Електронний журнал «Ефективна економіка» включено до переліку наукових фахових видань України з питань економіки (Категорія «Б», Наказ Міністерства освіти і науки України № 975 від 11.07.2019). Спеціальності – 051, 071, 072, 073, 075, 076, 292.

Ефективна економіка. 2025. № 5.

DOI: http://doi.org/10.32702/2307-2105.2025.5.65

УДК 336.763.33(477)

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UKRAINIAN BONDS YIELD DETERMINANTS UNDER MARTIAL LAW

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ВИЗНАЧАЛЬНІ ФАКТОРИ ДОХІДНОСТІ УКРАЇНСЬКИХ ОБЛІГАЦІЙ В УМОВАХ ВОЄННОГО СТАНУ

Ukraine's domestic bond yields have spiked amid the extraordinary conditions following the 2022 full-scale Russian invasion, raising questions about the key drivers of these yields and the efficiency of the key policy transmission mechanism. As the Ukrainian capital market is almost entirely comprised of government debt securities, this study examines the determinants of Ukrainian hryvnia-denominated sovereign and a small share of corporate bond yield-to-maturity (YTM) using an extensive panel of approximately 160,000 observations

across 278 bonds from 2022 to 2025. We estimate two panel regression models to analyze the monetary policy transmission to bond yields in the Ukrainian market under duress, investigating the impact of changes in key macroeconomic determinants, including the UAH/USD official foreign exchange rate and the monthly year-on-year inflation rate. The first model is a pooled panel without issuer-fixed effects; the second introduces issuer-fixed effects and orthogonalized independent variables to address severe multicollinearity. Our results indicate that the Central Bank's policy rate, exchange rate movements, inflation, and credit risk (proxied by Fitch ratings) have a significant impact on bond yields. Notably, once issuer-specific effects are controlled for, the term structure of yields appears inverted – shorter-term bonds carry higher yields than longer maturities, reflecting heightened near-term risk in the post-invasion period. These findings align with prior evidence that domestic interest rates, inflation, and fiscal and credit factors are pivotal for bond yields, confirming that monetary policy retains a powerful influence over market yields even in an extreme crisis. Policy implications include the importance of credible monetary tightening to anchor yields, alongside maintaining exchange rate stability and creditworthiness to reduce risk premiums. We conclude that Ukraine's wartime yield curve inversion underscores an environment of acute short-term risk and market expectations of eventual stabilization. This offers insights for policymakers and investors in emerging markets facing extreme shocks.

Різке зростання дохідності внутрішніх облігацій України після повномасштабного вторгнення РФ у 2022 р. загострило питання чинників ціноутворення та ефективності трансмісійного механізму монетарної політики в умовах воєнного стану. У статті досліджено детермінанти дохідності до погашення (YTM) гривневих суверенних та незначної частки корпоративних облігацій на основі великої панелі ≈160,000 щоденних спостережень за 278 випусками, що охоплює період з січня 2022 р. – до травня 2025 р. Використано дві панельні регресійні моделі. Перша —

згрупована панель без фіксованих ефектів облігацій, що дозволяє оцінити сукупний вплив макроекономічних змінних. Друга — модель із фіксованими ефектами та ортогоналізованими пояснювальними змінними (ключова ставка НБУ, офіційний курс UAH/USD, кредитний рейтинг Fitch), що знижує мультиколінеарність та ідентифікує внутрішньо-емітентні варіації. Отримано статистично достовірні еластичності: підвищення ключової ставки на 1 в.п. збільшує YTM на ≈ 0,24 од., тоді як девальвація гривні на 1% та зростання інфляції на 1 в.п. додають відповідно ≈ 0,38 та 0,06 од. до дохідності. Зниження кредитного рейтингу на один щабель асоціюється з приростом YTM на ≈ 20 б.п. Після контролю за фіксованими ефектами емітентів виявлено інверсію кривої дохідності: облігації з терміном ≤ 1 рік котируються з премією до паперів з погашенням > 5 років, що свідчить про переважання короткострокових ризиків ліквідності й політичної невизначеності. Результати узгоджуються з теорією портфельного балансу та попередніми дослідженнями ринків, що розвиваються, підтверджуючи, що монетарна політика зберігає вплив на ринкові ставки навіть під екстремальним шоком. Наукова новизна полягає у кількісному вимірі трансмісії політики в умовах воєнної економіки та у використанні ортогоналізації для коректної ідентифікації ролі валютного та інфляційного каналів. Практичне значення полягає у рекомендаціях для регулятора щодо підтримання жорсткого монетарного курсу, стабілізації валютного ринку та збереження кредитоспроможності для стримування премії за ризик. Отримані висновки корисні інвесторам та політикам країн з ринками, що розвиваються, які стикаються з надзвичайними шоками.

