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Currency Differences in the Determinants of Corporate Bond Spreads: Evidence from Peruvian Issuers

Gerald Alex Cisneros Rojas

Central Bank of Peru

Chemin Eugène-Rigot 2
P.O. Box 136
CH - 1211 Geneva 21
Switzerland

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Abstract

This paper provides issuance-level evidence from an emerging economy with a dual-currency primary bond market, showing that currency denomination not only affects the level of corporate bond spreads but also fundamentally reshapes the transmission of macro-financial shocks across credit ratings. Using a comprehensive dataset of 1,323 corporate bond issuances between 2008 and 2024, we combine bond level characteristics, macro-financial conditions, and firm-level financial indicators to analyze how credit risk is priced across currency segments. We find clear evidence of currency segmentation in the pricing of corporate bonds. Spreads on USD-denominated bonds exhibit greater sensitivity to macro-financial conditions than those issued in local currency, particularly with respect to inflation and monetary policy variables. In addition, we document substantial heterogeneity across credit ratings, with lower-rated bonds displaying markedly stronger responses to macroeconomic shocks. A variance decomposition analysis shows that credit ratings are the dominant determinant of spread variation, explaining approximately 23% of total spread variance and more than 60% in the USD-denominated segment.

Keywords: Corporate bond spreads, Currency denomination, Credit ratings, Primary bond market, Macroeconomic shocks, Emerging markets, Peru

JEL: G12, G32, F31, E44

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1 Introduction

When a corporation issues a fixed-income security, it must offer investors a yield above that of a comparable risk-free instrument — typically a government bond of similar maturity. This difference, known as the *credit spread*, is the additional return investors demand to hold a risky asset rather than a safe one. Far from being a mere pricing detail, the spread is a central indicator in capital markets: it compresses into a single number a set of information about the issuer, the security and the prevailing macro-financial conditions at the time of issuance.

The spread captures three distinct dimensions of this information. First, it reflects the compensation required for bearing credit risk — that is, the probability that the issuer defaults and the expected loss if it does (Merton (1974); Duffie and Singleton (1999)). In this role, the spread allows investors to differentiate among securities with heterogeneous risk profiles and serves as a key input for portfolio allocation decisions.

Second, the spread is a direct measure of the cost of debt financing for the issuing firm, quantifying the premium it pays over the risk-free rate (Collin-Dufresne et al., 2001; Campbell and Taksler, 2003). A generalized rise in spreads therefore tightens corporate financing conditions, with potential consequences for firms' investment, production, and capital structure choices.

Third, beyond issuer-specific risk, the spread embeds broader macroeconomic and financial conditions — including market liquidity, sovereign risk, financial volatility, and the business cycle — which shape aggregate risk perceptions and the premium investors require. In this sense, the credit spread integrates both microeconomic components, related to the bond and the issuer, and macro-financial ones, related to overall market conditions.

Given its relevance, a large empirical literature has examined the determinants of corporate bond spreads in primary markets. These studies generally distinguish three broad groups of determinants:

1. **Bond characteristics**: such as issuance size, maturity, and credit rating, among other instrument-specific features.

2. **Macro-financial conditions**: including economic growth, inflation, stock market performance, financial volatility, and market liquidity.

3. **Firm-level financial characteristics**: such as profitability, leverage, and solvency.

In the case of the Peruvian corporate bond market, a particularly relevant institutional feature is that securities can be issued in both local currency (Peruvian soles) and foreign currency.[1] This dual-currency structure introduces an additional dimension in the determination of spreads, as the currency of denomination may affect both risk perception and the factors that explain the risk premium demanded by investors. However, empirical evidence for the Peruvian case remains limited, and no study has systematically analyzed whether the determinants of credit spreads differ according to the currency of issuance.

This study contributes to the literature by explicitly incorporating the dual-currency dimension of the Peruvian corporate bond market into the analysis of spread determinants. Specifically, this paper differs from previous research in two main respects.

First, it employs a comprehensive dataset of the Peruvian primary bond market, comprising more than 1,200 corporate issuances conducted between 2010 and 2024, denominated in both soles and U.S. dollars. To the best of our knowledge, no previous study has provided an integrated analysis of spread dynamics in the Peruvian primary market while simultaneously accounting for its dual-currency structure.

Second, the analysis uses spreads observed at the time of issuance as the dependent variable, rather than secondary market yields. Following Sironi and Gabbi (2002), primary market yields more accurately reflect effective financing costs and actual transaction conditions compared to indicative secondary market prices. Consequently, issuance spreads provide a more direct measure of the risk premium required by investors and the borrowing cost faced by firms.

The main results reveal important patterns in the determination of corporate bond spreads in the Peruvian primary market. Average spreads increase as credit quality deteriorates. Relative to AAA-rated securities, bonds rated between AA+ and AA exhibit spreads that are approximately 24 basis points higher, while bonds rated between A+ and A display spreads about 132 basis points higher. In addition to these rating effects, pronounced differences emerge across currency segments. On average, foreign-currency bonds

[1] Throughout the paper, *foreign–currency bonds* refer to corporate bonds denominated in U.S. dollars.

exhibit lower spreads than comparable local-currency bonds within the same rating category. For example, short-term foreign-currency securities rated CP-1+ are issued at spreads roughly 85 basis points lower than their local-currency counterparts, while securities rated between CP-1 and CP-1 display spreads about 75 basis points lower when issued in foreign currency. The results further indicate that the sensitivity of spreads to macroeconomic conditions differs across currencies. Inflation shocks have a significantly stronger effect on foreign-currency bonds: a one-percentage-point increase in inflation raises spreads by approximately 21 basis points in the foreign-currency segment, compared with about 7 basis points for local-currency bonds. Allowing for heterogeneity across both credit ratings and currencies provides additional insights. For bonds issued in local currency, medium-grade ratings exhibit a modest response to economic activity, with a one-percentage-point increase in GDP growth reducing spreads by roughly 3–4 basis points for AA-rated securities, whereas no statistically significant effect is observed for comparable foreign-currency bonds. In contrast, inflation exerts a positive and statistically significant effect primarily on longer-maturity foreign-currency instruments. Finally, a variance decomposition analysis shows that credit ratings are the single most important determinant of spread variation, accounting for approximately 23% of total spread variance. This contribution is substantially larger in the foreign-currency segment, where credit ratings explain nearly 62% of the observed variation in spreads.

The remainder of the paper is organized as follows. Section 2 describes the data and presents key stylized facts from the Peruvian primary bond market. Section 3 reviews the related literature and develops the hypotheses. Section 4 outlines the empirical methodology. Section 5 presents the main results, and Section 6 concludes.

2 Data and Stylized Facts

2.1 Data

The dataset consists of individual primary bond issuances from the public Peruvian capital market and obtained from the Superintendence of the Securities Market (Superintendencia del Mercado de Valores, SMV). The sample covers the period 2008–2024 and includes 1,323 individual corporate bond issues. The information reported by the SMV provides detailed bond characteristics such as the issuance amount, currency denomination, maturity, issue date, credit rating, interest rate, and instrument type. In addition, information on the economic sector of each issuing firm is matched using the publicly available sector classification published by the Peruvian tax authority (SUNAT).

Macroeconomic and financial variables— including GDP growth, inflation, the PEN/USD exchange rate, stock market returns, and other domestic and external financial indicators— are obtained from the Central Reserve Bank of Peru (BCRP) and Bloomberg, both publicly accessible sources.

Finally, firm-level financial data are taken from the quarterly financial statements reported to the SMV, which allow us to construct leverage, profitability, liquidity, size, and capital structure ratios.

Table 1: Definition of Variables

Variable	Definition
Dependent Variable	
Spread	Margin (in bps) over the risk-free Treasury benchmark of the same currency and comparable maturity.
Independent Variables: Bond Characteristics	
Amount	Size of issuance (millions of soles), log-transformed.
Term	Bond maturity (years).
USD Issue	Dummy = 1 if denominated in USD.
NCD	Dummy = 1 for Negotiable Certificates of Deposit.
ICP	Dummy = 1 for short-term commercial paper.
Credit Rating	Set of rating-category dummies.
Independent Variables: Macro-Financial Factors	
Exchange Rate Variation	YoY change in PEN/USD.
GDP Growth	YoY real GDP variation.
Inflation Rate	12-month CPI change.
Slope Term	10-year minus 2-year Treasury spread.
Policy Rate	Monetary policy rate (BCRP).
Market Return	12-month return of BVL General Index.
VIX Index	Global financial volatility indicator.
Independent Variables: Firm Characteristics	
Size	Log of total assets.
Leverage Ratio	Total liabilities / total assets.
EBITDA-to-Assets	EBITDA / total assets.

2.2 Calculation of the bond spreads

The spread of bond issuance i, with maturity T, currency c, in period t, is calculated as the difference between the yield of the corporate bond and the yield of a sovereign bond with the same maturity and currency. Formally, the spread is defined as:

$$S_{i,T,c,t} = y_{i,T,c,t} - rf_{T,c,t} \tag{1}$$

where:

- $S_{i,T,c,t}$ denotes the spread of bond issuance i with maturity T and currency c at time t.
- $y_{i,T,c,t}$ represents the yield to maturity of the corporate bond issuance.
- $rf_{T,c,t}$ denotes the yield of a sovereign bond with maturity T and currency c at time t. When a sovereign bond with the exact maturity is not available, the yield is obtained through interpolation of the sovereign yield curve.

2.3 The Peruvian Primary Bond Market

The Peruvian primary bond market is characterised by the issuance of corporate debt instruments in two currencies: local currency (PEN-peruvian soles) and foreign currency (U.S. dollars). This dual-currency structure allows firms to diversify their sources of financing and access different investor bases, particularly given the preference for U.S. dollar–denominated assets among international investors.

Table 2: Corporate bond issuances in the Peruvian primary capital market: 2008–2024

Currency	Number of issues	Total amount	Avg. issue size	Avg. interest rate	Avg. spread	Avg. maturity	Modal rating
Local Currency (PEN)	828	56,304	68.00	6.02	1.56	3.63	AAA
Foreign Currency (USD)	399	11,988	30.05	5.81	3.04	2.88	CP-2
Total	1,227	68,293	55.66	5.95	2.04	3.39	AAA

Note: Total amount and average issue size are expressed in millions of Peruvian soles. Average interest rate and average spread are reported in percentage points. Average maturity is expressed in years. Modal rating corresponds to the most frequent credit rating observed within each category.
Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market. The calculations include only public issuances of fixed-income securities with fixed interest rates, a clearly defined issued amount, a specified maturity, and an available public credit rating.

Table 2 provides a summary of corporate bond issuances in the Peruvian primary capital market over the period 2008–2024. The evidence shows that the market is predominantly composed of local currency issuances. In terms of the number of issues, approximately 67.5% of corporate bond issuances during the sample period were denominated in Peruvian soles (828 out of 1,227 issuances). In terms of issuance value, local currency bonds account for an even larger share of the market, representing roughly 82.4% of the total amount issued. Both facts highlight the preference for issuance in the local currency.

