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The Impact of Markets in Crypto-Assets Regulation on Venture Capital Funding for Cryptocurrency Startups in Europe

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Abstract

This paper examines whether the Markets in Crypto-Assets Regulation increased venture capital funding for European centralised cryptocurrency startups. A difference-in-differences design exploits variation between European startups subject to the regulation and untreated firms in California, Hong Kong, and Singapore over 2021 to mid-2025. The analysis finds that the regulation increased quarterly venture capital funding by seven to nine percent. Effects are concentrated in late-stage investment, where funding increased by fourteen to seventeen percent, while early-stage funding shows no significant change. These findings provide the first causal evidence on investor response to regulatory compliance requirements in a previously unregulated market.

Keywords:

MiCA; Financial Regulation; Venture Capital; Fintech; Cryptocurrency

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1. Introduction

The European Union became the first jurisdiction to establish comprehensive crypto-asset regulation, yet no empirical evaluation has examined whether this intervention achieved its intended market effects. Understanding how investors respond to regulatory clarity provides essential feedback for assessing whether the regulation is meeting its intended objectives.

A difference-in-differences design was employed to compare European startups against comparable firms in California, Hong Kong, and Singapore over the period 2021 to mid-2025, with the regulation's entry into force in June 2023 as the treatment event. Findings indicate that the regulation increased quarterly venture capital funding by approximately 7 to 9 percent, with heterogeneity analysis indicating concentration of effects in late-stage investment, where funding increased by 14 to 17 percent. Authorised crypto-asset service providers registrations have accelerated as European jurisdictions reach the end of transitional periods.

The contribution lies in providing the first causal evidence on the regulation's market impact, assessing how investors respond to startups facing regulatory compliance requirements in a previously unregulated environment. The analysis focuses on investor response to regulatory clarity and not firm-level compliance outcomes. Section 2 provides background on the regulatory framework and rationale for the empirical focus. Section 3 describes data and sample construction. Sections 4 and 5 present the empirical strategy and results. Section 6 discusses policy implications.

2. Background and Literature Review

2.1. The Unregulated Crypto-Asset Market and Associated Risks

Cryptocurrencies emerged following the challenges faced by central banks during the 2008 global financial crisis and the 2010-2013 European sovereign debt crisis, attracting

participants with their decentralised nature, lower transaction costs, and transaction transparency (Mukhia et al. 2024). As an asset class still in its nascent stages, crypto-assets experienced remarkable price fluctuations and, with the realisation of their potential to generate high returns, evolved into rapidly growing speculative investment instruments (Mukhia et al. 2024). This expansion, however, occurred largely outside existing regulatory frameworks, with crypto-asset service providers in many jurisdictions operating in a non-compliant manner or entirely beyond the regulatory perimeter (OECD 2022; CCAF 2024).

Prior to establishing a comprehensive regulatory framework, European regulators had already warned consumers about these risks. In a 2018 joint warning, the European Supervisory Authorities, ESMA, EBA, and EIOPA (the ESAs), defined virtual currencies as "a digital representation of value that is neither issued nor guaranteed by a central bank or public authority and does not have the legal status of currency or money," caution that virtual currencies remained unregulated under EU law, as did the exchanges and digital wallets used to trade and store them (ESAs 2018). This regulatory vacuum meant consumers did not benefit from the guarantees associated with regulated financial services (ESAs 2018). The ESAs identified risks spanning extreme volatility and bubble risk, absence of protection if exchanges failed or suffered cyber-attacks, lack of exit options and price transparency, operational disruptions, and misleading information that failed to properly disclose risks (ESAs 2018). These concerns were subsequently reinforced at the international level when the FSB and IOSCO issued policy recommendations in 2023 addressing the elevated risks posed by crypto-asset service providers, particularly those operating as multi-function intermediaries that concentrate activities which traditional finance deliberately keeps separate (CCAF 2024).

Analysing the market value gives context to the warnings. Total crypto-asset market capitalisation exceeded USD 3 trillion in November 2021, before falling below USD 850 billion

barely thirteen months later, a pattern of extreme volatility that echoed the 2018 crypto winter, when digital asset market capitalisation fell 80 percent (ESMA 2025c; Dealroom and Rockaway 2023). In May 2022, the algorithmic stablecoin TerraUSD broke its peg and collapsed, with its associated token LUNA losing USD 41 billion in market value within a single week (OECD 2022). The implosion triggered cascading failures across crypto-asset service providers - Celsius Network, Three Arrows Capital, Voyager Digital, BlockFi, and FTX - with retail investors suffering total loss of investment without any recourse for compensation (OECD 2022). These collapses revealed were symptomatic of deeper structural problems: 40 percent of exchanges operating before 2022 subsequently failed, revealing a fundamental paradox whereby exchanges positioned themselves as trustworthy custodians akin to traditional financial institutions while operating without equivalent regulatory oversight, exposing investors to new risks (Ordekian et al. 2025; CCAF 2024).

Beyond consumer harm, the growth of crypto-asset markets raised systemic concerns across multiple dimensions. Crypto-assets can affect financial stability through interconnectedness with traditional finance, market volatility and lack of transparency, liquidity and maturity mismatches, and leverage and concentration (Aerts et al. 2025). The IMF (2023) reinforced these concerns, identifying threats to domestic stability though weakened monetary policy transmission, to external stability through disrupted exchange rate management and capital flows, and structural risks from stablecoin-driven bank disintermediation, while cautioning that purported benefits including cheaper cross-border payments and financial inclusion remained unrealised. At the firm level, misaligned incentives driven by information asymmetry and insufficient accountability encouraged exchanges to adopt risky business models, underinvest in cybersecurity, and potentially misuse clients' assets, creating systemic vulnerabilities with implications for consumer protection, market integrity, and financial

stability that emphasised the urgent need for regulatory intervention (Ordekian et al. 2025; OECD 2022).

Given the mounting evidence of consumer harm and systemic risk, leaving crypto markets unregulated became increasingly untenable. While crypto-assets and related service providers perform functions resembling traditional finance, the underlying technology and novel market structure create new risks or exacerbate existing ones, and crypto-asset service providers have been held accountable for harm to consumers more than the crypto-assets themselves (CCAF 2024). Jurisdictions responded with divergent approaches ranging from leaving crypto activities unregulated, to outright bans, to Anti-money Laundering (AML) only frameworks, to comprehensive licensing regimes (CCAF 2024). The European Union moved decisively to the end of this regulatory spectrum, becoming the first major jurisdiction to pass bespoke legislation specifically tailored to crypto-assets, in contrast to jurisdictions like Australia, Switzerland, and the United States that applied existing rules with varying supplementary guidance (CCAF 2024; Ordekian et al. 2025). In doing so, the EU directly addressed the consumer protection, market integrity, and financial stability concerns raised by the OECD, IMF, FSB, IOSCO, and the ESAs, establishing a comprehensive framework where none had developed before.

2.2. The Markets in Crypto-Assets Regulation (MiCA)

In September 2020, the European Commission proposed the Markets in Crypto-Assets Regulation (MiCA)[1] as part of the Digital Finance Package, aiming to support digital finance innovation while mitigating investor risks (EIOPA 2024; EUR-Lex 2024). The rationale for

[1] Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (Text with EEA relevance), OJ L 150, 9.6.2023, pp. 40-205, http://data.europa.eu/eli/reg/2023/1114/oj

intervention was grounded in the need to strengthen the Single Market. The Draghi (2024) report on European competitiveness emphasised that regulatory fragmentation undermines competitiveness as firms face heterogeneous requirements across member states, generating high compliance costs that prevent scaling, while the Letta (2024) report identified the lack of financial services integration as a primary reason for Europe's declining competitiveness relative to the United States and Asian economies. By establishing uniform rules across member states, MiCA directly addresses this fragmentation (CCAF 2024).

The Regulation (EU) 2023/1114 established a harmonised legal framework with four stated objectives: to create legal clarity and certainty for crypto-asset issuers and service providers, to support innovation while preserving financial stability, to protect investors and consumers from associated risks, and to ensure market integrity (EUR-Lex 2024). Reflecting market development, the regulation adopts the term "crypto-asset", defined under Article 3(5) as a "digital representation of a value or a right which may be transferred and stored electronically, using distributed ledger technology or similar technology", replacing the earlier terminology of "virtual currencies" (EUR-Lex 2024; ESAs 2018).