Keywords: *Ukrainian sovereign bonds; monetary policy transmission; exchange rate; credit risk; yield‑ curve inversion; emerging markets; martial law.*

Ключові слова: *державні облігації України; трансмісійний механізм монетарної політики; обмінний курс; кредитний ризик; інверсія кривої дохідності; ринки, що розвиваються; воєнний стан.*

Problem and its connection with important scientific or practical tasks. The Russian invasion of February 2022 and its aftermath created unprecedented stress in Ukraine's financial markets [1, p. 20]. Yields on Ukrainian hryvnia-denominated bonds surged to record levels, posing challenges for government financing and corporate borrowers. Understanding what drives these bond yields is crucial for effective monetary and fiscal policy responses. In emerging markets, sovereign and corporate bond yields are typically driven by macroeconomic fundamentals, market expectations, and risk premiums. War and geopolitical upheavals add further uncertainty, potentially altering traditional transmission mechanisms. This paper examines the determinants of Ukraine's domestic bond yields following the invasion, investigating how monetary policy and other factors influence bond yields under extreme economic stress.

The context of Ukraine's war economy presents a unique case for studying monetary policy transmission in an emerging market under duress. After years of relative stability, 2022 saw the National Bank of Ukraine (NBU) more than double its key policy rate, from 10% to 25% in June 2022, in response to surging inflation and currency pressures [2]. The hryvnia's peg to the US dollar was adjusted in July 2022 [3], resulting in a devaluation, and inflation peaked above 25% year-on-year by late 2022 [4]. Investors faced macroeconomic volatility and acute credit risk as Ukraine's sovereign credit rating was repeatedly downgraded [5]. These developments likely impacted bond yields through multiple channels: higher policy rates should directly raise short-term yields, inflation erodes real returns and pushes nominal yields up, currency depreciation risk can necessitate a premium on local currency bonds, and deteriorating credit quality elevates default risk premia.

This study contributes to the literature by focusing on Ukraine's domestic bonds, which comprise the majority of the Ukrainian capital market during the extraordinary post-invasion period [6, pp. 48–49], and explicitly modeling the joint impact of monetary policy and these risk factors on yields.

Analysis of recent research and publications. A substantial body of research indicates that domestic macroeconomic fundamentals have a significant

impact on sovereign and corporate bond yields in developing economies. In particular, higher inflation and domestic interest rates tend to drive up long-term bond yields. Baldacci and Kumar (2010) demonstrate that rising fiscal deficits and public debt levels lead to higher long-term interest rates, ultimately influencing sovereign yields [7, p. 21]. Conversely, strong fundamentals, such as low inflation, fiscal discipline, and ample foreign reserves, are associated with lower yield spreads in emerging markets. Min (1998) finds that countries with lower inflation and better external balances enjoyed tighter spreads.

In contrast, weaker liquidity indicators (e.g., low reserve coverage and high debt-service ratios) resulted in higher yields [8, p. 12–13]. Credit risk proxies, such as sovereign credit ratings, also play a crucial role – deteriorating ratings or heightened default risk correspond to higher yields, as investors demand compensation for increased risk. Recent evidence confirms that even after controlling for macro fundamentals, geopolitical risk factors can add a significant premium: for instance, Papavassiliou (2025) documents that spikes in geopolitical risk (including the Russia–Ukraine war) are strongly associated with higher euro-area sovereign yields, reflecting an extra risk premium demanded by investors [9, p. 10]. At the same time, Naidu et al. (2016) found that the exchange rate, federal reserve rate, oil price, US bond yield, gold price, and real interest rate mainly determine the bond yields of emerging countries [10, p. 114].

Classical theory posits that central bank policy rates have a significant influence on short-term interest rates and, through expectations, affect longer-term yields. In advanced economies, a surprise monetary tightening typically raises government bond yields by increasing expected future short rates and risk premia. There have been concerns in emerging markets that transmission may be weaker due to shallow financial markets or overriding global factors, known as the "dilemma" that global economic conditions diminish local policy autonomy. However, recent empirical research suggests that domestic monetary policy continues to have a strong influence on local bond yields. Checo *et al.* (2024) construct a novel dataset of monetary policy surprises for 18 emerging markets and

find pronounced effects on sovereign yields: a one percentage point unexpected policy rate hike raises 1-year and 2-year government bond yields by about 100 and 80 basis points, respectively, with a smaller but still notable ~50 bp rise for 5-year bonds [11]. These findings suggest that even in emerging markets, central bank actions can significantly alter the yield curve, particularly at its short end. Earlier research by the same authors on emerging Asia, within the scope of the Bank for International Settlements (BIS) study, noted that the transmission mechanism is "functional and largely as expected" – policy tightening appreciably lifts domestic yields despite global factors [12, pp. 27–28]. That said, international influences are not negligible: US interest rates and investor risk appetite (e.g., the VIX index) often spill over into emerging market yields. Bellas *et al.* (2010) demonstrated that during periods of stress, a surge in global risk aversion can widen the spreads of emerging markets, even if domestic policies are sound [13, p. 21].

