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The Peso Perspective:
Understanding Risk and Return in Global Currency Markets

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Presented to the Department of Applied Mathematics
in partial fulfillment of the requirements
for a Bachelor of Arts degree with Honors

Harvard College
Cambridge, Massachusetts
March 2025

Abstract

The drivers of currency excess returns remain poorly understood despite the foreign exchange market's size and liquidity. Using five measures of risk — novel text-based measures (from newspaper articles and firm earnings calls) alongside traditional risk indices that capture a country's economic, financial, and political risk — I show that financial risk is the dominant predictor of volatility in emerging market currency returns, while geopolitical risk is positively associated with excess returns, supporting a risk premium explanation for the profitability of currency trades. Firm-level risk perceptions, especially from foreign firms, outperform political/economic risk in forecasting returns. However, country-specific risks explain only a fraction of exchange rate movements, revealing fundamental limits to forecasting exchange rate movements. The results highlight financial stability as a stronger determinant of risk premia than political uncertainty, with implications for currency speculators and policy-making in emerging economies.

Acknowledgements

Thank you to my thesis advisor, Professor Robin Greenwood, for his guidance and support throughout the entire thesis writing process. I would also like to thank Professor Jeremy Stein, whose Behavioral Finance seminar first got me interested in international finance and testing market efficiency. Thank you to Dr. Leslie Sheng Shen and my classmates in Economics 985 for their feedback and continued motivation, and to Professor Kenneth Rogoff for serving as a reader. Lastly, I would like to thank my friends and my family for their unwavering support of my academic and personal growth. This challenging yet rewarding research journey reinforces the existence of the risk-return tradeoff—even in thesis writing.

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1 Introduction

The global foreign exchange market, with over $7 trillion traded daily, is the world's largest and most liquid financial market (Bank of International Settlements, 2022). Yet, its excess returns defy conventional efficient market theories and risk-neutrality assumptions, leaving an enduring puzzle: why do investors earn predictable returns from currency trades, and what risks are they compensated for?

There are several potential fundamental and idiosyncratic drivers of currency risk premia. Broadly, they can be categorized as macroeconomic (interest rate differentials, inflation, fiscal deficits), political (government stability, corruption, capital controls), financial (sovereign risk, external debt, liquidity shocks), and geopolitical (wars, trade disputes, sanctions). Prior literature offers varying explanations on which risks are priced in: while Brunnermeier et al. (2008) emphasize currency crash risk, Filippou et al. (2018) find political risk as a dominating driver of currency momentum profitability.

I consider five measures of country risk to determine what types of risk matter in currency trade excess returns. Using solely ex-post realized returns to proxy for risk conflates expectations with shocks; therefore, I introduce forward-looking measures, namely firm-level risk perceptions from earnings calls (Hassan et al., 2024) and geopolitical risk indices derived from news sentiment (Caldara & Iacoviello, 2022) to proxy for anticipated risk. From these observables, I test for whether anticipated risk, as well as realized outcomes in a country's economic, political, and financial state (via the International Country Risk Guide), drive currency risk premia.

1.1 Motivation & Main Findings

This thesis addresses the broader research field that concerns the existence of excess returns in currency trading and the global foreign exchange market. It has been empirically shown that such returns exist because of a risk premium associated with the riskiness of currency

trading, but there is little consensus on where the risk comes from in the first place. I take a more granular approach to understanding and measuring risk, in order to observe a disconnect between realized returns and ex-ante risk perceptions.

I find that country financial risk is a stronger determinant of currency excess return volatility than political or economic risk. In addition, geopolitical risk (GPR) and Firm-based risk measures may contain more forward-looking information than traditional country risk indices. The short-term changes in country risk do not have a systematic impact on currency returns, suggesting that risk premia are driven more by structural differences across countries rather than short-term shocks (as proxied by risk fluctuations).

1.2 Thesis Structure

The structure of the paper is as follows: Section 2 explores the mechanisms of the foreign exchange market and explanations for excess returns. Section 3 provides an overview of related research. Section 4 describes the different risk indices used in the analysis, as well as the data and regression methodology. Results are presented in Section 5. Section 6 concludes. Regression tables are in Section 7.

2 The Foreign Exchange Market

2.1 Event-Driven Volatility in Currency Markets

Around the world, currency markets are often first looked at in reaction to events. For example, in December of 2024, a daily market update from the Financial Times reported a weakening of the Chinese renminbi to a 4-month low, following an announcement from Donald Trump saying he would impose a 100% on BRICS countries (Brazil, Russia, India, China, and South Africa). Over the past few years, it was reported that the BRICS countries were considering developing their own currency to challenge the US dollar's (USD) status as

the global reserve currency[1]. In fact, American trade and monetary policy tends to influence not only the currencies of emerging market countries but also that of the US's major trading partners, including Canada and the EU.

Emerging market countries tend to have higher interest rates and more volatile currencies. For example, Brazil, a member of BRICS and the largest economy in South America, has seen its currency depreciate to a record low against the USD over 2024, following weakening investor confidence in the country's fiscal policy[2]. Following this depreciation, the country's central bank intervened with a currency sell-off that further raised government borrowing and its budget deficit. Yet on the economic front, Brazil had posted the lowest unemployment level in recorded history and the country's ministry of finance expects GDP to grow in 2024.

This trend of unstable exchange rates is not limited to emerging market countries. In 2024, the Canadian dollar (CAD) fell approximately 8% relative to the USD. Likely explanations for this continued depreciation of the CAD come from tariff threats from the US, consecutive rate cuts by the Bank of Canada, and the country's own increasing domestic political turmoil. The theme for 2024's currency depreciation is likely due to differences between US and Canadian monetary policy, where investors are leaving Canada in favor of higher returns on deposits elsewhere.

Broadly speaking, foreign exchange (FX) or currency trading involves trading one country's currency for that of another country's. The empirical disconnect between exchange rate movements and fundamental macroeconomic variables allows for currency trading profitability. Deviations from the risk-neutral efficient markets hypothesis for the foreign exchange market allows traders to profit from trading strategies such as carry, momentum, and value. In the short term, currency exchange rates tend to fluctuate based on news and economic events that effect market expectations. For example, safe-haven currencies, like the USD, Japanese Yen (JPY), and the Swiss Franc (CHF) tend to appreciate during times of crisis. Equity sell-offs or surges in volatility (i.e. VIX) tend to have spillover effects in the FX mar-

[1] https://www.ft.com/content/d8347bd0-cc4f-4c3b-9225-0ccd272330a6
[2] https://www.ft.com/content/07d242e9-4ea7-4692-ad8f-4488ddcaa742

kets as well. In addition, when market sentiment is positive, investors are more risk-seeking and will buy riskier assets, such as emerging market currencies, causing them to appreciate.

One example of a trading strategy is the currency carry trade, which involves borrowing in low interest rate currencies ("funding currency") to invest in high-interest rate currencies ("investment currencies"). Carry trades in particular are generally profitable because investors make profits from both the interest rate differential between the two currencies and the likely appreciation of the high interest-rate currency (contradictory to the notion of uncovered interest parity) (Kesse & Blenman, 2024). During periods of low global volatility and bullish financial markets, carry trades tend to be popular as investors' become more risk-seeking and subsequently high-interest rate currencies appreciate. However, during adverse market events or downturns, the unwindings of carry trade positions result in sharp depreciations of high-interest rate currencies. Investors instead seek stable returns in low-interest rate currencies, i.e. "safe haven currencies," which then tend to appreciate.

One notable market event from the summer of 2024 was the "yen carry trade unwind," where investors, who had borrowed in Japanese yen, likely to invest in American equities, experienced significant deleveraging pressure when the Bank of Japan raised its benchmark interest rate. Subsequently, the unwinding of trades in FX and equity markets resulted in a selloff in the Japanese and American stock market (Aquilina et al., 2024). This seemed to have followed a disappointing US labor market update in the beginning of August 2024, and market volatility spiked to levels last seen during the COVID-19 pandemic. The downturn was brief, as markets restabilized over the next few days and global volatility decreased to prior lows. Due to Japan's persistently low interest rates, the yen was the primary funding currency for carry trades, with net short yen futures by leveraged investors reaching record levels. Prior to the unwind, Japan had a relatively low-volatility risk profile. One can understand the catalysts to the carry trade unwind as a monetary policy shock (with the Bank of Japan's hawkish shift), an economic shock (with poor US labor data), and liquidity shock (trading volumes are generally low during the summer months). Investors

who borrowed in yen were forced to deleverage, causing the yen to surge against the dollar and high-yield emerging market currencies (the Mexican peso, Brazilian real, and the South African rand) to sharply depreciate.

In my thesis, I study the role of country-specific risk in the foreign exchange market. Specifically, do different measures of country risk (taken from the perspective of companies, newspapers, and professional risk measurers) contain information beyond traditional risk factors? In addition, I want to see if the channels that drive the risk-return relationship differ for different cross-sections of countries, split by geographic region, economic status, and trade alliance. By utilizing currency trade returns, I can look at how returns vary over time, given expected and unexpected shocks (Koijen et al., 2018). To that end, I regress different moments of currency trade returns (e.g. volatility and skewness) on these risk measures to observe whether anticipated versus realized risk relates differently to the behavior of returns.

2.2 Background

Under the Efficient Markets Hypothesis (EMH), prices reflect all information available to market participants. A corollary of the hypothesis is "no arbitrage", meaning an investor cannot make a profit with no net investment. Translating this to the FX market, EMH states that exchange rates should fully reflect all available information so that traders should not be able to systematically earn excess returns (Taylor, 1995).

By EMH, assuming that the foreign exchange market is risk neutral, then it must be true that the expected gain from holding currency X rather than currency Y, i.e. the expected change in exchange rate, must be exactly offset by the opportunity cost of holding funds in currency X than in currency Y, i.e. the interest rate differential between the two countries. This hypothesis gives us what is known as **uncovered interest rate parity** (UIP) (Taylor, 1995).

There are several ways of analyzing the efficiency of the foreign exchange market, in

addition to looking at the randomness of exchange rate movements. One can employ a regression analysis of forward and spot exchange rates, where the forward exchange rate, F_t, is the present (i.e. time t) agreed upon rate at which currencies are to be exchanged at at some agreed upon future point in time (i.e. $t+1$). The forward premium, or forward discount, is the percentage difference between the current forward rate and the current spot rate[3].

Analyzing exchange rate movements, there is not a consistent conclusion as to whether changes in exchange rates follow a random walk. Cumby and Obstfeld (1981) reject the hypothesis that deviations from UIP follow a random walk; however, the time series for major exchange rates still largely appear to be empirically indistinguishable from random walks.

2.3 Measuring Returns

It is generally understood that forward exchange rates have little forecasting power of future spot exchange rates. Let F_t be the forward exchange rate at time t for exchange at period $t+1$. F_t is defined as the market determined equivalent of the future spot exchange rate (S_{t+1}) and a premium (P_t):

$$F_t = E[S_{t+1}] + P_t, \tag{1}$$

where $E[S_{t+1}]$ is the "efficient forecast" given all information available at time t.

The forward discount (forward premium) is estimated by

$$F_t - S_t = P_t + E[S_{t+1} - S_t] \tag{2}$$

Fama (1984) analyzes the efficiency of the forward market: specifically, whether forward discounts contain time-varying premiums. He finds that most of the variation in forward

[3]Forward "premium" and forward "discount" refer to the same term; a premium is just a negative discount

discounts is variation in premiums: if we consider the variance of $F_t - S_t$ as being comprised of the variance attributed to the premium ($P_t = F_t - S_{t+1}$) and the variance attributed to the expected change in spot rate ($E[S_{t+1} - S_t]$), empirically, variation in the premium accounts for most of the variation in forward discounts. In addition, the premium and expected future spot rate components of forward rates are negatively correlated. Thus, our market-priced expectations of an exchange rate largely do not line up with the actual future exchange rate.

2.3.1 Interest Rate Parity

The relationship between interest rates and exchange rates in currency markets is governed by interest rate parity. It ensures that investors cannot earn risk-free profits from differences in interest rates between two countries due to exchange rate adjustments.

Formally, UIP states that the *expected* change in spot rate over time is equal to the interest rate differential between the two countries:

$$1 + i^* = \frac{E_t[S_{t+k}]}{S_t}(1 + i) \tag{3}$$

UIP assumes that investors do not hedge currency risk, and instead expect exchange rates to adjust in the future to reflect interest rate differentials. This suggests that currencies with higher interest rates (i.e. positive forward discount) should depreciate over time. However, empirical violations of UIP have been found, as counterintuitively, currencies with high-interest rates generally tend to appreciate, while the reverse holds for low interest rate currencies. This misprediction of the direction of the change in the spot exchange rate is known as the **forward premium puzzle** and thus makes it possible to invest in high-yield (high-interest rate) currencies by borrowing low-yield (low-interest rate) currencies, i.e. a positive forward discount strategy.

Assuming there are no barriers to arbitrage – open international bond/financial markets – then the no arbitrage condition of interest rate parity implies that the difference between the forward and spot exchange rate for a foreign currency ($*$) denominated in the local currency

is proportional to the difference in interest rates on bonds denominated in the two currencies. This is condition is known as **covered interest rate parity (CIP)**. Stated another way, the interest rate differential between two countries should be exactly offset by the forward discount (i.e. the forward exchange rate premium) so to prevent arbitrage opportunities.