MiCA's regulatory approach is grounded in two foundational principles set out in Recital 9: "same activities, same risks, same rules," ensuring crypto-asset activities face comparable regulatory treatment to traditional financial services carrying similar risks; and technology neutrality, ensuring regulation targets economic substance rather than specific technology (EIOPA 2024; EUR-Lex 2024). The regulation defines three crypto-asset categories: electronic money tokens (EMTs), which maintain stable value by referencing a single official currency; asset-referenced tokens (ARTs), which maintain stable value by referencing multiple assets including fiat currencies, other crypto-assets, or commodities; and other crypto-assets, including utility tokens and well-known assets such as Bitcoin and

Ethereum (EUR-Lex 2024). EMTs and ARTs are commonly referred to as stablecoins, though MiCA avoids this term given that such assets may not remain stable, particularly in stressed market conditions (EUR-Lex 2024; ESAs 2025a). To address identified extreme volatility and bubble risks, MiCA imposes reserve requirements and operational standards on stablecoin issuers, while a market abuse framework modelled on the EU's Market Abuse Regulation holds cryptocurrency markets to the same integrity standards as traditional finance (Ordekian et al. 2025; ESAs 2018).

Given that crypto-assets operate on decentralised networks where no single entity can be held accountable or supervised, MiCA focuses on intermediaries. Crypto-Asset Service Providers (CASPs) are the regulatory focal point because, as centralised entities, they offer a regulatory "hook" consistent with traditional finance: they can obtain authorisation and be subject to ongoing supervisory obligations (CCAF 2024). CASPs enable crypto-asset markets by providing on/off-ramps into the ecosystem, fiat conversion, and gateways for non-technical users, with a large share of trading activity flowing through them (CCAF 2024). To operate in the European Economic Area (EEA), CASPs must comply with minimum requirements related to governance, capital, conduct, and consumer protection (ESAs 2025a). Authorised CASPs are now legally obliged to act in clients best interest, provide clear risk information, maintain prudential safeguards, implement AML policies, and segregate clients assets from their own (EUR-Lex 2024). Additionally, MiCA mandates "white paper" publication when crypto-assets are offered publicly, outlining characteristics, functions, and risks in accessible language (EUR-Lex 2024). Critically for Single Market objectives, CASP licensing enables financial passporting across all 30 EEA countries without additional authorisations (Osimo, Barbieri, and Moise 2025; Ordekian et al. 2025).

MiCA's implementation followed a phased timeline, starting with publication in the EU Official Journal on 9 June 2023 and entering into force on 29 June 2023. Provisions governing ARTs and EMTs became applicable in June 2024, while the complete CASP authorisation framework entered full application in December 2024 (EIOPA 2024; ESAs 2025a). MiCA includes a transitional period for CASPs that already offered services under applicable national laws prior to this date, with grandfathering periods varying between 6 and 18 months across the EEA, creating regulatory heterogeneity as some member states have passed their transitional periods while others remain in transition until 1 July 2026, when full harmonisation will be achieved (ESMA 2024). During transitional periods, clients may not benefit from all MiCA protections, since national authorities have limited supervisory powers over CASPs not yet authorised, with enforcement potentially restricted to AML rules (ESMA 2025a).

2.3.Centralised Finance as the Regulatory and Empirical Focus

The crypto-asset ecosystem operates through two structurally distinct models. Centralised finance (CeFi) entities control user funds, with operational decisions made by identifiable individuals. Decentralised finance (DeFi) protocols, by contrast, operate through automated smart contracts without intermediaries (OECD 2022). Centralised exchanges have emerged as the primary service providers for retail users worldwide, increasingly mirroring traditional financial institutions, earning the designation of "crypto-banks" (Ordekian et al. 2025). The CASPs discussed in Section 2.2 operate within this CeFi model, which explains their suitability as a regulatory focal point. DeFi's distributed architecture lacks comparable entry points for regulation (CCAF 2024). According to Recital 22, "crypto-asset services provided in a fully decentralised manner without any intermediary fall outside the regulation's scope" (EUR-Lex 2024). Importantly, even crypto-assets without an identifiable issuer, such as Bitcoin, remain within MiCA's framework when accessed through CASPs (ESAs 2024).

DeFi remains a niche segment, with total value locked representing only 4 percent of global crypto-asset market capitalisation (EBA and ESMA 2025). EU adoption is particularly limited: only 7.2 million citizens (1.5 percent) use DeFi, falling behind the United States, United Kingdom, China, and India (EBA and ESMA 2025). The 2022 crypto winter, discussed in Section 2.1, also revealed structural differences between these models: all major failures concerned CeFi entities, while many DeFi protocols survived despite massive declines in collateral values (OECD 2022). Given CeFi's dominance in retail market access and MiCA's explicit focus on centralised intermediaries, this study analyses CeFi startups where regulatory effects are both theoretically expected and empirically measurable.

2.4. Venture Capital as a Signal of Regulatory Effectiveness

Within the European crypto ecosystem, centralised finance represents the largest recipient of venture capital, attracting USD 1.7 billion in 2022, more than any other segment including decentralised finance and blockchain infrastructure (Dealroom and Rockaway 2023). This concentration of investment in CeFi startups makes venture capital flows a relevant lens through which to assess MiCA's market impact, as changes in funding patterns may signal how investors perceive the regulatory environment.

Evidence from the broader fintech sector establishes a link between regulatory quality and investment. Cross-country analysis demonstrates that a 20-position improvement in regulatory quality rankings is associated with a 60 percent increase in fintech investment relative to GDP (Cornelli et al. 2021). Within fintech, the cryptocurrency and blockchain segment has experienced marked growth in investor interest (Cornelli et al. 2021). Regulatory uncertainty increases risk perception and due diligence costs for investors, while regulatory clarity can unlock major institutional capital (Arnold, Claveres, and Frie 2024). Accordingly, industry practitioners anticipated that MiCA would "accelerate the development of the crypto-

asset sector in Europe by providing a pan-European framework that ensures legal certainty for crypto asset service providers and stablecoin issuers" (Dealroom and Rockaway 2023).

The relationship between regulatory clarity and venture capital may not be uniform across funding stages, as later-stage funding relies more heavily on institutional investors with stricter due diligence requirements and greater risk aversion (Arnold, Claveres, and Frie 2024). This structural difference is reflected in broader fintech investment patterns: seed and early-stage rounds constitute approximately 90 percent of VC transactions by number but account for less than half of total investment value, with institutional capital concentrated in later-stage deals (Cornelli et al. 2021). Regulatory clarity may therefore disproportionately affect startups seeking different stages of funding rounds.

Building on this discussion, the following research questions motivate the analysis: Q1: Does the introduction of MiCA increase venture capital funding for EU-based centralised finance startups? Q2: Does the effect of MiCA on venture capital funding differ between early-stage and late-stage venture capital investments?

3. Data

3.1. Data sources and sample construction

Identifying MiCA's causal effect on venture capital funding requires firm-level data comparing EU startups subject to the regulation with comparable firms in jurisdictions without equivalent intervention. Firm-level data is sourced from Dealroom, a database tracking venture capital activity across technology sectors. The sample includes startups from Dealroom's fintech industry crypto and DeFi subindustry (Dealroom n.d.b).

The sample period spans Q1 2021 to Q2 2025. The 2021 starting point excludes pandemic-induced disruptions to VC markets. Quarterly periodisation serves two purposes: it

captures the continuous nature of venture capital activity, as funding rounds occur throughout the year rather than at fixed intervals, and it ensures balanced observation weights, since data through May 2025 would underweight the final year under annual aggregation. This yields nine pre-treatment and nine post-treatment quarters relative to MiCA's entry into force in June 2023. Table 1 defines the variables used in the analysis. The dependent variable is quarterly venture capital funding received by each startup. Funding amounts are harmonised and converted to euros using European Central Bank reference rates (ECB 2025). Following Cornelli et al. (2021), funding rounds are classified into three stages (seed, early, and late).

