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MACRO-FINANCIAL ASSOCIATIONS WITH DEMAND AT OVDP AUCTIONS IN UKRAINE UNDER MARTIAL LAW

МАКРОФІНАНСОВІ ЗВ'ЯЗКИ ПОПИТУ НА АУКЦІОНАХ ОВДП В УКРАЇНІ В УМОВАХ ВОЄННОГО СТАНУ

Bilous Kostiantyn
PhD,
Odesa National Economic University
ORCID: https://orcid.org/0000-0002-2891-3640

Baranova Victoria
Doctor of Economics, Professor,
Odesa National Economic University
ORCID: https://orcid.org/0000-0002-1724-957X

Білоус Костянтин Ігорович, Баранова Вікторія Глібівна
Одеський національний економічний університет

The article examines whether monetary and macro-financial conditions are associated with investor demand at wartime primary auctions of Ukrainian domestic government bonds (OVDP). The empirical analysis uses auction-level records published by the National Bank of Ukraine (NBU) and measures demand using the logarithms of the allocated and submitted volumes, both converted into UAH on the auction date. The wartime sample covers March 1, 2022, to March 31, 2026, while the period from January 1, 2021, to February 22, 2022, is used only for descriptive comparison. BTC is treated as a supplementary indicator because its wartime distribution is strongly right-skewed. OLS estimates with auction-date-clustered standard errors show that higher policy rates are associated with weaker auction demand, whereas liquidity is mostly positive but loses strength once quarter fixed effects are introduced in wartime.

Keywords: OVDP, primary auctions, public debt, auction demand, monetary policy, capital markets, public finance.

У статті досліджено зв'язок між макрофінансовими показниками та попитом інвесторів на первинних аукціонах облігацій внутрішньої державної позики України в умовах воєнного стану. Актуальність теми зумовлена тим, що в період війни для держави має значення не лише вартість боргового фінансування, а й здатність стабільно залучати внутрішні ресурси через регулярні розміщення ОВДП. Метою дослідження є виявлення макрофінансових змінних, із якими пов'язаний попит на аукціонах у воєнний період. Методика ґрунтується на побудові відтворюваного масиву даних на рівні «дата аукціону × окремий випуск» із використанням виключно публічних джерел Національного банку України. Основний період оцінювання охоплює аукціони з 1 березня 2022 року до 31 березня 2026 року, тоді як інтервал від 1 січня 2021 року до 22 лютого 2022 року використано лише як період описового порівняння. Основними залежними змінними є натуральний логарифм обсягу розміщення в гривневому еквіваленті та натуральний логарифм обсягу поданих заявок у гривневому еквіваленті. Показник bid-to-cover використано як допоміжний індикатор і показник для перевірки чутливості, але не як основну залежну змінну через виражену правосторонню асиметрію його розподілу. Для емпіричної перевірки застосовано моделі методу найменших квадратів з кластеризацією стандартних похибок за датою аукціону, лагові специфікації, модель із квартальними фіксованими ефектами, гривневу підвибірку та агреговану модель на рівні дати аукціону. До блоку пояснювальних змінних включено облікову ставку НБУ, індекс споживчих цін, офіційний валютний курс, проксі-показник ліквідності банківської системи та змінні контролю строковості інструментів. Результати показують стійкий від'ємний зв'язок між обліковою ставкою та попитом на аукціонах ОВДП, тоді як показник ліквідності переважно має додатний зв'язок, але втрачає статистичну значущість після врахування квартальних фіксованих ефектів. Вплив інфляції залишається слабким і нестійким. Практична цінність полягає у відтворюваному підході до оцінки попиту на аукціонах ОВДП.

Ключові слова: ОВДП, первинні аукціони, державний борг, попит на аукціонах, монетарна політика, ринки капіталу, державні фінанси.

Statement of the problem. Since the start of the full-scale invasion, domestic debt issuance has served as a recurring channel of fiscal financing for the Ukrainian state, making primary Ukrainian domestic government bond (OVDP) auctions an informative setting for studying sovereign demand under stress. In this setting, the primary market matters because, for the issuer, the wartime constraint is defined not only by borrowing cost but also by the market's capacity to absorb each new placement. Wartime OVDP auctions, therefore, offer a direct setting in which to observe sovereign debt demand under emergency conditions.

Ukrainian literature has focused more on yields, market structure, and the wartime role of OVDP than on direct auction-level tests of investor demand. Bilous [1] shows that wartime Ukrainian government bond yields responded to the policy rate, the exchange rate, inflation, and credit risk. That paper is useful as a background anchor, but it does not answer whether the same macro block shapes demand for newly issued OVDP at primary auctions.

