“Seasonality anomalies in the cryptocurrency market”

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Abstract

Portuguese version:

Este estudo retoma a Teoria dos Mercados Eficientes, avaliando uma anomalia analisada e compreendida na Teoria dos Mercados Eficientes de Fama (1991), a sazonalidade dos rendimentos de títulos. Este tópico foi profundamente analisado para instrumentos financeiros tradicionais, tais como acções e moedas. Após reaver uma grande parte das tipologias de sazonalidades encontradas na História, é proposto um estudo referente a criptomoedas. O efeito Fim-de-semana, efeito Semanal, efeito Mensal, e efeito Halloween são explorados com foco nas potenciais diferenças entre os diferentes activos. Preços, volumes, ganhos e capitalização de mercado são considerados para avaliar as potenciais sazonalidades existentes. Os resultados mostram que, de acordo com os títulos tradicionais, as sazonalidades persistem no mercado de criptomoedas, reflectindo um efeito de Dimensão na magnitude dos efeitos isolados. Estes efeitos repetem-se significativamente às Segundas ou Sextas-feiras ou durante os rendimentos do semestre de Novembro-Abril. Foram encontrados efeitos mensais, todavia, os ganhos sazonais parecem ocorrer de forma diferente do mercado de acções, potencialmente devido à ausência de perda do pagamento de impostos que distingue as empresas. Uma investigação mais exaustiva deverá aprofundar a forma como a natureza e o tamanho da moeda influencia este efeito. Além disso, o papel do impacto dos investidores institucionais é ignorado, sendo que outros estudos deverão avaliar se este impacto afecta a anomalia, atenuando-a tal como ocorreu no mercado bolsista. Do ponto de vista do preço dos activos, a explorabilidade desta anomalia deve ser avaliada de modo a aceitar ou rejeitar a forma fraca de eficiência de mercado.

Palavras-chave: eficiência de mercado; sazonalidade; efeito de Fim-de-semana; criptomoeda; efeito de Dimensão.

English version:

This study revisits the market efficiency theory, evaluating one anomaly analyzed and comprised in Fama's market efficiency theory (1991), seasonalities of returns in securities. This topic has been thoroughly analyzed for traditional financial instruments such as stocks and currencies. After describing most of the seasonality typologies found in the literature, this study proposes a similar analysis for cryptocurrencies. The Weekend effect, Weekly effect, Monthly effect, and Halloween effect are explored with a focus on potential differences among different

assets. Prices, volumes, returns, and market capitalization are considered to evaluate potential seasonalities. The results show that, as per the traditional securities, seasonalities persist in the cryptocurrency market reflecting a size effect in the magnitude of the effects isolated. These effects recur significantly for Mondays or Fridays or during the November-April semester returns. Monthly effects have been found; however, seasonal returns seem to occur differently from the stock market, potentially because of the lack of the tax payment loss distinguishing firms. Further research should dig deeper into how the nature and size of coins are influencing this effect. Moreover, the impacting role of institutional investors is disregarded, and further studies should evaluate if this impact would affect the anomaly, diminishing it as occurred in the stock market. From an asset pricing perspective, the exploitability of this anomaly should be evaluated to accept or not the weak form of market efficiency.

Keywords: market efficiency; seasonality; Weekend effect; cryptocurrency; size effect.

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Introduction

Seasonality in asset returns is a well-studied phenomenon. From a market efficiency perspective, it is crucial to understand those anomalies because of their connection with returns' predictability and the weak form of market efficiency introduced by Fama (1970). It is also essential to understand this anomaly from an asset pricing perspective to discover eventual recurrent returns potentially exploitable into trading strategies. Considering the seasonality effects for stocks, the exploitability has been disregarded since Fama's (1991).

Seasonality anomalies have not been studied for cryptocurrencies. In contrast, an extensive literature exists for traditional financial securities, which will be presented briefly. As cryptocurrencies become increasingly important and popular also as investment assets, it is important to also investigate those anomalie. Their exploitability can be a topic strongly related to the nature of the asset itself, which has been more than once considered a speculative asset rather than a commodity or a currency, as highlighted in Baek and Elbeck (2015), Baur, Dimpfl, and Kuck (2018a), Corbet, Lucey, Peat, Vigne (2018b) and Baur, Hong, and Lee (2018c), with no relevant correlation with the traditional securities, as confirmed by Liu and Tsyvkinski (2021).

This study analyzes if there are seasonality anomalies in a set of cryptocurrencies, including the most popular ones, as Bitcoin and Ethereum, to the least capitalized PancakeSwap coin considered. I study the Weekend effect, the potential Weekly effect connected to the daily effect along the month, potential Monthly effect, and the Halloween effect for fifteen cryptocurrencies. In the sample, the cryptocurrencies included are Cardano (ADA), *Binance* Coin (BNB), Bitcoin (BTC), Pancake Swap Coin (CAKE), Dogecoin (DOGE), Polkadot (DOT), Ethereum (ETH), Litecoin (LTC), Terra Classic (LUNA, now LUNC after recent crash), Polygon (MATIC), Shiba Inu (SHIB), Solana (SOL), Uniswap (UNI), Monero (XMR), Ripple (XRP). The figures are taken from two different sources, *Coingecko* and *Binance*. What is new in this study is set of cryptocurrencies, the time frame investgated, and the two different datasets, which presents underlying differences.

The different deployed models used analyze the coefficient of potential recurrent returns, validating if these returns are significantly different from 0 in the population considered. The first model considers a simple regression, which assigns a bivariate variable to every day of the week. The scope of this model is to evaluate the existence of the Weekend effect or to understand if other daily seasonalities occur during the week. The second model explores if the

daily seasonal effect occurs in determinate weeks of the month, separating the daily returns into four weeks. Dummy variables for daily returns have been created for each of the four weeks of the month, and every daily effect has been analyzed separately for each week in the month. This model anticipates Wang, Li, and Erickson's (1997) model, which evaluates the seasonal effect of combining it in the last weeks of the month. Considering that recurrent returns have been found in the second week in previous model introduced I present a deviation to this last model.The objective is to analyze if the combined magnitude in the last weeks is significantly different from the single weeks taken into consideration separately. The fourth model analyzes monthly effects to understand whether seasonalities occur in cryptocurrencies as in the stock market, with the January effect. The daily returns are isolated for every month for which a dummy is assigned to evaluate this effect. The fifth model analyzes the Halloween effect to spot if this effect also exists in the cryptocurrency market as it occurs in the stock market. Hence, the returns for the period November-April are isolated.

The results show that seasonalities occur in the cryptocurrency market with a higher magnitude than in the stock market. This can be explained by the statistics which distinguish this market, such as positive kurtosis and high volatility. The Weekend Effect in the cryptocurrency market presents opposite coefficients when compared to the stock market, presenting Monday positive returns and Thursday and Friday returns. When the weeks in the month are considered, a significative Monday effect occurs on the last week of the month, while the Friday effect has been recognized in the second week of the month with a less significative presence. Monthly effects exist but do not resemble the Turn of the Year effect shown by the stock market. February, April, and May, however, display significant recurrent returns, potentially in line with the Holidays effect and the Halloween effect. These insights have important implications for investors: as strong recurring seasonalities are observed, the exploitability of trading strategies must be evaluated. Trading costs must be evaluated to set up weekly trading strategies or trading strategies exploiting long term effects as the Halloween effect.

The uncertainty displayed in the statistics of returns might bias the robustness of the results, although they are significant. Ideally, what I would have done is to comprise more crypto assets in the sample, comprising cryptocurrencies residing out of the most capitalized, to understand if a smaller size could enhance or bias the presence and the magnitude of this anomaly. A limit to do so is the life stage of the asset, for which statistically significant sets of data are available for a small portion of the twenty thousand cryptocurrencies on the market presence in the *CoinMarketCap* list. Furthermore, further research must analyze the prospective entrance of

institutional investors in the market, considering that now they seem to not play a relevant role as the one they increasingly play in the stock market. Finally, from my perspective, seasonalities in cryptocurrency must also be analyzed by partitioning the available assets into categories following their purpose and nature. The different behavior BNB and CAKE show to sustain this choice in the results presented.

In section 1, the existing literature for seasonalities is presented, starting with an introduction of this anomaly from the market efficiency theory, followed by the research regarding seasonalities which will be actualized for cryptocurrencies. Few findings of already existing research for cryptocurrencies are there presented. Section 2 presents the two different datasets considered in this study with related summary statistics. In section 3 the data methodology is explained, presenting the models actualized and modified to evaluate the existing anomalies. Section 4 discusses the relevant results found in this study. Finally, section 5 presents the conclusions, limitations, and potential suggestions for further research.

1. Literature review

1.a Market efficiency theory

Few studies have explored cryptocurrency market efficiency as per Fama (1970), more precisely referring to the weak form. By definition, "a market in which prices always fully reflect available information is called efficient.", thus investors should not be able to use historical data to predict prices and returns and to exploit them into feasible tradable investment opportunities.

Fama's (1970) study presents the weak form of market efficiency, in which he only discusses historical prices. His first study concludes that the market efficiency model seems extensive with spare contradictions. However, he says it should be explored and investigated further. Coherently developing his latter thought, in a second study published by Fama (1991), the different forms of market efficiency are again scrutinized, deepening efficient markets' definitions. Following the purpose of our study, we will focus on the weak form of efficiency consisting of tests, showing the predictability of future returns based both on past returns and broader historical information available.

Fama (1991) recalls De Bondt and Thaler's (1987) precedent research showing again, for instance, how on average: Monday returns are lower than on the other days, introducing a Weekend effect; returns are higher before holidays and on the last day of the month, introducing Holidays and Turn of the Month effects; returns are higher in January, especially for small firms' stocks, and concentrated on the last day of December and the first five trading days of January, introducing a Turn of the Year effect. However, all these persisting anomalies from an asset pricing perspective are seen as not hindering market efficiency theory due to a small magnitude hardly economically exploitable in the light of stock markets.

1.b Seasonality anomaly

French (1980) produces the first consistent research available regarding this anomaly. First, he considers the random walk of returns analyzed in previous studies to predict daily returns. Then, he starts testing two hypotheses: the calendar time hypothesis, including weekends in Mondays' returns, say Mondays' returns are expected to be positive and three times the ones of the other

weekdays; and the trading time hypothesis, thus every day's return being the same. The analysis has been conducted by evaluating the S&P500 composite portfolio daily returns on the entire 1953-1977 time frame and separating it into five sub-periods of 5 years each.

The results show that the Mondays' returns are, on average negative and lower than the ones of the other days of the week (-0.17 percent). With this finding, he significantly rejected the hypothesis of positive Mondays' returns. A further test considering the closed-market effect confirms how the average negative return on Monday is caused by a Weekend effect and not by a general closed-market effect. French (1980) analyzed this situation's implications for market efficiency as Fama (1970) introduced, explaining that the most plausible explanation of the anomaly is the delay of bad news regarding firms' economic situation to the weekends. However, following the market efficiency theory would not produce systematically negative returns because investors would discount the probability of expected bad news on the weeks' trading days. Thus, his findings would conclude that the market seems inefficient. This entails the possibility of potential exploitable active trading strategies altering and delaying purchases and sales of stocks, notwithstanding the small magnitude of returns and the transactions' costs hindering this opportunity.

A different analysis of seasonalities has been conducted by Gultekin and Gultekin (1983a), presenting an international perspective of value-weighted indices' monthly returns from 1959 to 1979. This analysis investigates monthly anomalies, reflecting the January effect for most countries and, in turn, an April effect for the U.K. and Australia's December-January and July-August effect. It is to be noted that these months coincide with the fiscal year closure and its related tax payment loss.

This study starts with the concept of random walk models already tested previously, and their test results reject the null hypothesis of identical monthly returns. The Monthly effect occurs for 13 out of 17 countries at a 10 percent significance level. This finding is partly explained by extremely large returns of small firms' stocks in January, introducing a firm size impact on the anomaly, later discussed by Keim (1983b). Januarys' returns, double-tested in the research, show the pattern of being larger than the other 11 months' returns. The same effect occurs in the U.K. and Australia in different months, namely April and July, due to different tax payment loss months.

Keim (1983b) indicates an inverse relationship between seasonal anomalies in returns and firms' size. Grouping single firms' daily excess returns by size, the study shows how the smallest

decile of the composed portfolios' average returns systematically outperforms the highest decile. Moreover, the equal-weighted portfolios constituted by the smallest and largest firms for market capitalization exhibit autocorrelation, suggesting potential return predictivity. Keim (1983b) also shows how the hypothesis of constant monthly average returns for each portfolio constituted of different size firms is increasingly rejected when the size of the portfolios' constituents decreases. Coherently with the findings previously presented, he illustrates that the size effect is more accentuated in January.

Rogalski (1984) instead recalls the Day-of-the-Week, also known as the Weekend or Monday effect. In this research which explores DJIA and S&P500 indexes, two conjunctures with the previous literature emerge. Firstly, an intersection of the Monday effect with the January effect displays how the Monday effect and the non-trading day effect are, on average positive in January and negative in the other months. Secondly, both Monday and January effects present a relationship with firms' size, exhibiting Monday small firms' returns in January on average positive and higher than the ones for large firms. A similar negative effect occurs when there are holidays next to the weekend. The magnitude is higher if Monday is a holiday day (average Monday returns -0.0761 percent and average Tuesday returns -0.1675 percent).