Table 3 presents the descriptive statistics of bond spreads for the full sample and for the most recent subperiod (2020–2024). The spread is defined as the difference between the bond's yield at issuance and the yield of a sovereign benchmark bond with comparable maturity[2].

Table 3: Descriptive Statistics of Bond Spreads

Variable	Mean	SD	Median	P10	P90	Min	Max	N
Full Sample								
Spread (Total)	2.041	1.551	1.660	0.614	4.227	-0.499	8.498	1227
Spread (Local Currency)	1.557	1.031	1.384	0.500	2.864	-0.498	6.926	828
Spread (Foreign Currency)	3.045	1.923	2.667	0.814	5.528	-0.499	8.498	399
2020–2024								
Spread (Total)	1.954	1.651	1.646	0.175	4.514	-0.499	7.451	263
Spread (Local Currency)	1.230	0.960	1.135	0.112	2.236	-0.498	5.260	178
Spread (Foreign Currency)	3.472	1.765	3.220	1.182	5.841	-0.499	7.451	85

Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

[2]For bonds issued in local currency, the benchmark corresponds to Peruvian government bonds denominated in soles. For bonds issued in foreign currency, the benchmark corresponds to Peruvian government bonds denominated in U.S. dollars

In general, U.S. dollar–denominated bonds present substantially higher spreads than those issued in local currency. On average, spreads on foreign currency bonds are roughly twice as large as those on bonds issued in Peruvian soles. Moreover, dollar-denominated issuances display greater dispersion, as reflected in their higher standard deviation. These differences in spreads across currencies do not appear to be driven solely by differences in maturity structure.

Table 4 reports the main descriptive statistics of bond spreads by maturity and currency of issuance. Across short-, medium-, and long-term maturities, foreign currency issuances systematically exhibit higher average spreads and greater volatility compared to local currency bonds. This pattern suggests that investors demand a higher risk premium for bonds issued in foreign currency. Overall, these findings indicate that the currency of issuance plays an important role in the pricing of corporate bonds in the Peruvian primary market. Potential explanations for these differences include bond-specific characteristics (such as credit ratings), macro-financial conditions prevailing at the time of issuance, and firm-level fundamentals (e.g., profitability, leverage, or solvency).

Table 4: Descriptive Statistics of Bond Spreads by Maturity

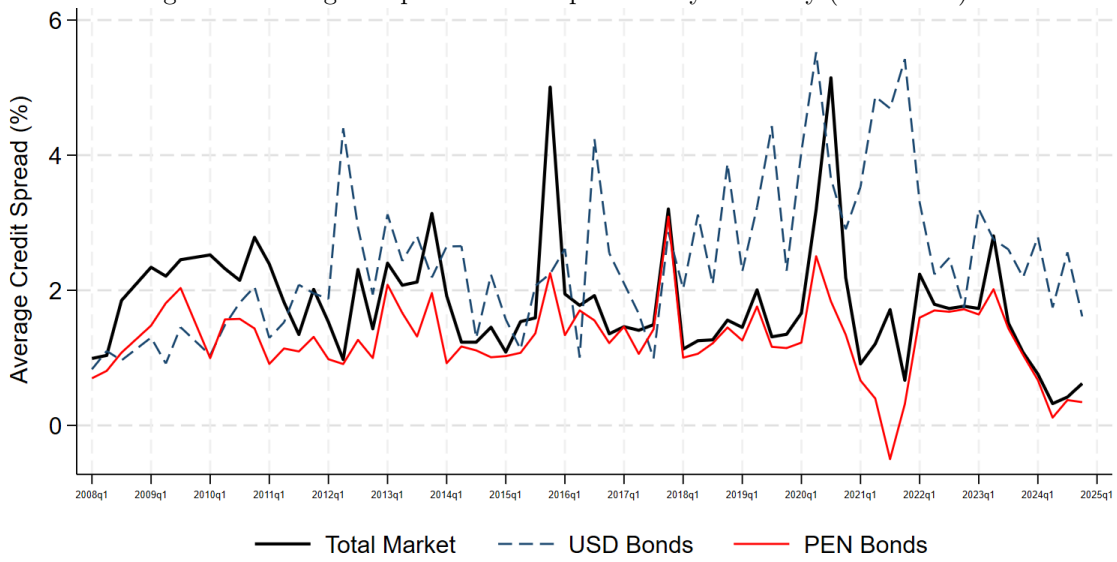
Maturity	Variable	Mean	SD	Median	P10	P90	Min	Max	N
Maturity < 1 *year*									
	Spread (Total)	3.149	1.890	2.905	0.953	5.430	-0.499	8.498	279
	Spread (Local Currency)	2.342	1.229	2.240	0.900	3.906	0.101	6.926	113
	Spread (Foreign Currency)	3.699	2.060	3.671	1.182	5.888	-0.499	8.498	166
Maturity 1–2 *years*									
	Spread (Total)	1.698	1.224	1.550	0.318	3.216	-0.498	6.842	433
	Spread (Local Currency)	1.492	0.944	1.443	0.282	2.622	-0.498	5.231	360
	Spread (Foreign Currency)	2.718	1.809	2.225	0.686	5.475	-0.435	6.842	73
Maturity 2–5 *years*									
	Spread (Total)	1.971	1.183	1.712	0.876	3.812	-0.085	6.042	212
	Spread (Local Currency)	1.547	0.852	1.365	0.769	2.545	-0.085	6.042	127
	Spread (Foreign Currency)	2.605	1.322	2.278	0.995	4.398	0.257	5.528	85
Maturity ≥ 5 *years*									
	Spread (Total)	1.559	1.346	1.184	0.517	2.684	-0.373	7.451	303
	Spread (Local Currency)	1.278	0.962	1.091	0.500	2.144	-0.373	6.645	228
	Spread (Foreign Currency)	2.414	1.889	1.942	0.676	6.385	-0.038	7.451	75

Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

2.4 Evolution of Spreads in the Peruvian Primary Market (2008–2024)

Over the period 2008–2024, the average spread of fixed-income issuances in the Peruvian primary market has exhibited pronounced cyclical dynamics, largely associated with major domestic and international shocks. Throughout the sample period, USD-denominated bonds have consistently recorded higher average spreads than PEN-denominated bonds.

Figure 1: Average Corporate Bond Spreads – by Currency (2008–2024)



Note: The figure shows the average primary market spread of corporate bond issuances, distinguishing between local currency (Peruvian soles) and foreign currency (U.S. dollars) instruments, weighted by issued amount.
Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

Following the 2008 global financial crisis, average spreads increased significantly, reflecting heightened uncertainty and deteriorating global financial conditions. This upward trend persisted until approximately 2012 and was particularly pronounced for dollar-denominated issuances.

Between 2012 and 2019, spreads remained relatively stable, fluctuating between 1% and 3%, albeit with episodes of heightened volatility—mainly driven by USD issuances. These episodes likely coincided with the end of the commodity supercycle and a less favorable international financial environment for emerging markets.

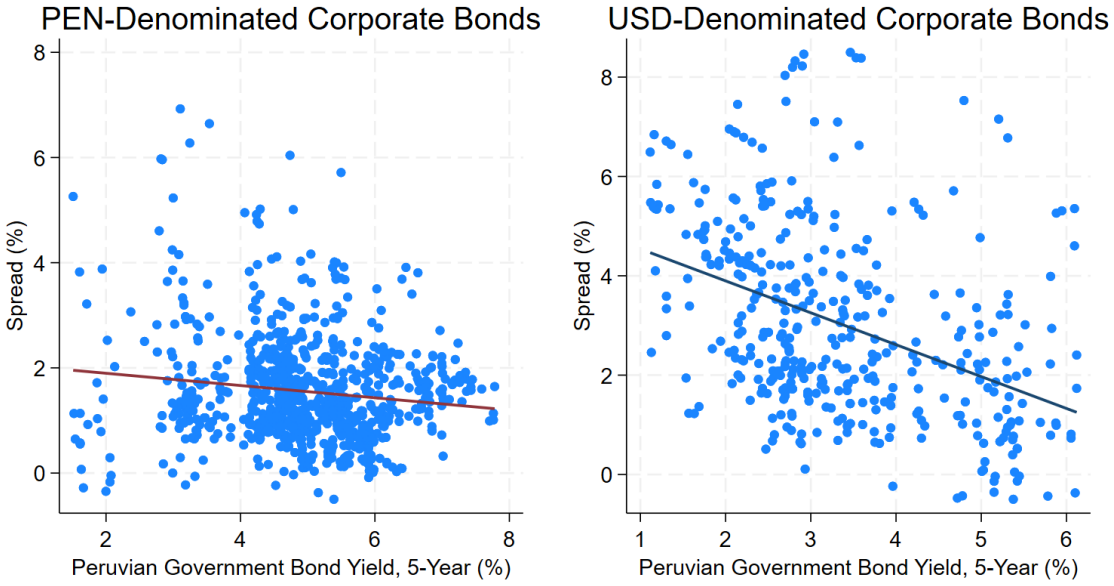
With the COVID-19 crisis in early 2020, spreads increased abruptly, reaching historical peaks of around 6%. This surge reflected an unprecedented global shock characterized by extreme uncertainty regarding economic growth, fiscal sustainability, and the duration and severity of the pandemic, as well as a sharp increase in global risk aversion—particularly toward emerging markets such as Peru.

In subsequent years, spreads gradually declined, consistent with the economic recovery and the withdrawal of pandemic-related restrictions. Across currencies, spreads on local currency-denominated bonds exhibited a more pronounced downward trend, while foreign currency spreads have remained relatively stable since 2022.

In addition to macro-financial shocks, the level of the risk-free rate may also influence observed corporate bond spreads. In standard asset pricing frameworks, the yield on a corporate bond can be decomposed into the risk-free rate plus a credit spread compensating investors for default risk, liquidity risk, and other risk premia. Figure 2 plots the observed spreads against the corresponding risk-free rate at the time of issuance for both PEN- and USD-denominated bonds.

The scatter plot suggests that spreads tend to co-move with the level of risk-free interest rates, although the relationship appears relatively stronger for dollar currency. This could be associated with a possible higher sensitivity of the spread on foreign currency, given the higher demand and liquidity of this type of instruments. Additionally, the dispersion of observations indicates that other factors may play an important role in determining corporate borrowing costs.

Figure 2: Corporate Bond Spreads and Risk-Free Rates by Currency



Note: The figure presents a scatter plot of corporate bond spreads against the corresponding risk-free rate at the time of issuance. Observations are shown separately for bonds denominated in Peruvian soles and U.S. dollars.
Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

Overall, the evolution of bond spreads appears closely linked to major macro-financial shocks during the sample period. Notably, USD-denominated issuances exhibit greater volatility than local currency bonds, suggesting heterogeneous responses of spreads to underlying determinants across currencies.

2.5 Credit Rating System in the Peruvian Capital Market

In the Peruvian capital market, fixed-income issuances are required by regulation to obtain at least two credit ratings from different rating agencies. Currently, four rating agencies are active in the corporate bond market: Apoyo & Asociados, Moody's Local, JCR Latin America, and Pacific Credit Rating (PCR).