Analysis of recent research and publications. Research on sovereign debt auctions shows that primary-market outcomes reflect bidder information, strategic behavior, and issuance design rather than passive price-taking alone. Cammack [3] and Hortaçsu and McAdams [4] make that point directly, while Hortaçsu, Kastl, and Zhang [5] show that bid shading remains material in the US Treasury system. More recent evidence links sovereign auction demand to macro-financial conditions, market structure, and risk-bearing capacity. Beetsma et al. [6] show that, in the Eurozone, the bid-to-cover ratio varies with maturity, auction size, and financial conditions. Gupta, Sundaram, and Sundaresan [7], Jiménez and Mochón [8], and Amin and Tédongap [9] further show that auction arrangements, underwriting structure, and dealer balance-sheet conditions affect issuance outcomes and the auction environment. Albuquerque, Cardoso-Costa, and Faias [10], Alves Monteiro and Fourakis [11], and Marchettini [12] further develop the argument by showing that sovereign auction demand depends on the market's capacity to absorb risk and on strategic interaction within the auction process.

The Ukraine-specific literature is narrower and more descriptive. Abubekerova [13] and Fedevych and Lyvdar [14] describe the development of the OVDP market and its role in state financing. Hantsiak [15], Margasova, Dubyna, and Zabashtanskyi [16], Bohrinovtseva and Kliuchka [17], and Bereslavska, Sapalov, and Suprun [18] extend that descriptive line to wartime financing, the investor base, and the broader government debt market. Motuzka and Szyszko [19] and Bilous [20] show that wartime monetary, regulatory, and market structure changes shaped the wider operating environment for public finance and domestic capital market functioning.

Highlighting previously unresolved parts of the overall problem. Despite the growing discussion of the wartime OVDP market in Ukrainian and international literature, several parts of the problem remain insufficiently resolved. First, Ukraine-specific studies mostly describe the role of OVDP in public financing, the evolution of yields, the investor base, and the institutional setting of the domestic debt market, but they do not provide a direct econometric assessment of investor demand at the level of individual primary auctions based on open auction records. Second, the broader sovereign-auction literature shows that auction outcomes depend not only on issuance design and bidder strategy, but also on the surrounding macro-financial environment; however, this approach has not yet been systematically applied to Ukrainian wartime OVDP auctions. Third, the closest adjacent Ukrainian evidence, including Bilous [1], is centered mainly on yield dynamics rather than on the quantity side of demand, which leaves unanswered whether the same wartime monetary and macro-financial factors that are associated with yields are also associated with the market’s capacity to absorb newly issued government securities.

As a result, the empirical relationship between policy tightening, inflation, exchange-rate conditions, banking-system liquidity, and auction demand during martial law remains underidentified. Another unresolved issue is methodological: the literature still lacks a reproducible, publicly available data framework that would allow researchers to measure wartime OVDP auction demand consistently across auction dates, instruments, maturities, and currencies. To address these unresolved aspects of the problem, the article combines verified NBU auction records with official macroeconomic indicators and directly tests the demand side of wartime sovereign issuance.

Formation of the objectives of the article (task statement). The purpose of the article is to identify the monetary and macro-financial variables that are associated with investor demand at primary OVDP auctions during martial

law on the basis of a reproducible empirical design using public data.

To achieve this purpose, the article solves the following tasks: to form an auction-level database at the “auction date × individual security” level from public NBU sources; to construct quantity-based indicators of auction demand, including the logarithm of allocated volume and the logarithm of submitted volume in hryvnia equivalent; to incorporate the bid-to-cover ratio as an auxiliary indicator for descriptive and sensitivity analysis; to align auction observations with official macro-financial indicators, including the NBU policy rate, inflation, the official exchange rate, and a proxy indicator of banking-system liquidity, while controlling for instrument maturity; to estimate the relationship between these variables and auction demand under wartime conditions using OLS specifications with clustered standard errors; and to verify the stability of the obtained results across alternative model specifications, including lagged models, quarter fixed effects, the hryvnia-only subsample, and the aggregated date-level specification.

Thus, the article aims to clarify the macro-financial correlates of wartime OVDP auction demand and to develop a reproducible public-data approach for further empirical research on the Ukrainian sovereign debt market.

Summary of the main research material. The empirical base merges the public NBU OVDP auction interface with detailed issue-level auction records that report dates, security identifiers, currency, tenor, bids, allocations, and BTC values [2]. Macro controls are taken from the NBU’s statistical APIs for key rates, liquidity indicators, and exchange rates [21]. The wartime institutional setting is consistent with the NBU's documented emergency monetary policy environment, including the June 2022 policy rate increase to 25% [22]. Market-infrastructure continuity also reflects the wartime capital-market setting described by the NBU and related market infrastructure developments [23].

After cleaning and alignment, the full panel contains 1,127 auction-security observations distributed across 268 auction dates from January 5, 2021, to March 31, 2026. The benchmark sample covers January 1, 2021, to February 22, 2022, and is used only for descriptive comparison. The main estimation sample covers March 1, 2022, to March 31, 2026, and contains 805 wartime observations across 211 auction dates. The wartime sample includes 677 rows of Ukrainian hryvnia (UAH), 91 rows of US dollars (USD), and 37 rows of euros (EUR). Tenor buckets range from 1 month to 4 years, with the largest wartime counts in the 1y, 1.5y, 3y, and 2y buckets.

