

How Regulatory Information Relates to Crypto Market Adjustment: The Role of MiCA-Specific Attention in Stablecoin Markets

Ningyu Zhou^{1*}, Zhanat Mukhtarovna Zhusupova²

Al-Farabi Kazakh National University, Almaty, Kazakhstan

Corresponding Author: Ningyu Zhou chzhou_ninyuy@live.kaznu.kz

ARTICLE INFO

Keywords: Cryptocurrency Regulation; MiCA; Investor Attention; Regulatory Information; Stablecoins

Received : 27, July

Revised : 25, August

Accepted: 23, September

©2026 Zhou, Zhusupova: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

Regulatory information has become increasingly relevant in cryptocurrency markets, but how such information is incorporated into market outcomes remains unclear. This paper examines the role of MiCA-specific attention in stablecoin market adjustment using the European Union's Markets in Crypto-Assets Regulation (MiCA) as an institutional setting. A MiCA-specific Regulatory Attention Index (MRAI) is constructed using Google Trends and Wikipedia page views. The empirical analysis combines regulatory milestone models, attention interaction models, lagged attention models, and dynamic adjustment analysis to examine the relationship between MiCA developments, regulatory attention, and stablecoin market changes. The results show that different MiCA regulatory stages are associated with different patterns of stablecoin market adjustment. The interaction between MiCA regulatory milestones and MRAI is positive and statistically significant, suggesting that regulatory developments are more strongly associated with market adjustment when MiCA-related attention is higher. The lagged attention analysis shows that regulatory attention contains information associated with subsequent stablecoin market adjustment.

INTRODUCTION

Cryptocurrency markets operate in an environment where regulatory information influences market expectations. Unlike traditional financial markets, crypto markets are global and operate across different regulatory systems. As governments introduce new rules, market participants need to evaluate how regulatory developments may affect asset availability, compliance conditions, and future market activity.

The European Union's Markets in Crypto-Assets Regulation (MiCA) provides a useful setting to examine how regulatory information enters cryptocurrency markets. MiCA establishes a common regulatory framework for crypto-assets and introduces specific requirements for crypto-asset issuers and service providers. The stablecoin provisions, which became applicable on June 30, 2024, represent an important regulatory milestone because stablecoins play a central role in cryptocurrency market infrastructure.

Previous research shows that policy-related information can affect financial markets by changing expectations about future conditions. Policy uncertainty affects asset prices because investors update their beliefs about future risks and economic outcomes (Baker et al., 2016; Pastor and Veronesi, 2012). Financial markets also respond to the information contained in policy actions relative to market expectations (Bernanke and Kuttner, 2005). Similar effects have been documented in cryptocurrency markets, where regulatory announcements are associated with changes in returns, volatility, liquidity, and trading behavior (Cumming et al., 2025; Conlon, Corbet, and Oxley, 2024.; Borri and Shakhnov, 2026).

Less is known about the process through which regulatory information affects cryptocurrency markets. A regulatory event does not automatically change market outcomes. Market participants first need to recognize the information, evaluate its implications, and incorporate it into their decisions. Investor attention may therefore influence the extent to which regulatory information is reflected in market dynamics.

Attention has been widely examined in financial markets. Barber and Odean (2008) show that attention affects which assets investors consider and trade. Da, Engelberg, and Gao (2011) demonstrate that internet search activity provides a measure of investor attention and contains information related to future market activity. Tetlock (2007) shows that information environments can be quantified through media-based measures and linked to financial market outcomes. These studies suggest that information availability alone is not sufficient for market effects; attention allocation also matters.

This mechanism may be particularly relevant in cryptocurrency markets, where information spreads rapidly through online channels. Liu and Tsyvinski (2021) show that cryptocurrency returns are related to crypto-specific factors, including measures associated with investor attention. Studies using social media and sentiment measures also find that online information environments influence cryptocurrency market behavior (Cary, 2024; Zhang et al., 2024). However, limited evidence exists on whether attention to regulatory information affects cryptocurrency market adjustment.

This paper examines whether MiCA-related attention affects the relationship between regulatory developments and stablecoin market adjustment. A MiCA-specific Regulatory Attention Index (MRAI) is constructed using Google Trends and Wikipedia page views. The analysis focuses on three regulatory milestones: the political agreement stage, the formal adoption stage, and the application of stablecoin-related provisions. Stablecoin market adjustment is measured using changes in stablecoin market capitalization.

The empirical design combines regulatory milestone models, attention interaction models, lagged attention models, and dynamic adjustment analysis. The results show that different MiCA regulatory stages are associated with different patterns of stablecoin market adjustment. The interaction between MiCA milestones and MRAI is positive and statistically significant, indicating that regulatory developments are more strongly associated with market adjustment when MiCA-related attention is higher. The lagged attention analysis provides additional evidence that regulatory attention precedes subsequent market adjustment.

The analysis does not treat MiCA as a direct market shock. Instead, it examines how regulatory information becomes associated with market outcomes through attention and information processing. The findings suggest that the market relevance of regulation depends not only on formal implementation dates but also on how market participants receive and evaluate regulatory information.