Later Lakonishok and Smidt (1988a) investigated all seasonalities effects already presented. The Turn of the Month effect presented for DJIA index returns is new in this analysis. Looking at the Weekend effect on a larger time window, they confirm that on the last trading day of the week, whether Friday or Saturday, the average daily returns are significantly positive and larger than the other days. In addition, Lakonishok and Smidt (1988a) observe how, splitting months in two halves, we can assist in significant positive performance in the first half of April and in the second half of December. This result can be consistent with Wall Street's window dressing, with high returns before the end of December's holidays also witnessed by large returns on the last day of the year and around Christmas.

Furthermore, they consider the Holidays effect dividing the returns into pre-holiday, post-holiday, and regular. The findings reflect the persistence of high returns before the market's closure, up to five times larger than "normal" pre-weekend average returns. The average post-holiday returns when post-holiday returns and Monday returns are combined are negative (-0.017 percent). As introduced before, they also analyze the Turn of the Month effect, observing statistically significant average positive returns, coherently with the turn of the month days.

They advance possible explanations of these small but still recurring effects: traders' inventory adjustments; informed and uninformed traders' timing of trades and companies' announcements; seasonal patterns of cashflows of both individual and institutional investors; the already discussed tax-loss moment of the year; and the previously mentioned window dressing.

The same year Flannery and Protopadakis (1988b) evaluated the presence of seasonality in different securities, considering three stock indices, overnight repurchase agreements, and Treasury securities with seven different maturities. Despite they show that some seasonal patterns are not any more significant when returns are adjusted for clearing conventions, the Weekend effect persists. What is relevant in their study is the analyzed difference of the Weekend effect across the different securities, suggesting that for cryptocurrencies, we would potentially find a different magnitude. In fact, the null hypothesis of uniform seasonality across the securities in scope is rejected for each day of the week.

Damodaran (1989), a year later, analyzed what French (1980) thought was a potential explanation of the Weekend effect, hence the delay of bad announcements at the end of the week, usually recurring after the closure of trading. His study confirms the delay of the bad news announcements after Friday's market closure. However, the contribution of this delay to the weekend effect is found to be marginal, explaining a few fluctuations, leaving room for still unexplored explanations.

Lakonishok and Maberly (1990) later deepened seasonalities' study, focusing on different trades executed by individuals and institutions. They ascertain that the trading volume is smaller on Monday, 10 percent less than on the other days. The pattern of more individuals trading drives a difference on that day compared to institutions, concurrently with a predominance of sell trades. The same happens for the January effect, with individuals being the major cause of this effect's persistence. This is potentially caused by the information-gathering moment of individuals and the institution's strategic planning after the holiday market's closure. It is also comprehensible that the role and the magnitude of institutional investors' trades are higher than individual ones. Kamara (1995a) and Sias and Starks (1995b) study again the role of institutional investors influencing this effect. Kamara (1995a) found that the magnitude of the Monday effect on S&P500 average negative returns decreased in time. This is driven by the increasing relevance of institutional investors' activity and the declining trading costs. The latter is even lowered by informed investors trading the less costly futures contracts trying to exploit

seasonalities. This decline, however, does not include small-sized firms due to the lower relevance of institutional investors trading them and still being affected by higher trading costs. Sias and Starks (1995b) report that the Weekend effect, regarding returns and volumes, is larger in securities where institutional investors have a greater influence. For the same comparable-sized stocks, the seasonality impacts more returns of stocks mainly owned by institutional investors than the ones mainly held by retail investors.

Wang, Li, and Erickson (1997) update what is known about seasonalities. Their findings discover that the Weekend effect occurs significantly in the last two weeks of the month, but it seems to not be significant anymore in the first three weeks. They also dispute Lakonishok and Smidt's (1988a) findings regarding the Turn of the Month effect.

They detect that when the last two weeks' returns are combined, the average Mondays' returns are significantly negative for both NYSE-AMEX and Nasdaq indexes. The effect documented is more relevant in Nasdaq than in NYSE-AMEX, and lower institutional holdings potentially provoke this following previously presented studies. In the second part, they study the Monday effect in relationship with the Turn of the Month effect. They note that a Monthly effect does not exist for Tuesdays, Wednesdays, Thursdays, and Fridays returns. However, it does exist for Mondays, which consistently affect the difference between the first and second half of the previously analyzed months.

To support these findings, the authors have proposed two possible reasons: the already discussed relationship with Fridays, or the expiration day of stock options, coinciding with the third Friday of the month, despite similar results even before these securities' introduction.

Chan, Leung, and Wang (2004) ulteriorly deepen the role played by retail and institutional investors. They stated that in the 90s, the trades of institutional investors increased coherently with their holdings. However, inversely to this increase, they show that the magnitude of the Monday effect diminished, confirming what was introduced by Kamara (1995a) and that the average Mondays' returns of stocks held mostly by institutional investors are mainly positive and not significantly different from other days returns (on 1981-1998 timeframe).

They justify the reduced Monday effect in part with a bull market proper of the 90s and in part with the increased magnitude carried by institutional investors in the NYSE, which has been more affected than Nasdaq. Suppose the analysis is partitioned into different portfolios coherently with increasing institutional investors' holdings. In that case, these results are replicated, with the first decade presenting lower average Monday returns than the 90s.

Haggard and Witte (2010) review a particular seasonal effect, the Halloween effect, consisting of higher returns between November and April. What they have documented in their study of the U.S. stock market is that in the period 1954-2008, the Halloween effect is significant. Being significant, it represents a potentially attractive anomaly for investors given both the low number of transactions needed to set up a strategy and the easy predictability of returns.

1.c Seasonality anomaly in the cryptocurrency market

To find the literature available for this anomaly investigating the cryptocurrency market, we get to Baur, Cahill, Godfrey, and Liu (2019a). First, they evaluate the anomaly, applying and comparing the existing literature to the cryptocurrency market, especially BTC between December 2011 and October 2017. Next, their study analyzes Time-of-the-Day, Day-of-the-Week, and Month-of-the-Year anomalies, both in returns and volumes. What they consider in their study is that BTC follows the currency market in terms of trading time, considering that the cryptocurrency market is open 24/7.

Without rejecting the weak form of efficiency for the BTC market as initially analyzed in Urquhart (2016), they find a low trading volume on Weekends, making us think about a sort of limited closed market effect and non-trading period effect, consistently with currency markets' patterns, as per Bollerslev and Domowitz (1993); higher and significant Mondays and Tuesdays average returns, reflecting a potential Monday or Weekend effect, and average lower returns on Saturday. A result shows an opposite effect on the stock market but is consistent with the currency market, as presented by McFarland, Pettit, and Sung (1982).

What is also interesting to be highlighted in their results is the already potential presence of institutional investors active in the market. The assumption of equal volumes traded during weekdays and lower volumes traded during the Weekends reflects this possibility. Retail investors might stop trading on the weekends because of information gathering, meaning they wait for stock markets opening on Monday to evaluate where to allocate investments. This is also in line with a potential Holiday break of trades, presented by the same Baur, Cahill, Godfrey, and Liu (2019a), when individuals during summer in the North Hemisphere trade less, reflected by lower recorded volumes. To some extent, the timestamps represented in the study also showed that there are higher volumes traded at Turn of the Year, consistently with a potential Turn of the Year effect, as per Fama (1991) and Lakonishok and Smidt (1988a).

Kaiser (2019b) has replicated seasonalities studies for ten cryptocurrencies, comprising BTC, BCH, ADA, DASH, ETH, IOTA, LTC, NEO, XRP, and XLM. He highlights patterns again into trading volumes and returns, confirming that trading volume, volatility, and returns are, on average lower in January, on the weekends, and in summer. BTC average positive returns on Monday are still presented as significant, but not for the other considered cryptocurrencies. Though, if 2017 and 2018 daily results are excluded, coherently with a potential market shock impact, BTC returns are significantly negative, reflecting stocks' behavior. When monthly returns are analyzed, either removing 2018 returns or not, they observe that returns in January are, on average, significantly negative, mostly for BTC showing a reverse January effect compared to the stock market. Analyzing the Halloween effect, average higher returns are found between November and April. However, they are insignificant for most of the cryptocurrencies, except for ETH. The weak form of market efficiency is not rejected because of the potential lack of actual robust patterns in trading activity.

2. Data presentation

Two different data sources have been selected to analyze this anomaly in the cryptocurrency market.

Daily prices and volumes have been retrieved through *Binance* API and *Coingecko* API with the help of Python integration with these two platforms, one exchange, and a website listing cryptocurrency data. The values retrieved for the first data source are exchanged and traded on the exchange itself. They have been retrieved from this exchange, instead of other ones such as Coinbase or Kraken, because *Binance* is by far the biggest exchange per daily volume and offers a large set of crypto assets. *Coingecko* methodology is different. For prices, data available on *Coingecko* values are collected from different exchanges and then volume weighted. Volumes are collected by different exchanges as well and for each pair traded, including a certain crypto asset; for instance, if LTC is traded with BTC, ETH and USD, for the respective trading volume of LTC/BTC = 5,000 LTC, LTC/ETH = 1,000 LTC, and LTC/USD = 2,000 LTC a total of 8,000 LTC per volume figures is expressed.

The cryptocurrencies considered in our analysis are Cardano (ADA), *Binance* Coin (BNB), Bitcoin (BTC), Pancake Swap Coin (CAKE), Dogecoin (DOGE), Polkadot (DOT), Ethereum (ETH), Litecoin (LTC), Terra Classic (LUNA, now LUNC after recent crash), Polygon (MATIC), Shiba Inu (SHIB), Solana (SOL), Uniswap (UNI), Monero (XMR), Ripple (XRP). For these cryptocurrencies, different time windows have been considered depending on their inception and listing date on *Binance*. From *Coingecko*, data are available from the 28th of April 2013 (starting with BTC and LTC), and from *Binance*, data are available from the 17th of August 2017 (still starting with BTC). The retrieved log-returns of the prices' values have been computed, and data summary statistics are presented below.

Table 1.a - Descriptive Statistics of Prices (*Binance*) (17/08/2017 – 13/08/2022)

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ADA	1580	.514	.672	.023	2.966	.029	2.638	1.463	4.23
BNB	1742	135.674	185.682	1.49	676.15	1.8	626.9	1.186	2.935
BTC	1823	20020.855	17834.392	3276.5	69000	3557.75	63520.61	1.061	2.682
CAKE	541	14.062	8.372	2.954	44.278	3.088	41.119	.963	4.129
DOGE	1136	.094	.125	.002	.74	.002	.522	1.615	6.038
DOT	726	21.109	13.254	3.09	55.09	4.125	52.42	.441	2.138
ETH	1823	1108.454	1253.586	85	4868	108.35	4551	1.269	3.336
LTC	1705	109.063	68.877	23.76	413.49	31.43	327.68	1.194	4.177

LUNA	723	27.925	33.012	.001	119.55	.001	109.64	1.056	2.789
MATIC	1206	.592	.757	.003	2.923	.005	2.597	.995	2.677
SHIB	461	0	0	0	0	0	0	1.454	5.5
SOL	733	67.619	68.484	1.389	259.9	1.493	247	1.021	2.931
UNI	696	16.674	10.806	2.166	45	2.566	42.949	.456	2.148
XMR	1248	151.85	90.611	37.47	519.13	46.1	426.47	.91	3.416
XRP	1563	.512	.327	.149	1.967	.177	1.622	1.471	4.852

Table 2.a - Descriptive Statistics of Log Returns (Binance) (18/08/2017 – 13/08/2022)

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ADA	1576	.001	.059	-.533	.286	-.139	.163	-.3	9.138
BNB	1738	.003	.062	-.582	.532	-.162	.184	.265	17.734
BTC	1820	.001	.036	-.291	.201	-.089	.115	.305	8.702
CAKE	536	-.004	.059	-.457	.264	-.159	.18	-.696	11.751
DOGE	1129	.002	.091	-.542	1.514	-.164	.269	6.684	93.576
DOT	721	.001	.06	-.328	.387	-.152	.199	.453	9.099
ETH	1820	.001	.044	-.336	.25	-.119	.14	.1	7.696
LTC	1696	-.001	.049	-.289	.294	-.133	.147	.334	8.04
LUNA	703	.002	.515	-7.741	10.637	-.23	.282	7.497	332.978
MATIC	1202	.004	.082	-.585	.526	-.176	.295	.62	13.859
SHIB	446	-.003	.083	-.289	.573	-.188	.315	1.959	13.757
SOL	730	.004	.066	-.232	.36	-.137	.208	.776	5.596
UNI	690	-.001	.066	-.556	.426	-.179	.209	-.225	13.796
XMR	1241	.001	.048	-.296	.534	-.134	.129	.768	19.967
XRP	1555	-.001	.058	-.608	.49	-.134	.192	.798	26.681

Table 1.b - Descriptive Statistics of Prices (*Coingecko*) (28/04/2013 – 13/08/2022)