The effective variation in the macro indicators is narrower than the row count suggests, because policy, inflation, and liquidity move chiefly across auction dates rather than across the same day-issued securities. The wartime sample contains 805 auction-security rows, but only 211 unique auction dates, and the policy rate, inflation, and liquidity variables vary mainly at the auction-date level rather than across securities within a date. The auction-security design is still preferred because it retains maturity and currency composition within each placement. However, inference for the macro coefficients is anchored by clustering at the auction date. To ensure the primary results are not driven by the repetition of date-level macro variables across multiple securities, the robustness analysis includes an auction-date model aggregating total volume sold.

The main dependent variable is the logarithm of total sold volume expressed in UAH equivalent, with foreign-currency placements converted at the official NBU rate on the auction date. The alternative dependent variable is the logarithm of submitted volume, expressed in UAH equivalents. Given the strong right-skewness of the wartime distribution, the BTC ratio is treated as a descriptive metric rather than the main dependent variable. In the pooled specification, the exchange-rate variable is also interpreted cautiously because it equals zero for UAH auctions and moves only for foreign-currency placements, so its coefficient partly combines exchange-rate movement with currency-composition effects even after currency controls are included.

Table 1 defines the variables used in the empirical analysis and shows how the study translates auction outcomes and macro-financial conditions into measurable indicators. It separates the auction-demand variables from the explanatory macro block and the security-level control. The outcome side includes BTC, logged sold volume, logged submitted volume, and the sold-to-submitted ratio, each capturing a different aspect of revealed demand at the auction-security level. The explanatory side includes the policy rate, inflation indicators, the relevant exchange rate, and a liquidity proxy derived from banks’ correspondent account balances with the NBU. The table also includes residual maturity as a control for differences in tenor across instruments. Taken together, these

Table 1

Variable definitions

Variable	Definition
BTC	Published NBU bid-to-cover ratio at the auction-security level
$\log\left(\text{SoldVolume}_{i,t}^{\text{UAH}}\right)$	Natural logarithm of the total volume sold converted to UAH at the official exchange rate on the auction date
$\log\left(\text{SubmittedVolume}_{i,t}^{\text{UAH}}\right)$	Natural logarithm of total submitted volume converted to UAH at the official exchange rate on the auction date
$\text{SoldVolume}_{i,t} / \text{SubmittedVolume}_{i,t}$	Ratio of sold volume to submitted volume at the auction-security level
PolicyRate_t	NBU key policy rate on the auction date
$\text{CPI}_t^{\text{YoY}}$	Consumer price index, year-on-year, matched to the auction month
$\text{CPI}_t^{\text{MoM}}$	Consumer price index, month-on-month, matched to the auction month
$\log\left(\text{FX}_{i,t}\right)$	Natural logarithm of the official exchange rate relevant to the auction currency
$\log\left(\text{Liquidity}_t\right)$	Natural logarithm of banks' correspondent accounts held with the NBU
$\text{Tenor}_{i,t}$	Residual maturity of the security in years

Source: created by the authors based on the National Bank of Ukraine OVDP auction data and official NBU statistical APIs [2; 21]

Table 2

Descriptive statistics for the wartime sample

Variable	Count	Mean	Std. dev.	Min	25%	Median	75%	Max
BTC	805	2.94	13.07	1.00	1.00	1.00	1.40	214.5
$\log\left(\text{SoldVolume}_{i,t}^{\text{UAH}}\right)$	805	20.72	1.96	12.00	19.95	21.42	22.11	23.67
$\log\left(\text{SubmittedVolume}_{i,t}^{\text{UAH}}\right)$	805	21.07	2.08	12.00	20.15	21.50	22.44	24.72
$\text{SoldVolume}_{i,t} / \text{SubmittedVolume}_{i,t}$	805	0.82	0.29	0.01	0.72	1.00	1.00	1.00
PolicyRate_t	805	18.06	5.22	10.00	14.5	15.50	25.00	25.00
$\text{CPI}_t^{\text{YoY}}$	805	13.61	7.25	3.20	7.60	12.80	18.00	26.60
$\text{CPI}_t^{\text{MoM}}$	805	1.03	1.00	-1.40	0.50	0.70	1.50	4.50
$\log\left(\text{FX}_{i,t}\right)$	805	0.58	1.33	0.00	0.00	0.00	0.00	3.94
$\log\left(\text{Liquidity}_t\right)$	805	12.20	0.58	10.63	12.11	12.45	12.56	13.00
$\text{Tenor}_{i,t}$	805	1.63	0.94	0.10	0.98	1.38	2.26	4.06

Source: calculated by the authors based on the National Bank of Ukraine OVDP auction data and official NBU statistical APIs [2; 21]

definitions clarify the measurement design and improve the transparency of the empirical specification.

Table 2 shows that wartime auction outcomes are widely dispersed rather than concentrated around a narrow central tendency, with demand concentrated in a minority of placements. Specifically, the BTC ratio exhibits extreme right-skewness (median 1.0; maximum 214.5), precluding its use as a primary dependent variable while retaining its utility as a descriptive metric.

