Effects Regression Results—Sovereign Spreads (Debt and Deficit FPI)

Variables	(1) Sovereign Spreads	(2) Sovereign Spreads	(3) Sovereign Spreads	(4) Sovereign Spreads
Debt deficit incidence	0.286** (0.112)			0.226* (0.119)
Debt deficit risk		0.202** (0.077)		0.039 (0.036)
Debt deficit sentiment			-0.247*** (0.073)	-0.096* (0.052)
Constant	1.676*** (0.010)	1.686*** (0.007)	1.675*** (0.005)	1.672*** (0.012)
Observations	1,648	1,535	1,624	1,535
R-squared	0.036	0.017	0.024	0.042
Number of countries	30	27	29	27

Source: Authors' calculations.

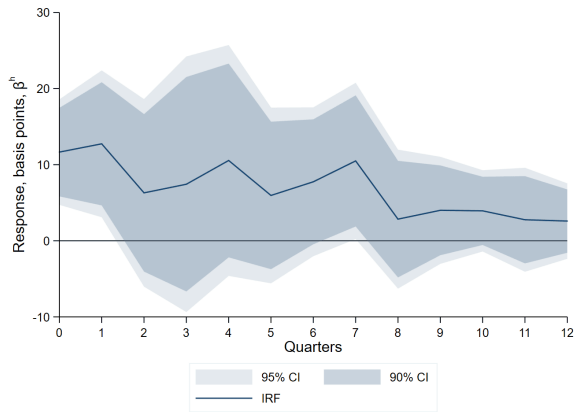
Note: This table reports fixed effects panel regressions of sovereign bond spreads on the standardized components of the Debt & Deficit FPI: Debt & Deficit incidence, Debt & Deficit risk, and Debt & Deficit sentiment. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A11: Fixed Effects Regression Results—Country and Time Fixed Effects (Debt and Deficit FPI)

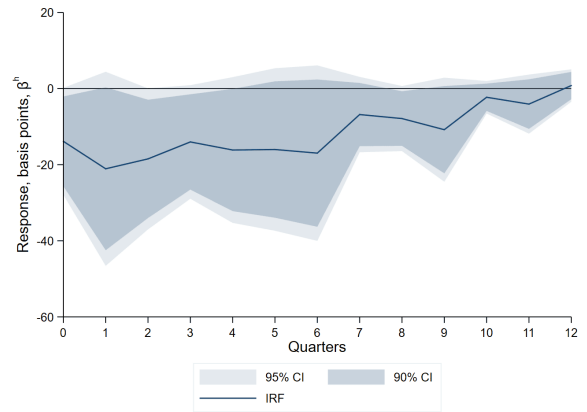
Variables	(1) GDP	(2) Capital	(3) Consumption	(4) MSCI return	(5) MSCI volatility	(6) Sovereign spreads
Debt deficit incidence	-0.018 (0.029)	-0.517 (0.335)	0.004 (0.027)	0.000 (0.002)	-0.002 (0.026)	0.073 (0.068)
Debt deficit risk	0.041* (0.022)	0.576* (0.339)	0.006 (0.030)	-0.004 (0.002)	0.018 (0.014)	-0.030 (0.039)
Debt deficit sentiment	0.007 (0.032)	-0.077 (0.178)	0.026 (0.028)	0.002 (0.001)	-0.008 (0.014)	0.025 (0.059)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,225	3,225	3,133	2,826	2,864	1,535
R-squared	0.000	0.002	0.001	0.004	0.000	0.008
Number of countries	38	38	37	39	39	27

Source: Authors' calculations.

Note: This table reports two-way fixed effects panel regressions of the macroeconomic growth rates, the MSCI financial indicators, and sovereign bond spreads on the standardized components of the Debt & Deficit FPI: Debt & Deficit incidence, Debt & Deficit risk, and Debt & Deficit sentiment, entered jointly. Relative to the country fixed effects specifications reported above, these regressions add time fixed effects, so the estimates are identified from variation within a country relative to the common movement across countries in the same quarter. Standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.



(a) Spread Response to a Government Expenditure Shock (Direct Effect)

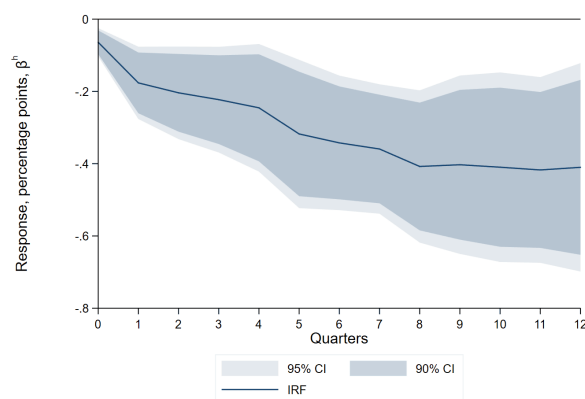


(b) Spread Response to a Government Expenditure Shock (Interaction with Debt and Deficit Sentiment)

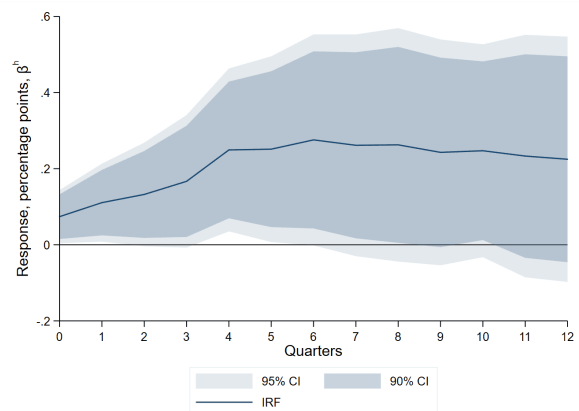
Figure A30: Impulse Responses of Sovereign Spreads to Government Expenditure Shocks (Debt and Deficit FPI)

Source: Authors' calculations.

Note: This figure shows impulse response functions from local projections estimating the effect of a government expenditure shock on sovereign bond spreads. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Debt & Deficit sentiment, estimated using the interaction specification in Equation 2. Debt & Deficit fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) GDP Response to a Government Expenditure Shock (Direct Effect)

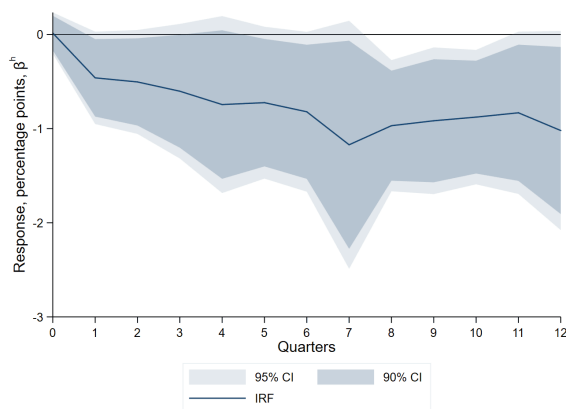


(b) GDP Response to a Government Expenditure Shock (Interaction with Debt and Deficit Sentiment)

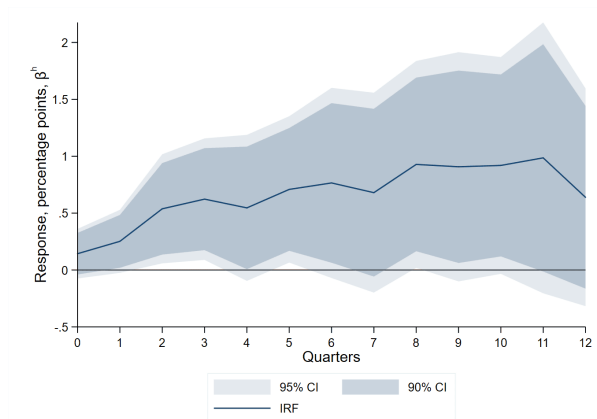
Figure A31: Impulse Responses of GDP to Government Expenditure Shocks (Debt and Deficit FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real GDP. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Debt & Deficit sentiment, estimated using the interaction specification in Equation 2. Debt & Deficit fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) Investment Response to a Government Expenditure Shock (Direct Effect)

