MEASURING FIRM-LEVEL CURRENCY EXPOSURE*

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Abstract

We develop DoEx, a firm-quarter measure of currency exposure, built from how intensively managers and analysts discuss the currency environment—exchange-rate levels, volatility, and the dollar's direction—on quarterly earnings conference calls for 8,294 U.S.-listed firms over 2007–2024. DoEx tracks every major dollar episode of the period and rises with firms' real international footprints, and carries information well beyond alternative currency-exposure proxies, including foreign-sales ratios and return-based FX betas. Firms with higher exposure experience equity-price declines when the dollar appreciates, and they act on this exposure by using more FX derivatives and tilting their borrowing toward non-USD-denominated debt.

Keywords: Currency Exposure, Exchange Rates, Conference Calls, Textual Analysis, Hedging

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I. INTRODUCTION

Exchange-rate fluctuations are among the most pervasive sources of risk for firms. The U.S. dollar, as the world's dominant invoicing, reserve, and pricing currency, affects nearly every dimension of corporate activity: the translation of foreign revenues into domestic earnings, the domestic-currency cost of imported inputs, the pricing power of exports against foreign competitors, the servicing burden of dollar-denominated debt, and the level and volatility of firm value. Yet despite decades of empirical research, how exposed a given firm is to dollar movements remains difficult to measure at the firm level.

This difficulty is especially apparent in the classic exchange-rate exposure puzzle: regression-based FX betas are statistically insignificant for most firms even when their underlying economic exposure is obvious (Bartov and Bodnar, 1994). More broadly, existing proxies capture only partial manifestations of firms' underlying currency exposure and miss important channels through which dollar movements affect corporate cash flows.[1] Accounting-based proxies such as the foreign-sales ratio are backward-looking and low-frequency, reflecting historical geographic revenue composition while missing exposure arising through imported inputs, foreign competition, or financial channels.[2] Market-based proxies such as regression-estimated FX betas are also backward-looking because they are estimated from trailing historical return windows, and therefore capture exposure only after it has been reflected in realized stock returns and investor beliefs.[3] In addition, FX betas often confound firm-specific currency exposure with broader macro factors that co-move with the dollar over the estimation window.[4]

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[1] See Bartram and Bodnar (2007) for a review of the puzzle and the subsequent literature; the empirical work spans Jorion (1990), Bartov and Bodnar (1994), He and Ng (1998), Bartram, Brown, and Minton (2010), and Dominguez and Tesar (2006), among others.

[2] For example, a firm with high foreign sales may hedge extensively and face limited net exposure, while a firm with no foreign sales may still be highly exposed through imported inputs, dollar-priced commodities, dollar-denominated borrowing, or competition from foreign-currency-priced rivals. Similarly, a foreign-sales-based measure may mechanically classify many financial firms as having limited currency exposure despite potentially high exposure arising through cross-border funding, foreign-currency balance-sheet positions, derivatives exposures, and settlement flows. More generally, because the foreign-sales ratio is based on *past* geographic revenue composition, it can misstate current exposure for firms whose hedging, sourcing, production, or pricing plans have already changed. In that sense, the foreign-sales ratio reflects *past* geography rather than true expected currency risk.

[3] For example, the typical thirty-six-to-sixty-month rolling window did not fully absorb the 2014–2015 dollar surge until well after firms had adjusted hedges, sourcing, and pricing in response, so the estimator identifies exposure ex post rather than ex ante. The same mechanical lag also implies that FX betas can persistently flag firms as exposed long after the underlying position has been restructured or hedged away, since the trailing window retains historical return covariance well after the firm's economic position has changed.

[4] In the March 2020 COVID-19 episode, the dollar spiked as a safe-haven currency at the same time equity markets fell broadly, and the rolling-window estimator mechanically loaded this co-moving aggregate factor onto firm-level FX betas—inflating estimated exposure across the cross-section even for firms with no firm-specific

More fundamentally, market prices reflect only the component of exposure observable to outside investors, whereas managers observe far more granular operational details—including supply-chain transactions, revenue repatriation, transfer pricing, and cross-border settlement flows—that shape firms' true economic exposure to currency movements.

The limitations of existing measures matter beyond asset pricing and risk management. They also affect how we study the organizational limits of globalization itself. Cross-border integration has stalled in aggregate: world trade as a share of GDP rose from roughly 37 percent in 1980 to about 61 percent in 2008 and has not durably surpassed that peak since (World Bank, World Development Indicators). Even within our sample of U.S.-listed firms, the average firm reports only about 23 percent of sales from foreign markets, with the median at 12 percent. If currency risk is one friction limiting firm globalization, then accurately measuring firm-level exchange-rate exposure is central to understanding how firms structure their global operations.

In this paper, we develop DoEx, a new, *direct* firm-quarter measure of currency exposure derived from the language managers and analysts use on quarterly earnings conference calls. To operationalize currency exposure, we begin with a set of twenty seed phrases that are unambiguously related to currency conditions: 'dollar index', 'dollar exchange rate', and 'dollar value' for the level dimension; 'dollar volatility' and 'dollar fluctuation' for the volatility dimension; 'dollar appreciation' and 'dollar strengthening' for the appreciation dimension; and 'dollar depreciation' and 'dollar weakening' for the depreciation dimension.

These seeds are written to capture the operational language any currency-exposed firm uses, regardless of which channel the exposure runs through. The same vocabulary appears whether the speaker is the CFO of a textbook multinational discussing yen-hedge mechanics or, as in one high-DoEx call from a US-only-revenue food manufacturer, a CFO explaining that 'this is really exchange rate between U.S. dollar and Mexican peso … and that's a transaction, that's not translation.' The seeds therefore detect dollar concerns that arise through foreign sales, imported inputs, dollar-priced commodities, dollar-denominated financing, or foreign-priced competition—channels that no single balance-sheet variable observes.

Using these seeds as anchors, we apply a machine-learning keyword-discovery method (Mikolov et al., 2013; specifically, Word2Vec) trained on the call corpus itself to learn the

dollar sensitivity. The same contamination arises whenever any macro factor co-moves with the dollar over the estimation window yet is omitted from the regression, so the FX beta cannot reliably pin down true firm-level currency exposure without recourse to managers' *own* discussion of currency.

broader vocabulary managers and analysts use when discussing currency conditions, including colloquialisms ('greenback'), institutional terminology ('foreign-currency translation', 'fx headwind', 'translational impact'), and country-currency unigrams (yen, euro, peso, ruble). The expanded dictionary contains 1,066 unigrams, bigrams, and trigrams across the four dimensions. We score each earnings-call transcript on the intensity of dictionary-matched language, weighted by its relative rarity across the corpus using TF-IDF, and aggregate the scores to the firm-quarter level. The resulting panel covers the universe of U.S.-listed firms with conference-call coverage from 2007 through 2024.[5]

What makes the earnings call a uniquely informative venue is that it brings together two otherwise scarce perspectives on the firm's currency environment at the same moment. Managers speak from privileged knowledge of the supply-chain mix, hedging-program effectiveness, customer concentration, foreign-currency debt service, and competitive dynamics abroad. At the same time, sell-side analysts—drawing on external research—press managers on these issues live during the Q&A, where prepared talking points provide less cover. The result is a disclosure that is contemporaneous, recurring, and interactive: managers and analysts discuss expected dollar movements and planned responses before they appear in realized cash flows or stock returns. A measure built from this language inherits those properties directly, without our having to specify in advance which channel a given firm's exposure runs through.

We validate DoEx in three stages. First, face validity at the term level: the dictionary expansion recovers the language managers use to discuss the dollar—colloquialisms ("greenback"), institutional terms ("foreign-currency translation"), and dimension-specific phrases—rather than artifacts of the seed words. Top n-grams by TF-IDF are economically meaningful and distinct from the seeds.[6]

Second, the aggregate series tracks the major dollar episodes and stays quiet otherwise. The aggregate DoEx series spikes during the major dollar-appreciation episodes of the sample—

[5] Word2Vec is trained on the call corpus itself rather than on a general-purpose embedding because the language of currency exposure on earnings calls is institution-specific and context-laden. We retain the top fifty nearest neighbors of each seed phrase by cosine similarity and inspect each candidate by hand for currency relevance before admission to the dictionary. TF-IDF weighting penalizes phrases that appear in a large share of calls so that ubiquitous filler does not dominate the score; the resulting firm-quarter score is winsorized at the 1 and 99 percentiles before any panel regression.

[6] We assess face validity by inspecting the top fifty TF-IDF-ranked phrases in each of the four dimensions and verifying that their currency relevance is unambiguous to a domain reader. The exercise is non-mechanical by construction—a measurement tool trained on text only delivers face-valid output if the discovered vocabulary is recognizable to the same audience whose disclosures produced it.

the 2008–2009 Global Financial Crisis, the 2014–2015 dollar surge, Brexit in 2016, and the 2022–2023 Fed-hike cycle—even though none of these events was used to train the dictionary, while staying subdued during shocks that did not originate in currency markets, such as the 2020 COVID risk-off. The 2020 case is the telling one: a measure of general market stress or uncertainty would have spiked then, but DoEx stayed low in 2020 , because it captures attention to the dollar specifically rather than turbulence at large. A variance decomposition further shows that firm-level heterogeneity within industry-year cells accounts for the bulk of DoEx variation—the variation the measure is built to capture.[7]

Third, DoEx lines up with hard evidence recorded outside the call—both the operations that expose a firm to the dollar and the costly steps firms take to manage that exposure. On the operations side, DoEx rises with every standard measure of a firm's international footprint: the share of its revenue earned abroad (the foreign-sales ratio), how widely it produces and sources overseas (the foreign locations it names in its 10-Ks), and how international its supplier and customer networks are (from FactSet Revere). On the action side, the logic is that talk is cheap but hedging is not, so the firms DoEx flags should be the ones paying to manage currency risk—and they are, on the two margins firms actually use. They disclose more use of foreign-exchange derivatives, the standard instruments for hedging currency risk; and they tilt their borrowing toward bonds denominated in foreign currencies, which act as a natural hedge by matching foreign-currency liabilities to foreign-currency revenues. To confirm this reflects currency management rather than a general appetite for debt, we run a placebo on dollar-denominated issuance: DoEx predicts whether a firm issues a non-USD bond but not whether it issues a USD bond, so the effect is specific to the foreign-currency denomination of financing, not to borrowing as such. Because foreign sales, footprints, derivative use, and bond currency are all observed in filings and records rather than in the calls, they corroborate that DoEx tracks an exposure firms actually bear and act on, not merely the attention they pay to it.

Next, we show DoEx adds information the existing proxies miss. We compare it against the measures the literature relies on: the foreign-sales ratio; two footprint measures of net international exposure—the net offshore position a firm discloses in its 10-Ks (how far its

[7] The volatility dimension is the exception in the variance decomposition, with a much smaller permanent-across-firms share than the directional dimensions, consistent with volatility exposure being more aggregate and less firm-specific. The dispersion-widens-with-mean property is a natural feature of any disclosure-based exposure measure: episodes that raise average exposure also reshuffle which firms are most exposed, since the firms that talk most about the dollar in calm periods are not the firms most affected when the regime shifts.

foreign selling and foreign sourcing are out of balance) and the net international supply-chain exposure implied by the country mismatch between its suppliers and customers in FactSet Revere; and the return-based FX beta, the sensitivity of a firm's stock return to the dollar estimated over a trailing window. Over time these measures diverge. Aggregate DoEx spikes during major dollar episodes, while the foreign-sales ratio and the two footprint measures are slow-moving: they reflect the multi-year evolution of a firm's geography and supply chain, not the dollar in a given quarter. The FX beta, by contrast, tends to track broader risk-off cycles rather than currency-specific shocks. The 2014–2015 dollar surge and the 2020 COVID risk-off episode illustrate these limitations. DoEx detects the 2014 regime shift immediately, while the beta responds only gradually because its trailing window remains dominated by the calm pre-2014 dollar environment. Conversely, DoEx stays low through 2020, while the beta spikes because the global risk-off episode made the dollar and stock returns move together, a pattern that a rolling regression cannot distinguish from genuine currency exposure.

The cross-sectional disagreement is just as large. Ranked across industries, the measures order sectors differently: the foreign-sales ratio is highest for Chemicals, Business Equipment, and Manufacturing—the largest foreign-revenue footprints—while DoEx places Consumer Non-Durables well above its foreign-sales rank and Business Equipment well below it, picking up the cost-side and competitive exposure that reported foreign sales miss. The contrast with the FX beta is sharper and reassuring: Energy has the largest return-based sensitivity to the dollar yet is among the least dollar-attentive sectors, because energy returns move with dollar-priced commodities rather than with currency risk its managers emphasize—so DoEx is not simply a relabeled commodity or dollar index. The correlations bear this out. After removing additive industry and year effects, DoEx correlates 0.35 with the foreign-sales ratio and positively with the offshore footprint, but is essentially uncorrelated with the FX beta (−0.02); entered jointly with the supply-chain footprint in a horse race with industry and year fixed effects, the four proxies leave roughly 54 percent of the within-industry-year variation in DoEx unexplained—foreign revenues, international footprints, and realized return sensitivities together do not subsume the exposure managers reveal in their own words.

Our central application is asset pricing: if investors recognize the currency exposure DoEx records, the cross-section of returns to DoEx should track the dollar's realized path. We document this in two complementary settings. In a conditional double sort, we compare high-

attention firms—those in the top quartile of positive DoEx within size buckets—against the large group of firms that record no attention to the currency environment at all. This high-minus-zero portfolio earns +0.62% per month in the months when the dollar falls and −0.34% per month when it rises, a double-difference of −0.96% per month across the two extreme dollar regimes. The premium is conditional rather than unconditional: the long-short earns no abnormal return on average, yet its dollar-conditional spread survives out-of-sample five-factor risk adjustment, leaving a significant risk-adjusted double-difference of −0.67% per month across the extreme dollar regimes. A high-frequency event study around scheduled FOMC announcements—where dollar repricing is plausibly exogenous to any single firm—delivers the same conclusion: high-DoEx firms' cumulative returns fall by significantly more than other firms' when the dollar strengthens around the announcement. The two designs together show that DoEx identifies the firms whose equity value moves with the dollar, and that the exposure is priced precisely when the dollar appreciates.

A direct implication is that aggregate dollar movements matter not only by raising the level of currency exposure but also by altering which firms are exposed and how widely exposure is dispersed across them. Consistent with this view, a one-unit increase in aggregate DoEx is associated with a 1.23-unit increase in the cross-sectional standard deviation of firm-level DoEx (std. err. = 0.032 across the 72 sample quarters), and the firm-level distribution is strongly right-skewed with a fat right tail—advanced-foreign-economies dollar shocks raise both the first and second moments of the distribution, reallocating exposure across firms rather than tilting every firm uniformly, in ways backward-looking measures cannot detect (Bruno and Shin, 2017; Maggiori, Neiman, and Schreger, 2020).

We acknowledge limitations. DoEx measures attention to the currency environment as revealed in earnings-call language, not the currency exposure that would obtain in a full structural model with hedging cost and supply-chain frictions. Because text is a lossy representation of underlying economic activity, DoEx contains measurement error; the measure aggregates across speakers, sections, and dimensions in ways that may attenuate or misclassify some firm-quarters. Our sample is restricted to U.S.-listed firms with conference-call coverage, so the population is the standard Compustat–CRSP universe rather than the full economy; financials and utilities are retained in all analyses except the footprint and supply-chain validation regressions in Section III. The associations we document between DoEx and real or

financial outcomes are not causal estimates: high-DoEx firms select into the situations that prompt the discussion. We interpret the empirical patterns throughout the paper as informative of the economic relevance of DoEx, not as evidence of causal effects.

Our efforts relate to several strands of prior literature. An important set of studies measures firm-level currency exposure using stock-return sensitivity to exchange-rate movements and documents that exposure varies with foreign-sales footprints, hedging policy, and operational structure (Adler and Dumas, 1984; Jorion, 1990; Bartov and Bodnar, 1994; Allayannis and Weston, 2001; Bartram, Brown, and Minton, 2010; Bartram, Brown, and Conrad, 2011). A separate strand in international finance prices currency risk in equity and currency markets and documents the central role of the dollar in global capital flows (Lustig, Roussanov, and Verdelhan, 2011; Verdelhan, 2018; Bruno and Shin, 2017; Maggiori, Neiman, and Schreger, 2020). In the absence of a direct measure of how managers themselves perceive currency risk, this literature has relied on identifying firm-level exposure through stock-return betas to aggregate exchange-rate indices, geographic-segment disclosures, or currency-portfolio sorts. Bartram, Brown, and Minton (2010) in particular document that the foreign-sales ratio captures only the revenue-side dimension of exposure, leaving the cost-side, competitive-pricing, and dollar-financing channels invisible. Relative to this existing work, we provide the first firm-level, time-varying, text-based measure of currency exposure that is panel-comparable, incremental to both the foreign-sales ratio and the return-based FX beta, and that connects firm-level cross-sectional dispersion of currency exposure to the aggregate USD shocks the global-dollar literature predicts.

Another closely related strand studies corporate hedging and operational risk management as responses to FX exposure (Smith and Stulz, 1985; Froot, Scharfstein, and Stein, 1993; Géczy, Minton, and Schrand, 1997; Graham and Rogers, 2002; Bartram, Brown, and Fehle, 2009; Allayannis, Lel, and Miller, 2012). The empirical literature has typically inferred hedging from binary indicators of derivative use disclosed in 10-K footnotes, leaving the underlying exposure being hedged unobserved and the broader set of risk-management margins largely unmeasured. We contribute on two margins. First, DoEx supplies the missing measure of the exposure firms respond to, and firms that score high on it do disclose more FX-derivative use. Second, and new to this literature, dollar-attentive firms also manage the exposure through the currency denomination of their borrowing: they tilt debt issuance toward non-USD-

denominated bonds—raising the probability, share, and count of foreign-currency issues with no parallel rise in dollar-denominated issuance—a foreign-currency natural hedge that the binary derivative-use indicators do not observe and that survives controls for the foreign-sales ratio and the return-based FX beta. Closest in spirit to our text-based approach is the work of Hoberg and Moon (2017, 2019), who construct firm-level measures of offshore activities—both offshore output and offshore input—by text-mining 10-K filings. Their measures differ from DoEx along three dimensions. First, the underlying corpus: Hoberg and Moon use annual 10-K disclosures, while DoEx is built from quarterly earnings conference calls, which arrive on a higher frequency and reflect contemporaneous managerial discussion rather than disclosed accounting categorization. Second, the construction target: their measures track specific operational footprints (offshore output and input by nation), while DoEx captures the broader managerial attention to currency exposure that spans operational, financial, and competitive channels. Third, the time horizon: 10-K disclosures lag historical activity by months, while earnings-call discussion is forward-looking.