Figure 1 separates the pre-war benchmark from the wartime segment and makes visible both the scale increase and the uneven timing of auction demand. The series also shows that wartime demand remained uneven across auctions, which supports the decision to work with auction-level observations rather than only monthly aggregates. The sold-volume spikes are concentrated in a limited number of months with unusually large placements, most clearly in May and October 2023 and in September to November 2024. These peaks are consistent with periods in which the auction calendar concentrated placements into a short sequence of auctions and offered a broader mix of maturities and foreign-currency instruments. By contrast, the sharpest bid-to-cover spikes occur in July-August 2022 and again in August 2024, even though placement volumes were not at their maximum during those months. This gap matters for interpretation: shifts in auction composition and placement scale can generate visible spikes even when bid pressure and actual placed volume do not move one-for-one.

As shown in Figure 2, primary market demand favored mid-range maturities over the short end of the curve. Placements were predominantly concentrated in the 1, 1.5, and 3-year buckets, contrasting with the marginal volumes recorded for the shortest-dated instruments. At the same time, the mean bid-to-cover ratio was not highest in the same buckets, indicating that relative bid pressure and actual placement volume do not mechanically coincide across maturities.

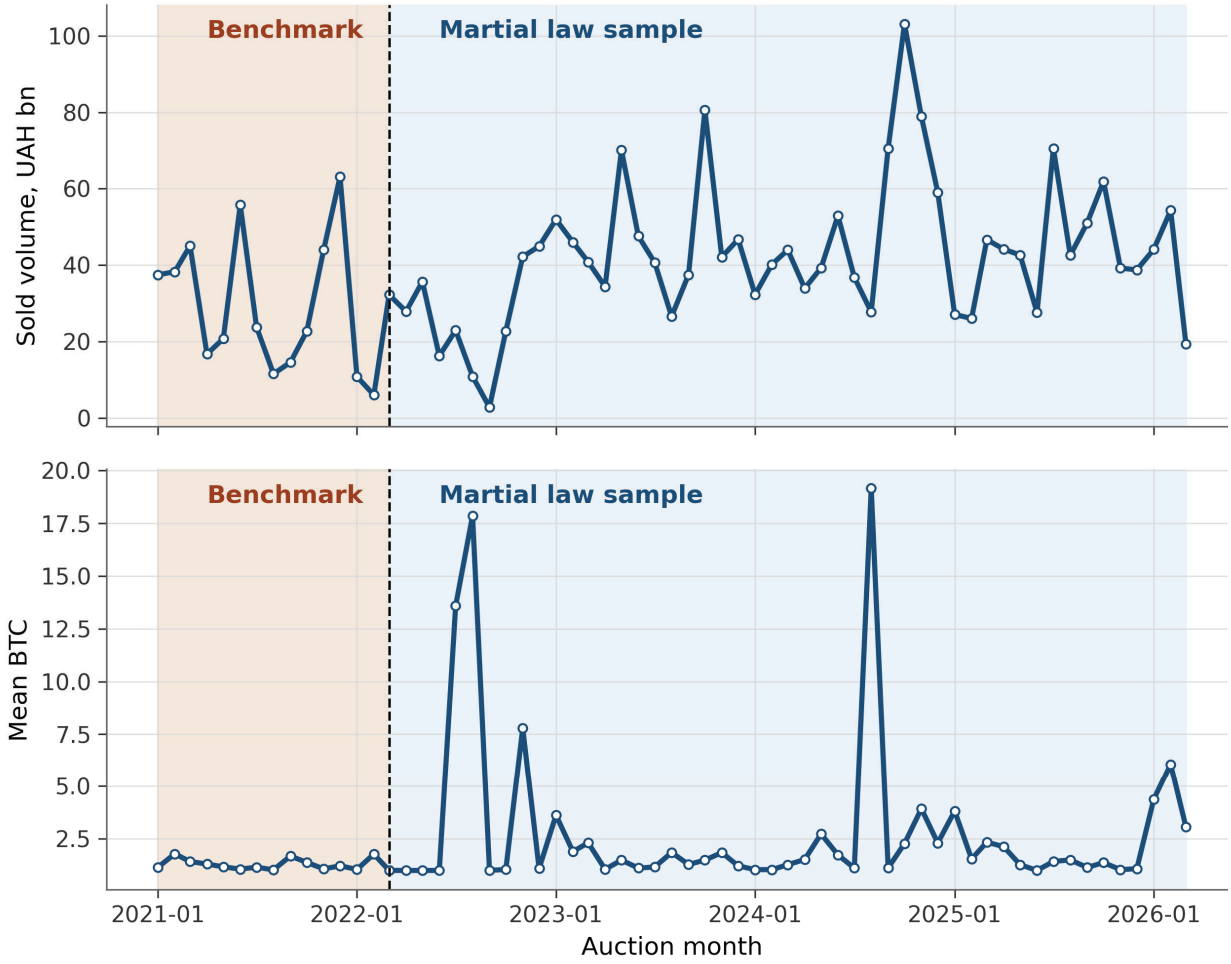

Figure 1. OVDP auction demand before and during martial law

Source: created by the authors based on the National Bank of Ukraine OVDP auction data [2]