Table 1 - Variable definitions

	variable name	definition
Dependent variables	VC	Total VC funding: Seed/Early/Late, received by firm i in quarter t, in euros (Dealroom, 2025; ECB, 2025).
	Seed	Seed-stage funding received by firm i in quarter t, in euros (Dealroom, 2025; ECB 2025), within 0-2 years after founding, with deal sizes ranging from $1M to $4M (Dealroom, n.d.)
	Early	Early-stage funding (Early VC/Series A) received by firm i in quarter t, in euros (Dealroom, 2025; ECB 2025). Early VC occurs before Series A, when companies focus on product development and consolidation; Series A marks when a company begins scaling operations. Deal sizes range from $4M to $15M (Dealroom, n.d.).
	Late	Late-stage funding (Late VC/ Series B+) received by firm i in quarter t, in euros (Dealroom, 2025; ECB 2025). Late VC occurs when the product is already established in the market; Series B+ denotes further scaling into new markets and revenue growth. Deal sizes range from $15M to $40M (Series B), $40M to $100M (Series C), and above $100M (Series D+) (Dealroom, n.d).
Time-invariant indicator variables	EU_CeFi	Binary indicator equal to 1 for pure CeFi firms headquartered in the EEA that are not registered CASPs
	MiCA	Binary indicator variable equal to 1 for the period after Q2 2023 (MiCA entry into force)
Time-variant variables	CryptoMarketCap	Overall crypto market capitalization in quarter t, in billion euros (Statista, 2025; ECB 2025)
	CryptoExposure	Ratio of global crypto market capitalization to country GDP, varying by country c and quarter t
	$GDP(million\ euros)^1$	Gross Domestic Product of a country c in quarter t, in euros (IMF, 2025a; ECB 2025)
	$Population^1$	Total Population of a country c in quarter t (IMF, 2025b)

Notes: [1]2025 values are projections. All funding variables are transformed as $ln(1 + variable)$ in regression analysis to accommodate quarters with no funding activity.

As established in Section 2.3, this study focuses on CeFi startups. A key methodological contribution involves constructing a CeFi classification, as Dealroom does not distinguish between centralised and decentralised platforms. Drawing on OECD (2022), Ordekian et al. (2025), and CCAF (2024), startups were classified as CeFi using keywords corresponding to activities regulated under MiCA Article 3: cryptocurrency exchanges, custody services, crypto payments, fiat-crypto on-ramps, crypto lending, stablecoin issuance, and institutional crypto services. Startups tagged with decentralised finance indicators are excluded, as are those operating in both segments, to ensure clean treatment identification.

To identify CASPs already authorised under MiCA, data was collected from the ESMA Interim CASP Register (ESMA 2025g). Of 53 authorised providers listed as of November 2025, 46 were manually matched to Dealroom records. However, Dealroom reports funding at global headquarters level, while many CASPs obtained authorisation through EU subsidiaries. This mismatch renders regression analysis of CASP-specific effects unviable, therefore matched CASPs are excluded from the treatment group.

The treatment group comprises 67 CeFi startups headquartered in the European Economic Area, excluding identified CASPs. While not all EEA countries are represented in the sample, the cross-border nature of crypto-asset operations means firms headquartered in one jurisdiction typically serve clients across multiple countries (OECD 2022; IMF 2023); accordingly, the analysis operates at the EEA level. Control jurisdictions were selected based on three criteria: (i) status as established financial hubs, (ii) high concentration of fintech and crypto venture capital activity, and (iii) absence of comprehensive crypto-specific regulation during the study period. The primary control group (defined as CA + Asia in subsequent tables) consists of 59 startups from California, Singapore, and Hong Kong. These jurisdictions satisfy all three criteria: they constitute established fintech and crypto venture capital hubs with

comparable investment environment to the EU (Dealroom and Rockaway 2023); crypto-asset markets are globally integrated, with identical assets trading simultaneously across jurisdictions; and none had achieved comprehensive crypto-specific regulation during the study period: the United States remained at preparatory stages with continuing regulatory uncertainty, while Hong Kong and Singapore, though gradually formalising bespoke regulation, had not achieved full implementation comparable to MiCA (CCAF 2024). Two additional configurations support robustness analysis: 88 US startups (defined as US) provide a larger control sample from a jurisdiction where regulatory uncertainty persisted, while 70 startups from the United Kingdom and Switzerland (defined as UK + CH) serve as a placebo, jurisdictions with comparable financial development but outside MiCA's scope.

Cryptocurrency market capitalisation data is obtained from Statista (2025). The extended specification includes CryptoExposure, measuring country-level sensitivity to global cryptocurrency market fluctuations. Unlike traditional equity markets, where domestic capitalisation can be measured separately, the borderless nature of crypto-asset markets impedes a country-specific measure (OECD 2022; IMF 2023). The CryptoExposure variable adapts the logic of the market capitalisation-to-GDP ratio to this global context:

$$Crypto\ Exposure_{ct} = \frac{CryptoMarketCap_t}{GDP_{ct}} \quad (1)$$

Where the traditional Buffett Indicator divides domestic stock market capitalisation by domestic GDP to assess relative valuation (Vipond n.d.), CryptoExposure divides global cryptocurrency market capitalisation by country-level GDP. The variable does not measure crypto market overvaluation in the Buffett Indicator sense, as there is no country-specific numerator. Rather, it captures the proportional magnitude of global crypto market movements relative to each economy's size: a given change in global valuations represents proportionally greater significance for smaller economies. This interpretation aligns with IMF (2023) findings

that "cryptoization" risks are particularly pertinent for countries with smaller economic bases. Additional macroeconomic controls, GDP and population, are sourced from the IMF World Economic Outlook database (IMF 2025a; IMF 2025b). Given the high correlation between ln ($CryptoExposure_{ct}$) and ln($Population)_t$ (r = -0.97, Appendix 1), these variables are not included simultaneously in any specification.

3.2.Sample Characteristics

Table 2 presents sample characteristics by region. Treatment and control groups exhibit comparable firm maturity: EU firms average 5.57 years since founding, similar to CA+Asia (5.49 years) and UK+CH (5.99 years), supporting the identification strategy. Mean annual venture capital funding during the pre-MiCA period (2021-2022) is higher for CA+Asia (€20.86 million) and US (€25.52 million) than for EU firms (€6.35 million), reflecting deeper venture capital markets in established fintech and crypto hubs (Dealroom and Rockaway 2023; Atomico 2025). Late-stage investments account for approximately 70 percent of total funding across all regions, with the EU-US gap particularly pronounced at this stage.

Table 2 - Sample Characteristics by Region in Pre-MiCA period

		N (firms)	Age (Years)	Total VC	Early-Stage VC	Late-Stage VC
EEA	Treatment	67	5.57	6.35	1.27	4.45
CA+Asia	Primary Control	59	5.49	20.86	3.68	11.62
US	Robustness	88	6.30	25.52	1.93	19.11
UK+CH	Placebo	70	5.99	6.01	1.04	4.79

Notes: Company age measured at MiCA entry force (June 2023). VC figures are pre-MiCA (2021-2022) mean annual values in EUR millions. Early-stage combines seed and early VC; late-stage as defined in Table 1. US control includes California; California appears in both CA + Asia and US samples.

The difference-in-differences estimator identifies changes in funding trends rather than levels, so baseline differences do not threaten identification of causal effects. Appendix 2 presents quarterly venture capital funding by region, illustrating broadly parallel trajectories prior to MiCA's entry into force. The pre-MiCA period captures the 2021-2022 crypto market cycle, including the crypto winter discussed in Section 2.1. The resulting dataset comprises an

unbalanced firm-quarter panel of 126 CeFi startups (67 treatment, 59 control) in the primary specification, with full sample statistics reported in Appendix 3.

4. Empirical Strategy

4.1. Research Design

A Two-Way Fixed Effects (TWFE) Difference-in-Differences (DiD) design estimates the causal effect of MiCA on venture capital funding for EU-based centralised fintech startups. The DiD approach compares changes in funding for startups in the scope of MiCA (treatment group) against changes for startups in jurisdictions without comparable regulatory intervention (control group), before and after MiCA's entry into force in June 2023. The baseline specification estimates:

$$\ln\left(Funding_{it}^{VC}\right) = \alpha_i + \gamma_t + \beta_1 EU\_CeFi_i \times MiCA_t + \varepsilon_{it} \quad (2)$$

where α_i denotes firm fixed effects, γ_t quarter fixed effects, and ε_{it} is the error term. The coefficient β_1 captures the percentage change in quarterly venture capital funding for EU_CeFi_i startups following $MiCA_t$, relative to control startups. Standard errors are clustered at the firm level to account for serial correlation.

The identifying assumption is that absent MiCA, venture capital funding for EU_CeFi_i startups would have evolved parallel to funding for control startups. Under this assumption, the control group provides a valid counterfactual for what EU firms would have experienced without regulatory intervention. Extended specifications incorporating funding stage heterogeneity and global crypto market conditions are presented in Appendix 4.

This design features simultaneous treatment of all EU firms at a single point in time (Q2 2023), avoiding complications associated with staggered adoption. Recent econometric

literature demonstrates that TWFE estimators can yield biased estimates when treatment timing varies across units, as the overall estimate becomes a weighted average of multiple 2×2 comparisons, some receiving negative weights (Goodman-Bacon 2021). With simultaneous treatment and a never-treated control group, these concerns do not apply. A Goodman-Bacon (2021) decomposition confirms that 100 percent of the identifying variation derives from treated versus never-treated comparisons (Figure A4, Appendix 4), validating standard two-way fixed effects in this setting.