For two country currencies foreign ($*$) and domestic, let F_t^*, S_t^* be the forward and spot exchange rates in units of a foreign country's currency per unit of domestic currency at time t. i_t^* and i_t are the nominal interest rates at time t on bonds denominated in the foreign and domestic currencies, respectively. The CIP condition implies that

$$F_t^*/S_t^* = (1 + i_t^*)/(1 + i_t), \tag{4}$$

This relationship implies that the premium in the forward exchange rate arises from the difference between the expected returns on the bonds of the two countries.

Testing whether CIP holds dates back to the 1970s with Frenkel and Levich (1975, 1977), where generally researchers found empirical evidence in support of CIP for several major exchange rates. But, more recently, Du et al. (2018) find large and persistent failures of CIP for major currencies since the 2008 global financial crisis, allowing for arbitrage opportunities (e.g. taking long positions in low-interest rate currencies and short positions in high-interest rate currencies, exactly opposite of the typical carry trade approach).

2.4 Drivers of Excess Returns

The demonstrated inefficiency of the foreign exchange market suggests that there may be a level of risk aversion in market participants and/or a deviation from the "pure rational expectations hypothesis." Risk aversion among investors in this market may explain the empirical deviation from UIP, as agents demand a risk premium — a rate of return greater than the interest rate differential — to compensate for the risk of holding foreign currency. Then, the interest rate differential (the cost of holding foreign currency) should be equal to the expected gain from holding foreign currency (expected rate of depreciation of the

domestic currency, or appreciation of the foreign currency) plus a risk premium. So, rather than purely reflecting rational expectations, a time-varying risk premia could explain why UIP failures arise, suggesting that exchange rate movements also reflect compensation for risk (Taylor, 1995).

Greenwood et al. (2023) present a model of foreign exchange risk premia based on bond term premia, demonstrating that unexpected movements in short-term US interest rates affect both long-term bond prices and exchange rates. They find that investors are paid a premium for bearing foreign exchange risk; however, there is no precise determinant on the underlying driver of risk. They do find evidence of monetary policy shocks to bond supply as a partial factor in foreign exchange risk premia. Fama (1984) lays out several interpretations of the relationship between the components of forward rates, such as inefficiency in the foreign exchange market or stochastic deviations from purchasing power parity. It is also possible that government intervention in the country's spot foreign exchange market leads to market inefficiency. Assuming that covered interest rate parity holds and determines the forward rates, in an open market the spot exchange rates would move with the forward discount $(F_t - S_t)$. However, if governments intervene in their currency markets (e.g. via capital flow restrictions, open market operations), they may distort market forces by placing pressure on factors that influence exchange rates (such as differential inflation rates).

Another interpretation, the "doomsday theory," suggests that certain episodes affect the skewness of the distribution of expected exchange rate changes. Given some probabilistic event – the example Fama gives is an inflationary monetary policy change – there may be a highly skewed distribution of expected inflation rates and subsequently higher interest rate differentials and forward differentials of this country relative to others.

Obstfeld (1987) lays out three explanations of the inefficient predictive power of forward exchange rates: the rational expectations model of the "peso problem", speculative bubbles in exchange-rate determination, and foreign—exchange asset pricing under risk aversion. I draw from the intuition of the "peso problem" to contextualize the country-specific shocks

captured in my analysis of risk measures.

2.4.1 The "Peso Problem"

A "peso problem" occurs when investors anticipate a discrete shift in economic fundamentals that has not yet materialized, leading to apparent anomalies in asset prices. This expectation of low probability but impactful events can cause forecast errors to be correlated with current information and deviate from zero in finite samples, even under rational expectations (Lewis, 2008). Such a notion was first discussed in Rogoff (1980), where he found that the behavior of Mexican peso futures and spot exchange rates from June 1974 to June 1976 were aligned with participants anticipating the devaluation of the peso. This was prior to the actual August 1976 devaluation of the peso. Essentially, in the years prior to the Mexican peso crisis, traders in the 1970s had anticipated a potential devaluation of the peso, and as a result, forward contracts priced in a devaluation risk that had not yet materialized, leading to an apparent inefficiency in forecasting models. When the peso was eventually devalued, the accumulated forecast errors were explained ex-post.

More broadly, the peso problem can apply to any asset where investors expect infrequent but substantial changes in fundamentals. This includes foreign exchange markets, equity markets, and interest rates. In general, asset pricing models treat current prices as incorporating investor expectations of future outcomes (i.e. economic variables). This means that, in a stable economic environment, a market participant's rational expectations are based on their individual probability distributions for potential economic shocks and the distribution of past realizations of certain variables or outcomes However, in "unstable environments," these expectations may not follow the probability distribution generating past realizations, if investors rationally anticipate shifts in the distribution of future shocks. When investors anticipate a shift in the behavior of fundamentals, current asset prices will be dependent on the forecasts of the fundamentals under the current process as well as forecasts of the change in prices if a shift does materialize in the future. In particular, the expectation of a

regime shift (a sudden, significant, and persistent change in the underlying process governing a system – in this case, that of the spot exchange rate process) can affect the relationship between asset prices and fundamentals (Evans, 1996).

This interpretation attributes the forward premium puzzle to a small sample bias, wherein rare but extreme events such as currency crashes are not observed in limited datasets. Investors may expect these events to materialize, but if they do not occur in sample, it appears as if high-interest rate currencies appreciate unexpectedly. When considering a sufficiently large sample, the forward premium puzzle would disappear as these events materialize.

2.4.2 A Risk Premia Story

Markowitz (1952) introduces Modern Portfolio Theory (MPT), a formalization of the risk-return tradeoff, and explains how investors should construct portfolios based on mean-variance optimization. He argues that rational investors should seek to maximize expected return while minimizing variance (risk) through diversification. He views portfolio selection as a two-stage process, wherein investors first form beliefs about future security performance based on observation, and then select portfolios based on expected return and variance. In particular, mean-variance optimization suggests that investors should consider both expected return (mean) and risk (variance of returns). The efficient frontier (expected return versus risk) consists of portfolios that offer the highest return for a given level of risk. Higher returns require taking on higher risk, but risk can be minimized through diversification.

Under the "rare disasters" view presented in Farhi and Gabaix (2016), risk premia exist because high-interest rate currencies are more exposed to catastrophic events (e.g. financial crises, sovereign defaults, wars). Investors therefore demand compensation for this risk, which leads to UIP deviations. So, in contrast with the "pure peso" view, which treats the forward premium puzzle as a statistical anomaly, they argue that the latter interpretation provides a fundamental explanation for the puzzle. In other words, the forward premium puzzle reflects a rational pricing of disaster risk.

2.5 A Hybrid Explanation: Expectations in Currency Markets

Together, I consider an explanation of the forward premium puzzle where in theory, if disasters are truly rare, even long historical samples might miss some extreme events, making the peso problem a persistent issue. Since rare events, due to their infrequency, may be hard to measure empirically but simultaneously possibly drive risk premia, I study text-based risk signals, which proxy for forward-looking expectations of extreme events, to see if such latent risks are priced even if rarely realized; if so, this is in line with the idea that investors pay a premium to hedge against tail risks. A complete explanation of the forward premium puzzle incorporates both concepts, such that excess returns exist due to structural risk premia from disaster exposure, as well as sampling uncertainty. Empirically, this would imply that countries with high geopolitical risk or firm-perceived risk should exhibit higher excess returns as compensation for disaster risk and negative skewness (crash risk). High financial risk may also reflect latent peso problems, through the possibility of stops in capital flows or debt crises. Peso problems and risk premia together present a rationalization of the forward premium.

2.5.1 Novel Country Risk Measures

To capture country-specific idiosyncracies, I use risk measures constructed by a professional risk data measurer (the International Country Risk Guide), and two other measures based on company earnings calls and newspaper articles(Hassan et al., 2024, and Caldara & Iacoviello, 2022, respectively). The latter two measures proxy country risk by performing a text-based sentiment analysis on firms' perceptions of a country's riskiness, and similarly for newspaper articles mentioning a country with adjacent discussions of riskiness and uncertainty. These are explained in detail in Section 4.3.

2.5.2 Currency Investor Risk Factors

There is a wide body of literature on the various risk factors currency investors face, such as the forward discount (Lustig, Roussanov, & Verdelhan, 2011), global currency volatility (Menkhoff et al., 2012), currency crash risk (global currency skewness) (Rafferty, 2010), the "peso problem," (Burnside et al., 2011b), and sovereign risk (the likelihood of a government to be unable to meet its loan obligations and defaulting on external debt (Kesse & Blenman, 2024).

3 Related Literature

As long as it is difficult to forecast FX rates using public info and there are informed traders that make positive expected profits, there must be a forward premium puzzle (Burnside, Eichenbaum, & Rebelo, 2009). Burnside, Eichenbaum, and Rebelo (2011b) raise the question of whether payoffs to currency trading strategies can be seen as reward for exposure to conventional types of risk. They find that conventional measures of risk, namely consumption growth, stock market returns, and the Fama-French (1993) factors fail to explain the payoffs to the carry trade.

Possible explanations towards the profitability of currency trading strategies and the failure of UIP is that there exists a risk premium to compensate investors for "covariance between the payoffs to the currency strategies and their stochastic discount factor." However, prior literature has found that the covariance of payoffs with conventional risk factors (e.g. excess returns to US stock market, Fama-French factors, per capita consumption growth, etc.) is not statistically significant. Other potential explanations to the profitability of currency trades is compensation for payoffs being strongly negatively skewed, as well as the "peso problem," which refers to the possibility of rare disasters, i.e. low probability events that significantly decrease payoffs and/or increase the value of the stochastic discount factor.

Brunnermeier, Nagel, and Pedersen (2008) examine crash risk of currencies in the context

of the currency carry trade. They find that currencies with high-interest rates (investment currencies) are prone to crash risk, i.e. exhibit negative skewness in exchange rate movements. In addition, periods of high global risk aversion (measured by the VIX index) coincide with carry trade unwinding, leading to losses in investment currencies. A high VIX level predicts stronger future returns in investment currencies and weaker returns in funding currencies. Interest rate differentials are also a predictor of returns as well as skewness in exchange rate movements.

Farhi and Gabaix (2016) present a model of exchange rates based on "rare but extreme" disasters as a determinant of risk premia. In the model, disasters occur with low probability, and countries differ by their "riskiness" (how much their exchange rate would depreciate given the occurrence of a world disaster). Each country also has time-varying exposure to world disasters. Based on this hypothesis, risky countries also have higher interest rates relative to less risky countries, in order to compensate investors for the risk of currency depreciation under disaster circumstances. In particular, the model posits that the forward premium arises because certain countries are more exposed to rare global disaster events.

According to the model, when a country is considered risky, it has a high-interest rate because its currency has a high likelihood of depreciation in bad states of the world. On the other hand, "safe" countries can borrow at a lower interest rate. The model implies that this difference in interest rates is a compensation for disaster risk (investors are willing to lend at lower interest rates to "safer" countries because, with the occurrence of a disaster, the safe country's currency will appreciate relative to a riskier country). Another feature of the model is that exchange rates of "safe haven countries" will appreciate during times of crisis.

Extending to carry trade returns, expected carry trade return depends on whether disasters take place or not: if there are no disasters, expected return is zero, while if there are disasters, then expected return is positive if the investment (high-interest rate) currency is riskier than the funding currency (low-interest rate currency). Under these conditions, the

carry trade will have highly negative returns, and the compensation for bearing disaster risk is the positive interest rate differential which yields positive expected returns.

Brunnermeier, Nagel and Pedersen (2009) find empirical evidence of a strong link between currency carry trade premium and currency crash risk, and Burnside et al. (2011) find that carry trade premium can be explained by rare events (high values of SDF and negative carry trade returns), which is in line with the rare disaster hypothesis. With this intuition, I will attempt to test the hypothesis that disaster risk accounts for the forward premium puzzle, by specifically looking at changes in country risk perceptions on currency trade returns. Using various measures of country risk perception (both realized and anticipated risk), I will analyze the effects on currency excess returns and the forecasting power of risk.

Kesse and Blenman (2024) explore the persistent violation of uncovered interest parity (UIP) in the foreign exchange (FX) market and examine the role of sovereign and political risk in explaining currency excess returns. The UIP condition posits that the interest rate differential between riskless foreign and domestic assets should equal the expected depreciation rate of the foreign currency. However, empirical evidence reveals that high-interest rate currencies do not depreciate as much as UIP would predict and sometimes even appreciate, while low-interest-rate currencies tend to depreciate – a phenomenon that enables profitable carry trades. The paper identifies a forward premium puzzle, as highlighted by Burnside, Eichenbaum, and Rebelo (2011a), where excess returns from carry trades reflect an inherent risk premium, but the exact nature of this risk remains unclear. Kesse and Blenman investigate whether sovereign risk based in political, macroeconomic, and global systematic factors accounts for these excess returns. They question whether local sovereign and political risks are equally significant for advanced and emerging economies and assess the existence of a political risk premium. The authors argue that the local component of sovereign risk partially explains currency excess returns, particularly as political uncertainty in weaker economies necessitates a higher risk premium when economic conditions deteriorate.