The remainder of the paper is organized as follows. Section 2 reviews related literature. Section 3 describes the institutional background of MiCA. Section 4 develops the conceptual framework and hypotheses. Section 5 presents the data and variable construction. Section 6 explains the empirical methodology. Section 7 reports the results, followed by discussion and conclusion.

LITERATURE REVIEW

Research in financial markets shows that regulatory information can influence asset prices, investment decisions, and market expectations. Policy changes create uncertainty because investors need to evaluate how new rules may affect future economic conditions and asset values. Baker, Bloom, and Davis (2016) show that policy uncertainty can be measured through observable indicators and that changes in policy uncertainty are associated with economic and financial outcomes. Pastor and Veronesi (2012) develop a framework in which uncertainty about government policy affects asset prices through changes in expected future cash flows and risk. Bernanke and Kuttner (2005) further show that financial markets respond not only to policy actions but also to the information contained in those actions relative to market expectations.

Cryptocurrency markets provide a different environment for examining regulatory information because digital assets operate continuously across jurisdictions and are highly dependent on market access and regulatory conditions. Existing studies examine how regulatory developments affect cryptocurrency returns, volatility, liquidity, and market structure. Cumming, Fuchs, and Momtaz (2025) examine international cryptocurrency regulation and show that regulatory quality and enforcement conditions are related to crypto

market risk and return characteristics. Conlon, Corbet, and Oxley examine the influence of MiCA-related regulatory announcements on cryptocurrency markets and document market responses around regulatory events. Borri and Shakhnov (2026) provide evidence that MiCA affects stablecoin trading patterns by changing the regulatory conditions faced by crypto exchanges.

These studies show that regulatory events contain information that can affect cryptocurrency markets. However, most existing research focuses on the direct relationship between regulatory developments and market outcomes. Less is known about the process through which regulatory information becomes relevant to market participants. A regulatory event does not necessarily produce an immediate market response. Investors need to identify the information, evaluate its implications, and incorporate it into their decisions. This suggests that attention may influence how regulatory information is reflected in market dynamics.

Investor attention has been widely examined as a channel through which information affects financial markets. Because investors face limited attention capacity, not all available information receives the same level of processing. Barber and Odean (2008) show that attention affects which assets investors consider and trade. Da, Engelberg, and Gao (2011) demonstrate that internet search activity can be used as a measure of investor attention and contains information related to future market activity. Tetlock (2007) further shows that information environments can be quantified and linked to financial market outcomes through text-based measures. These studies suggest that the existence of information alone may not determine market responses; the attention allocated to that information also matters.

The role of attention may be particularly relevant in cryptocurrency markets because digital assets rely heavily on online information channels, public discussion, and rapid information diffusion. Liu and Tsyvinski (2021) show that cryptocurrency returns are related to crypto-specific factors, including measures associated with investor attention. Studies using social media and sentiment measures also find that online information environments influence cryptocurrency market behavior. Cary (2024) examines cryptocurrency investor sentiment using Twitter data and natural language processing methods, while Zhang et al. (2024) construct cryptocurrency sentiment measures through text analysis and examine their relationship with cryptocurrency returns.

Although previous studies provide evidence that attention and information environments influence cryptocurrency markets, limited evidence exists on the role of regulatory attention. Regulatory information differs from general market information because it reflects institutional changes that may affect compliance requirements, market access, and expectations about future market conditions. Understanding regulatory attention may therefore help explain why similar regulatory events can generate different market responses.

Stablecoins provide a suitable setting for examining this mechanism because they are directly affected by regulatory requirements and represent an important component of cryptocurrency market infrastructure. Stablecoins connect digital asset markets with traditional financial systems through trading,

settlement, and payment functions. Ahmed et al. (2025) discusses the increasing role of stablecoins in payment systems and financial markets, while Ahmed and Aldasoro (2025) show that stablecoin flows can influence demand conditions in traditional safe asset markets.

The existing literature provides evidence that regulation, attention, and information environments influence financial markets separately. Less is known about how regulatory information interacts with investor attention in cryptocurrency markets. This paper examines this relationship by focusing on MiCA developments and stablecoin market adjustment. The analysis considers regulatory events as information that requires market attention and evaluation rather than as a direct market shock.

Institutional Background: Mica Regulation

Provide clear and concise versions of your methods of conducting research, population and samples, and data analysis tools.

The European Union's Markets in Crypto-Assets Regulation (MiCA) provides an institutional setting for examining how regulatory information enters cryptocurrency markets. Before MiCA, crypto-asset regulation in Europe was characterized by different national approaches, which created uncertainty for market participants operating across jurisdictions. MiCA introduced a common regulatory framework for crypto-assets and established requirements for crypto-asset issuers and crypto-asset service providers within the European Union.

MiCA is suitable for studying regulatory information transmission because the regulation developed through several observable stages. Rather than representing a single unexpected policy shock, MiCA progressed through a series of regulatory milestones that gradually provided information about future market conditions. Market participants could observe these developments, update their expectations, and adjust their behavior before specific rules became applicable.

The first milestone was the political agreement reached on June 30, 2022. This stage provided an early signal that a unified European regulatory framework for crypto-assets was likely to be established. Although the final legal requirements were not yet implemented, the agreement reduced uncertainty about the future direction of cryptocurrency regulation.