In practice, ratings assigned by different agencies tend to be highly consistent. Table 5 reports the rank correlations between standardized ratings assigned by the main agencies observed in the sample. The correlations are high across all pairs of agencies, ranging from 0.71 to 0.98, indicating a strong degree of agreement in the relative ordering of credit quality across issuers.

Table 5: Rank Correlation of Credit Ratings Across Agencies

	Apoyo	Moody's Local	PCR
Apoyo	1.000	0.710	0.978
Moody's Local	0.710	1.000	0.845
PCR	0.978	0.845	1.000

Note: The table reports Spearman rank correlations between standardized credit ratings assigned by the different rating agencies operating in the Peruvian capital market. Correlations are computed using only observations for which ratings from both agencies are simultaneously available. The number of overlapping observations used in each pairwise correlation is: Apoyo–Moody's (N = 87), Apoyo–PCR (N = 88), and Moody's–PCR (N = 43).

Given this high level of concordance, ratings issued by different agencies were homogenized into a unified rating scale to ensure comparability across securities. Table 6 presents the equivalence mapping used to standardize ratings across agencies.

Under a well-functioning rating system, and assuming a sufficiently large number of issuances, higher credit ratings should be associated, on average, with lower spreads. In other words, credit spreads should

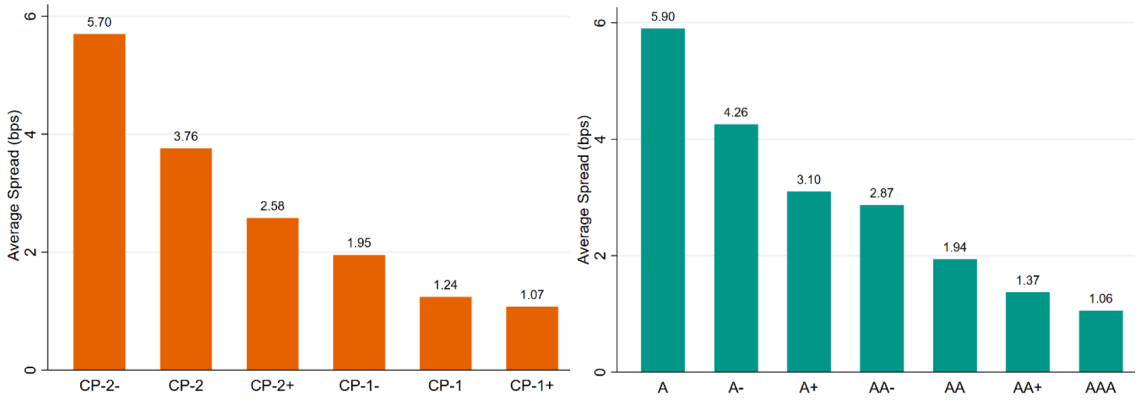
Table 6: Equivalence Table of Credit Ratings Across Agencies

Type of Rating	Rating (Apoyo)	Moody's Local PE	JCR Latin America	PCR	Final Rating
Long-Term Ratings					
	AAA(pe)	AAA	AAA	pAAA	AAA
	AA+(pe)	AA+	AA+	pAA+	AA+
	AA(pe)	AA	AA	pAA	AA
	AA-(pe)	AA-	AA-	pAA-	AA-
	A+(pe)	A+	A+	pA+	A+
	A(pe)	A	A	pA	A
	A-(pe)	A-	A-	pA-	A-
Short-Term Ratings					
	CP-1+	EQL1+	P1+	pe1+	CP-1+
	CP-1	EQL-1	P-1	pe1	CP-1
	CP-1-	EQL-1-	P-1-	pe1-	CP-1-
	CP-2+	EQL-2+	P-2+	pe2+	CP-2+
	CP-2	EQL-2	P-2	pe2+	CP-2
	CP-2-	EQL-2-	P-2-	pe2-	CP-2-

Note: The table presents the equivalence of credit rating categories across the main rating agencies operating in the Peruvian market. The final rating corresponds to the standardized rating used in the empirical analysis.
Source: Authors' compilation based on rating agency classification systems.

decline monotonically as credit quality improves. Figure 3 illustrates the average spreads by rating category for both short-term and long-term issuances.

Figure 3: Average Spread by Short-Term and Long-Term Credit Ratings (2008–2024)



Note: The figure reports the average spread by credit rating category for short-term and long-term bond issuances. When multiple ratings are available for a given issuance, the lowest rating is used.
Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

For short-term ratings, the data show the expected monotonic pattern: average spreads decrease consistently as credit ratings improve. This suggests that the rating system adequately captures relative differences in short-term credit risk.

For long-term ratings, a broadly similar monotonic decline is observed from A+ to AAA categories. However, a notable exception arises between the A and A− categories, where instruments rated A− exhibit a lower average spread than those rated A. This deviation from the expected ordering suggests that factors beyond credit ratings may be influencing observed spreads.

One potential explanation is the currency of issuance. Table 7 presents descriptive statistics of spreads by rating category and currency denomination.

When separating spreads by currency, the monotonic relationship between ratings and spreads is generally preserved for both short- and long-term instruments. Nevertheless, the anomaly between A and A− long-term ratings persists in foreign currency issuances, where A− bonds display a lower average spread than A-rated bonds—an outcome that is counterintuitive if ratings alone were the primary determinant of spread differentials.

Table 7: Spread Statistics by minimum rating and currency

Rating	Total					PEN					USD				
	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N
AAA	1.059	0.537	-0.373	3.159	254	1.044	0.522	-0.373	3.159	226	1.180	0.649	0.088	2.823	28
AA+	1.371	0.648	-0.038	3.626	66	1.274	0.480	0.265	2.339	33	1.467	0.777	-0.038	3.626	33
AA	1.941	0.834	0.109	4.100	93	1.583	0.635	0.163	2.941	52	2.397	0.839	0.109	4.100	41
AA-	2.870	1.346	1.006	6.276	70	2.410	1.288	1.006	6.276	39	3.450	1.202	1.308	5.568	31
A+	3.103	1.796	1.547	7.451	20	3.065	1.431	1.846	6.042	12	3.160	2.352	1.547	7.451	8
A	5.899	1.316	3.300	6.956	11	5.952	0.979	5.260	6.645	2	5.887	1.430	3.300	6.956	9
A-	4.256	1.371	1.929	6.444	20	–	–	–	–	–	4.256	1.371	1.929	6.444	20
Short-term ratings															
CP-1+	1.074	0.730	-0.498	3.235	129	1.091	0.717	-0.498	3.235	124	0.635	1.009	-0.370	2.028	5
CP-1	1.241	0.779	-0.475	3.819	159	1.241	0.704	-0.046	3.346	133	1.243	1.105	-0.475	3.819	26
CP-1-	1.953	0.987	-0.435	6.491	154	1.789	0.792	-0.169	4.788	110	2.364	1.277	-0.435	6.491	44
CP-2+	2.577	1.251	-0.034	6.926	67	2.602	1.136	0.646	6.926	48	2.512	1.537	-0.034	6.626	19
CP-2	3.759	1.500	-0.499	7.529	158	3.198	0.776	0.982	4.952	42	3.962	1.644	-0.499	7.529	116
CP-2-	5.696	2.095	3.262	8.498	26	4.287	0.502	3.906	5.019	7	6.215	2.227	3.262	8.498	19

Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

However, the observed deviation between the A and A− categories should be interpreted with caution. The number of observations in these categories is relatively small, with only a limited number of bond issuances rated within the A segment. As a result, the average spread in these categories may be influenced by idiosyncratic characteristics of a few securities rather than reflecting systematic differences in credit risk. To mitigate the influence of small sample sizes and improve the stability of the descriptive statistics, rating categories are aggregated into broader groups following a commonly used approach in the literature. Specifically, long-term ratings are grouped into three categories: AAA, AA (including AA+, AA, and AA−), and A (including A+, A, and A−). Similarly, short-term ratings are grouped into CP-1+, CP-1 (including CP-1 and CP-1−), and CP-2 (including CP-2+, CP-2, and CP-2−).

This grouping allows for a clearer comparison of spreads across broad levels of credit quality while reducing noise generated by categories with very few observations.

Table 8: Spread Statistics by Rating Groups and Currency

Rating	Total					PEN					USD				
	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N
AAA	1.059	0.537	-0.373	3.159	254	1.044	0.522	-0.373	3.159	226	1.180	0.649	0.088	2.823	28
AA group	2.061	1.137	-0.038	6.276	229	1.761	0.975	0.163	6.276	124	2.416	1.216	-0.038	5.568	105
A group	4.158	1.845	1.547	7.451	51	3.478	1.705	1.846	6.645	14	4.416	1.851	1.547	7.451	37
Short-term ratings															
CP-1+	1.074	0.730	-0.498	3.235	129	1.091	0.717	-0.498	3.235	124	0.635	1.009	-0.370	2.028	5
CP-1 group	1.591	0.955	-0.475	6.491	313	1.489	0.792	-0.169	4.788	243	1.947	1.325	-0.475	6.491	70
CP-2 group	3.644	1.737	-0.499	8.498	251	2.982	1.059	0.646	6.926	97	4.061	1.943	-0.499	8.498	154

Source: Authors' calculations based on corporate bond issuance data from the Peruvian capital market.

Table 8 confirms that once ratings are aggregated into broader categories, the expected monotonic relationship between credit quality and spreads becomes clearly visible. Instruments rated AAA display the lowest average spreads, followed by the AA group and then the A group, indicating a consistent increase in spreads as credit quality deteriorates. A similar pattern is observed for short-term ratings, where CP-1+ instruments present the lowest spreads and CP-2 instruments the highest.

These results suggest that, at an aggregate level, credit ratings in the Peruvian corporate bond market broadly capture relative differences in credit risk. The deviations observed at more granular rating levels appear largely driven by small sample sizes within certain categories rather than by systematic inconsistencies in the pricing of credit risk. While this descriptive evidence supports the informational role of credit ratings, spreads may also reflect additional determinants beyond ratings alone.

3 Literature Review and Hypotheses

3.1 Theoretical Models of Corporate Bond Spreads

Theoretical models of corporate bond pricing originate in the structural framework proposed by Merton (1974), who values corporate debt as a contingent claim within the Black–Scholes option-pricing model. In this setting, default occurs when the market value of a firm's assets falls below the face value of its debt at maturity. Consequently, the spread between corporate and risk-free bonds depends primarily on firm fundamentals and bond characteristics, including the value of firm assets relative to outstanding debt, asset volatility, leverage, time to maturity, the risk-free interest rate, and contractual features such as seniority or embedded options.

Longstaff and Schwartz (1995) extend this framework by incorporating stochastic interest rates and market volatility, generating implications consistent with observed term-structure dynamics and interest rate cycles. These structural models establish the role of bond characteristics and firm fundamentals as core determinants of corporate spreads.