Filippou, Gozluklu, and Taylor (2018) investigate political risk and currency momen-

tum trade returns, where an investor buys currencies that have performed well in the past (winners) and short-sells currencies that have performed poorly (losers). They found that investors require a higher premium for taking on global political risk by holding a portfolio of past winner currencies when performing a momentum trading strategy. Conversely, investors accept a lower return from investing in loser portfolios, i.e., past loser currencies, as they provide insurance against adverse movements of currency returns in bad states of the world. A measure of global political risk (relative to the United States) is used to capture unexpected political conditions. The authors also develop a two-factor asset pricing model, involving a level factor (currency risk premia) and a slope factor (global political risk), in order to assess whether political risk is priced in the cross-section of currency returns. The results show that political risk significantly impacts currency momentum strategies. Portfolios with high exposure to political risk (winner currencies) require higher premiums, while portfolios with low exposure (loser currencies) provide lower returns. Political risk innovations explain a significant part of currency momentum returns, even after controlling for other risk factors like FX volatility, liquidity, and credit default swaps (CDS) spreads. The main channel through which political risk impacts momentum is via the short leg of the strategy (loser currencies), which provides insurance against adverse political shocks. Hence, the authors suggest that political risk innovations are priced into currency momentum portfolios, so investors are compensated for exposure to political risk through higher returns on politically risky currencies.

Falconio (2023) investigates the impact of US monetary policy on the returns of currency carry trades. Specifically, the author looks at how unexpected US monetary policy decisions impact carry trade returns, defined as the total returns for a long/short strategy (long a portfolio of currencies with the highest interest rates / forward discounts, short a portfolio with the lowest interest rates / smallest forward discounts). It focuses on expansionary (loosening) and restrictive (tightening) policies. The monetary policy shocks are measured using an indicator derived from changes in Fed funds and Eurodollar futures around Federal

Open Market Committee (FOMC) announcements. A key finding was US expansionary monetary policy increases the profitability of carry trades. This effect is primarily driven by increases in future real interest differentials between high-interest rate currencies and the US dollar, which attracts capital flows to those currencies. The rise in high-interest currency returns (from portfolio 5) is not fully offset by a decrease in low-interest currency returns (from portfolio 1). As a result, unexpected monetary expansions lead to higher overall carry trade returns. Hence, capital flows play a crucial role in influencing exchange rates and, therefore, the profitability of the carry trade.

3.1 Synthesizing the Evidence: Testable Predictions

Different risk measures—backward-looking (ICRG) versus forward-looking (GPR, Firm-based)—capture different dimensions of country risk, and will show up in differing implications for currency returns, volatility and skewness.

I hypothesize that (1) financial risk will dive volatility in emerging market currencies, as such countries lack shock absorbers; (2) geopolitical risk will dictate a risk premium, in line with peso problem-disaster risk dynamics, and (3) Firm-based risk measures will outperform traditional measures by capturing latent risks that more informed market participants account for (i.e. investors and company leadership).

ICRG's financial risk ratings, based on objective data like external debt/GDP, will dominate volatility in emerging market currencies, where the capacity for shock absorption is weaker than that of advanced economies. Typically, emerging markets lack institutional buffers, making them more prone to financial instability.

GPR's news-based measures will correlate with excess returns, reflecting compensation for latent disaster risks. This is in line with the theory presented above on peso problems and tail risks, where investors price in the possibility of negative events such as wars or sanctions even if they rarely materialize.

Lastly, Firm-based risk perceptions will better predict returns by capturing forward-

looking uncertainty. I expect firms and investors to internalize risks such as political instability before they appear in downstream quantifiers, such as macroeconomic variables.

Across countries, I expect political risk (ICRG) to drive returns for emerging markets more so than economic or financial risk, primarily because countries considered emerging economies tend to experience more political and domestic volatility and changes in political risk will have larger first-order effects on investor decisions. For advanced economies, I hypothesize that economic and/or financial risk will be more salient. In general, I expect changes and levels of risk to be more salient for emerging market countries than for developed countries, as emerging market countries are less able to absorb shocks.

4 Data, Definitions, & Methodology

4.1 Currency Excess Returns

At time t, let S_t be the spot exchange rate and F_t be the 1-month forward exchange rate. These values are quoted against the US dollar, i.e. S_t is in units of foreign currency per dollar. Therefore, an appreciation of the US dollar reflects an increase in S_t (i.e. a depreciation in the foreign currency). The realized excess return is defined as

$$R_{t+1} = (F_t - S_{t+1})/S_t, \tag{5}$$

which is the payoff of a trading strategy where an investor buys the foreign currency in the 1-month forward market at time t, and then sells it in the spot market at time $t + 1$.

For the sake of consistency across currency trade returns, all returns can be understood as positions taken relative to the USD. If the high-yield currency appreciates or remains stable, traders realize a gain. If the high-yield currency depreciates, traders lose, but only if the depreciation exceeds the carry return.

4.1.1 Extension to Currency Carry Trade

Countries are categorized by their currency's status as either a "investment" currency or a "target" currency based on their average monthly forward discount within the sample, $(F_t - S_t)/S_t$. Countries with positive forward discount were categorized as investment currencies and those with negative forward discount as funding currencies.

Country/Currency Categorization			
Advanced Economies	**Emerging/Developing Economies**	**Funding Currency**	**Investment Currency**
Australia	Argentina	Australia	Argentina
Croatia	Brazil	Croatia	Brazil
Czech Republic	Chile	Czech Republic	Chile
Denmark	Colombia	Denmark	Colombia
Greece	Egypt	Greece	Egypt
Iceland	Hungary	Iceland	Hungary
Israel	India	Israel	India
Japan	Indonesia	Japan	Indonesia
New Zealand	Malaysia	New Zealand	Malaysia
Norway	Mexico	Norway	Mexico
Singapore	Morocco	Singapore	Morocco
South Korea	Philippines	South Korea	Philippines
Sweden	Romania	Sweden	Romania
Switzerland	Poland	Switzerland	Poland
Taiwan	Russia	Taiwan	Russia
United Kingdom	Thailand	United Kingdom	Thailand
	Turkey		Turkey
	South Africa		South Africa

Table 1: Exchange Rate Country Sample

Under CIP (Equation 2), the forward discount is a proxy for the interest-rate differentials, i.e. foreign interest rate i_t^* and domestic (US) interest rate i_t can be approximated by

$$i_t^* - i_t \approx (F_t - S_t)/S_t \tag{6}$$

Therefore, Excess Return can also be expressed as

$$R_{t+1} = (i_t^* - i_t) - \Delta S_{t+1} \tag{7}$$

where $\Delta S_{t+1} = (S_{t+1} - S_t)/S_t$ is the depreciation of the foreign currency (if positive). This gives the return of an investment in the foreign currency financed by borrowing in the domes-

tic currency. Recall that under UIP (Equation 1), excess return should not be forecastable, i.e. $E_t[R_{t+1}] = 0$.

4.2 Exchange Rate Data

The sample consists of 34 countries[4]. I obtain data on daily spot and 1-month forward exchange rates (relative to the US dollar) for each country. Exchange rates are from LSEG Datastream. The sample covers a cross-section of countries from the earliest available spot/1-month forward rate to the end of September 2024. Most exchange rates cover the time period from December 1998 to September 2024. However, based on risk measure data availability, some country samples begin later (see Section 4.3).

4.3 Measures of Country Risk

4.3.1 International Country Risk Guide

The PRS Group publishes the International Country Risk Guide (ICRG) Risk Ratings. The ICRG publishes monthly data on political, economic, and financial risk ratings and forecasts. Risk points are assessed for each component factor, and country monthly ratings range from a high of 50 (least risk) to a low of 0 (highest risk). ICRG is a retrospective measure of risk, meaning that its calculation consists of numerical inputs that are counted at the end of each month. In particular, for economic and financial risk ratings, risk assessments and component values are assigned based on objective data points. On the other hand, for political risk ratings, these are made based on a "subjective analysis of the available information." Overall, these risk measures are based on realizations of risky events.

I log-transform the risk ratings as shown below to mitigate skewness and normalize

[4]The countries are: Argentina, Australia, Brazil, Chile, Colombia, Croatia, Czech Republic, Denmark, Egypt, Greece, Hungary, Iceland, India, Indonesia, Israel, Japan, Malaysia, Mexico, Morocco, New Zealand, Norway, Philippines, Poland, Romania, Russia, Singapore, South Africa, South Korea, Sweden, Switzerland, Taiwan, Thailand, Turkey, and United Kingdom. Note that for certain risk measures, not all countries in this sample were included. Only countries with available risk data were used when applicable.

relative to the US as the baseline, so that an increase in a risk measure corresponds to a worsening in a country's particular risk profile:

$$\begin{aligned} \text{Economic Risk}_{c,t} &= \log(1/\text{ERR}_{c,t}) - \log(1/\text{ERR}_{\text{US},t}) \\ \text{Financial Risk}_{c,t} &= \log(1/\text{FRR}_{c,t}) - \log(1/\text{FRR}_{\text{US},t}) \\ \text{Political Risk}_{c,t} &= \log(1/\text{PRR}_{c,t}) - \log(1/\text{PRR}_{\text{US},t}) \end{aligned} \tag{8}$$

Political Risk Rating assesses the political stability of a country relative to other countries by assessing risk points for each of the component factors of government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. A high risk rating 100 (maximum) indicates least risk, while a low rating of 0 indicates highest risk. **Economic Risk Rating** assesses a country's current economic strengths and weaknesses. Risk components are based on accepted ratios between the measured data within the national economic/financial structure, and then the ratios are compared, not the data. Points incorporated in this measure include GDP per capital, real annual GDP growth, annual inflation rate, budget balance as a percentage of GDP, and current account balance as a percentage of GDP. The highest risk rating is 50, indicating lowest risk, whereas the lowest risk rating is 0, indicating highest risk. **Financial Risk Rating** assesses a country's ability to pay or finance its official, commercial and trade debt obligations. Components of this measure include factors of foreign debt as a percentage of GDP, foreign debt service as a percentage of exports of goods and services (XGS), current account as a percentage of XGS, net liquidity as months of import cover, and exchange rate stability. A risk rating of 50 indicates least risk, while a risk rating of 0 indicates highest risk.

ICRG sample coverage varies by country, where the earliest recorded risk rating for most countries ranges from January 1984 - December 1985 (risk data for the Czech Republic begins in 1993, naturally). For these three risk measures, the final dataset spans the overlapping dates of the exchange rate data and the risk data.

Figure 3 shows the time series of ICRG's financial risk rating for Australia, Canada, Switzerland, Japan, and the United Kingdom. The general comovement of the risk measures suggests that these advanced economies experience shared or globalized financial instability, with different countries bearing different magnitudes of risk. Figure 4 shows the time series of ICRG's political risk rating for Brazil, Russia, India, and South Africa. Here, more country idiosyncrasies can be seen, such as Russia's invasion of Ukraine at the beginning of 2022. Figure 5 shows the cross section of ICRG country risk measures for the sample in June 2024. Blue indicates low measured risk, red indicates high measured risk.

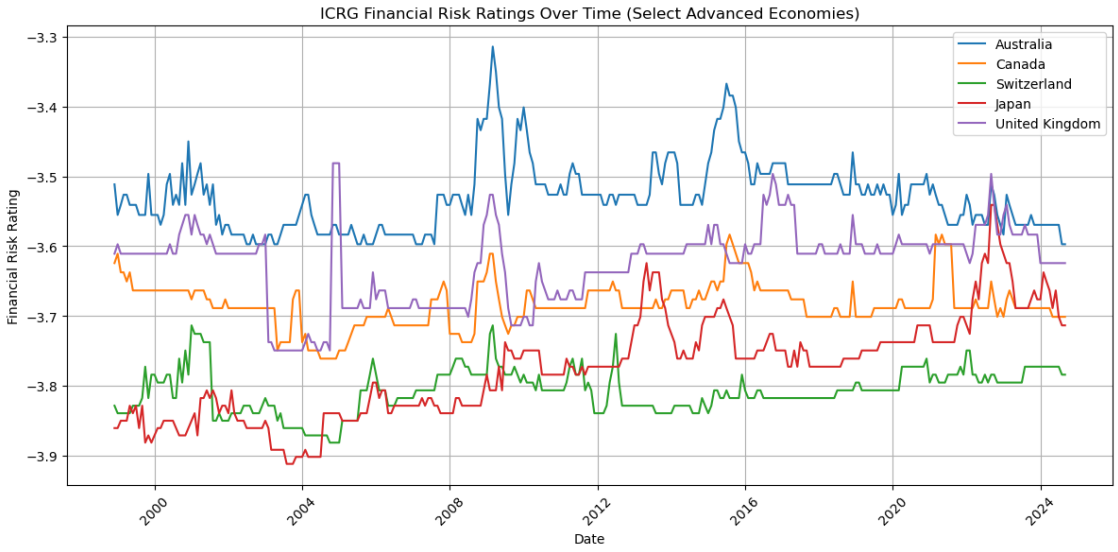


Figure 3: Financial Risk Ratings for Australia, Canada, Switzerland, Japan, and the United Kingdom