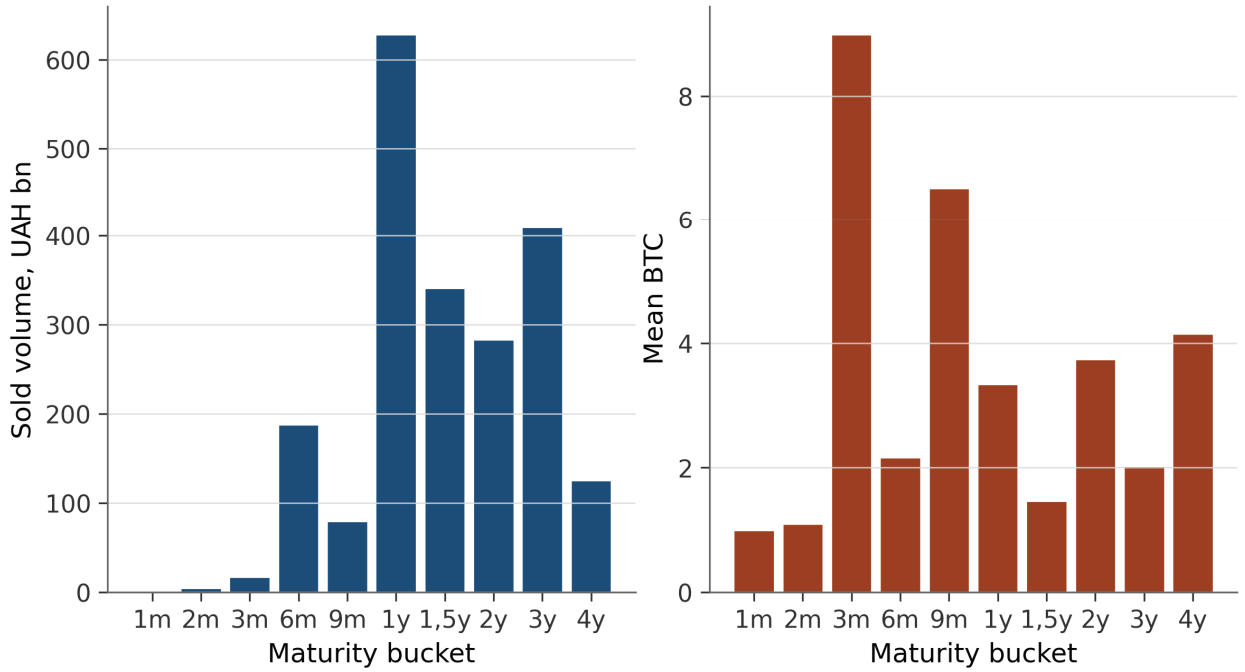

Figure 2. Demand by maturity bucket

Source: created by the authors based on the National Bank of Ukraine OVDP auction data [2]

This pattern supports the use of tenor controls in the baseline specification and shows why maturity composition should be treated explicitly when modeling wartime auction demand.

Figure 3 traces the macroeconomic setting in which wartime OVDP auctions took place and shows a sharp policy-rate pivot in the first panel. After a brief period at 10%, the rate was raised to 25% in mid-2022 to maintain stability, before a cycle of moderation in 2023–2024, reaching 15% by the end of the period, following a temporary 2025 hike. The second series illustrates a distinct hump-shaped inflationary trajectory: consumer prices surged from 10.7% in March 2022 to a peak of 26.6% by early 2023, followed by a sharp disinflationary phase reaching 3.2% in mid-2024. Subsequently, inflation trended upward into the low-to-mid teens in 2025 before moderating to 7.6% by March 2026.

As illustrated in Figure 4 in the exchange-rate panel, the hryvnia underwent a one-time devaluation in mid-2022 (from 29.3 to 36.6 USD/UAH), followed by a gradual downward trend, ending the observation period at roughly 43.8 USD/UAH. Finally, the liquidity panel shows that banks' correspondent-account balances were highly volatile but trended upward after the initial wartime compression, rising from roughly 40-60 UAH bn in mid-2022 to repeated peaks above 300 UAH bn and even above 400 UAH bn in late 2025. The evidence shows that wartime auctions occurred amid shifts in monetary conditions, inflation, the exchange rate, and the banking system's liquidity. This variation in macroeconomic conditions helps explain why the policy-rate and liquidity coefficients matter in the baseline regressions.

Table 3 shows that wartime auctions were associated with higher observed demand volumes than the benchmark period, but also with a lower mean sold-to-submitted ratio. This pattern is consistent with stronger gross demand alongside less complete absorption of submitted demand in a more stressed market environment.

Based on the descriptive analysis, the baseline auction-level specification is:

$$\log\left(\text{SoldVolume}_{i,t}^{\text{UAH}}\right) = \\ = \alpha + \beta_1 \text{PolicyRate}_t + \beta_2 \text{CPI}_t^{\text{YoY}} + \beta_3 \text{FX}_t + \\ + \beta_4 \text{Liquidity}_t + \Gamma' \text{Tenor}_{i,t} + \Delta' \text{Currency}_{i,t} + \varepsilon_{i,t} \quad (1)$$

where i denotes the auctioned security, t denotes the auction date, PolicyRate_t is the NBU key policy rate, $\text{CPI}_t^{\text{YoY}}$ is the headline CPI year-on-year, FX_t is the log exchange rate relevant to the auction currency, Liquidity_t is the log of banks' correspondent-account balances, and $\text{Tenor}_{i,t}$ and $\text{Currency}_{i,t}$ are control vectors. The lagged specification replaces the contemporaneous macro controls with their values from the previous auction date. A further robustness specification adds quarter fixed