Our work also speaks to the literature on real effects of exchange-rate uncertainty on firm investment, hiring, and capital allocation (Bernanke, 1983; Caballero, Cowan, Engel, and Micco, 2013; Aghion, Bacchetta, Ranciere, and Rogoff, 2009; Bloom, 2009; Bloom et al., 2018). These studies have typically relied on aggregate FX-volatility indices or country-level uncertainty proxies to test the real-options channel that links currency uncertainty to investment delay. We introduce a firm-level proxy for FX-uncertainty perception that opens the door to firm-level tests of the real-options channel; we leave the empirical exploration of that channel to future work.

The remainder of the paper develops these results in turn. We construct DoEx from the earnings-call corpus through a Word2Vec dictionary expansion and TF-IDF scoring, validate the measure on its aggregate dynamics, cross-sectional dispersion, real-footprint and hedging correlates, and aggregate dollar drivers, and establish its incremental content relative to the foreign-sales ratio and the return-based FX beta. We then show that DoEx is a priced currency exposure in the cross-section of equity returns, in both a conditional double sort and a high-frequency FOMC event study, before concluding.

II. Data and Measure Construction

Building a measure of currency exposure from text requires three things: a corpus in which managers speak candidly about the risks they face, a vocabulary that captures how they refer to the dollar without our having to anticipate every phrase in advance, and a scoring rule that renders that language comparable across firms and quarters. The earnings call supplies the first—a quarterly, largely unscripted forum in which managers and analysts surface the risks that matter to the firm; a Word2Vec expansion of a small dollar-anchored seed set supplies the second; and a section-level TF-IDF weighting supplies the third.

II.A. Earnings-Call Corpus

A measure meant to span the cross-section must begin with a corpus that does too. Our primary source is the universe of earnings conference-call transcripts for U.S.-listed firms hosted on S&P Capital IQ via WRDS. We restrict the sample to firms matched to a Compustat GVKEY using the CapIQ–Compustat crosswalk maintained by WRDS. We further apply the standard U.S.-focused empirical-research filter and retain only firm-years in which Compustat's foreign-incorporation code is the United States (fic == "USA"), excluding cross-listed foreign firms such as ADRs. We restrict to U.S.-incorporated firms—not merely firms that happen to report in dollars—because it gives the cleanest setting for interpreting exposure to currency movements. For a U.S.-incorporated firm the dollar is unambiguously the home currency and reporting numeraire, so its operations partition cleanly into domestic (U.S.) and foreign (non-U.S.)—the split the foreign-sales and footprint measures rely on—and a dollar move carries an unambiguous sign: an appreciation is a headwind to the foreign side rather than a shock whose direction depends on which currency counts as "home." This restriction trades coverage for identification—it drops cross-listed and foreign-domiciled firms—and because the object of the paper is the direction and pricing of currency exposure, we deliberately favor the cleaner interpretation, which matters most for the asset-pricing and FX-shock tests of Section IV. The final corpus contains 246,403 calls covering 8,294 unique firms between 2007Q1 and 2024Q4, or 195,493 non-missing firm-quarters after matching to panel data. The 8,294 firm count is the raw corpus count; a smaller subset of 6,348 firms survives the Compustat filters and non-missing data requirements used in the regression panel (Section II.D). Each call contains a moderator introduction, a prepared-remarks section read by the CFO and CEO, and an analyst Q&A

section; our baseline measure aggregates across the whole call, and we retain the section split for robustness checks. After lemmatization, stopword removal, and bigram/trigram joining via gensim.Phrases, the median call yields roughly 3,100 tokens (with multi-word phrases such as dollar_strength counted as single tokens), split roughly evenly between the prepared remarks and the Q&A (median shares of 49 percent presentation and 51 percent Q&A by token count).

II.B. Seed Dictionary

Any dictionary method needs a starting point—a small, unambiguous set of seeds to anchor the expansion. We partition DoEx into four economically distinct dimensions, each with five seed phrases, for a total of 20 seeds. The "dollar level" dimension captures discussions of the dollar's standing in general terms (seeds include "dollar index," "dollar exchange rate," "dollar rate," "dollar currency," and "dollar value"). The "dollar volatility" dimension captures discussions of uncertainty or movement magnitude ("dollar volatility," "dollar fluctuation," "dollar swing," "dollar dynamic," and "dollar movement"). The "appreciation" and "depreciation" dimensions capture directional moves, using phrases such as "dollar appreciation," "dollar strengthening," "usd strength," "dollar depreciation," and "dollar weakening." All seeds are multi-word phrases rather than single words, so that the subsequent word2vec expansion operates on meaningful n-grams rather than on word-level proximity. The seed list is designed to be conservative and interpretable; it deliberately avoids single-word keywords like "dollar" in isolation, which carry heavy semantic ambiguity.

A natural question is whether a dollar-anchored seed set sufficiently captures the full range of firms' currency exposure. The anchor is a choice of convenience rather than necessity: because the Word2Vec expansion learns each seed's semantic neighborhood from the corpus, one could in principle begin with any currency and recover the same web of exchange-rate language—we anchor on the dollar because it is the most prominent and the most representative currency for the U.S.-listed firms we study. We argue the dollar anchor is sufficient for three further reasons. First, enumerating an exhaustive set of seed phrases that cover every currency a U.S. firm might discuss—euro, yen, pound, yuan, real, ruble, peso, rupee, hryvnia, and dozens of smaller-market currencies—is infeasible, and is precisely the problem that modern dictionary-expansion methods are designed to solve. By anchoring on a well-specified dollar-centric seed set and letting a Word2Vec model trained on our own corpus discover semantically related

language from context, we recover cross-currency terminology directly from how managers describe exchange-rate risk: the expanded dictionary includes country-currency unigrams for the euro, peso, ruble, rupee, krona, and hryvnia, among others. Second, our sample consists of U.S.-listed firms whose reporting currency is the dollar; for these firms, the dollar is the natural numeraire, and currency exposure is dollar exposure in the first instance, with non-dollar cross-rate implications entering through how managers discuss the global currency environment. Third, this dollar-anchored design follows the canonical FX-exposure literature: Allayannis and Weston (2001), for example, title their study of "exchange rate risk" generally but structure the empirical tests explicitly around dollar appreciation versus dollar depreciation periods for U.S. firms, noting that hedging value is concentrated during dollar-appreciating years. We adopt the same convention: the dollar is the conceptual anchor; the exposure captured is currency exposure broadly.

II.C. Word2Vec Dictionary Expansion

The choice of Word2Vec over a pre-specified static dictionary is deliberate. Traditional keyword approaches require manual expert categorization of every phrase that might signal currency exposure, but the language managers use evolves quickly—from colloquial references such as "greenback" to institutional terminology such as "trade-weighted dollar" to currency-specific discussion spanning dozens of trading partners. An exhaustive manual lexicon cannot anticipate this vocabulary and becomes outdated as market innovations introduce new terms. Anchoring instead on the small set of seed phrases above—phrases that are unambiguously related to dollar dynamics—we train a word-embedding model that learns semantic relationships from the corpus itself, leveraging the distributional hypothesis that words appearing in similar contexts carry similar meanings (Harris 1954). The resulting dictionary is tailored to the exact language of the earnings-call corpus rather than imposed from a static external vocabulary. It evolves naturally with the discourse, and the boundary between FX-relevant and unrelated language is data-driven rather than imposed by the researcher.

Operationally, we train a Word2Vec skip-gram model on the entire conference-call corpus to learn dense vector representations of tokens and multi-word phrases (unigrams, bigrams, and trigrams, with phrase detection applied during pre-processing so that co-occurring tokens such as "exchange rate" are treated as a single unit). We then expand each seed by taking

its top-*k* cosine-similarity neighbors in embedding space, iterating two rounds so that second-order neighbors are also included. Because the same n-gram can be a near-neighbor of seeds in more than one dimension, we impose a deduplication rule: any non-seed expansion that appears in multiple dimensions is assigned to the dimension in which it has the highest cosine similarity; seed terms are kept in their own dimension even when they also appear as expansions in other dimensions. After deduplication, the final dictionary contains 1,066 unique n-grams (unigrams, bigrams, and trigrams combined). The expansion substantially increases coverage relative to the raw seed list: seeds alone would cover fewer than one percent of transcripts, while the expanded dictionary fires at least once in more than 80 percent of transcripts. Appendix Table A1 lists the top-three n-grams by cosine similarity for each seed, showing that the expansion recovers phrases managers use, including colloquialisms such as "greenback" and institutional terminology such as "trade-weighted dollar."

We report in Table I the seed phrases (Panel A) and the top 20 expanded-dictionary terms per dimension under two complementary rankings (Panels B and C). Terms are pooled across unigrams, bigrams, and trigrams and ranked within each dimension; Panels B and C are organized as four dimension-level sub-panels (Level, Volatility, Appreciation, Depreciation), each displaying 20 terms in a wide two-group layout (ranks 1-10 and 11-20 side by side). Panel B sorts each dimension's terms by Word2Vec cosine similarity to the dimension's seed phrases; Panel C sorts by each term's TF-IDF percent contribution to the dimension's aggregate score—that is, which terms drive the score rather than which are most semantically related. High-similarity terms capture face validity (the dictionary recovers seed-relevant language); high-TF-IDF terms capture empirical impact (the terms that firms use in earnings calls).

The similarity ranking in Panel B is economically coherent. For dollar level, the top n-grams are "dollar rate", "dollar currency", "exchange rate", and "fx rate"—direct references to the spot rate. For dollar appreciation, the top n-grams are "dollar appreciation", "dollar strength", "dollar strengthening", and "usd strength"; the dollar-depreciation top n-grams are the mirror pairs "dollar depreciation", "dollar weakening", "dollar weakness", and "dollar devaluation". For dollar volatility the expansion recovers "dollar movement", "dollar fluctuation", "dollar volatility", and "dollar swing". Country-currency unigrams (euro, peso, ruble, rupee, krona, hryvnia) appear consistently across dimensions, reflecting the global scope of currency discussion.

The TF-IDF ranking in Panel C reveals which terms carry the scoring weight in the corpus. For dollar level, the unigrams "dollar" and "currency" together account for roughly half the dimension's aggregate score, with "exchange rate" adding about a tenth and "dollar term", "spot rate", and "fx rate" each a further one to two percent. For dollar volatility, "currency exposure" and "fx exposure" together contribute close to half of the dimension's score, underscoring that managers most often discuss volatility in explicit exposure language rather than in the volatility-specific vocabulary that dominates the similarity ranking. For dollar appreciation and depreciation, "foreign exchange", "foreign currency", "currency impact", and related exposure terms again dominate TF-IDF contribution. The two rankings together show that the dictionary captures both the seeds managers rarely speak in isolation (dollar-direction terms) and the exposure language they use to discuss those movements.

To illustrate the kind of language DoEx captures and to demonstrate that currency exposure does not scale mechanically with the foreign-sales ratio, we reproduce two representative Q&A exchanges from earnings calls ranked among the highest-DoEx events in our sample. The first is from a textbook multinational with near-universal foreign revenue (Philip Morris International, foreign-sales ratio close to one); the second is from a US-only-revenue branded-food manufacturer whose currency exposure flows entirely through the cost side (B&G Foods, foreign-sales ratio of zero by Compustat geographic-segment disclosure).

Excerpt 1—Philip Morris International, third-quarter 2014 results call (October 16, 2014), Q&A. The exchange falls at the start of the 2014–2015 dollar surge, in which the U.S. dollar index appreciated roughly twenty percent over twelve months. The CFO discusses yen-hedge mechanics and the magnitude of the FX headwind to 2015 EPS:

> Analyst (Judy Hong, Goldman Sachs): *"So first, just maybe on FX. And obviously, the currency market continues to be very volatile, and if we just assume maybe prevailing rates, just trying to gauge the impact on 2015, really, and I get to a number something like a negative $0.35 or so. So can you just confirm that, that's kind of in the ballpark of where you see the impact in 2015 at current rates, especially when you take into consideration the effect of hedged rates on the yen?"*
>
> CFO (Jacek Olczak): *"...If you look what is happening in the currency market over the last 24 hours, 48 hours, a week, it's extremely a volatile market. ... Yes,*

there was a bit of the impact of yen. The effective rate will be higher than 98. In the revised guidance for the currency at the spot rate, which we gave today …"

Excerpt 2—B&G Foods, Inc., third-quarter 2024 results call (November 4, 2024), Q&A. B&G Foods is a US-incorporated branded-food manufacturer (Green Giant, Cream of Wheat, Ortega) whose Compustat geographic-segment disclosure shows only a United States segment: foreign-sales ratio is zero. Yet a substantial share of its frozen-vegetable manufacturing for the Green Giant line is located in Mexico, exposing the firm to U.S.-dollar-versus-Mexican-peso movements on the cost side. The CFO is asked about the foreign-currency impact in the quarter and explicitly distinguishes the transaction channel from the translation channel:

CFO (Bruce Wacha): *"So part one on the foreign currency. This is really exchange rate between U.S. dollar and Mexican peso. … We lapped a period where the Mexican peso was pretty strong relative to where it's been in the past and certainly stronger this year, relative to where it was last year. That impacts really our core frozen business for Green Giant. It's those products that are manufactured out there. And that's a transaction, that's not translation. And so that compressed margins and that impacted EBITDA."*

The two excerpts illustrate the symmetric failure modes of the textbook foreign-sales ratio. Philip Morris is the textbook high-FSR multinational where currency exposure flows through the translation channel: the analyst opens with a quantitative $0.35-per-share FX-headwind estimate and the CFO discusses yen-hedge mechanics at the spot rate. B&G Foods, by contrast, is a US-only-revenue firm whose foreign-sales ratio is exactly zero—yet its CFO discusses the U.S.-dollar-versus-Mexican-peso exchange rate intricately, because the firm's frozen-vegetable manufacturing footprint is in Mexico, and the resulting margin compression is, as he carefully notes, 'a transaction, not a translation.' A foreign-sales-ratio reading would register sharply different exposures across the two firms; DoEx records the operational specificity each CFO actually uses to describe how the firm transmits dollar movements through its operations, regardless of where the firm sits on the foreign-sales spectrum and whether the channel is revenue-side translation or cost-side transaction.

Insert Table I about here

Table II lists the highest-scoring firms in our corpus across the four DoEx dimensions by historical mean DoEx, providing additional examples beyond the two snippets above. The list

contains a heterogeneous mix of firms—large multinationals with translation exposure, U.S.-headquartered manufacturers with foreign cost bases, and import-reliant retailers—consistent with DoEx capturing exposure through multiple operational channels rather than a single geographic-footprint dimension. We report in Appendix Table A.I the analogous ranking under a stricter eligibility filter—firms observed in at least 12 of the 18 sample years—isolating those whose attention to the currency environment is persistently high rather than episodic.

Insert Table II about here

II.D. Scoring Methodology

A raw count of dictionary terms would reward firms that simply talk more and would let boilerplate phrases common to every call drown out the words that actually signal currency exposure. Our scoring rule is designed to avoid both problems. For each transcript i and each dimension d, we compute a TF-IDF score by aggregating the normalized term frequency of dictionary n-grams times a section-specific inverse document frequency, computed separately within the presentation and Q&A sections rather than corpus-wide. Section-specific IDF is important because common filler phrases differ across the two sections. The resulting firm-quarter score $DoEx_{i,q}^{d}$ is winsorized at the 1st and 99th percentiles and then transformed as $ln(1 + DoEx)$ for use in regressions. For cross-dimension graphs we instead use the standardized score $DoEx/\hat{\sigma}$, where $\hat{\sigma}$ is the overall sample standard deviation. After merging to Compustat annual and quarterly panels, the final regression panel covers the full universe of U.S.-listed firms with conference-call coverage—roughly 52,454 firm-years drawn from 6,348 unique GVKEYs, reconciling with the 8,294 raw-corpus firm count (Section II.A) as the subset surviving Compustat filters and non-missing data requirements. Financials (SIC 6000–6999) and utilities (SIC 4900–4999) are retained throughout the descriptive and regression analyses; the only place we exclude these two industries is the supply-chain validation regressions in Section III, where FactSet Revere's customer/supplier concepts do not map cleanly onto financial-firm or utility-firm relationships.

We report in Table III summary statistics of DoEx and the main regression variables. The aggregate DoEx score averages 3.96 (SD 7.05) across 40,559 firm-years; the 'dollar level' and 'dollar appreciation' dimensions account for most firm-years with nonzero scores (means 2.34 and 1.36 respectively), while 'dollar volatility' and 'dollar depreciation' are more sparsely

discussed (means 0.04 and 0.15). The five firm-level controls used throughout—log total assets, leverage, cash-to-lagged-assets, log (1+firm age), and Tobin's Q—align with a standard Compustat ex-financials-and-utilities sample. The foreign-sales ratio has a mean of 27.6% and median of 20.9%, reflecting substantial cross-firm heterogeneity in foreign exposure. Upstream and downstream domesticity—the equal-weighted U.S. share of the focal firm's identified supplier and customer networks in FactSet Revere—average 43% and 46% respectively, with substantial cross-firm dispersion (SD around 0.41 on each), that motivates the supply-chain and customer-network results in Section III.D.

Insert Table III about here

Appendix Table A.II reports definitions of every variable used throughout the paper, with Compustat field codes where applicable, sample-period coverage, and the regression specifications in which each variable appears.

Insert Table A.II about here

Several features of DoEx as a text-based construct are worth noting at this point. The score is observed at firm-quarter frequency for the universe of conference-call covered firms, without dependence on how a firm reports geographic segments or whether it discloses derivative positions. It is contemporaneous with the call, and its forward-looking content—guidance, hedge adjustments, supply-chain reroutes, pricing actions—enters the score in the quarter the language is voiced. It is also channel-agnostic: dollar concerns that originate in foreign sales, imported inputs, dollar-priced commodities, dollar-denominated financing, or foreign-priced competition all enter the same score, whereas each conventional proxy isolates only one of these channels. The hedging response is a separate object, observable through Item 305 derivative-position disclosures, which we use as an external validation against revealed hedging behavior rather than as a substitute for DoEx itself. We provide formal definitions of every variable used throughout the empirical sections in Table A.II of the appendix.

III. The DoEx Measure: Patterns, Validation, and Comparison

III.A. Aggregate Patterns and Dispersion

If DoEx is a meaningful measure of firm-level attention to the currency environment, it should behave in particular ways: the aggregate path should track major dollar episodes, the cross-section should reflect the textbook drivers of currency exposure, and the firms that pay

more attention should be the firms that take more action against the risk. Section III establishes that DoEx behaves on each of these margins. We begin with the aggregate moments—how the cross-sectional mean and the cross-sectional dispersion of DoEx co-move with major dollar episodes.

We plot in Figure I the cross-sectional mean of DoEx across all four dimensions over the 2007–2024 sample, with vertical bands marking three FX-relevant episodes: the Global Financial Crisis (2008Q3–2009Q2), the dollar surge during the first post-GFC Fed rate-hike period (2014Q3–2015Q4), and the Fed hike cycle (2021Q4–2023Q1). The aggregate series is dominated by the level dimension and spikes most sharply during the 2014–2015 dollar surge, when the level, appreciation, and volatility dimensions peak together, with a secondary rise during the 2008–2009 Global Financial Crisis. The appreciation dimension also rises during the 2021–2023 Fed-hike cycle, while the depreciation dimension remains much smaller and more episodic. The volatility dimension is plotted on the right axis because its raw mean is much smaller than the other four dimensions.