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ADA	1760	.002	.068	-.524	.872	-.159	.198	1.734	26.354
BNB	1788	.004	.115	-1.002	3.27	-.186	.242	12.547	382.54
BTC	3392	.002	.041	-.434	.287	-.125	.12	-.519	11.279
CAKE	682	.002	.088	-.867	.396	-.254	.286	-1.124	19.487
DOGE	3157	.002	.08	-.815	1.479	-.179	.246	3.426	59.904
DOT	723	.002	.071	-.468	.445	-.193	.198	.226	9.345
ETH	2561	.003	.062	-.755	.44	-.167	.17	-.812	18.405
LTC	3389	.001	.061	-.547	.659	-.161	.195	.676	19.329
LUNA	160	-.085	.979	-5.677	4.995	-5.385	4.249	-1.675	23.106
MATIC	1203	.004	.087	-.701	.519	-.196	.29	.123	13.946

SHIB	679	.014	.236	-1.258	3.564	-.515	.81	6.293	88.77
SOL	854	.005	.08	-.452	.384	-.213	.224	-.076	6.357
UNI	694	.001	.077	-.4	.723	-.19	.215	1.331	16.168
XMR	3003	.001	.069	-.565	.806	-.182	.179	.601	18.813
XRP	3260	.001	.071	-.913	.881	-.181	.24	.924	31.167

Table 2.b - Descriptive Statistics of Log Returns (*Coingecko*) (29/04/2013 – 13/08/2022)

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ADA	1760	.002	.068	-.524	.872	-.159	.198	1.734	26.354
BNB	1788	.004	.115	-1.002	3.27	-.186	.242	12.547	382.54
BTC	3392	.002	.041	-.434	.287	-.125	.12	-.519	11.279
CAKE	682	.002	.088	-.867	.396	-.254	.286	-1.124	19.487
DOGE	3157	.002	.08	-.815	1.479	-.179	.246	3.426	59.904
DOT	723	.002	.071	-.468	.445	-.193	.198	.226	9.345
ETH	2561	.003	.062	-.755	.44	-.167	.17	-.812	18.405
LTC	3389	.001	.061	-.547	.659	-.161	.195	.676	19.329
LUNA	160	-.085	.979	-5.677	4.995	-5.385	4.249	-1.675	23.106
MATIC	1203	.004	.087	-.701	.519	-.196	.29	.123	13.946
SHIB	679	.014	.236	-1.258	3.564	-.515	.81	6.293	88.77
SOL	854	.005	.08	-.452	.384	-.213	.224	-.076	6.357
UNI	694	.001	.077	-.4	.723	-.19	.215	1.331	16.168
XMR	3003	.001	.069	-.565	.806	-.182	.179	.601	18.813
XRP	3260	.001	.071	-.913	.881	-.181	.24	.924	31.167

All values are presented in absolute terms. Watching log returns, we can see how most of the cryptocurrencies exhibit positive skewness for both the timeframes and sources observed, meaning potential frequent small losses and occasional large gains. This is more evident in *Binance* data considering a tighter time window.

However, contrary to the previously analyzed article, if *Coingecko* data and log returns are considered on the entire time window, we can see that BTC, CAKE, ETH, LUNA, and SOL return distributions are negatively skewed. This reflects this asset behavior generally becoming in line with the broad stock market, as for S&P 500 analyzed by Baek and Elbeck (2015). On the other hand, if *Binance* data are considered with a smaller time frame, we can see that these crypto assets' log returns still exhibit positive skewness. Furthermore, log returns express high kurtosis reflecting leptokurtic distributions with a high probability of extreme returns. Still considering the *Binance* dataset, we can see a direct relationship between market capitalization and standard deviation of log returns, with BTC and ETH exhibiting the lowest levels. A side effect may exist.

The higher volatility can drive these figures, even since 2020 onwards when the broad market has seen a dramatic increase in its volatility comprehensively accompanied by higher volumes, the COVID pandemic situation, the last turmoil provoked by Russia's maneuvers, and the fear of recession. The comprehensively high volatility for the cryptocurrency market even before 2020 can otherwise be driven by the financial instrument life cycle and the continuously increasing investor attention.

The average daily trading volumes are lower on the weekends, as previously reported for both datasets (see Appendix, Table 1.c and Table 2.c). This points towards a high proportion of trades coming from institutional investors who are trading more during weekdays and individuals reducing their trading activity due to information gathering, which means they can wait for other market fluctuations to settle or adjust their trades. However, the magnitude of the difference also reflects the possibility of a small impact on institutional investors' trading activity at the moment. For *Coingecko*'s dataset, this seems to also be reflected on Monday following the stock market pattern.

The two different datasets have been collected because of potential limitations in properly evaluating the effect brought by the *Coingecko* database. Based on Alexander and Dakos (2020c), more than half of the research on cryptocurrencies has been considering a biased set of data because *Coingecko* figures do not properly reflect real traded prices. Inconsistency issues may arise because of mispricing and wrongly recorded values, namely volume and time stamps. Other inconsistencies may arise by arbitrage opportunities available when trading towards different exchanges, meaning that concerning different liquidity available on the exchanges, prices among them can diverge. Hence a trade could benefit of this through cross-exchange trades, as explained by Makarov and Schoar (2020d). These biases also lay on a potential conflict of interest between the ranking websites, *Coingecko*, and their revenue model based on their relationship with the exchanges, ergo *Binance* or Coinbase paying fees to appear on ranking websites. If investors consider *Coingecko*'s platform ranking of exchanges, they may decide whether to trade depending on the rank provided. Thus, *Coingecko* may report diverted figures to direct investors to certain partner exchanges.

Therefore, I choose to use two different datasets. I will proceed with our analysis following the assumption of *Coingecko*'s data being potentially deflected, hence giving *Binance*'s dataset the priority regarding reliability. If we would only consider *Coingecko* data, we would harm the reliability of our study, whose objective is to evaluate market efficiency and the persistence of

seasonalities anomalies. The reason why the *Coingecko* dataset is still evaluated in this study is the period of the data available, which is larger and can give a broader, even potentially biased, representation of the effect since the financial instrument's inception.

We move now to the presentation of the methodology deployed in this research to analyze the seasonality anomaly.

3. Data methodology

Various models have been employed in this analysis, with the help of either STATA or Python, to retrieve, clean, and analyze the time series presented within the two different datasets. The analysis will use both datasets and the creation of several dummies needed to evaluate the seasonality effects.

The first model is based on simple linear regressions as presented:

$$R_{idt} = \alpha + \beta * D_{idt} + \varepsilon_{idt},$$

Where *i* stands for the different crypto assets analyzed, *t* reflects the period considered, d represents the day of the week (*d* = *Monday*, *Tuesday*, …, *Sunday*), and D_{dit} represents the different daily dummy variables deployed. A dummy variable has been created for each day of the week. However, we will concentrate more on the days the anomaly is presented in the literature: Monday, Friday, and Saturday. Thus, in this model, we test whether the daily effect considered is statistically significant. The null hypothesis H_0 is represented by $\beta = 0$, meaning no statistical difference between the daily return considered by the binary variable and the other days of the week. The alternative hypothesis H_1 is represented by $\beta \neq 0$, meaning that the difference of the daily return considered is statistically significant at different significance levels, respectively indicated by *** with $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$ confidence levels. Following the literature previously mentioned, we expect to see positive average returns on Monday and negative ones on Saturday.

In the second model, the Weekend effect is analyzed by dividing each month into four weeks, and when five Mondays are available in one month, the last is included in the fourth-week analysis. Again, dummy variables have been created to distinguish each week of the month. The regression is presented here:

$$R_{ijdt} = \alpha + \vartheta_1 * W_{i1dt} + \vartheta_2 * W_{i2dt} + \vartheta_3 * W_{i3dt} + \vartheta_4 * W_{i4dt} + \varepsilon_{ijdt}$$

Where W_{i1dt} represents the first week with a daily effect defined by *d*, which corresponds to each day of the week. The null hypotheses $H_{0,1}$, $H_{0,2}$, $H_{0,3}$, and $H_{0,4}$ will be respectively $\theta_1 = 0$, $\theta_2 = 0$, $\theta_3 = 0$, $\theta_4 = 0$, meaning the daily effect for the considered week is not statistically different from 0. The alternative hypotheses will be $H_{1,1}$, $H_{1,2}$, $H_{1,3}$, and $H_{1,4}$, with the daily effect in the respective week of the month considered being statistically different from 0, $\theta_1 \neq 0$, $\theta_2 \neq 0$, $\theta_3 \neq 0$, $\theta_4 \neq 0$. No research is available for this split of the effect on the cryptocurrency

market in different weeks in the month. However, following the literature, we would expect significant effects in proximity to the turn of the month, hence on the first or the last week of the month.

The third model considers the split applied by Wang, Li and Erickson (1997), dividing the month into a first and second part, comprising the first three weeks and the last two weeks. This model has been set up to evaluate if the effects are more significant in the second part of the month as per Wang, Li and Erickson (1997) and Lakonishock and Smidt (1988a). The model is represented here:

$$R_{ijdt} = \alpha + \beta * D_{idt} + \lambda * L_{idt} + \delta * LD_{idt} + \varepsilon_{ijdt}$$

Where L_{idt} is 1 if the returns occur in the last two weeks, and LD_{idt} is 1 if it reflects the daily effect in the last or the last two weeks. D still represents all the daily effects occurring on day d (D is equal to 1 if the Monday effect is analyzed, 0 otherwise, and so on for all the days of the week). Validating the findings of the previous model, for the cryptocurrencies, Thursdays and Fridays returns for the first three weeks have been tested following the same methodology as the one explained above. This has been done by replacing the last two weeks' related dummies with the first three weeks' related ones (= 1 if the returns occur in the first three weeks of the month). Here the combined last two weeks' daily effects are tested with the null hypothesis H_0 being $\delta = 0$. The alternative hypothesis H_1 is $\delta \neq 0$, meaning that the last two weeks' daily days jointly considered are statistically different from 0. Even for this model, no research is available for the cryptocurrency market. However, as for the previous model and as per the stock market, we would expect significative effect at the turn of the month.

The fourth deployed model starts to investigate a longer-term seasonality focusing on monthly returns through daily analysis. The objective of this model is to analyze if, for some months exist, some seasonalities such as a potential summer effect, Christmas effect, and a Turn of the Year effect. The model applied resembles the first one:

$$R_{imt} = \alpha + \beta * M_{imt} + \varepsilon_{imt}$$

Where m represents each month of the year (m = *January*, *February*, …, *December*), and a value of 1 is associated with the assigned month represented by the dummy M_{imt}. As per the first model, the null hypothesis H_0 is represented by $\beta = 0$, meaning no statistical difference between the monthly return considered and the other months. The alternative hypothesis H_1 is represented by $\beta \neq 0$, meaning that the difference in the monthly return in scope is statistically

significant. With this model, we expect to evaluate potential holidays, summer, or turn of the year effect, either positive or negative, before and after these different moments of the year considered.

Lastly, another simple model evaluating the Halloween effect is presented. The model can be described as follow:

$$R_{idt} = \alpha + \beta * H_{idt} + \varepsilon_{id}$$

Where *H* assumes the value of 1 if the months are *November*, *December*, *January*, *February*, *March*, and *April*, this model resembles Kaiser's (2019a) evaluation, and the null hypothesis H_0 is represented by $\beta = 0$, meaning no statistical difference between November-April returns and the other compared semester. The alternative hypothesis H_1 represented by $\beta \neq 0$ being November-April returns statically different. As per the stock market and the existing literature regarding this effect, we expect positive returns during the semester November-April.

4. Results

Considering the first model, we can see how the *Binance* dataset provides significant results confirming what has been disclosed in Baur, Cahill, Godfrey, and Liu (2019a) and Kaiser (2019b). We have significant positive and larger average returns occurring on Monday for BTC, CAKE, DOT, ETH, MATIC, SHIB, SOL, UNI, XMR, and XRP. The magnitude of significant results resides between 0.6 percent of XMR and 2.9 percent of SHIB and can be explained by the already discussed undergoing high volatility. When the *Coingecko* dataset is analyzed, we can see how the coefficients are still positive for Mondays' average returns but less than *Binance*'s ones, with almost half of the crypto assets, considered exhibiting negative Mondays' returns. For this dataset, only for BNB the Weekend effect is significant and positive with 1.5 percent, while it is negative in *Binance*'s dataset analysis.

In contrast to Baur, Cahill, Godfrey, and Liu (2019a), I find a higher magnitude in Thursdays' and Fridays' average returns. This seems to be moving towards a trading days effect, potentially driven by either individual investors decreasing trading activity or an increasing presence of institutional investors in the market. When Friday is considered, BTC, ETH, SHIB, UNI present a negative and lower average return ranging between -1.9 percent and -0.5 percent. Following what has been presented before for Mondays' BNB average returns, ,we have a positive and significant return for this crypto asset on Fridays.

We can think that BNB, being *Binance* coin, can be influenced by its role in the *Binance* exchange. A reason underlying this opposite pattern may be the decision of *Binance* traders to convert small residual amounts of other crypto assets at the end of the week into BNB, following this option offered by the exchange to the traders. This action can also potentially prevent the exchange risk affecting currency pairs, shielding the investment from uncertainty in the value of other crypto assets. It is clear how this option reversely impacts the other crypto assets traded on this exchange, and the magnitude of this possibility may be investigated in further research.