The parallel trends assumption is tested through two complementary approaches: a pre-trend coefficient testing for linear differential trends in the pre-treatment period, and a joint F-test of whether all pre-treatment interaction coefficients are jointly equal to zero. Both tests support parallel trends for total venture capital funding and early-stage funding across all control group specifications. Late-stage funding exhibits some evidence of pre-treatment divergence with CA+Asia controls: the pre-trend coefficient is significant ($p = 0.044$), though the joint F-test fails to reject the null hypothesis ($p = 0.108$), proving partial support for parallel trends. With US controls, both tests indicate pre-trend concerns. With the UK+CH placebo, parallel trends hold clearly. Late-stage results should therefore be interpreted with appropriate caution. Full results are reported in Appendix 5.

5. Results

5.1. Main Results: Impact of MiCA on VC Funding

Table 3 reports difference-in-differences estimates of MiCA's effect on quarterly venture capital funding for EU CeFi startups. The baseline specification (Column 1) yields a coefficient of 0.069 ($p < 0.05$), indicating that EU CeFi startups experienced a 6.9 percent increase in quarterly VC funding following MiCA's entry into force relative to (CA+Asia), an economically meaningful effect given the sector´s funding patterns documented in Section 3.2.

The extended specification incorporating crypto market conditions (Column 2) strengthens this finding. The treatment effect increases to 9.1 percent ($p < 0.01$), while the interaction term $EU\_CeFi_{it} \times CryptoExposure_{ct}$ is negative and significant (-0.074, $p < 0.05$). This "crypto insulation" effect indicates that post-MiCA, EU venture capital funding became less sensitive to global crypto market fluctuations: for EU startups post-MiCA, the funding response to a one percent increase in CryptoExposure is 7.4 percentage points smaller than for control startups. Investments decisions appear to be evaluated more on startups own qualities and metrics and less on whether crypto markets are booming or crashing compared to control.

Table 3 - Results of the difference-in-differences (DiD) analysis

	Dependent variable: ln (VC)					
	(1)	(2)	(3)	(4)	(5)	(6)
$EU\_CeFi_i \times MiCA_t$	0.069**	0.091***	0.069**	0.042*	0.061**	-0.018
	(0.027)	(0.030)	(0.028)	(0.024)	(0.026)	(0.019)
ln ($CryptoExposure_{ct}$)		-0.320			-0.166	
		(0.240)			(0.202)	
$EU\_CeFi_{it} \times$ ln ($CryptoExposure_{ct}$)		-0.074**			-0.066**	
		(0.029)			(0.029)	
ln$(GDP\ per\ capita)_t$			0.294			
			(0.244)			
ln$(Population)_t$			-0.119			
			(0.681)			
N	2,268	2,268	2,268	2,790	2,790	2,466
Startups	126	126	126	155	155	137
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Group	CA+Asia	CA+Asia	CA+Asia	US	US	UK+CH

Standard errors clustered by firm are reported in parentheses with $* p < 0.1$, $** p < 0.05$,$*** p < 0.01$. Time: 2021Q1-2025Q2. N refers to firm-quarter observations (firms × quarters). The dependent variable ln (VC) captures quarterly venture capital funding rounds, with unfunded quarters coded as zero. Sample: CA + Asia includes 67 EU treatment and 59 control; the US sample includes 88 US startups; the UK + CH sample includes 70 UK/Swiss.

Adding macroeconomic controls (Column 3) leaves the baseline estimate unchanged at 6.9 percent. Robustness checks with alternative control groups confirm these patterns. Using the broader US sample (Columns 4-5), the treatment effect ranges from 4.2 to 6.1 percent, smaller in magnitude but consistent in direction and significance. The UK+CH placebo (Column 6) yields a null effect (-0.018, $p > 0.10$), confirming that the observed EU funding

increase reflects MiCA specifically rather than a broader European or developed-market trends, since these jurisdictions faced similar market conditions but were not subject to MiCA.

5.2.Heterogeneity by Funding Stage

Table 4 decomposes the treatment effect by funding stage. The results reveal pronounced heterogeneity: MiCA's impact is concentrated in late-stage venture capital funding, with no detectable effect on early-stage venture capital investments.

Table 4 - Heterogeneity analysis

	Baseline Specification		With Crypto Market Controls	
	(1)	(2)	(3)	(4)
Dependent variable:	ln (Early-stage)	ln (Late-stage)	ln (Early-stage)	ln (Late-stage)
$EU\_CeFi_i \times MiCA_t$	-0.013	0.140**	-0.003	0.168**
	(0.032)	(0.063)	(0.033)	(0.068)
ln ($CryptoExposure_{ct}$)			0.030	-0.103
			(0.241)	(0.468)
$EU\_CeFi_{it} \times$ ln ($CryptoExposure_{ct}$)			-0.048	-0.129*
			(0.043)	(0.068)
N	2,268		2,268	
Firms	126		126	
Firm FE	Yes		Yes	
Time FE	Yes		Yes	
Control Group	CA+Asia		CA+Asia	

*Standard errors clustered by firm are reported in parentheses with * p < 0.1, ** p < 0.05, and *** p < 0.01. Sample: Exclusive CeFi non-CASP firms, 2021Q1-2025Q2. N refers to firm-quarter observations (firms × quarters). Control group: California, Singapore, and Hong Kong. Early-stage combines seed and early VC funding (as in Table I). Columns (1)-(2) present baseline specifications; columns (3) to (4) include crypto market controls. Results robust to alternative control groups (US, UK + CH) reported in Appendix 6.*

Early-stage funding shows null effects across all specifications. The baseline coefficient is - 0.013 ($p > 0.10$), and adding crypto market controls yields - 0.003 ($p > 0.10$). Late-stage funding, by contrast, exhibits substantial and significant effects. The baseline specification (Column 2) indicates a 14.0 percent increase in quarterly late-stage VC funding for EU CeFi startups post-MiCA ($p < 0.05$). With crypto market controls (Column 4), this effect strengthens to 16.8 percent ($p < 0.05$). The crypto insulation effect is also present for late-stage funding, with the interaction term negative and marginally significant (-0.129, $p < 0.10$). Results with

alternative control groups, reported in Appendix 6, confirm the late-stage effect with US controls (12.5 percent, $p < 0.05$), while the UK+CH placebo yields null effects for both stages.

5.3.CASP Authorization Patterns: Descriptive Evidence

While CASPs were excluded from the difference-in-differences analysis due to data limitations discussed in Section 3.1, descriptive analysis of authorization patterns provides relevant insights. Authorization activity concentrates in established financial hubs, with the Netherlands and Germany together accounting for approximately half of all licenses granted (Figure A5, Appendix 7). While all authorized CASPs necessarily maintain an EEA legal entity, not all originated in Europe: of the 46 matched firms, approximately 45 percent are headquartered outside the EEA, including startups from the United States (9), United Kingdom (6), Hong Kong, Singapore, Australia, and Switzerland that obtained authorization through EU subsidiaries.