The shape of the yield curve, which represents the relationship between short-term and long-term yields, in emerging markets can deviate from typical patterns observed during stable times. In normal conditions, yields tend to slope upward with maturity due to inflation expectations and term premia. However, inverted or flat yield curves have been observed in times of crisis. Historical episodes in Latin America demonstrated that yield curves can invert when short-term risks are acute. Min (1998) reported that, on average, Latin American countries exhibited a negative yield curve slope in the 1990s [8, pp. 15–16]. An inverted curve often signals that investors expect current high short-term rates and risks to abate in the future, thus lowering long-term yields. Alternatively, it may indicate a "cash crunch," where investors demand extremely high yields for near-term commitments amid uncertainty. An aggressive monetary tightening and extreme war-related uncertainty in Ukraine will likely have had uneven impacts on different maturities. Prior work on crisis-period yield curves suggests that if market participants anticipate eventual stabilization (e.g., inflation coming under control or wartime risks easing in the long run), long-term yields might not rise as much as short-term yields, resulting in an inversion.

Additionally, liquidity factors during crises (investors preferring shorter-term instruments or vice versa) can distort the term structure of interest rates. There is scant literature specifically on Ukraine's domestic bond yields post-2022. However, analogous findings from other contexts – such as the high real yields on Ukraine's "war bonds" reported by market commentators in 2022 [14] – indicate that extraordinary risk premia were demanded, especially at specific maturities.

In summary, previous research underscores several key determinants to examine: (i) Monetary policy – higher policy interest rates are expected to increase bond yields, particularly at shorter maturities [11]; (ii) Inflation – higher current or expected inflation should elevate nominal yields as investors require compensation; (iii) Exchange rate – local currency depreciation or FX risk tends to push up local-currency bond yields, an effect found to intensify during volatile periods [15, p. 15]; (iv) Credit/Fiscal risk – worsening sovereign credit metrics (downgrades, debt surges) are associated with higher yields [10, p. 114]; and (v) Crisis risk sentiment – extraordinary geopolitical or default risk can invert or steepen the yield curve in atypical ways [8, pp. 15–16]. These insights inform our hypothesis and modeling strategy for the Ukrainian case.

The purpose of the study is to measure how the NBU policy rate, inflation, hryvnia depreciation, and credit downgrades affect Ukrainian hryvnia‑ bond yields during 2022–2025, and then tests whether, after controlling for these drivers and issuer heterogeneity, the wartime yield curve is inverted, with short maturities yielding more than long ones.

Research results and their discussion. We employ panel regression analysis with two model specifications to investigate the determinants of bond yields. The dependent variable in all models is the bond's yield-to-maturity (YTM), expressed in logarithmic form. Specifically, we define the following variables listed in Table 1.

Table 1

Variables' definitions

Variable	Symbol	What it captures	Transformation
Yield-to-maturity	$\mathrm{YTM}_{i,t}$	Gross yield (%) for bond i on day t	$\ln(\mathrm{YTM}_{i,t}/100)$
Policy rate	KR_t	NBU key policy rate (%) at end-of-day	$\ln(\mathrm{KR}_t/100)$
Exchange rate	FX_t	Official USD/UAH rate	$\ln(\mathrm{FX}_t)$
Inflation	INF_t	Monthly CPI year-on-year rate (%)	$\ln(\mathrm{INF}_t/100)$
Credit quality score	R_t / $R_t(int)$	Fitch LT IDR mapped 22 (AAA) → 1 (D)	Categorical variable / Integer scale (no log)
Bond type dummies	Type_i	OVDP (baseline), OVMP, Corporate	Categorical variable
Maturity bucket dummies	MB_i	≤1 Y (baseline), 1–3 Y, 3–5 Y, >5 Y	Categorical variable

Source: created by the author

We estimate two models:

Model (1) Baseline Pooled OLS

This is a pooled panel regression with no fixed effects. It relates $log(YTM)$ to the contemporaneous macro variables and controls:

$$\log(\mathrm{YTM}_{i,t}) = \beta_0 + \beta_1 \log(\mathrm{KR}_t) + \beta_2 \log(\mathrm{FX}_t) + \beta_3 \log(\mathrm{INF}_t) + \gamma' \mathrm{Type}_i + \delta' \mathrm{MB}_i + \varepsilon_{i,t} \quad (1)$$

This specification pools all bonds and dates, controlling for the effects of bond type and maturity category. Standard errors are clustered two-way (by bond i and by date t) to account for cross-sectional and time-series correlation in residuals. Model (1) examines the immediate, pooled effect of policy, foreign exchange (FX), inflation, and rating on yields. However, as discussed, multicollinearity among the macro variables can obscure individual effects in this pooled model.

To isolate independent macro shocks, we purge $\log(\mathrm{FX}_t)$ and R_t of their policy component. We introduce Model (2).