Insert Figure I about here

The aggregate path masks substantial cross-firm heterogeneity. Panel A of Figure II plots the cross-sectional mean of DoEx alongside the cross-sectional standard deviation of the residual DoEx (net of industry and time fixed effects): the two series move together tightly, so that years in which the average firm pays more attention to the currency environment are also years in which the gap between high- and low-attention firms widens. Both series, in turn, track the forward-looking implied volatility of the dollar—the volatility market participants expect over the coming three months—so DoEx dispersion rises when currency uncertainty is priced as high, not merely after the dollar has already moved. Advanced-foreign-economies dollar shocks thus do not pull every firm uniformly; they reallocate attention across firms and amplify cross-sectional heterogeneity in exposure. Panel B plots the pooled distribution of the same residual DoEx: it is strongly right-skewed with a fat right tail, and this purely firm-level variation is large relative to the full panel—consistent with the variance decomposition in Table IV, where within-industry-year differences across firms account for roughly 73 percent of the variation in DoEx.

Insert Figure II about here

We further break down the time-series in Figure III, which plots cross-sectional mean DoEx by Fama-French 12 industry over 2007–2024. The industry-level paths reveal two patterns

the aggregate series averages over: first, the largest dollar-attention episodes are not uniform across sectors—Chemicals, Consumer Durables, Manufacturing, and Consumer Non-Durables load most heavily during the 2014–2015 dollar surge, while Energy and Utilities barely respond; second, the cross-industry ordering shifts over time, ruling out a static industry-fixed-effect interpretation of currency exposure. The industry-level heterogeneity motivates the industry-and-year fixed-effects specifications used throughout the rest of the paper.

Insert Figure III about here

III.B. Variance Decomposition

For DoEx to add firm-level information rather than relabel an industry or macroeconomic indicator, most of its variation must live across firms within the same industry and year. We decompose in Table IV the variance of log DoEx (all dimensions) into incremental shares explained by progressively richer fixed effects. Year fixed effects alone explain 5.17 percent of the yearly variance. Adding 3-digit industry fixed effects raises the cumulative R-squared by a further 15.46 percentage points; replacing the two main effects with industry-by-year fixed effects raises it by an additional 6.78 percentage points. The residual 72.58 percent is firm-level variation—within-industry-year, across firms and over time—which is the variation DoEx is designed to capture. Panel B further decomposes this firm-level residual: 61.09 percent is permanent across-firm heterogeneity (absorbed by firm fixed effects) and 38.91 percent is within-firm, over-time variation. The volatility dimension is the exception: only 17.18 percent of its firm-level variation is permanent, consistent with volatility exposure being more aggregate and less firm-specific than directional exposure.

Insert Table IV about here

Throughout the empirical applications in Sections III and IV we use year and SIC3 fixed effects as the default specification. Firm fixed effects absorb the cross-firm dispersion in DoEx—precisely the variation Panel B documents the measure is designed to capture—so using firm fixed effects as the default would discard the heterogeneity the measure is built to detect. We report firm-FE robustness in Appendix A.

We document the cross-industry distribution of mean DoEx in Table V, mapping firms to Fama-French 12 sectors via SIC codes. The table includes all 12 FF12 industries, including Money/Finance and Utilities, so that the cross-industry pattern of attention to the currency

environment is visible across the full corpus; we exclude these two industries only in the supply-chain regressions of Section III, where the FactSet Revere supplier and customer concepts do not map cleanly onto financial-firm or utility-firm relationships. Finance, Business Equipment, and Healthcare account for the largest shares of firm-years, and the cross-industry breadth ensures that the DoEx measure draws from firms with heterogeneous exposure to currency fluctuations on both the cost and revenue sides.

Insert Table V about here

III.C. Cross-Firm Drivers

What kind of firm pays the most attention to the currency environment? We address this in Table VI by regressing log DoEx on lagged firm characteristics. Columns (1)–(3) report the foreign-sales-ratio univariate specification under progressively tighter fixed effects, and Columns (4)–(6) add book leverage, cash-to-lagged-assets, log total assets, log(1 + firm age), and Tobin's Q. Standard errors are two-way clustered at the SIC3-by-year level. In the fully controlled year-plus-SIC3 specification (Column 6), a one-percentage-point increase in the foreign-sales ratio is associated with a 1.1-percent increase in DoEx and a one-log-unit increase in total assets with a 17-percent increase. Cash holdings load negatively (a one-percentage-point increase corresponds to a 0.45-percent decrease in DoEx), Tobin's Q loads positively and strongly (a one-unit increase maps to a 4.1-percent higher DoEx), firm age loads positively but modestly, and leverage is statistically insignificant once size, valuation, and industry-year composition are absorbed. Overall, the cross-sectional variation in DoEx tracks the textbook drivers of currency exposure, with size and foreign sales the strongest predictors.

The high-DoEx firm profile is therefore large, foreign-sales-heavy, cash-lean, and higher-valued (higher Tobin's Q). The foreign-sales-ratio loading is the convergent-validity check the measure should pass, and it passes cleanly: holding firm size and industry-year composition fixed, firms with more foreign sales pay more attention to the currency environment. The remaining loadings extend the profile beyond the textbook benchmark—DoEx responds to firm characteristics the foreign-sales ratio does not capture. Currency exposure, by this reading, is a margin that complements rather than substitutes for the geographic-footprint variation the textbook proxy isolates.

Insert Table VI about here

III.D. Validation Against Real International Footprints

A direct test of whether DoEx captures genuine currency exposure is whether it rises with a firm's actual international footprint—the real operations through which dollar movements reach the firm. We assemble two footprint measures built entirely outside the earnings-call text and ask whether firms with larger footprints score higher on DoEx, as we report in Table VII. The first is the offshore activity disclosed in 10-Ks following Hoberg and Moon (2019)—the breadth of foreign nations a firm names as offshore-output (selling) and offshore-input (sourcing) locations, together with the abnormal-offshore-input and offshore-|Wedge| refinements. The second is the internationalization of the firm's actual counterparties from FactSet Revere—the share of suppliers and of customers headquartered outside the United States, and the supplier-versus-customer |Wedge|. Each column regresses standardized DoEx on one footprint proxy, with year and SIC3 fixed effects. DoEx loads positively and significantly on every footprint measure: firms that offshore more output and input, and firms whose supplier and customer networks reach further outside the United States, devote measurably more attention to the currency environment. Because these proxies are constructed from regulatory filings and supply-chain records rather than from the call transcripts, the relation is external corroboration that DoEx tracks the operational exposure firms actually carry.

Insert Table VII about here

III.E. Aggregate FX Drivers

If DoEx captures genuine attention to the currency environment, it should rise when that environment actually turns—when the dollar moves and when uncertainty about its path climbs. We use the Federal Reserve's advanced foreign economies dollar index (DTWEXAFEGS) as the headline FX shock series because it weights dollar movements against the U.S.'s major developed-market trading partners—most relevant for the publicly-listed firms in our Compustat–Refinitiv intersection, the bulk of whose foreign exposure runs through trade and balance-sheet positions in advanced economies. We regress in Table VIII log DoEx on three lagged aggregate FX-related conditions—the change in the dollar index, its implied volatility, and the 6-month T-bill rate. Columns (1) and (3) report specifications without firm controls and with and without SIC3 fixed effects; Columns (2) and (4) add the lagged firm controls. Time

fixed effects are intentionally omitted because the regressors are pure time series and would be absorbed by year dummies. Aggregate dollar conditions are economically modest but statistically robust: in the specification with controls and industry fixed effects (Column 4), a one-percentage-point increase in the U.S. dollar index is associated with a 0.92-percent increase in DoEx, a one-percentage-point increase in the dollar's implied volatility with a 2.7-percent increase, and a 100-basis-point increase in the 6-month T-bill rate with a 3.8-percent decrease. Across specifications, the dollar-change and implied-volatility coefficients remain positive and statistically significant, while the T-bill coefficient is negative and significant. The implied-volatility loading is substantially larger than the dollar-change loading, consistent with managers being more sensitive to uncertainty about the dollar than to direction alone.

Insert Table VIII about here

III.F. Validation Through Hedging Behavior

A measure of currency exposure built from what managers say should line up with what their firms do. If DoEx captures a genuine exposure rather than incidental dollar talk, firms that score high on it should take costly, observable steps to manage it—and we find they do, on both the financial-hedging and the debt-financing margins, as we report in Table IX. On the financial-hedging margin (Panel A), high-DoEx firms disclose substantially more FX-derivative use: the loading on Ln(1+DoEx) is positive and strongly significant for both the 10-K FX-derivative mention rate and the log count of mentions. On the financing margin (Panel B), high-DoEx firms tilt their debt issuance toward foreign currencies—a higher probability of issuing a non-USD-denominated bond, a larger non-USD share of issuance, and more non-USD issues. The share result is the most demanding of the three: because it conditions on firms that issue at all, it isolates the currency *composition* of issuance and so cannot be driven by high-DoEx firms simply borrowing more—within issuers, dollar-attentive firms shift the mix away from USD and toward non-USD bonds. A USD-issuance placebo supports the point from the other side: DoEx does not predict whether a firm issues a USD-denominated bond, so the association is specific to the currency denomination of financing rather than to issuance itself. Taken together with the operational footprint in Table VII, these hedging responses corroborate that DoEx tracks the exposure firms actually bear, not merely the attention they pay to it.

Insert Table IX about here

III.G. Incremental Content Relative to Existing Currency-Exposure Measures

The preceding subsections established that DoEx co-moves with firms' real currency footprints—the foreign-sales ratio and the offshore and supply-chain |Wedge| measures all load on it. A complementary question is whether DoEx merely relabels those footprints or carries information they miss, and how it compares to the market-based proxy that dominates the asset-pricing literature: the return-based FX beta, the loading on the U.S. Dollar Index from a rolling thirty-six-month Fama–French three-factor-plus-FX model of monthly stock returns. We place DoEx alongside four existing measures—the foreign-sales ratio (FSR), the offshore |Wedge| built from machine-read 10-Ks in the manner of Hoberg and Moon (2017, 2019), the supply-chain |Wedge| from FactSet Revere, and the FX beta—and ask, in Figures IV and V and Table X, whether each ranks firms and time periods the way DoEx does.[8]

Figure IV plots the cross-firm mean of each measure, standardized to mean zero and unit variance so the four series share a common scale. Standardization removes differences in amplitude, so the comparison is purely about timing—whether a measure's aggregate path rises and falls with the dollar. This is a different question from the firm-level correlations of the preceding subsections: a proxy can rank firms much as DoEx does in the cross-section, as FSR and the offshore |Wedge| do, and still have an aggregate path over time that does not move with the dollar. DoEx's standardized mean peaks on the dollar episodes themselves—the Global Financial Crisis, the 2014–2015 surge, and Brexit—and bottoms out in the non-currency 2020 risk-off. The other measures peak at other times. FSR rises after the crisis to a high around 2011 and then drifts down, with no rise at the 2014–2015 surge, because its aggregate path is driven by slow changes in the geographic composition of revenue rather than by the dollar. The |FX beta| peaks later still, in 2020–2022, the reverse of DoEx, because the beta is a backward-looking average: each month's value is estimated from the prior thirty-six months of returns, so it registers a change in the currency environment only with a long lag and cannot separate currency exposure from any other factor that moves with the dollar over the window. Two episodes make the point. The |FX beta| stays low through the 2014–2015 surge—a false negative—because its three-year window is still dominated by the calm dollar of the preceding years, and it catches up

[8] In the figures, which compare the *size* of each exposure, we use the magnitude of the beta, |FX beta|, since an exporter's negative loading and an importer's positive loading represent equal exposure; in Table X we report the signed beta, whose sign is itself informative.

only as surge-period months enter the average. It then climbs in 2020–2022—a false positive—because the COVID risk-off made the dollar and equity returns move together with the same global risk factor, which a rolling regression cannot distinguish from firm-level currency exposure.

Panel B repeats the exercise with the two footprint |Wedge| measures, standardized the same way, and neither rises with the dollar episodes: the offshore |Wedge| drifts gently to a peak around 2013 and then declines (its data end in 2017), while the supply-chain |Wedge| climbs steadily across the whole sample, tracing the gradual internationalization of supplier and customer networks rather than any dollar event. Of these paths, DoEx is the only one that rises during the dollar episodes and subsides between them.

Insert Figure IV about here

Figure V turns to Fama–French twelve-industry means, where the measures rank industries differently precisely because each captures a different slice of currency exposure. FSR is highest for Chemicals, Business Equipment, and Manufacturing—the sectors with the largest foreign-sales footprints—because it sees only the revenue side. DoEx agrees on Chemicals but places Consumer Non-Durables well above its foreign-sales rank, reflecting exposure through imported inputs, dollar-priced commodities, and foreign competitors that a revenue-based proxy misses. Conversely, it places Business Equipment well below its FSR rank, suggesting that a large foreign-sales share can overstate currency risk when revenues are invoiced in dollars or naturally hedged by local costs. The starkest disagreement is Energy, which ranks near the bottom on DoEx yet carries the highest |FX beta|. That high beta likely reflects the co-movement of energy returns with the broader dollar–commodity complex rather than pure exchange-rate exposure, implying that return-based measures can overstate currency risk when other macro factors move with the dollar.

Panel B compares DoEx with the two footprint-based |Wedge| measures across industries. While both footprint measures broadly track the DoEx ordering—Chemicals, Manufacturing, and Consumer Non-Durables rank relatively high, while Utilities remain low—important differences remain. For example, Energy ranks near the top under the supply-chain |Wedge| but near the bottom under DoEx, whereas Consumer Non-Durables rank substantially higher on DoEx than their footprint measures would suggest. These gaps indicate that firms with

similar international production and supply-chain structures can nonetheless face very different currency risks depending on how those activities are financed, sourced, priced, or hedged.

Insert Figure V about here

The pairwise correlations in Table X, Panel A, quantify the patterns visible in Figures IV and V. DoEx is positively related to both the foreign-sales ratio and the footprint-based measures, with pooled correlations of 0.405 with FSR and similarly positive correlations with the offshore and supply-chain |Wedge| measures. The correlations remain economically meaningful after absorbing industry and year effects, confirming that firms with larger international footprints tend to discuss currency exposure more frequently. Yet none of the correlations is close to one, indicating that firms with similar foreign-sales, offshore-production, or supply-chain footprints can nonetheless differ substantially in the currency exposure managers perceive and discuss. By contrast, the FX beta is only weakly related to DoEx (−0.039 pooled; −0.017 within industry-year). The negative sign is consistent with many high-DoEx firms being exporters whose stock returns fall when the dollar appreciates, but the near-zero magnitude suggests that the rolling-window estimator loads heavily on confounding macro factors (such as the COVID-induced shock) that co-move with the dollar rather than on the underlying firm-level exposure that DoEx is designed to capture.

We then regress standardized DoEx on the standardized exposure proxies—the foreign-sales ratio, the return-based FX beta, and the two footprint |Wedge| measures—with SIC3 and year fixed effects. Entered individually and jointly, the proxies explain less than half of the within-industry-year variation in DoEx, leaving roughly 54 percent unexplained in the full specification. In the joint regression, DoEx loads positively on both the foreign-sales ratio and the offshore |Wedge| measure, while the FX-beta coefficient is small and statistically insignificant. The results imply that DoEx shares information with existing footprint-based measures, as it should if it captures genuine international exposure, but also contains substantial incremental variation beyond what can be inferred from foreign revenues, offshore activities, supply-chain geography, or realized stock-return sensitivities alone. The results imply that DoEx overlaps meaningfully with alternative measures of currency exposure, yet contains substantial incremental variation beyond what can be inferred from foreign revenues, international operating footprints, supply-chain geography, and realized stock-return sensitivities alone.

Insert Table X about here

We complement the industry-level evidence with a geographic comparison in the appendix. Appendix Figures A.I and A.II show that the states with the highest DoEx are not always the states with the highest foreign-sales ratios. The geographic wedge mirrors the industry-level results: foreign-sales measures concentrate in locations with the largest foreign-revenue footprints, whereas DoEx also highlights regions with substantial importer-side and supply-chain exposure. Together, the evidence suggests that DoEx captures a broader dimension of currency exposure than can be recovered from geographic footprints alone.

Overall, the foreign-sales ratio, the footprint |Wedge| measures, and the FX beta capture foreign revenues, international operating footprints, and return sensitivities, respectively. Each is informative but inherently partial. DoEx instead records the currency exposure managers themselves identify and discuss, making it a *complementary*, *forward-looking*, and *channel-agnostic* measure of currency exposure.

IV. Currency Exposure Is a Priced Risk

Sections II and III show that DoEx is a valid and incremental measure of currency exposure. The remaining question is whether that exposure is priced in equity markets—that is, whether investors require compensation for holding firms that DoEx identifies as currency-sensitive. This question matters for how the measure should be interpreted and used: a measure that only correlates with foreign operations adds little beyond standard proxies, whereas a measure that identifies in advance which firms underperform when the dollar strengthens is directly informative about asset pricing and risk management. We therefore turn to return-based tests. If DoEx captures a genuine and recognized exposure, firms with higher DoEx should perform worse when the dollar appreciates and better when it depreciates, with the effect strongest when dollar movements are driven by shocks outside any single firm's control.

IV.A. Conditional Returns: DoEx × ΔUSD Double Sort

The natural first test of pricing is a portfolio sort: rank firms on DoEx, form a long-short, and ask how its return depends on the dollar's direction. We begin with a conditional double sort. Each month we partition firms into size buckets, and within each size bucket we rank the firms with strictly positive DoEx into quartiles, setting them against the large group of firms that record no attention to the currency environment at all—a DoEx of exactly zero. We value-weight

within each size–DoEx cell and equal-weight across size bins, so the resulting high-minus-zero long-short is neutral to the size premium, and we cross this firm-level sort with a time-series partition of months into quintiles of the contemporaneous change in the advanced-economies dollar index (ΔUSD), from the months in which the dollar falls most (Q1) to those in which it rises most (Q5).

The high-minus-zero long-short flips sign with the dollar's direction, as we report in Table XI, Panel A. It earns +0.62% per month in the months when the dollar falls (ΔUSD Q1) and −0.34% per month in the months when it rises (ΔUSD Q5), a double-difference of −0.96% per month across the two extreme dollar regimes. High-attention firms thus behave like a claim that pays off when the dollar weakens and loses when the dollar strengthens—the return signature of a real currency exposure, and a pattern that mirrors the operational footprint we document in Section III.D.