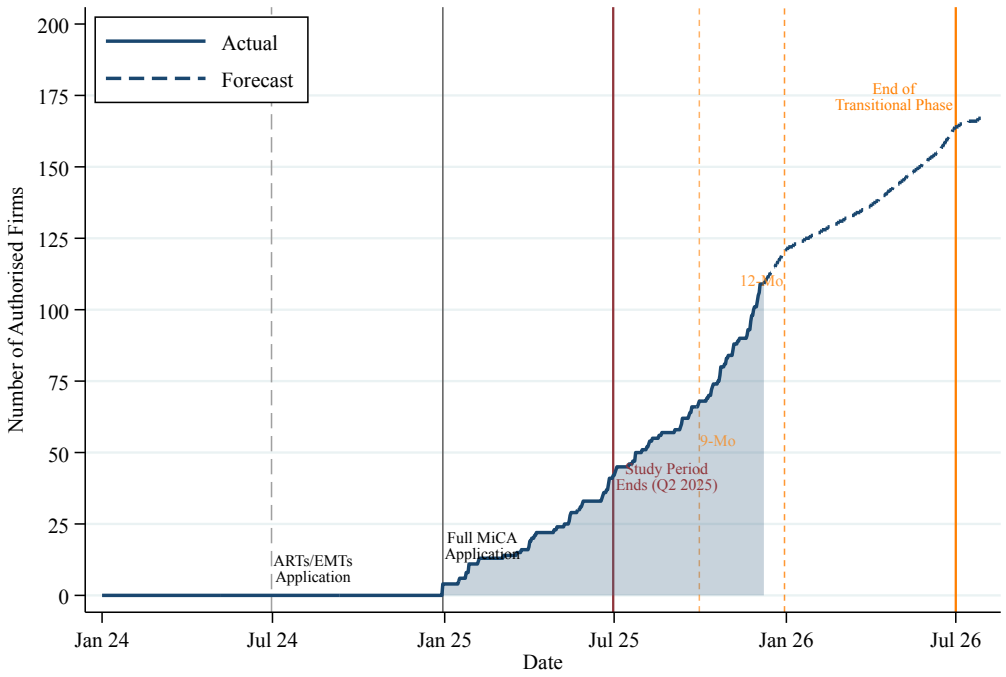

Figure 1. Cumulative CASP Authorizations and Forecast timeline. Note: Forecast based on grandfathering deadline weights and historical authorization rates. Study covers Q1 2021 – Q2 2025, with 35 CASPs authorized by the study's last observation. Post-study data: 53 CASPs by November 2025, 109 by December 2025. Grandfathering periods: 6-months (NL, FI, SI, LV, HU, PL), 9-months (SE), 12-months (DE, IE, ES, AT, LT, NO, LI), 18-month (FR, MT, CY, LU, IT, and others). Source: ESMA (2025g) and ESMA (2024)

Within the EEA, authorized CASPs differ systematically from treatment firms. CASPs are significantly older (8.85 versus 5.57 years at MiCA entry, $p = 0.014$), corresponding to founding cohorts around 2014-2015 versus 2017-2018 (Table A5, Appendix 7). This age profile suggests firms pursuing early authorization are established players rather than recent entrants, consistent with the regulatory capacity and compliance costs associated with MiCA licensing.

The CASP register expanded rapidly following full MiCA application in December 2024. Figure 1 presents cumulative authorizations alongside a forecast based on grandfathering deadline weights and historical authorization rates. At data collection in November 2025, 53 CASPs had obtained authorization; the latest register reached 109 firms by 8 December 2025. Between these updates, Germany accounted for the largest share of new registrations (14), followed by the Netherlands (8) and France, Cyprus, and Malta (5 registers each). This acceleration reflects grandfathering deadline pressure: between updates, the majority of new authorizations occurred in jurisdictions with twelve-month transitional periods facing their December 2025 deadline (Appendix 8). Two startups from the EU CeFi treatment group obtained CASP authorization after the study's final observation: Bit2Me (Spain) received authorization on 30 November 2025, and Safello (Sweden) on 13 November 2025.

6. Discussion

6.1. MiCA´s Objectives and the Evidence

This study identifies three principal findings. First, MiCA increased quarterly venture capital funding for EU CeFi startups by 6.9 to 9.1 percent relative to California, Hong Kong and Singapore. Second, this effect is concentrated entirely in late-stage investment, where funding increased by 14.0 to 16.8 percent, while early-stage funding shows no significant change. Third, post-MiCA, european venture capital funding response to global crypto market

fluctuations declined 7.4 percentage points relative to controls, suggesting reduced sensitivity to global market sentiment.

Given the characteristics of the European crypto-finance market, these results are consistent with regulatory clarity addressing a structural weakness: while Europe hosts more blockchain startups than the United States or Asia, it has historically been underweighted at later funding stages, with US companies dominating rounds exceeding USD 100 million (Dealroom and Rockaway 2023). The concentration of MiCA's effects precisely in late-stage funding suggests regulatory clarity that unlock institutional capital where Europe has been weakest.

The late-stage concentration also suggests MiCA channels capital toward established operators capable of absorbing compliance costs, a selection effect with implications for both financial stability, by directing investment toward viable firms, and market structure, by potentially favouring incumbents over undercapitalised entrants. The profile of authorised CASPs supports this interpretation: an average firm age of 8.85 years suggests early authorisations were obtained predominantly by established players capable of meeting compliance requirements. To the extent that authorisation requirements filter out non-compliant operators, the probability that consumers interact with adequately capitalised providers has increased. The crypto insulation effect provides additional evidence of MiCA's stabilising influence. Given that trust and confidence dynamics in crypto markets can trigger rapid contagion (OECD 2022), this decoupling suggests the regulatory framework partially insulates EU firms from global market sentiment.

However, interpreting these results requires caution. In traditional fintech, increased venture capital funding would constitute a straightforward positive indicator. The crypto-asset context differs fundamentally: this was an unregulated market now subject to comprehensive

regulation, and increased funding does not imply recipient firms are MiCA-compliant. By construction, the treatment group comprises firms providing services within MiCA´s regulatory scope; these firms will require CASP authorisation to continue operating legally in the EEA after transitional phase comes to an end. The observed effect captures investor response to regulatory clarity for firms facing a direct compliance pathway. Two startups in the treatment group, Bit2Me and Safello, obtained CASP authorisation after the observation period, suggesting some funding recipients actively pursue this pathway. Nevertheless, the relationship between venture capital flows and actual regulatory adherence remains an empirical question beyond this study's scope.

6.2.Persistent Risks and Policy Implications

While the relationship between venture capital flows and regulatory compliance cannot be directly assessed, MiCA is producing observable enforcement effects. In January 2025, ESMA required CASPs to cease services for non-compliant stablecoins; major exchanges including Coinbase and Crypto.com indicate subsequent delisting of Tether (USDT) from their European platforms to comply with MiCA's transparency and reserve requirements (ESMA 2025e; Coinmarketcap 2025). This enforcement action illustrates MiCA's operational effect on CASP conduct.

However, inherent market risks identified in Section 2.1 persist regardless of regulatory intervention. ESMA's 2025 risk assessment scores the crypto-asset sector as medium-high risk, with liquidity, market, contagion, and operational risks at highest concern levels (ESMA 2025f). Bitcoin represents 53 percent of total market capitalisation while exhibiting twice the volatility of gold and nearly three times that of the S&P 500 (Aerts et al. 2025; ESMA 2025f). Operational vulnerabilities remain acute: the February 2025 Bybit cyber-attack resulted in USD 1.4 billion in losses, the largest crypto hack recorded (Cazenave 2025). Bybit, which

subsequently obtained CASP authorisation in May 2025 (ESMA 2025g), illustrates the scale of potential operational risks that major crypto-asset service providers may face. Money laundering and terrorist financing risks remain high due to cross-border operations, instant global transfers, and products offering high anonymity (ESMA 2025g).

MiCA's protective framework also does not provide the same safeguards as regulation over traditional financial products, such as MiFID II (ESMA 2025b). ESMA considers that no CASPs should be classified as low-risk, given direct retail exposure and limited track records in regulatory compliance (ESMA 2025g). CASPs offering both MiCA-regulated and unregulated services create additional concern: the "halo effect" risk whereby regulated status provides misguided reassurance about unregulated products on the same platform (ESMA 2025d).

Given the borderless nature of crypto-asset markets, MiCA's effectiveness ultimately depends on international coordination. The 2025 FSB and IOSCO thematic review identified uneven implementation and enforcement gaps across 40 jurisdictions, concluding that enhanced international cooperation remains essential (FSB and IOSCO 2025).

6.3.Limitations and Future Research

Some limitations warrant acknowledgment. Venture capital data may underrepresent startups in a previously unregulated industry with limited disclosure requirements, a limitation intrinsic to market characteristics rather than data sources. Limited prior research on crypto-fintech venture capital constrained methodological benchmarking. Late-stage specifications exhibit some pre-trend concerns requiring cautious interpretation. The sample comprises firms averaging 5-6 years at MiCA entry, some of which may transition to non-VC funding sources during the observation period. This lifecycle effect applies equally to treatment and control

groups and does not bias the difference-in-differences estimate, though it may contribute to the overall decline in late-stage VC observed across jurisdictions post-2022 (Appendix 2). Most fundamentally, results capture investor response to regulatory clarity, not firm-level compliance outcomes, a distinction that cannot be resolved fully while transitional periods remain ongoing.

Future research would benefit from examining market dynamics after full MiCA harmonisation in July 2026, including entry, exit, and concentration patterns. Analysis of authorised CASPs, tracking headquarters origin, post-licence performance, and compliance outcomes, would complement this study's focus on non-CASP startups. Longer time horizons will permit direct assessment of consumer protection outcomes.