The second milestone was the formal adoption of MiCA in 2023. The adoption stage confirmed the regulatory framework and clarified future requirements for crypto-asset issuers, service providers, and market participants. This stage represented a transition from regulatory discussion to a confirmed legal framework.

The third milestone was the application of stablecoin-related provisions on June 30, 2024. These provisions introduced specific requirements for asset-referenced tokens (ARTs) and electronic money tokens (EMTs), making stablecoins one of the main market segments directly affected by MiCA. Since stablecoins provide important functions in cryptocurrency trading, settlement,

and market infrastructure, changes in their regulatory environment may influence market expectations and activity.

Previous research shows that regulatory developments can affect cryptocurrency markets through changes in expected compliance costs, market access, and asset availability. Cumming et al. (2025) examine the relationship between cryptocurrency regulation and market outcomes, while Conlon et al. examine market responses to MiCA-related regulatory announcements. Borri and Shakhnov (2026) provide evidence that MiCA affects stablecoin trading patterns by changing the conditions faced by crypto exchanges. These findings suggest that regulatory developments may influence market structure even when the overall market response is limited.

MiCA also provides a useful setting for examining anticipation effects. Because regulatory information became available before formal implementation dates, market participants could incorporate expectations about future regulatory conditions into their decisions. This process is consistent with the view that financial markets respond to information about future conditions rather than only completed policy actions (Bernanke and Kuttner, 2005).

Stablecoins are the focus of this study because they represent an important connection between cryptocurrency markets and broader financial systems. Their use in trading, payments, and settlement makes regulatory changes particularly relevant for market participants. Ahmed et al. (2025) discuss the increasing role of stablecoins in payment systems and financial markets, while Ahmed and Aldasoro (2025) show that stablecoin flows can influence demand conditions in traditional safe asset markets.

The MiCA setting therefore allows the analysis to examine not only whether regulatory milestones are associated with stablecoin market adjustment, but also whether market attention influences the strength of this relationship. By combining MiCA milestones with a MiCA-specific attention measure, the analysis focuses on how regulatory information is received and processed by market participants.

Conceptual Framework and Hypotheses

Regulatory events can affect financial markets through different channels. A direct interpretation assumes that new regulations change market conditions and generate corresponding market responses. However, regulatory information may influence markets before formal implementation because investors continuously evaluate future regulatory conditions. Therefore, the market response to regulation depends not only on the regulatory event itself but also on whether market participants recognize and process the information.

This paper develops a regulatory information framework in which MiCA milestones provide information about future market conditions, while MiCA-specific attention determines the extent to which this information is incorporated into stablecoin market adjustment. The framework is based on three assumptions. First, regulatory milestones provide observable information about changes in the institutional environment. Second, market attention toward

regulatory information varies over time. Third, stronger attention increases the likelihood that regulatory information is reflected in market outcomes.

The first relationship concerns whether MiCA regulatory milestones are associated with stablecoin market adjustment. Previous studies show that policy-related information can affect asset prices because investors update expectations about future risks, opportunities, and constraints (Pastor and Veronesi, 2012; Bernanke and Kuttner, 2005). In cryptocurrency markets, regulatory announcements may influence expectations about compliance requirements, market access, and asset availability (Cumming et al., 2025; Conlon et al.). Since MiCA developed through several observable stages, different regulatory milestones may contain different information for market participants.

The first hypothesis is:

H1: MiCA regulatory milestones are associated with stablecoin market adjustment.

The second relationship focuses on the role of regulatory attention. The existence of regulatory information does not necessarily lead to immediate market adjustment. Investors face limited attention capacity and must decide which information to process. Barber and Odean (2008) show that attention affects investment decisions, while Da et al. (2011) demonstrate that online search activity can measure investor attention and contains information related to future market behavior.

Regulatory attention differs from general market attention because it reflects a specific focus on institutional developments. When market participants actively search for and process regulatory information, regulatory events may have stronger associations with market outcomes. In cryptocurrency markets, where information spreads rapidly through online channels, attention may influence how regulatory developments are incorporated into asset prices and market conditions (Liu and Tsyvinski, 2020).

The second hypothesis is:

H2: MiCA-specific regulatory attention strengthens the association between MiCA regulatory milestones and stablecoin market adjustment.

The final part of the framework examines the timing of information transmission. A potential concern in attention-based analysis is that market changes may themselves increase attention. To examine whether attention precedes market adjustment, this paper uses lagged measures of MiCA-specific attention.

Information processing in financial markets is not always immediate. Investors may require time to interpret regulatory developments, evaluate their implications, and adjust their positions. Previous research shows that attention measures can contain information about future market outcomes (Da et al., 2011; Tetlock, 2007). If lagged regulatory attention remains associated with later stablecoin market adjustment, this provides evidence consistent with a process in which regulatory information is processed before market changes occur.

The third hypothesis is:

H3: Lagged MiCA-specific regulatory attention predicts subsequent stablecoin market adjustment.

The framework does not assume that MiCA directly causes stablecoin market changes. Instead, it examines whether regulatory information becomes associated with market outcomes through attention and information processing. The empirical analysis therefore evaluates the relationship between regulatory milestones, MiCA-specific attention, and stablecoin market adjustment.