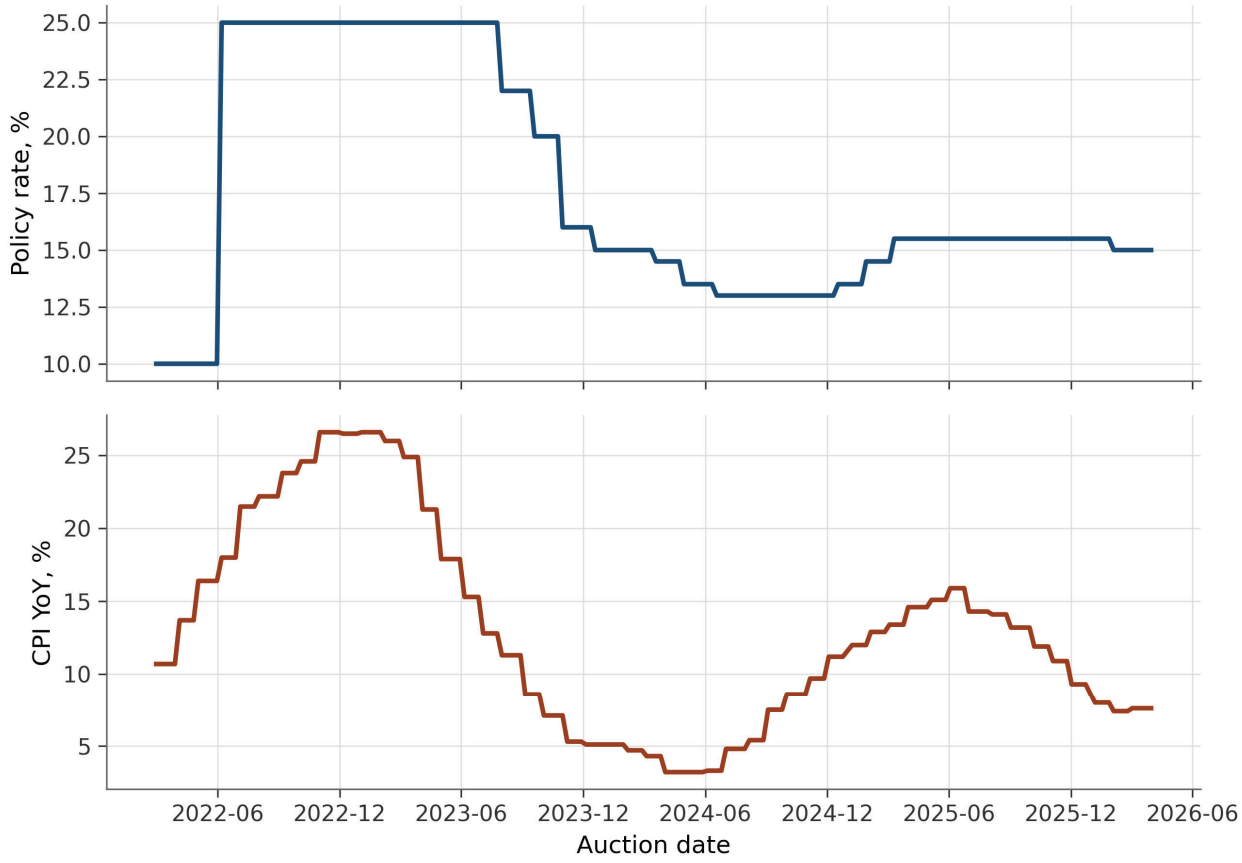

Figure 3. Main explanatory series in the wartime sample (rates)

Source: created by the authors based on official NBU statistical APIs [21]

Table 3

Benchmark versus wartime comparison

Metric	Benchmark mean	Wartime mean	Benchmark median	Wartime median
BTC	1.2997	2.9432	1.0	1.0
$\log\left(\text{SoldVolume}_{i,t}^{\text{UAH}}\right)$	19.8880	20.7198	20.2142	21.4164
$\log\left(\text{SubmittedVolume}_{i,t}^{\text{UAH}}\right)$	20.0476	21.0668	20.4431	21.5018
$\text{SoldVolume}_{i,t} / \text{SubmittedVolume}_{i,t}$	0.8956	0.8190	1.0	1.0

Source: calculated by the authors based on the National Bank of Ukraine OVDP auction data [2]

effects. To account for heteroskedasticity and the correlation of macroeconomic shocks within specific dates, standard errors are clustered at the auction-date level.

The baseline estimates are presented in Table 4. The policy-rate coefficient is negative across all main specifications. Bank liquidity exhibits a positive coefficient across the baseline, lagged, and alternative-demand specifications, though this relationship does not persist in the quarter fixed-effects model. Inflation remains weak across specifications, while the exchange-rate coefficient is less stable than the policy-rate coefficient.