We ask whether this conditional pattern survives risk adjustment in Panel B, where we replace each portfolio's raw return with its out-of-sample five-factor abnormal return—the return net of the part explained by Fama–French five-factor betas estimated on a rolling thirty-six-month window ending the month before, so the risk adjustment uses only information available ex ante. The conditional spread survives. The high-minus-zero long-short earns no abnormal return on average—DoEx is not an unconditional anomaly—yet its risk-adjusted return is significantly positive when the dollar falls (+0.36% per month) and significantly negative when it rises (−0.31% per month), a risk-adjusted double-difference of −0.67% per month across the two extreme dollar regimes. Because the factor loadings are estimated out of sample rather than over the same months whose returns they explain, the five factors do not span the dollar-conditional component of the long-short. We therefore read the spread as a conditional, risk-adjusted return rather than a stand-alone unconditional alpha, and the high-frequency FOMC evidence in Section IV.B, where the dollar shock is cleanly identified, points the same way.

We read these patterns as evidence that DoEx captures a priced dimension of currency exposure rather than a tradeable anomaly. The premium is state-dependent: it is realized in the dollar regime in which currency-exposed firms are most at risk, consistent with the view that managers' attention to the currency environment reveals an exposure that investors also recognize and price. This is the signature of a conditional risk premium rather than a mispricing: the long-short pays nothing on average—the factor models span it unconditionally—yet it loads

negatively on dollar appreciation, the state in which currency-exposed cash flows are squeezed. In the language of the currency-risk-premium literature (Lustig, Roussanov, and Verdelhan, 2011; Verdelhan, 2018), DoEx sorts firms on the conditional exposure of their equity to the dollar, and that exposure surfaces as underperformance in the bad state for exposed firms—economically sizable and statistically significant even after out-of-sample factor adjustment. The practical implication is that the disclosure itself is forward-looking information: an investor reading earnings calls can identify, before the dollar moves, the firms whose returns will swing with it—the same firms whose return-based betas are too noisy to flag in advance (Section III.G). DoEx therefore supplies an ex-ante, disclosure-based signal of which firms carry currency exposure, information that supports hedging and portfolio decisions even though the exposure is a priced risk rather than an arbitrage opportunity.

Insert Table XI about here

IV.B. High-Frequency Evidence: FOMC Dollar Surprises

A natural objection to the conditional sort is that the realized dollar moves driving it are not exogenous: the macroeconomic forces that move the dollar over a month also move firm fundamentals, so a return spread across dollar regimes could reflect correlated shocks rather than currency exposure as such. We address this with a high-frequency event study around scheduled FOMC announcements, the identification strategy developed to isolate exogenous variation in asset prices from the monetary news revealed in a tight window around the announcement (Gürkaynak, Sack, and Swanson, 2005) and extended to exchange rates by Faust, Rogers, Wang, and Wright (2007); we follow the firm-level specification of Rodnyansky, Timmer, and Yago (2026). The logic is that of a tight-window surprise: in a narrow interval bracketing a pre-scheduled announcement, prices move almost entirely in response to the monetary news the announcement reveals, because no other material firm-relevant information is released in that window and no single firm can move the aggregate dollar. We therefore measure the dollar surprise as the change in the advanced-economies dollar index in the 30-minute window straddling each announcement—wide enough to capture the repricing, narrow enough to exclude confounding news—and treat that move as a clean, firm-exogenous dollar shock. The exercise asks a sharper version of the question behind the conditional sort: when the dollar is repriced by a force outside any firm's control, do the firms DoEx flags as currency-exposed move with it?

Around each announcement we measure the announcement-window move in the advanced-economies dollar index and trace the differential stock-price response of high-DoEx firms—those in the top two quintiles of the prior year's DoEx—relative to other firms, from the day before the announcement through the following days. We report the dynamic difference-in-differences estimates in Table XII and plot the coefficient path in Figure VI. High-DoEx firms' cumulative returns fall by significantly more than the comparison group's when the dollar appreciates around the announcement, with the gap emerging only after the announcement and widening over the subsequent days. The differential response is therefore direct evidence that DoEx identifies the firms whose equity value moves with the dollar.

Insert Table XII about here

Insert Figure VI about here

IV.C. Hedging Across Dollar Conditions

We next examine whether firms with greater currency exposure adjust their hedging behavior more strongly when dollar conditions change, and whether their responses differ between predictable and unexpected dollar movements. In Table XIII, we augment the FX-derivative and bond-issuance specifications with interactions between DoEx and two lagged measures of the dollar environment: the year-over-year change in the dollar, which captures the full realized movement and therefore combines anticipated and unanticipated components, and the dollar surprise within FOMC announcement windows, which isolates the portion of dollar movements that is plausibly unanticipated and exogenous to any individual firm. These interaction terms allow us to assess whether currency-exposed firms respond primarily to dollar movements in general, or more specifically to shocks that arrive unexpectedly.

FX-derivative use is significantly related to the FOMC surprise, both in disclosure frequency and in the number of mentions, but shows little association with the year-over-year dollar change. By contrast, non-USD bond issuance responds to both the surprise component and the full annual dollar movement, whereas the placebo outcome for USD-denominated bond issuance displays no comparable interaction. The positive and significant main effect of DoEx remains intact throughout, indicating that these interaction terms complement rather than absorb the baseline relation documented in Section III.F. This pattern is consistent with the economics of the two instruments. FX derivatives are relatively short-dated and can be adjusted at low cost

as new information arrives, making them well suited to responding to unexpected dollar movements. By contrast, currency denomination in new debt issuance is a lumpy, discrete financing choice with long-lived consequences, so it may reflect firms' broader response to realized dollar conditions as well as their efforts to rebalance after unexpected dollar shocks.

Insert Table XIII about here

V. Conclusion

We develop DoEx, a firm-quarter measure of currency exposure derived from the language managers and analysts use on earnings conference calls. The measure tracks every major dollar episode of the 2007–2024 sample, and its cross-firm dispersion widens precisely when the aggregate level rises, so that dollar shocks reallocate exposure across firms rather than tilt every firm uniformly. Firm-level heterogeneity within industry-year cells accounts for the bulk of DoEx variation—the variation a firm-level measure is built to capture. DoEx rises with the real operational footprints firms disclose outside the call—their offshore activity and the internationalization of their supplier and customer networks—and with the costly steps firms take to manage the dollar: more FX-derivative disclosure and a tilt toward non-USD-denominated borrowing.

DoEx carries substantial information that existing proxies do not recover. The foreign-sales ratio is silent on cost-side and competitive exposure and evolves only over multi-year horizons; the rolling-window FX beta lags regime shifts and loads on whatever macro factor co-moves with the dollar over the estimation window; and the footprint measures from 10-Ks and FactSet Revere capture important but still incomplete aspects of firms' international operating and supply-chain structures. A horse race that absorbs industry-by-year composition leaves roughly 54 percent of the firm-level variation in DoEx unexplained by the foreign-sales ratio, the FX beta, and the footprint proxies combined. The exposure DoEx records is priced in equity markets: high-attention firms outperform when the dollar weakens and underperform when it strengthens, and the same differential response appears sharply in a high-frequency event study around scheduled FOMC announcements, where dollar repricing is plausibly exogenous to any single firm.

Two limitations qualify the findings. First, the measure is restricted to U.S.-listed firms with conference-call transcripts, limiting generalization to private firms and to non-U.S.

domiciles. Second, the associations we document between DoEx and pricing, hedging, and supply-chain outcomes are not causal estimates: high-DoEx firms select into the situations that prompt the discussion. We interpret the empirical patterns as informative of the economic relevance of DoEx, not as evidence of causal effects.

We position DoEx as a direct, forward-looking measure of firm-level currency exposure that is priced in equity markets and that maps onto firms' financial- and operational-hedging choices—dimensions the foreign-sales ratio and the return-based FX beta leave largely invisible. We leave to future work the foreign-direct-investment margin—the establishment and scale of foreign subsidiaries—and the question of how currency exposure interacts with the geopolitical, pandemic-era, and industrial-policy drivers of cross-border integration emphasized in Antràs (2020) and Goldberg and Reed (2023). Another important direction for future research is to extend DoEx to non-U.S. firms, enabling the study of how U.S. monetary policy spills over internationally through firms' exposure to foreign currencies.

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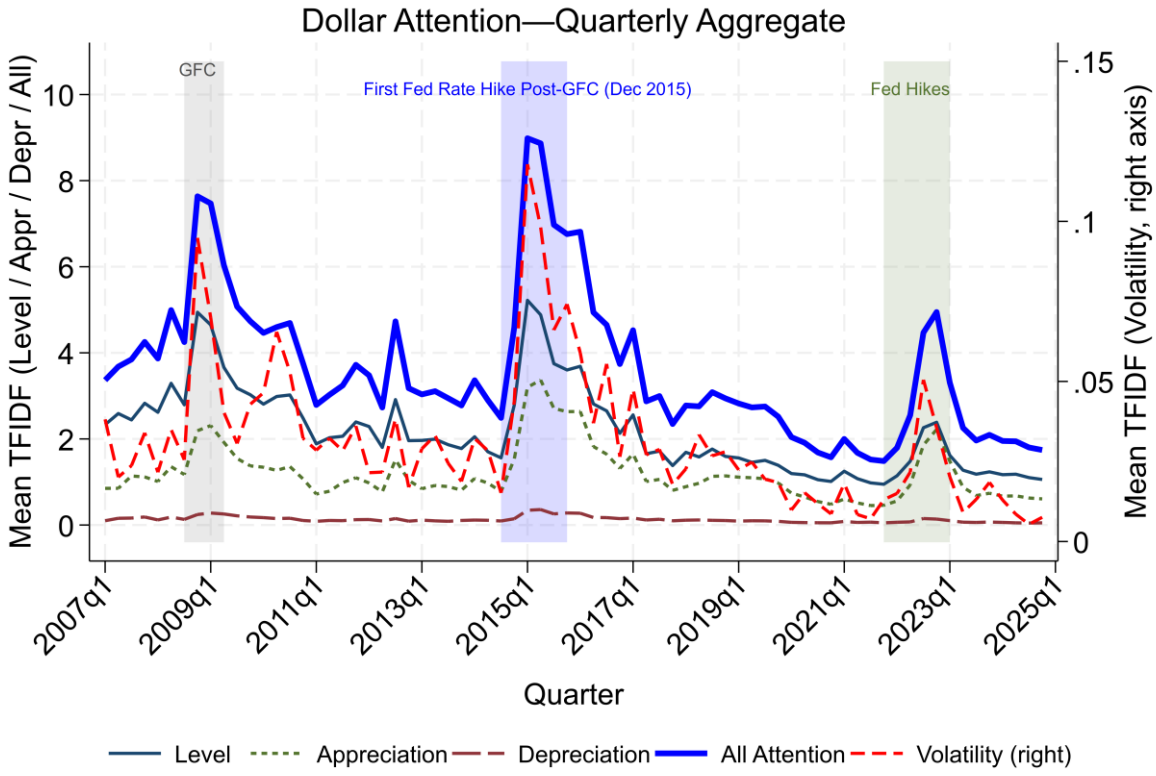
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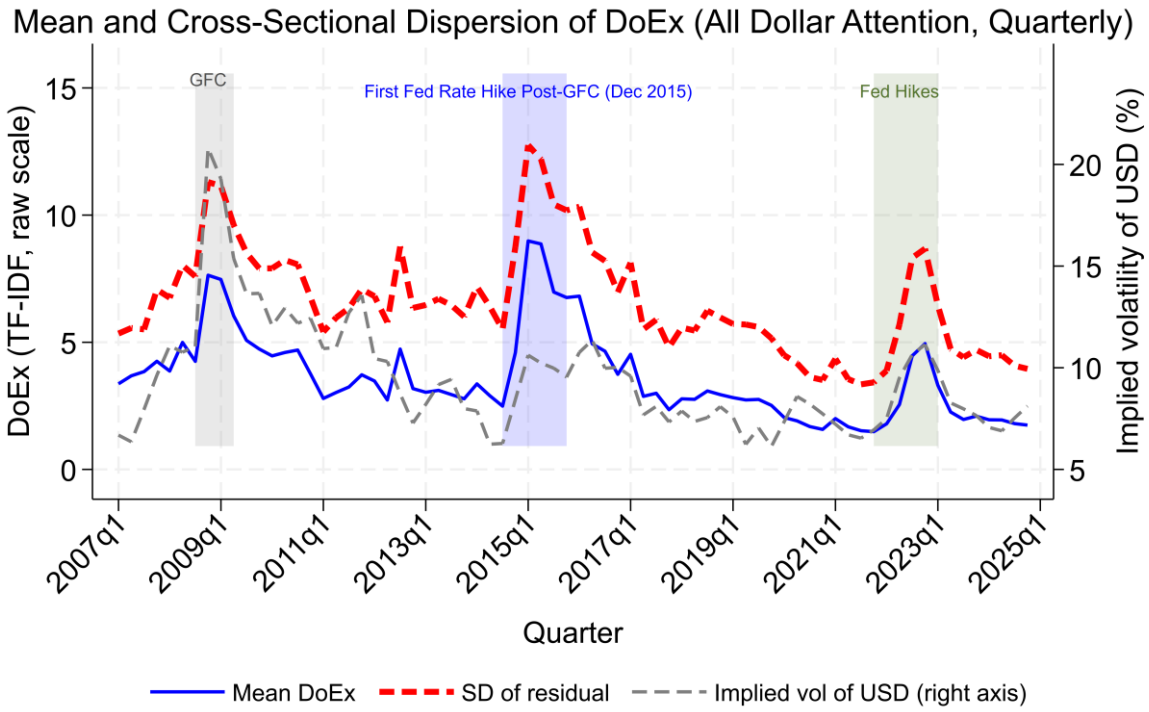
FIGURE I
AGGREGATE DOEX ATTENTION OVER TIME



Notes. Cross-sectional mean for each DoEx dimension across all U.S.-listed firms, 2007Q1–2024Q4 (quarterly). Level, Appreciation, Depreciation, and All Attention share the left axis (raw TF-IDF scale); Volatility is plotted on the right axis because its raw mean is much smaller than the other four. Shaded bands mark three episodes: GFC (2008Q3–2009Q2); First Fed Rate Hike Post-GFC (Dec 2015) / Dollar Surge (2014Q3–2015Q4); and the Fed Hike Cycle (2021Q4–2023Q1). Sample: 2007–2024; financials and utilities included.

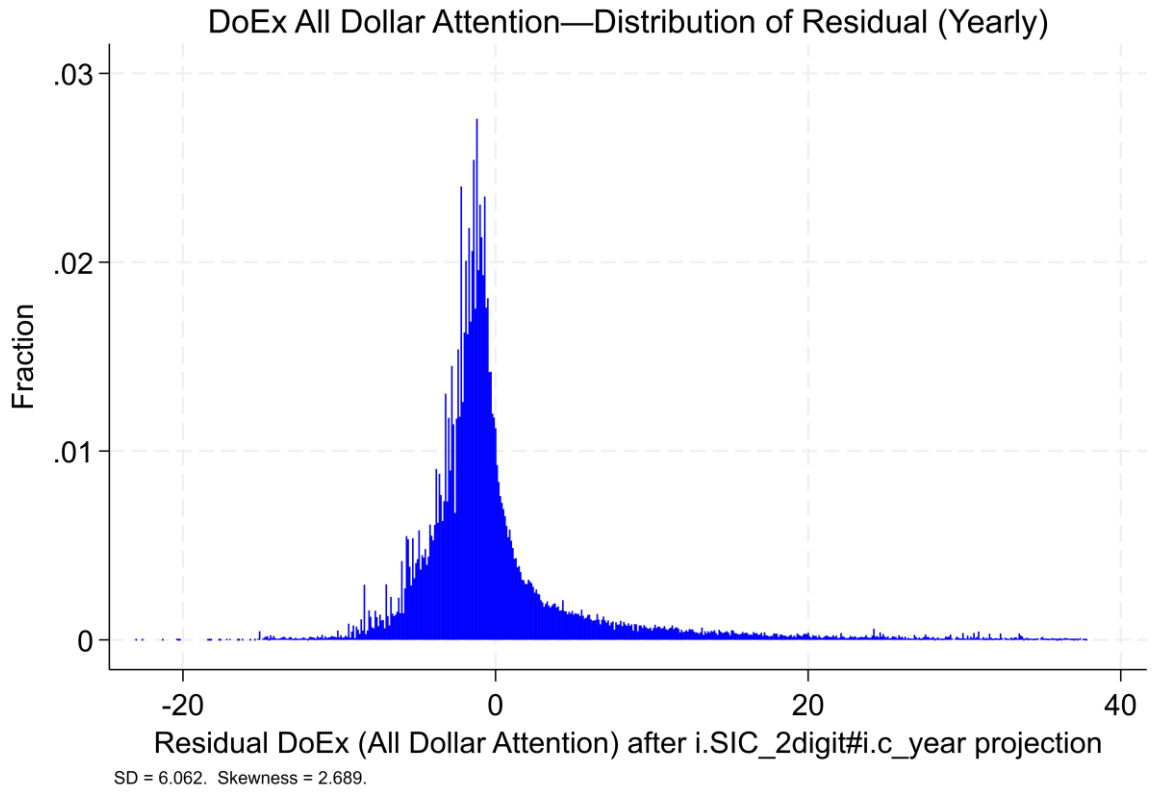
FIGURE II
CROSS-SECTIONAL DISPERSION OF DOEX AND CO-MOVEMENT WITH IMPLIED U.S. DOLLAR VOLATILITY

(A) Cross-Sectional Dispersion and Implied U.S. Dollar Volatility (Quarterly)



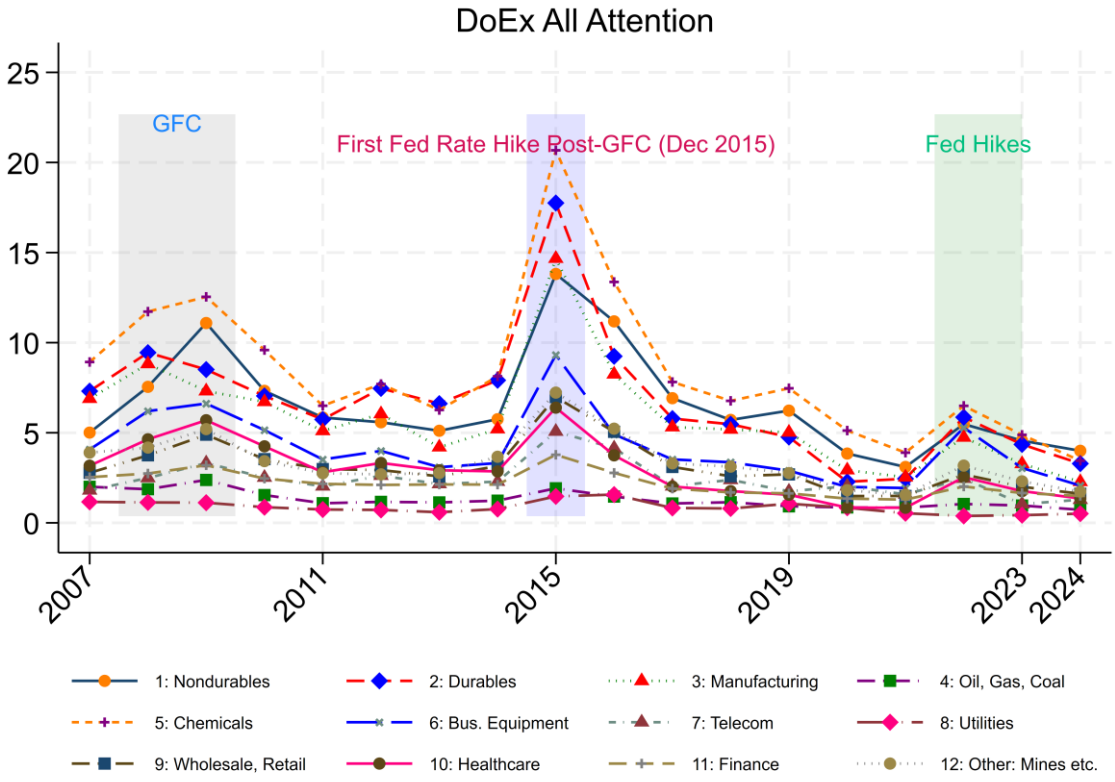
DoEx mean and dispersion on left axis (raw TF-IDF); USD implied volatility on right axis (3-month ATM, %).
Residual: projection on i.SIC_2digit#i.c_qdate (industry × quarter cells).
Cross-firm SD = 1.230 (0.032) × Mean (raw-scale regression).