Data and Variable Construction

This section describes the data used to examine the relationship between regulatory information, attention, and stablecoin market adjustment. The dataset combines MiCA regulatory milestones, a MiCA-specific Regulatory Attention Index (MRAI), stablecoin market indicators, and cryptocurrency market control variables.

The sample period covers the development and implementation process of MiCA, including periods before and after the main regulatory milestones. The analysis focuses on stablecoin markets because stablecoins are directly affected by MiCA requirements and represent an important component of cryptocurrency market infrastructure.

The main regulatory variables are constructed based on three MiCA milestones. The first milestone is the political agreement reached on June 30, 2022, which represents the stage when the future direction of European crypto regulation became clearer. The second milestone is the formal adoption of MiCA in 2023, which confirmed the regulatory framework and reduced uncertainty regarding future requirements. The third milestone is the application of stablecoin-related provisions on June 30, 2024, which introduced specific requirements for asset-referenced tokens (ARTs) and electronic money tokens (EMTs). Three indicator variables are constructed to represent these regulatory stages. Each variable equals one after the corresponding milestone date and zero otherwise.

The main explanatory variable is the MiCA-specific Regulatory Attention Index (MRAI). The purpose of MRAI is to measure the extent to which market participants focus on MiCA-related information over time. Following previous research, online information activity is used as a measure of investor attention (Da et al., 2011).

The MRAI combines two sources of online information activity: Google Trends search intensity and Wikipedia page views. Google Trends captures changes in search activity for MiCA-related terms, reflecting public demand for regulatory information. The search terms include “MiCA,” “MiCAR,” “Markets in Crypto-Assets,” and “EU crypto regulation.” Wikipedia page views for the Markets in Crypto-Assets Regulation page provide an additional measure of information exposure.

The two attention measures are standardized and combined into the main index:

$$MRAI_t = \frac{GT_t + Wiki_t}{2}$$

where GT_t represents standardized Google Trends activity and $Wiki_t$ represents standardized Wikipedia page views at time t .

The MRAI is designed to capture attention toward MiCA-related regulatory information rather than general cryptocurrency attention. This distinction allows the analysis to focus on whether regulatory information becomes associated with market adjustment when market participants pay greater attention to it. As a robustness measure, an alternative attention index is constructed using principal component analysis (PCA).

The dependent variable is stablecoin market adjustment. Stablecoins are selected because they are directly affected by MiCA's regulatory framework and play important roles in cryptocurrency trading, settlement, and market infrastructure. The main outcome variable is defined as the daily change in total stablecoin market capitalization:

$$SC_{Return_t} = \frac{MC_t - MC_{t-1}}{MC_{t-1}}$$

where MC_t represents total stablecoin market capitalization at time t .

Additional outcome variables, including stablecoin market growth and stablecoin activity measures, are used in robustness tests to examine whether the results remain consistent under alternative definitions of market adjustment.

The empirical models include several control variables capturing broader cryptocurrency market conditions. Bitcoin return is included to control for general crypto market movements because Bitcoin remains the largest cryptocurrency asset and often reflects overall market direction. Bitcoin volatility is included to capture market risk conditions that may influence stablecoin demand independently of regulatory information. The Crypto Fear and Greed Index (FGI) is included as a measure of investor sentiment, as previous studies show that sentiment and online information environments influence cryptocurrency market outcomes (Cary, 2024; Zhang et al., 2024).

The final dataset combines regulatory variables, attention measures, stablecoin market outcomes, and cryptocurrency market controls. This structure allows the empirical analysis to examine whether MiCA-related regulatory information is associated with stablecoin market adjustment and whether this relationship varies with the level of regulatory attention.

METHODOLOGY

Provide clear and concise versions of your methods of conducting research, population and samples, and data analysis tools.

This study examines whether regulatory information is associated with stablecoin market adjustment through a regulatory attention mechanism. Since MiCA affects the broader cryptocurrency market rather than a specific group of treated assets, the empirical design does not rely on a traditional treatment-control framework. Instead, the analysis examines whether regulatory milestones, combined with variations in MiCA-specific attention, are associated with changes in stablecoin market outcomes.

The empirical strategy includes three related analyses. The first model examines the relationship between MiCA regulatory milestones and stablecoin market adjustment. The second model introduces the interaction between MiCA milestones and regulatory attention to test whether attention changes the strength of this relationship. The third model uses lagged attention measures to

examine whether regulatory attention is associated with subsequent market adjustment.

The baseline model is specified as follows:

$$SC_Return_t = \alpha + \beta_{1MiCA_{\{Agreement,t\}}} + \beta_{2MiCA_{\{Adoption,t\}}} + \beta_{3MiCA_{\{Stablecoin,t\}}} + \gamma X_t + \varepsilon_t$$

where SC_Return_t represents the daily change in stablecoin market capitalization. The three MiCA variables are indicator variables representing periods after different regulatory milestones. X_t includes control variables for broader cryptocurrency market conditions, including Bitcoin return, Bitcoin volatility, and the Fear and Greed Index.

The baseline specification evaluates whether different stages of MiCA development are associated with changes in stablecoin market adjustment.