Model (2) Fixed-Effects with Orthogonalized Factors

We augment the model by adding issuer fixed effects to absorb time-invariant yield differentials for each bond issuer and by transforming two collinear regressors – FX and rating – into orthogonal components that are uncorrelated with the policy rate. Specifically, we first run auxiliary OLS regressions on the full sample:

$$u_t = \log(\mathrm{FX}_t) - \left(\hat{\rho}_0 + \hat{\rho}_1 \log(\mathrm{KR}_t)\right), v_t = \mathrm{R}_t - \left(\hat{\theta}_0 + \hat{\theta}_1 \log(\mathrm{KR}_t)\right) \quad (2)$$

where $(\hat{\rho}_0, \hat{\rho}_1)$ and $\left(\hat{\theta}_0, \hat{\theta}_1\right)$ come from simple OLS fits on the full sample. u_t (FX shock) and v_t (rating shock) are orthogonal to policy by construction.

These residuals represent the portion of exchange rate movements and rating changes orthogonal to the policy rate. In other words, u_t is the exchange rate "shock" component unexplained by contemporaneous policy rate (capturing independent currency pressure), and v_t is the credit rating "shock" net of policy influence. We then replace $log(FX)$ with u_t, and R_t with v_t, in the regression. Entity fixed effects α_i absorb time-invariant issuer premia. Model (2) is thus:

$$\log\left(\mathrm{YTM}_{i,t}\right) = \alpha_i + \beta_1 \log(\mathrm{KR}_t) + \beta_2 u_t + \beta_3 v_t + \beta_4 \log(\mathrm{INF}_t) + \delta' \mathrm{MB}_i + \varepsilon_{i,t}. \quad (3)$$

In this specification, bond type dummies are omitted because type differences (e.g., corporate vs. government) are essentially constant within an issuer and thus absorbed by α_i. We retain maturity bucket dummies to allow the term structure slope to be estimated within each issuer's yields. Two-way clustered standard errors, by issuer and date, are again used to ensure robust inference.

Model (2) is motivated to solve the multicollinearity problem and isolate distinct channels. In Model (1), the policy rate, exchange rate, and credit rating are all highly correlated. For instance, the NBU's hefty policy hike coincided with the

currency devaluation and credit downgrades, making it difficult to disentangle their effects. Indeed, the variance-inflation factors (VIFs) for these three variables in Model (1) were extremely high, ranging from 30 to 44, indicating unstable coefficient estimates.

No lagged dependent variable is included, assuming that the main macro drivers capture the persistence in yields; additionally, we focus on contemporaneous effects. We did not include time-fixed effects in Model (2) because those would absorb all common macro variation (essentially rendering policy, FX, etc., unidentifiable). Instead, Model (2) uses the macro variables as explanatory factors for the common time variation in yields.

By comparing Model (1) and Model (2), we can diagnose the extent to which the omission of fixed effects and multicollinearity have caused bias. A stark coefficient change (especially on maturity buckets, policy vs. FX, and rating effects) is expected. Indeed, as we will see, the orthogonal design in Model (2) dramatically lowered VIFs (to ≤ 2) and altered the term structure coefficients, resolving the identification issues present in Model (1).

Our dataset combines daily bond market data with macroeconomic time series from January 1, 2022, through May 6, 2025. The bond data were obtained from the National Bank of Ukraine (NBU), which provides daily "fair value" yield-to-maturity (YTM) estimates for Ukrainian domestic bonds. We focus on hryvnia-denominated bonds issued by the government and Ukrainian corporates, for which these YTMs are available. A unique ISIN identifies each bond. After filtering out any observations where the NBU's fair-value price was zero or the resulting YTM was non-positive (which can occur if a bond is illiquid or has ceased trading actively), we are left with a panel of 159,962 bond-day observations, covering 278 unique bonds [16].

Table 2 provides summary statistics of the main variables. The panel's average YTM is around 14.91%, with a standard deviation of 4.00 percentage points. Yields ranged from a minimum of ~5.47% (certain short-term government bills in early 2022) to a maximum of ~60.06% (an outlier during the extreme stress

of 2022). The average fair value price of bonds was 1,052 UAH (with significant dispersion), indicating that many bond quotes were below par, consistent with the high yields. The USD/UAH rate averaged approximately 36.92 (standard deviation ~4.07), reflecting the one-time devaluation and subsequent drift. The policy rate mean was ~17.92% (std ~5.76), skewed by the prolonged 25% period. Inflation averaged 13.43% (standard deviation ~7.66), with notable surges and declines observed. These figures underline the volatile macro backdrop.

Table 2

Descriptive statistics on key variables

Statistic	YTM, %	Fair Value, UAH	UAH/USD FX rate, UAH	Key policy rate, %	Monthly inflation y-o-y rate, %
count	159,962	159,962	159,962	159,776	155,126
mean	14.91	1 052.37	36.92	17.92	13.43
std	4.00	527.95	4.07	5.76	7.66
min	5.47	419.73	27.28	9.00	3.22
25 %	12.10	867.88	36.57	13.00	5.39
50 %	14.75	975.70	36.57	15.50	11.99
75 %	17.16	1 077.86	40.70	25.00	21.29
max	60.06	10 998.19	42.28	25.00	26.61

Source: calculated by the author based on [4, 16–18]

According to Figure 1, the mean YTM of all UAH bonds over time spiked in mid-2022 after the policy rate hike and then gradually declined as inflation and the key rate were reduced, leveling off around 15% by May 2025 [16].