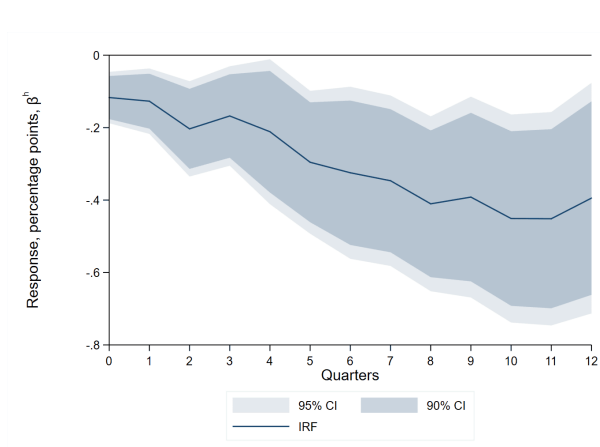


(b) Investment Response to a Government Expenditure Shock (Interaction with Debt and Deficit Sentiment)

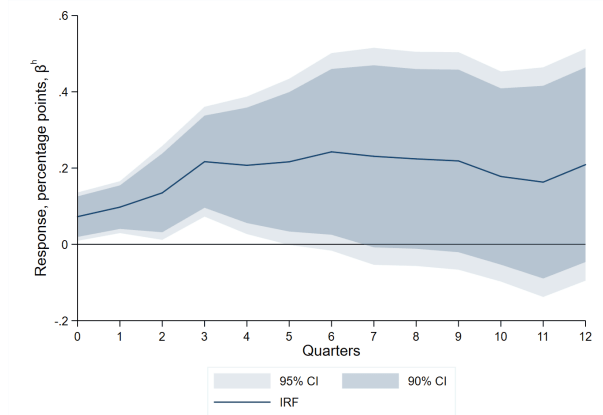
Figure A32: Impulse Responses of Investment to Government Expenditure Shocks (Debt and Deficit FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real investment. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Debt & Deficit sentiment, estimated using the interaction specification in Equation 2. Debt & Deficit fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) Consumption Response to a Government Expenditure Shock (Direct Effect)



(b) Consumption Response to a Government Expenditure Shock (Interaction with Debt and Deficit Sentiment)

Figure A33: Impulse Responses of Consumption to Government Expenditure Shocks (Debt and Deficit FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real consumption. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Debt & Deficit sentiment, estimated using the interaction specification in Equation 2. Debt & Deficit fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is multiplied by -1 so that it corresponds to a contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

A.8 Spending Fiscal Perceptions Indicators

This appendix presents the main empirical results based on the Spending FPI, which isolate the effects of spending-related fiscal perceptions on macroeconomic and financial outcomes.

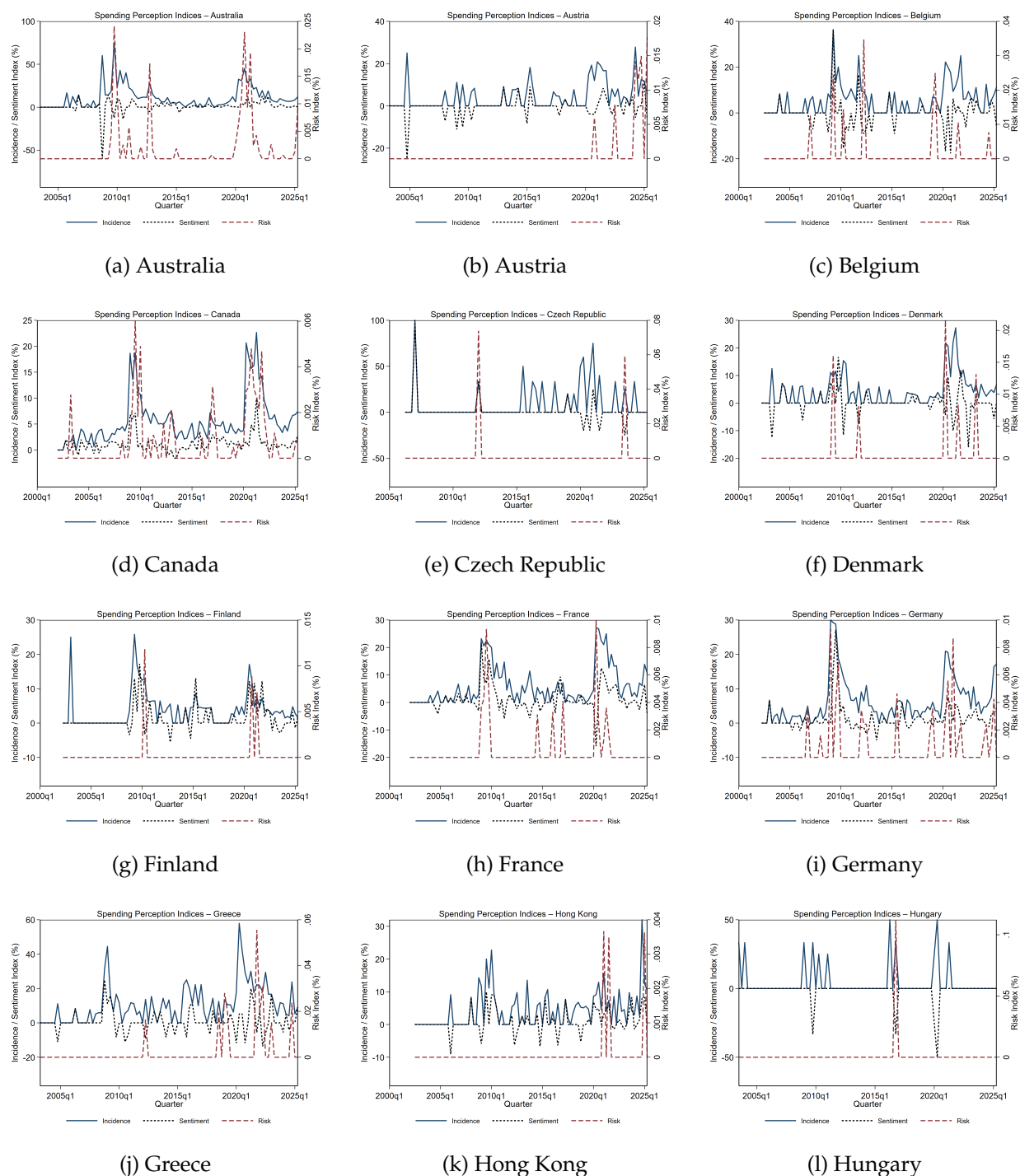


Figure A34: Spending Perceptions Indicators across Selected Advanced Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing spending, based on a predefined keyword dictionary.

