Pricing Transparency in European Crypto Trading

Research Brief | An Empirical Assessment of Execution Costs Across Major Retail Exchanges

Background

With approximately one in ten euro area households now holding crypto-assets (ECB, 2025), the asset class has reached meaningful retail penetration. Yet the underlying trading infrastructure remains highly fragmented. Unlike equity markets, which benefit from consolidated tapes, best-execution enforcement and standardized spread disclosure, the European crypto market lacks comparable safeguards. Each platform sets its own execution price and retail investors have no standardized means of comparing what they actually pay.

Study Design

This study combines two complementary empirical approaches to measure execution costs on six MiCAR-licensed European retail crypto platforms (Bitvavo, BSDEX, Bison, Kraken, Bitpanda, Coinbase).

Phase 1 (API Testing): 924 synchronised order-book observations across Bitvavo, Kraken and Coinbase over 62 days (Jul–Sep 2025), capturing wholesale execution conditions and published fee impacts for €100, €500 and €1,000 notionals.

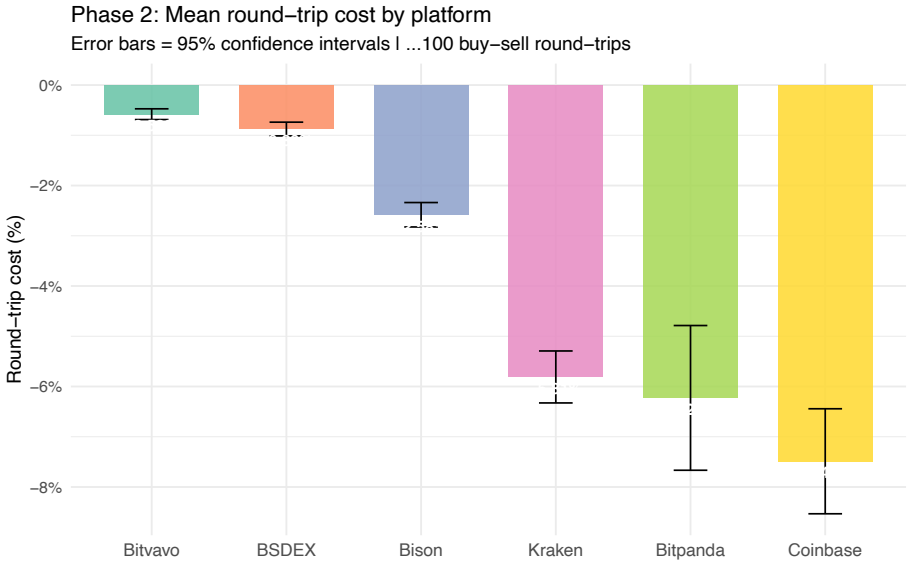
Phase 2 (Real-Money Testing): 50 standardised buy–sell round-trips (€100 notional) across all six platforms over 12 trading days (Oct–Nov 2025), measuring the full retail cost including fees, spreads and hidden markups.

The gap between Phase 1 predictions and Phase 2 outcomes reveals the **hidden retail spread**, the cost embedded in the retail interface beyond published fees and order-book prices. All data and analysis code are publicly available.

Results: Round-Trip Costs by Platform

Platform	Model	N	Mean RT	SD	95% CI	Hidden Spread
Bitvavo	Exchange	13	**−0.58%**	0.18%	[−0.69%, −0.47%]	**0.08 pp**
BSDEX	Exchange	13	**−0.88%**	0.23%	[−1.01%, −0.74%]	**0.18 pp**
Bison	Broker (spread)	6	**−2.58%**	0.23%	[−2.82%, −2.34%]	**0.08 pp**
Kraken	Broker	6	**−5.81%**	0.49%	[−6.33%, −5.29%]	**3.81 pp**
Bitpanda	Broker	6	**−6.23%**	1.37%	[−7.67%, −4.79%]	**4.25 pp**
Coinbase	Broker	6	**−7.49%**	1.00%	[−8.53%, −6.44%]	**4.51 pp**

Round-trip cost = percentage loss from buying and immediately selling €100 of crypto. Hidden spread = actual RT cost minus predicted cost from published fee schedule (2× one-way fee). CI computed using t-distribution. All trades executed via standard retail interfaces.



Key Findings

1. Execution costs vary by a factor of 13 across platforms

Round-trip costs range from −0.58% (Bitvavo) to −7.49% (Coinbase). Platforms employing transparent, order-book-based price discovery (Bitvavo, BSDEX) consistently deliver lower costs than those using broker-model or spread-based retail interfaces. After Bonferroni-corrected statistical testing, a robust three-tier structure emerges: exchange-model platforms (<1%) < Bison (~2.5%) < broker-model platforms (5.8–7.5%). Kraken, Bitpanda and Coinbase cannot be reliably ranked relative to each other ($p = 0.589$ for Kraken vs. Bitpanda).

2. Published fees capture less than half of actual costs on broker platforms

For exchange-model platforms, published fees closely approximate total trading costs (hidden spread: 0.08 pp for Bitvavo). For broker-model platforms, the majority of costs are embedded in the execution price as an undisclosed markup. On Coinbase, the posted fee accounts for approximately 40% of actual trading costs; the remaining ~60% is hidden. On Kraken, the hidden spread (3.81 pp) exceeds the published fee (2.00 pp predicted RT) by nearly a factor of two.

3. The regulatory framework does not enable consumers to detect these differences

MiCAR Article 78 imposes a best-execution obligation on CASPs, but lacks the infrastructure that gives the analogous MiFID II obligation practical effect: no consolidated tape providing market-wide reference prices, no requirement to disclose the effective spread and no standardized execution quality reporting. Two fully MiCAR-compliant platforms can deliver execution prices differing by more than six percentage points on a round-trip basis, with no mechanism for the retail user to detect this.

4. Results independently confirmed by Frankfurt School study

An independent study by the Frankfurt School Blockchain Center (March 2026), covering 432 round-trips across nine platforms, reports near-identical costs for the five overlapping platforms: Bitvavo (0.53% vs. our 0.58%), Bison (2.50% vs. 2.58%), Kraken (5.92% vs. 5.81%). The consistency across independently conducted studies with different methodologies and observation periods strengthens confidence that the observed cost structures are stable platform characteristics.

Consumer Impact

For an investor making monthly €500 purchases, the difference between the best-performing platform (Bitvavo, 0.58% RT) and the worst (Coinbase, 7.49% RT) amounts to approximately €200 per year in excess execution costs on the buy side alone. For investors using dollar-cost averaging or similar periodic investment strategies, each transaction compounds the cost differential, making platform selection a significant determinant of long-term investment outcomes.

Methodological Notes & Limitations

The study examines six MiCAR-licensed platforms selected by licensing status, retail orientation and European market relevance. Phase 2 sample sizes are small (N = 6 for four platforms); results should be interpreted as descriptive of the studied period (Oct–Nov 2025) rather than confirmatory. The €100 trade size maximally penalizes platforms with fixed fees (notably Coinbase at €2.99 per trade); cost rankings may shift at higher notionals. Kraken and Coinbase both offer professional order-book interfaces where users would achieve substantially better execution than through the retail interfaces tested. The study was conducted in cooperation with Bitvavo (initial funding of €5,000, fully reimbursed). Bitvavo had no influence on study design, data analysis, or publication. Academic supervision by Prof. Dr. Philipp Maume (TUM) ensured methodological independence.

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Data & Code: github.com/dominikhei/tum-research-markets