7. Conclusion

The European Union's Markets in Crypto-Assets Regulation represents the first comprehensive regulatory framework for an industry that had operated largely outside supervisory perimeters, exposing consumers to risks that materialised during multiple market downturns. By establishing uniform rules across member states, MiCA directly addresses the regulatory fragmentation that has been identified as a barrier to European competitiveness, replacing heterogeneous national requirements with a harmonised framework enabling financial passporting across the Single Market.

This study provides early empirical evidence on MiCA's market impact, estimating that the regulation increased quarterly venture capital funding for EU-based centralised fintech startups by 6.9 to 9.1 percent, with heterogeneity analysis indicating that effects concentrated in late-stage investment at 14.0 to 16.8 percent. The findings address both research questions motivating this analysis: MiCA's entry into force is associated with increased venture capital funding, and this effect operates through institutional capital at later funding stages rather than

early-stage venture capital investment. The late-stage concentration carries particular significance: it suggests regulatory clarity unlocks capital precisely where Europe has historically underperformed, potentially strengthening European competitiveness in digital finance.

However, these results require careful interpretation. Increased venture capital funding captures investor response to regulatory clarity, not firm-level compliance with MiCA requirements. The selection effect channelling capital toward established operators may strengthen financial stability by directing investment toward viable firms, yet the relationship between funding flows and actual consumer protection outcomes remains an empirical question that cannot be resolved while transitional periods continue.

MiCA establishes a protective framework, but one operating substantially below traditional financial services standards. Inherent market risks persist regardless of regulatory intervention: volatility, concentration, operational vulnerabilities, and financial crime exposure. Critically, global regulatory fragmentation limits MiCA's effectiveness: the borderless nature of crypto-asset markets means that risks connected to money laundering, terrorist financing, and tax avoidance cannot be fully mitigated through regional regulation alone. While the EU has positioned itself as a first mover, the framework would benefit substantially from comparable standards developing internationally, enabling coordinated supervision and reducing regulatory arbitrage opportunities.

With grandfathering periods concluding across member states and full harmonisation expected for July 2026, MiCA remains in transition. The acceleration of CASP authorisations, from 53 in November 2025 to 109 by December 2025, signals active market response to regulatory deadlines. Continued evaluation will be necessary as the regulatory perimeter consolidates.

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Appendix

Appendix 1

Table A1 – Correlation coefficients

Variables	ln (VC)	ln (Early-tage)	ln (Late-stage)	ln (CryptoExposure)	ln (GDP per capita)	ln (Population)
ln (VC)	1					
ln (Early-stage)	-0.0166	1				
ln (Late-stage)	0.0420	-0.0258	1			
ln (CryptoExposure)	-0.0208	0.0234	-0.0497	1		
ln (GDP per capita)	0.0069	-0.0277	0.0364	-0.2527	1	
ln (Population)	0.0198	-0.0297	0.0392	-0.9650	0.0600	1

Correlation coefficients, using N = 2,268 firm-quarter observations. 5% critical value (two-tailed) = 0.0412. Sample: Pure CeFi non-CASP firms, 2021Q1 – 2025Q2 (CA – Asia control). Early-stage combines seed and early VC funding. The high correlation between ln (CryptoExposure) and ln (Population) (-0.965) reflects mechanical construction; these variables are never included simultaneously in any specification.

Appendix 2

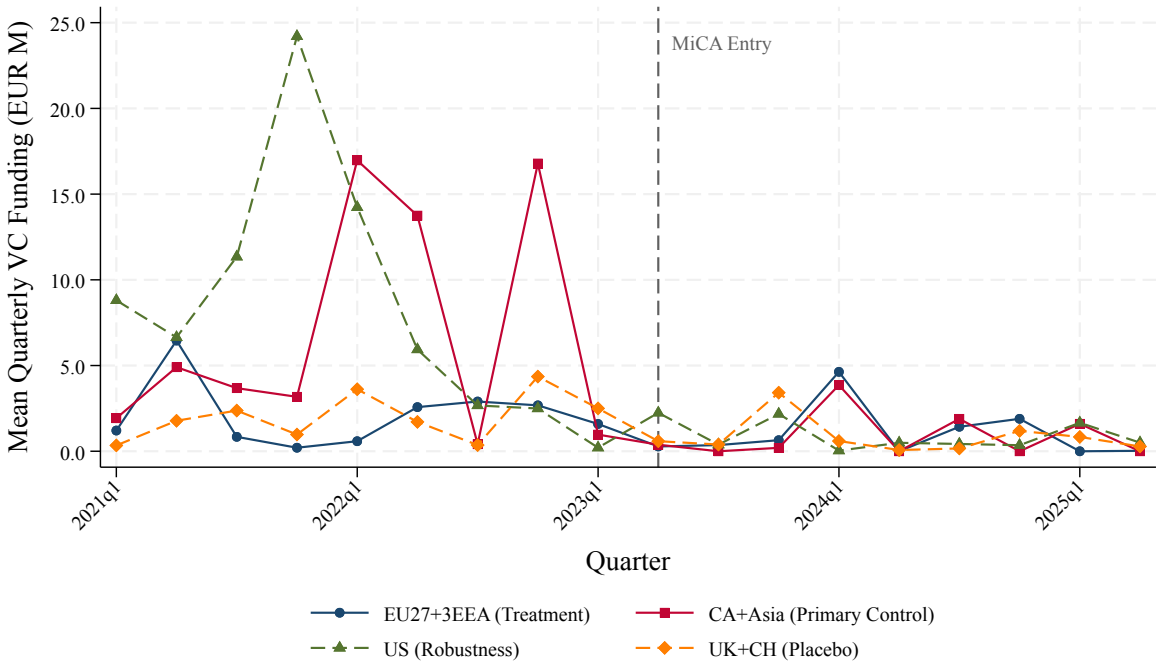

Figure A1: Total Venture Capital Funding by Region. Notes: Mean quarterly VC funding for CeFI startups, Q1 2021 to Q2 2025. Vertical dashed line indicates MiCA entry into force (Q2 2023).

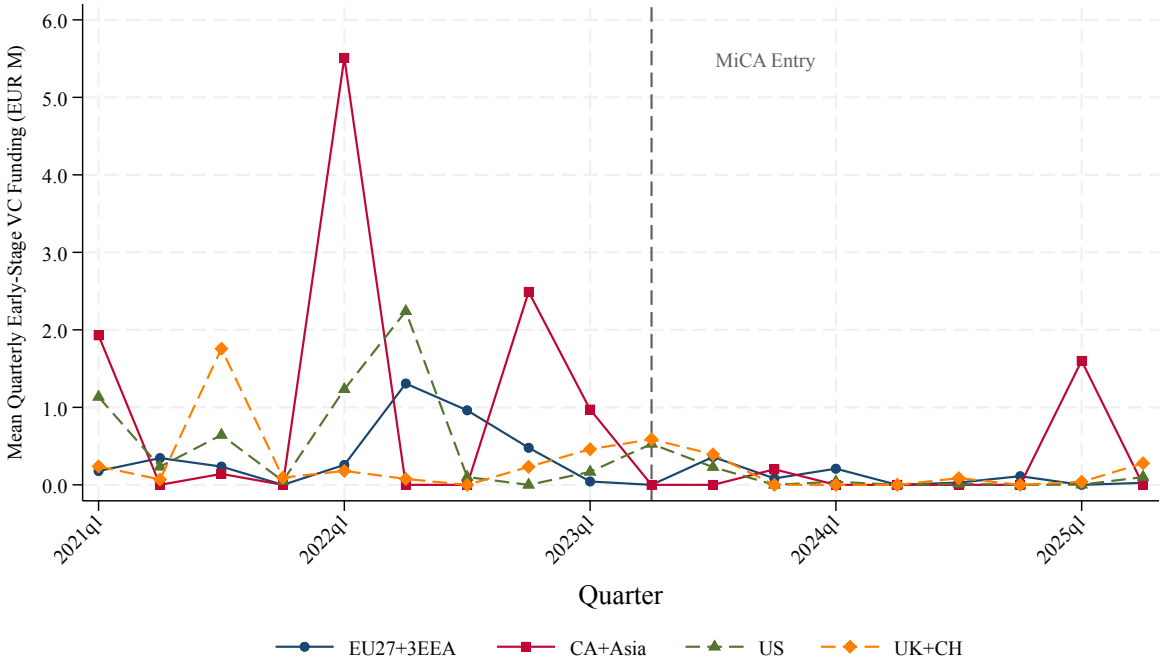

Figure A2: Early-Stage Venture Capital Funding by Region Notes:Mean quarterly early-stage VC funding (seed and early combined) for CeFi startups, Q1 2021 to Q2 2025. Vertical dashed line indicates MiCA entry into force (Q2 2023).