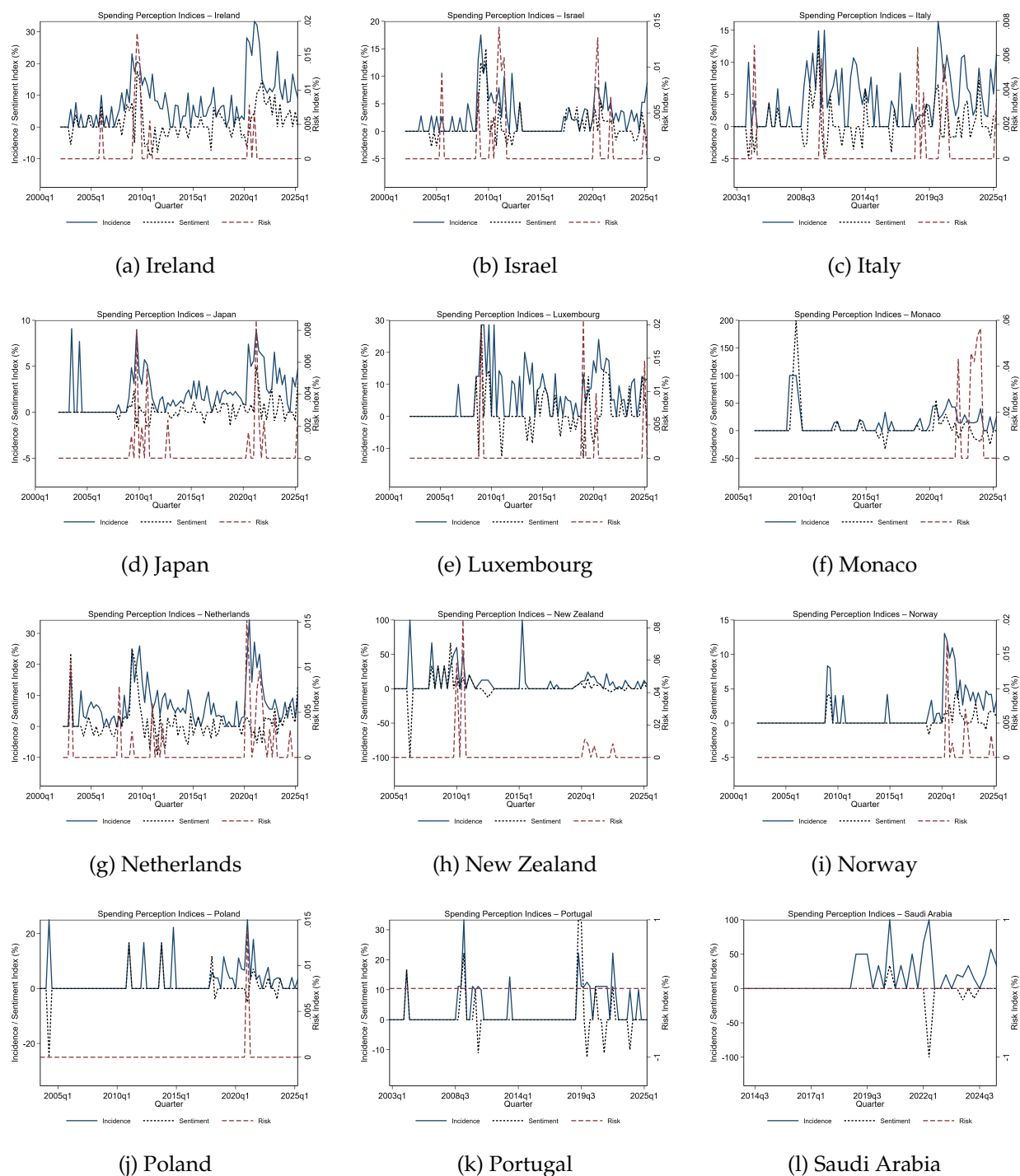


Figure A35: Spending Fiscal Perceptions Indicators across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing spending, based on a predefined keyword dictionary.

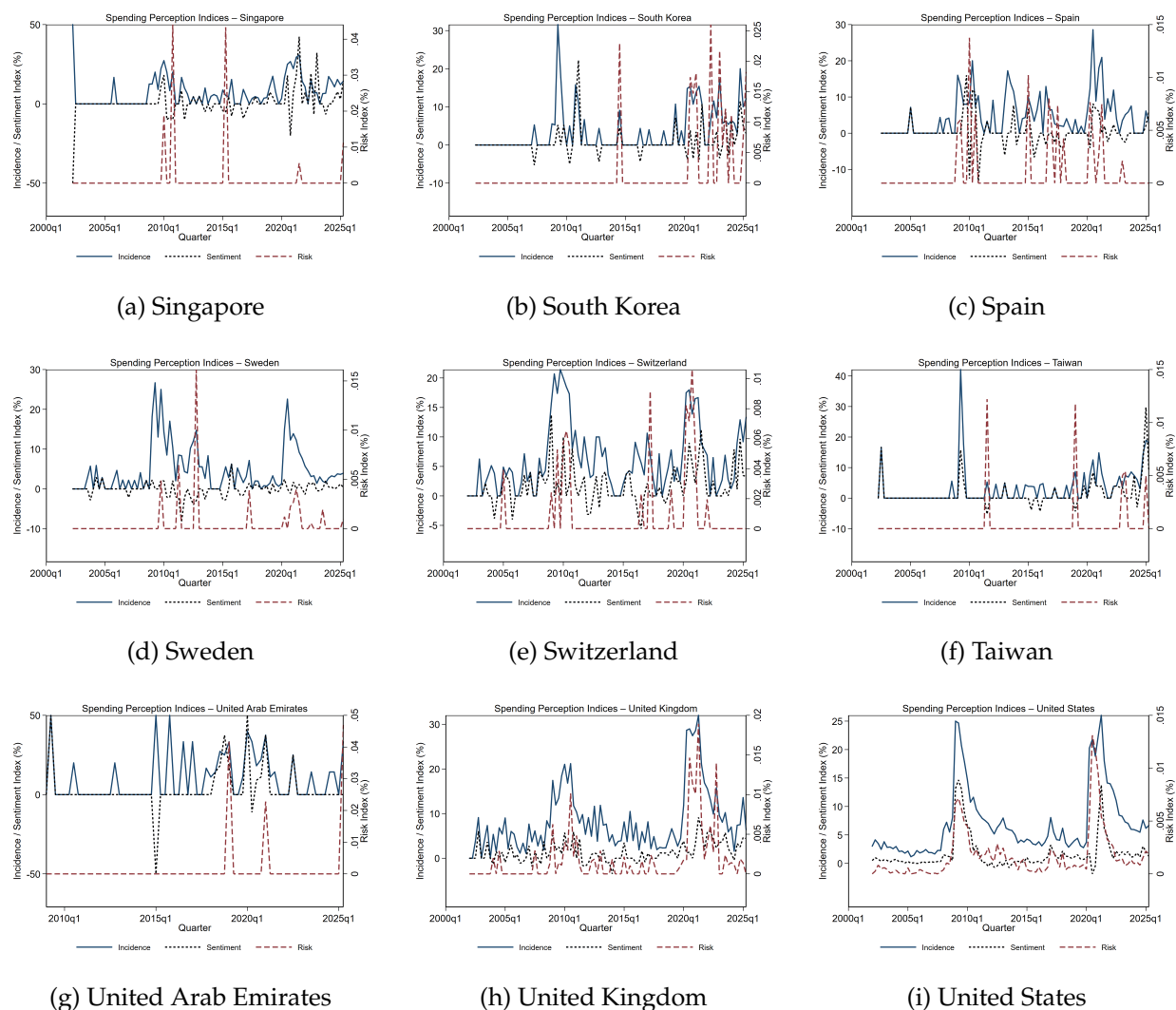


Figure A36: Spending Fiscal Perceptions Indicators across Selected Advanced Economies (Continued)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected advanced economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing spending, based on a predefined keyword dictionary.