In the baseline specification, the model explains a moderate share of the variation in auction demand (R^2 = 0.3549), while the direction of the policy-rate coefficient remains consistently negative. The policy rate has a negative, statistically significant impact, with a coefficient of approximately -0.0885 (clustered standard error ≈ 0.0164). Conversely, the liquidity

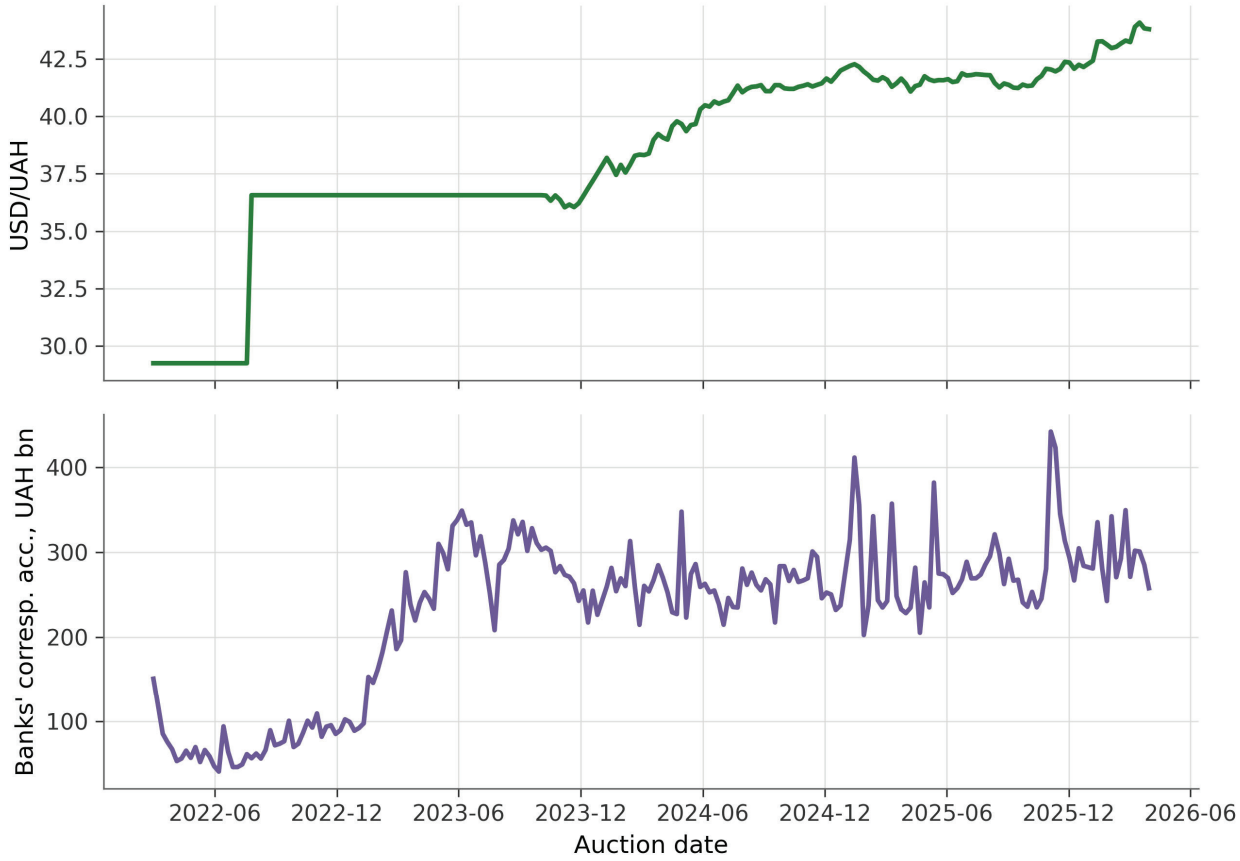

Figure 4. Main explanatory series in the wartime sample (macro market)

Source: created by the authors based on official NBU statistical APIs [21]

coefficient is positive and statistically significant, yielding a value of 1.3935 with a standard error of 0.1691. The exchange-rate coefficient is negative in the pooled wartime specification, about -2.7472, while the inflation coefficient is small and statistically weak.

The lagged model confirms the main pattern, with the lagged policy-rate coefficient about -0.0811 and the lagged liquidity coefficient about 1.4005. Both remain statistically significant. By contrast, lagged inflation and lagged exchange-rate terms are weak. The quarter-fixed-effects model improves the fit to an R^2 of 0.4048. Across the preferred specifications, tighter monetary conditions are systematically associated with lower auction demand, carrying an estimated coefficient of -0.1024. Once quarter effects absorb common wartime shifts, the liquidity term loses much of its standalone explanatory content, suggesting overlap with broader period-level dynamics.

The core interpretation remains unchanged when the dependent variable is replaced with the logarithm of the submitted volume in UAH equivalent. The policy-rate coefficient is about -0.0842, and the liquidity coefficient is about 1.3380, both with clear statistical support. The inflation coefficient remains statistically insignificant, while the exchange-rate variable is less stable than in the baseline sold-volume model.