The main model introduces MiCA-specific regulatory attention:

$$SC_Return_t = \alpha + \beta_{1MiCAStage_t} + \beta_{2MRAI_t} + \beta_{3(MiCAStage_t \times MRAI_t)} + \gamma X_t + \varepsilon_t$$

where $MiCAStage_t$ represents the specific regulatory milestone examined in each specification and $MRAI_t$ represents MiCA-specific regulatory attention. The coefficient of interest is the interaction term between MiCA milestones and MRAI. A positive coefficient indicates that regulatory developments are more strongly associated with stablecoin market adjustment when attention toward MiCA-related information is higher.

To examine whether regulatory attention is associated with subsequent market adjustment, the analysis introduces a lagged attention measure:

$$SC_Return_t = \alpha + \beta_{1MiCAStage_t} + \beta_{2MRAI_{\{t-7\}}} + \beta_{3(MiCAStage_t \times MRAI_{\{t-7\}})} + \gamma X_t + \varepsilon_t$$

The lagged attention measure captures MiCA-related attention observed seven days before the market outcome. This specification reduces concerns that attention only reflects contemporaneous market movements. A positive interaction coefficient suggests that previous regulatory attention levels are statistically associated with subsequent stablecoin market adjustment.

Several robustness analyses are conducted. First, alternative measures of regulatory attention are examined, including Google Trends-based attention, Wikipedia-based attention, and the PCA-based attention index. Second, alternative stablecoin market outcomes are used, including stablecoin growth and activity measures. Third, alternative estimation approaches are applied, including winsorization and robust standard errors.

Together, these empirical specifications examine different aspects of the relationship between regulatory developments, attention, and stablecoin market adjustment. The milestone model evaluates whether regulatory stages are associated with market adjustment. The interaction model tests whether attention strengthens this relationship. The lagged attention model examines whether previous attention levels are associated with subsequent market changes.

RESEARCH RESULT

Table 1 reports the descriptive statistics of the variables used in the empirical analysis. The sample contains 2,397 daily observations for the main dependent variables and regression models. The average daily stablecoin market

return (SC_Return) is 0.00179, with a standard deviation of 0.01012, indicating variation in stablecoin market adjustment during the sample period. The alternative outcome measures show similar patterns.

The attention variables also display substantial variation. The MRAI measure has a mean close to zero because it is standardized, while its maximum value indicates periods of sharp increases in MiCA-related attention. The alternative attention measures, including MRAI_PCA and GT_MiCA, show similar variation, suggesting that regulatory attention changed considerably around specific regulatory events.

Table 1. Descriptive Statistics

Variable	N	Mean	Std.	Min	25%	Median	75%	Max
SC_Return	2397	0.00179	0.01012	-0.09474	-0.00068	0.00065	0.00265	0.31162
SC_Growth	2397	0.00185	0.01115	-0.09039	-0.00068	0.00065	0.00266	0.36563
SC_Activity	2397	350.11M	550.62M	149,556	65.29M	192.82M	451.28M	15.91B
MiCA_Agreement	2398	0.620	0.485	0	0	1	1	1
MiCA_Adoption	2398	0.487	0.500	0	0	0	1	1
MiCA_Stablecoin	2398	0.315	0.465	0	0	0	0	1
MRAI	2398	0.000	0.724	-0.494	-0.249	-0.188	-0.097	18.353
MRAI_PCA	2398	0.000	1.024	-0.698	-0.353	-0.266	-0.137	25.960
GT_MiCA	2398	-0.000	0.712	-0.683	-0.335	-0.248	-0.117	5.870
Wiki_MiCA	2398	0.000	0.707	-0.020	-0.020	-0.020	-0.020	24.469

Figure 1 presents the timeline of the three MiCA regulatory milestones examined in this study. The figure shows that MiCA developed through several stages rather than a single regulatory event. The political agreement stage provided early information about future regulation, followed by formal adoption and the later application of stablecoin-related provisions.

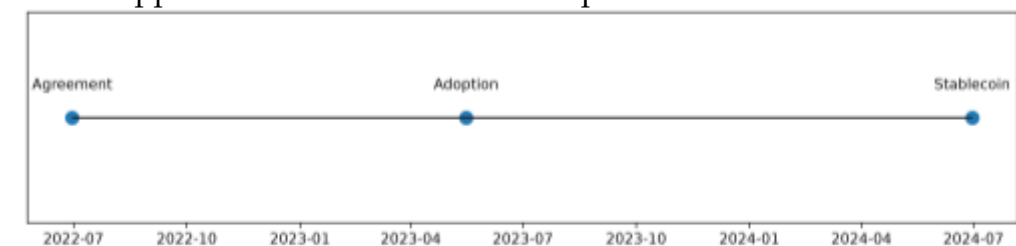


Figure 1. MiCA Regulatory Timeline

Table 2 examines whether different MiCA regulatory stages are associated with stablecoin market adjustment. The results show that the market response differs across regulatory stages.

The political agreement stage is negatively associated with stablecoin market return ($\beta = -0.003409$, $p < 0.001$). This result suggests that early regulatory information may have changed market expectations when the future direction of crypto regulation became clearer. In contrast, the stablecoin application stage is positively associated with market adjustment ($\beta = 0.001328$, $p < 0.001$), indicating that the implementation of stablecoin-related requirements coincided with

further market changes. The formal adoption stage is not statistically significant, which suggests that some information may have already been incorporated before legal confirmation.