3.2 Credit Ratings

Empirical studies consistently document a strong negative relationship between credit ratings and corporate bond spreads. For example, Elton et al. (2001) show that yield spreads increase monotonically as credit ratings deteriorate, reflecting higher compensation for default risk. Sironi and Gabbi (2002) provide early empirical evidence using a dataset of eurobond issuances by Canadian, European, Japanese, and U.S. firms in the primary market during 1991–2001. They examine the role of credit ratings, issuance size (as a proxy for liquidity), and various bond and issuer characteristics, including sector and country dummies. Their findings indicate that credit ratings are the most significant determinant of issuance spreads, with lower-rated bonds exhibiting systematically higher spreads.

Subsequent research reinforces this result. Hand et al. (1992) document a strong negative relationship between credit ratings and spreads, confirming that lower-rated bonds command higher risk premia. Longstaff et al. (2005) show that rating changes affect spreads asymmetrically, with downgrades generating larger spread increases than the compression observed following upgrades. Overall, the empirical evidence consistently supports a negative relationship between credit quality and spreads: bonds with lower ratings are associated with significantly higher borrowing costs. The previous literature leads us to hypothesize:

> **Hypothesis 1:** (H1): Corporate bonds with lower credit ratings are associated with higher issuance spreads in the Peruvian capital market.

3.3 Currency Denomination and Corporate Bond Spreads

The literature has documented that the currency of denomination constitutes an additional dimension in the pricing of corporate debt. Recent studies show that comparable corporate bonds can exhibit systematically different yields or spreads depending on the currency in which they are issued. For example, Dhar (2016) , using Bloomberg data on USD-denominated corporate bonds, examines a broad set of yield determinants including maturity, credit rating, country characteristics, collateral type, embedded options, and currency-related macroeconomic conditions. The analysis shows that bond yields are primarily driven by standard risk factors and that currencies associated with higher inflation environments tend to exhibit higher interest rates. More recent studies explicitly isolate the role of currency denomination in corporate bond markets. Caramichael et al. (2021) study corporate bonds issued in U.S. dollars and euros by the same non-U.S., non-euro-area firms using primary market data. By constructing currency-hedged borrowing costs, the authors identify a currency-specific component in corporate spreads and show that borrowing costs differ systematically across currencies even after controlling for issuer characteristics and credit quality. Their results indicate that U.S. dollar-denominated debt embeds a currency premium that is particularly pronounced for short-term, highly rated bonds, reflecting the special role of the dollar as a global safe asset. Importantly, these spread differentials persist despite the absence of differences in firm-level credit risk, suggesting that currency denomination affects corporate bond pricing through channels beyond issuer fundamentals. Hu et al. (2022), who formalize this mechanism through the concept of the corporate basis, defined as the difference in spreads between bonds issued in U.S. dollars and non-dollar currencies by the same firm, adjusted for

foreign exchange hedging costs. Using issuance-level data, the authors document persistent and economically significant cross-currency spread differentials. Their decomposition shows that these differences arise from a combination of credit spread differentials, currency-specific convenience yields, and deviations from covered interest parity. Crucially, their findings demonstrate that currency denomination influences the pricing of corporate credit even when firm-level credit risk is held constant, reinforcing the role of currency-specific demand and financial intermediation frictions. Motivated by this framework, we propose the following hypothesis:

> **Hypothesis 2 (H2).** Corporate bonds denominated in local and foreign currency are priced differently with respect to common pricing factors, including credit ratings, bond characteristics, and macro-financial determinants.

3.4 Liquidity, Market Risk, and Financial Conditions

While structural models emphasize default risk, later research demonstrates that corporate bond spreads also incorporate compensation for liquidity risk and exposure to aggregate market conditions. Chen et al. (2009) find that a substantial portion of spread changes cannot be explained solely by traditional credit risk variables. Instead, supply and demand shocks and liquidity factors play an important role.

Joost and Driessen (2012) further show that liquidity risk becomes particularly relevant during financial crises, when market illiquidity explains a significant share of observed spread variation. Longstaff et al. (2005) and Cremers et al. (2004) document a positive relationship between corporate spreads and measures of market volatility—both realized and implied—suggesting that investors demand higher risk premia during periods of heightened uncertainty. Additionally, Bai et al. (2015) examine the role of capital structure and firm liquidity, finding that firms with higher leverage and weaker liquidity positions exhibit wider spreads, consistent with structural credit risk theory.

3.5 Macroeconomic and Monetary Policy Determinants

Macroeconomic conditions and monetary policy also play a significant role in shaping corporate bond spreads. Using U.S. panel data, Gilchrist and Zakrajšek (2012) find that corporate bond spreads contain predictive information about future economic activity, functioning as leading indicators of business cycle fluctuations. In emerging market contexts, E. A. Cavallo and Valenzuela (2010) highlight the importance of macroeconomic stability and political risk perceptions in determining spreads. Their findings suggest that institutional quality and macroeconomic credibility are particularly relevant in developing economies.

Finally, Jahan (2022) offers an integrative perspective on the determinants of corporate bond spreads, classifying them into three groups:

- Macroeconomic factors: GDP growth, monetary policy rates, exchange rates, inflation, and stock returns;
- Bond-specific factors: maturity and contractual characteristics; and
- Firm-specific factors: profitability indicators (EBITDA/assets), leverage, working capital, and firm size.

Through variance decomposition analysis, Jahan (2022) finds that a substantial share of corporate bond spread variability arises from unobserved heterogeneity at the bond-level. This result suggests that the effect of macroeconomic factors may not be uniform across securities, but instead may vary depending on bond characteristics such as credit quality and currency denomination. Motivated by this potential heterogeneity, we formulate the following hypothesis:

> **Hypothesis 3.**(H3) The effect of macroeconomic variables on corporate bond spreads varies across credit rating categories and bond currency.

Finally, to examine the relative importance of credit ratings in explaining spread variation in the Peruvian bond market, we propose the following hypothesis:

> **Hypothesis 4.**(H4) Credit ratings explain a substantial portion of the variation in corporate bond spreads for both local and foreign currency-denominated bonds.

4 Methodology

To test the hypotheses outlined in Section 3, we estimate a set of regression models that relate the credit spread of each bond issuance to three groups of explanatory variables: (i) bond-level characteristics, (ii) macro-financial conditions prevailing at the time of issuance, and (iii) firm-level financial fundamentals. The empirical analysis exploits cross-sectional variation across primary market bond issuances while incorporating time-varying information. Each observation corresponds to a unique bond issuance, but firm fundamentals and macro-financial variables vary over time and are measured at the issuance date. As a result, the specification captures the economic and financial environment faced by issuers when accessing the bond market. This empirical approach follows Sironi and Gabbi (2002) and E. Cavallo and Valenzuela (2010), among others, who study issuance-level determinants of corporate bond spreads in primary markets.

A potential concern in the analysis is the endogenous choice of the currency of issuance. Firms may self-select into foreign-currency borrowing based on unobserved characteristics related to risk exposure, investor base, or financing strategies. We mitigate this concern in several ways. First, all specifications include firm fixed effects, which absorb time-invariant issuer characteristics that may jointly influence both currency choice and borrowing costs. Second, by focusing on primary market spreads observed at issuance, the analysis captures actual transaction prices rather than secondary market valuations that may be affected by liquidity trading or speculative behaviour. Finally, macro-financial variables and firm fundamentals are measured at the time of issuance, capturing exogenous conditions faced by all issuers when accessing the market. While these strategies cannot fully eliminate endogeneity concerns, they substantially reduce the scope for bias arising from systematic differences across issuers. All regressions are estimated using heteroskedasticity-robust standard errors clustered at the firm level. Clustering at the issuer level accounts for potential correlation of unobserved shocks across multiple bond issuances by the same firm, ensuring valid statistical inference in the presence of within-firm dependence. Finally, given the sample constraints when introducing firm-level indicators, this group of variables will be included only as control variables.

4.1 Baseline Specification

Based on the works of Sironi and Gabbi (2002) and E. Cavallo and Valenzuela (2010) . The proposed baseline econometric specification is defined as follows:

$$Spread_i = \alpha + \sum_{k=1}^{K} \beta_k BChar_{k,i} + \sum_{r=1}^{R} \rho_r Rating_{r,i} + \sum_{m=1}^{M} \gamma_m Macro_{m,i} + \sum_{n=1}^{N} \delta_n FChar_{n,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where:

- i indexes bond issuances, $f(i)$ the issuing firm and $t(i)$ the time of issuance.
- $Spread_i$ denotes the credit spread at issuance of bond i.
- $BChar_{k,i}$ represents a set of bond-level characteristics associated with issuance i. These variables capture structural attributes of the instrument, such as maturity, issuance size, and instrument type.
- $Rating_{r,i}$ corresponds to a set of dummy variables capturing the credit rating of the bond. Given that the rating summarizes the perceived creditworthiness of the issuer and the expected default risk of the instrument, it is modeled separately from other bond characteristics.
- $Macro_{m,i}$ captures macro-financial conditions prevailing at time $t(i)$, the moment in which bond i is issued. These variables reflect the broader economic and financial environment and include indicators such as GDP growth, inflation, exchange rate movements, sovereign risk spreads, and financial market volatility.
- $FChar_{n,i}$ includes firm-level financial indicators for the issuing firm $f(i)$, such as leverage, profitability, liquidity, and solvency measures observed at time $t(i)$.
- $\lambda_{y(i)}$ and $\mu_{f(i)}$ denote year and firm fixed effects, respectively.
- ε_i represents the error term.

This baseline specification is designed to test **H1**. If lower credit rating categories are associated with larger and significant estimated coefficients ρ_r, this provides evidence that bonds with weaker credit quality command higher issuance spreads.

4.2 Currency Difference Specification

Having established the baseline specification, we next extend the model to examine whether the determinants of corporate bond spreads differ according to the currency of issuance. To capture potential heterogeneous effects between local and foreign-denominated bonds, we introduce interaction terms between a USD currency denominated dummy variable and the main group of determinants of interest.

Let D_i denote a dummy variable equal to one if bond i is denominated in U.S. dollars and zero if the bond is issued in local currency . The empirical specification is then defined as follows:

$$Spread_i = \alpha + \sum_{j=1}^{J} \beta_j Det_{j,i} + \sum_{j=1}^{J} \phi_j (Det_{j,i} \times D_i) + \sum_{c=1}^{C} \kappa_c Control_{c,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where:

- D_i is a dummy variable equal to one if bond i is denominated in U.S. dollars and zero if the bond is issued in Peruvian soles.
- $Det_{j,i}$ represents the main determinants of interest. Depending on the specification, this set may include credit rating indicators, macro-financial variables, or bond-level characteristics.
- $(Det_{j,i} \times D_i)$ denotes the interaction between the determinants of interest and the USD dummy. The associated coefficients capture whether the marginal effect of these variables differs for USD-denominated bonds relative to bonds issued in local currency.
- $Control_{c,i}$ represents a set of control variables included to account for other factors affecting bond spreads, such as firm-level financial indicators, additional bond characteristics, or macro-financial conditions.
- $\lambda_{y(i)}$ and $\mu_{f(i)}$ denote year and firm fixed effects, respectively.
- ε_i represents the error term.

This specification allows us to test **H2** by assessing whether common pricing factors—including credit ratings, bond characteristics, and macro-financial conditions—have systematically different effects on corporate bond spreads depending on the currency of issuance. To do that, we estimate three models, each focusing on a different group of determinants of interest.