(B) Distribution of the Residual DoEx



Notes. Two-panel figure for DoEx. Panel (A) plots three series: the cross-firm mean of DoEx (blue, solid) and the cross-firm standard deviation of the residual after projecting DoEx on SIC 2-digit × quarter fixed effects (red, dashed), both on the left axis (raw TF-IDF scale); and the forward-looking implied volatility of the U.S. dollar (gray, dashed) on the right axis (percent). This series is the equal-weighted average of the three-month at-the-money Bloomberg implied volatilities of six U.S.-dollar currency pairs (EUR/USD, GBP/USD, AUD/USD, USD/CAD, USD/JPY, USD/CHF), averaged within each quarter; unlike the realized within-quarter volatility of the dollar index, it reflects the dollar volatility that market participants expect over the coming three months. Shaded bands mark the three episodes highlighted in Figure I. Panel (B) shows the pooled distribution of the same residual. Sample: 2007–2024; financials and utilities included.

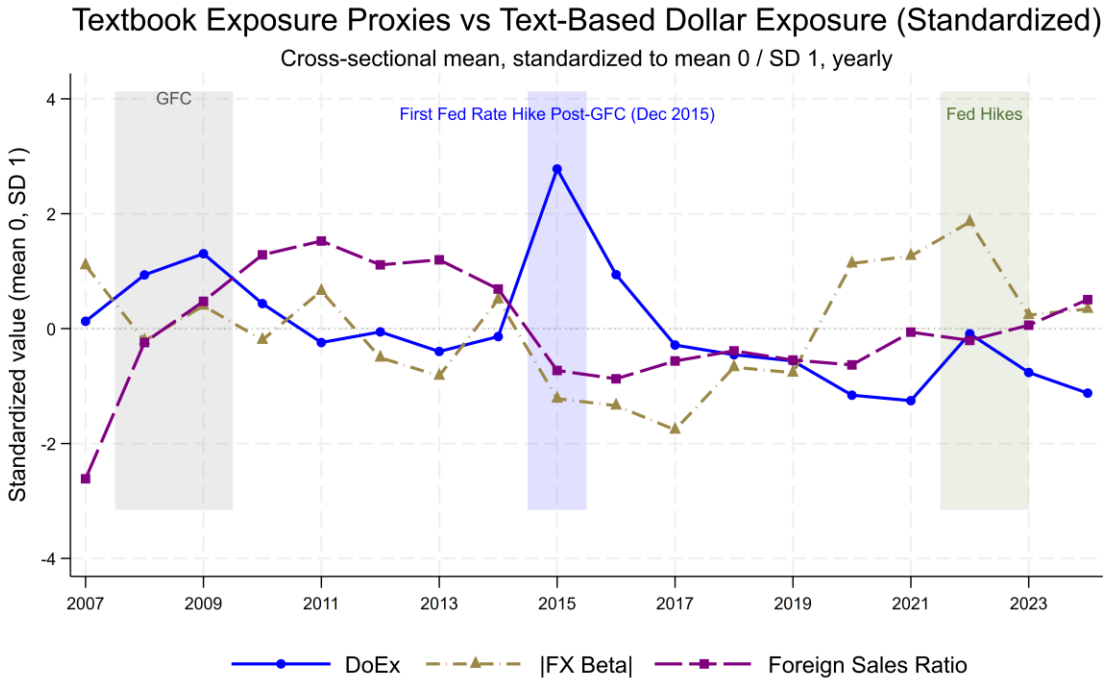
FIGURE III
DOEX ACROSS FAMA-FRENCH 12 INDUSTRIES



Notes. Cross-firm mean of DoEx (all dimensions, TF-IDF) by Fama-French 12 industry. Sample: 2007–2024; financials and utilities included.

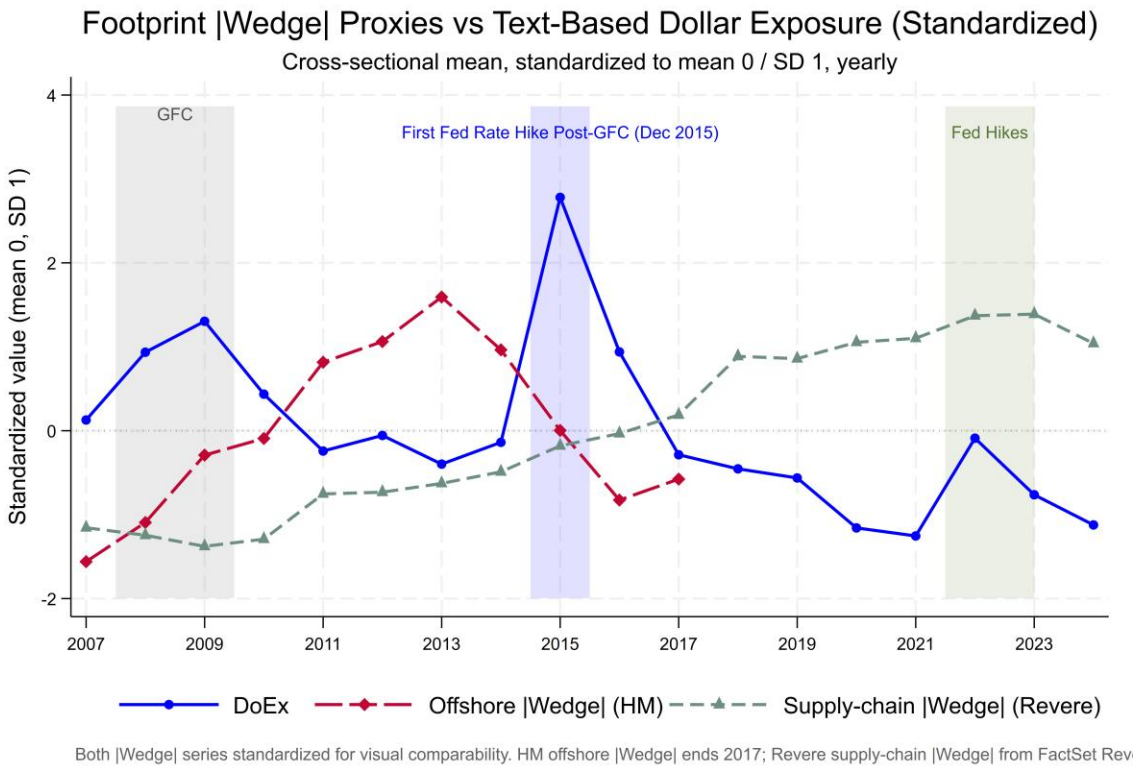
FIGURE IV
DOEX, EXISTING FX-EXPOSURE PROXIES, AND THE FOOTPRINT |WEDGE| MEASURES OVER TIME

(A) DoEx, Foreign Sales Ratio, and FX Beta



All three series standardized (z-scored) for visual comparability on a common axis.
|FX Beta|: absolute value of the FF3+FX 4-factor rolling beta. Foreign Sales: Compustat geographic segments.
DoEx: TF-IDF attention to dollar, all dimensions.

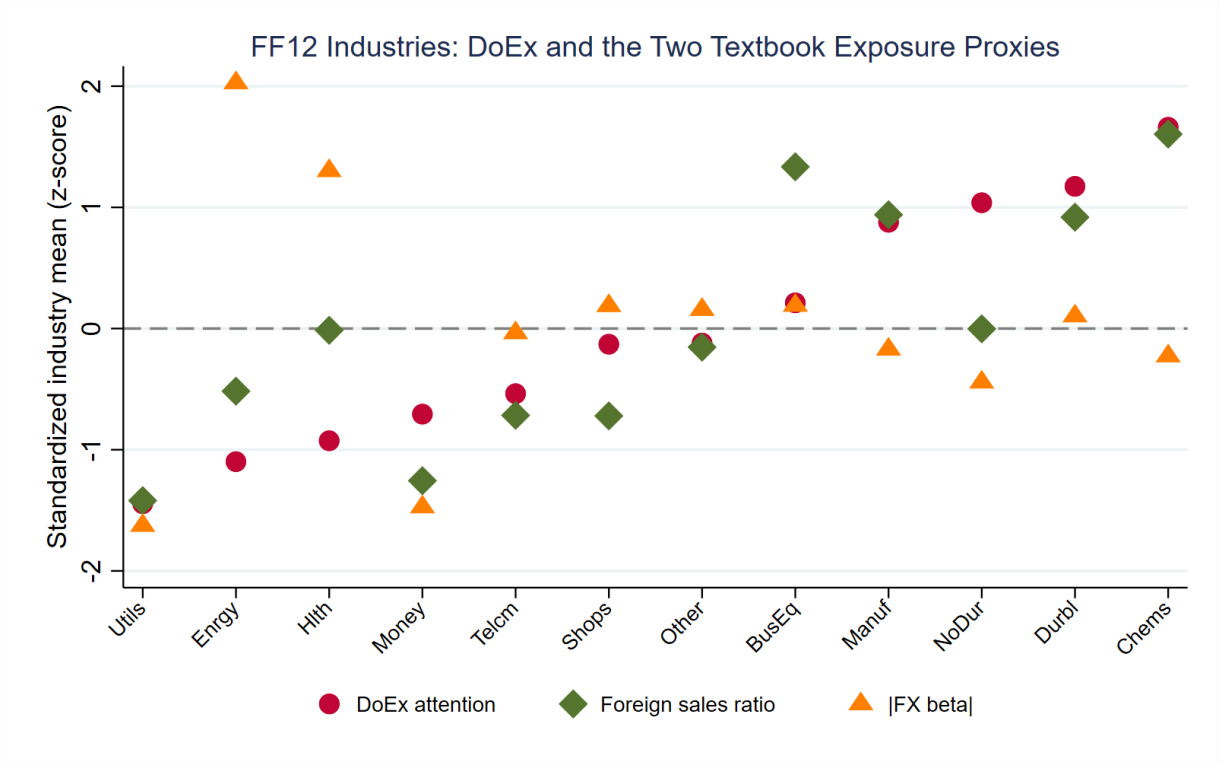
(B) DoEx and the Footprint |Wedge| Measures



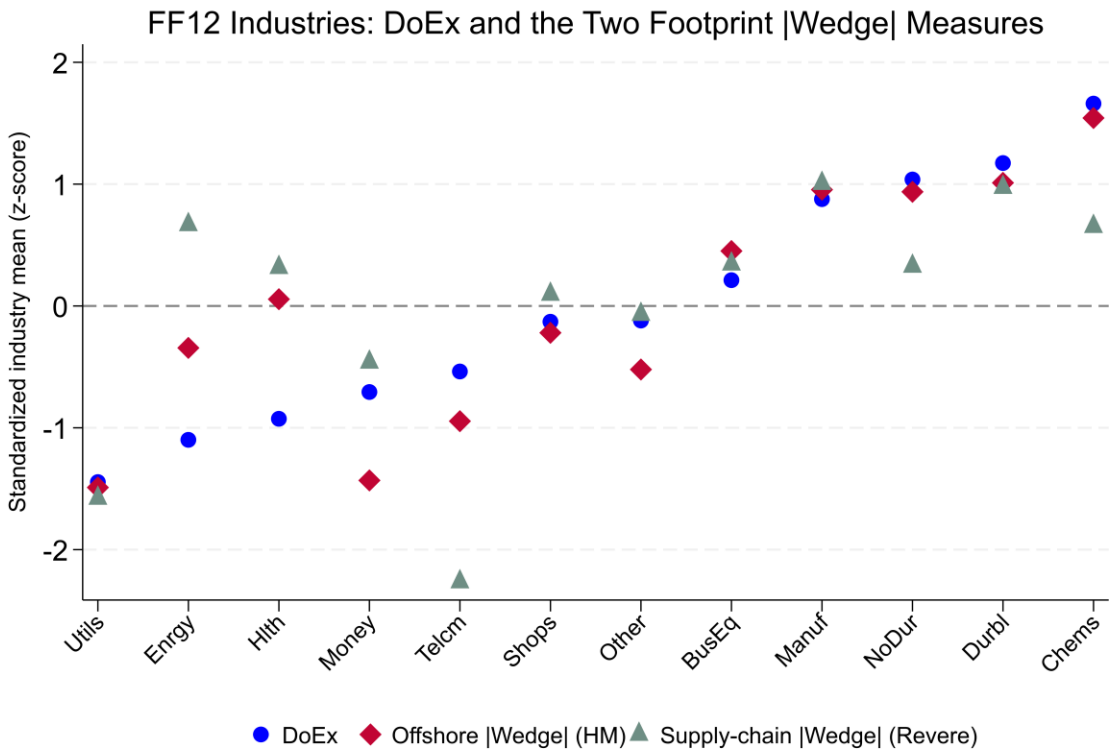
Notes. Panel (A) plots the cross-firm mean of DoEx (all dimensions, TF-IDF), the foreign-sales ratio, and the absolute value of the return-based FX beta (|FX beta|) — the magnitude of the loading on the U.S. Dollar Index from a 36-month rolling FF3+FX factor model — each standardized to mean 0 and standard deviation 1 and plotted yearly. Panel (B) plots the cross-firm mean of DoEx and the two footprint |Wedge| measures, the offshore |Wedge| from machine-read 10-Ks (Hoberg and Moon, 2017, 2019) and the supply-chain |Wedge| from FactSet Revere, standardized the same way; the offshore |Wedge| ends in 2017. Shaded bands mark the global financial crisis, the post-2014 dollar surge, and the 2021–2023 Fed-hike cycle. Sample: 2007–2024; financials and utilities included.

FIGURE V
INDUSTRY MEANS OF DOEX, EXISTING FX-EXPOSURE PROXIES, AND THE FOOTPRINT |WEDGE| MEASURES

(A) DoEx, Foreign Sales Ratio, and FX Beta by Industry

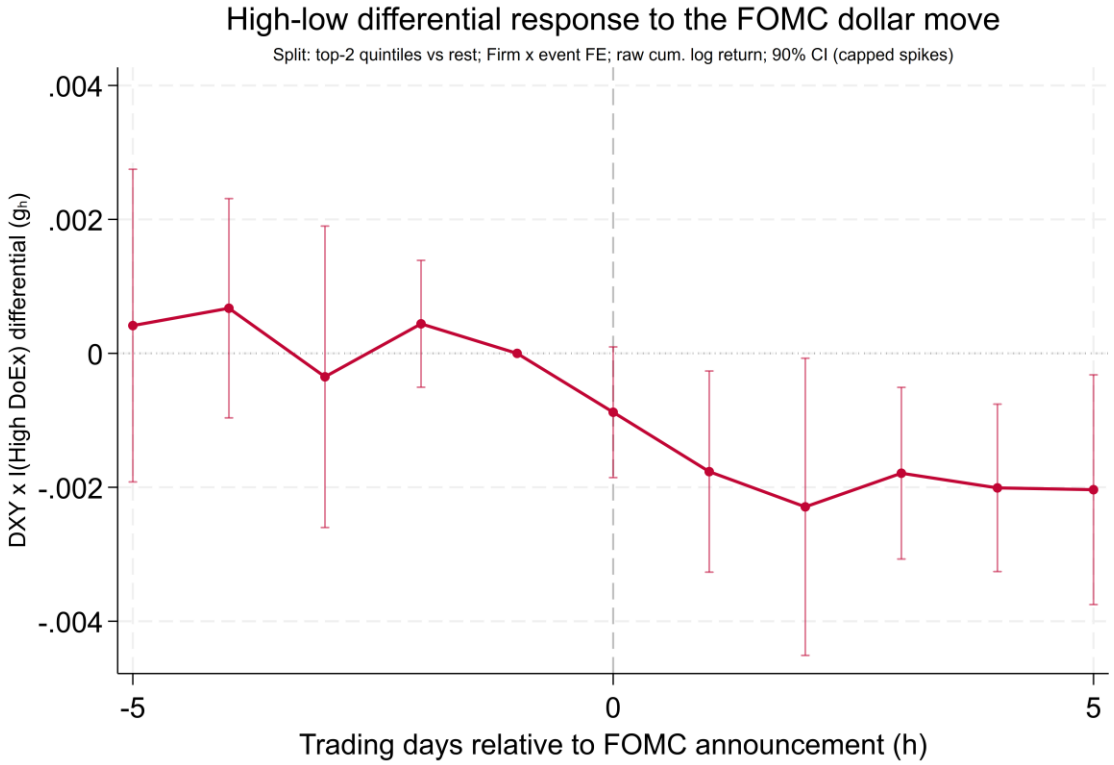


(B) DoEx and the Footprint |Wedge| Measures by Industry



Notes. Panel (A) plots the cross-firm mean of DoEx, the foreign-sales ratio, and the absolute value of the return-based FX beta (|FX beta|) by industry, each standardized cross-sectionally before averaging to the industry level (standard-deviation units); industries are ordered by mean DoEx. Panel (B) plots the industry means of DoEx and the two footprint |Wedge| measures (offshore |Wedge| from 10-Ks; supply-chain |Wedge| from FactSet Revere), standardized the same way. Industries are ordered by mean DoEx. Sample: 2007–2024; financials and utilities included.

FIGURE VI
CURRENCY EXPOSURE AND THE DYNAMIC RETURN RESPONSE TO FOMC DOLLAR SURPRISES



Notes. Dynamic difference-in-differences coefficients from the high-frequency FOMC event study reported in Table XII. Each point is the differential cumulative log return, from the day before a scheduled FOMC announcement (t−1) to t+h, of high-DoEx firms relative to the comparison group, per unit of the announcement-window change in the advanced foreign economies dollar index. High-DoEx firms are those in the top two quintiles of the prior year's DoEx distribution; the comparison group is all remaining firms. The horizontal axis is the trading day h relative to the announcement, with h=−1 the omitted baseline; whiskers are 95% confidence intervals from standard errors clustered by firm and by announcement. The specification includes the lower-order dynamic terms (relative-day × dollar move and relative-day × high-DoEx indicator), relative-day fixed effects, and firm × announcement fixed effects. A negative coefficient means high-DoEx firms' cumulative returns fall by more than the comparison group's when the dollar appreciates around the announcement. Sample: scheduled FOMC announcements, 2007–2024.