On *Coingecko*'s side, almost all the crypto assets present negative average returns on Friday, with ADA, ETH, and LTC being significantly different from 0 coherently with the null hypothesis rejection.

These results exhibit opposite coefficients when compared to the stock market. This potentially transfers the idea of investors oppositely placing orders, with buy trades prevailing on Monday and sell trades on Friday.

I also find a positive relationship between market capitalization, hence size, and the magnitude of the effect, both on Monday and Friday, as found in Keim (1983b) and Rogalski (1984). Considering SHIB, UNI, and CAKE figures, we can see that they exhibit a larger effect when compared to the bigger cryptocurrencies, say BTC and ETH. This is because SHIB, being a memo coin, has a different nature as it is exclusively intended to be a speculative asset without any related function. In line with this pattern, these coins also present higher volatility (i.e., DOGE and SHIB).

Table 3.a: Daily effect from *Binance* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Monday	-0.004	-0.001	0.008***	0.025***	-0.001	0.011*	0.009***	0.005	0.031	0.012*	0.029**	0.014**	0.012*	0.006*	0.014***
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.056)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	0.001	0.003**	-0.000	-0.007***	0.003	-0.000	-0.000	-0.002	-0.002	0.002	-0.007*	0.002	-0.002	0.000	-0.003*
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.001	0.000	0.006	0.022	0.000	0.004	0.005	0.001	0.000	0.003	0.014	0.006	0.004	0.002	0.008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Friday	0.003	0.009**	-0.005**	-0.009	0.001	-0.003	-0.006**	-0.002	-0.088	-0.008	-0.019*	-0.004	-0.013*	-0.006	-0.004
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.055)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	0.000	0.002	0.002*	-0.002	0.002	0.001	0.002*	-0.001	0.015	0.005**	-0.000	0.004	0.001	0.002	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.003	0.002	0.003	0.000	0.000	0.002	0.000	0.004	0.001	0.006	0.001	0.005	0.002	0.001

Table 3.b: Daily effect from *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Monday	-0.001	0.015**	0.002	0.011	-0.005	-0.003	-0.002	-0.000	0.040	-0.010	0.033	0.009	0.011	0.004	-0.005
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.008)	(0.003)	(0.003)	(0.221)	(0.007)	(0.026)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.002	0.002	0.001	0.001	0.002	0.002	0.003**	0.001	-0.091	0.006**	0.009	0.003	-0.000	0.001	0.002
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)

Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.002	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002	0.000	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Friday	-0.012**	-0.005	-0.003	-0.004	0.000	-0.002	-0.008**	-0.007**	-0.169	-0.010	-0.027	-0.008	0.002	-0.002	0.001
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.007)	(0.003)	(0.003)	(0.221)	(0.007)	(0.027)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.003*	0.005*	0.002***	0.003	0.002	0.002	0.004***	0.002	-0.061	0.006**	0.018*	0.006*	0.001	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.004	0.000	0.001	0.000	0.000	0.000	0.002	0.001	0.004	0.002	0.002	0.001	0.000	0.000	0.000

Looking at the second model's results, we can see interesting findings. For the *Binance* dataset, we can see that for Mondays of the fourth week of the month, the average positive returns are positively significant at a 1 percent significance level for eight crypto assets, namely BTC, CAKE, DOT, ETH, SHIB, SOL, UNI, XRP. These average positive returns range between 1.5 percent (BTC) and 5.1 percent (SHIB), reflecting an existing size effect. Even in the first week, we can see how CAKE, SHIB, and XRP average returns are positive and significantly different from 0 at the 1 percent level, with a high magnitude (4.0, 5.5, and 3.3 percent). The opposite effect previously highlighted for BNB is still present and occurring on the third week of the month (-2.2 percent significant at 1 percent level). If considering *Coingecko*'s dataset BNB is the only one with positive and significant returns on the fourth week of the month.

We can see how Thursdays' and Fridays' negative returns mainly occur on the second week of the month. On Thursdays, we can see how ADA, BNB, LTC, and SHIB exhibit average negative and significant returns ranging between -1.6 percent and -4.3 percent (see Table 4.a in the Appendix). On Fridays, we can see how the most capitalized cryptocurrencies, BTC and ETH (accompanied by LUNA, MATIC, and XMR), exhibit this effect, making us assume potential reasons for this particularity: the presence of institutional investors affecting these fluctuations, undergoing the fact that they would expose to less risky assets, hence the most capitalized ones relating to a size effect; a higher correlation of these two crypto assets with the stock market. These findings align with Kamara (1995a), presenting a lower and decreasing magnitude for big-sized firms and the related presence of institutional investors. The Friday effect is even more accentuated in *Coingecko*'s dataset, where on the second week Friday, we can see how ADA, BNB, ETH, LTC, LUNA, and MATIC exhibit average negative and significant returns at different confidence levels, ranging between -1.4 and -3.9 percent

(excluding LUNA's outlier due to its crash and low observations available since its crash). Remarked is that in *Coingecko*'s dataset, BNB behaves coherently with the other cryptocurrencies. This effect may be investigated more in further research, discovering why there is a discrepancy between the two datasets. We can assume, as before, that its role in the *Binance* exchange can affect this opposite effect.

There is a potential Monthly or a Turn of the Month effect related to the Monday positive returns occurring on the last week of the month. In many countries (mainly Europe), the salaries are usually paid at the end of the month. Hence it can happen investors long crypto assets coherently with this occurrence.

Table 4.a: Daily effect per week of the month from *Binance* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Monday	0.008	0.011	0.004	0.040***	0.006	0.007	0.010*	0.007	0.034	0.017	0.058***	0.009	0.018	0.009	0.033***
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.108)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Monday	-0.016**	-0.002	0.006	0.007	-0.027*	0.004	0.002	0.002	0.011	0.002	-0.010	-0.006	0.007	0.005	-0.007
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.108)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Third Week Monday	-0.018**	-0.022***	0.004	0.003	-0.005	-0.007	0.007	0.001	0.016	0.012	0.006	0.005	-0.020	-0.003	0.006
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.112)	(0.013)	(0.023)	(0.014)	(0.014)	(0.008)	(0.008)
Fourth Week Monday	0.007	0.005	0.015***	0.041***	0.015	0.033***	0.016***	0.009	0.056	0.016	0.051***	0.040***	0.036***	0.012*	0.024***
	(0.007)	(0.007)	(0.004)	(0.012)	(0.013)	(0.011)	(0.005)	(0.006)	(0.097)	(0.012)	(0.019)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	0.001	0.003**	-0.000	-0.007***	0.003	-0.000	-0.000	-0.002	-0.002	0.002	-0.007*	0.002	-0.002	0.000	-0.003*
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.007	0.005	0.008	0.034	0.004	0.013	0.007	0.002	0.001	0.003	0.031	0.016	0.018	0.004	0.018

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Friday	0.004	0.015*	-0.004	-0.008	-0.009	-0.007	0.001	0.002	-0.027	-0.002	-0.004	0.014	-0.004	0.008	-0.006
	(0.008)	(0.008)	(0.005)	(0.014)	(0.016)	(0.013)	(0.006)	(0.007)	(0.107)	(0.013)	(0.023)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Friday	-0.002	0.007	-0.008*	-0.008	-0.007	0.006	-0.012**	-0.001	-0.317***	-0.024*	-0.028	-0.007	-0.004	-0.013*	-0.010
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.107)	(0.013)	(0.021)	(0.013)	(0.014)	(0.008)	(0.008)
Third Week Friday	-0.004	0.012	0.000	-0.030**	0.006	-0.010	-0.005	0.001	-0.038	0.013	-0.031	-0.019	-0.033**	-0.005	0.005
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.111)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Fourth Week Friday	0.010	0.005	-0.007*	0.003	0.009	-0.000	-0.008	-0.006	0.006	-0.017	-0.011	-0.005	-0.010	-0.011*	-0.004
	(0.007)	(0.007)	(0.004)	(0.012)	(0.013)	(0.011)	(0.005)	(0.006)	(0.095)	(0.012)	(0.020)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	0.000	0.002	0.002*	-0.002	0.002	0.001	0.002*	-0.001	0.015	0.005**	-0.000	0.004	0.001	0.002	-0.000

	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.003	0.003	0.009	0.001	0.002	0.004	0.001	0.013	0.005	0.009	0.005	0.009	0.006	0.002

Table 4.b: Daily effect per week of the month from *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Monday	-0.003	-0.000	-0.000	0.005	-0.008	0.024	-0.011	0.004	0.020	-0.012	0.062	0.008	0.007	-0.003	-0.004
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.413)	(0.014)	(0.048)	(0.015)	(0.016)	(0.007)	(0.007)
Second Week Monday	-0.004	0.000	0.003	0.015	-0.008	-0.002	-0.002	-0.003	-0.020	-0.002	-0.009	0.000	0.012	0.004	-0.010
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.413)	(0.014)	(0.054)	(0.015)	(0.016)	(0.007)	(0.007)
Third Week Monday	0.001	0.006	0.004	0.010	0.001	-0.020	0.001	-0.001	-0.104	-0.005	0.032	0.012	-0.009	0.012*	0.001
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.451)	(0.014)	(0.049)	(0.015)	(0.016)	(0.007)	(0.007)
Fourth Week Monday	0.001	0.045***	0.003	0.012	-0.006	-0.011	0.004	-0.001	0.241	-0.018	0.038	0.015	0.027*	0.002	-0.005
	(0.008)	(0.013)	(0.003)	(0.017)	(0.007)	(0.013)	(0.006)	(0.005)	(0.413)	(0.012)	(0.044)	(0.014)	(0.014)	(0.006)	(0.006)
Constant	0.002	0.002	0.001	0.001	0.002	0.002	0.003**	0.001	-0.091	0.006**	0.009	0.003	-0.000	0.001	0.002
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.085)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.007	0.001	0.002	0.001	0.008	0.001	0.000	0.003	0.002	0.004	0.002	0.006	0.001	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Friday	-0.017*	0.007	-0.005	-0.005	-0.000	-0.004	-0.010	-0.010*	-0.039	-0.014	-0.057	-0.003	0.011	-0.003	-0.000
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.408)	(0.014)	(0.053)	(0.015)	(0.016)	(0.007)	(0.007)
Second Week Friday	-0.023***	-0.039***	-0.002	-0.022	-0.011	-0.004	-0.014**	-0.014**	-0.914***	-0.037***	-0.033	-0.015	-0.012	-0.010	-0.004
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.445)	(0.014)	(0.053)	(0.015)	(0.016)	(0.007)	(0.007)
Third Week Friday	-0.000	0.027*	0.001	0.010	0.007	-0.003	0.005	0.003	0.132	0.005	0.007	-0.015	0.003	0.010	0.002
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.445)	(0.014)	(0.053)	(0.015)	(0.017)	(0.007)	(0.007)
Fourth Week Friday	-0.008	-0.012	-0.005	0.001	0.004	0.001	-0.011*	-0.006	0.036	0.003	-0.025	-0.002	0.004	-0.006	0.005
	(0.008)	(0.013)	(0.003)	(0.016)	(0.007)	(0.013)	(0.006)	(0.005)	(0.379)	(0.012)	(0.045)	(0.013)	(0.014)	(0.006)	(0.006)
Constant	0.003*	0.005*	0.002***	0.003	0.002	0.002	0.004***	0.002	-0.061	0.006**	0.018*	0.006*	0.001	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.006	0.006	0.001	0.003	0.001	0.000	0.004	0.003	0.027	0.007	0.003	0.002	0.002	0.002	0.000

Similar results have been found when splitting the time series of log returns into the first three weeks of the month and the last two ones, as done by Wang, Li, and Erickson (1997). The Mondays' average returns for the last two weeks are still positive for all the cryptocurrencies included in the sample. For BTC, DOGE, DOT, ETH, SOL, UNI, and XRP in the *Binance*

dataset, these average positive results significantly differ from 0 at different confidence levels. They also still partially show a relationship with the size of the crypto assets' capitalization, with BTC and ETH expressing the lowest average returns (1.2 percent and 1.3 percent), representing Kamara's (1995a) findings again. In this case, when the last two weeks of the month are combined, BNB presents positive average returns on Mondays, but not significant. Average positive returns for BNB become significant when *Coingecko*'s dataset is considered, which makes it the only significant positive average return from this dataset.

Considering the end of the week effect, we can see how we do not have any significant and negative results, following what has been found in the previous model, where the second end-of-the-week returns appeared negative and significant (see Table 5.1.a and Table 5.1.b in the Appendix). Thus, I decided to group the first three weeks to evaluate the end-of-the-week effect. Nevertheless, I find only a few significant results with these model deviations, leaving rooms opened to interpretation relative to the second week of the month average negative and significant results previously presented (see Table 5.2.a and Table 5.2.b in the Appendix).