Model 1: Credit Rating × USD Interaction

To assess whether the pricing of credit risk differs between USD- and PEN-denominated issuances, we interact the credit rating indicators with the USD currency dummy. The estimated specification is:

$$Spread_i = \alpha + \sum_{r=1}^{R} \rho_r Rating_{r,i} + \sum_{r=1}^{R} \phi_r (Rating_{r,i} \times D_i) + \sum_{c=1}^{C} \kappa_c Control_{c,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where:

- $Rating_{r,i}$ denotes a set of dummy variables capturing the credit rating category assigned to bond i.
- D_i is a dummy variable equal to one if bond i is denominated in U.S. dollars and zero if the bond is issued in Peruvian soles (PEN).
- $(Rating_{r,i} \times D_i)$ represents the interaction between the rating indicators and the USD dummy. The associated coefficients capture whether the pricing of credit risk differs between USD- and PEN-denominated bonds.
- $Control_{c,i}$ represents a set of control variables included to account for other factors affecting bond spreads, such as bond characteristics, macro-financial conditions, and firm-level financial indicators.

A lack of currency-specific differences in how ratings are priced would imply that the coefficients of the interaction terms, λ', are statistically indistinguishable from zero.

Model 2: Macro-Financial Determinants × USD Interaction

To analyze whether macro-financial conditions are priced differently depending on the currency of issuance, we interact the USD dummy with the set of macro-financial variables. The estimated specification is:

$$Spread_i = \alpha + \sum_{m=1}^{M} \gamma_m Macro_{m,i} + \sum_{m=1}^{M} \phi_m (Macro_{m,i} \times D_i) + \sum_{c=1}^{C} \kappa_c Control_{c,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where:

- $Macro_{m,i}$ denotes the set of macro-financial variables observed at the time of issuance of bond i. These variables capture the broader economic and financial conditions prevailing in the market and include indicators such as exchange rate variation, GDP growth, inflation, the yield curve slope, the monetary policy rate, equity market returns, turnover ratio, EMBIG Peru, domestic financial volatility, and the VIX index.
- D_i is a dummy variable equal to one if bond i is denominated in U.S. dollars and zero if the bond is issued in Peruvian soles (PEN).
- $(Macro_{m,i} \times D_i)$ represents the interaction between macro-financial variables and the USD dummy. The associated coefficients capture whether macro-financial conditions affect the spreads of USD-denominated bonds differently relative to bonds issued in local currency.
- $Control_{c,i}$ represents a set of control variables included to account for other factors affecting bond spreads, such as credit rating indicators, bond-level characteristics, and firm-level financial variables.

If macro-financial conditions affect the spread in the same way across currencies, the coefficients in κ' should be statistically indistinguishable from zero.

Model 3: Bond Characteristics × USD Interaction

To examine whether the valuation of bond-specific attributes differs between USD- and PEN-denominated issuances, we interact the USD dummy with the set of bond characteristics (other than credit ratings). The estimated specification is:

$$Spread_i = \alpha + \sum_{k=1}^{K} \beta_k BChar_{k,i} + \sum_{k=1}^{K} \phi_k (BChar_{k,i} \times D_i) + \sum_{c=1}^{C} \kappa_c Control_{c,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where:

- $BChar_{k,i}$ denotes the set of bond-level characteristics associated with issuance i. These variables capture structural attributes of the instrument, including the logarithm of the issuance amount, bond maturity, a dummy for negotiable certificates of deposit (NCD), and a dummy identifying short-term instruments.
- D_i is a dummy variable equal to one if bond i is denominated in U.S. dollars and zero if the bond is issued in Peruvian soles (PEN).
- $(BChar_{k,i} \times D_i)$ represents the interaction between bond characteristics and the USD dummy. The associated coefficients capture whether the pricing of these characteristics differs for USD-denominated bonds relative to bonds issued in local currency.
- $Control_{c,i}$ represents a set of control variables included to account for other factors affecting bond spreads, such as credit rating indicators, macro-financial conditions, and firm-level financial variables.

If the market prices bond characteristics similarly across currencies, the coefficients associated with the interaction terms, ϕ_k, should be statistically indistinguishable from zero.

4.3 Marginal Effects of Macro-Financial Variables across Ratings and Currencies

Given the importance of macro-financial shocks in the determination of credit spreads, and the possibility that their impact may vary across different levels of credit risk, we estimate an additional specification that allows the marginal effect of selected macro-financial variables to differ simultaneously by credit rating and currency of issuance. Previous studies suggest that macroeconomic shocks may affect lower-rated instruments more strongly than higher-rated ones, reflecting differences in risk sensitivity and investor perception (Jahan (2022)).

To capture these heterogeneous effects, we introduce triple interaction terms between (i) the USD currency dummy, (ii) the set of rating indicators, and (iii) selected macro-financial variables. The empirical specification is defined as follows:

$$Spread_i = \alpha + \sum_{r=1}^{R} \rho_r Rating_{r,i} + \sum_{m=1}^{M} \gamma_m Macro_{m,i} + \sum_{r=1}^{R} \sum_{m=1}^{M} \phi_{rm}(Rating_{r,i} \times Macro_{m,i}) + \sum_{r=1}^{R} \sum_{m=1}^{M} \psi_{rm}(Rating_{r,i} \times Macro_{m,i} \times D_i) + \sum_{c=1}^{C} \kappa_c Control_{c,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where:

- $Macro_{m,i}$ denotes the set of macro-financial variables evaluated in this specification, including GDP growth, inflation, exchange rate variation, and stock market returns.
- $Rating_{r,i}$ represents the set of credit rating indicators assigned to bond i.
- D_i is a dummy variable equal to one if bond i is denominated in U.S. dollars and zero if the bond is issued in Peruvian soles.
- $(Rating_{r,i} \times Macro_{m,i})$ captures whether macro-financial shocks affect bonds differently depending on their credit rating.
- $(Rating_{r,i} \times Macro_{m,i} \times D_i)$ captures whether these rating-specific effects differ further for USD-denominated bonds relative to local-currency bonds.
- $Control_{c,i}$ represents the set of additional control variables, including bond characteristics and firm-level financial indicators.

This specification provides a direct test of **H3** by assessing whether the sensitivity of corporate bond spreads to macro-financial conditions varies jointly across credit rating categories and currency of issuance.

4.4 Variance Decomposition

To quantify the relative importance of the different determinants of corporate bond spreads, we perform a variance decomposition based on an analysis of variance (ANOVA) framework, following the methodology proposed by Jahan (2022) .

Our baseline regression specification is given by

$$Spread_i = \alpha + \sum_{k=1}^{K} \beta_k BChar_{k,i} + \sum_{r=1}^{R} \rho_r Rating_{r,i} + \sum_{m=1}^{M} \gamma_m Macro_{m,i} + \sum_{n=1}^{N} \delta_n FChar_{n,i} + \lambda_{y(i)} + \mu_{f(i)} + \varepsilon_i$$

where $BChar$ represents bond characteristics, $Rating$ denotes credit rating categories, $Macro$ captures macro-financial conditions, and $FChar$ includes issuer-specific financial characteristics. In addition, the specification controls for sector fixed effects $\theta_{s(i)}$, year fixed effects $\lambda_{y(i)}$, and issuer fixed effects $\mu_{f(i)}$.

To assess the contribution of each determinant to the overall variation of corporate bond spreads, we rely on the ANOVA representation of the regression model. Specifically, the total sum of squares of the dependent variable can be decomposed into the partial sums of squares associated with each explanatory variable.

Let TSS denote the total sum of squares of the spread and PSS_{X_k} the partial sum of squares associated with determinant X_k. The contribution of each determinant to the overall variation of spreads is computed as

$$Contribution_k = \frac{PSS_{X_k}}{TSS}.$$

We compute the partial sums of squares using a Type II ANOVA decomposition. This approach measures the marginal contribution of each regressor after controlling for all other covariates in the model, while remaining invariant to the ordering of regressors in the regression specification.

The resulting variance shares provide a measure of the relative importance of bond characteristics, credit ratings, macroeconomic factors, issuer financial conditions, and fixed effects in explaining the cross-sectional variation in corporate bond spreads. This variance decomposition framework provides a direct test of **H4** by quantifying the share of corporate bond spread variation explained by credit ratings relative to other determinants.

5 Results

5.1 Baseline Specification

Table 9: Base model: Determinants of corporate bond spreads

	Bond spread	
	Without firm controls	With firm controls
	(1)	(2)
Bond characteristics		
Ln(Issue amount)	-0.012	-0.093**
	(0.044)	(0.045)
Maturity (years)	-0.036***	-0.040***
	(0.009)	(0.008)
USD-denominated	-0.167	-0.182*
	(0.106)	(0.100)
Short-term instrument	-0.167	-0.312
	(0.302)	(0.269)
NCD	-0.343	-0.476*
	(0.318)	(0.282)
Credit rating (reference category: AAA)		
AA group	0.228*	0.242*
	(0.135)	(0.124)
A group	1.594***	1.320***
	(0.218)	(0.216)
CP-1+	0.170	0.072
	(0.302)	(0.265)
CP-1 group	-0.095	-0.041
	(0.295)	(0.258)
CP-2 group	0.349	0.478*
	(0.319)	(0.284)
Macroeconomic conditions		
Exchange rate (12-month variation)	-0.018*	-0.031***
	(0.010)	(0.009)
GDP growth (12-month)	-0.006	-0.006
	(0.006)	(0.006)
Inflation rate	0.076*	0.095***
	(0.040)	(0.036)
Yield curve slope	-0.046	0.035
	(0.070)	(0.066)
Monetary policy rate	-0.202***	-0.083
	(0.060)	(0.056)
Stock market return (12-month)	-0.003*	-0.002
	(0.002)	(0.002)
VIX	0.001	-0.002
	(0.006)	(0.006)
Firm controls		
EBITDA ratio		0.011
		(0.007)
Liabilities-to-assets ratio		0.015***
		(0.004)
Firm size		-0.212**
		(0.094)
Constant	6.391***	6.192***
	(0.773)	(1.123)
Observations	1,227	964
R^2	0.790	0.807
Adjusted R^2	0.762	0.783

Notes: The regressions include firm and year fixed effects. Column (1) excludes firm-level controls, while column (2) includes them. The reference credit rating category is AAA. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9 reports the results of the baseline model explaining corporate bond spreads. Column (1) presents estimates that include bond characteristics, credit ratings, and macroeconomic conditions, while column (2) additionally incorporates firm-level financial ratio controls. All specifications include firm, economic sector, and year fixed effects.

Bond characteristics. Among the bond-level characteristics, maturity remains statistically significant across specifications, while the issue amount becomes significant only when firm-level controls are included.

The negative and highly significant coefficient on maturity suggests that longer-term bonds are associated with lower issuance spreads in the Peruvian primary market. Although this result contrasts with standard term structure intuition, it likely reflects the composition of issuers in the sample. This interpretation is supported by the positive correlation between issue amount and maturity (approximately 40%), suggesting that in the Peruvian market larger bond issuances are more frequently associated with longer maturities.