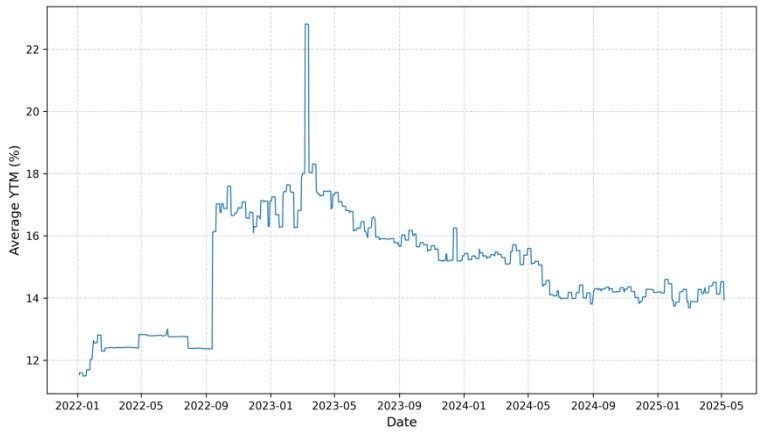

Figure 1. Average YTM on UAH-denominated bonds from 2022.01.04 to 2025.05.06

Source: created by the author based on [16]

A boxplot of YTMs by maturity bucket in Figure 2 confirms an inverted term structure, as median yields for the 1–3Y and 3–5Y buckets were higher than those for the >5Y bucket. In contrast, the ≤1Y bucket had the lowest median (albeit with some outliers above 40% during 2022's turmoil) [16]. This is an unusual pattern, reflective of the war-induced market conditions.

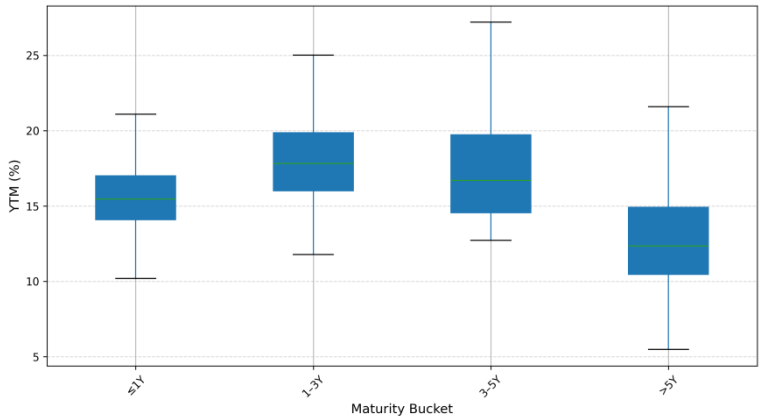

Figure 2. Boxplot of YTM on UAH-denominated bonds in maturity buckets within the 2022.01.04 to 2025.05.06

Source: created by the author based on [16]

The distribution of YTMs in Figure 3 is right-skewed, with most observations clustering in the 10–20% range, but a long tail of very high yields during stress episodes [16]. These features foreshadow our regression findings of an inverted yield curve and high-risk premia.

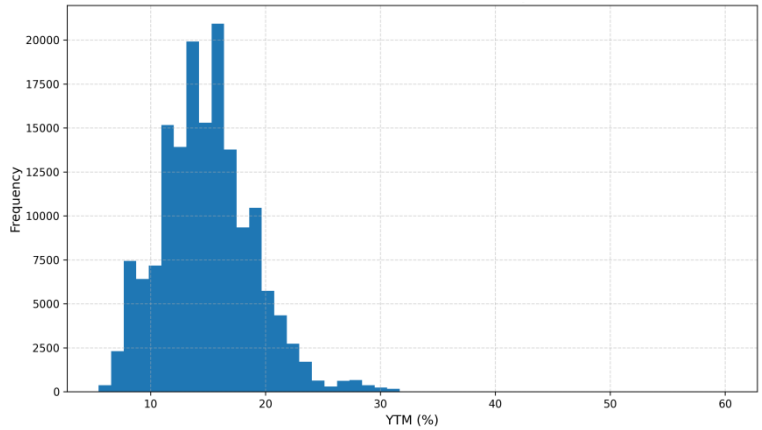

Figure 3. Distribution of YTM on UAH-denominated bonds in maturity buckets within the 2022.01.04 to 2025.05.06

Source: created by the author based on [16]

The policy interest rate (NBU key rate) in percent was obtained from NBU official reports (policy decision dates). This series was relatively stable at 6–10% in early 2022, then jumped to 25% on June 3, 2022 [2], in response to the economic impact of the invasion (Figure 4). It remained at 25% until a gradual easing began, with cuts to 21% in July 2023 and 15.5% by December 2024 [18].

