

Bitcoin markets segmentation: Why policy design matters



Mathilde Dufouleur | Banque de France

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Abstract

Bitcoin is traded globally, yet national price gaps persist. Using daily data for 22 countries between 2013 and 2023 and a new database of crypto-asset regulations in 28 jurisdictions, this brief shows that regulatory design matters. Frameworks that improve legal certainty and access to regulated market infrastructure are associated with narrower price gaps and higher trading volumes, whereas partial banking bans are associated with wider gaps and lower activity. AML/CFT measures are associated with lower local prices, but uneven national implementation may shift activity across borders. The findings call for keeping compliant gateways open, coordinating enforcement internationally and monitoring the stronger transmission of shocks that may accompany integration.

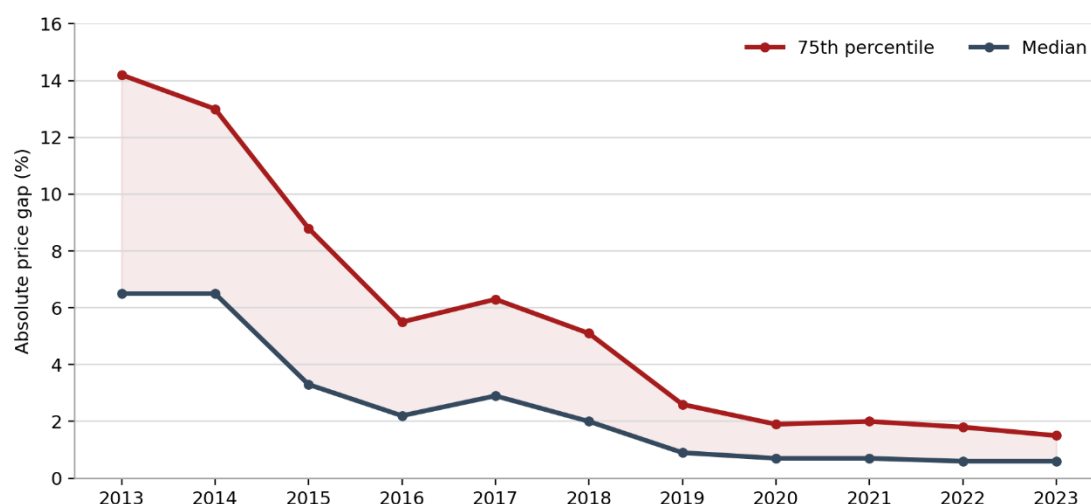
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A global asset still shaped by national institutions

Bitcoin is often described as borderless. Yet the same unit of Bitcoin can trade at different prices across countries even after local prices are converted into US dollars. Market microstructure is central to understanding this apparent paradox. Bitcoin transfers are recorded on a global blockchain, but most price discovery takes place on separate exchanges with distinct order books, levels of liquidity, fees, AML/CFT requirements, and connection to banking and payment systems. Arbitrageurs can close a price gap only if they can fund accounts, move Bitcoin across trading venues and convert the proceeds into local currency quickly, reliably and at a limited cost. Cross-country price gaps therefore reveal frictions that limits arbitrage. They show that decentralisation at the protocol level does not remove the national institutions through which most users buy, sell and hold crypto-assets.