Credit ratings. Credit ratings are statistically significant for most categories and display the expected risk pattern relative to the AAA benchmark. In particular, the estimated coefficients increase as credit quality deteriorates among long-term ratings. Bonds rated in the AA group exhibit spreads approximately 24 basis points higher than AAA bonds, while bonds in the A group display spreads about 132 basis points higher. This pattern is consistent with standard credit risk theory, according to which lower credit quality requires higher compensation from investors.

For short-term instruments, the results also reveal a risk gradient, although the magnitude is smaller. While CP-1 categories are not statistically different from the AAA benchmark, spreads increase for lower short-term ratings. In particular, the CP-2 group shows higher spreads relative to the benchmark, indicating that investors demand additional compensation for instruments with weaker short-term credit quality.

Overall, these results confirm that rating categories contain substantial information about credit risk and are an important determinant of corporate bond spreads in the Peruvian market. The economic magnitude of the coefficients suggests that credit risk is one of the main determinants of spreads in the Peruvian corporate bond market.

Macroeconomic conditions. Regarding macroeconomic and financial conditions, only exchange rate variation and inflation are statistically significant at conventional levels. Inflation exhibits a positive and significant effect on spreads, consistent with the pricing of higher macroeconomic uncertainty and inflation risk by investors.

Exchange rate depreciation is associated with lower issuance spreads, particularly once firm-level controls are included. While this result may appear counterintuitive, it should be interpreted with caution. One possible explanation is that depreciation episodes coincide with favorable external demand conditions or improved export prospects for certain issuers, which may partially offset increases in perceived financial risk.

Firm-level controls. The inclusion of firm-level controls in column (2) improves the explanatory power of the model, as reflected in the higher adjusted R^2. Among these variables, only the equity-to-capital ratio is statistically significant at the 5% level, suggesting that firms with higher capital on their equity components face higher bond spreads.

5.2 Currency Difference Specification

5.2.1 Credit Rating × USD Interaction

Table 10: Credit rating and currency interaction

	Bond spread	
	Without firm controls	With firm controls
	(1)	(2)
Currency denomination		
USD-denominated	-0.014	-0.022
	(0.224)	(0.220)
Credit rating (reference category: AAA)		
AA group	0.075	0.178
	(0.145)	(0.132)
A group	1.159***	1.179***
	(0.277)	(0.245)
CP-1+	0.298	0.129
	(0.302)	(0.266)
CP-1 group	0.038	0.005
	(0.295)	(0.259)
CP-2 group	0.163	0.186
	(0.338)	(0.300)
Rating × USD denomination		
AA group × USD	0.110	-0.023
	(0.269)	(0.253)
A group × USD	0.399	-0.103
	(0.432)	(0.479)
CP-1+ × USD	-0.979**	-0.854**
	(0.433)	(0.397)
CP-1 group × USD	-0.927***	-0.753***
	(0.292)	(0.286)
CP-2 group × USD	-0.053	0.159
	(0.297)	(0.305)
Constant	6.335***	6.101***
	(0.776)	(1.120)
Observations	1,227	964
R^2	0.796	0.811
Adjusted R^2	0.767	0.786

Notes: The regressions include firm and year fixed effects. Column (1) excludes firm-level controls, while column (2) includes them. The reference credit rating category is AAA. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 10 examines whether the relationship between credit ratings and corporate bond spreads differs depending on the currency of issuance. The reference category corresponds to AAA-rated bonds issued in local currency. Because the model includes interaction terms between rating categories and the USD dummy, the standalone coefficients cannot be interpreted independently of the interactions. In particular, the coefficient on the USD dummy reflects the currency effect only for the reference category (AAA-rated bonds). Since this coefficient is not significant in both specifications, there is no evidence of a systematic spread difference between currencies for AAA-rated bonds. The baseline rating coefficients represent spread differences relative to AAA for bonds issued in local currency. While lower-rated categories generally exhibit higher spreads than the AAA benchmark, the pattern across categories is not strictly monotonic. The interaction terms indicate that the role of currency denomination varies across rating segments. For long term instruments, such as those in the AA and A groups, the interaction coefficients are small and not significant. This suggests that currency denomination does not materially affect spreads for these issuers, which may reflect their stronger credit profiles and broader access to both domestic and international investor bases. A different pattern emerges for short-term instruments. The interaction coefficients for CP-1+ and CP-1 ratings are negative and statistically significant, indicating that USD-denominated instruments tend to be issued at lower spreads than comparable instruments in local currency. This result may reflect the greater depth and liquidity of U.S. dollar money markets, which provide a larger pool of investors and more active trading conditions than the local-currency segment. Given the very short maturities of these instruments, currency risk and hedging costs are limited, making liquidity considerations more relevant for pricing. Overall, the results suggest that the currency denomination does not generate a uniform spread differential across the corporate bond market, and only short term bonds shows a significance difference, with overall lower spread for those instruments.

5.2.2 Macroeconomic and Financial determinantes with Currency of Issuance interaction

Table 11: Macroeconomic and Financial Determinants with Currency of Issuance Interaction

	Without firm controls (1)	With firm controls (2)
USD-denominated	3.037***	2.114***
	(0.376)	(0.468)
Macroeconomic variables		
Exchange rate (12-month change)	-0.025**	-0.031***
	(0.010)	(0.009)
GDP growth (12-month)	-0.021***	-0.013**
	(0.007)	(0.006)
Inflation rate	0.072*	0.070*
	(0.039)	(0.036)
Yield curve slope	0.138*	0.103
	(0.074)	(0.069)
Monetary policy rate	-0.037	-0.013
	(0.058)	(0.055)
Stock market return (12-month)	-0.002	-0.002
	(0.002)	(0.002)
VIX	0.007	0.003
	(0.006)	(0.006)
USD × macroeconomic interactions		
USD × Exchange rate	0.012	0.009
	(0.010)	(0.010)
USD × GDP growth	0.036***	0.026***
	(0.009)	(0.010)
USD × Inflation	-0.026	0.140***
	(0.040)	(0.052)
USD × Yield curve slope	-0.598***	-0.451***
	(0.097)	(0.113)
USD × Monetary policy rate	-0.496***	-0.448***
	(0.055)	(0.065)
USD × Stock market return	-0.006***	-0.000
	(0.002)	(0.003)
USD × VIX	-0.012	-0.014*
	(0.008)	(0.008)
Constant	5.079***	5.818***
	(0.740)	(1.098)
Observations	1,227	964
R^2	0.820	0.821
Adjusted R^2	0.794	0.797

Notes: The regressions include firm and year fixed effects. Column (1) excludes firm-level controls, while column (2) includes them. The reference credit rating category is AAA. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 11 extends the baseline specification by allowing the effects of macroeconomic and financial variables on corporate bond spreads to differ according to the currency of issuance. Because the model includes interaction terms between macroeconomic variables and the USD denomination dummy, the coefficients reported in the regression correspond to the effects for local-currency bonds, while the effects for USD-denominated bonds are obtained by combining the baseline coefficients with the corresponding interaction terms. For ease of interpretation, Table 12 reports the implied marginal effects by currency of issuance.

For bonds issued in local currency, the results indicate that spreads respond to domestic macroeconomic conditions in the expected direction. Exchange rate depreciation is associated with wider spreads, while stronger economic activity—measured by GDP growth—compresses spreads. Inflation also exhibits a positive relationship with spreads, consistent with higher inflation reflecting increased macroeconomic uncertainty and higher risk premia demanded by investors.

The marginal effects reported in Table 12 show that the response of spreads differs markedly for USD-

Table 12: Marginal Effects of Macroeconomic Variables by Currency of Issuance

	Local currency bonds	USD-denominated bonds
Exchange rate (12-month change)	-0.031	-0.022
GDP growth (12-month)	-0.013	0.013
Inflation rate	0.070	0.210
Yield curve slope	0.103	-0.348
Monetary policy rate	-0.013	-0.461

Notes: Marginal effects computed from the specification with firm controls reported in Table 11. The effects for USD-denominated bonds are obtained by summing the baseline coefficient and the corresponding interaction term with the USD dummy.

denominated bonds. In the case of GDP growth, the estimated effect for local-currency bonds is negative (–0.013), indicating that stronger economic activity reduces spreads. However, once the interaction term is considered, the combined effect for USD bonds becomes slightly positive (approximately 0.013). This result suggests that improvements in domestic economic activity reduce spreads primarily for local-currency bonds, while the effect is considerably weaker—and even reversed—for bonds issued in U.S. dollars.

A similar pattern emerges for financial conditions. For local-currency bonds, the slope of the yield curve has a modest positive association with spreads (0.103). In contrast, the combined effect for USD-denominated bonds becomes negative (approximately –0.348), indicating that changes in the yield curve have a substantially different impact depending on the currency of issuance. This finding suggests that the pricing of USD-denominated instruments may be more closely linked to broader financial conditions than to purely domestic yield curve movements.

The difference is particularly pronounced for the monetary policy rate. While the estimated effect for local-currency bonds is small (–0.013), the implied effect for USD-denominated bonds is much larger (–0.461), indicating that spreads on foreign-currency bonds react more strongly to changes in domestic interest rates.

Inflation also displays notable heterogeneity across currencies. The marginal effect for local-currency bonds is positive but relatively moderate (0.070), whereas the combined effect for USD-denominated bonds increases substantially (approximately 0.210), suggesting that inflationary pressures are associated with a significantly larger increase in spreads for bonds issued in foreign currency.

These results indicate that the currency of issuance plays an important role in shaping how macroeconomic and financial shocks are transmitted to corporate bond spreads. While spreads on local-currency bonds appear to reflect domestic macroeconomic fundamentals more directly, USD-denominated bonds exhibit stronger sensitivity to several macro-financial variables, highlighting the importance of currency denomination in the pricing of corporate debt instruments.

5.2.3 Bond characteristics by currency of issuance

Table 13: Bond Characteristics and USD Interactions

	Without firm controls (1)	With firm controls (2)
Bond characteristics		
Log(issue amount)	0.069	-0.055
	(0.050)	(0.050)
Maturity (years)	-0.048***	-0.050***
	(0.009)	(0.008)
USD-denominated	1.479*	0.610
	(0.819)	(0.835)
Short-term instrument	0.064	-0.199
	(0.307)	(0.272)
Negotiable CD (NCD)	-0.345	-0.470*
	(0.314)	(0.279)
USD × bond characteristics		
USD × Log(issue amount)	-0.190**	-0.103
	(0.075)	(0.076)
USD × Maturity (years)	0.071***	0.070***
	(0.021)	(0.022)
USD × Short-term instr.	-0.450*	-0.239
	(0.232)	(0.246)
USD × NCD	1.369	1.685**
	(0.871)	(0.737)
Constant	5.811***	5.988***
	(0.818)	(1.149)
Observations	1,227	964
R^2	0.797	0.812
Adjusted R^2	0.768	0.787

Notes: The regressions include firm and year fixed effects. Column (1) excludes firm-level controls, while column (2) includes them. The reference credit rating category is AAA. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The results from Table 13 examines whether the relationship between bond characteristics and corporate bond spreads differs according to the currency of issuance. As in the previous sections, the baseline coefficients reflect the effect of each characteristic for bonds issued in local currency, while the interaction terms capture how this effect changes for foreign denominated securities. Among the bond characteristics, only maturity remains consistently significant across specifications, while the negotiable certificate of deposit (NCD) indicator becomes statistically significant once firm controls are included. Other characteristics, such as issue amount and the short-term instrument dummy, are not statistically significant in the preferred specification with firm controls. The baseline coefficient on maturity is negative and highly significant, indicating that longer maturities are associated with lower spreads for bonds issued in local currency. Although this result may appear counterintuitive—since longer maturities are typically associated with higher risk premia—it likely reflects the structure of the Peruvian corporate bond market. In particular, longer maturities tend to be issued by larger and more established firms with stronger credit profiles, which are able to access longer-term financing at lower borrowing costs.