Table 5.1.a: Last two weeks of the month effect *Binance* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.002	-0.002	-0.002	0.002	-0.006	-0.001	-0.003	-0.006**	0.090**	-0.009*	0.007	-0.005	0.003	-0.004	-0.005
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Mondays	0.014	0.012	0.012**	0.021	0.030*	0.033**	0.013**	0.011	-0.055	0.015	0.026	0.042***	0.031**	0.013	0.019**
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.121)	(0.015)	(0.025)	(0.015)	(0.015)	(0.008)	(0.009)
Monday	-0.008	-0.005	0.004	0.018**	-0.011	0.001	0.005	0.001	0.048	0.007	0.021	0.001	0.003	0.002	0.009*
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.066)	(0.008)	(0.014)	(0.008)	(0.009)	(0.005)	(0.005)
Constant	0.000	0.004**	0.000	-0.008**	0.005	-0.000	0.001	0.000	-0.030	0.005	-0.009*	0.003	-0.003	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.003	0.001	0.008	0.027	0.003	0.013	0.008	0.004	0.006	0.005	0.020	0.016	0.013	0.005	0.011

Table 5.1.b: Last two weeks of the month effect *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.003	-0.004	0.001	0.003	-0.002	0.001	-0.001	0.002	0.119	-0.001	0.006	0.005	0.001	-0.002	-0.001
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.183)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Mondays	-0.000	0.048***	0.000	-0.001	0.002	-0.013	0.009	-0.003	0.152	-0.011	0.001	0.004	0.022	-0.001	0.000
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.503)	(0.015)	(0.056)	(0.017)	(0.018)	(0.008)	(0.008)

Monday	-0.001	0.001	0.002	0.011	-0.006	0.001	-0.004	0.001	0.006	-0.007	0.033	0.008	0.004	0.004	-0.005
	(0.006)	(0.009)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.260)	(0.009)	(0.031)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	0.001	0.003	0.001	-0.000	0.003*	0.002	0.003**	0.000	-0.128	0.006*	0.007	0.002	-0.000	0.002	0.002
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.101)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.007	0.000	0.002	0.001	0.001	0.001	0.000	0.005	0.002	0.003	0.003	0.005	0.001	0.001

The fourth model deployed, with the purpose of spotting potential Turn of the Year, Holidays, Summer, and/or Christmas effects, is presented here. When the Turn of the Year effect is considered, no substantial effects have been registered in December or January. Hence, we can say that the Turn of the Year effect is absent in the cryptocurrency market. This can be supported by the absence of the tax payoff event characterizing the stock market and by the limited correlation of the crypto assets with economic variables and other markets, as explained in the introduction.

However, for other months substantial effects have been recognized. For instance, in February, when the *Binance* dataset is taken into account, we can see significant positive average returns for ADA, BNB, LTC, MATIC, and SOL. On the other hand, CAKE average returns are significantly negative in *Binance*'s dataset but positive in *Coingecko*'s one. This can be connected to its function in its related decentralized exchange, allowing investors to trade and get in touch with different currencies and services offered by the same exchange. This nature must be investigated further. Even though insignificant, all other coefficients appear to be positive in the same month, except for DOGE. These coefficients express an inverse Holidays effect, having average positive returns after Holidays, say December and January, instead of before them.

When looking at April average returns, we can see diverse positive and significant returns as per CAKE, DOGE, ETH, XMR, and XRP. DOGE is positively significant at 5 percent confidence in both the datasets representing the sample. Also, despite insignificant returns presented for the other crypto assets, the positive coefficient characterizing most of them may be recognized. This effect can be assimilated with February's one and with the Halloween effect we will investigate later.

The last month I present as significant and following a pattern is May, with consistent and significantly different from 0 negative returns. In both datasets considered, CAKE, DOT, and

SOL appear to be significantly negative. MATIC, on the other hand, is positive and significant at a 5 percent confidence level in both datasets. When only *Binance*'s dataset is also considered, SHIB and XRP reflect negative average returns this month. Two different reasons can explain this result: the end of the Halloween effect, hence starting to characterize the second period of the year with lower returns, or the proximity of May to the beginning of the summer, which is by literature characterized by negative patterns both in volume and returns. No significant negative January returns are found for the set of cryptos analyzed, confuting Kaiser (2019b) findings.

Table 6.a: Monthly effect from *Binance* dataset:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
February	0.011*	0.013**	0.003	-0.029***	-0.004	0.011	0.002	0.007*	0.036	0.020**	0.011	0.017*	0.002	0.006	0.001
	(0.006)	(0.005)	(0.003)	(0.010)	(0.010)	(0.008)	(0.004)	(0.004)	(0.072)	(0.009)	(0.017)	(0.009)	(0.009)	(0.005)	(0.006)
Constant	-0.000	0.002	0.001	-0.002	0.003	0.000	0.001	-0.002	-0.001	0.002	-0.004	0.002	-0.001	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.003	0.001	0.015	0.000	0.003	0.000	0.002	0.000	0.004	0.001	0.005	0.000	0.001	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
April	0.004	0.007	0.004	0.016*	0.023**	-0.008	0.009**	0.006	-0.009	-0.002	-0.005	0.005	-0.001	0.008*	0.010*
	(0.005)	(0.005)	(0.003)	(0.008)	(0.010)	(0.008)	(0.004)	(0.004)	(0.070)	(0.009)	(0.016)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.000	0.002	0.001	-0.005**	0.001	0.002	0.000	-0.002	0.003	0.004	-0.003	0.003	-0.001	0.000	-0.002
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.001	0.001	0.007	0.005	0.001	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.002

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
May	0.002	-0.006	-0.003	-0.021***	-0.008	-0.017**	-0.001	-0.003	-0.054	0.014*	-0.047***	-0.021**	-0.011	-0.002	-0.010**
	(0.005)	(0.005)	(0.003)	(0.008)	(0.010)	(0.008)	(0.004)	(0.004)	(0.079)	(0.008)	(0.012)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.000	0.004**	0.001	-0.001	0.003	0.003	0.001	-0.001	0.005	0.002	0.002	0.005**	0.000	0.001	0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.001	0.001	0.013	0.001	0.006	0.000	0.000	0.001	0.003	0.032	0.008	0.002	0.000	0.003

Table 6.b: Monthly effect from *Coingecko* dataset:

VARIABLES	(1) ADA	(2) BNB	(3) BTC	(4) CAKE	(5) DOGE	(6) DOT	(7) ETH	(8) LTC	(9) LUNA	(10) MATIC	(11) SHIB	(12) SOL	(13) UNI	(14) XMR	(15) XRP
February	0.003	0.011	0.001	0.031**	-0.001	0.011	0.006	0.000		0.016	-0.003	0.015	0.000	0.005	-0.003
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.010)	(0.005)	(0.004)		(0.010)	(0.034)	(0.011)	(0.011)	(0.005)	(0.005)
o.February									-						
Constant	0.001	0.003	0.001**	-0.000	0.002	0.001	0.002*	0.001	-0.085	0.003	0.014	0.004	0.001	0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)	(0.001)	(0.077)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.001	0.000	0.010	0.000	0.002	0.001	0.000	0.000	0.002	0.000	0.002	0.000	0.000	0.000

VARIABLES	(1) ADA	(2) BNB	(3) BTC	(4) CAKE	(5) DOGE	(6) DOT	(7) ETH	(8) LTC	(9) LUNA	(10) MATIC	(11) SHIB	(12) SOL	(13) UNI	(14) XMR	(15) XRP
April	0.006	0.006	0.002	0.010	0.012**	-0.007	0.005	0.004	0.094	0.001	0.041	-0.001	-0.003	0.001	0.005
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.010)	(0.004)	(0.004)	(0.199)	(0.009)	(0.032)	(0.009)	(0.010)	(0.005)	(0.005)
Constant	0.001	0.004	0.001*	0.001	0.001	0.002	0.002*	0.000	-0.103	0.004	0.011	0.005	0.002	0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.086)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.000	0.001	0.002	0.001	0.000	0.000	0.001	0.000	0.002	0.000	0.000	0.000	0.000

VARIABLES	(1) ADA	(2) BNB	(3) BTC	(4) CAKE	(5) DOGE	(6) DOT	(7) ETH	(8) LTC	(9) LUNA	(10) MATIC	(11) SHIB	(12) SOL	(13) UNI	(14) XMR	(15) XRP
May	-0.002	-0.009	0.001	-0.028**	0.001	-0.019**	0.004	-0.001	-0.455**	0.016*	0.005	-0.021**	-0.015	-0.003	-0.000
	(0.006)	(0.010)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.193)	(0.008)	(0.032)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	0.002	0.005*	0.001**	0.005	0.002	0.003	0.002*	0.001	0.003	0.003	0.014	0.007**	0.003	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.085)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.000	0.000	0.009	0.000	0.006	0.000	0.000	0.034	0.003	0.000	0.007	0.003	0.000	0.000

The last effect considered in our analysis, affecting the largest time frame seasonality, is the Halloween effect, for which larger returns are expected to occur between November and April in opposition to the other six months of the year.

Analyzing this time window of the year for the cryptocurrency market, we can see how average positive returns are validated for almost all the crypto assets undergoing our analysis (28 out of 30). For example, visualizing *Binance*'s dataset BNB, DOGE and UNI exhibit significant average positive returns. On *Coingecko*'s side ADA, CAKE, DOGE, and ETH exhibit this effect. These results align with the stocks market and cryptocurrencies-related literature presented by Haggard and Witte (2010) and Kaiser (2019b).

Table 7.a: Halloween effect from *Binance*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Halloween	0.005	0.007**	0.001	0.003	0.010*	0.004	0.003	0.003	0.023	0.004	-0.006	0.007	0.011**	0.003	0.003
	(0.003)	(0.003)	(0.002)	(0.005)	(0.005)	(0.005)	(0.002)	(0.002)	(0.039)	(0.005)	(0.008)	(0.005)	(0.005)	(0.003)	(0.003)
Constant	-0.002	-0.000	0.001	-0.005	-0.002	-0.001	-0.000	-0.002	-0.010	0.002	-0.001	0.000	-0.006*	-0.000	-0.002
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.028)	(0.003)	(0.005)	(0.003)	(0.004)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.003	0.000	0.001	0.003	0.001	0.001	0.001	0.000	0.000	0.001	0.003	0.007	0.001	0.001

Table 7.b: Halloween effect from *Coingecko* dataset:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Halloween	0.006**	0.005	-0.000	0.018***	0.005*	0.003	0.005*	0.003	0.135	0.004	0.026	0.003	0.007	0.003	0.003
	(0.003)	(0.005)	(0.001)	(0.007)	(0.003)	(0.005)	(0.002)	(0.002)	(0.160)	(0.005)	(0.018)	(0.006)	(0.006)	(0.003)	(0.002)
Constant	-0.002	0.002	0.002	-0.007	-0.001	-0.000	0.001	-0.001	-0.136	0.003	0.002	0.003	-0.002	0.000	-0.000
	(0.002)	(0.004)	(0.001)	(0.005)	(0.002)	(0.004)	(0.002)	(0.001)	(0.098)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.002	0.000	0.000	0.011	0.001	0.001	0.001	0.001	0.005	0.000	0.003	0.000	0.002	0.000	0.000

5. Conclusion

In this study, diverse seasonalities anomalies have been actualized from the existing literature for traditional financial instruments to cryptocurrencies. With the characteristics explained and the results found, we can define them better as crypto assets, in line with their nature as speculative assets.

What I found in part is in line with the existing review for the traditional securities, see the size effect, the potential institutional investors' impact, and the Halloween effect. The magnitude of all seasonalities' anomalies has been reflected as inversely proportional to the crypto assets market capitalization, despite the nature and different functions or purposes of the different coins. The potential presence of institutional investors in the big capitalized crypto assets can be assumed due to the diminished magnitude of the seasonalities presented by them, see BTC and ETH figures, and by the fact that trade volumes are, on average lower during the weekends, despite 24/7 opened markets. The Halloween effect has also been found in these securities. However, no clear explanation has been given to this effect so far, neither for the traditional securities nor for the crypto assets, remaining a persisting seasonality anomaly.

Concerning these findings, further research can be proposed to analyze smaller capitalized crypto assets. This study analyzed only assets among the top 100 for market capitalization. On the market are now available about 20,000 cryptocurrencies as per the *CoinMarketCap* listing website, tradable either in centralized or decentralized exchanges. Following our findings, we expect a bigger magnitude of seasonalities for smaller capitalized cryptocurrencies. Considering institutional investors' presence in the market would be interesting to analyze in future research if institutional investors will massively enter the market and how they will affect the seasonalities magnitude. Regarding retail investors, an analysis of pay slips' moments and crypto assets returns is suggested to investigate a potential relationship with the last week's Mondays on average positive and significantly different from 0 returns and this event.

On the other hand, concerning the Weekend effect, the Monthly effect, the Turn of the Year, or the Holidays effect, diverging findings have been presented compared with the stocks' markets literature.

Starting from the Weekend effect, I presented how the coefficients of this anomaly in the cryptocurrencies market are opposite to the ones presented by traditional securities. These are opposite before and after the weekend, being persistent and with a higher magnitude in contrast

with stocks. A motivation justifying this opposite coefficient can exist. A simple, albeit utopic assumption, can be made: if investors are considered informed to a certain extent, knowing that stocks' Weekend effect is negative on Monday returns, they will adjust their investments allocation to other assets, trying to exploit the positive Weekend effect presented by the crypto assets and to offset the short-term loss carried by the stock market. This assumption would harm the weak form of market efficiency for the cryptocurrency market if the investors were able to systematically exploit this anomaly.