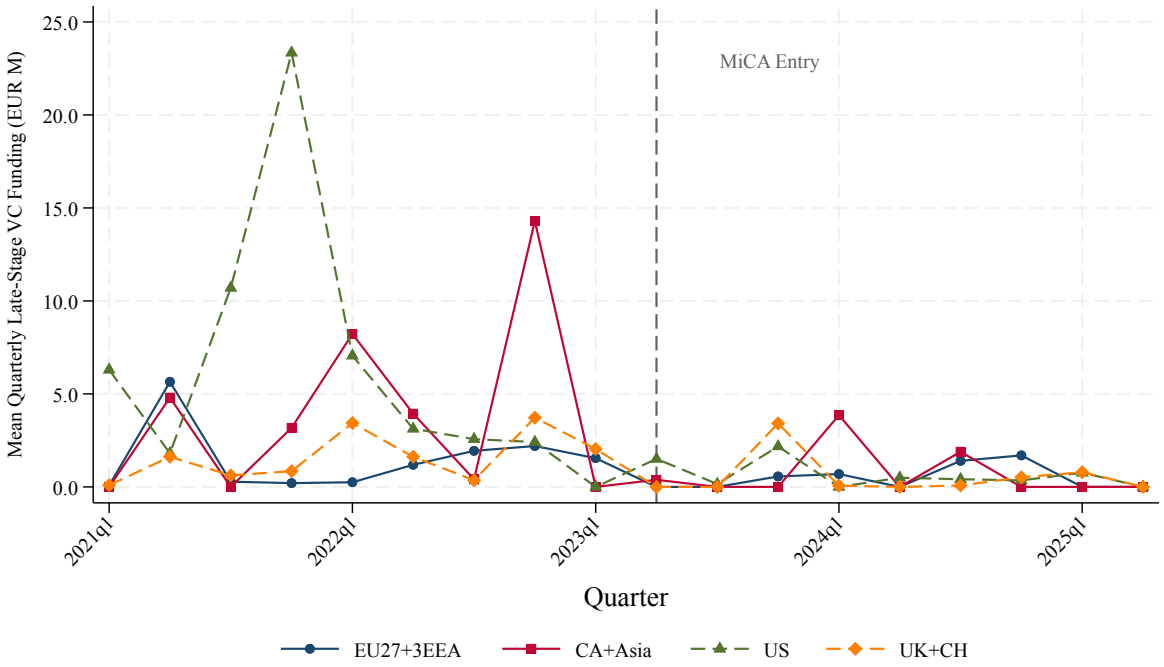

Figure A3: Late-Stage Venture Capital Funding by Region Notes: Mean quartely late-stage VC funding (Series B and above) for CeFi startups, Q1 2021 to Q2 2025. Vertical dashed line indicates MiCA entry into force (Q2 2023).

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Appendix 3

Table A2 – Summary Statistics

	Mean	Median	Minimum	Maximum	Standard deviation
Firm-quarter data (N=2,268)	Panel A: Time-variant variables				
Venture Capital	2 713 755	0	0	352 674 592	18 711 683
Early-Stage	385 186	0	0	88 168 648	3 912 604
Late-Stage	1 851 733	0	0	352 674 592	16 848 769
Crypto Market Cap (millions)	1 738 269	1 571 583	908 771	3 088 266	674 317
Crypto Exposure	10	1	0	370	33
	Panel B: Time-invariant variables				
GDP per capita	60 717	58 757	12 296	203 806	26 854
Population	111 679 192	19 042 002	39 000	341 697 952	141 677 117
GDP (millions)	7 628 565	1 123 323	6 515	27 146 314	10 650 048
	Panel C: Treatment indicators				
EU CeFi	0.53	1.00	0	1	0.50
Post-MiCA	0.50	0.50	0	1	0.50
Years 2021 Q1 - 2025 Q2, quartely					

Sample includes 126 CeFi non-CASP firms (67 EU treatment, 59 California + Asia Control). Early-Stage combines Seed and Early-stage funding. Crypto Exposure is the ratio of global market capitalization to country GDP. All monetary values in euros.

Appendix 4

To analyse heterogeneous effects across the startup lifecycle, Equation (3) estimates stage-specific treatment effects:

$$\ln\left(Funding_{it}^{stage}\right) = \alpha_i + \gamma_t + \beta EU\_CeFi_i \times MiCA_t + \varepsilon_{it} \quad (3)$$

where $stage \in \{Early, Late\}$

The extended specification incorporates global crypto market conditions:

$$\ln(Funding_{it}^{VC}) = \alpha_i + \gamma_t + \beta_1 EU\_CeFi_i \times MiCA_t + \beta_2 CryptoExposure_{ct} + \beta_3 EU\_CeFi_{it} \times CryptoExposure_{ct} + \varepsilon_{it} \quad (4)$$

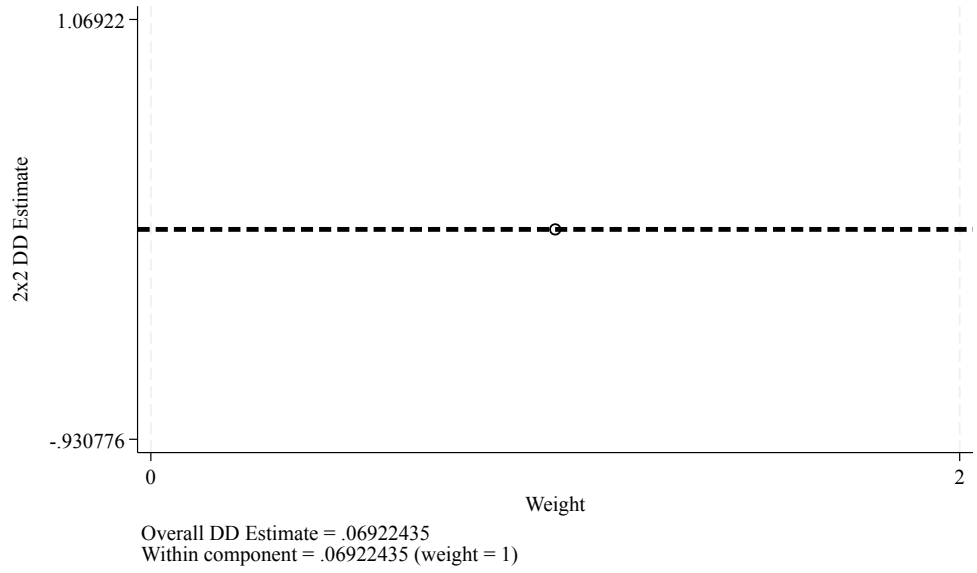

Figure A4: Goodman-Bacon (2021) Decomposition of the difference-in-difference estimate. The decomposition shows that the entire weight (1.00) is assigned to comparisions between treated EU CeFi firms and never-treated control firms. No weight is assigned to potentially problematic timing-based comparisons, validating the use of standard two-way fixed effects in this setting.

Appendix 5

Table A3 – Tests for Pre-Treatment Parallel Trends

Dependent Variable	Pre-trend Coef.	(SE)	p-value	Joint F-stat.	F p-value
Panel A: Main Specification (California, Singapore, Hong Kong)					
ln (VC)	-0.004	(0.009)	0.630	1.29	0.262
ln (Early-stage)	0.009	(0.010)	0.381	1.54	0.150
ln (Late-stage)	0.028	(0.014)	0.044**	1.69	0.108
Panel B: Robustness - United States as Control					
ln (VC)	0.003	(0.009)	0.698	1.14	0.342
ln (Early-stage)	0.014	(0.009)	0.092*	1.45	0.182
ln (Late-stage)	0.040	(0.014)	0.006***	2.29	0.024**
Panel C: Robustness - United Kingdom and Switzerland as Control					
ln (VC)	-0.014	(0.006)	0.029**	1.24	0.288
ln (Early-stage)	0.009	(0.009)	0.282	1.67	0.110
ln (Late-stage)	-0.002	(0.010)	0.862	0.41	0.911

*Notes: The pre-trend coefficient tests for a linear differential trend in the pre-treatment period. The joint F-test test whether all pre-treatment interaction coefficients are jointly equal to zero. Insignificant p-values support parallel trends assumption. All specifications include firm and time fixed effects. Standard errors clustered by firm. * p < 0.10, ** p < 0.05, *** p < 0.01*