However, the positive and statistically significant interaction between maturity and USD denomination indicates that the relationship between maturity and spreads differs across currencies. As shown in Table 14, while spreads decrease with maturity for local-currency bonds, the combined effect for USD-denominated bonds becomes slightly positive. This suggests that longer maturities may carry a modest additional premium in foreign-currency issuances, potentially reflecting increased exposure to currency risk or greater sensitivity to global financial conditions over longer horizons. Finally, the results reveal an interesting pattern for negotiable

Table 14: Marginal Effects of Significant Bond Characteristics by Currency of Issuance

	Local currency bonds	USD-denominated bonds
Maturity (years)	-0.050	0.020
Negotiable CD (NCD)	-0.470	1.215

Notes: Marginal effects correspond to the specification with firm controls in Table 13. For USD-denominated bonds, the effect equals the sum of the baseline coefficient and the corresponding USD interaction term. Only variables that are statistically significant in the specification with firm controls are reported.

certificates of deposit (NCDs). In the case of local-currency instruments, NCDs are associated with slightly lower spreads relative to other instruments. However, the positive and statistically significant interaction with USD denomination implies a substantially higher spread for USD-denominated NCDs. This result may reflect differences in investor demand, liquidity conditions, or the relative scarcity of this instrument type in foreign-currency markets.

5.3 Marginal Effects of Macro-Financial Variables across Ratings and Currencies

5.3.1 GDP growth effect across Ratings and Currencies

Table 15 examines whether the effect of GDP growth on corporate bond spreads varies across credit rating groups and the currency of issuance. The specification allows GDP growth to interact with both rating categories and the currency of the bond, thereby capturing heterogeneous responses of risk premia across segments of the corporate bond market.

Table 15: GDP Growth and Corporate Bond Spreads: Heterogeneity by Currency and Credit Rating

	(1) Without Firm Controls	(2) With Firm Controls
Currency effects		
USD-denominated bond	-0.621**	-0.599**
	(0.299)	(0.263)
GDP growth	0.001	0.007
	(0.011)	(0.010)
USD × GDP growth	0.133***	0.144***
	(0.044)	(0.039)
Rating × GDP growth		
A group	-0.027	-0.069
	(0.094)	(0.081)
AA group	-0.033	-0.041**
	(0.021)	(0.018)
CP-1 group	-0.023*	-0.023**
	(0.014)	(0.012)
CP-1+	-0.093***	-0.070***
	(0.023)	(0.019)
CP-2 group	-0.041	-0.037*
	(0.026)	(0.022)
USD × Rating × GDP growth		
A group	-0.115	-0.019
	(0.105)	(0.358)
AA group	-0.082	-0.092**
	(0.051)	(0.045)
CP-1 group	-0.093**	-0.110***
	(0.047)	(0.042)
CP-1+	0.065	-0.038
	(0.128)	(0.127)
CP-2 group	-0.088*	-0.151***
	(0.052)	(0.049)
Constant	6.454***	5.349***
	(0.771)	(1.136)
Observations	1,227	964
R^2	0.804	0.823
Adjusted R^2	0.774	0.797

Notes: The regressions include firm and year fixed effects. Column (1) excludes firm-level controls, while column (2) includes them. The reference credit rating category is AAA. Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The baseline category corresponds to AAA-rated bonds issued in local currency. For this group, the coefficient on GDP growth is small and statistically insignificant, indicating that macroeconomic fluctuations have a limited direct effect on the spreads of the highest-quality bonds issued in domestic currency. However, the positive and statistically significant interaction between GDP growth and the USD issuance dummy suggests that dollar-denominated bonds respond differently to macroeconomic conditions. In particular, higher GDP growth is associated with an increase in spreads for USD-denominated bonds relative to local-currency bonds.

The interaction terms between GDP growth and rating categories further reveal important heterogeneity across credit risk levels. In the specification including firm controls (column 2), GDP growth has a negative and statistically significant effect for several rating groups when bonds are issued in local currency. In particular, the coefficients for the AA group, the CP-1 group, and the CP-1+ category indicate that stronger economic activity tends to reduce spreads for these securities. This result is consistent with the interpretation that improved macroeconomic conditions lower perceived default risk and financing costs for medium-quality issuers and short-term instruments.

Table 16 reports the marginal effects of GDP growth on spreads for each rating group and currency. The results show that the response of spreads to macroeconomic conditions differs substantially across market segments. For AAA-rated bonds, GDP growth has no statistically significant effect on spreads in local currency, but it increases spreads for USD-denominated bonds. In contrast, for several medium-quality ratings issued in local currency—particularly the AA group and CP-1+—GDP growth is associated with statistically significant reductions in spreads, suggesting that investors demand lower risk premia when economic conditions improve.

For lower-rated short-term instruments, the effects are smaller and generally less precisely estimated. In most cases, the marginal effects for USD-denominated bonds are statistically insignificant, indicating that the sensitivity of spreads to domestic economic activity is weaker for foreign-currency instruments.

Table 16: Marginal Effects of GDP Growth on Corporate Bond Spreads (Basis Points)

Rating Group	Currency	Marginal Effect (bp)	p-value	CI 95% (LB)	CI 95% (UB)
AAA	PEN	0.007	0.434	-0.011	0.026
AAA	USD	0.151***	0.000	0.074	0.228
AA group	PEN	-0.034**	0.050	-0.067	-0.000
AA group	USD	0.018	0.334	-0.018	0.053
A group	PEN	-0.061	0.446	-0.219	0.096
A group	USD	0.063	0.856	-0.618	0.744
CP-1+	PEN	-0.062***	0.000	-0.097	-0.027
CP-1+	USD	0.043	0.715	-0.190	0.277
CP-1 group	PEN	-0.015*	0.053	-0.031	0.000
CP-1 group	USD	0.018*	0.099	-0.003	0.040
CP-2 group	PEN	-0.030	0.151	-0.070	0.011
CP-2 group	USD	-0.037	0.117	-0.084	0.009

Notes: Marginal effects are computed from the interaction model between GDP growth, currency of issuance, and credit rating groups. Effects are expressed in basis points (bp). PEN denotes local-currency issuance and USD denotes dollar-denominated bonds. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

5.3.2 Inflation rate effect across ratings and currencies

In the case of the inflation rate, Table 17 presents the results from the proposed interaction model.

Table 17: Inflation and Corporate Bond Spreads: Heterogeneity by Currency and Credit Rating

	(1) Without Firm Controls	(2) With Firm Controls
Currency effects		
USD-denominated bond	0.178	0.325
	(0.437)	(0.391)
Inflation rate	-0.033	-0.027
	(0.057)	(0.052)
USD × Inflation rate	-0.064	-0.115
	(0.115)	(0.103)
Rating × Inflation rate		
A group	-0.060	-0.083
	(0.181)	(0.164)
AA group	-0.006	-0.002
	(0.071)	(0.064)
CP-1 group	0.185***	0.137***
	(0.050)	(0.044)
CP-1+	0.222***	0.161***
	(0.055)	(0.049)
CP-2 group	0.087	0.069
	(0.066)	(0.059)
USD × Rating × Inflation rate		
A group	0.090	0.619***
	(0.220)	(0.229)
AA group	0.213	0.268**
	(0.139)	(0.125)
CP-1 group	-0.138	-0.073
	(0.134)	(0.124)
CP-1+	-0.048	-0.176
	(0.232)	(0.232)
CP-2 group	-0.144	-0.044
	(0.129)	(0.130)
Constant	6.607***	6.377***
	(0.773)	(1.122)
Observations	1,227	964
R^2	0.811	0.820
Adjusted R^2	0.782	0.793

Notes: The dependent variable is the corporate bond spread. Inflation corresponds to the annual inflation rate. The base category corresponds to AAA-rated bonds issued in local currency. Column (2) includes firm-level financial controls in addition to issuer, sector, and year fixed effects. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The estimates suggest that the effect of inflation on corporate bond spreads varies significantly across credit ratings and currencies. In the baseline specification, inflation does not exhibit a statistically significant effect on the spreads of the benchmark category (AAA-rated bonds issued in local currency). This result indicates that domestic bonds which are highly rated appear relatively insulated from short-term inflation fluctuations, possibly reflecting their lower perceived credit risk and stronger issuer fundamentals. However, the interaction terms reveal heterogeneity across rating groups. In particular, short-term instruments with lower credit quality exhibit greater sensitivity to inflation dynamics. The coefficients for the CP-1 and CP-1+ groups are positive and statistically significant, suggesting that increases in inflation are associated with higher spreads for these instruments when issued in local currency. The previous result is consistent with the notion that inflationary environments increase uncertainty and perceived credit risk, which tends to be priced more strongly in lower-rated securities. The marginal effects reported in Table 18 further clarify these dynamics.

Table 18: Marginal Effects of Inflation on Corporate Bond Spreads (Basis Points)

Rating Group	Currency	Marginal Effect (bp)	p-value	CI 95% (LB)	CI 95% (UB)
AAA	PEN	-0.027	0.610	-0.129	0.076
AAA	USD	-0.141	0.179	-0.348	0.065
AA group	PEN	-0.029	0.672	-0.164	0.105
AA group	USD	0.124**	0.048	0.001	0.246
A group	PEN	-0.109	0.505	-0.431	0.212
A group	USD	0.395***	0.003	0.139	0.650
CP-1+	PEN	0.135***	0.001	0.053	0.216
CP-1+	USD	-0.156	0.464	-0.572	0.261
CP-1 group	PEN	0.111***	0.006	0.032	0.189
CP-1 group	USD	-0.078	0.282	-0.219	0.064
CP-2 group	PEN	0.042	0.470	-0.072	0.156
CP-2 group	USD	-0.116	0.166	-0.281	0.048

Notes: Marginal effects are computed from the interaction model between inflation, currency of issuance, and credit rating groups. Effects are expressed in basis points (bp). PEN denotes local-currency issuance and USD denotes dollar-denominated bonds. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

For bonds issued in local currency, inflation significantly increases spreads for CP-1 and CP-1+ instruments, while the effects for higher-rated bonds remain statistically insignificant. This finding suggests that inflation shocks primarily affect the short-term segment of the corporate bond market, where refinancing risk and liquidity considerations are typically more relevant. In contrast, the effect of inflation on USD-denominated bonds differs notably. The results show that inflation significantly increases spreads for A-rated and AA-rated bonds issued in foreign currency, with marginal effects that are positive and statistically significant for these groups. One possible interpretation is that higher domestic inflation may raise concerns about macroeconomic stability or future monetary tightening, thereby increasing perceived risk for bonds denominated in foreign currency.