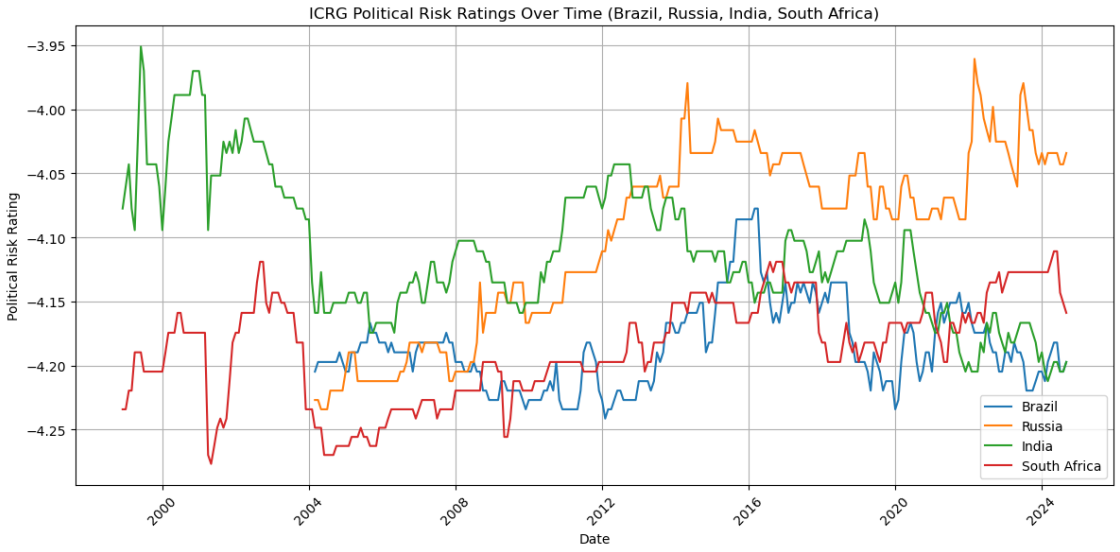


Figure 4: Political Risk Ratings for Brazil, Russia, India, and South Africa

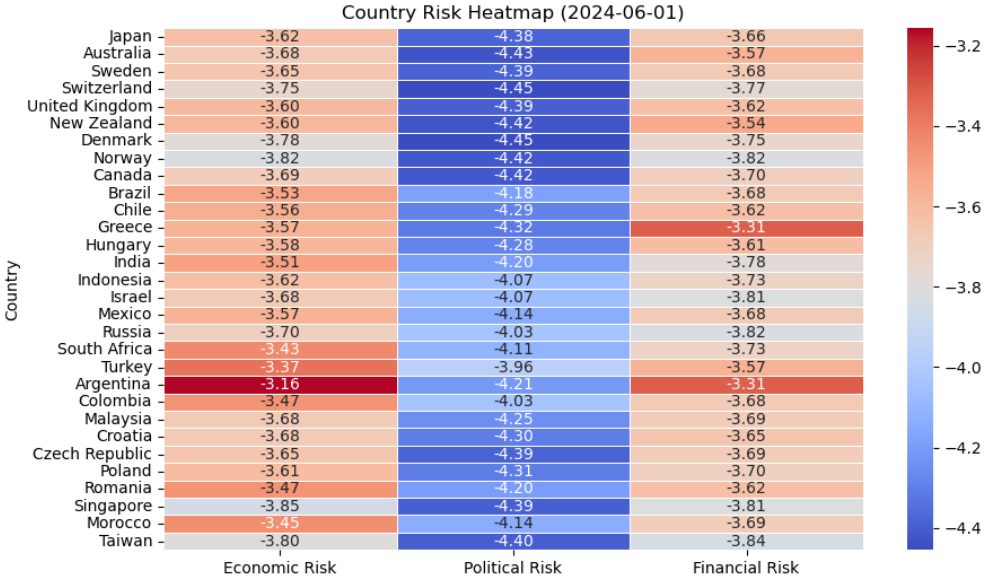


Figure 5: ICRG Country Risk Ratings (June 2024)

4.3.2 Firm-based Country Risk

Hassan et al. (2024) use earnings conference calls to measure the amount of risk key stakeholders (i.e. managers and investors of each firm) associate with each country at each point in time. The measure of country risk for each country in the sample is derived from counting

the number of mentions of the country within 10 words of a synonym for risk or uncertainty, which is then weighted. Other country-specific measures include country exposure, the overall perceived exposure a firm has to a given foreign country, and country sentiment, which quantifies whether a firm receives good or bad news related to its activities related to a given country.

In order to calculate country-level measures of risk, the authors aggregate the firm-level measure of country risk across a set of firms K:

$$\text{Country Risk}_{c,t}^{K} = \frac{1}{N_K} \sum_{i \in K} \text{Country Risk}_{i,c,t}, \tag{9}$$

where N_K is the number of firms of type K in the dataset (i.e. financials, non-financials, foreign, domestic, all). This measure of quarterly country risk tells us the average perceived risk transmitted from country c at time t for the set of firms K.

The data covers country risk from 2002 to 2020. Figure 6 shows how risk perceptions for a particular country (in this case, Mexico) vary depending on the type of firm. For Mexico, risk perceived by domestic firms has the highest variance and overall assigns the highest level of risk at each point in time. There also appears to be general agreement in risk assessments amongst non-financial and foreign firms.

Figure 7 shows the same time series but for Japan. Again, Japanese firms typically perceive higher levels of Japan-risk than other types of firms, with greater variance in associated risk perceptions. Similar to Mexico, financial firms seem to capture the same risk trends as foreign and non-financial firms, but the higher risk levels suggest that financial firms comment on Japanese-specific risk at a greater frequency.

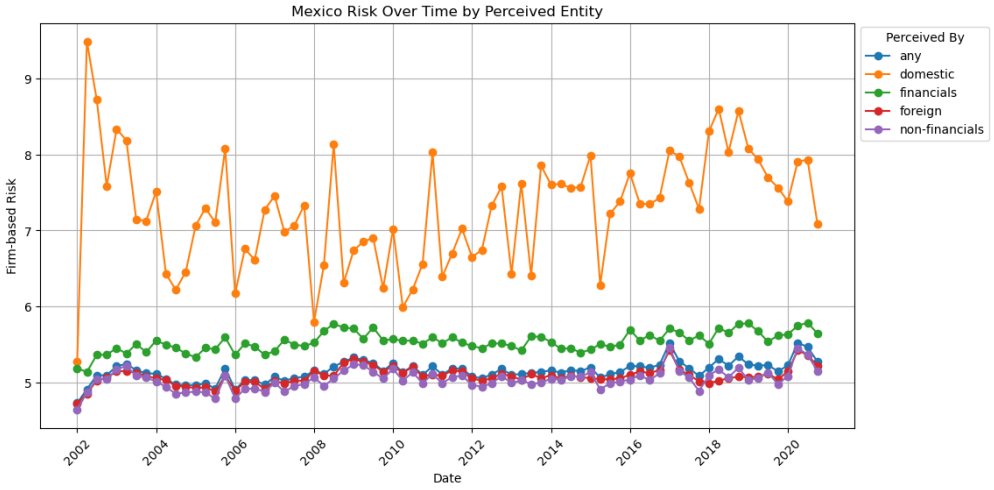


Figure 6: Firm-based Measures of Risk associated with Mexico (2002 - 2020)

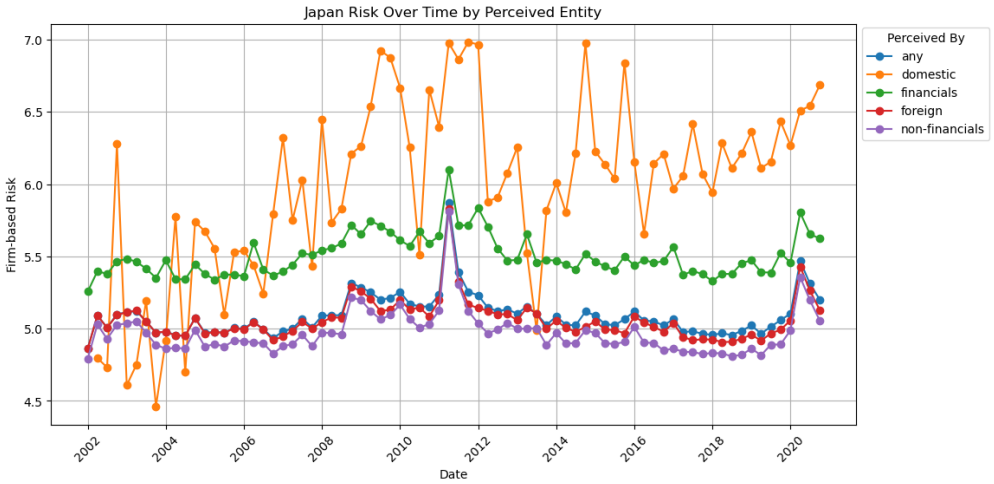


Figure 7: Firm-based Measures of Risk associated with Japan (2002 - 2020)

4.3.3 News-based measure of Geopolitical Risk (Caldara & Iacoviello, 2022)

Caldara and Iacoviello (2022) develop a novel measure of geopolitical risk (GPR) for 26 countries. Similar to Hassan et al. (2024), the measure is constructed using a text-based approach. They define geopolitical risk as "the threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations." To compute each country's monthly GPR index, they calculate the share of news articles mentioning adverse geopolitical events, sampling from newspapers published in the United States, the United Kingdom, and

Canada (so the primary perspective captured is that from the North American and British angle). This measure captures the risk a US newspaper associates with a particular country, or more broadly, the US perspective on risks involving a particular country.

They found that higher geopolitical risk foreshadowed lower investment and employment. In looking at macroeconomic outcomes of geopolitical risk, they found that shocks to GPR led to persistent declines in investment, employment, and stock prices. Similar to Hassan et al. (2024), the authors analyze quarterly earnings calls of US-listed firms to construct firm-level geopolitical risk. Comparing newspaper and investor perspectives on risk, they found that the two indices have a correlation of 0.19, suggesting that investors' and journalists' assessment on geopolitical events are similar.

One limitation of this measure is that it samples primarily from Western news publications, and although the newspapers cover global geopolitical events, they often imply US involvement. Therefore, the GPR may not pick up on domestic nuances that would typically not make global news but still affects a country's risk level. At a high level, the GPR provides a perspective that is relevant for North American and British investors, companies, and policymakers.

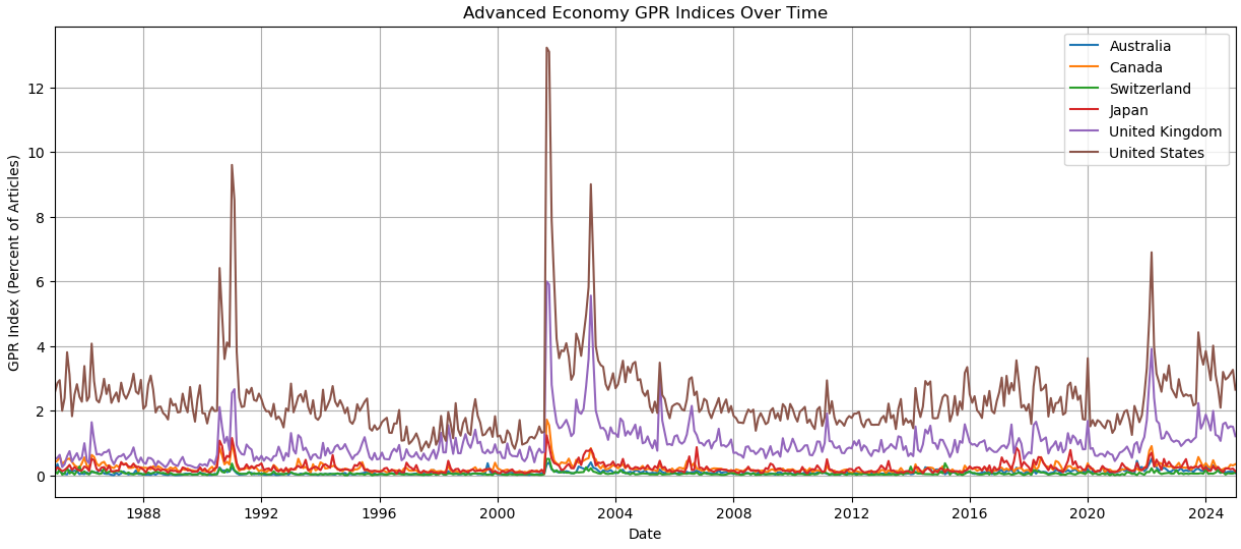


Figure 8: GPR Indices for Australia, Canada, Switzerland, Japan, United Kingdom, and the United States (1985-2025)

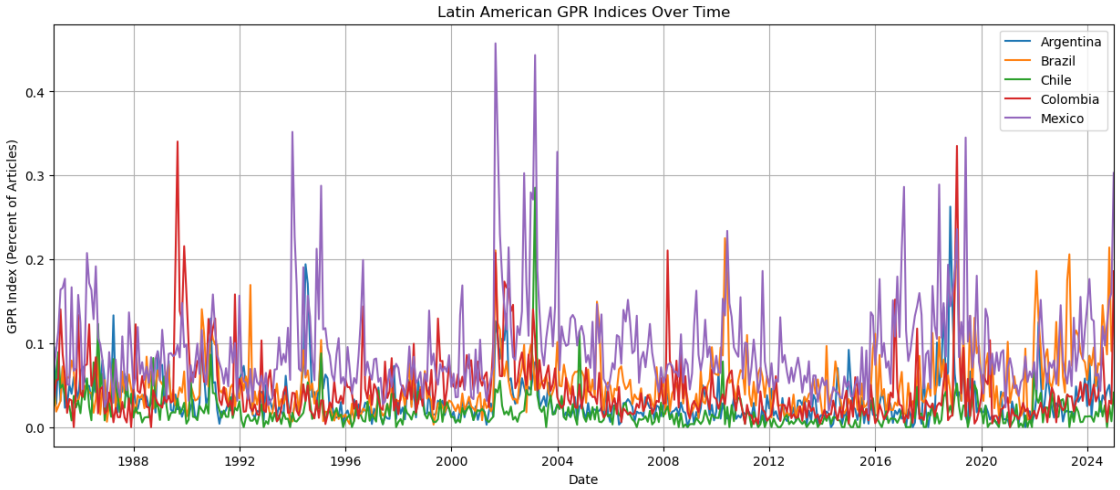


Figure 9: GPR Indices for Argentina, Brazil, Chile, Colombia, and Mexico (1985 - 2025)

4.4 Graphical Comparison of Different Risk Measures

The text-based approaches of GPR and Firm-based Risk encapsulate a broader understanding of risk, where both the realization and threat of risky events occurring is captured in the risk measure. Firm-based risk is more of a measure of country uncertainty, as at each point in time, the firms' perceptions of their exposure to country-specific risk are quantified and tallied.