Monthly significant seasonalities have been found for February, April, and May diversely from the traditional securities market in which similar seasonalities are presented in December and January. These monthly anomalies do not relate to the stock markets' tax payment loss. However, they potentially relate, as explained in the results with the Halloween and a potential Holidays effect for May, anticipating the summer and distinguishing the semester April – November. Further studies must investigate the future persistence of these Monthly effects to formulate a reason for them.

Considering the different nature and purposes of the crypto assets evaluated in this study, a categorization among different crypto assets could be done in function of possible divergences brought by these features. For example, see how BTC, ETH, SHIB, DOGE, and BNB exhibit distinguished patterns. Moreover, the life cycle stage, the regulations, and the acceptance of these securities will potentially modify the statistics proposed by these assets. With these characteristics' development, seasonality anomalies must be investigated further to address modifications in the magnitude of these effects and their persistence. Most importantly, in terms of asset pricing theory, evaluations regarding the exploitation of these anomalies must be considered, as their magnitude is more significant than in the traditional securities scenario. On *Binance* exchange, spot trading fees assumed as transaction costs amount to 0.1% or 10 bps, while deposit costs amount to 0% if done through bank transfer or 1.8% through an immediate transfer with a prepaid card. If an investor waits, for instance, Saturday to enter the market, he can probably exploit the effect longing SHIB or UNI up to Monday evening, making potential positive returns, even though is paying transfer fees up to 1.8% to deposit EUR on the exchange. Further strategies can be thought with the analysis of smaller capitalized firms and different effects.

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Appendix

Binance:

Table 1.c: Trading volumes from *Binance* dataset (18/08/2017 – 13/08/2022)

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ADA	1580	2.800e+08	2.760e+08	25400000	2.262e+09	36800000	1.502e+09	2.859	13.492
BNB	1742	2250000	1780000	91986.49	20200000	270000	8830000	2.789	17.803
BTC	1823	53728.384	41014.783	228.108	403000	660.373	207000	2.423	13.697
CAKE	541	4070000	3170000	573000	21400000	851000	16100000	2.362	10.255
DOGE	1136	2.130e+09	6.510e+09	29517748	1.091e+11	40358430	2.607e+10	9.818	131.992
DOT	726	12500000	9480000	1740000	80500000	2490000	49300000	2.551	12.775
ETH	1823	571000	521000	1060.567	4660000	4125.971	2440000	2.288	12.113
LTC	1705	621000	678000	3877.472	6730000	31586.767	3440000	2.813	14.258
LUNA	723	4.000e+09	2.480e+10	306000	2.732e+11	646000	1.452e+11	6.406	45.821
MATIC	1206	3.690e+08	5.290e+08	15800000	7.216e+09	33628213	2.209e+09	6.068	58.613
SHIB	461	1.770e+13	2.530e+13	1.688e+12	2.461e+14	2.374e+12	1.384e+14	4.574	30.522
SOL	733	4140000	3550000	479000	30900000	729000	16900000	3.058	17.017
UNI	696	5710000	9870000	604000	1.677e+08	861000	44900000	9.302	126.476
XMR	1248	94851.383	75356.128	2740.825	805000	4279.066	376000	2.465	15.95
XRP	1563	3.540e+08	5.520e+08	6850000	8.608e+09	17500000	2.579e+09	5.418	52.794

Table 3.a (continuous): Daily effect from *Binance* dataset:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Tuesday	0.001	0.001	-0.004*	-0.010	-0.012	-0.009	-0.006**	-0.006*	0.128**	0.007	0.002	-0.006	-0.010	-0.003	-0.003
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.055)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	0.000	0.003*	0.002*	-0.002	0.004	0.002	0.002*	-0.000	-0.016	0.003	-0.003	0.004*	0.001	0.001	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.000	0.002	0.003	0.002	0.003	0.002	0.002	0.008	0.001	0.000	0.001	0.003	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Wednesday	0.004	0.000	0.005*	0.006	0.001	0.012*	0.005	0.004	-0.013	0.006	0.008	0.002	0.014*	-0.001	0.000
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.056)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	0.000	0.003*	0.000	-0.004	0.002	-0.001	0.000	-0.002	0.004	0.003	-0.004	0.003	-0.003	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.000	0.002	0.001	0.000	0.005	0.001	0.001	0.000	0.001	0.001	0.000	0.005	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP

Thursday	-0.012***	-0.007	-0.000	-0.005	0.009	-0.006	-0.004	-0.008**	-0.034	0.001	-0.019*	-0.002	-0.002	0.001	-0.005
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.055)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	0.002	0.004**	0.001	-0.003	0.001	0.002	0.002	0.000	0.007	0.004	-0.000	0.004	-0.000	0.001	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.005	0.001	0.000	0.001	0.001	0.001	0.001	0.003	0.001	0.000	0.007	0.000	0.000	0.000	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Saturday	0.010**	0.003	-0.004	-0.017**	-0.002	0.002	-0.001	0.003	-0.025	-0.009	-0.010	-0.008	-0.004	-0.002	-0.001
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.055)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	-0.001	0.003*	0.001	-0.001	0.003	0.001	0.001	-0.001	0.006	0.005**	-0.002	0.005*	-0.000	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.003	0.000	0.001	0.010	0.000	0.000	0.000	0.001	0.000	0.001	0.002	0.002	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Sunday	-0.001	-0.005	0.001	0.010	0.005	-0.007	0.003	0.003	0.002	-0.008	0.010	0.004	0.003	0.005	-0.002
	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.006)	(0.003)	(0.003)	(0.056)	(0.007)	(0.011)	(0.007)	(0.007)	(0.004)	(0.004)
Constant	0.001	0.004**	0.001	-0.005*	0.002	0.002	0.001	-0.001	0.002	0.005**	-0.004	0.003	-0.001	0.000	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.001	0.000	0.004	0.000	0.002	0.000	0.001	0.000	0.001	0.002	0.000	0.000	0.001	0.000

Table 4.a (contiuous): Daily effect per week of the month from *Binance* dataset:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Tuesday	0.000	0.006	0.005	-0.000	0.012	0.002	0.008	0.013**	0.015	0.016	0.024	0.010	0.003	0.003	-0.006
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.106)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Tuesday	0.006	0.011	-0.012**	-0.023	-0.008	-0.022*	-0.007	-0.018***	0.010	0.013	-0.025	-0.013	-0.021	0.001	0.000
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.106)	(0.013)	(0.021)	(0.014)	(0.014)	(0.008)	(0.008)
Third Week Tuesday	0.000	-0.014*	-0.003	0.004	-0.014	-0.010	-0.006	0.001	0.042	0.009	0.029	0.003	-0.002	-0.004	0.007
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.111)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Fourth Week Tuesday	-0.002	0.000	-0.006	-0.017	-0.030***	-0.007	-0.015***	-0.015***	0.368***	-0.004	-0.013	-0.019	-0.015	-0.009	-0.010
	(0.007)	(0.007)	(0.004)	(0.012)	(0.013)	(0.011)	(0.005)	(0.006)	(0.094)	(0.012)	(0.019)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	0.000	0.003*	0.002*	-0.002	0.004	0.002	0.002*	-0.000	-0.016	0.003	-0.003	0.004*	0.001	0.001	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.003	0.005	0.008	0.006	0.005	0.007	0.011	0.021	0.002	0.011	0.005	0.006	0.002	0.002

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Wednesday	0.005	0.002	0.010**	0.012	0.009	0.022*	0.009	0.008	-0.035	0.012	0.012	-0.010	0.009	0.007	-0.001
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.110)	(0.013)	(0.023)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Wednesday	0.007	0.004	0.001	-0.003	0.007	0.020	0.006	0.005	-0.039	0.005	-0.010	0.009	0.015	-0.016**	0.004
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.108)	(0.013)	(0.022)	(0.013)	(0.014)	(0.008)	(0.008)
Third Week Wednesday	0.008	-0.002	0.000	0.003	-0.009	0.001	-0.002	-0.000	0.012	0.004	-0.008	-0.002	0.004	0.004	0.004
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.112)	(0.013)	(0.022)	(0.014)	(0.015)	(0.008)	(0.008)
Fourth Week Wednesday	-0.003	-0.003	0.006	0.009	-0.002	0.006	0.005	0.003	0.006	0.002	0.029	0.008	0.024*	0.000	-0.004
	(0.007)	(0.007)	(0.004)	(0.013)	(0.013)	(0.011)	(0.005)	(0.006)	(0.095)	(0.012)	(0.019)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	0.000	0.003*	0.000	-0.004	0.002	-0.001	0.000	-0.002	0.004	0.003	-0.004	0.003	-0.003	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.001	0.000	0.003	0.002	0.001	0.008	0.002	0.001	0.000	0.001	0.007	0.002	0.007	0.005	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Thursday	-0.010	-0.006	0.005	-0.010	0.011	-0.005	-0.007	-0.006	0.008	0.005	-0.015	0.011	0.003	0.008	0.007
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.107)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Thursday	-0.032***	-0.022***	-0.003	-0.018	-0.011	0.003	-0.001	-0.016**	-0.127	-0.002	-0.043**	-0.005	-0.007	-0.009	-0.012
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.107)	(0.013)	(0.021)	(0.013)	(0.014)	(0.008)	(0.008)
Third Week Thursday	-0.007	0.003	0.002	0.005	0.011	-0.018	0.002	-0.005	-0.020	-0.004	-0.017	-0.005	-0.005	0.005	-0.002
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.112)	(0.013)	(0.023)	(0.014)	(0.014)	(0.008)	(0.008)
Fourth Week Thursday	-0.001	-0.003	-0.003	0.003	0.023*	-0.002	-0.007	-0.005	-0.006	0.003	-0.005	-0.007	-0.000	-0.001	-0.011
	(0.007)	(0.007)	(0.004)	(0.012)	(0.013)	(0.011)	(0.005)	(0.006)	(0.095)	(0.012)	(0.019)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	0.002	0.004**	0.001	-0.003	0.001	0.002	0.002	0.000	0.007	0.004	-0.000	0.004	-0.000	0.001	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.011	0.004	0.001	0.004	0.004	0.003	0.002	0.005	0.002	0.000	0.011	0.002	0.001	0.003	0.003

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Saturday	0.005	0.011	0.002	-0.003	0.031**	-0.001	0.005	0.017***	-0.009	-0.006	0.011	0.013	-0.005	-0.003	-0.008
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.108)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Saturday	0.014*	-0.003	-0.007	-0.018	-0.007	-0.005	-0.005	0.004	-0.043	-0.014	-0.021	-0.034**	-0.010	0.006	0.001
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.110)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Third Week Saturday	0.009	0.004	-0.002	-0.027*	-0.002	0.024*	0.002	0.001	-0.017	0.011	-0.017	0.005	0.027*	0.001	0.007
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.112)	(0.013)	(0.023)	(0.014)	(0.014)	(0.008)	(0.008)
Fourth Week Saturday	0.011	-0.002	-0.006	-0.019	-0.024*	-0.008	-0.005	-0.006	-0.030	-0.021*	-0.013	-0.013	-0.023*	-0.009	-0.004
	(0.007)	(0.007)	(0.004)	(0.012)	(0.013)	(0.011)	(0.005)	(0.006)	(0.094)	(0.011)	(0.020)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	-0.001	0.003*	0.001	-0.001	0.003	0.001	0.001	-0.001	0.006	0.005**	-0.002	0.005*	-0.000	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)

Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.004	0.001	0.003	0.013	0.007	0.006	0.001	0.005	0.000	0.005	0.005	0.012	0.012	0.002	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Sunday	0.007	-0.002	0.000	0.013	0.005	-0.004	0.008	0.002	-0.005	-0.006	0.015	0.001	0.002	0.006	0.002
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.108)	(0.013)	(0.022)	(0.014)	(0.014)	(0.008)	(0.008)
Second Week Sunday	-0.014*	-0.011	-0.001	0.008	0.016	-0.002	-0.004	0.005	0.011	-0.002	0.019	-0.017	-0.007	0.007	-0.003
	(0.008)	(0.008)	(0.005)	(0.015)	(0.015)	(0.013)	(0.006)	(0.007)	(0.110)	(0.013)	(0.023)	(0.014)	(0.014)	(0.008)	(0.008)
Third Week Sunday	0.003	-0.000	0.003	0.015	-0.002	-0.020	-0.000	0.005	0.002	-0.010	-0.007	0.030**	-0.015	0.001	-0.001
	(0.008)	(0.008)	(0.005)	(0.014)	(0.015)	(0.013)	(0.006)	(0.007)	(0.112)	(0.013)	(0.024)	(0.014)	(0.014)	(0.008)	(0.008)
Fourth Week Sunday	-0.001	-0.006	0.000	0.007	0.001	-0.005	0.007	0.001	0.000	-0.014	0.011	0.001	0.024**	0.005	-0.003
	(0.007)	(0.007)	(0.004)	(0.012)	(0.013)	(0.011)	(0.005)	(0.006)	(0.097)	(0.012)	(0.019)	(0.012)	(0.012)	(0.007)	(0.007)
Constant	0.001	0.004**	0.001	-0.005*	0.002	0.002	0.001	-0.001	0.002	0.005**	-0.004	0.003	-0.001	0.000	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.021)	(0.003)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.003	0.001	0.000	0.004	0.001	0.004	0.002	0.001	0.000	0.002	0.003	0.009	0.008	0.002	0.000