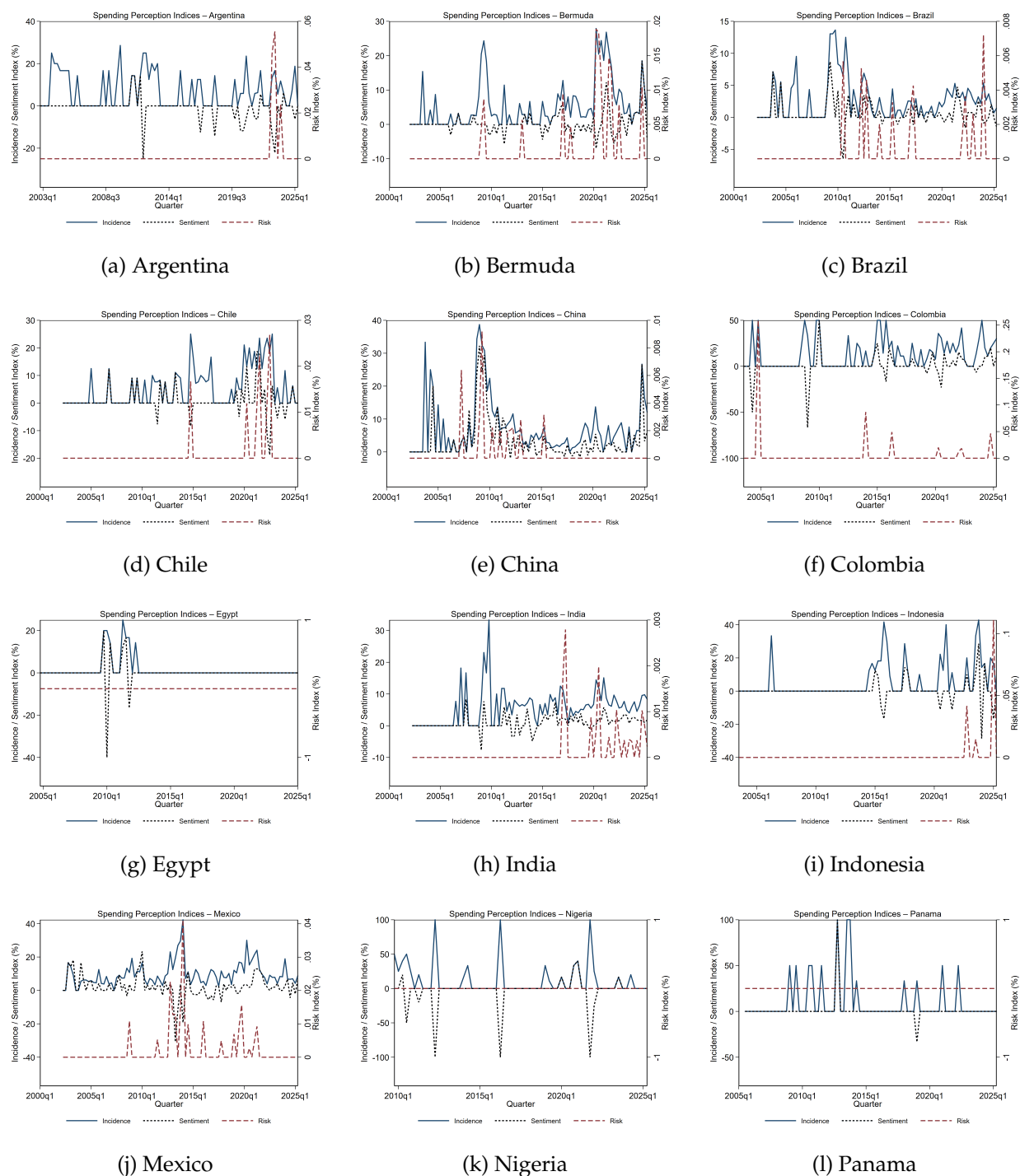


Figure A37: Spending Fiscal Perceptions Indicators across Selected Emerging Economies

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing spending, based on a predefined keyword dictionary.

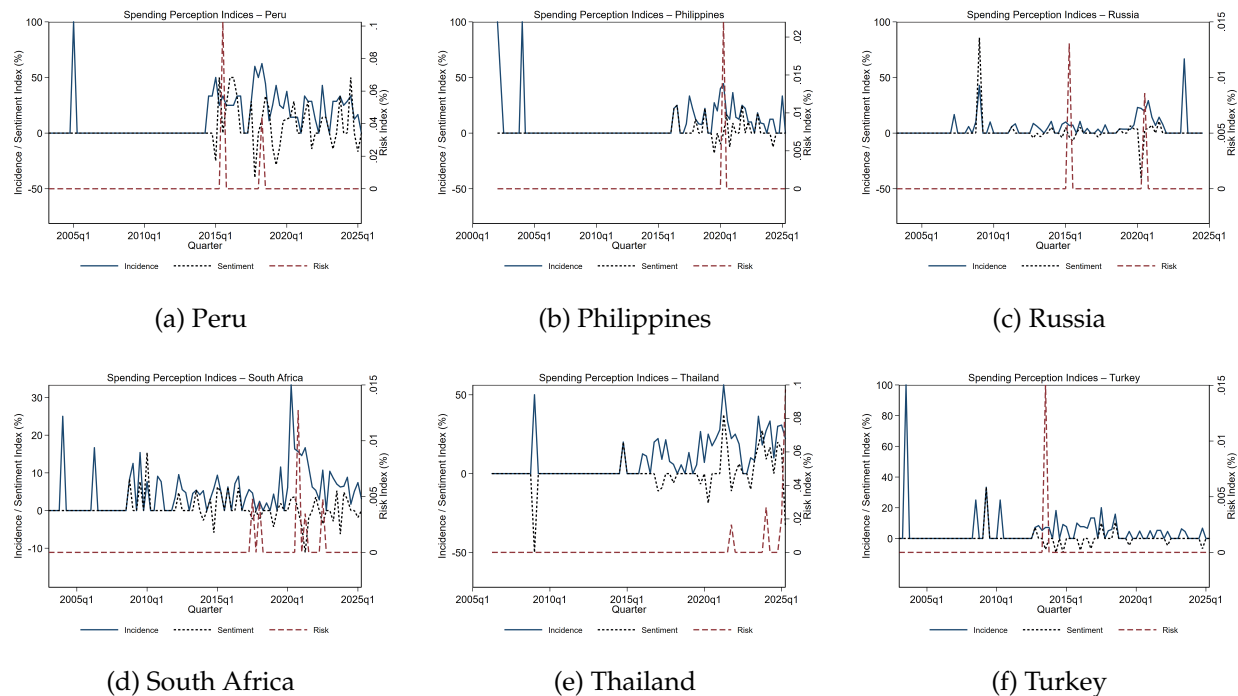


Figure A38: Spending Fiscal Perceptions Indicators across Selected Emerging Economies (Continuation)

Source: Authors' calculations.

Note: This figure shows the quarterly share of earnings calls that mention fiscal policy terms across selected emerging economies over the period 2002–2025. Incidence is measured as the fraction of calls referencing spending, based on a predefined keyword dictionary.

Table A12: Correlation Matrix: Macro Growth, MSCI, and Spending FPI Variables

	Real GDP growth	Capital formation growth	Consumption growth	MSCI Return	MSCI Volatility	Spend. FPI Incidence	Spend. FPI Risk	Spend. FPI Sentiment
Real GDP growth	1							
Capital formation growth	0.307***	1						
Consumption growth	0.802***	0.27***	1					
MSCI return	0.315***	0.152***	0.269***	1				
MSCI volatility	-0.182***	-0.086***	-0.145***	-0.116***	1			
Spending FPI incidence	-0.0339*	-0.015	0.00403	0.00191	-0.00481	1		
Spending FPI risk	-0.0181	-0.0105	-0.00865	-0.00338	-0.00374	0.211***	1	
Spending FPI sentiment	0.061***	0.00742	0.0766***	0.0723***	-0.00609	0.213***	0.04**	1

Source: Authors' calculations.

Note: This table reports pairwise correlations between the quarterly growth rates of the macroeconomic variables (real GDP, capital formation, and consumption, each measured as $100 \times \Delta \ln$), MSCI financial indicators (returns and volatility), and the components of the Spending FPI: Spending incidence, Spending risk, and Spending sentiment. The macroeconomic aggregates enter in growth rates rather than in levels, so that the reported associations are not driven by the common trend shared by the three real series. Because correlations are computed pairwise, the number of observations varies across cells, ranging from 2,390 to 5,830. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A13: Fixed Effects Regression Results—Macro Outcomes (Spending FPI)

Variables	(1) GDP	(2) GDP	(3) GDP	(4) GDP	(5) Capital	(6) Capital	(7) Capital	(8) Capital	(9) Consumption	(10) Consumption	(11) Consumption	(12) Consumption
Spending incidence	-0.089* (0.046)			-0.127* (0.071)	-0.286* (0.166)			-0.372* (0.212)	-0.017 (0.040)			-0.073 (0.059)
Spending risk		-0.018 (0.073)		0.028 (0.088)		-0.123 (0.174)		0.017 (0.200)		0.009 (0.056)		0.034 (0.071)
Spending sentiment			0.105** (0.050)	0.127** (0.057)			0.045 (0.118)	0.103 (0.129)			0.155*** (0.041)	0.163*** (0.046)
Observations	3,635	3,312	3,571	3,293	3,567	3,312	3,514	3,293	3,391	3,135	3,338	3,116
R-squared	0.002	0.000	0.002	0.005	0.001	0.000	0.000	0.001	0.000	0.000	0.006	0.006
Number of countries	49	39	46	38	46	39	44	38	45	37	43	36

Source: Authors' calculations.