To visually compare the different risk measures, Figure 10 plots each of the three indices over time for Turkey. Note that the Firm-based country risk measure and the GPR use a text-based approach to assign risk scores to each point in time whereas the ICRG aggregates specific variables related to economic, political, and financial risk, so the former two present a broader definition of risk. There appears to be some comovement in risk measure between the two text-based approaches. The correlation matrix in Table 2 shows that the measures of risk constructed by Hassan et al. and Caldara and Iacoviello (2022) are more strongly correlated than the ICRG risk ratings to either.

	GPR	ICRG	Firm-based
GPR	1.000	0.260	0.421
ICRG	0.260	1.000	0.369
Firm-based	0.421	0.369	1.000

Table 2: Correlation Matrix between various risk measures (Turkey)

Figure 11 shows normalized volatility of currency trades and GPR index movements over time for Turkey. There appears to be an association between spikes in geopolitical risk and volatility of returns.

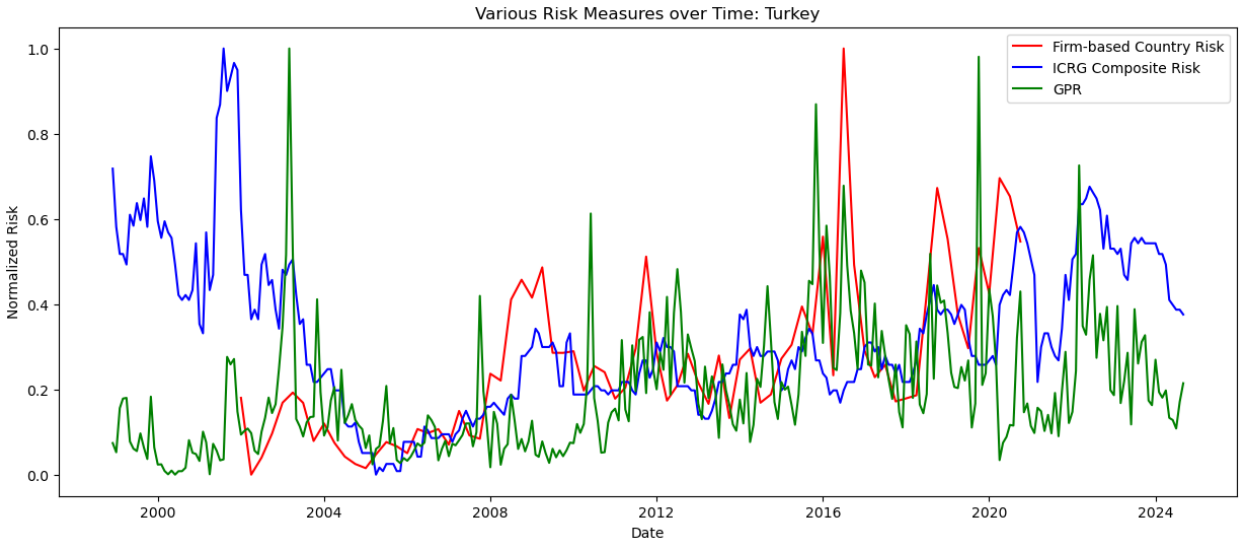


Figure 10: Normalized Measures of Risk for Turkey over time

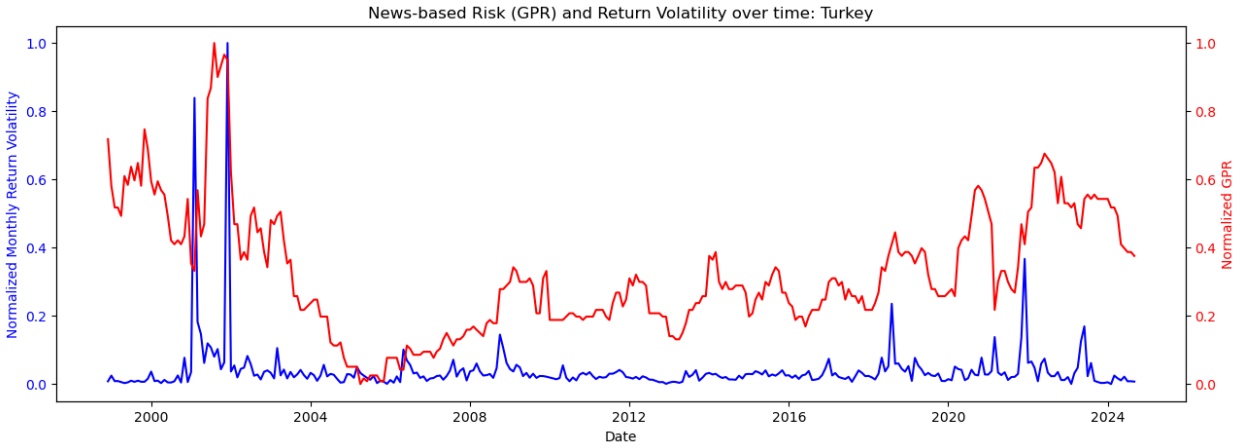


Figure 11: Turkish Lira Currency Trade Monthly Volatility and Turkey GPR over time

4.5 Regression Methodology

Daily currency excess returns are calculated for each country in the sample following the formula above. Since ICRG and GPR report monthly indices of risk, monthly moments of returns are calculated using daily returns data (mean, volatility, skewness), i.e. I measure volatility and skewness of daily returns within each quarter or month. Since Hassan et al. (2024) reports country risk at a quarterly level, quarterly statistical measures are calculated similarly using daily data. I regress (monthly/quarterly) changes in mean returns, volatility of returns, and skewness (crash risk) of returns on changes in risk ratings (month to month or quarter to quarter). I run a panel regression on the entire sample with time and country fixed effects and clustered standard errors at the country level, and then slice the panel in different ways to observe patterns or trends within various groupings of countries (based on geographic region, trade alliance, etc.).

$R_{c,t+1}$ is the (monthly/quarterly) average currency trade return for country c in period $t+1$, $\sigma(R_{c,t+1})$ is the standard deviation (volatility) of monthly/quarterly returns, and $\gamma(R_{c,t+1})$ is the skewness of returns. Change in returns and risk measures, e.g. $\Delta\text{Risk Measure}_{t+1} = \text{Risk Measure}_{t+1} - \text{Risk Measure}_t$, i.e change from previous period t to next period $t+1$. For GPR and Firm-based risk ratings, risk assigned to each country at time t is saved as the log of the country risk minus the log of the country risk for the US during the same period.

4.5.1 ICRG Regression Equation (Monthly)

Using monthly data from ICRG on a country's level of political, economic, and financial risk, I run the following panel regressions (with time and country fixed effects). Risk ratings are inverse-logged and reported relative to US risk. I use time and country fixed effects cluster standard errors at the country level for the panel regression.

Levels Regression:

$$R_{c,t+1} = \beta_0 + \beta_1 PRR_{c,t+1} + \beta_2 ERR_{c,t+1} + \beta_3 FRR_{c,t+1} \tag{10}$$

$$\sigma(R_{c,t+1}) = \beta_0 + \beta_1 PRR_{c,t+1} + \beta_2 ERR_{c,t+1} + \beta_3 FRR_{c,t+1} \tag{11}$$

$$\gamma(R_{c,t+1}) = \beta_0 + \beta_1 PRR_{c,t+1} + \beta_2 ERR_{c,t+1} + \beta_3 FRR_{c,t+1} \tag{12}$$

Changes Regression:

$$R_{c,t+1} = \beta_0 + \beta_1 \Delta PRR_{c,t+1} + \beta_2 \Delta ERR_{c,t+1} + \beta_3 \Delta FRR_{c,t+1} \tag{13}$$

$$\sigma(R_{c,t+1}) = \beta_0 + \beta_1 \Delta PRR_{c,t+1} + \beta_2 \Delta ERR_{c,t+1} + \beta_3 \Delta FRR_{c,t+1} \tag{14}$$

$$\gamma(R_{c,t+1}) = \beta_0 + \beta_1 \Delta PRR_{c,t+1} + \beta_2 \Delta ERR_{c,t+1} + \beta_3 \Delta FRR_{c,t+1} \tag{15}$$

4.5.2 Regression Equations for Text-based Risk Measures

I use Caldara and Iacoviello's country-specific GPR indices which reports GPR on a monthly basis, with time and country fixed effects with clustered standard errors for the panel regression. Similarly, using Hassan et al. (2024)'s quarterly firm perceptions of country risk, I run panel regressions (with time and country fixed effects and clustered standard errors) from the perspective of the set of firms f, where f is the set of all firms, foreign firms, domestic firms, financials firms, or non-financials firms. Let $\text{Risk}_{c,t+1} = GPR_{c,t+1}$ for the regressions using news-based risk (where periods are monthly), and let $\text{Risk}_{c,t+1} = \text{CountryRisk}_{c,f,t+1}$

for the regressions using Firm-based risk (where periods are quarterly).

Levels Regression:

$$R_{c,t+1} = \beta_0 + \beta_1 \text{Risk}_{c,t+1} \tag{16}$$

$$\sigma(R_{c,t+1}) = \beta_0 + \beta_1 \text{Risk}_{c,t+1} \tag{17}$$

$$\gamma(R_{c,t+1}) = \beta_0 + \beta_1 \text{Risk}_{c,t+1} \tag{18}$$

Changes Regression:

$$R_{c,t+1} = \beta_0 + \beta_1 \Delta\text{Risk}_{c,t+1} \tag{19}$$

$$\sigma(R_{c,t+1}) = \beta_0 + \beta_1 \Delta\beta_1 \text{Risk}_{c,t+1} \tag{20}$$

$$\gamma(R_{c,t+1}) = \beta_0 + \beta_1 \Delta\beta_1 \text{Risk}_{c,t+1} \tag{21}$$

5 Results

For realized risk, Financial Risk (ICRG) exhibits the strongest and most consistent effects: it significantly increases volatility across all samples, with the largest magnitude in Emerging Markets (coefficient = 0.029, $p < 0.001$, Table 5) and BRICS (0.034, $p < 0.05$, Table 7). Economic Risk (ICRG) also affects volatility in Advanced Economies (-0.0022, $p < 0.05$, Table 4) and Emerging Markets (0.0201, $p < 0.05$, Table 5), though with smaller coefficients. Skewness effects are generally insignificant, except in Latin America, where Economic Risk correlates with negative skewness. Geopolitical Risk (GPR) shows no meaningful relationship with realized risk measures.

For excess returns, GPR has a small but significant positive effect on returns in the full sample (0.0022, $p < 0.05$, Table 3), suggesting that geopolitical tensions may modestly elevate carry trade returns. However, this effect disappears in subsamples. Financial and Economic Risks are insignificant for returns globally, except in Advanced Economies, where

higher Economic Risk reduces mean returns (-0.02, $p < 0.05$, Table 4). In Emerging Markets, risk measures explain little variation in returns (low R^2 values), suggesting that idiosyncratic drivers are more at play.

A one-unit increase in Financial Risk raises volatility by 2–3 percentage points in Emerging Markets, while GPR's impact on returns is an order of magnitude smaller (0.2 percentage points). Statistical significance is robust for volatility (multiple $p < 0.001$ results) but sparse for skewness and returns, suggesting that risk premia are more structural (priced into volatility) than reactive (affecting short-term returns).

Financial Risk is associated with negative skewness in Latin America (-0.307, Table 6), suggesting that realized financial instability increases crash risk. However, this pattern does not hold globally (-0.0755, $p > 0.10$, Table 3), implying localized peso problem dynamics.