Appendix 6

Table A4 – Robustness: Alternative Control Groups

	US Control		UK + Switzerland Control	
	(1)	(2)	(3)	(4)
Dependent variable:	ln (Early-stage)	ln (Late-stage)	ln (Early-stage)	ln (Late-stage)
$EU\_CeFi_i \times MiCA_t$	-0.041*	0.125**	-0.043	0.017
	(0.025)	(0.051)	(0.026)	(0.043)
N	2,790		2,466	
Firms	155		137	
Firm FE	Yes		Yes	
Time FE	Yes		Yes	
Control Group	US		UK+CH	

*Standard errors clustered by firm are reported in parentheses with * p < 0.1, ** p < 0.05, and *** p < 0.01. Sample: Exclusive CeFi non-CASP firms, 2021Q1-2025Q2. N refers to firm-quarter observations (firms × quarters). Early-stage combines seed and early VC funding (as in Table I). Columns (1)-(2) present baseline specifications for US firms as control group; columns (3) to (4) use UK and Swiss firms. UK + CH serves as a placebo test: these jurisdictions face similar market conditions but not subject to MiCA.*

Appendix 7

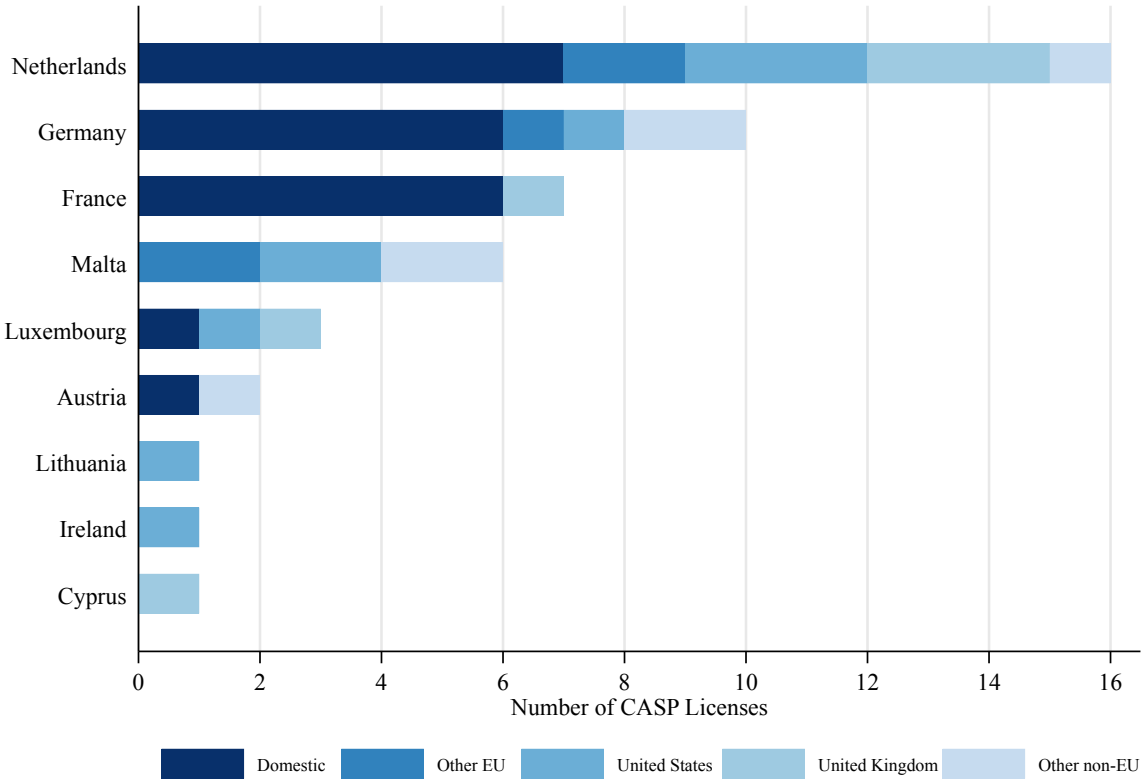

Figure A5 – CASP License Jurisdictions by Firm Headquarters Origin. Note:Source ESMA (2025g) Dealroom (2025). Domestic means same country as license (N =21); Other EU when HQ differs from license country (N = 5);United States (9); United Kingdom (6); Other non-EU (6): Australia, Hong Kong, Singapore, and Switzerland; Total N = 47

Table A5 – Descriptive statistics on CASP and EU CeFi fintech startups

	CASP	EU CeFi	p-value
Panel A: Firm Characteristics			
N	46	67	
Company age (years)	8.85 (8.65) [22]	5.57 (2.50) [52]	0.014**
Revenue (€M)	196.87 (309.50) [7]	2.39 (6.97) [12]	0.040**

*Note: Panel A reports Mean (Standard Deviation) [N]. Company age at MiCA entry into force (Q2 2023). Revenue data available for subset of firms; results are not representative of sample, thus should be interpreted with caution due to small sample size. ** $p < 0.05$ from two sample t-test comparing group means under the null hypothesis of no difference.*

Appendix 8

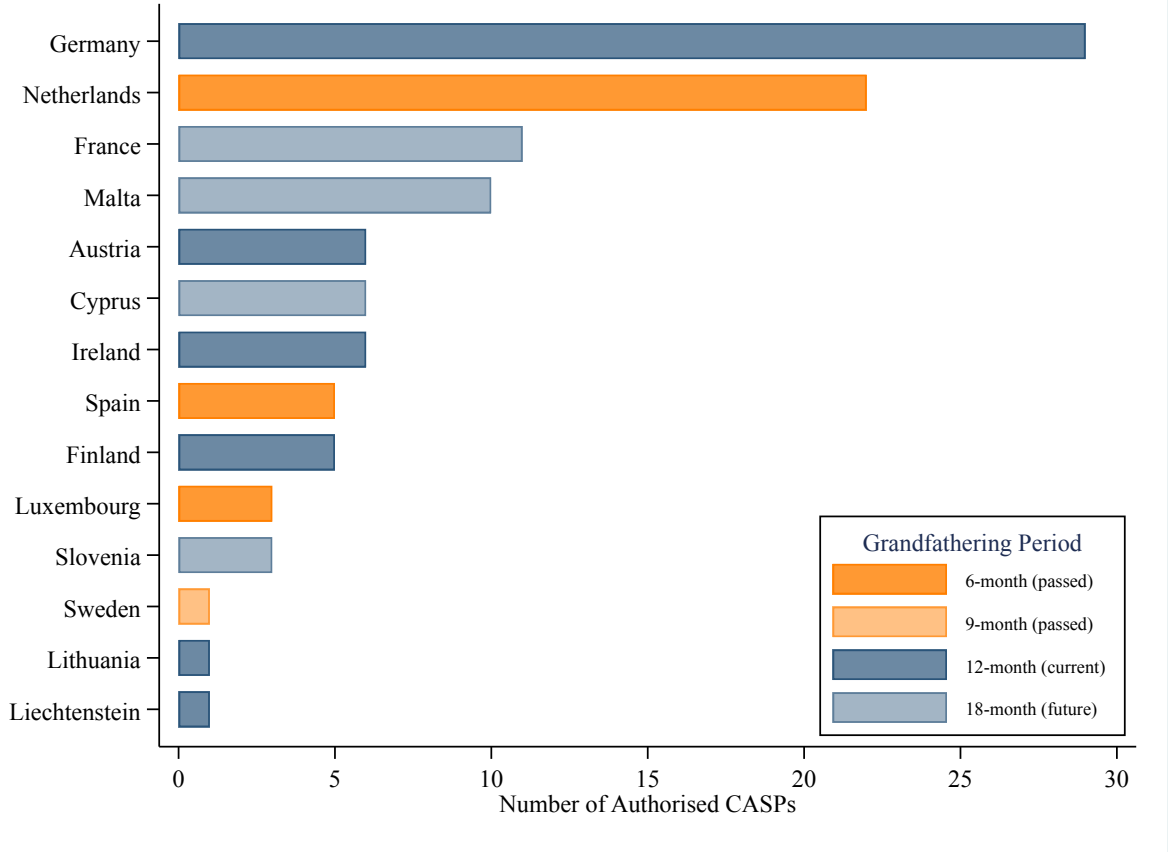

Figure A6 - CASP Authorizations by Country and Grandfathering Period. Note: Bars show number of authorized CASPs per country as of 8 December 2025. Colors indicate grandfathering period length under MiCA Article 143. Correlation between grandfathering period and CASP count: r = - 0.06 (n =14 countries with at least one authorization). Source (2025g); ESMA (2024).