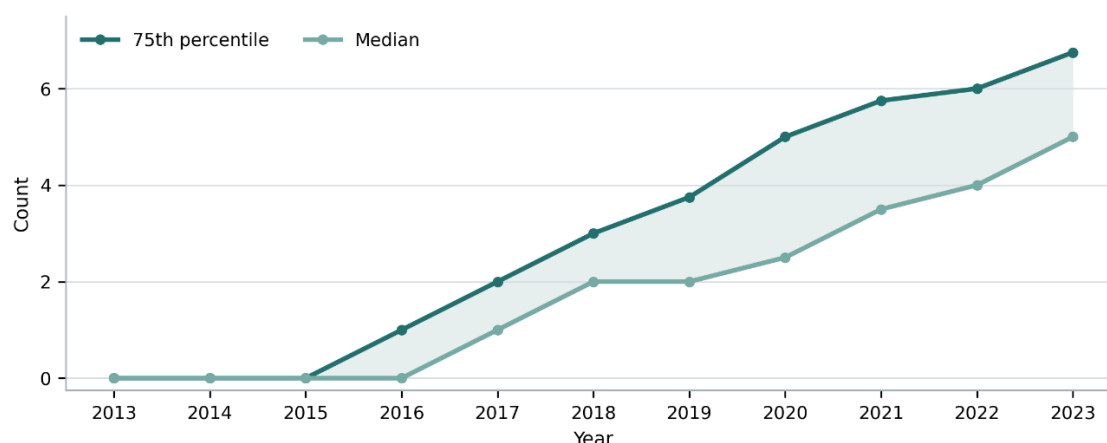
Typical gaps narrowed substantially over the sample. The annual median of daily absolute price deviations fell from about 6.5% in 2013–2014 to 0.6% in 2023, while the 75th percentile fell from 14.2% to 1.5%. Persistent outliers nevertheless indicate that country-specific barriers remain. Over the same period regulatory coverage expanded: in the 22-jurisdiction price panel, the median cumulative number of implemented measures rose from zero at end-2016 to five at end-2023, while the 75th percentile reached about 6.8. These parallel trends are descriptive and do not establish that regulation caused price convergence. They nevertheless motivate the paper's central empirical question: whether regulatory implementation helps explain cross-country Bitcoin price gaps, and why some forms of regulation are associated with greater market integration while others are associated with greater fragmentation?

Figure 1. Cross-country Bitcoin price gaps narrowed sharply, but did not disappear



Note: Annual median and 75th percentile of daily country-level absolute price deviations from the USD benchmark. Outliers can be substantially larger. Source: Dufouleur (2026)

Figure 2. Cumulative number of implemented regulations per jurisdiction



How the study identifies regulatory effects

The study combines daily Bitcoin prices and trading volumes for 22 countries between September 2013 and 2023 with a new database recording the implementation of crypto-asset regulation in 28 jurisdictions since 2009. It uses implementation dates, even though it controls for dates of announcement, and distinguishes rules for service providers, banking and payments, securities-law coverage, regulatory sandboxes, policies admitting crypto-related products into traditional finance, AML/CFT requirements and partial bans.

The analysis compares price gaps, local prices and volumes across countries and over time while accounting for persistent national barriers and shocks common to all Bitcoin markets. It also asks whether macro-financial factors influence market dynamics differently under supportive, restrictive and less developed regulatory regimes. The estimates provide carefully controlled associations, but they do not rank policies as if regulatory adoption were a controlled experiment.

What different forms of regulation do

The results reject the idea that all regulation has the same effect. Measures that make formal intermediation possible behave differently from measures that restrict access to the crypto market.

Table 1. Headline market effects differ by regulatory approach

Form of regulation	Price gaps	Trading volume	Main interpretation
Frameworks improving crypto market definition and functioning (as extension of securities law)	Narrower	Higher	Legal certainty and regulated access can reduce market frictions.
Pro-innovation measures	Narrower	Higher	Sandboxes and access to regulated financial products can broaden participation.
Partial banking bans	Wider	Lower	Restricting banking participation can impede arbitrage and formal trading.
AML/CFT requirements	Mixed	Lower	Demand is constrained, but uneven national rules may display activity.

Enabling frameworks support integration and activity

Comprehensive and pro-innovation frameworks are associated with smaller deviations from the USD benchmark and higher trading volumes. Securities-law coverage, banking and payment rules and regulatory sandboxes appear to support convergence. This is consistent with legal certainty and regulated access lowering market frictions, although the individual channels are not separately identified. Narrower gaps indicate integration, not by themselves investor protection or financial stability.

Partial banking bans fragment markets and reduce activity

Restrictions that prevent banks from investing in crypto-assets or providing crypto services widen price gaps, lower local prices and reduce traded volumes. The estimates do not identify whether the main channel operates through payment access, banking services, direct investment or liquidity provision. However, the decline in trading activity is consistent with Copestake et al. (2023), who find that the persistent reduction in volumes following the strictest crypto bans is driven by lower institutional trading. Taken together, these findings highlight the importance of banks and other institutional investors for the liquidity and integration of local crypto-asset markets.