5.1 Levels Regressions

5.1.1 ICRG Risk Data

Table 3 shows the results of the panel regression on the entire sample of countries, where levels of risk are regressed on levels of returns. Amongst the ICRG risk measures, Financial Risk is a significant predictor of return volatility; that is, a country becoming riskier relative to the United States is associated with increased volatility of excess returns. This suggests that riskier currencies tend to exhibit greater fluctuations in excess returns, in line with my hypothesis. Other measures of risk are not predictive of average returns or skewness of returns. In the regressions on volatility and skewness with ICRG risk measures, the constant is statistically significant, suggesting that there is a baseline level of volatility and skewness that is present independent of risk. A baseline level of currency return volatility across all markets suggests that currency volatility may be driven by factors beyond country risk, such as capital controls.

Across all subsamples (Tables 4 - 7), Financial Risk is a significant predictor of volatility of returns. Financial Risk and Economic Risk appears to be a significant predictor of mean and

volatility of returns, but Political Risk is not a significant predictor across any regressions.

5.1.2 Geopolitical Risk (Caldara & Iacoviello)

When using a news-based measure of risk, as risk increases mean excess returns tend to increase (Table 3). This is in agreement with the risk premium story, that higher risk currencies tend to offer higher returns to investors to compensate for additional uncertainty. There is also a baseline excess return associated with currency trades as well. Increases in risk also tend to result in negative skewness of returns, i.e. greater crash risk, but these coefficients are not significant for any of the included subsamples.

5.1.3 Firm-based Risk (Hassan et al.)

As firm perceptions of country risk and uncertainty increase, there tends to be an increase in mean and volatility of returns for the entire sample of countries. This trend persists with the subsample of emerging market currencies as well as BRICS currencies, but does not appear to have a meaningful relationship for Latin American or advanced economy countries. Surprisingly, country risk perceived by financial firms tends not to be a significant predictor of returns, despite the fact that Hassan et al. (2024) found that perceptions of foreign and financial firms best accounted for the patterns of capital inflows and sovereign credit spreads. However, in line with Hassan et al. (2024), risk perceptions of foreign firms tends to be a more significant predictor of returns, capturing the role of risk in capital allocation across countries and firms. It is possible that due to local biases, the risk measure derived from domestic firms contains more noise, and mischaracterizes the potential for and likelihood of risky events occurring.

5.2 Differences Regressions

5.2.1 ICRG Risk Data

Table 13 gives the panel regression results for a first differences regression on changes in risk, as measured by ICRG (1) and GPR (2), on changes in monthly mean, volatility, and skewness of currency trade returns. A one-unit increase in financial risk, i.e. a 63.2% decline in a country's financial risk rating relative to that of the United States, monthly change in average currency trade returns is 1.27 basis points. Recall that the ICRG measures risk where higher risk ratings are associated with lower risk. Other variables were not statistically significant, but broadly, when looking at the entire sample, increases in financial and political risk were associated with positive changes in average returns. Increases in financial and economic risk were associated with increases in volatility of returns, and increases in financial and political risk were associated with negative skewness of returns. Given the low R^2 for regressions done with ICRG risk measures, not much can be said about the predictability of changes in risk on any moment of currency trade excess returns.

Overall, changes in ICRG measures of country risk (financial, political, and economic) are not associated with significant changes in excess returns. Even for "riskier" countries like those in Latin America (Table 16) and BRICS (Table 17), a monthly increase in risk does not have a significant effect on currency trade returns. So, we cannot make the risk premia argument as the effect is not stronger in the emerging markets/BRICS subsets.

5.2.2 Geopolitical Risk (Caldara & Iacoviello)

The following countries were included in this sample: Argentina, Australia, Brazil, Canada, Chile, Colombia, Denmark, Hungary, India, Indonesia, Israel, Japan, Malaysia, Mexico, Norway, Poland, Russia, South Africa, South Korea, Sweden, Switzerland, Taiwan, Turkey, and United Kingdom.

Now considering a broader measure of country risk and uncertainty captured by GPR

(Table 13 (2)), changes in relative risk do not appear to systematically drive changes in returns, volatility, or skewness for the sample of all countries. This suggests that the monthly fluctuations in risk measured via newspaper articles do not explain currency return characteristics and how they evolve over time; in other words, these short term shifts in risk do not manifest in monthly returns in the currency markets.

However, the constant coefficient is significant and positive for regressions of changes in GPR on changes in mean and volatility of returns. This suggests that currency returns on average are increasing over time, regardless of changes in perceived risk. Similar for volatility, the positive coefficient suggests that volatility is increasing over time, possibly due to fluctuations in market conditions or overall global uncertainty.

Tables 16 and 17 show regressions for changes in monthly risk for Latin American and BRICS countries. Although changes in GPR are not significant predictors of any moment of returns, the presence of significant positive coefficients for constants when regressing on changes in mean and volatility, and a significant negative coefficient when regressing on changes in skewness, suggests that these countries experienced increasing volatility and positive currency trade returns over time, ass well as more negative skewness, i.e. more downside risk.

5.2.3 Firm-based Risk

The sample consists of the following countries: Argentina, Australia, Brazil, Canada, Chile, Colombia, Czech Republic, Greece, Hungary, India, Indonesia, Israel, Japan, Malaysia, Mexico, New Zealand, Norway, Poland, Russia, South Africa, Singapore, South Korea, Sweden, Switzerland, Taiwan, Turkey, United Kingdom.

Tables 22 provides the results for panel regressions done on changes in firm-perceptions of country risk and uncertainty on changes in returns. The firm-level assessments provide another perspective into a country's perceived riskiness.

Comparing the regression results for the Latin American countries with GPR versus

Firm-based Country Risk, changes in geopolitical risk are not associated with any meaningful change in mean, volatility, and skewness of returns (Table 16). There is also no significant effect of changes in firm-perceptions of risk in Latin American countries on returns. For BRICS countries (minus China), changes in risk perceived by foreign and non-financial firms is associated with a positive increase in average monthly returns, similar to the result found in Table 17.

For the sample of emerging markets, the regression of changes in firm-perceptions of risk on mean returns had more significant coefficients than that of the regression on changes in GPR. Similarly, for the sample of advanced economies, changes in firm-risk perceptions had more significant associations with changes in currency volatility and skewness than changes in GPR. One possible explanation for this is that investors and company executives are more informed than journalists, such that their encapsulations of country uncertainty and risk contain more salient information/signals of currency weakness.

It is possible that earnings calls may contain more forward-looking and market-relevant information than newspaper articles, as companies typically provide insights on political and economic risks that directly impact their operations and, by extension, financial markets. In contrast, newspapers might emphasize broader narratives that may not be as directly tied to financial markets and investor decision making. News-based risk measures might also be noisier than earnings calls-based measures.

5.3 Forecasting Future Risk

Finally, I consider whether levels of present global risk (as proxied by the VIX index) and country risk explain future currency return volatility.

$$\sigma_{t+1} = a + b\sigma_t + c\text{Risk}_t \tag{22}$$

Using the entire sample of news-based risk, I find that volatility is persistent (Table 23). Although current risk does not significantly help forecast future risk, in general, increases in current currency trade volatility are generally associated with increases in the next period's (i.e. next month's) return volatility.

In addition, using the entire sample of Firm-based Risk, I find a similar trend (Table 24). Current volatility, across all firm types is a significant predictor of future return volatility. The current risk measures themselves have weak positive correlations with next quarter's volatility.

So, while current volatility significantly predicts future volatility (coefficient $b > 0$, $p < 0.05$, Table 23 and Table 24), the contemporaneous risk measures are statistically insignificant despite positive point estimates. This suggests that short-term volatility is driven more by market momentum than concurrent risk fundamentals, though the latter may still matter over longer horizons or during crisis periods.

6 Conclusion

I find that country-specific risks are priced asymmetrically in currency markets, but with limitations. Country risk is overall a weak predictor of currency trade returns, but significant in certain cases. Results tend to be stronger for emerging economies and countries in early and middle stages of development, such as Latin American and BRICS countries.

Firstly, financial stability appears to dominate political risk. As measured by ICRG, financial risk is the primary driver of volatility in emerging markets, while political risk does not play a first-order role. This suggests that investors worry about debt sustainability and external imbalances more so than regime changes, such that there is a country-specific determinant of currency returns via a country's financial status.

Geopolitical risk (GPR) and Firm-based risk measures correlate with excess returns but not short-term volatility, supporting the "peso problem" narrative: investors demand com-

pensation for latent disasters that text-based proxies better capture ex-ante. This result suggests a linkage between rational expectations and observed risk premia. For investors, firm earnings calls from foreign firms may contain more accurate forward-looking risk signals. Policymakers in developing countries may also choose to prioritize financial stability over political reforms to lower currency risk premia.

However, exchange rate movements remain puzzling. Although text-based risk measures may provide some early warnings of market stress, their low explanatory power supports the persistent finding that currency movements are unpredictable using country-specific factors alone. Given the disconnect between exchange rates and country idiosyncratic fundamentals, future research could look into unifying global factors that drive risk premia in currency markets. Text-based risk indices can also expand to non-Western sources. As the 2024 yen carry trade unwind illustrates, latent risks can quickly materialize, yet such events are difficult to predict in sample.

7 Tables

The data used in the panel regressions run from the earliest overlapping risk measure and exchange rate data to September 2024 for GPR and ICRG; Firm-based risk spans 2002 to 2020. * indicates $p < 0.05$, ** indicates $p < 0.01$, and *** indicates $p < 0.001$.

Entire Sample						
	Mean		Volatility		Skew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Financial Risk	0.010		0.0198**		-0.0755	
	(0.323)		(3.487)		(-0.527)	
Political Risk	0.0164		0.0005		0.274	
	(0.610)		(0.05)		(1.162)	
Economic Risk	-0.017		0.0154		-0.0928	
	(-0.405)		(1.641)		(-0.836)	
GPR		0.0022**		0.0003		-0.0182
		(2.199)		(1.057)		(-1.167)
Constant	0.0037	0.0115***	0.0101***	0.0079***	-0.0762*	-0.0926
	(0.444)	(3.38)	(5.185)	(7.440)	(-2.431)	(-1.769)
R^2	0.0034	0.0034	0.0393	0.0004	0.0004	0.0003
No. Observations	8563	7509	8555	6900	8545	6893

Table 3: Panel regressions (Equations 10-12, Equations 16-18) of monthly currency excess returns, volatility, and skewness on levels of country risk measures (ICRG and GPR). Financial Risk (ICRG) significantly correlates volatility ($p < 0.01$), while GPR correlates with excess returns ($p < 0.05$).

Advanced Economies						
	Mean		Volatility		Skew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Financial Risk	0.0349		0.0045*		0.016	
	(1.382)		(2.278)		(0.0877)	
Political Risk	-0.0313		-0.0012		0.316	
	(-1.252)		(-0.460)		(0.696)	
Economic Risk	-0.02		-0.0022*		0.285	
	(-2.403)*		(-2.160)		(1.412)	
GPR		0.0015		0.0002		-0.011
		(1.263)		(1.120)		(-0.517)
Constant	0.0058	0.0038	0.0065***	0.0064	0.0028	-0.053
	(1.144)	(1.041)	(15.306)	(15.067)	(0.074)	(-0.799)
R^2	0.036	0.0081	0.0047	0.0022	0.001	0.0001
No. Observations	3797	3293	3789	2946	3787	2944

Table 4: Panel regression results for Advanced Economies (Equations 10-12, Equations 16-18) using ICRG and GPR risk measures. Financial and Economic Risk (ICRG) drive volatility in this sample ($p < 0.05$), but GPR shows no significant effects.[5]

[5]The sample includes Australia, Canada, Denmark, Greece Israel, Japan, New Zealand, Norway, Singapore, Sweden, Switzerland, Taiwan, and the United Kingdom.

Emerging Markets / Developing Countries						
	Mean		Volatility		Skew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Financial Risk	-0.0181		0.029***		-0.0893	
	(-0.448)		(4.025)		(-0.375)	
Political Risk	0.039		-0.0015		0.178	
	(0.984)		(-0.131)		(0.595)	
Economic Risk	-0.0139		0.0201*		-0.177	
	(-0.275)		(2.001)		(-1.276)	
GPR		0.0028		0.0006		-0.024
		(1.848)		(1.152)		(-1.078)
Constant	-0.0036	0.0187***	0.0108	0.0097	-0.077	-0.131
	(-0.323)	(3.35)	(4.005)	(4.896)	(-1.068)	(-1.576)
R^2	0.0072	0.0037	0.056	0.0009	0.0006	0.0005
No. Observations	4766	3914	4766	3652	4758	3647

Table 5: Panel regression results for Emerging Markets (Equations 10-12, Equations 16-18) using ICRG and GPR risk measures. There is a stronger financial risk effect in EMs, supporting the idea that such countries are sensitive to financial instability.[6]

[6]The sample includes Argentina, Brazil, Chile, Colombia, Croatia, Czech Republic, Hungary, India, Indonesia, Malaysia, Mexico, Morocco, Poland, Romania, Russia, South Africa, and Turkey.