Note: This table reports fixed effects panel regressions of real GDP, capital formation, and consumption growth on the standardized components of the Spending FPI: Spending incidence, Spending risk, and Spending sentiment. Columns (1)–(4) show results for GDP, (5)–(8) for capital formation, and (9)–(12) for consumption. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A14: Fixed Effects Regression Results—Financial Variables (Spending FPI)

Variables	(1) MSCI Return	(2) MSCI Return	(3) MSCI Return	(4) MSCI Return	(5) MSCI Volatility	(6) MSCI Volatility	(7) MSCI Volatility	(8) MSCI Volatility
Spending incidence	0.005* (0.003)			0.001 (0.003)	0.008 (0.030)			0.050*** (0.012)
Spending risk		0.003 (0.002)		0.003 (0.002)		0.003 (0.006)		-0.015** (0.006)
Spending sentiment			0.011*** (0.002)	0.011*** (0.002)			0.003 (0.013)	-0.018** (0.008)
Observations	3,002	2,815	3,002	2,815	3,042	2,853	3,042	2,853
R-squared	0.002	0.001	0.010	0.012	0.000	0.000	0.000	0.013
Number of countries	42	39	42	39	42	39	42	39

Source: Authors' calculations.

Note: This table reports fixed effects panel regressions of MSCI country-level stock returns (columns 1–4) and MSCI return volatility (columns 5–8) on the standardized components of the Spending FPI: Spending incidence, Spending risk, and Spending sentiment. All regressions include country fixed effects and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A15: Fixed Effects Regression Results—Sovereign Spreads (Spending FPI)

Variables	(1) Sovereign Spreads	(2) Sovereign Spreads	(3) Sovereign Spreads	(4) Sovereign Spreads
Spending incidence	0.161** (0.073)			0.203** (0.085)
Spending risk		0.011 (0.033)		-0.057** (0.026)
Spending sentiment			-0.066* (0.036)	-0.094** (0.042)
Constant	1.722*** (0.010)	1.652*** (0.002)	1.698*** (0.001)	1.671*** (0.011)
Observations	1,648	1,521	1,648	1,521
R-squared	0.008	0.000	0.002	0.013
Number of countries	30	27	30	27

Source: Authors' calculations.

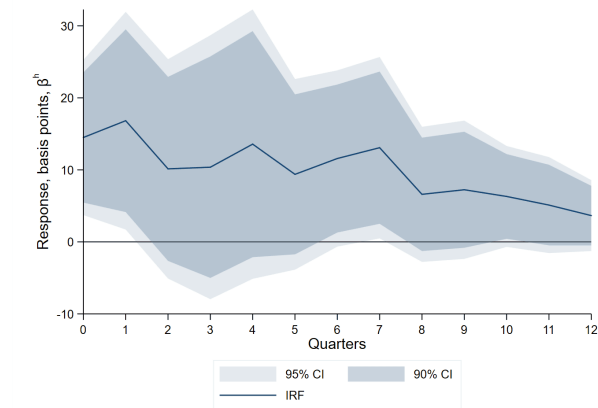
Note: This table reports fixed effects panel regressions of sovereign bond spreads on the standardized components of the Spending FPI: Spending incidence, Spending risk, and Spending sentiment. All regressions include country fixed effects, and standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A16: Fixed Effects Regression Results—Country and Time Fixed Effects (Spending FPI)

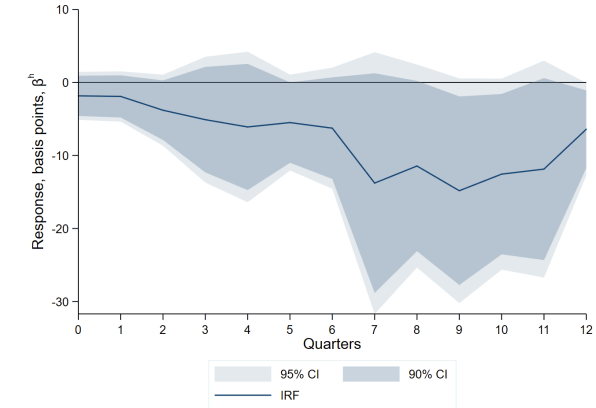
Variables	(1) GDP	(2) Capital	(3) Consumption	(4) MSCI return	(5) MSCI volatility	(6) Sovereign spreads
Spending incidence	-0.021 (0.034)	-0.019 (0.147)	0.020 (0.044)	-0.002 (0.002)	0.009 (0.008)	0.028 (0.047)
Spending risk	0.016 (0.044)	0.026 (0.140)	0.029 (0.044)	-0.001 (0.002)	-0.003 (0.003)	-0.053** (0.027)
Spending sentiment	0.016 (0.026)	0.044 (0.109)	0.063** (0.027)	0.001 (0.001)	-0.009** (0.004)	-0.055 (0.034)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,293	3,293	3,116	2,815	2,853	1,521
R-squared	0.001	0.000	0.003	0.000	0.004	0.004
Number of countries	38	38	36	39	39	27

Source: Authors' calculations.

Note: This table reports two-way fixed effects panel regressions of the macroeconomic growth rates, the MSCI financial indicators, and sovereign bond spreads on the standardized components of the Spending FPI: Spending incidence, Spending risk, and Spending sentiment, entered jointly. Relative to the country fixed effects specifications reported above, these regressions add time fixed effects, so the estimates are identified from variation within a country relative to the common movement across countries in the same quarter. Standard errors are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.



(a) Spread Response to a Government Expenditure Shock (Direct Effect)

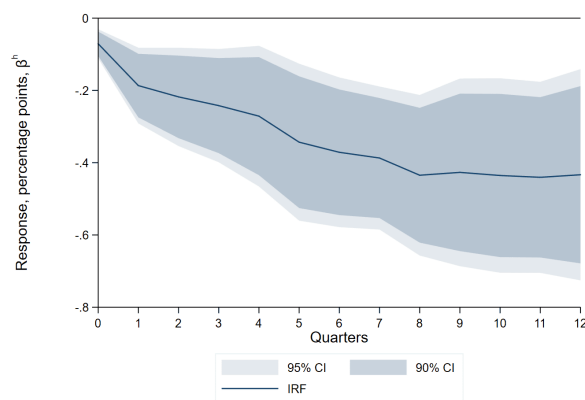


(b) Spread Response to a Government Expenditure Shock (Interaction with Spending Sentiment)

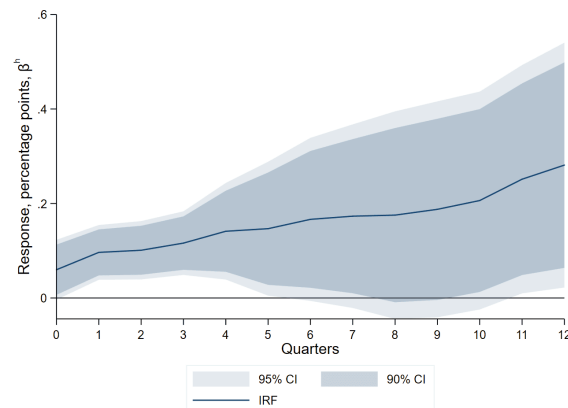
Figure A39: Impulse Responses of Sovereign Spreads to Government Expenditure Shocks (Spending FPI)

Source: Authors' calculations.