AML/CFT measures constrain demand but require coordination

AML/CFT requirements have mixed effects on price convergence but are associated with lower local prices and activity. This pattern is consistent with reduced demand for anonymity-related or illicit uses, but aggregate data cannot identify users' motives. Uneven national implementation may also encourage activity to move across borders, making international coordination central to enforcement.

Integration changes the transmission of shocks

Regulations that support formal market access are associated with narrower price gaps and greater trading activity. Yet closer integration also means that local markets may respond more strongly to global Bitcoin cycles and international financial conditions. Partial bans may instead isolate local markets during global price surges, but this apparent insulation comes with wider price gaps and lower trading volumes. The policy challenge is therefore not to preserve fragmentation, but to combine open, well-regulated market access with closer monitoring of cross-border shock transmission.

Policy implications

- **Keep compliant gateways open.** Exchange authorisation, payment-system access, banking rules and securities-law coverage can make formal intermediation more transparent and reduce barriers to arbitrage by increased exchanges access and reliability. Such rules should not be treated as equivalent to measures that close market access.
- **Do not treat banking bans as a substitute for risk-based supervision for bank-crypto linkages.** Partial banking bans are associated with wider market segmentation and lower trading volumes. Yet lower activity should not be equated with a safer market. Investor-protection failures, operational disruptions, cyberattacks and counterparty defaults may persist, while some activity may shift towards less transparent venues. Rather than relying primarily on restrictions intended to suppress activity, authorities should make regulated crypto intermediation safer and more transparent through prudential and conduct requirement, clear risk disclosures and financial-literacy initiatives. Moreover, to identify and mitigate financial stability risks, supervisors should monitor bank-crypto linkages in both directions: crypto-related exposures on bank's balance sheets may transmit shocks from crypto markets to the banking system, while crypto markets' reliance on banks for payment services and liquidity may transmit changes in bank participation back to crypto markets. The relevance of this second channel is consistent with Copestake et al. (2023), who find that reduces institutional trading drives the persistent decline in crypto trading volumes following bans.
- **Coordinate AML/CFT enforcement internationally.** National measures may reduce activity locally without eliminating it. Compatible standards, information sharing and cross-border supervision can limit displacement towards other jurisdictions or less observable venues.
- **Monitor integration as both a benefit and a source of exposure.** As found in the paper, a regulated market is associated with a more integrated market, and therefore more sensitive to global and domestic fluctuations. Supervisors should track price gaps and volumes alongside domestic markets' sensitivity to global Bitcoin shocks and macro-financial conditions.

What this means for tokenised finance and CBDCs

The evidence in this study concerns Bitcoin, not tokenised deposits, tokenised securities or central bank digital currencies. One lesson nevertheless travels: technological decentralisation does not remove dependence on the gateways connecting digital assets to bank money, custody, payments and settlement.

Tokenised deposits and wholesale CBDC arrangements may support a common settlement layer and reduce market frictions only if access, convertibility and cross-border interoperability are designed coherently. Incompatible frameworks could instead reproduce the fragmentation observed in Bitcoin markets. This is a broader policy implication of the findings, not a result directly tested in the paper.

Limits and next steps

Regulatory adoption is not random, and the analysis cannot rank every policy as if it were a controlled experiment. Moreover, the US dollar is also used as the single global benchmark, and the sample ends in 2023, before the full application of MiCA. Post-MiCA and tokenised-market evidence should test whether the same integration–exposure trade-off persists.

Conclusion

Bitcoin is decentralised at the protocol level, but its markets remain shaped by national institutions. The relevant choice is not regulation versus no regulation, but which rules support transparent access without unnecessary fragmentation. Well-designed gateways can improve price discovery and formal trading, provided supervision also addresses the shocks and bank–crypto linkages that integration may transmit.

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About the author

Mathilde Dufouleur is an economist in the European Relations Unit at the Banque de France, where she works on the EU Savings and Investments Union and venture capital. She previously worked in the European Commission’s Macroeconomic Imbalances Unit. She holds a PhD in economics, and her research lies at the intersection of macro-financial economics and international finance, with a particular focus on regulations and digital assets.

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SUERF Secretariat

c/o OeNB, Otto-Wagner-Platz 3A-1090 Vienna, Austria

Phone: +43 1 40 420 7206 E-mail: suerf@oenb.at Website: <https://www.suerf.org/>

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