The different effects across milestones indicate that regulatory information may have different market implications depending on the stage of the regulatory process. These results provide support for H1.

Table 2. MiCA Regulatory Milestones and Stablecoin Market Adjustment

Variable	Coefficient	Std. Error	p-value
Constant	-0.000431	0.001011	0.670
MiCA Agreement	-0.003409	0.000610	<0.001
MiCA Adoption	-0.000066	0.000380	0.862
MiCA Stablecoin	0.001328	0.000278	<0.001
BTC Return	0.008398	0.007158	0.241
BTC Volatility	0.047762	0.016790	0.004
FGI	0.000054	0.000012	<0.001
Observations	2397		
R-squared	0.0447		

Figure 2 presents changes in MiCA-specific attention around regulatory milestones. The figure shows several short-lived increases in MiCA-related attention around different regulatory stages, with the most pronounced increase occurring around the application of stablecoin-related provisions. The pattern indicates that MRAI captures variation in attention toward MiCA-related regulatory information over time.

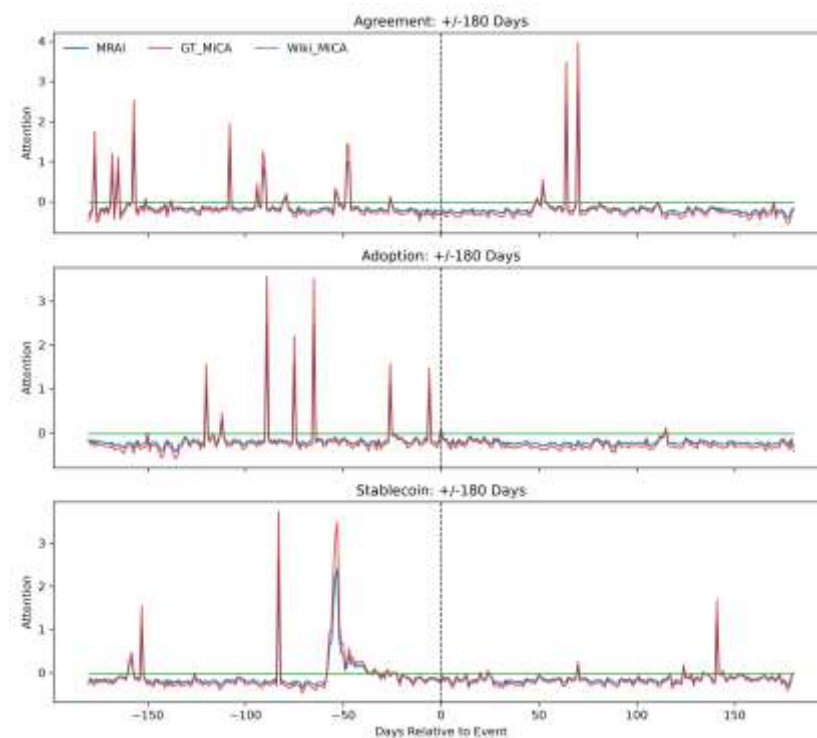


Figure 2. MiCA-Specific Attention Dynamics Around Regulatory Milestones

Table 3 reports the interaction models examining whether regulatory attention changes the relationship between MiCA developments and stablecoin market adjustment.

The interaction term between MiCA milestones and MRAI is the main variable of interest. A positive coefficient indicates that regulatory developments are more strongly associated with market adjustment when market participants pay greater attention to MiCA-related information.

The results show that the interaction term is positive and statistically significant in both specifications. In the adoption model, the coefficient is 0.003971 ($p < 0.001$), while the stablecoin application model reports a coefficient of 0.003217 ($p < 0.001$).

The findings suggest that regulatory attention affects the strength of the relationship between regulatory events and market outcomes. When attention toward MiCA increases, regulatory developments are more closely associated with stablecoin market adjustment. These results support H2.

The interaction results are reported in Table 3. The control variables remain consistent with the baseline model. Bitcoin volatility is positively associated with stablecoin market adjustment, while investor sentiment measured by FGI also shows a positive association. These results indicate that broader cryptocurrency market conditions remain relevant when evaluating regulatory information effects.

Table 3. The Role of MiCA-Specific Attention in Regulatory Information Transmission

Variable	Adoption Model	Stablecoin Application Model
Constant	-0.002765***	-0.003737***
MiCA Stage	-0.000889**	0.000217
MRAI	-0.003638***	-0.003030***
MiCA × MRAI	0.003971***	0.003217***
BTC Return	0.008476	0.008606
BTC Volatility	0.062926***	0.082704***
FGI	0.000058***	0.000056***
Observations	2397	2397
R-squared	0.0363	0.0318

Notes: *** $p < 0.01$, ** $p < 0.05$.

Table 4 examines whether regulatory attention precedes subsequent stablecoin market adjustment. A potential concern in the interaction model is that attention may increase because of market movements rather than because of regulatory information. To address this issue, the analysis introduces a seven-day lagged MRAI measure.