Note: This figure shows impulse response functions from local projections estimating the effect of a government expenditure shock on sovereign bond spreads. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Spending sentiment, estimated using the interaction specification in Equation 2. Spending sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) GDP Response to a Government Expenditure Shock (Direct Effect)

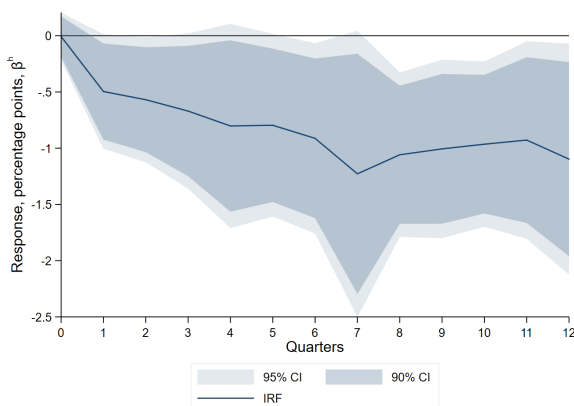


(b) GDP Response to a Government Expenditure Shock (Interaction with Spending Sentiment)

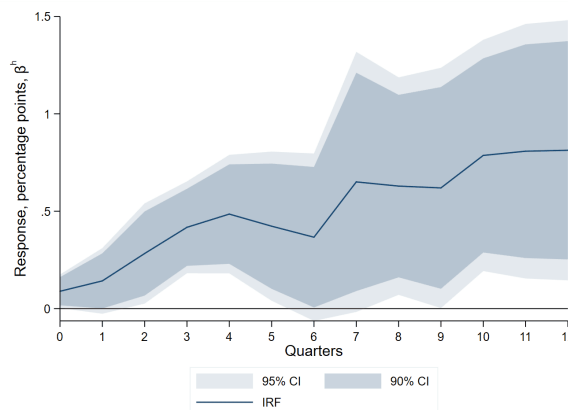
Figure A40: Impulse Responses of GDP to Government Expenditure Shocks (Spending FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real GDP. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Spending sentiment, estimated using the interaction specification in Equation 2. Spending sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) Investment Response to a Government Expenditure Shock (Direct Effect)

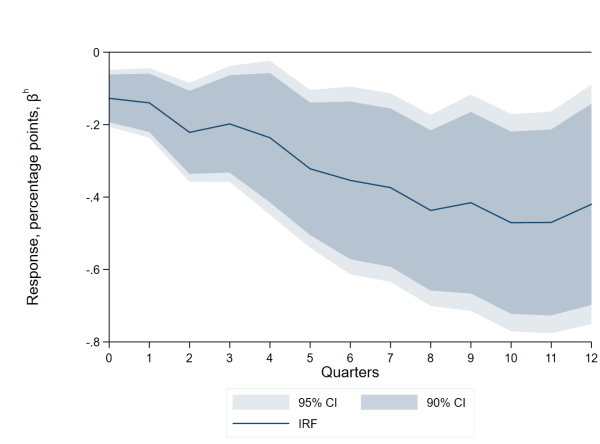


(b) Investment Response to a Government Expenditure Shock (Interaction with Sentiment)

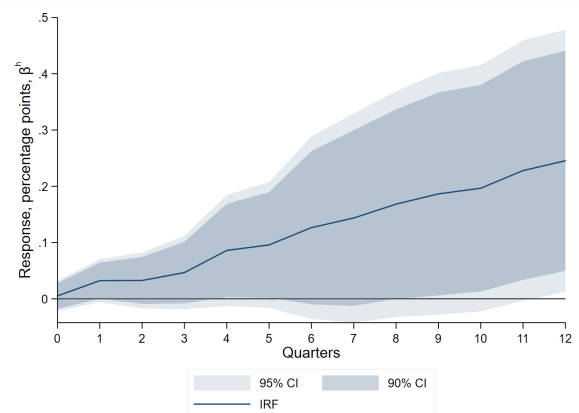
Figure A41: Impulse Responses of Investment to Government Expenditure Shocks (Spending FPI)

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real investment. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Spending sentiment, estimated using the interaction specification in Equation 2. Spending sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.



(a) Consumption Response to a Government Expenditure Shock (Direct Effect)



(b) Consumption Response to a Government Expenditure Shock (Interaction with Spending Sentiment)

Figure A42: Impulse Responses of Consumption to Government Expenditure Shocks (Spending FPI)

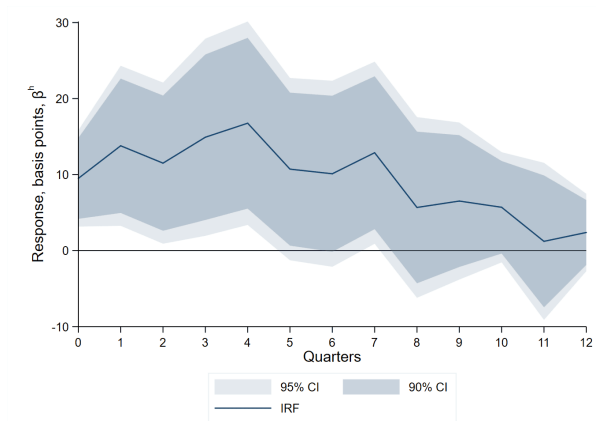
Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real consumption. Panel (a) presents the average (direct) response. Panel (b) shows the conditional response as a function of Spending sentiment, estimated using the interaction specification in Equation 2. Spending sentiment is derived from firm-level earnings calls and standardized. The shock is multiplied by -1 so that it corresponds to a contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.

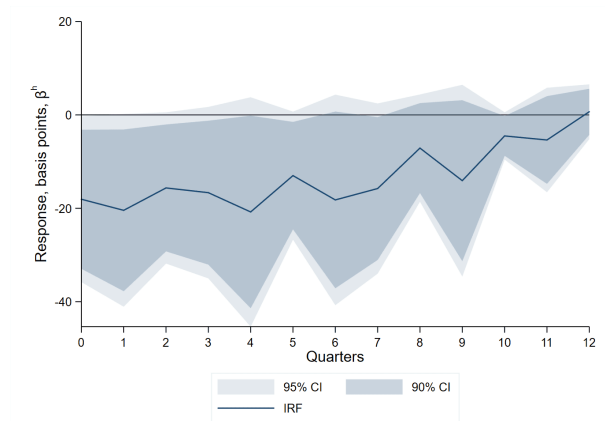
A.9 Heterogeneous Effects across Country Groups

This appendix explores potential heterogeneity in the transmission of fiscal shocks across advanced and emerging market economies. As in the main analysis, we estimate local projections by allowing the effects of government expenditure shocks to vary with firm-level fiscal sentiment. To maintain comparability with [Born et al. \(2020\)](#), we use the same set of exogenous fiscal shocks, which limits the analysis to the period 2002Q1–2017Q4 and to a subset of 21 countries: Argentina, Australia, Austria, Chile, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, Thailand, Turkey, United Kingdom, and the United States. Given the relatively small number of emerging markets in this sample, the results should be interpreted with caution.

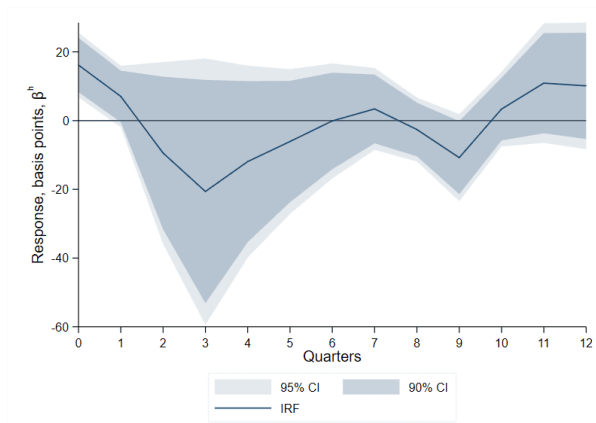
Figure [A43](#) compares the impulse responses of sovereign spreads to contractionary government expenditure shocks across advanced and emerging markets, distinguishing between direct effects and interactions with firm-level fiscal sentiment. In both groups, fiscal shocks tend to raise spreads on average, reflecting increased sovereign risk following consolidation. However, the magnitude and persistence of the response differ: advanced economies exhibit a moderate and gradually declining increase, while emerging markets display sharper and more-volatile reactions, with an initial spike followed by partial reversal. When interacted with fiscal sentiment, the spread effects are dampened under favorable sentiment conditions in both groups. The moderating role of sentiment appears stronger in emerging markets, although the estimates are not statistically significant.