Overall, the results indicate that inflation affects corporate bond spreads through heterogeneous channels depending on both credit quality and currency of issuance. While high-grade local-currency bonds appear largely unaffected, lower-rated short-term instruments and some foreign-currency bonds exhibit greater sensitivity to inflation fluctuations.

5.3.3 Market Returns effect across ratings and currencies

For market returns, the results indicate that the relationship with corporate bond spreads is heterogeneous across both credit ratings and currencies.

Table 19: Market Returns and Corporate Bond Spreads: Heterogeneity by Currency and Credit Rating

	(1) Without Firm Controls	(2) With Firm Controls
Currency effects		
USD-denominated bond	-0.014	-0.062
	(0.225)	(0.219)
Market return	0.000	0.001
	(0.003)	(0.002)
USD × Market return	0.001	0.003
	(0.005)	(0.004)
Rating × Market return		
AA group	-0.002	-0.003
	(0.004)	(0.003)
A group	-0.016	-0.021**
	(0.010)	(0.010)
CP-1+	-0.004	-0.007**
	(0.004)	(0.003)
CP-1 group	-0.007**	-0.008***
	(0.003)	(0.002)
CP-2 group	-0.005	-0.009**
	(0.004)	(0.004)
USD × Rating × Market return		
AA group	-0.001	-0.003
	(0.006)	(0.005)
A group	0.002	-0.084**
	(0.013)	(0.034)
CP-1+	-0.002	0.004
	(0.010)	(0.009)
CP-1 group	0.001	-0.007
	(0.007)	(0.007)
CP-2 group	-0.002	0.007
	(0.006)	(0.006)
Constant	6.396***	6.297***
	(0.778)	(1.133)
Observations	1,227	964
R^2	0.798	0.819
Adjusted R^2	0.767	0.792

Notes: The dependent variable is the corporate bond spread. Market return corresponds to the annual return of the stock market index. The base category corresponds to AAA-rated bonds issued in local currency. Column (2) includes firm-level financial controls in addition to issuer, sector, and year fixed effects. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The interaction terms reveal clear differences across rating groups. In particular, bonds with lower credit quality tend to exhibit greater sensitivity to market returns. The coefficients for several short-term rating categories are negative and statistically significant, indicating that higher market returns are associated with lower credit spreads for these instruments. This pattern is consistent with the interpretation that positive equity market performance reflects improved macro-financial conditions and lower perceived credit risk, thereby reducing the risk premium required by investors.

The marginal effects by currency and ratings are presented on table 20.

Table 20: Marginal Effects of Market Returns on Corporate Bond Spreads (Basis Points)

Rating Group	Currency	Marginal Effect (bp)	p-value	CI 95% (LB)	CI 95% (UB)
AAA	PEN	0.001	0.634	-0.003	0.005
AAA	USD	0.004	0.301	-0.003	0.011
AA group	PEN	-0.002	0.494	-0.008	0.004
AA group	USD	-0.002	0.319	-0.007	0.002
A group	PEN	-0.020**	0.036	-0.039	-0.001
A group	USD	-0.101***	0.002	-0.166	-0.037
CP-1+	PEN	-0.006*	0.071	-0.012	0.001
CP-1+	USD	0.001	0.924	-0.014	0.016
CP-1 group	PEN	-0.007***	0.001	-0.012	-0.003
CP-1 group	USD	-0.011*	0.054	-0.023	0.000
CP-2 group	PEN	-0.008**	0.035	-0.015	-0.001
CP-2 group	USD	0.002	0.525	-0.004	0.007

Notes: Marginal effects are computed from the interaction model between market returns, currency of issuance, and credit rating groups. Market returns correspond to the 12-month variation of the market index. Effects are expressed in basis points (bp). PEN denotes local-currency issuance and USD denotes dollar-denominated bonds. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

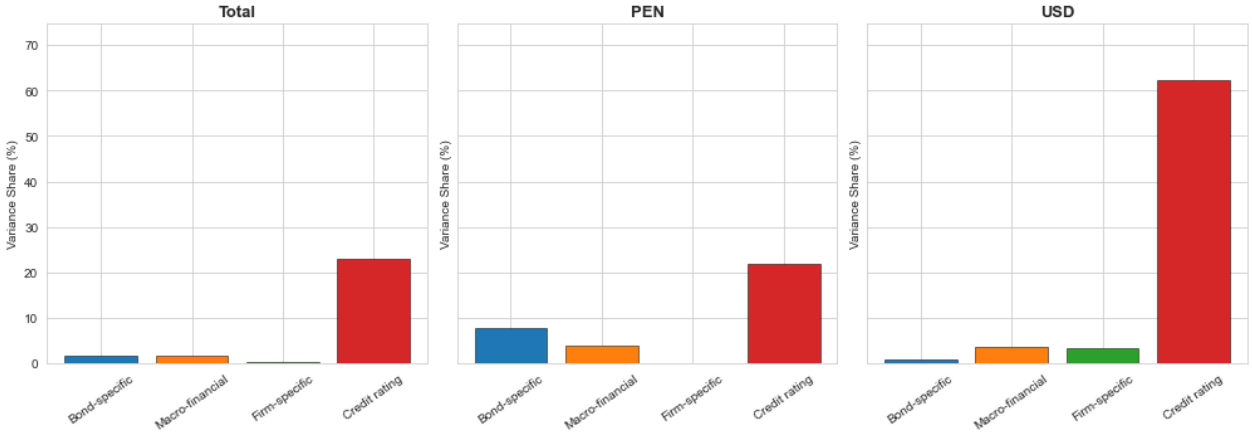
For bonds issued in local currency, market returns significantly reduce spreads for A-rated bonds as well as for several short-term rating categories (CP-1, CP-1+, and CP-2). These results suggest that improvements in equity market performance are associated with lower borrowing costs, particularly for issuers with intermediate or lower credit quality, which are typically more sensitive to changes in economic conditions and investor risk appetite.

The results for foreign currency-denominated bonds display a different pattern. The marginal effects indicate a negative relationship between market returns and spreads for A-rated bonds issued in foreign currency, while the effects for most other rating categories are not statistically significant. This finding suggests that the sensitivity of USD-denominated bonds to equity market conditions is concentrated in a specific set of credit rating segments.

5.4 Variance decomposition

In order to measure the relative contribution of different groups of determinants (macro-financial factors, bond-specific characteristics, firm-specific variables, and credit ratings), we perform a variance decomposition of bond spreads using the baseline regression model. The following figure presents the contribution of each group of determinants to the explained variance of spreads for the full sample, as well as separately for PEN-denominated and USD-denominated bond issues.

Figure 4: Variance Decomposition of Corporate Bond Spreads by Determinant Group



Note: Results are presented for the full sample and separately for bonds denominated in Peruvian soles (PEN) and U.S. dollars (USD). *Source:* Authors' calculations .

For the full sample , macro-financial factors account for a very small share of the variation in spreads (less than 2%). Similarly, bond-specific and firm-specific variables jointly explain only about 2.1% of the spread variability. These results suggest that these variables have limited explanatory power for the overall dispersion in spreads. In contrast, credit ratings explain a substantially larger share of the variance (23.1%), indicating that credit risk, as summarized by rating classifications, is the primary determinant of differences in spreads across bonds.

For PEN-denominated bonds, the contribution of bond-specific characteristics and macro-financial factors is noticeably larger, accounting for 7.7% and 3.8% of the variance, respectively. This suggests that these variables play a more important role in explaining spread variability in the domestic-currency segment. Credit ratings continue to explain a significant share of the variation (approximately 22%). Overall, these results indicate that the local currency market incorporates a broader set of determinants beyond credit ratings when pricing credit risk.

In contrast, the USD-denominated segment shows a much stronger dependence on credit ratings, which explain 62.2% of the variability in credit spreads. The individual contributions of macro-financial variables, bond characteristics, and firm-specific variables are each below 4%. This pattern suggests that investors in USD-denominated bonds rely more heavily on standardized credit risk assessments, such as ratings, rather than on macroeconomic conditions or issuer-specific characteristics. Consequently, pricing in this segment appears to be more closely aligned with global credit markets, where ratings play a central role in risk classification.

Taken together, these results highlight important differences in the determinants of credit spreads across currencies. While the PEN-denominated segment reflects a more balanced contribution of bond characteristics, macro-financial conditions, and credit ratings, the USD-denominated market appears to rely much more heavily on rating-based credit risk assessments. This contrast suggests that the pricing mechanisms and information used by investors may differ across currency segments in the Peruvian corporate bond market.

6 Conclusion

This paper provides empirical evidence from the Peruvian primary corporate bond market indicating that currency denomination is systematically associated with differences in corporate bond spread determination. The regression results confirm the central role of credit ratings in explaining cross-sectional variation in corporate bond spreads. Credit ratings remain the dominant factor in corporate debt pricing, exhibiting strong statistical significance across all specifications. Bond characteristics and macro-financial indicators explain a relatively limited share of overall spread variation when considered in isolation. However, the regression evidence indicates that their effects are economically and statistically relevant in specific segments of the market. In particular, bonds with lower credit quality display stronger responses to macro-financial shocks, consistent with the notion that investors demand higher risk premia from issuers that are more vulnerable to changes in economic conditions.

A key finding of the paper is that these pricing relationships differ markedly across currency segments. Spreads on bonds denominated in local currency reflect domestic macroeconomic conditions more strongly, suggesting that investors in the local-currency segment incorporate a broader set of macroeconomic fundamentals into pricing decisions. In contrast, spreads on USD-denominated bonds exhibit a much stronger dependence on credit ratings and weaker sensitivity to domestic macroeconomic variables, pointing to a greater reliance on standardized credit risk assessments and a tighter integration with global corporate bond markets. The variance decomposition analysis reinforces these results by highlighting the presence of distinct pricing regimes within the same market. While pricing in the local-currency segment reflects a combination of issuer fundamentals, bond characteristics, and macro-financial conditions, the pricing of USD-denominated bonds is overwhelmingly dominated by credit ratings. This evidence suggests that credit ratings play a particularly important screening role in foreign-currency markets, consistent with a more standardized and globally integrated pricing environment.

From a policy perspective, these findings suggest that risk monitoring and prudential oversight may need to distinguish more carefully between local- and foreign-currency corporate debt. The transmission of macro-financial shocks and the informational content embedded in primary market spreads differ substantially across currency segments, with potential implications for financial stability assessment in emerging economies.

Overall, the results emphasize the importance of currency segmentation in corporate bond markets. The currency of issuance not only affects the level and volatility of corporate bond spreads, but also shapes the mechanisms through which credit risk and macroeconomic conditions are priced. Future research could extend this analysis by incorporating secondary market data, exploring the role of liquidity and investor composition, or examining how global financial conditions influence corporate bond pricing across currency segments.

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