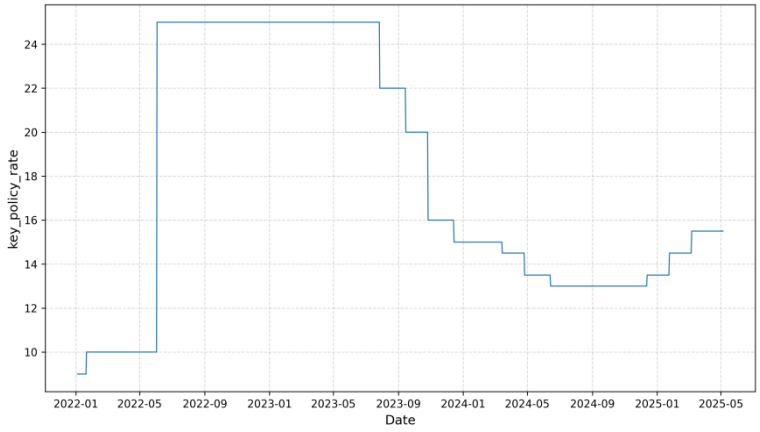

Figure 4. Key policy rate from 2022.01.01 to 2025.05.06
Source: created by the author based on [18]

According to Figure 5, the USD/UAH exchange rate, specifically the official NBU fixing (UAH per 1 USD). The hryvnia was pegged at around 27.3–28 UAH/USD before the invasion, then maintained at ~29.25 until July 21, 2022, when it was devalued to 36.57 UAH/USD. After that, the currency slowly weakened to about 41–42 UAH/USD by early 2025 [17]. We use the official rate, as capital controls during this period made it the primary reference for markets.

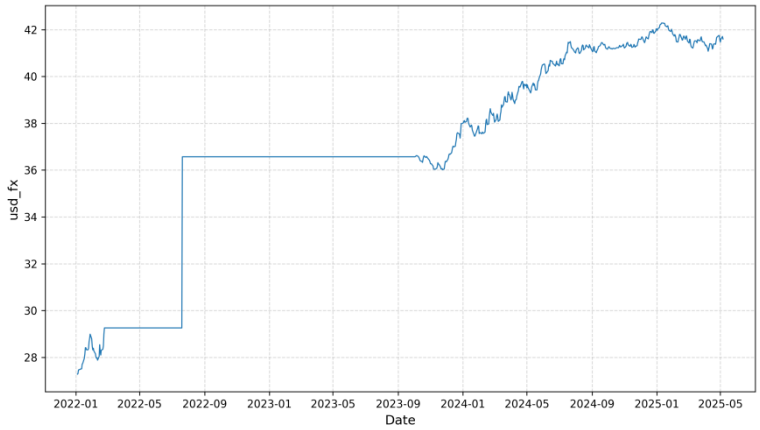

Figure 5. UAH/USD FX rate from 2022.01.01 to 2025.05.06
Source: created by the author based on [17]

The inflation rate is measured as the year-on-year change in the Consumer Price Index (CPI), as provided by the State Statistics Service of Ukraine (UkrStat), and is expressed as a percentage. According to Figure 6, Ukraine's inflation spiked due to war disruptions, rising from ~10% year-over-year (YoY) in early 2022 to a peak of around 26% in September 2022, then declining below 10% by mid-2023 before rising again toward ~15% by early 2025 [4].

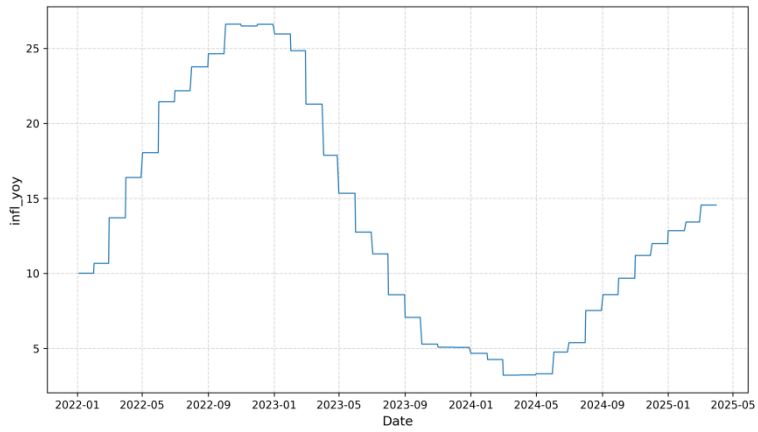

Figure 6. Monthly y-o-y inflation rate from 2022.01.01 to 2025.05.06
Source: created by the author based on [4]

The Fitch long-term issuer rating for Ukraine (and select corporates). Ukraine's sovereign rating was downgraded multiple times due to the war, from B (highly speculative) before the invasion to CCC and lower. For simplicity, we use a unified numeric scale (AAA = 22, down to D = 1) to encode ratings. As shown in Figure 7, between 2022 and 2023, Ukraine's rating on this scale declined from 8 (B) to 5 (CCC) [5]. A lower number thus indicates worse credit quality. We acknowledge that this variable changes only occasionally (stepwise when Fitch announces rating actions), but it serves as a crucial qualitative indicator of investors' perceived credit risk.