Table 5 indicates which coefficient patterns survive the tighter robustness checks. Both the UAH-only and auction-date models preserve the negative sign of the policy rate, providing the strongest evidence in support of the paper's central claim. The liquidity coefficient remains positive in those models, but the quarter-fixed effects results still caution against treating it as equally firm across specifications. The BTC specification performs poorly, confirming that ratio-based demand should remain outside the paper's main model. The monthly aggregation fits better mechanically, but it is a secondary check rather than the preferred design.

The evidence indicates that wartime auction demand should not be read as a simple continuation of the mechanisms observed in yield dynamics. While Bilous [1] provides documentation on wartime yields, the present

Table 4

Baseline regressions

Variable	(1) Log sold volume	(2) Log sold volume, lagged macro block	(3) Log sold volume, quarter FE	(4) Log submitted volume
Policy rate	-0.0885*** (0.0164)		-0.1024*** (0.0288)	-0.0842*** (0.0171)
CPI, year-on-year	-0.0158 (0.0152)		0.0818 (0.0589)	-0.0222 (0.0159)
Log exchange rate	-2.7472** (1.0771)		-2.0950* (1.1507)	-1.4017 (1.1110)
Log bank liquidity	1.3935*** (0.1691)		0.1013 (0.3522)	1.3380*** (0.1867)
Lagged policy rate		-0.0811*** (0.0174)		
Lagged CPI, year-on-year		-0.0138 (0.0154)		
Lagged log exchange rate		0.0155 (0.0373)		
Lagged log bank liquidity		1.4005*** (0.1768)		
Intercept	16.5980*** (3.5121)	6.0841*** (2.2163)	28.7567*** (6.0316)	12.2884*** (3.5054)
Tenor controls	Yes	Yes	Yes	Yes
Currency controls	Yes	Yes	Yes	Yes
Quarter fixed effects	No	No	Yes	No
N	805	805	805	805
R-squared	0.3549	0.3535	0.4048	0.3307
Adjusted R-squared	0.3426	0.3413	0.3809	0.3180

*Note: clustered standard errors by auction date are shown in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10*

Source: calculated by the authors

study analyzes revealed demand within primary auctions. Although the price of debt represents the required compensation on the secondary market and auction demand captures the market's willingness to absorb new sovereign issuance, these mechanisms operate as distinct, albeit related, channels under martial law.

These estimates should be read within the limits of public auction data, which omit several supply-side and administrative determinants of placement outcomes. The public auction feed does not provide a full set of supply-side and institutional controls, such as announced supply targets, military-bond status, placement caps, or the Ministry of Finance's internal allocation strategy. The coefficients should therefore be interpreted as conditional empirical associations rather than structural demand elasticities.

Conclusions. The article provides a reproducible, publicly available framework for tracking wartime OVDP auction demand in Ukraine. Using verified NBU auction and macro sources, it constructs a reproducible auction-level dataset for the period from March 2022 to March 2026, with a pre-war benchmark used only for comparison.

Across the preferred specifications, the most stable empirical result is a negative association between the policy rate and primary-market demand. Specifically, in wartime primary markets, higher policy rates are associated with lower auction demand in the baseline model and in the most informative robustness checks. Stronger banking-system liquidity is positively associated with larger auction allocations and submitted volumes in the baseline, lagged,

Table 5

Robustness regressions

Variable	(1) BTC, winsorized at 99th percentile	(2) UAH-only sample	(3) Monthly by currency	(4) Auction-date total sold volume
Policy rate	0.0157 (0.0260)	-0.1015*** (0.0182)	-0.0255 (0.0226)	-0.0552*** (0.0181)
CPI, year-on-year	-0.0071 (0.0244)	-0.0144 (0.0166)	0.0194 (0.0149)	0.0172 (0.0142)
Log exchange rate	3.8050** (1.5333)		-0.4627 (1.3411)	
Log bank liquidity	-0.2756 (0.2899)	1.4467*** (0.1932)	0.7767*** (0.1916)	0.7971*** (0.1703)
Intercept	-10.0964*** (3.7035)	4.4840* (2.4375)	14.4716*** (4.5910)	13.6841*** (2.0054)
N	805	677	116	211
R-squared	0.0638	0.3291	0.5744	0.2161
Adjusted R-squared	0.0460	0.3170	0.5510	0.2047

Note: clustered standard errors by auction date are shown in parentheses for models (1) and (2); HC1 standard errors are shown for models (3) and (4). *** p < 0.01, ** p < 0.05, * p < 0.10

Source: calculated by the authors

submitted-volume, UAH-only, and date-level models, but that relationship becomes weak once quarter fixed effects absorb broader wartime time variation. The inflation effect is weak, and BTC is too skewed to serve as the main outcome variable.

In wartime debt analysis, yields and auction quantities should be treated as related but distinct dimensions of market adjustment. Together with the earlier yield paper [1], the present article describes two distinct empirical margins of the Ukrainian domestic government bond market without repeating the same design.

Further work could proceed in two directions: adding post-war observations to compare demand regimes and using richer auction microdata to examine bidder composition and allocation dispersion. First, this research design may be updated as post-war data becomes available, facilitating a comparative analysis of demand regimes between the wartime and recovery periods. Second, if richer auction microdata become publicly available, the analysis can move from reduced-form demand outcomes toward bidder composition, bid dispersion, and allocation heterogeneity.

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