The results remain consistent with the baseline interaction model. The interaction coefficient between MiCA milestones and lagged attention is positive and statistically significant. The coefficient is 0.003238 ($p = 0.024$) in the adoption model and 0.002688 ($p < 0.01$) in the stablecoin application model.

The persistence of the interaction effect after introducing lagged attention suggests that MiCA-related attention contains information associated with future stablecoin market adjustment. Although the lagged specification does not establish a causal relationship, the results are consistent with a process in which market participants observe and process regulatory information before market adjustment occurs. These findings support H3.

Table 4. Lagged Regulatory Attention and Subsequent Market Adjustment

Variable	Adoption Model	Stablecoin Application Model
Constant	-0.002989***	-0.003919***
MiCA Stage	-0.000837**	0.000269
Lagged MRAI	-0.002891**	-0.002491**
MiCA × Lagged MRAI	0.003238**	0.002688***
BTC Return	0.003772	0.003893
BTC Volatility	0.065294***	0.083134***
FGI	0.000060***	0.000058***
Observations	2391	2391
R-squared	0.0426	0.0381

Notes: *** $p < 0.01$, ** $p < 0.05$.

Table 5 presents robustness tests using alternative attention measures, alternative outcome definitions, and alternative estimation approaches.

The main interaction effect remains positive when different measures of regulatory attention are applied. The PCA-based attention measure produces an interaction coefficient of 0.002807 ($p < 0.001$), while the Google Trends-based measure produces a coefficient of 0.003110 ($p < 0.001$). The effect remains statistically significant when alternative outcome measures and estimation adjustments are used.

The Wikipedia-based attention measure does not show a statistically significant effect. This difference may reflect the fact that search activity and page-view activity capture different aspects of information demand. Search behavior may better capture active information acquisition by market participants, while page views may include broader public interest.

Overall, the robustness tests indicate that the main relationship between MiCA-related attention and stablecoin market adjustment is not driven by a single measurement approach.

Table 5. Robustness Tests

Specification	Interaction Term	Coefficient	p-value
MRAI_PCA instead of MRAI	MiCA Adoption × MRAI_PCA	0.002807	<0.001
GT_MiCA instead of MRAI	MiCA Adoption × GT_MiCA	0.003110	<0.001
Wiki_MiCA instead of MRAI	MiCA Adoption × Wiki_MiCA	0.000004	0.721
Alternative outcome: SC_Growth	MiCA Adoption × MRAI	0.004119	<0.001
Winsorized regression	MiCA Adoption × MRAI	0.002370	<0.001
Robust standard errors	MiCA Adoption × MRAI	0.003971	<0.001

DISCUSSION

The empirical results suggest that the relationship between regulatory developments and stablecoin market adjustment depends on both the stage of regulation and the level of attention received by market participants. The findings do not show a uniform market response after each MiCA milestone. Instead, different regulatory stages are associated with different patterns of market adjustment, suggesting that market participants interpret regulatory information differently throughout the regulatory process.

The differences across MiCA milestones indicate that regulatory information may have different market implications depending on its timing and content. The political agreement stage is negatively associated with stablecoin market adjustment, while the stablecoin application stage is positively associated with market adjustment. The adoption stage does not show a statistically significant association after controlling for broader cryptocurrency market conditions. These differences suggest that regulatory information may be incorporated gradually rather than only after formal implementation. Early regulatory signals may affect expectations about future conditions, while later stages may be more directly related to compliance requirements and market participation.

The attention results are consistent with an attention-based regulatory information process. The positive interaction between MiCA milestones and MRAI indicates that regulatory developments are more strongly associated with stablecoin market adjustment when MiCA-related attention is higher. This finding is consistent with investor attention research showing that information effects depend partly on whether investors recognize and process specific information (Barber and Odean, 2008; Da et al., 2011). In cryptocurrency markets, where information spreads through online channels, attention may influence the extent to which regulatory information is reflected in market outcomes.

The lagged attention results provide further evidence regarding the timing of this relationship. The positive coefficients using seven-day lagged MRAI suggest that regulatory attention is associated with subsequent stablecoin market adjustment rather than only reflecting contemporaneous market conditions. These results are consistent with a process in which market participants observe

regulatory developments, evaluate their implications, and gradually adjust their positions. However, the findings should not be interpreted as direct causal evidence because the empirical design identifies associations between regulatory attention and market outcomes.

The dynamic adjustment analysis provides additional information about how regulatory information may be incorporated over time. The results do not show a sharp adjustment only after formal implementation dates. Instead, market responses appear distributed around the regulatory timeline. This pattern suggests that market participants may incorporate publicly available regulatory information before specific rules become effective.

The findings also provide implications for understanding the role of stablecoins in cryptocurrency markets. Stablecoins serve important functions in trading, settlement, and digital asset infrastructure. Regulatory changes affecting stablecoins may influence market expectations, trading arrangements, and future market participation. This interpretation is consistent with recent research showing that stablecoins are connected with payment systems, financial markets, and broader financial conditions (Ahmed et al., 2025; Ahmed and Aldasoro, 2025).

Several limitations should be considered. First, the empirical analysis identifies associations between MiCA-related attention and stablecoin market adjustment rather than providing a fully causal estimate of regulatory effects. Second, the MRAI measure is constructed using online information activity, including search behavior and page views. Although these measures capture observable attention, they may not represent all forms of investor information processing. Third, the analysis focuses on stablecoin market outcomes and does not examine other possible effects of regulation, such as changes in exchange behavior, investor composition, or long-term market structure.