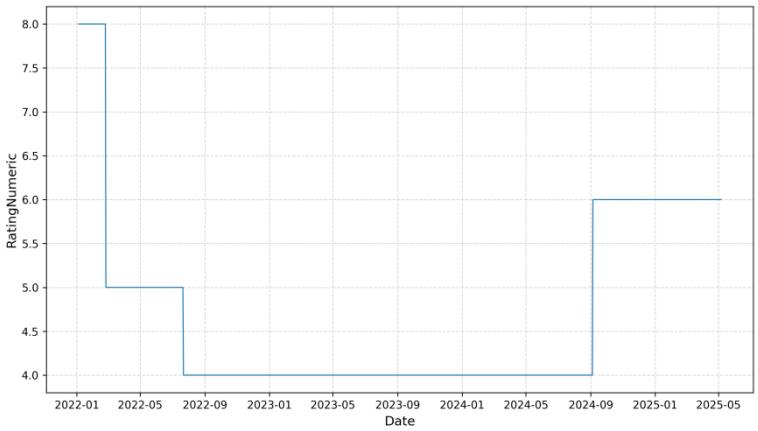

Figure 7. Ukraine's long-term issuer default rating by Fitch from 2022.01.01 to 2025.05.06

Source: created by the author based on [5]

We also implicitly account for time-fixed effects through macro variables, rather than including a separate dummy variable for each date. Global factors (e.g., global interest rates or risk aversion) are not directly included; however, their influence would be partially reflected in the exchange rate and possibly in the sovereign rating or policy decisions. The period also saw Ukraine undergo a foreign debt restructuring (August 2022–September 2022)—our dataset's local currency yields may reflect some spillover from that, captured via rating changes.

The dataset offers a comprehensive view of Ukrainian bond yields under extreme conditions, accompanied by key macroeconomic indicators that likely drive them. This foundation allows us to quantify the relationships in the subsequent analysis.

We now turn to the regression results from Model (1) and Model (2) to evaluate our hypothesis. For clarity, we summarize the main findings for each model and discuss the economic interpretation and the differences between them. The full estimation output is provided in Table 3, which includes coefficient estimates, standard errors clustered at the two-way level, and significance levels for both models.

Table 3

Regression results (dependent variable: $\mathbf{YTM}_{i,t}$)

Variable	(1) Baseline, no effects	(2) Orthogonal FE
Macro drivers		
$\log(\mathrm{KR}_t)$	0.241*** (0.012)	0.228*** (0.011)
$\log(\mathrm{FX}_t)$ / $u_t = [\mathrm{FX}_{\mathrm{res}}]$	0.285*** (0.036)	0.376*** (0.030)
R_t / $v_t = [\mathrm{Rating}_{\mathrm{res}}]$	—	-0.021*** (0.003)
$\log(\mathrm{INF}_t)$	-0.040*** (0.005)	-0.020*** (0.005)
Bond type dummies †		
$\mathrm{C}_{\mathrm{OVDP}}$	-2.564*** (0.136)	—
$\mathrm{C}_{\mathrm{OVMP}}$	-2.223*** (0.127)	—
$\mathrm{C}_{\mathrm{Corp.\ bond}}$	-2.518*** (0.136)	—
Maturity buckets ‡		
$\mathrm{MB}_{\leq 1\ \mathrm{Y}}$ (baseline)	—	-1.636*** (0.027)
$\mathrm{MB}_{1-3\ \mathrm{Y}}$	0.130*** (0.008)	-1.544*** (0.025)
$\mathrm{MB}_{3-5\ \mathrm{Y}}$	0.126*** (0.010)	-1.561*** (0.026)
$\mathrm{MB}_{>5\ \mathrm{Y}}$	-0.215*** (0.023)	-1.584*** (0.027)
Fit & diagnostics		
Effects	—	ISIN
Within R^2	0.274	0.410
Overall R^2	0.476	0.113
Robust F	436	933
VIF (core vars)	30-44	1-2
Obs / entities	155,126 / 275	155,126 / 275

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$,

† Type dummies dropped in Model (2) because we used Entity FE and they become absorbed.

‡ Positive signs in Model (1) reflect issuer-level means; after purging them, the curve is uniformly inverted. Negative maturity coefficients in Model (2) confirm the post-invasion inversion across all shorter buckets versus $MB_{>5\ \mathrm{Y}}$.