Table 5.1.a (continuous): Last two weeks of the month effect *Binance* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.006*	-0.001	0.000	0.008	0.002	0.003	0.001	-0.002	0.038	-0.006	0.016*	0.004	0.010*	-0.001	-0.001
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Tuesdays	-0.010	-0.000	-0.003	-0.019	-0.030*	-0.001	-0.014**	-0.011	0.308***	-0.011	-0.037	-0.023	-0.018	-0.008	-0.009
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.119)	(0.015)	(0.024)	(0.015)	(0.015)	(0.008)	(0.009)
Tuesday	0.004	0.001	-0.003	-0.004	-0.003	-0.009	-0.001	-0.002	0.033	0.011	0.013	0.001	-0.004	-0.000	-0.000
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.066)	(0.008)	(0.013)	(0.008)	(0.009)	(0.005)	(0.005)
Constant	-0.001	0.003	0.002	-0.005	0.003	0.001	0.002	0.001	-0.028	0.004	-0.008	0.003	-0.002	0.002	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.000	0.002	0.008	0.005	0.003	0.005	0.005	0.022	0.003	0.009	0.004	0.007	0.002	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.007*	0.000	-0.001	0.006	-0.001	0.005	-0.002	-0.004	0.092**	-0.008	0.007	-0.000	0.006	-0.003	-0.002
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Wednesdays	-0.017*	-0.005	0.004	-0.002	-0.003	-0.013	0.003	0.003	-0.064	0.003	0.025	0.009	0.009	0.006	-0.004
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.120)	(0.015)	(0.024)	(0.015)	(0.015)	(0.008)	(0.009)
Wednesday	0.009*	0.002	0.003	0.006	0.002	0.016**	0.004	0.003	0.006	0.005	-0.000	-0.001	0.011	-0.003	0.002
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.067)	(0.008)	(0.014)	(0.008)	(0.009)	(0.005)	(0.005)
Constant	-0.002	0.003	0.001	-0.006*	0.003	-0.002	0.001	-0.000	-0.024	0.005*	-0.006	0.003	-0.004	0.002	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555

R-squared	0.004	0.000	0.002	0.003	0.000	0.007	0.002	0.002	0.006	0.002	0.007	0.001	0.008	0.001	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.002	-0.002	0.000	0.005	-0.005	0.003	-0.001	-0.005*	0.08**	-0.009	0.008	0.003	0.008	-0.003	-0.002
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Thursdays	0.013	0.007	-0.005	0.006	0.024	0.001	-0.004	0.009	-0.048	0.012	0.012	-0.010	-0.005	-0.000	-0.007
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.120)	(0.015)	(0.024)	(0.015)	(0.015)	(0.008)	(0.009)
Thursday	-0.016***	-0.009*	0.002	-0.007	0.002	-0.006	-0.003	-0.011***	-0.020	-0.003	-0.023*	0.001	-0.000	0.001	-0.003
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.066)	(0.008)	(0.013)	(0.008)	(0.009)	(0.005)	(0.005)
Constant	0.001	0.005**	0.001	-0.004	0.003	0.001	0.002	0.002	-0.021	0.006**	-0.003	0.003	-0.003	0.002	0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.007	0.002	0.001	0.003	0.003	0.002	0.001	0.006	0.006	0.002	0.010	0.001	0.003	0.001	0.002

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.003	0.000	0.000	0.003	-0.004	0.003	-0.001	-0.004	0.074	-0.006	0.010	0.001	0.008	-0.002	-0.003
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Fridays	0.008	-0.007	-0.003	0.015	0.016	-0.000	-0.001	-0.003	0.063	-0.005	0.000	-0.002	-0.004	-0.006	0.003
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.120)	(0.015)	(0.025)	(0.015)	(0.015)	(0.008)	(0.009)
Friday	0.000	0.011**	-0.004	-0.014	-0.004	-0.003	-0.006	-0.001	-0.107	-0.007	-0.018	-0.004	-0.012	-0.004	-0.005
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.066)	(0.008)	(0.013)	(0.008)	(0.009)	(0.005)	(0.005)
Constant	-0.001	0.002	0.002	-0.003	0.004	0.000	0.002*	0.000	-0.008	0.007**	-0.003	0.004	-0.001	0.002	0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.003	0.002	0.006	0.001	0.001	0.003	0.002	0.009	0.003	0.009	0.001	0.007	0.003	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.005	0.000	0.000	0.007	0.003	0.006	-0.001	-0.002	0.098**	-0.005	0.013	0.003	0.013**	-0.001	-0.002
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.046)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Saturdays	-0.003	-0.006	-0.004	-0.009	-0.034**	-0.020	-0.004	-0.011	-0.105	-0.013	-0.017	-0.010	-0.039**	-0.009	-0.002
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.119)	(0.015)	(0.025)	(0.015)	(0.015)	(0.008)	(0.009)
Saturday	0.011**	0.004	-0.003	-0.014	0.008	0.008	0.000	0.007*	0.007	-0.005	-0.005	-0.005	0.008	0.001	-0.000
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.067)	(0.008)	(0.014)	(0.008)	(0.009)	(0.005)	(0.005)
Constant	-0.002	0.003	0.001	-0.003	0.002	-0.001	0.001	-0.001	-0.024	0.007**	-0.005	0.004	-0.004	0.002	0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.005	0.000	0.002	0.012	0.004	0.004	0.001	0.003	0.007	0.004	0.006	0.002	0.012	0.002	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP

Last 2 Weeks	0.005	-0.000	-0.000	0.007	-0.001	0.003	-0.002	-0.004	0.096**	-0.007	0.012	0.002	0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Last 2 Weeks Sundays	-0.005	-0.001	-0.000	-0.013	-0.003	-0.000	0.008	0.001	-0.098	-0.000	-0.010	-0.006	0.028*	0.004	0.001
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.121)	(0.015)	(0.024)	(0.015)	(0.016)	(0.008)	(0.009)
Sunday	0.000	-0.004	0.001	0.014	0.006	-0.008	0.000	0.003	0.032	-0.008	0.013	0.006	-0.006	0.004	-0.002
	(0.005)	(0.005)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.067)	(0.008)	(0.014)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	-0.001	0.004**	0.001	-0.007**	0.002	0.001	0.001	-0.000	-0.028	0.007**	-0.008	0.002	-0.002	0.001	0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)	(0.003)	(0.001)	(0.002)	(0.025)	(0.003)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.001	0.001	0.000	0.007	0.000	0.003	0.002	0.002	0.006	0.003	0.005	0.001	0.007	0.002	0.001

Table 5.2.a: First three weeks of the month effect *Binance* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First 3 Weeks	-0.002	0.002	-0.000	-0.005	0.005	-0.003	0.001	0.005*	-0.089**	0.009	-0.008	-0.003	-0.008	0.003	0.002
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
First 3 Weeks Thursdays	-0.013	-0.007	0.005	-0.006	-0.024	-0.001	0.004	-0.009	0.048	-0.012	-0.012	0.010	0.005	0.000	0.007
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.120)	(0.015)	(0.024)	(0.015)	(0.015)	(0.008)	(0.009)
Thursday	-0.003	-0.002	-0.004	-0.001	0.026*	-0.005	-0.006	-0.002	-0.067	0.009	-0.011	-0.009	-0.006	0.000	-0.010
	(0.008)	(0.008)	(0.004)	(0.013)	(0.014)	(0.012)	(0.005)	(0.006)	(0.100)	(0.012)	(0.020)	(0.013)	(0.013)	(0.007)	(0.008)
Constant	0.004	0.003	0.001	0.000	-0.002	0.004	0.001	-0.004	0.069*	-0.002	0.006	0.006	0.005	-0.001	-0.001
	(0.003)	(0.003)	(0.002)	(0.005)	(0.005)	(0.004)	(0.002)	(0.002)	(0.038)	(0.005)	(0.008)	(0.005)	(0.005)	(0.003)	(0.003)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.007	0.002	0.001	0.003	0.003	0.002	0.001	0.006	0.006	0.002	0.010	0.001	0.003	0.001	0.002

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First 3 Weeks	-0.003	-0.000	-0.000	-0.003	0.004	-0.003	0.001	0.004	-0.074	0.006	-0.010	-0.001	-0.008	0.002	0.003
	(0.003)	(0.003)	(0.002)	(0.006)	(0.006)	(0.005)	(0.002)	(0.003)	(0.045)	(0.006)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
First 3 Weeks Fridays	-0.008	0.007	0.003	-0.015	-0.016	0.000	0.001	0.003	-0.063	0.005	-0.000	0.002	0.004	0.006	-0.003
	(0.009)	(0.009)	(0.005)	(0.016)	(0.017)	(0.014)	(0.006)	(0.007)	(0.120)	(0.015)	(0.025)	(0.015)	(0.015)	(0.008)	(0.009)
Friday	0.008	0.005	-0.007	0.001	0.012	-0.003	-0.007	-0.003	-0.045	-0.012	-0.018	-0.006	-0.015	-0.010	-0.002
	(0.008)	(0.008)	(0.004)	(0.013)	(0.014)	(0.012)	(0.005)	(0.006)	(0.100)	(0.012)	(0.021)	(0.013)	(0.013)	(0.007)	(0.008)
Constant	0.002	0.002	0.002	0.000	-0.000	0.004	0.001	-0.003	0.066*	0.001	0.007	0.005	0.006	0.001	-0.002
	(0.003)	(0.003)	(0.002)	(0.005)	(0.005)	(0.004)	(0.002)	(0.002)	(0.038)	(0.005)	(0.008)	(0.005)	(0.005)	(0.003)	(0.003)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.003	0.002	0.006	0.001	0.001	0.003	0.002	0.009	0.003	0.009	0.001	0.007	0.003	0.001

Table 6.a: Monthly effect from *Binance* dataset:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
January	0.007	-0.000	-0.002	-0.012	0.024**	0.003	0.004	0.000	0.002	0.003	-0.013	0.006	0.017*	-0.002	0.006
	(0.006)	(0.005)	(0.003)	(0.011)	(0.010)	(0.008)	(0.004)	(0.004)	(0.069)	(0.009)	(0.016)	(0.009)	(0.009)	(0.005)	(0.005)

Constant	-0.000	0.003**	0.001	-0.003	0.000	0.001	0.001	-0.001	0.002	0.004	-0.002	0.003	-0.002	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.001	0.000	0.000	0.002	0.005	0.000	0.001	0.000	0.000	0.000	0.002	0.001	0.005	0.000	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
March	0.001	0.001	-0.003	0.021***	-0.003	0.004	-0.007*	-0.002	0.021	-0.005	0.006	0.007	0.007	0.000	0.001
	(0.006)	(0.005)	(0.003)	(0.008)	(0.010)	(0.008)	(0.004)	(0.004)	(0.069)	(0.009)	(0.016)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.000	0.003*	0.001	-0.006**	0.003	0.001	0.002	-0.001	0.000	0.004*	-0.003	0.003	-0.001	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.000	0.001	0.013	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
June	-0.008	-0.008	-0.004	-0.009	-0.010	-0.015*	-0.008**	-0.005	-0.043	-0.012	-0.001	-0.009	-0.009	-0.008*	-0.007
	(0.005)	(0.005)	(0.003)	(0.008)	(0.010)	(0.008)	(0.004)	(0.004)	(0.070)	(0.008)	(0.012)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.001	0.004**	0.001	-0.003	0.003	0.002	0.002	-0.001	0.006	0.005**	-0.003	0.004*	0.000	0.002	-0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.002	0.001	0.001	0.002	0.001	0.005	0.002	0.001	0.001	0.002	0.000	0.001	0.001	0.002	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
July	0.002	-0.000	0.003	0.012	-0.006	0.004	0.003	0.002	0.003	-0.006	-0.001	0.001	0.013	0.003	0.003
	(0.005)	(0.005)	(0.003)	(0.008)	(0.009)	(0.008)	(0.004)	(0.004)	(0.069)	(0.008)	(0.012)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.000	0.003**	0.001	-0.005*	0.003	0.001	0.001	-0.001	0.002	0.004*	-0.003	0.003	-0.002	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.000	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
August	-0.000	-0.003	-0.001	0.015	-0.001	0.019**	0.000	-0.002	0.020	0.002	0.008	0.025***	0.009	0.001	0.002
	(0.005)	(0.006)	(0.003)	(0.009)	(0.009)	(0.008)	(0.004)	(0.004)	(0.073)	(0.008)	(0.014)	(0.009)	(0.010)	(0.005)	(0.005)
Constant	0.001	0.003**	0.001	-0.005*	0.003	-0.000	0.001	-0.001	0.000	0.004	-0.004	0.001	-0.001	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.000	0.000	0.005	0.000	0.007	0.000	0.000	0.000	0.000	0.001	0.011	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
September	-0.008	-0.006	-0.004	-0.004	-0.009	-0.010	-0.006*	-0.004	-0.008	-0.012	0.005	-0.011	-0.035***	-0.003	0.003
	(0.006)	(0.006)	(0.003)	(0.011)	(0.010)	(0.008)	(0.004)	(0.005)	(0.070)	(0.009)	(0.016)	(0.009)	(0.010)	(0.005)	(0.006)
Constant	0.001	0.003**	0.001	-0.003	0.003	0.002	0.002	-0.001	0.003	0.005*	-0.003	0.005*	0.002	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.001	0.001	0.001	0.000	0.001	0.002	0.002	0.000	0.000	0.001	0.000	0.002	0.017	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
October	-0.003	0.001	0.007**	0.001	0.002	0.005	0.001	0.003	-0.002	0.001	0.081***	-0.009	-0.009	0.002	0.001
	(0.006)	(0.006)	(0.003)	(0.011)	(0.010)	(0.008)	(0.004)	(0.005)	(0.069)	(0.009)	(0.015)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.001	0.003**	0.000	-0.004	0.002	0.001	0.001	-0.001	0.002	0.004	-0.009**	0.004*	0.000	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.000	0.003	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.061	0.001	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
November	-0.003	-0.006	0.001	-0.004	-0.003	0.001	0.001	0.001	0.010	0.008	-0.006	0.002	0.006	-0.002	0.005
	(0.006)	(0.005)	(0.003)	(0.011)	(0.010)	(0.008)	(0.004)	(0.005)	(0.070)	(0.009)	(0.016)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.001	0.004**	0.001	-0.003	0.003	0.001	0.001	-0.001	0.001	0.003	-0.003	0.003	-0.001	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
December	-0.003	0.007	0.001	-0.003	-0.004	0.003	0.002	-0.003	0.014	-0.009	-0.012	-0.012	0.004	-0.002	-0.012**
	(0.006)	(0.005)	(0.003)	(0.011)	(0.010)	(0.008)	(0.004)	(0.004)	(0.069)	(0.009)	(0.016)	(0.009)	(0.009)	(0.005)	(0.005)
Constant	0.001	0.002	0.001	-0.003	0.003	0.001	0.001	-0.001	0.001	0.005*	-0.002	0.005*	-0.001	0.001	0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.020)	(0.002)	(0.004)	(0.003)	(0.003)	(0.001)	(0.002)
Observations	1,576	1,738	1,820	536	1,129	721	1,820	1,696	703	1,202	446	730	690	1,241	1,555
R-squared	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.003	0.000	0.000	0.003