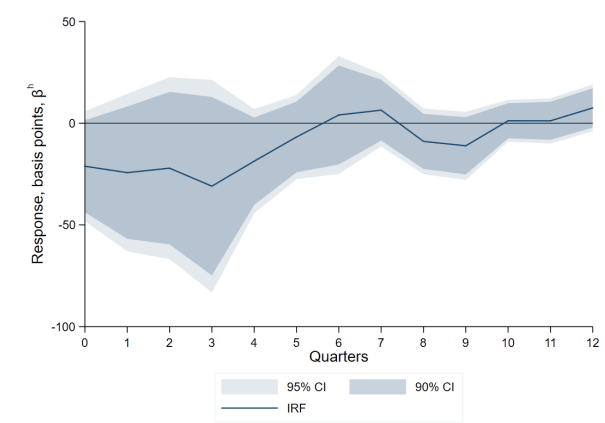
(a) Advanced: Direct effect



(b) Advanced: Interaction with sentiment



(c) Emerging: Direct effect

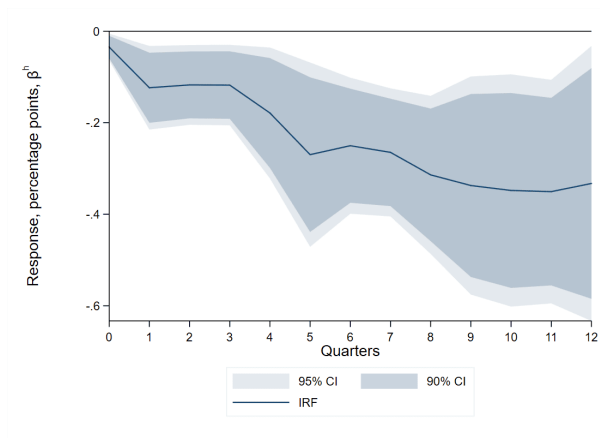


(d) Emerging: Interaction with sentiment

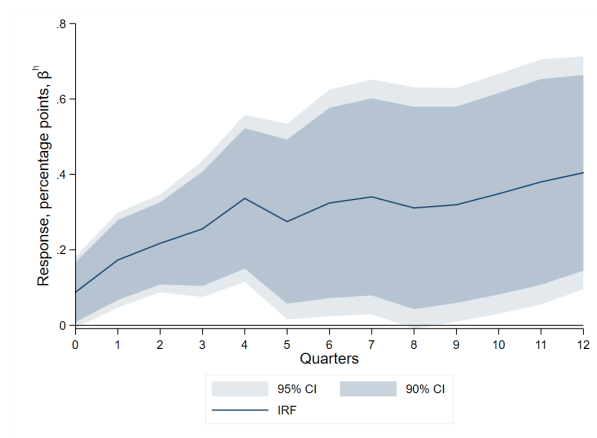
Figure A43: Impulse responses of sovereign spreads to government expenditure shocks across advanced and emerging markets.

Note: This figure shows the impulse response functions from local projections estimating the effect of a government expenditure shock on sovereign spreads. Panels (a) and (c) present the average (direct) response for advanced and emerging markets, respectively. Panels (b) and (d) show the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the 95% level. Source: Authors' calculations.

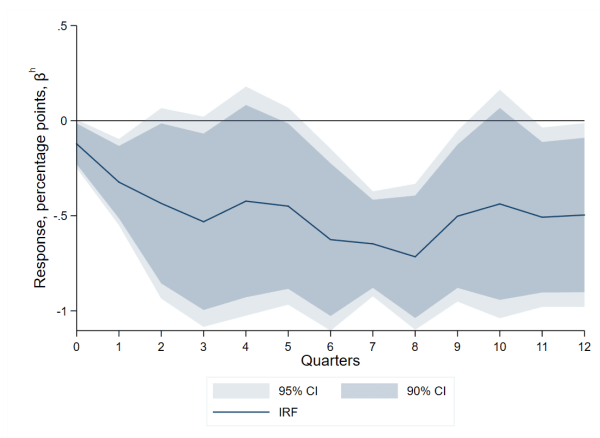
Figure A44 presents the impulse responses of real GDP to contractionary government expenditure shocks across advanced and emerging markets, comparing average effects with those conditioned on firm-level fiscal sentiment. In both country groups, fiscal shocks are associated with declines in output, consistent with contractionary demand-side effects. In advanced economies, the average response is persistent and statistically significant, with GDP falling by nearly 0.3 p.p. over the projection horizon. When sentiment is more favorable, however, the contraction is dampened, suggesting that more favorable fiscal perceptions mitigate the adverse output response. In emerging markets, the average GDP response is negative but more imprecisely estimated. The interaction with sentiment reveals a less contractionary path under favorable perceptions, although the estimates lack statistical precision. Overall, the figure illustrates that the effectiveness of fiscal consolidation depends on the perceived fiscal environment, with more favorable sentiment attenuating the adverse effects on output in both groups.



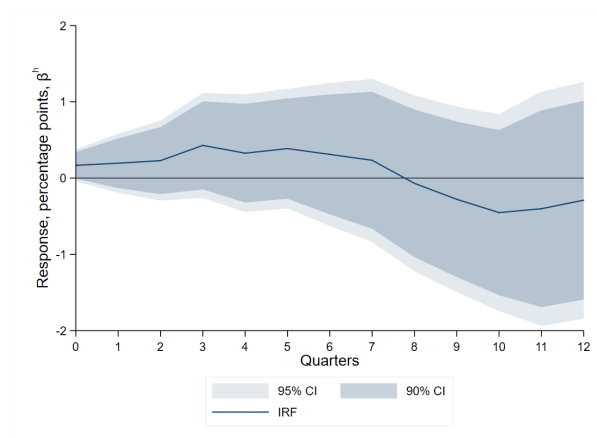
(a) Advanced: Direct effect



(b) Advanced: Interaction with sentiment



(c) Emerging: Direct effect

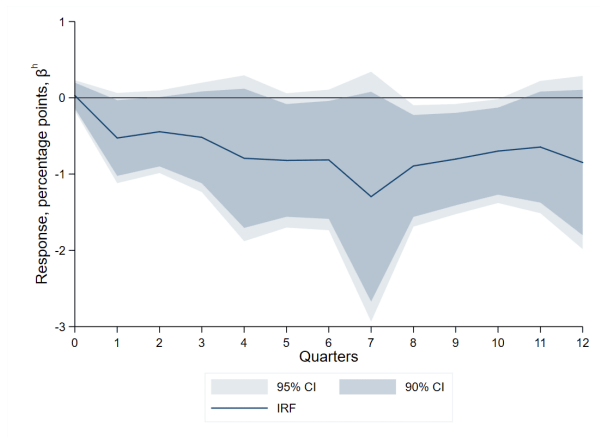


(d) Emerging: Interaction with sentiment

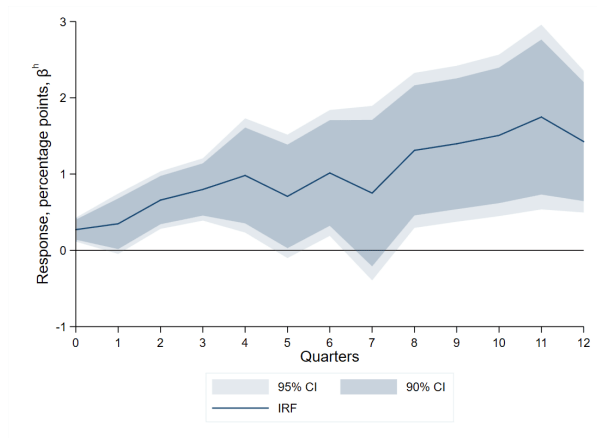
Figure A44: Impulse responses of GDP to government expenditure shocks across advanced and emerging markets.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real GDP. Panels (a) and (c) present the average (direct) response for advanced and emerging markets, respectively. Panels (b) and (d) show the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the 95% level. Source: Authors' calculations.