Source: calculated by the author based on [4, 16–18]

Model (1): pooled OLS without issuer effects

The positive policy rate coefficient of 0.24, representing semi-elasticity, confirms substantial pass-through: a 1 pp rise in the key rate results in a YTM increase of approximately 0.24 (24 bp when yields are 10%). A hryvnia depreciation (higher $log(FX)$) also pushes yields up. Because the significant 2022 devaluation coincided with the rate hike, multicollinearity blurs their separate roles ($VIF \approx 40$). The inflation coefficient is negative, indicating that days with higher year-on-year CPI readings are associated with lower yields once KR and FX are

included in the regression. This counterintuitive sign signals that inflation's influence is already channeled through policy; lags and base effects dominate the residual variation in monthly year-over-year (YoY) figures. Corporate and OVMP issues carry large negative dummies because their coupons—and thus their quoted log-YTM—are structurally lower than the benchmark of more than 5 years used as the reference. The positive 1–3-year and 3–5-year dummies suggest a seemingly upward-sloping curve in the pooled data. This reflects the issuer mix, not an actual term premium.

Model (2): issuer fixed effects with orthogonal FX & rating shocks

Controlling for bond-issuer constants (α_i purging FX and rating the policy component yields more precise estimates.

The positive policy rate elasticity (0.23) remains highly significant, confirming that the NBU's key rate is the primary driver of day-to-day yield shifts. FX shock (u_t once orthogonalized, independent hryvnia losses raise yields even more (0.38 elasticity). Currency risk, therefore, commands a distinct premium beyond the policy reaction. A one-notch downgrade (negative v_t) increases log-YTM; the negative coefficient means an improvement in yields. Credit risk is thus priced separately from the policy. The inflation coefficient remains small and negative. With policy absorbing most inflation news, the remaining monthly CPI surprises are inversely correlated with yields —a pattern also observed in other high-inflation emerging market episodes when policy runs ahead of data releases. All buckets ≤ 5 Y now receive negative dummies relative to > 5 Y, revealing an inverted curve: shorter maturities command higher yields once issuer risk is stripped out.

VIFs drop below 2, and within-ISIN R^2 rises to 0.41. This indicates that the orthogonal design successfully cures multicollinearity and explains nearly half of the day-to-day yield variation for a given bond.

Combining the results from both models, we can say that (i) monetary transmission stands out as every percentage-point change in the policy rate shifts

YTM positively; (ii) currency risk is priced separately as hryvnia moves not explained by rate policy still add a sizeable premium; (iii) credit downgrades bite as even a single Fitch notch matter after controlling for policy; (iv) curve inversion confirmed as shorter bonds yield ≈1.5 log-points more than > 5 Y issues of the same issuer, reflecting acute near-term risk despite expectations of eventual normalization; (v) inflation's marginal effect is harmful as a feature of monthly YoY data lagging policy moves rather than an actual price puzzle.

These findings support our hypothesis that orthodox macroeconomic factors dominate bond pricing, and the wartime term structure is inverted once issuer heterogeneity is controlled for.

Conclusions and further research. Our investigation of daily Ukrainian hryvnia-bond data for 2022-2025 yields four clear findings:

1. Monetary policy transmission works—even in wartime. Each hike or cut of 1 pp in the policy rate by the NBU (e.g., 25% → 26%) moved yields by 0.24 in log terms (+ 24 bp when yields are 10%), matching evidence from other emerging markets [11]. The June 2022 hike shifted the entire curve upward; later cuts passed through and eased borrowing costs.
2. The yield curve is inverted. After issuer fixed effects are applied, bonds maturing within five years trade at a premium to longer tenors, reflecting a substantial near-term risk premium. Such an inversion is typical when investors expect present dangers, such as high inflation, capital controls, or conflict, to fade in the longer run, echoing patterns seen in earlier crises [8].
3. Currency and credit shocks matter. A hryvnia loss not explained by policy or a Fitch downgrade materially raises yields. Stable FX arrangements and credible debt-service commitments thus help cap local-currency borrowing costs, in line with evidence on geopolitical risk premia [9].
4. Inflation lifts yields mainly through the policy channel. While higher CPI readings correlate with higher yields, the policy rate largely mitigates this effect. Sustained disinflation, therefore, remains essential for lasting relief.

Policy takeaways are: (i) maintain credible rate moves, e.g., tight settings contain inflation and support the peg when orderly easing can relieve fiscal pressures; (ii) anchor the exchange rate, and yields stay lower, while erratic FX moves would add to premia; (iii) protect credit quality by avoiding arrears on local debt and pursuing fiscal discipline to shave yields by reducing default risk.

In the study, we rely on NBU fair-value quotes, a coarse numeric rating scale, and contemporaneous regressors. Unobserved issuer-level credit events or endogeneity between yields and policy may bias some coefficients. Results also apply only to local-currency debt, when Eurobond dynamics should differ. Further studies could include extending the sample beyond 2025, incorporating global factors (such as US rates and risk indices), and conducting high-frequency event studies around military or aid announcements. Deeper data on investor holdings could clarify liquidity effects along the curve.

In summary, orthodox drivers—policy rate, FX, inflation, and credit risk—continue to govern Ukrainian bond pricing under extreme stress. A disciplined mix of monetary, exchange-rate, and fiscal measures remains the most effective route to lower yields and a return to a normal, upward-sloping curve.

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Стаття надійшла до редакції 11.05.2025 р.