TABLE I
SEED WORDS AND TOP DICTIONARY TERMS
Panel A: Seed Words by Dimension

Dollar Level	**Dollar Volatility**	**Dollar Appreciation**	**Dollar Depreciation**
dollar_index	dollar_volatility	dollar_strengthening	dollar_weakening
dollar_exchange_rate	dollar_fluctuation	dollar_appreciation	dollar_depreciation
dollar_rate	dollar_swing	dollar_strength	dollar_weakness
dollar_currency	dollar_dynamic	dollar_rally	dollar_decline
dollar_value	dollar_movement	usd_strength	dollar_devaluation

Panel B: Top Terms by Word2Vec Cosine Similarity

Dollar Level

Rank	Term	Sim.	Rank	Term	Sim.
1	dollar_rate	0.84	11	dollar_exchange_ratio	0.68
2	dollar_exchange_rate	0.82	12	euro_-_usd	0.68
3	dollar_currency	0.76	13	currency	0.68
4	exchange_rate	0.75	14	euro_parity	0.68
5	euro	0.73	15	euro_pound	0.67
6	fx_rate	0.73	16	ruble	0.67
7	us_dollar	0.69	17	kroner_exchange_rate	0.67
8	exchange_rate_euro	0.69	18	91_yen	0.66
9	pound_currency	0.68	19	currency_rate	0.66
10	dollar_index	0.68	20	non-dollar_currency	0.66

Dollar Volatility

Rank	Term	Sim.	Rank	Term	Sim.
1	dollar_movement	0.79	11	euro_payable	0.65
2	dollar_fluctuation	0.78	12	ruble_side	0.65
3	dollar_volatility	0.74	13	pound_movement	0.65
4	dollar_swing	0.72	14	dollar_-_sterling	0.65
5	dollar_dynamic	0.71	15	account_currency_movement	0.65
6	euro_usd	0.67	16	weakening_norwegian_krona	0.65
7	sterling_dollar	0.66	17	accounting_translation_effect	0.65
8	dollar_tailwind	0.66	18	currency_rate_exchange	0.65
9	currency_transaction_risk	0.66	19	eps_exposure	0.64
10	material_derivative	0.65	20	steel_cost_volatility	0.64

Dollar Appreciation

Rank	Term	Sim.	Rank	Term	Sim.
1	dollar_appreciation	0.83	11	cross_-_rate	0.68
2	dollar_strength	0.82	12	weakening_aud	0.68
3	dollar_strengthening	0.82	13	fx_weakening	0.68
4	usd_strength	0.77	14	gb_pound	0.68
5	peso_strengthening	0.72	15	pound_sterling_currency	0.68
6	weakening_euro	0.71	16	pound_devalue	0.68

Rank	Term	Sim.	Rank	Term	Sim.
7	weakening_pound_sterling	0.71	17	currency_erosion	0.68
8	euro_decrease	0.70	18	weakening_rmb	0.67
9	rand_weakening	0.69	19	currency_movement	0.67
10	gbp_depreciation	0.69	20	translation_decline	0.67

Dollar Depreciation

Rank	Term	Sim.	Rank	Term	Sim.
1	dollar_depreciation	0.81	11	dollar_fx_rate	0.65
2	dollar_weakening	0.81	12	pound_effect	0.65
3	dollar_weakness	0.79	13	dollar_period	0.65
4	dollar_devaluation	0.78	14	krona_depreciate	0.65
5	pound_weakness	0.68	15	q4_guidance_rate	0.64
6	dollar_fx	0.67	16	jap_yen	0.64
7	euro_strengthening	0.67	17	dollar_operating_expense	0.63
8	brl_devaluation	0.67	18	expense_currency	0.63
9	korean_yuan	0.66	19	peso_strength	0.63
10	dollar_currency_impact	0.66	20	dollar_translation	0.63

Panel C: Top Terms by TF-IDF Contribution

Dollar Level

Rank	Term	%TF-IDF	Rank	Term	%TF-IDF
1	dollar	32.22%	11	fx_rate	1.66%
2	currency	18.60%	12	dollar_denominate	1.26%
3	exchange_rate	10.76%	13	dollar_value	1.23%
4	euro	8.89%	14	rupee	1.21%
5	forex	2.41%	15	currency_rate	1.21%
6	yen	2.21%	16	us_dollar	1.19%
7	denominate	2.05%	17	ruble	1.14%
8	dollar_term	2.04%	18	renminbi	0.56%
9	peso	1.93%	19	translation_effect	0.53%
10	spot_rate	1.72%	20	euro_denominate	0.49%

Dollar Volatility

Rank	Term	%TF-IDF	Rank	Term	%TF-IDF
1	currency_exposure	27.02%	11	currency_influence	0.71%
2	fx_exposure	16.67%	12	euro_move	0.61%
3	fx_perspective	3.88%	13	currency_translation_issue	0.55%
4	dollar_movement	2.38%	14	penny_change	0.52%
5	fx_swing	1.65%	15	ruble_hryvnia	0.50%
6	dollar_move	1.51%	16	exchange_rate_swing	0.48%
7	rupee_movement	0.82%	17	dollar_volatility	0.47%
8	dollar_fluctuation	0.81%	18	euro_fx_rate	0.47%
9	exchange_standpoint	0.76%	19	aluminum_barley	0.44%
10	dollar_euro	0.74%	20	currency_translation_result	0.44%

Dollar Appreciation

Rank	Term	%TF-IDF	Rank	Term	%TF-IDF
1	fx	26.55%	11	currency_fluctuation	2.61%
2	foreign_exchange	15.95%	12	exchange_movement	1.46%
3	foreign_currency	8.45%	13	currency_devaluation	1.43%
4	fx_impact	5.48%	14	fx_movement	1.23%
5	devaluation	4.87%	15	currency_change	1.17%
6	currency_headwind	4.27%	16	translation_impact	1.00%

Rank	Term	%TF-IDF	Rank	Term	%TF-IDF
7	currency_movement	3.81%	17	currency_volatility	0.93%
8	weakening	3.43%	18	currency_depreciation	0.87%
9	exchange_impact	3.41%	19	exchange_rate_movement	0.86%
10	fx_headwind	3.31%	20	market_currency	0.66%

Dollar Depreciation

Rank	Term	%TF-IDF	Rank	Term	%TF-IDF
1	currency_impact	57.47%	11	kronor	0.89%
2	krona	10.40%	12	weakening_ruble	0.65%
3	dollar_impact	5.97%	13	dollar_depreciation	0.55%
4	currency_tailwind	4.90%	14	franc_euro	0.52%
5	fx_move	1.46%	15	dollar_weakening	0.47%
6	dollar_decline	1.29%	16	loonie	0.44%
7	weakening_canadian_dollar	1.10%	17	krona_weaken	0.38%
8	weakening_rand	1.01%	18	appreciation_ruble	0.38%
9	peso_appreciation	0.91%	19	weakening_peso	0.36%
10	dollar_weakness	0.89%	20	rand_depreciate	0.32%

Notes. Panel A lists the five seed phrases per DoEx dimension (dollar level, volatility, appreciation, depreciation) — short phrases unambiguously related to each dimension that anchor the Word2Vec dictionary expansion. Panels B and C report the top 20 expanded-dictionary terms per dimension, pooled across unigrams, bigrams, and trigrams. Panel B ranks each term within its dimension by Word2Vec cosine similarity to that dimension's seeds — the terms most semantically related to the seeds. Panel C ranks each term within its dimension by TF-IDF percent contribution to the dimension's aggregate score — the terms that actually drive the scoring in the data. Panels B and C each display 20 terms in two side-by-side rank-groups of 10 (ranks 1–10 on the left, 11–20 on the right).

TABLE II
WHICH FIRMS TALK ABOUT CURRENCY EXPOSURE THE MOST?

Rank	Company Name	Industry (FF12)	N Years	Mean DoEx
1	VWR CORP	9 (Wholesale, Retail, and Some Services)	3	36.961
2	DOLE FOOD CO INC	1 (Consumer Non-Durables)	3	36.688
3	TNS INC	6 (Business Equipment)	4	36.213
4	CENTRAL EUROPEAN DIST CORP	9 (Wholesale, Retail, and Some Services)	5	34.906
5	MEAD JOHNSON NUTRITION CO	1 (Consumer Non-Durables)	8	34.747
6	SIGMA-ALDRICH CORP	10 (Healthcare, Medical, and Drugs)	7	30.506
7	PHILIP MORRIS INTERNATIONAL	1 (Consumer Non-Durables)	17	30.445
8	INTERACTIVE DATA HLDGS -REDH	11 (Finance)	3	30.129
9	KENDLE INTERNATIONAL INC	12 (Other)	4	30.052
10	INGREDION INC	1 (Consumer Non-Durables)	18	30.035
11	MACQUARIE GLBL INFRA TTL RTN	11 (Finance)	3	29.920
12	ST JUDE MEDICAL INC	10 (Healthcare, Medical, and Drugs)	9	29.308
13	FEI CO	6 (Business Equipment)	8	29.116
14	RED HAT INC	6 (Business Equipment)	12	28.989
15	SPECTRUM BRANDS HOLDINGS INC	6 (Business Equipment)	9	28.498
16	NESS TECHNOLOGIES INC	6 (Business Equipment)	4	28.264
17	COSTCO WHOLESALE CORP	9 (Wholesale, Retail, and Some Services)	18	27.999
18	PRA HEALTH SCIENCES INC	12 (Other)	6	27.795
19	JOHNSON & JOHNSON	10 (Healthcare, Medical, and Drugs)	18	27.779
20	MILLIPORE CORP	6 (Business Equipment)	3	27.491

Notes. The table reports the twenty firms with the highest historical mean DoEx score (aggregate of all four dimensions: Level, Volatility, Appreciation, Depreciation) across firm-years 2007–2024. Eligibility requires at least three firm-years in the matched Compustat panel, mitigating one-off-event bias. Industry (FF12) reports the firm's modal Fama-French 12 industry classification across its sample years. Mean DoEx is the within-firm time-series average of TF-IDF DoEx score on the whole call. N Years is the count of firm-years contributing to the firm's mean. The dimensional decomposition (top 20 firms within each of the four dimensions individually) is reported in the Internet Appendix. Sample: 2007–2024 transcripts; financials and utilities included.

TABLE III
DOEX AND FIRM CHARACTERISTICS: SUMMARY STATISTICS
Panel A: Full Sample

	count	mean	sd	p25	p50	p75
DoEx(lvl)	52454	2.12	3.90	0.00	0.73	2.13
DoEx(vol)	52454	0.04	0.22	0.00	0.00	0.00
DoEx(app)	52454	1.17	2.91	0.00	0.00	0.63
DoEx(dep)	52454	0.13	0.48	0.00	0.00	0.00
DoEx	52454	3.50	6.60	0.24	0.95	3.31
Ln(Total Assets)	50791	7.20	2.05	5.79	7.24	8.58
Leverage (%)	48182	29.96	28.00	6.72	24.56	44.66
Cash (%)	48374	21.64	29.04	3.37	10.43	28.10
Ln(1 + Firm Age)	51125	2.20	0.78	1.95	2.40	2.77
Tobin's Q	50727	2.07	1.85	1.08	1.46	2.29
Foreign Sales Ratio (%)	41611	23.16	28.46	0.00	12.32	41.38
FX Beta	36661	-0.06	1.31	-0.69	-0.00	0.62
Growth in FX-Hedge Mentions in 10-K (%)	29907	3.20	28.22	0.00	0.00	0.00
Change in USD (%)	52454	1.94	6.18	-2.47	2.02	7.17
Volatility of USD (%)	52454	0.43	0.13	0.32	0.41	0.52
6-month T-bill rate	52454	1.37	1.71	0.12	0.27	2.50

Panel B: Excluding Financials and Utilities

	count	mean	sd	p25	p50	p75
DoEx(lvl)	40559	2.34	4.15	0.00	0.73	2.47
DoEx(vol)	40559	0.04	0.22	0.00	0.00	0.00
DoEx(app)	40559	1.36	3.13	0.00	0.00	1.03
DoEx(dep)	40559	0.15	0.52	0.00	0.00	0.00
DoEx	40559	3.96	7.05	0.24	0.97	4.11
Ln(Total Assets)	39157	6.82	1.96	5.47	6.82	8.12
Leverage (%)	36973	28.61	27.63	5.58	23.50	42.04
Cash (%)	37137	25.06	31.02	4.73	13.63	33.59
Ln(1 + Firm Age)	39460	2.18	0.80	1.79	2.40	2.77
Tobin's Q	39108	2.28	1.98	1.19	1.64	2.58
Foreign Sales Ratio (%)	32816	27.61	27.62	0.00	20.95	46.92
FX Beta	25884	-0.09	1.40	-0.80	-0.04	0.66
Growth in FX-Hedge Mentions in 10-K (%)	23345	3.20	28.47	0.00	0.00	0.00
Change in USD (%)	40559	1.94	6.19	-2.47	2.02	7.17
Volatility of USD (%)	40559	0.43	0.13	0.32	0.41	0.52
6-month T-bill rate	40559	1.37	1.71	0.12	0.27	2.50
Upstream Domesticity	14574	0.43	0.42	0.00	0.33	1.00
Downstream Domesticity	16153	0.46	0.40	0.00	0.43	1.00

Notes. Firm-year summary statistics, 2007–2024. Variables include the DoEx aggregate measure and its four sub-dimensions; standard firm controls (Ln(Total Assets), Leverage, Cash/L.Assets, Ln(1+Firm Age), Tobin's Q); alternative currency-exposure proxies (Foreign Sales Ratio, FX Beta); the Growth in FX-Hedge Mentions in 10-K; and macro/FX variables (ΔUSD, Vol(USD), 6-month T-Bill). Panel A reports the full universe of U.S.-listed firms; Panel B excludes financials (SIC 6000–6999) and utilities (SIC 4900–4999), matching the sample used in the supply-chain regressions in Section III. Sample: 2007–2024 firm-years. *** p<0.01, ** p<0.05, * p<0.10.

TABLE IV

WHAT SOURCES OF VARIATION DRIVE DOEX?

Panel A: Incremental R-squared (%) from progressively adding fixed effects

	DoEx	DoEx_Level	DoEx_Volatility	DoEx_Appreciation	DoEx_Depreciation
Year FE	5.17	5.29	0.96	3.55	1.79
Industry FE	15.46	12.88	2.24	14.01	6.97
Industry x Year FE	6.78	7.18	7.84	6.54	7.99
Firm Level (residual)	72.58	74.65	88.97	75.90	83.24
Sum	100.00	100.00	100.00	100.00	100.00

Panel B: Decomposing the firm-level residual (rows sum to 100% within firm-level pool)

	DoEx	DoEx_Level	DoEx_Volatility	DoEx_Appreciation	DoEx_Depreciation
Firm FE (permanent cross-firm)	61.09	56.32	17.18	57.52	33.10
Residual (within-firm over time)	38.91	43.68	82.82	42.48	66.90
Sum	100.00	100.00	100.00	100.00	100.00

Notes. Variance decomposition of DoEx attention shown side-by-side for the aggregate DoEx score (DoEx All, first column) and each of the four individual sub-dimensions (Level, Volatility, Appreciation, Depreciation). Panel A reports the incremental R-squared (in %) from progressively adding fixed effects: Year, Industry (SIC 3-digit), and Industry x Year. The residual share, labelled 'Firm Level (residual)', captures all variation that remains within industry-by-year cells and sums with rows 1-3 to 100%. Panel B further decomposes the Firm-Level pool into a firm fixed effect (permanent differences across firms within the same industry x year cell) and a within-firm residual (variation over time). Panel B shares are normalized within the Firm-Level pool and sum to 100%. Sample: 2007–2024; financials and utilities included.

TABLE V

WHICH INDUSTRIES TALK ABOUT CURRENCY EXPOSURE THE MOST?

Industry (FF12)	Mean	STD	Median	N
5 (Chemicals and Allied Products)	8.40	10.02	4.46	1320
1 (Consumer Non-Durables)	6.55	9.34	2.39	2169
2 (Consumer Durables)	6.53	8.52	3.03	1231
3 (Manufacturing)	5.77	8.06	2.35	4686
6 (Business Equipment)	4.12	6.85	1.33	9626
12 (Other)	3.34	6.07	0.97	6161
9 (Wholesale, Retail, and Some Services)	3.15	5.89	1.09	4940
10 (Healthcare, Medical, and Drugs)	2.68	6.55	0.24	6955
7 (Telephone and TV Transmission)	2.48	5.29	0.73	1286
11 (Finance)	2.10	4.66	0.73	10133
4 (Oil, Gas, Coal Extraction)	1.30	2.98	0.49	2450
8 (Utilities)	0.87	2.02	0.24	1497

Notes. The table reports the mean, standard deviation, median, and count of firm-years for the aggregate DoEx score (all four dimensions combined) across Fama-French 12 industries, sorted by descending mean. The sample includes all 12 FF12 industries, including Money/Finance (FF12 = 11) and Utilities (FF12 = 8); these two industries are excluded only from the supply-chain regressions in Section III. The dimensional decomposition (same industry-mean/SD/median/N table for each of the four individual DoEx dimensions) is reported in the Internet Appendix. Sample: 2007–2024; financials and utilities included.

TABLE VI
WHICH FIRM CHARACTERISTICS PREDICT ATTENTION TO CURRENCY EXPOSURE?

	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Sales Ratio (%)	0.014***	0.014***	0.013***	0.014***	0.014***	0.011***
	(12.70)	(12.81)	(9.16)	(12.30)	(12.39)	(8.47)
Ln(Total Assets)				0.117***	0.123***	0.169***
				(27.52)	(30.57)	(30.03)
Leverage (%)				-0.0013***	-0.00030	-0.00007
				(-3.38)	(-0.84)	(-0.30)
Cash (%)				-0.0053***	-0.0046***	-0.0045***
				(-9.60)	(-8.48)	(-10.41)
Ln(1 + Firm Age)				-0.031***	0.031***	0.014**
				(-3.20)	(3.15)	(2.10)
Tobin's Q				0.066***	0.079***	0.041***
				(10.32)	(15.24)	(11.04)
Year FE	N	Y	Y	N	Y	Y
SIC3 FE	N	N	Y	N	N	Y
Observations	41,611	41,611	41,609	40,333	40,333	40,332
Adj. R-squared	0.1656	0.2110	0.3367	0.2399	0.2948	0.4323

Notes. The table regresses the firm-year DoEx score, Ln(1+DoEx) (all dimensions, whole call, TF-IDF), on the foreign sales ratio alone (columns 1-3) and on the foreign sales ratio together with the lagged firm controls (columns 4-6). Columns 1 and 4 include no fixed effects; columns 2 and 5 add year fixed effects; columns 3 and 6 add year and SIC3 fixed effects. All regressors are lagged one year. The sample is the full firm-year panel. t-statistics in parentheses; standard errors clustered by SIC3 × year. * p<0.10, ** p<0.05, *** p<0.01.