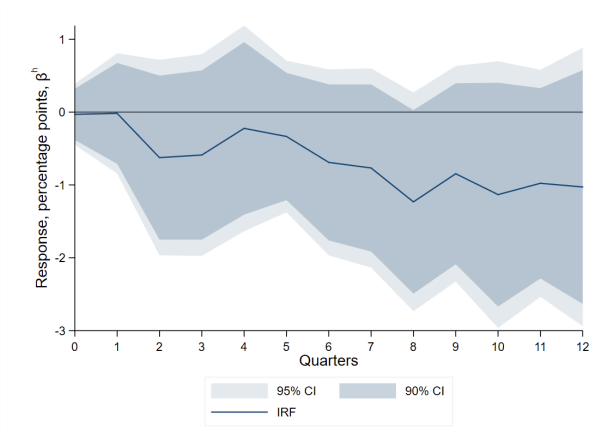
Figure A45 shows that contractionary fiscal shocks reduce investment in both advanced and emerging markets, with the average response negative and persistent. In advanced economies, more favorable sentiment moderates this effect, yielding a substantially less contractionary investment response. In emerging markets, the interaction is positive but short-lived and less precisely estimated. These results suggest that firm perceptions of fiscal conditions—captured by sentiment—influence the investment response to fiscal tightening across country groups.



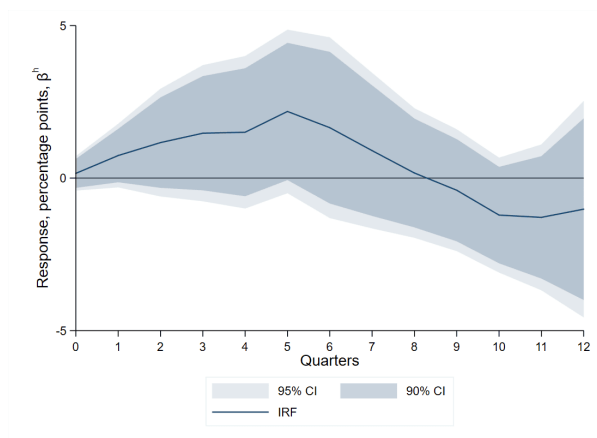
(a) Advanced: Direct effect



(b) Advanced: Interaction with sentiment



(c) Emerging: Direct effect



(d) Emerging: Interaction with sentiment

Figure A45: Impulse responses of investment to government expenditure shocks across advanced and emerging markets.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real investment. Panels (a) and (c) present the average (direct) response for advanced and emerging markets, respectively. Panels (b) and (d) show the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the 95% level. Source: Authors' calculations.

Figure A46 shows that contractionary fiscal shocks lead to a sustained decline in consumption in both advanced and emerging markets. In advanced economies, the average response is large and persistent, reaching nearly -0.35 p.p. by the end of the horizon. Favorable sentiment substantially offsets this effect, with consumption gradually rising above baseline. In emerging markets, the average response is negative but less precisely estimated, while the interaction with sentiment yields a flatter trajectory with muted declines.

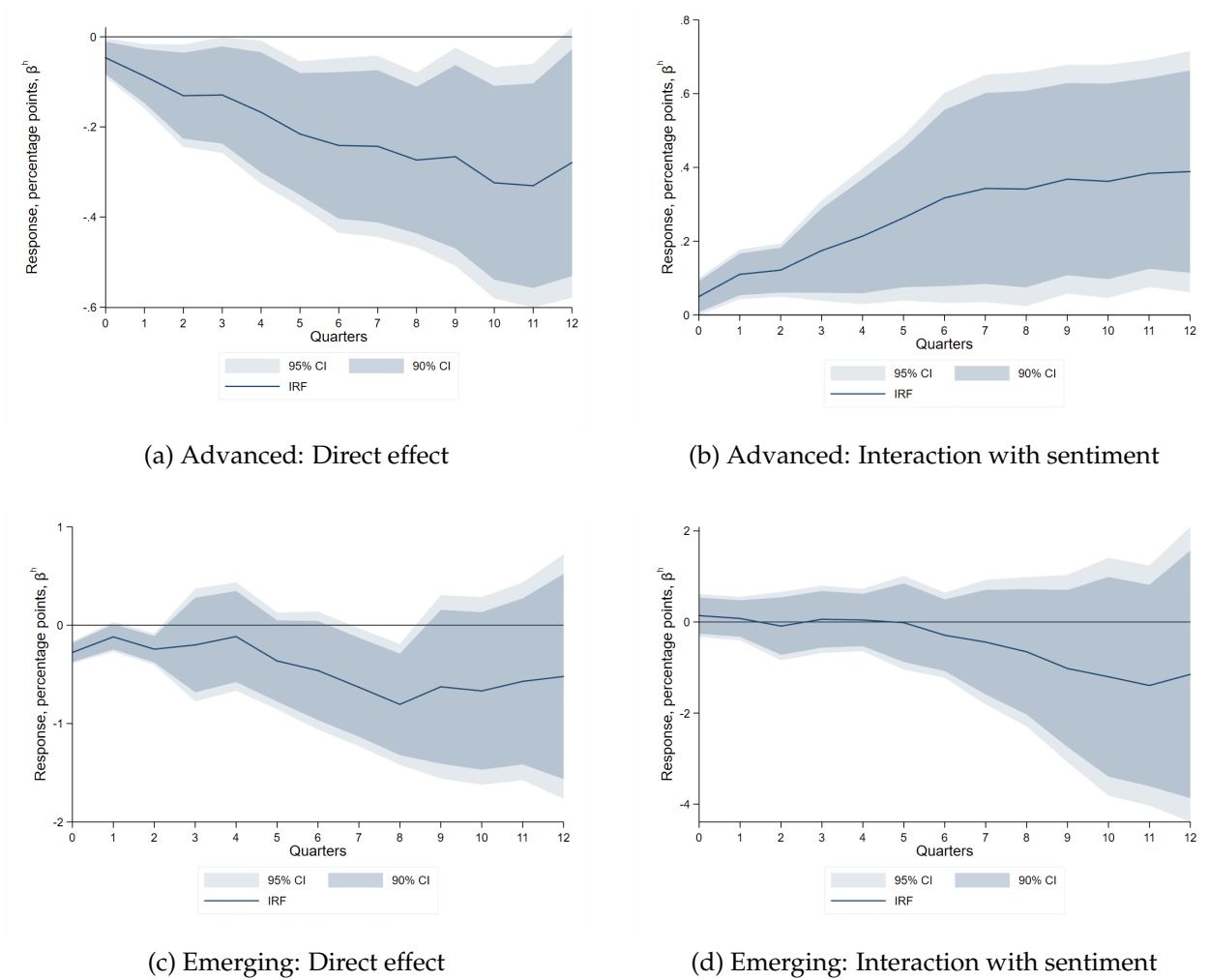


Figure A46: Impulse responses of consumption to government expenditure shocks across advanced and emerging markets.

Source: Authors' calculations.

Note: This figure shows cumulative impulse response functions from local projections estimating the effect of a government expenditure shock on real consumption. Panels (a) and (c) present the average (direct) response for advanced and emerging markets, respectively. Panels (b) and (d) show the interaction coefficient β^h from Equation 2—the change in the response per one-standard-deviation increase in fiscal sentiment, not the total response (which is the sum of the direct effect and the interaction). Fiscal sentiment is derived from firm-level earnings calls and standardized. The shock is also standardized at the country level and multiplied by -1 , so that impulse responses correspond to a one standard deviation contractionary fiscal shock. Shaded areas represent 90% and 95% confidence intervals, with the lighter band indicating the latter.