Latin America						
	Mean		Volatility		Skew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Financial Risk	0.056***		0.0531***		0.212	
	(8.035)		(10.235)		(0.519)	
Political Risk	-0.023		-0.032		-0.843	
	(-1.028)		(-1.724)		(-1.025)	
Economic Risk	0.105*		0.048*		-0.307***	
	(2.374)		(2.483)		(-3.745)	
GPR		0.0023		0.002		-0.0566
		(1.356)		(1.684)		(-1.110)
Constant	0.0178***	0.020**	0.021***	0.0175***	0.172	-0.295
	(3.582)	(2.717)	(7.287)	(3.337)	(0.817)	(-1.367)
R^2	0.156	0.0026	0.079	0.0032	0.0037	0.0026
No. Observations	1298	1280	1298	1256	1294	1252

Table 6: Panel regression results for Latin American countries (Equations 10-12, Equations 16-18) using ICRG and GPR risk measures. Latin American currencies show amplified financial and economic risk effects, appearing in volatility and skewness of returns, respectively. Political risk remains insignificant. [7]

[7]The sample includes Argentina, Brazil, Chile, Colombia, and Mexico.

BRICS (minus China)						
	Mean		Volatility		Skew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Financial Risk	0.012		0.034*		-0.493	
	(0.800)		(3.102)		(-0.863)	
Political Risk	0.0206		0.0172		0.721	
	(0.695)		(0.0873)		(1.511)	
Economic Risk	0.004		0.0007		-0.099	
	(0.467)		(0.580)		(-0.394)	
GPR		0.0021		0.0021		-0.0087
		(1.228)		(1.267)		(-0.099)
Constant	0.004	0.013	0.012*	0.014	-0.368	-0.097
	(0.364)	(2.603)	(2.255)	(3.009)	(-1.431)	(-0.387)
R^2	0.0148	0.0094	0.072	0.021	0.0021	3.65e-08
No. Observations	1114	1238	1114	1114	1112	1112

Table 7: Panel regression results for Brazil, Russia, India, and South Africa (Equations 10-12, Equations 16-18) using ICRG and GPR risk measures(ICRG, GPR). Risk measures offer no significant predictive power. Geopolitical risk is insignificant, suggesting local drivers.

Entire Sample															
	Mean					Volatility					Skew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Country Risk$_{any}$	0.013*					0.0045*					0.262				
	(2.562)					(2.417)					(1.510)				
Country Risk$_{foreign}$		0.014*					0.006*					0.375			
		(2.302)					(2.406)					(1.944)			
Country Risk$_{domestic}$			-2.8e-04					-2.5e05					0.0032		
			(-0.847)					(-0.234)					(0.207)		
Country Risk$_{financials}$				0.003					0.0012					0.093	
				(1.063)					(0.786)					(0.683)	
Country Risk$_{non\text{-}financials}$					0.012*					0.0047*					0.251
					(2.376)					(2.257)					(1.590)
Constant	0.0145***	0.014**	0.003***	0.0059**	0.015**	0.011***	0.012***	0.0069	0.0077	0.011***	0.136	0.181	-0.093***	-0.029	0.145
	(3.496)	(3.214)	(14.688)	(3.090)	(3.21)	(6.786)	(6.047)	(93.675)	(8.08)	(5.894)	(0.913)	(1.306)	(-9.589)	(-0.333)	(0.987)
R^2	0.007	0.007	8.8e-04	0.0008	0.008	0.0035	0.006	2.4e05	0.0004	0.005	0.0008	0.001	0.00003	0.0002	0.0009
No. Observations	1894	1894	1823	1894	1894	1894	1894	1823	1894	1894	1888	1888	1763	1888	1888

Table 8: Panel regression results using Firm-based Risk (Equations 16-18). Significant results from foreign and non-financial firm risk perceptions contribute to overall significant predictive power of Firm-based risk.[8].

[8]The sample includes Argentina, Australia, Brazil, Canada, Chile, Colombia, Czech Republic, Greece, Hungary, India, Indonesia, Israel, Japan, Mexico, Norway, New Zealand, Poland, Russia, Singapore, Sweden, Switzerland, Taiwan, Turkey, and the United Kingdom.

Advanced Economies															
	Mean					Volatility					Skew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Country Risk$_{any}$	0.002					-0.0007					0.121				
	(0.682)					(-0.403)					(0.708)				
Country Risk$_{foreign}$		0.002					0.0001					0.178			
		(0.691)					(0.076)					(0.727)			
Country Risk$_{domestic}$			3.2e-05					5.1e-05					-0.042		
			(0.228)					(0.290)					(-1.39)		
Country Risk$_{financials}$				0.0001					1.0e-06					0.225	
				(0.087)					(0.001)					(1.10)	
Country Risk$_{non\text{-}financials}$					0.002					-0.0008					0.033
					(0.853)					(-0.424)					(0.138)
Constant	9.9e-04	0.001	-6.5e-04	-0.0005	0.002	0.0055***	0.006***	0.006***	0.006***	0.005	0.003	0.028	-0.07***	0.033	-0.064
	(0.429)	(0.430)	(-8.541)	(-0.653)	(0.617)	(3.96)	(4.925)	(62.1)	(10.734)	(3.141)	(0.026)	(0.167)	(-4.208)	(0.287)	(-0.298)
R^2	0.0006	0.0007	1.5e-05	4e-06	0.001	0.0002	6e-06	9.5e-05	9.9e-10	0.0003	2.2e-04	0.0004	0.002	0.001	1.76e-05
No. Observations	869	869	856	869	869	869	869	856	869	869	869	869	856	869	869

Table 9: Panel regression results using Firm-based Risk (Equations 16-18) for Advanced Economies[9]. Significant constant coefficients demonstrate the existence of baseline volatility and skewness, but overall firm-based risk measures are not significant.

[9]The sample includes Australia, Canada, Greece, Japan, Israel, New Zealand, Norway, Singapore, Taiwan, and the United Kingdom.

Emerging Markets / Developing Countries															
	Mean					Volatility					Skew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Country Risk$_{any}$	0.018*					0.0097***					0.381				
	(2.279)					(3.58)					(1.463)				
Country Risk$_{foreign}$		0.023*					0.013***					0.517			
		(2.44)					(3.598)					(1.94)			
Country Risk$_{domestic}$			-6.0e-04					-0.0002					0.017		
			(-1.370)					(-1.005)					(0.854)		
Country Risk$_{financials}$				0.0021					0.002					0.164	
				(0.302)					(0.619)					(0.688)	
Country Risk$_{non\text{-}financials}$					0.017*					0.009**					0.304
					(2.103)					(3.288)					(1.566)
Constant	0.024***	0.025***	0.008***	0.01*	0.024**	0.017***	0.018***	0.008***	0.01***	0.017***	0.227	0.271	-0.116***	0.007	0.179
	(3.47)	(3.642)	(19.412)	(2.05)	(3.187)	(7.06)	(6.622)	(42.261)	(3.700)	(6.491)	(0.993)	(1.39)	(-6.26)	(0.042)	(0.979)
R^2	0.01	0.013	0.003	1.9e-04	0.012	0.01	0.016	0.001	0.001	0.012	0.003	0.004	0.001	0.0007	0.002
No. Observations	791	791	764	791	791	791	791	764	791	791	791	791	764	791	791

Table 10: Panel regression results using Firm-based Risk (Equations 16-18) for Emerging Markets[10]. Higher foreign and non-financial firm risk perceptions is associated with greater levels of returns and volatility.

[10]The sample includes Argentina, Brazil, Chile, Colombia, Czech Republic, Hungary, India, Indonesia, Malaysia, Mexico, Poland, Russia, South Africa, and Turkey.

Latin America															
	Mean					Volatility					Skew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Country Risk$_{any}$	0.014					0.002					0.196				
	(1.317)					(0.377)					(0.295)				
Country Risk$_{foreign}$		0.029					0.011					0.251			
		(1.124)					(1.019)					(0.462)			
Country Risk$_{domestic}$			-2.2e-04					-4.8e-04					0.0004		
			(-0.303)					(-1.210)					(0.012)		
Country Risk$_{financials}$				-0.007					-0.008					0.444	
				(-0.720)					(-1.09)					(0.696)	
Country Risk$_{non\text{-}financials}$					0.015					0.005					-0.029
					(1.162)					(0.774)					(-0.07)
Constant	0.019*	0.027	0.008***	0.003	0.021	0.01*	0.016*	0.009***	0.003	0.013*	0.038	0.047	-0.121***	0.178	-0.152
	(2.159)	(1.539)	(10.210)	(0.476)	(1.797)	(1.972)	(2.162)	(22.395)	(0.561)	(2.22)	(0.068)	(0.126)	(-3.983)	(0.410)	(-0.414)
R^2	0.007	0.021	0.0004	0.002	0.01	3.6e-04	0.005	0.003	0.005	0.002	4.5e-04	5.2e-04	3.5e-07	0.003	1.4e-05
No. Observations	344	344	342	344	344	344	344	342	344	344	344	344	342	344	344

Table 11: Panel regression results using Firm-based Risk (Equations 16-18) for Latin American countries[11]. Certain regression constants are significant but overall firm-based risk does not have any significant predictive power in returns.

[11]The sample includes Argentina, Brazil, Chile, Colombia, and Mexico.

BRICS (minus China)															
	Mean					Volatility					Skew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Country Risk$_{any}$	0.0085*					0.008					1.219***				
	(2.157)					(1.746)					(3.403)				
Country Risk$_{foreign}$		0.0113*					0.0109*					1.350**			
		(1.981)					(2.275)					(2.866)			
Country Risk$_{domestic}$			-0.0004					-2.814e-05					-0.0273		
			(-0.217)					(-0.034)					(-0.315)		
Country Risk$_{financials}$				-0.0132					-0.006					1.156***	
				(-0.737)					(-0.445)					(16.199)	
Country Risk$_{non\text{-}financials}$					0.0094*					0.0082					0.998**
					(2.113)					(1.969)					(3.045)
Constant	0.0135***	0.014**	0.0071***	-0.0014	0.0144**	0.015***	0.0157***	0.0085***	0.005	0.0155***	0.843**	0.750	-0.053	0.691***	0.706**
	(4.536)	(3.996)	(4.191)	(-0.124)	(4.136)	(4.345)	(5.344)	(12.573)	(0.553)	(4.707)	(3.126)	(2.606)	(-0.805)	(14.620)	(2.754)
R^2	0.0061	0.0095	0.001	0.009	0.011	0.0119	0.0192	2.27e-05	0.0044	0.018	0.051	0.055	0.0009	0.025	0.0493
No. Observations	288	288	285	288	288	288	288	285	288	288	288	288	285	288	288

Table 12: Panel regression results using Firm-based Risk (Equations 16–18) for Brazil, Russia, India, and South Africa. Again, foreign and non-financial firms are more significant predictors of excess returns, volatility, and skewness, suggesting that domestic and financial firms tend to misjudge potential risk or contain noisier signals, possibly due to local biases.

Entire Sample						
	ΔMean		ΔVolatility		ΔSkew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Δ Financial Risk	0.0127**		0.0034		-0.0478	
	(2.963)		(0.321)		(-0.0929)	
Δ Political Risk	0.0276		-0.0174		-0.383	
	(0.775)		(-1.486)		(-0.587)	
Δ Economic Risk	-0.0112		0.0113		0.412	
	(-0.671)		(1.185)		(1.837)	
Δ GPR		0.0002		0.0004		-0.0374
		(0.635)		(1.327)		(-1.433)
Constant	1.23e-06	8.184e-06***	-4.93e-07	8.67e-06***	-0.0004***	-0.0012
	(0.960)	(30.058)	(-0.377)	(33.172)	(-7.58)	(-47.245)
R^2	0.0029	9.85e-05	0.0018	0.0006	0.0002	0.0006
No. Observations	8562	7448	8553	6842	8543	6835

Table 13: Panel regression results using ICRG and GPR risk measures on changes in returns (Equations 13)-15, Equations 19-21). Monthly changes in financial risk predict return changes, but GPR changes are insignificant. This suggests that risk premia are structural and not transient.

Advanced Economies						
	ΔMean		ΔVolatility		ΔSkew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Δ Financial Risk	0.0203		0.0059		-1.081	
	(1.760)		(1.737)		(-1.117)	
Δ Political Risk	-0.0385		0.0112		-1.587	
	(-1.691)		(1.161)		(-0.925)	
Δ Economic Risk	0.0007		-0.0097		0.273	
	(0.389)		(-0.435)		(0.493)	
Δ GPR		0.0001		0.0001		-0.015
		(0.677)		(1.588)		(-0.371)
Constant	1.835e-06	-1.341e-06**	2.79e-07	8.731e-07	-0.0003	0.0004***
	(1.780)	(-3.256)	(0.455)	(5.192)	(-1.850)	(5.857)
R^2	0.0269	0.0006	0.001	0.0023	0.0009	0.0001
No. Observations	3796	3286	3788	2942	3786	2940

Table 14: Panel regression results using ICRG and GPR risk measures on changes in returns (Equations 13)-15, Equations 19-21) for Advanced Economies. There appear to be no significant short-term effects of risk changes in advanced economies, which is aligned with the levels regression result (Table 10), suggesting that risks are not priced reactively.