TABLE VII
DO FIRMS WITH LARGER INTERNATIONAL FOOTPRINTS SCORE HIGHER ON DOEX?

	Offshore output	Offshore input	Abn. input	Offshore |Wedge|	Foreign suppliers	Foreign customers	Revere |Wedge|
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Footprint proxy	0.186***	0.183***	0.098***	0.220***	0.148***	0.122***	0.071***
	(29.45)	(30.44)	(14.63)	(28.75)	(7.45)	(6.57)	(4.61)
Ln(Total Assets)	0.201***	0.196***	0.220***	0.193***	0.195***	0.198***	0.203***
	(33.40)	(34.47)	(37.78)	(32.99)	(33.38)	(34.20)	(26.46)
Leverage (%)	-0.0010	-0.0010***	-0.0010***	-0.0010*	0.00010	-0.00010	-0.00010
	(-1.53)	(-2.61)	(-3.51)	(-1.79)	(1.10)	(-1.22)	(-0.78)
Cash (%)	-0.0040***	-0.0040***	-0.0040***	-0.0040***	-0.0030***	-0.0050***	-0.0050***
	(-8.25)	(-7.38)	(-6.35)	(-8.41)	(-4.09)	(-8.72)	(-5.92)
Ln(1 + Firm Age)	0.055***	0.055***	0.063***	0.051***	0.065***	0.046***	0.055***
	(5.83)	(5.80)	(6.53)	(5.41)	(5.92)	(4.90)	(3.81)
Tobin's Q	0.060***	0.067***	0.067***	0.061***	0.046***	0.042***	0.045***
	(9.87)	(10.89)	(10.88)	(9.92)	(9.59)	(8.54)	(7.10)
Year FE	Y	Y	Y	Y	Y	Y	Y
SIC3 FE	Y	Y	Y	Y	Y	Y	Y
Observations	23,999	23,999	23,999	23,999	16,872	18,001	9,314

Notes. The table examines whether firms with larger real international footprints score higher on DoEx. Each column regresses the firm-year DoEx score, Ln(1+DoEx) (all dimensions, whole call, TF-IDF), on one real-international-footprint proxy entered in levels, with lagged firm controls and year and SIC3 fixed effects. The proxies are machine-read offshore-activity counts from 10-Ks—offshore-output and offshore-input nations, abnormal input (the residual of offshore input on offshore output), and the absolute offshore wedge (the log across-country sum of the absolute gap between foreign-output and foreign-input intensity)—and FactSet Revere supply-chain network measures (supplier-side and customer-side internationalization and the absolute supplier-versus-customer country wedge). The proxies sit on different native scales, so the column coefficients are not directly comparable in magnitude. The sample is the full firm-year panel; all controls are lagged one year. t-statistics in parentheses; standard errors clustered by SIC3 × year. * p<0.10, ** p<0.05, *** p<0.01.

TABLE VIII
AGGREGATE DOLLAR MOVEMENTS PREDICT FIRM-LEVEL ATTENTION TO CURRENCY EXPOSURE

DV: ln(1 + DoEx)	(1)	(2)	(3)	(4)
Change in USD (%)	0.011***	0.01***	0.011***	0.0092***
	(3.9)	(3.4)	(6.8)	(5.1)
Implied Volatility of USD (%)	0.019**	0.032***	0.015***	0.027***
	(2.6)	(4.2)	(4.3)	(7.5)
6-month T-bill Rate (%)	-0.032***	-0.031***	-0.032***	-0.038***
	(-3)	(-3.2)	(-6.2)	(-6.7)
Ln(Total Assets)		0.13***		0.19***
		(26)		(44)
Leverage (%)		-0.0027***		-0.0016***
		(-5.5)		(-6.5)
Cash (%)		-0.0036***		-0.0041***
		(-4.9)		(-8.3)
Ln(1 + Firm Age)		0.049***		-0.0076
		(5.3)		(-1.1)
Tobin's Q		0.084***		0.039***
		(16)		(11)
SIC3 FE	N	N	Y	Y
Adj. R-squared	0.0131	0.1096	0.2045	0.3287
Observations	49859	49253	49857	49252

Notes. Four-column yearly panel regression of logged DoEx (all dimensions, TF-IDF) on three aggregate FX/macro state variables, all lagged one year: the year-over-year change in the advanced foreign economies dollar index, the forward-looking implied volatility of the U.S. dollar, and the 6-month U.S. Treasury bill rate. The implied-volatility series is the equal-weighted average of the three-month at-the-money Bloomberg implied volatilities of six U.S.-dollar currency pairs (EUR/USD, GBP/USD, AUD/USD, USD/CAD, USD/JPY, USD/CHF), averaged within the year; unlike the realized within-year volatility of the dollar index, it reflects the dollar volatility that market participants expect over the coming three months. Columns (1)–(4) progressively add lagged firm controls (Ln(L.Assets), leverage, cash-to-lagged-assets, Ln(1+firm age), Tobin's Q) and SIC3 fixed effects. Time fixed effects are omitted because the FX shocks are aggregate time series that year fixed effects would absorb. Standard errors are clustered at the SIC3-by-year level. t-statistics in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$. Sample: 2007–2024; financials and utilities included.

TABLE IX
DO FIRMS ATTENTIVE TO CURRENCY EXPOSURE HEDGE IT? FX-DERIVATIVE USE AND FOREIGN-CURRENCY BOND ISSUANCE

Panel A: FX-Derivative Use

	Mention rate	Ln(count)
	(1)	(2)
Ln(1+DoEx)	0.185***	0.319***
	(38.27)	(38.30)
Ln(Total Assets)	0.085***	0.198***
	(31.11)	(38.46)
Leverage (%)	-0.00066***	-0.0012***
	(-3.45)	(-3.05)
Cash (%)	0.00017	0.0012***
	(0.83)	(2.95)
Ln(1 + Firm Age)	0.038***	0.021**
	(7.56)	(2.38)
Tobin's Q	-0.00093	-0.0098**
	(-0.34)	(-2.02)
Year FE	Y	Y
SIC3 FE	Y	Y
Observations	25,649	25,649

Panel B: Foreign-Currency Bond Issuance

	Any non-USD	Share non-USD	Ln(# non-USD)	Any USD
	(3)	(4)	(5)	(6)
Ln(1+DoEx)	0.0044***	0.015***	0.0050***	-0.0013
	(7.50)	(6.65)	(7.26)	(-0.59)
Ln(Total Assets)	0.0055***	0.012***	0.0062***	0.063***
	(12.91)	(9.81)	(12.05)	(39.24)
Leverage (%)	-0.00001	0.00012	-0.00002	0.00080***
	(-0.40)	(1.51)	(-1.13)	(8.86)
Cash (%)	0.00007***	0.00007	0.00006**	0.00078***
	(3.20)	(0.54)	(2.33)	(7.51)
Ln(1 + Firm Age)	0.0015***	0.0024	0.0015***	0.011***
	(4.41)	(1.12)	(4.01)	(4.58)
Tobin's Q	0.00017	0.0032**	0.00022	0.0055***
	(0.78)	(2.38)	(0.93)	(3.88)
Year FE	Y	Y	Y	Y
SIC3 FE	Y	Y	Y	Y
Observations	46,211	6,957	46,211	46,211

Notes. The table asks whether firms that score high on DoEx take measurable steps to manage currency exposure—a behavioral validation of the measure that complements the operational-footprint evidence in Table VII and the aggregate-driver evidence in Table VIII. Each column regresses one financial-hedging outcome on DoEx and the lagged firm controls, with year and SIC3 fixed effects. Panel A, columns (1)–(2), uses year-over-year-comparable text-based FX-derivative measures from the 10-K (mention rate per 100 paragraphs and log count). Panel B, columns (3)–(6), uses Mergent FISD firm-year bond-issuance measures: an indicator for issuing any non-USD-denominated bond, the count-based share of non-USD issues among issuer firm-years, the log count of non-USD issues, and a placebo (issuing any USD bond) that gauges whether DoEx is associated with the currency mix rather than issuance itself. Share non-USD is defined on issuer firm-years only. All regressors are lagged one year; t-statistics in parentheses; standard errors clustered by SIC3 × year. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

TABLE X
HOW MUCH DO DOEX AND EXISTING CURRENCY-EXPOSURE PROXIES OVERLAP?

Panel A: Correlation of DoEx With Each Proxy

	Foreign sales ratio	FX beta	Offshore |Wedge|	Revere |Wedge|
Raw correlation	0.405	-0.039	0.387	0.020
Residualized (SIC3 × Year FE)	0.348	-0.017	0.326	0.039
Observations	42,278	36,661	24,517	9,519

Panel B: z(DoEx) on Each Currency-Exposure Proxy, Individually (1)–(4) and Jointly (5)

	(1)	(2)	(3)	(4)	(5)
z(Foreign Sales Ratio)	0.545***				0.494***
	(11.744)				(10.111)
z(FX beta)		-0.064**			-0.045
		(-2.236)			(-1.636)
z(Offshore |Wedge|)			0.277***		0.138***
			(9.785)		(4.691)
z(Revere |Wedge|)				0.060**	-0.008
				(2.575)	(-0.379)
SIC3 FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Observations	2,473	2,473	2,473	2,473	2,473
Adj R-squared	0.451	0.373	0.398	0.373	0.457

Notes. The table relates DoEx to four existing currency-exposure proxies, all in firm-year units. Panel A reports the correlation of Ln(1+DoEx) (all dimensions, whole call, TF-IDF) with each proxy: the raw row is the pooled Pearson correlation and the residualized row is the correlation after projecting both measures on SIC3 and year fixed effects. Each pair uses the largest sample in which both variables are observed, so the columns need not share a common sample; the number of firm-years appears in the last row. Panel B regresses z(DoEx) on each currency-exposure proxy (z-scored) one at a time in columns (1)–(4) and on all four jointly in column (5), with SIC3 and year fixed effects, on the firm-years where all five measures are observed simultaneously (a common sample, so the columns share the same number of firm-years). The four proxies jointly leave roughly half of the cross-sectional variation in DoEx unexplained (a column-5 R^2 of about 0.49), so DoEx carries substantial information beyond existing currency-exposure measures. The proxies are the foreign sales ratio (Compustat geographic segments), the rolling FX beta on the advanced foreign economies dollar index, the absolute offshore wedge (the across-country sum of the absolute gap between foreign-output and foreign-input intensity, from machine-read 10-Ks), and the absolute supply-chain wedge (the supplier-versus-customer country-share gap, from FactSet Revere). Standard errors in Panel B are clustered at the SIC3 × year level; t-statistics in parentheses. Sample: 2007–2024; financials and utilities included. *** p<0.01, ** p<0.05, * p<0.10.

TABLE XI
CURRENCY EXPOSURE AS A PRICED RISK: DOEX × ΔUSD DOUBLE SORT

Panel A: One-Month Excess Returns (within-size DoEx-attention bins × ΔUSD, value-weighted, %/mo)

	ΔUSD Q1 (down)	Q2	Q3	Q4	Q5 (up)	Q5−Q1
DoEx = 0 (low)	4.79	2.46	0.78	-1.66	-2.83	-7.62***
	[n=53,114]	[n=57,834]	[n=56,604]	[n=62,275]	[n=58,771]	(-5.99)
Positive Q1	4.92	2.64	1.04	-1.89	-2.90	-7.83***
	[n=14,516]	[n=14,184]	[n=13,609]	[n=14,448]	[n=15,099]	(-5.76)
Positive Q2	5.37	2.75	1.00	-1.51	-3.23	-8.59***
	[n=14,620]	[n=14,287]	[n=13,708]	[n=14,558]	[n=15,207]	(-6.39)
Positive Q3	5.42	2.94	0.86	-1.51	-3.18	-8.60***
	[n=14,566]	[n=14,233]	[n=13,661]	[n=14,498]	[n=15,152]	(-6.16)
Positive Q4 (high)	5.41	2.90	0.93	-1.79	-3.17	-8.58***
	[n=14,674]	[n=14,352]	[n=13,762]	[n=14,615]	[n=15,258]	(-6.46)
High − Zero	0.62***	0.45***	0.16	-0.13	-0.34**	-0.96***
(t)	(2.93)	(3.20)	(0.93)	(-0.54)	(-2.27)	(-3.24)

Panel B: Out-of-Sample Five-Factor Abnormal Returns (within-size DoEx-attention bins × ΔUSD, %/mo)

	ΔUSD Q1 (down)	Q2	Q3	Q4	Q5 (up)	Q5−Q1
DoEx = 0 (low)	-0.04	0.08	0.01	-0.41	-0.01	0.03
	[n=50,439]	[n=55,818]	[n=55,280]	[n=58,442]	[n=55,262]	(0.10)
Positive Q1	-0.22	-0.01	0.25	-0.54	0.06	0.29
	[n=13,434]	[n=13,443]	[n=13,115]	[n=13,001]	[n=13,638]	(0.56)
Positive Q2	0.01	0.10	0.14	-0.13	-0.43	-0.45
	[n=13,528]	[n=13,533]	[n=13,208]	[n=13,098]	[n=13,737]	(-1.22)
Positive Q3	-0.02	0.31	-0.14	-0.01	-0.27	-0.25
	[n=13,479]	[n=13,484]	[n=13,165]	[n=13,043]	[n=13,685]	(-0.60)
Positive Q4 (high)	0.32	0.05	0.12	-0.27	-0.32	-0.64*
	[n=13,570]	[n=13,591]	[n=13,255]	[n=13,149]	[n=13,786]	(-1.65)
High − Zero	0.36*	-0.04	0.11	0.14	-0.31*	-0.67**
(t)	(1.95)	(-0.18)	(0.61)	(0.47)	(-1.75)	(-2.15)

Notes. The table double-sorts on DoEx and the dollar change. Within size quintiles, firms are split into a zero-attention group (DoEx = 0) and quartiles of the strictly-positive DoEx firms (size-balanced, two-stage value-weighting); these bins are crossed with months sorted into Change-in-USD quintiles (Q1 = dollar falls most, Q5 = rises most). Panel A reports value-weighted mean one-month excess returns (%)

for the 25 cells, the high-minus-zero long-short (top positive quartile minus the zero-attention group) by ΔUSD quintile [bottom row, Newey-West (3) t], the ΔUSD high-low (Q5 − Q1 months) by bin [right column, heteroskedastic-robust t], and the double-difference corner; firm-month observation counts appear in square brackets [n] below each cell's return, while t-statistics appear in parentheses throughout; Panel A uses all 213 months (about 43 per ΔUSD quintile). Panel B replaces each cell's raw return with its out-of-sample five-factor abnormal return (%/mo): for each within-size DoEx bin, the monthly excess return minus the factor-explained part using the five factors (MKT-RF, SMB, HML, RMW, CMA), where the factor betas are estimated on a rolling 36-month window ending the month before (out-of-sample, minimum 24 observations); cell means are then taken within each ΔUSD quintile. Firm-month observation counts appear in square brackets [n] below each cell's abnormal return, and t-statistics appear only in the "Q5 − Q1" column and the "High − Zero" row (interior cells report the mean only). The "Q5 − Q1" column is each bin's up-minus-down abnormal return [heteroskedastic-robust t]; the "High − Zero" row is the top-positive-quartile bin minus the zero bin by ΔUSD quintile [Newey-West (3) t], with the up-minus-down double difference in the corner. The rolling burn-in leaves 189 months (about 37–38 per quintile). Full panel. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

TABLE XII
CURRENCY EXPOSURE AND THE STOCK-PRICE RESPONSE TO FOMC DOLLAR SURPRISES

	(1) Pooled post	(2) Dynamic
ΔUSD × I(High DoEx) × 1{h≥0}	-0.0020**	
	(-2.04)	
ΔUSD × I(High DoEx) × 1{h = -5}		0.0004
		(0.29)
ΔUSD × I(High DoEx) × 1{h = -4}		0.0007
		(0.68)
ΔUSD × I(High DoEx) × 1{h = -3}		-0.0004
		(-0.26)
ΔUSD × I(High DoEx) × 1{h = -2}		0.0004
		(0.77)
ΔUSD × I(High DoEx) × 1{h = 0}		-0.0009
		(-1.48)
ΔUSD × I(High DoEx) × 1{h = 1}		-0.0018*
		(-1.93)
ΔUSD × I(High DoEx) × 1{h = 2}		-0.0023*
		(-1.70)
ΔUSD × I(High DoEx) × 1{h = 3}		-0.0018**
		(-2.30)
ΔUSD × I(High DoEx) × 1{h = 4}		-0.0020***
		(-2.64)
ΔUSD × I(High DoEx) × 1{h = 5}		-0.0020*
		(-1.95)
Firm × event FE	Y	Y
Relative-day FE	Y	Y
Lower-order dynamic terms	Y	Y
Observations	3,138,206	3,138,206

Notes. The table reports a high-frequency event-study difference-in-differences around scheduled FOMC announcements, 2007–2024. For firm i and announcement e, the dependent variable is the cumulative log return from the day before the announcement (t−1) to t+h. The treatment interacts the high-frequency dollar move in the announcement window (the percentage change in the advanced foreign economies dollar index) with an indicator for high ex-ante DoEx (top two quintiles of the prior year's DoEx; the comparison group is all remaining firms). Column (1) reports the pooled post-announcement effect, interacting the treatment with 1{h≥0} (days t through t+5); column (2) reports the dynamic differential at each trading day h, with h=−1 omitted as the baseline. Each regression also includes the lower-order dynamic terms, relative-day fixed effects, and firm × announcement fixed effects. Standard errors are clustered by firm and by announcement; t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