The results suggest that understanding regulatory effects in cryptocurrency markets requires considering both regulatory developments and market attention. The timing of regulatory events alone may not fully explain market responses. How market participants receive and process regulatory information appears to be an important factor associated with stablecoin market adjustment.

CONCLUSIONS AND RECOMMENDATIONS

This paper examines whether MiCA regulatory developments are associated with stablecoin market adjustment and whether regulatory attention affects this relationship. Using a MiCA-specific Regulatory Attention Index (MRAI) based on online information activity, the analysis evaluates three MiCA regulatory milestones and examines how regulatory information is related to stablecoin market outcomes.

The results show that different MiCA stages are associated with different patterns of stablecoin market adjustment. The political agreement stage is negatively associated with market adjustment, while the stablecoin application stage is positively associated with adjustment. The interaction models show that higher MiCA-related attention strengthens the association between regulatory developments and stablecoin market outcomes. The lagged attention analysis

further suggests that regulatory attention is associated with subsequent market adjustment rather than only reflecting contemporaneous changes.

These findings suggest that the market relevance of regulation depends not only on when regulatory changes occur but also on how market participants receive and process regulatory information. For cryptocurrency markets, where information is rapidly distributed through online channels, attention may affect how institutional developments are incorporated into market outcomes.

ADVANCED RESEARCH

This study has several limitations. The empirical design identifies associations rather than causal effects. The MRAI measure captures observable online attention but may not fully represent all forms of investor information processing. Future research can examine other digital asset markets and additional measures of regulatory attention.

REFERENCES

- Ahmed, R., Clouse, J., Natalucci, F., Rebucci, A., & Sun, T. (2025). Stablecoins: A revolutionary payment technology with financial risks. International Monetary Fund.
- Ahmed, R., & Aldasoro, I. (2025). Stablecoins and safe asset prices. Bank for International Settlements.
- Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, 131(4), 1593–1636. <https://doi.org/10.1093/qje/qjw024>
- Barber, B. M., & Odean, T. (2008). All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors. *The Review of Financial Studies*, 21(2), 785–818. <https://doi.org/10.1093/rfs/hhm079>
- Barczentewicz, M., & de Gândara Gomes, M. (2024). Crypto-asset market abuse under EU MiCA: Problems of scope, implementation, and enforcement. Working paper.
- Bernanke, B. S., & Kuttner, K. N. (2005). What explains the stock market's reaction to Federal Reserve policy? *The Journal of Finance*, 60(3), 1221–1257. <https://doi.org/10.1111/j.1540-6261.2005.00760.x>
- Borri, N., & Shakhnov, K. (2026). Does regulation bite at gateways? Evidence from MiCA and stablecoins. Working paper.
- Callaway, B., & Sant'Anna, P. H. C. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, 225(2), 200–230. <https://doi.org/10.1016/j.jeconom.2020.12.001>
- Cary, M. (2024). Herding and investor sentiment after the cryptocurrency crash: Evidence from Twitter and natural language processing. *International Review of Financial Analysis*, 94, 103281. <https://doi.org/10.1016/j.irfa.2024.103281>
- Conlon, T., Corbet, S., & Oxley, L. (2024). The influence of European MiCA regulation on cryptocurrencies. *Finance Research Letters*. <https://doi.org/10.1016/j.frl.2024.105046>

- Cumming, D. J., Fuchs, A., & Momtaz, P. P. (2025). Market reactions to cryptocurrency regulation: Risk, return and the role of enforcement quality. *Journal of Banking & Finance*.
- Da, Z., Engelberg, J., & Gao, P. (2011). In search of attention. *The Journal of Finance*, 66(5), 1461–1499. <https://doi.org/10.1111/j.1540-6261.2011.01679.x>
- Goodman-Bacon, A. (2021). Difference-in-differences with variation in treatment timing. *Journal of Econometrics*, 225(2), 254–277. <https://doi.org/10.1016/j.jeconom.2021.03.014>
- Ibañez, J., et al. (2024). Bitcoin MiCA white paper. Working paper.
- Liu, Y., & Tsyvinski, A. (2021). Risks and returns of cryptocurrency. *The Review of Financial Studies*, 34(6), 2689–2727. <https://doi.org/10.1093/rfs/hhaa113>
- MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35(1), 13–39.
- Pastor, L., & Veronesi, P. (2012). Uncertainty about government policy and stock prices. *The Journal of Finance*, 67(4), 1219–1264. <https://doi.org/10.1111/j.1540-6261.2012.01746.x>
- Tetlock, P. C. (2007). Giving content to investor sentiment: The role of media in the stock market. *The Journal of Finance*, 62(3), 1139–1168. <https://doi.org/10.1111/j.1540-6261.2007.01232.x>
- Zetzsche, D. A. (2025). Third-country multi-issuer stablecoins under MiCA. Working paper.
- Zhang, Y., et al. (2024). Investor sentiment and the holiday effect in the cryptocurrency market: Evidence from China. *Research in International Business and Finance*.