Emerging Markets / Developing Countries						
	ΔMean		**ΔVolatility**		**ΔSkew**	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Δ Financial Risk	0.009		0.0038		0.414	
	(0.661)		(0.275)		(0.633)	
Δ Political Risk	-0.0255		-0.0268		-0.397	
	(-0.937)		(-1.548)		(-0.323)	
Δ Economic Risk	-0.026		0.0179		0.383	
	(-0.930)		(1.411)		(0.208)	
Δ GPR		0.0003		0.0004		-0.0623
		(0.8186)		(1.038)		(-1.678)
Constant	9.484e-06***	2.301e-05***	-5.932e-07	1.45e-05***	6.32e-05	-0.0019
	(8.389)	(162.61)	(-0.351)	(90.894)	(0.821)	(-75.079)
R^2	0.0048	0.0002	0.0031	0.0005	0.0003	0.0018
No. Observations	4518	4083	4518	3817	4511	3811

Table 15: Panel regression results using ICRG and GPR risk measures on changes in returns (Equations 13)-15, Equations 19-21) for Emerging Markets. Changes in backward-looking data are insignificant, as are changes in GPR.

Latin America						
	ΔMean		ΔVolatility		ΔSkew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
Δ Financial Risk	0.0077		0.0255		2.562*	
	(0.698)		(1.844)		(2.081)	
Δ Political Risk	-0.106		-0.115		-1.269	
	(-1.043)		(-1.315)		(-0.890)	
Δ Economic Risk	0.0028		0.003		-0.144	
	(0.305)		0.380		(-0.317)	
Δ GPR		0.001		0.0012		-0.0224
		(1.248)		(1.565)		(-0.452)
Constant	7.374e-07	5.44e-05***	7.52e-06	3.97e-05***	0.0009	-0.0075***
	(0.176)	(20.756)	(1.857)	(15.550)	(1.922)	(-34.603)
R^2	0.0048	0.001	0.0066	0.0016	0.0045	0.0003
No. Observations	1297	1244	1297	1220	1293	1216

Table 16: Panel regression results using ICRG and GPR risk measures on changes in returns (Equations 13)-15, Equations 19-21) for Argentina, Brazil, Chile, Colombia, and Mexico. Changes in financial risk result in positive skewness.

BRICS (minus China)						
	Δ Mean		ΔVolatility		ΔSkew	
Variables	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
ΔFinancial Risk	0.0054		0.0529*		0.0256	
	(0.594)		(2.527)		(0.0275)	
ΔPolitical Risk	0.0094		0.0128		0.332	
	(0.476)		(0.582)		(0.106)	
ΔEconomic Risk	0.0158***		-0.0031		1.105***	
	(4.527)		(-1.220)		(6.386)	
ΔGPR		-0.0007***		0.0006		-0.0131
		(-3.500)		(1.894)		(-0.167)
Constant	7.902e-07	-4.586e-07	2.176e-05**	3.94e-06***	-0.0012***	-0.0012
	(0.264)	(-5.914)	(3.145)	(28.871)	(-3.663)	(-118.46)
R^2	0.0106	0.0042	0.0267	0.0021	0.0018	5.281e-05
No. Observations	1113	1237	1113	1113	1111	1111

Table 17: Panel regression results using ICRG and GPR risk measures on changes in returns (Equations 13)-15, Equations 19-21) for Brazil, Russia, India, and South Africa. Economic risk changes significantly predict higher returns and positive skewness. Higher geopolitical risk is associated with a decline in returns.

Entire Sample															
	Δ Mean					ΔVolatility					ΔSkew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
ΔCountry Risk$_{any}$	0.0032					0.0007					0.0692				
	(1.168)					(0.519)					(0.194)				
ΔCountry Risk$_{foreign}$		0.0032					0.0008					0.208			
		(1.120)					(0.503)					(0.508)			
ΔCountry Risk$_{domestic}$			0.0002					3.459e-05					-0.0037		
			(0.859)					(0.282)					(-0.186)		
ΔCountry Risk$_{financials}$				-0.0002					-0.0002					0.253	
				(-0.113)					(-0.223)					(1.045)	
ΔCountry Risk$_{non\text{-}financials}$					0.0031					0.0008					-0.016
					(1.300)					(0.694)					(-0.0476)
Constant	4.243e-07	2.505e-07	-8.435e-05	8.158e-07	4.153e-07	5.082e-07***	4.467e-07	-2.182e-06	5.978e-07***	4.862e-07	-0.0004***	-0.0004	-0.001***	-0.0004	-0.0004***
	(1.303)	(0.507)	(-787.75)	(8.155)	(1.386)	(3.370)	(1.606)	(-33.73)	(11.845)	(0.694)	(-48.285)	(-61.799)	(-541.19)	(-144.39)	(-24.957)
R^2	0.0008	0.0007	0.0007	5.048e-06	0.0009	4.234e-05	5.545e-05	3.404e-05	6.252e-06	7.779e-05	2.15e-05	0.0002	2.657e-05	0.0005	1.438e-06
No. Observations	1893	1893	1816	1893	1893	1893	1893	1816	1893	1893	1887	1887	1754	1887	1887

Table 18: Panel regression results using Firm-based risk measures on changes in returns (Equations 19-21). No significant relationship arises out of changes in firm risk perceptions on returns.

Advanced Economies															
	Δ Mean					ΔVolatility					ΔSkew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
ΔCountry Risk$_{any}$	0.0033					-0.0014*					0.772				
	(1.406)					(-2.144)					(1.825)				
ΔCountry Risk$_{foreign}$		0.0024					-0.0016**					0.878			
		(1.726)					(-2.945)					(1.780)			
ΔCountry Risk$_{domestic}$			0.0004					3.459e-05					-0.041		
			(1.189)					(0.282)					(-0.792)		
ΔCountry Risk$_{financials}$				0.002					-0.0011**					0.634**	
				(1.043)					(-2.885)					(2.718)	
ΔCountry Risk$_{non\text{-}financials}$					0.0026					-0.0009					0.450
					(1.613)					(-1.152)					(1.063)
Constant	6.263e-05***	6.183e-05***	5.172e-05	6.176e-05***	6.267e-05***	3.249e-06***	3.518e-06	-2.182e-06	3.584e-06	3.319e-06***	0.0006***	0.0004***	-0.0008**	0.0004	0.0005**
	(81.813)	(382.36)	(28.448)	(312.36)	(90.51)	(15.347)	(56.172)	(-33.73)	(87.148)	(9.976)	(4.092)	(7.366)	(-3.113)	(15.512)	(2.616)
R^2	0.0054	0.0027	0.0104	0.0036	0.0039	0.0004	0.0005	7.081e-05	0.0005	0.0002	0.0042	0.0049	0.0014	0.0053	0.002
No. Observations	869	869	855	869	869	869	869	855	869	869	868	868	854	868	868

Table 19: Panel regression results using Firm-based risk measures on changes in returns (Equations 19-21) on Advanced Economies. Changes in foreign and financial firm risk perceptions more significantly predict advanced economy currency volatility and skewness.

Emerging Markets / Developing Countries															
	Δ Mean					ΔVolatility					ΔSkew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
ΔCountry Risk$_{any}$	0.0102**					0.0016					-0.625				
	(2.585)					(0.659)					(-1.183)				
ΔCountry Risk$_{foreign}$		0.0147*					0.002					-0.405			
		(2.393)					(0.681)					(-0.737)			
ΔCountry Risk$_{domestic}$			-0.0001					1.632e-05					-0.0096		
			(-0.560)					(0.107)					(-0.343)		
ΔCountry Risk$_{financials}$				0.0017					0.0004					-0.388	
				(0.668)					(0.343)					(-1.142)	
ΔCountry Risk$_{non\text{-}financials}$					0.0081*					0.0014					-0.356
					(2.444)					(0.630)					(-0.773)
Constant	-8.709e-07	-3.777e-06	-0.0002***	1.526e-06***	-4.492e-07	8.526e-07	5.406e-07	-1.442e-06**	1.221e-06***	9.085e-07	0.0001	6.123e-05	-0.0012	4.374e-05	4.5e-05
	(-0.860)	(-1.636)	(-267.32)	(4.579)	(-0.499)	(1.332)	(0.501)	(-2.922)	(7.746)	(1.562)	(0.816)	(0.363)	(-8.916)	(0.467)	(0.321)
R^2	0.004	0.0076	0.0002	0.0002	0.0034	0.0002	0.0002	6.172e-06	1.859e-05	0.0001	0.003	0.0011	0.0002	0.0022	0.0013
No. Observations	871	871	839	871	871	871	871	839	871	871	790	790	760	790	790

Table 20: Panel regression results using Firm-based risk measures on changes in returns (Equations 19-21) on Emerging Market countries. Changes in foreign and non-financial firm risk perceptions more significantly predict currency returns.

Latin America															
	Δ Mean					ΔVolatility					ΔSkew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
ΔCountry Risk$_{any}$	0.008					0.0106					0.338				
	(0.893)					(1.173)					(0.423)				
ΔCountry Risk$_{foreign}$		0.0148					0.0112					0.751			
		(1.370)					(1.356)					(1.933)			
ΔCountry Risk$_{domestic}$			-0.0006					-0.0004					-0.0031		
			(-1.868)					(-1.382)					(-0.145))		
ΔCountry Risk$_{financials}$				0.0072					0.0053					0.697	
				(0.690)					(0.815)					(1.018)	
ΔCountry Risk$_{non\text{-}financials}$					0.0034					0.0068					-0.0192
					(0.77)					(1.082)					(-0.0296)
Constant	-4.105e-06	-1.242e-05	3.778e-06**	-8.316e-07	-1.224e-06	-5.36e-06	-8.629e-06	-2.639e-06*	2.32e-07	-3.245e-06	-0.003	-0.0033	-0.0021***	-0.0031	-0.0027***
	(-0.683)	(-1.243)	(2.903)	(-0.274)	(-0.379)	(-0.884)	(-1.127)	(-2.339)	(0.124)	(-0.702)	(-5.196)	(-11.943)	(-28.214)	(-9.947)	(-5.715)
R^2	0.0013	0.0036	0.0019	0.0018	0.0003	0.0028	0.0025	0.0009	0.0012	0.0017	0.0006	0.0022	1.567e-05	0.0042	2.835e-06
No. Observations	347	347	343	347	347	347	347	343	347	347	343	343	339	343	343

Table 21: Panel regression results using Firm-based risk measures on changes in returns (Equations 19-21) on Latin American countries (Brazil, Argentina, Colombia, Chile, Mexico). Although changes in domestic risk carry a baseline level of returns, decrease in volatility, and negative skewness, there is no significant predictive power.

BRICS (minus China)															
	Δ Mean					ΔVolatility					ΔSkew				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
ΔCountry Risk$_{any}$	0.0161***					-0.0025					-0.0218				
	(4.367)					(-0.695)					(-0.0171)				
ΔCountry Risk$_{foreign}$		0.0169***					-0.0021					-0.288			
		(3.569)					(-0.614)					(-0.278)			
ΔCountry Risk$_{domestic}$			0.0022					3.867e-05					-0.117		
			(1.729)					(0.546)					(-1.442)		
ΔCountry Risk$_{financials}$				0.0056					-0.0032					0.215	
				(1.736)					(-0.835)					(0.286)	
ΔCountry Risk$_{non\text{-}financials}$					0.0125***					-0.0014					-0.085
					(5.043)					(-0.465)					(-0.078)
Constant	-4.962e-06**	-1.603e-05	4.9e-06**	6.028e-07	-3.246e-06**	2.509e-05***	2.627e-05	2.431e-05***	2.475e-05***	2.459e-05***	0.0009***	0.001*	0.0008***	0.0007	0.0009***
	(-3.142)	(-3.185)	(2.876)	(0.786)	(-3.161)	(16.077)	(7.112)	(258.77)	(27.759)	(19.366)	(10.137)	(2.316)	(13.324)	(1.538)	(3.993)
R^2	0.0247	0.028	0.046	0.0038	0.0217	0.0006	0.0004	3.709e-05	0.0012	0.0003	3.814e-06	0.0007	0.0089	0.0005	7.933e-05
No. Observations	287	287	284	287	287	287	287	284	287	287	209	209	208	209	209

Table 22: Panel regression results using Firm-based risk measures on changes in returns (Equations 19-21) for Brazil, Russia, India, and South Africa. Changes in foreign and non-financial risk perceptions are significant, correlating with increases in currency returns.

Variables	Future Volatility
Current Volatility	0.108*
	(1.983)
Current Risk	0.0002
	(0.471)
Constant	0.006***
	(9.490)
R^2	0.03
No. Observations	2298

Table 23: Forecasting future currency return volatility using the sample of news-based country risk indices (GPR), as specified in Equation 5.3.

	Future Volatility				
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Current Volatility	0.222*	0.221*	0.143**	0.223*	0.221*
	(2.200)	(2.176)	(2.350)	(2.223)	(2.175)
Current Country Risk$_{\text{any}}$	0.003				
	(1.498)				
Current Country Risk$_{\text{foreign}}$		0.004			
		(1.630)			
Current Country Risk$_{\text{domestic}}$			0.000		
			(-0.718)		
Current Country Risk$_{\text{financials}}$				0.001	
				(0.651)	
Current Country Risk$_{\text{non-financials}}$					0.003
					(1.415)
Constant	0.007***	0.008***	0.006***	0.006***	0.008***
	(4.500)	(4.082)	(12.890)	(7.369)	(3.704)
R^2	0.05	0.05	0.02	0.05	0.05
No. Observations	1893	1893	1893	1893	1893

Table 24: Forecasting future currency return volatility using the sample of Firm-based country risk indices, as specified in Equation 5.3.

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