TABLE XIII

FX HEDGING AND FOREIGN-CURRENCY BORROWING ACROSS DOLLAR CONDITIONS

Panel A: FX-Derivative Use

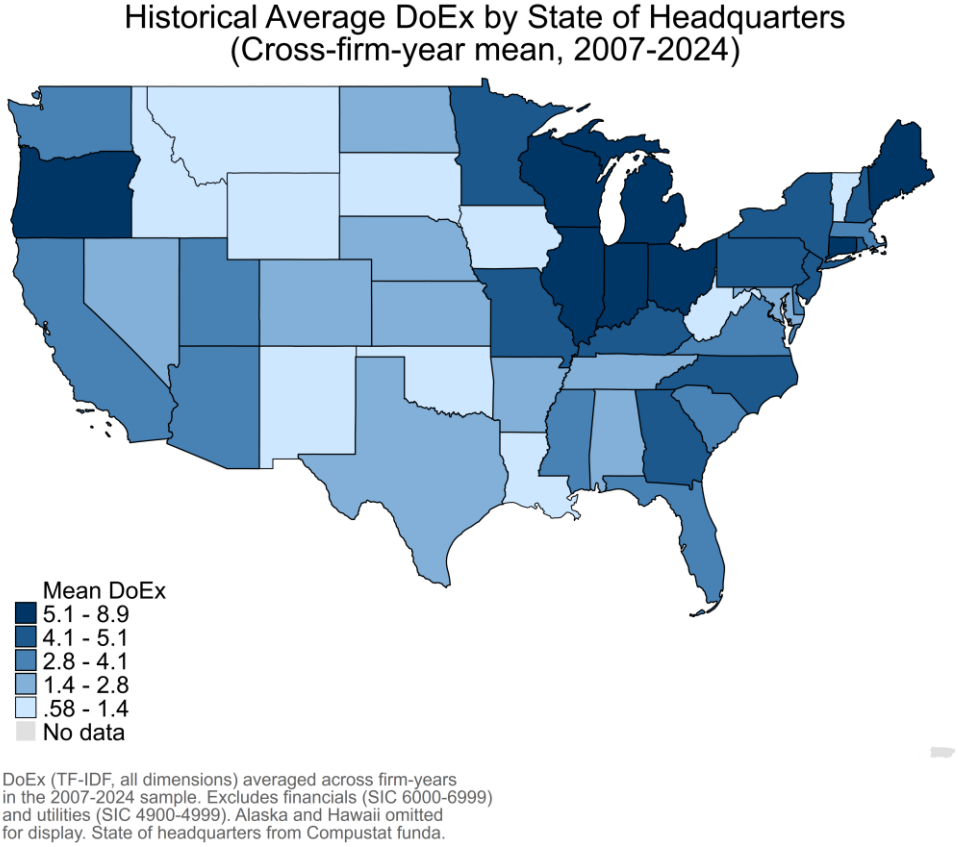
	Mention rate		Log count	
	FOMC surprise	Δ USD	FOMC surprise	Δ USD
	(1)	(2)	(3)	(4)
Ln(1+DoEx)	0.190***	0.180***	0.320***	0.320***
	(38.00)	(36.00)	(38.00)	(36.00)
Ln(1+DoEx) × USD condition	0.072**	0.00028	0.096**	0.0012
	(2.20)	(0.51)	(2.10)	(1.50)
Ln(Total Assets)	0.085***	0.085***	0.200***	0.200***
	(31.00)	(31.00)	(38.00)	(38.00)
Leverage (%)	-0.00067***	-0.00066***	-0.0012***	-0.0012***
	(-3.50)	(-3.50)	(-3.10)	(-3.10)
Cash (%)	0.00016	0.00017	0.0012***	0.0012***
	(0.78)	(0.82)	(2.90)	(2.90)
Ln(1 + Firm Age)	0.038***	0.038***	0.021**	0.021**
	(7.50)	(7.60)	(2.40)	(2.40)
Tobin's Q	-0.0010	-0.00095	-0.010**	-0.0099**
	(-0.38)	(-0.35)	(-2.10)	(-2.00)
Year FE	Y	Y	Y	Y
SIC3 FE	Y	Y	Y	Y
Observations	25,649	25,649	25,649	25,649

Panel B: Foreign-Currency Bond Issuance

	Any non-USD		Share non-USD		Ln(# non-USD)		Any USD	
	FOMC surprise	Δ USD	FOMC surprise	Δ USD	FOMC surprise	Δ USD	FOMC surprise	Δ USD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(1+DoEx)	0.0051***	0.0037***	0.016***	0.012***	0.0056***	0.0043***	-0.00056	-0.0015
	(7.40)	(6.30)	(6.60)	(5.50)	(7.20)	(6.20)	(-0.23)	(-0.66)
Ln(1+DoEx) × USD condition	0.014**	0.00035***	0.034	0.0012***	0.013*	0.00033***	0.016	0.00010
	(2.10)	(3.40)	(1.50)	(3.30)	(1.70)	(3.00)	(1.00)	(0.35)
Ln(Total Assets)	0.0055***	0.0055***	0.012***	0.012***	0.0062***	0.0062***	0.063***	0.063***
	(13.00)	(13.00)	(9.90)	(9.90)	(12.00)	(12.00)	(39.00)	(39.00)
Leverage (%)	-0.00001	-0.00001	0.00012	0.00011	-0.00002	-0.00002	0.00080***	0.00080***
	(-0.41)	(-0.43)	(1.50)	(1.50)	(-1.10)	(-1.20)	(8.90)	(8.90)
Cash (%)	0.00007***	0.00007***	0.00006	0.00007	0.00006**	0.00006**	0.00078***	0.00078***
	(3.10)	(3.20)	(0.51)	(0.61)	(2.20)	(2.30)	(7.50)	(7.50)
Ln(1 + Firm Age)	0.0015***	0.0015***	0.0023	0.0023	0.0015***	0.0015***	0.011***	0.011***
	(4.50)	(4.40)	(1.10)	(1.10)	(4.10)	(4.00)	(4.60)	(4.60)
Tobin's Q	0.00019	0.00015	0.0032**	0.0031**	0.00025	0.00021	0.0055***	0.0055***
	(0.89)	(0.70)	(2.40)	(2.30)	(1.00)	(0.86)	(3.90)	(3.90)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
SIC3 FE	Y	Y	Y	Y	Y	Y	Y	Y
Observations	46,211	46,211	6,957	6,957	46,211	46,211	46,211	46,211

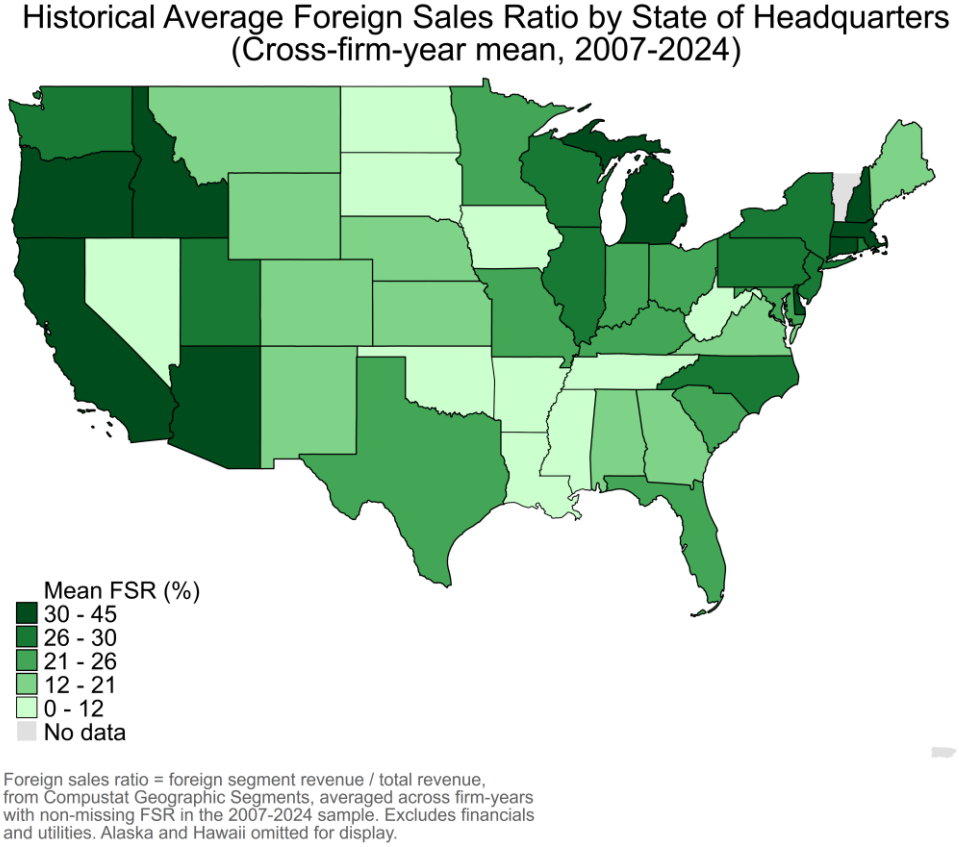
Notes. The table reports how the financial-hedging and foreign-currency-borrowing associations of DoEx vary with U.S. dollar conditions. Each dependent variable is estimated under two separate single-moderator specifications, shown as the two sub-columns beneath the variable: the "FOMC surprise" column interacts Ln(1+DoEx) with the FOMC dollar surprise—the calendar-year mean of the high-frequency change in the dollar index in the 30-minute window around FOMC announcements—and the "Δ USD" column interacts Ln(1+DoEx) with the year-over-year change in the advanced foreign economies dollar index. The "Ln(1+DoEx) × USD condition" row reports the interaction coefficient for that column's moderator. Both moderators take one value per year, so their main effects are absorbed by the year fixed effects. Panel A uses the text-based FX-derivative-use measures from the 10-K (mention rate per 100 paragraphs and log count); Panel B uses Mergent FISD firm-year bond-issuance measures (an indicator for any non-USD-denominated issue, the count-based share of non-USD issues among issuer firm-years, the log count of non-USD issues, and a placebo indicator for issuing any USD-denominated bond). Every regression includes year and SIC3 fixed effects; DoEx, the moderators, and the firm controls (size, leverage, cash, age, and Tobin's Q) are all lagged one year. t-statistics in parentheses; standard errors clustered by SIC3 × year. * p<0.10, ** p<0.05, *** p<0.01.

FIGURE A.I
DOEX BY U.S. STATE OF HEADQUARTERS



Notes. Choropleth of the cross-firm-year mean of DoEx (TF-IDF, all dimensions) for firms headquartered in each U.S. state, 2007–2024. State of headquarters is from Compustat funda. Alaska and Hawaii are omitted from the choropleth for display; their state-level mean DoEx is reported in the underlying ranked table (table_state_mean_doex.csv). Darker shades indicate higher state-level mean DoEx. Sample: 2007–2024 firm-state-years; excludes financials (SIC 6000–6999) and utilities (SIC 4900–4999).

FIGURE A.II
FOREIGN SALES RATIO BY U.S. STATE OF HEADQUARTERS



Notes. Choropleth of the cross-firm-year mean of foreign sales ratio (foreign segment revenue / total revenue, in percent), for firms headquartered in each U.S. state, 2007–2024. Foreign sales come from Compustat Geographic Segments. Alaska and Hawaii are omitted from the choropleth for display. Comparing this choropleth to the DoEx choropleth in the previous figure shows that the cross-state distribution of FSR and DoEx differ—for instance, FSR is high in West Coast states whose firms have large foreign-revenue shares, but DoEx in those states is not correspondingly high—indicating that DoEx captures a dimension of currency salience that the foreign-sales ratio alone misses. Sample: 2007–2024 firm-state-years; excludes financials (SIC 6000–6999) and utilities (SIC 4900–4999).

TABLE A.I
TOP FIRMS BY HISTORICAL AVERAGE DOEX SCORE (≥12 FIRM-YEARS)

Rank	Company Name	Industry (FF12)	N Years	Mean DoEx
1	PHILIP MORRIS INTERNATIONAL	1 (Consumer Non-Durables)	17	30.445
2	INGREDION INC	1 (Consumer Non-Durables)	18	30.035
3	RED HAT INC	6 (Business Equipment)	12	28.989
4	COSTCO WHOLESALE CORP	9 (Wholesale, Retail, and Some Services)	18	27.999
5	JOHNSON & JOHNSON	10 (Healthcare, Medical, and Drugs)	18	27.779
6	BECTON DICKINSON & CO	10 (Healthcare, Medical, and Drugs)	18	27.433
7	TECH DATA CORP	9 (Wholesale, Retail, and Some Services)	12	27.219
8	COGENT COMMUNICATIONS HLDGS	7 (Telephone and TV Transmission)	18	27.206
9	GUESS INC	1 (Consumer Non-Durables)	17	27.031
10	AVON PRODUCTS	5 (Chemicals and Allied Products)	12	27.026
11	IQVIA HOLDINGS INC	12 (Other)	12	26.961
12	COOPER COS INC (THE)	10 (Healthcare, Medical, and Drugs)	18	26.887
13	BAXTER INTERNATIONAL INC	10 (Healthcare, Medical, and Drugs)	18	26.739
14	EQUINIX INC	11 (Finance)	18	26.687
15	TIFFANY & CO	9 (Wholesale, Retail, and Some Services)	13	26.498
16	KANSAS CITY SOUTHERN	12 (Other)	14	26.096
17	BRINKS CO	12 (Other)	17	26.094
18	VISA INC	11 (Finance)	17	25.987
19	PROCTER & GAMBLE CO	5 (Chemicals and Allied Products)	18	25.826
20	AFLAC INC	11 (Finance)	17	25.562

Notes. Companion to Table II in the main paper, restricted to firms observed for at least 12 of the 18 sample years (2007–2024). The stricter eligibility filter isolates firms whose dollar attention is persistently high across the full sample period rather than firms with short panels or one-off blowout years. Industry (FF12) is the firm's modal Fama-French 12 industry across its sample years. Sample: 2007–2024 transcripts; financials and utilities included.

TABLE A.II
DEFINITIONS OF VARIABLES

Variable	Definition
DoEx	DoEx is a TF-IDF-based measure that captures attention to dollar-related phrases in earnings calls, aggregated across the four sub-dimensions (level, volatility, appreciation, depreciation). Constructed from Refinitiv earnings call transcripts, 2007–2024. Throughout the paper, regressions enter the measure as Ln(1+DoEx) to mitigate skewness in the raw TF-IDF score; descriptive tables report the raw level.
DoEx Lvl	TF-IDF-based measure that captures attention to dollar-level phrases (Word2Vec expansion of seed phrases such as 'strong dollar', 'dollar level') in earnings calls.
DoEx Vol	TF-IDF-based measure that captures attention to dollar-volatility phrases (e.g., 'currency volatility', 'fx swings') in earnings calls.
DoEx App	TF-IDF-based measure that captures attention to dollar-appreciation phrases (e.g., 'dollar strengthening') in earnings calls.
DoEx Dep	TF-IDF-based measure that captures attention to dollar-depreciation phrases (e.g., 'weaker dollar') in earnings calls.
Change in USD (%)	End-of-period log change in the Federal Reserve Advanced Foreign Economies trade-weighted dollar index (FRED H0.10 / DTWEXAFEGS), in percent. The advanced index is the headline FX series throughout the paper.
Implied Volatility of USD (%)	Forward-looking implied volatility of the U.S. dollar: the equal-weighted average of the three-month at-the-money implied volatilities of six U.S.-dollar currency pairs (EUR/USD, GBP/USD, AUD/USD, USD/CAD, USD/JPY, USD/CHF), averaged within the year, in percent. Unlike the realized within-year volatility of the dollar index, it reflects the dollar volatility that market participants expect over the coming three months.
FOMC Dollar Surprise (%)	The calendar-year arithmetic mean, across all FOMC announcements that year, of the high-frequency change in the advanced foreign economies dollar index in the tight (intraday) window around each announcement, in percent. A monetary-policy-driven, plausibly exogenous counterpart to the annual Change in USD; positive values mean FOMC announcements pushed the dollar up on net. Entered lagged one year as an interaction moderator; the companion magnitude measure uses the mean absolute window change.
6-Month T-Bill Rate (%)	6-month U.S. Treasury bill rate (FRED), in percent. Annual average for the yearly panel.
Foreign Sales Ratio (%)	100 × foreign sales (Compustat Historical Segments, aggregated by gvkey-fyear) scaled by total firm sales, lagged by one year. Missing if a firm did not report foreign segments that year.

FX Beta	Stock-return loading on the Advanced Foreign Economies trade-weighted dollar index (FRED H0.10 / DTWEXAFEGS) from a Fama-French three-factor + FX four-factor model estimated over a rolling 36-month window of monthly returns ending at fiscal year-end (CRSP).
Offshore Output, Offshore Input	Log counts of the foreign nations a firm names as offshore-output (sales/production) and offshore-input (sourcing) locations in its machine-read 10-K filings. Higher values indicate a broader offshore footprint.
Abnormal Offshore Input	The residual from regressing offshore input on offshore output, isolating the offshore-input signal that is orthogonal to offshore-output activity.
Offshore |Wedge|	The log of the across-country sum of the absolute gap between a firm's foreign-output and foreign-input intensity, from machine-read 10-K filings; an unsigned measure of offshore output-versus-input geographic mismatch.
Supplier / Customer Internationalization	Share of a firm's identified suppliers (respectively, customers) headquartered outside the United States, from FactSet Revere's Supply Chain Relationships product. Partners for which Revere lacks HQ data are excluded symmetrically from numerator and denominator. Higher values indicate a more internationalized supplier (customer) network.
Revere |Wedge|	The across-country sum of the absolute gap between a firm's supplier-side and customer-side country shares, from FactSet Revere; an unsigned measure of supplier-versus-customer geographic mismatch (the signed gap nets to zero by construction).
Leverage (%)	100 × long-term debt (Compustat DLTT) plus debt in current liabilities (Compustat DLC) scaled by total assets (Compustat AT), lagged by one year.
Cash (%)	100 × cash and short-term investments (Compustat CHE) scaled by total assets (Compustat AT), lagged by one year.
Ln(Total Assets)	Log of total assets (Compustat AT), lagged by one year.
Ln(1 + Firm Age)	Log of one plus firm age in years, where age is measured from the earliest CRSP listing date or, if absent, the earliest Compustat fiscal year for the firm. Lagged by one year.
Tobin's Q	Market value of equity (Compustat PRCC_F × CSHO) plus book debt (Compustat AT − CEQ), divided by lagged total assets (Compustat AT). Lagged by one year.
FX-Derivative Mention Rate	Count of FX-derivative-related mentions in the firm's 10-K text, per 100 paragraphs (machine-read 10-K filings).
Ln(FX-Derivative Count)	Log of one plus the firm's count of FX-derivative-related mentions in its 10-K text.

Growth in FX-Hedge Mentions in 10-K (%)	100 times the year-on-year log change in the firm's count of FX-derivative-related mentions in its 10-K text, winsorized at the 1st and 99th percentiles. A positive value indicates the firm increased its disclosed FX-hedging discussion relative to the prior year's 10-K.
Non-USD Bond Issuance	Mergent FISD firm-year bond-issuance measures: an indicator for issuing any non-USD-denominated bond, the count-based share of non-USD issues among issuer firm-years (the fraction of a firm's bond issues denominated in a non-USD currency), and the log count of non-USD issues. The placebo measures (issuing any bond, issuing any USD bond) test whether DoEx predicts the currency mix rather than issuance itself.

Notes. This table defines the variables used throughout the paper. DoEx text measures are constructed from Refinitiv earnings call transcripts (2007–2024). Firm fundamentals are from Compustat Annual and Quarterly. Macro / FX variables are from the Federal Reserve H0.10 trade-weighted dollar indices (FRED). Stock returns are from CRSP. The lag suffix _L denotes a one-period lag (one year for yearly-panel variables; one quarter for quarterly-panel variables; one year for annual controls used in monthly asset-pricing regressions).