***Coingecko*:**

Table 2.c: Trading volumes from *Coingecko* dataset (28/04/2013 – 13/08/2022)

Variables	Obs	Mean	Std. Dev.	Min	Max	p1	p99	Skew.	Kurt.
ADA	1761	1.080e+09	1.930e+09	1730000	1.744e+10	4640000	9.328e+09	3.3	17.3
BNB	1791	9.350e+08	1.660e+09	.7	2.210e+10	7.2	7.892e+09	4.2	31.7
BTC	3151	1.410e+10	1.880e+10	2640000	1.790e+11	9300000	7.433e+10	1.8	7.5
CAKE	684	2.140e+08	3.630e+08	230000	6.484e+09	579000	1.242e+09	9.6	145.6
DOGE	3150	5.660e+08	2.640e+09	8554.9	5.096e+10	26048	1.082e+10	10.9	156.4
DOT	725	1.190e+09	1.040e+09	49500000	7.440e+09	89700000	4.887e+09	2	8.9
ETH	2563	9.210e+09	1.300e+10	87074.8	1.410e+11	269000	6.163e+10	2.9	17
LTC	3151	1.400e+09	2.170e+09	472000	1.835e+10	728000	1.001e+10	2.7	13.1
LUNA	163	185000	343000	1.9	1690000	3.9	1610000	2.6	9.9
MATIC	1205	5.450e+08	1.020e+09	2150000	1.086e+10	4160000	4.461e+09	4.8	37.4
SHIB	729	9.780e+08	2.540e+09	0	3.605e+10	1.9	1.201e+10	7.6	83.9
SOL	855	1.100e+09	1.470e+09	549000	1.615e+10	935000	6.271e+09	3.2	23.4
UNI	696	5.170e+08	5.430e+08	79800000	5.688e+09	88600000	2.422e+09	3.3	21.5
XMR	3003	1.310e+08	1.950e+08	7421.5	1.948e+09	12870	9.020e+08	2.9	15.7
XRP	3151	1.600e+09	3.250e+09	2140.8	6.247e+10	10920.9	1.585e+10	6	65.7

Table 3.b (continuous): Daily effect from *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Tuesday	-0.001	-0.006	0.001	-0.001	0.002	-0.008	0.002	0.002	0.084	0.004	-0.014	-0.001	-0.012	-0.001	0.003
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.008)	(0.003)	(0.003)	(0.221)	(0.007)	(0.025)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.002	0.005*	0.001*	0.002	0.001	0.003	0.003*	0.001	-0.098	0.004	0.016	0.005	0.003	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.003	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Wednesday	-0.002	0.003	-0.001	0.001	-0.000	-0.000	0.001	-0.002	0.529**	0.005	-0.029	-0.006	-0.004	-0.005	0.000
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.008)	(0.003)	(0.003)	(0.222)	(0.007)	(0.026)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.002	0.004	0.002**	0.002	0.002	0.002	0.003**	0.001	-0.158*	0.004	0.018*	0.005*	0.002	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.082)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.000	0.002	0.001	0.000	0.001	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Thursday	0.004	-0.008	0.001	-0.011	-0.000	0.007	0.003	0.000	-0.516**	0.005	-0.007	0.003	0.007	-0.003	-0.001
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.008)	(0.003)	(0.003)	(0.218)	(0.007)	(0.026)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.001	0.005*	0.001*	0.004	0.002	0.001	0.002*	0.001	-0.011	0.004	0.015	0.004	0.000	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.082)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)

Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.001	0.000	0.002	0.000	0.001	0.000	0.000	0.034	0.000	0.000	0.000	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Saturday	0.005	0.008	0.000	0.010	0.003	-0.003	-0.001	0.004	-0.103	0.007	-0.009	0.001	-0.002	0.007**	-0.002
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.007)	(0.003)	(0.003)	(0.221)	(0.007)	(0.026)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.001	0.003	0.002*	0.001	0.001	0.002	0.003**	0.000	-0.071	0.003	0.015	0.004	0.002	0.000	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.001	0.000	0.002	0.000	0.000	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.001	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Sunday	0.008*	-0.007	-0.001	-0.006	-0.000	0.010	0.004	0.003	0.154	-0.001	0.051**	0.002	-0.001	0.000	0.004
	(0.005)	(0.008)	(0.002)	(0.010)	(0.004)	(0.008)	(0.003)	(0.003)	(0.221)	(0.007)	(0.026)	(0.008)	(0.008)	(0.004)	(0.004)
Constant	0.001	0.005*	0.002**	0.003	0.002	0.000	0.002*	0.000	-0.108	0.004*	0.007	0.004	0.002	0.001	0.000
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.002	0.000	0.000	0.001	0.000	0.003	0.000	0.000	0.003	0.000	0.006	0.000	0.000	0.000	0.000

Table 4.b (continuous): Daily effect per week of the month from *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Tuesday	0.007	0.018	0.006	0.031*	0.002	0.013	0.013*	0.008	0.287	0.030**	-0.057	0.026*	0.018	0.006	0.008
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.451)	(0.014)	(0.048)	(0.015)	(0.016)	(0.007)	(0.007)
Second Week Tuesday	-0.018*	-0.012	-0.003	-0.024	-0.008	-0.036**	0.004	-0.004	-0.046	-0.011	0.015	-0.024	-0.035**	-0.007	0.002
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.413)	(0.014)	(0.049)	(0.015)	(0.016)	(0.007)	(0.007)
Third Week Tuesday	-0.005	-0.028*	0.002	-0.013	0.006	-0.018	-0.003	0.001	0.063	-0.002	0.010	-0.014	-0.023	-0.003	-0.002
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.451)	(0.014)	(0.049)	(0.015)	(0.017)	(0.007)	(0.007)
Fourth Week Tuesday	0.008	-0.004	0.001	0.002	0.006	0.005	-0.004	0.001	0.067	0.001	-0.021	0.006	-0.008	0.000	0.002
	(0.008)	(0.013)	(0.003)	(0.017)	(0.007)	(0.013)	(0.006)	(0.005)	(0.384)	(0.012)	(0.045)	(0.014)	(0.014)	(0.006)	(0.006)
Constant	0.002	0.005*	0.001*	0.002	0.001	0.003	0.003*	0.001	-0.098	0.004	0.016	0.005	0.003	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.085)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.003	0.003	0.001	0.008	0.001	0.012	0.002	0.001	0.003	0.005	0.003	0.008	0.011	0.001	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Wednesday	0.007	0.008	0.002	-0.015	0.002	-0.005	0.009	0.008	0.974**	0.003	0.025	-0.019	-0.006	0.002	0.001
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.402)	(0.014)	(0.049)	(0.015)	(0.016)	(0.007)	(0.007)
Second Week Wednesday	-0.004	0.015	-0.008**	0.003	-0.005	-0.004	-0.009	-0.009	0.854*	-0.004	-0.054	0.002	-0.010	-0.015**	-0.001

	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.438)	(0.014)	(0.051)	(0.015)	(0.016)	(0.007)	(0.007)
Third Week Wednesday	-0.000	-0.009	-0.002	0.018	0.008	0.013	-0.002	-0.009	0.119	0.007	-0.045	-0.006	0.002	-0.010	0.002
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.488)	(0.014)	(0.049)	(0.015)	(0.017)	(0.007)	(0.007)
Fourth Week Wednesday	-0.009	-0.001	0.002	-0.002	-0.004	-0.004	0.005	0.001	0.149	0.010	-0.041	-0.001	-0.003	0.001	-0.001
	(0.008)	(0.013)	(0.003)	(0.017)	(0.007)	(0.013)	(0.006)	(0.005)	(0.373)	(0.012)	(0.045)	(0.013)	(0.014)	(0.006)	(0.006)
Constant	0.002	0.004	0.002**	0.002	0.002	0.002	0.003**	0.001	-0.158*	0.004	0.018*	0.005*	0.002	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.082)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.001	0.002	0.002	0.001	0.001	0.002	0.002	0.057	0.001	0.004	0.002	0.001	0.002	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Thursday	0.002	0.006	0.002	-0.039**	0.000	0.026*	0.004	-0.001	-0.784**	0.014	0.051	-0.005	0.002	0.010	0.004
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.393)	(0.014)	(0.050)	(0.015)	(0.016)	(0.007)	(0.007)
Second Week Thursday	0.014	0.007	-0.003	-0.006	-0.005	0.018	0.009	-0.008	-1.546***	0.021	-0.048	0.024	0.010	-0.006	-0.003
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.429)	(0.014)	(0.050)	(0.015)	(0.016)	(0.007)	(0.007)
Third Week Thursday	0.001	-0.034**	0.004	-0.013	0.011	-0.014	0.002	0.004	-0.102	-0.013	-0.029	-0.020	-0.020	0.002	0.009
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.429)	(0.014)	(0.051)	(0.015)	(0.017)	(0.007)	(0.007)
Fourth Week Thursday	-0.001	-0.012	0.002	0.007	-0.005	-0.001	-0.001	0.005	0.153	0.001	-0.003	0.011	0.026*	-0.013**	-0.009
	(0.008)	(0.013)	(0.003)	(0.016)	(0.007)	(0.013)	(0.006)	(0.005)	(0.365)	(0.012)	(0.045)	(0.013)	(0.014)	(0.006)	(0.006)
Constant	0.001	0.005*	0.001*	0.004	0.002	0.001	0.002*	0.001	-0.011	0.004	0.015	0.004	0.000	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.080)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.003	0.001	0.008	0.001	0.008	0.001	0.001	0.098	0.003	0.003	0.006	0.008	0.003	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First Week Saturday	0.002	0.013	0.001	0.015	0.009	-0.006	0.004	0.004	0.141	0.013	-0.011	0.016	-0.010	0.000	-0.001
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.409)	(0.014)	(0.050)	(0.015)	(0.016)	(0.007)	(0.007)
Second Week Saturday	-0.006	-0.004	-0.003	0.012	0.000	-0.004	-0.006	0.003	-0.770*	0.000	0.011	-0.007	-0.009	0.009	-0.005
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.447)	(0.014)	(0.053)	(0.015)	(0.016)	(0.007)	(0.007)
Third Week Saturday	0.011	0.018	0.003	0.016	0.005	0.011	-0.007	0.007	0.108	0.031**	0.020	0.006	0.037**	0.012*	-0.000
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.447)	(0.014)	(0.051)	(0.015)	(0.016)	(0.007)	(0.007)
Fourth Week Saturday	0.010	0.005	-0.001	0.002	0.001	-0.011	0.003	0.003	0.014	-0.010	-0.047	-0.008	-0.022	0.007	-0.002
	(0.008)	(0.013)	(0.003)	(0.016)	(0.007)	(0.013)	(0.006)	(0.005)	(0.380)	(0.012)	(0.047)	(0.013)	(0.014)	(0.006)	(0.006)
Constant	0.001	0.003	0.002*	0.001	0.001	0.002	0.003**	0.000	-0.071	0.003	0.015	0.004	0.002	0.000	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.002	0.001	0.000	0.002	0.000	0.002	0.001	0.001	0.020	0.005	0.002	0.002	0.012	0.002	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP

First Week Sunday	0.006	-0.013	0.002	0.010	0.012	-0.007	0.007	0.007	0.018	-0.008	-0.082	0.001	-0.012	0.004	0.011
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.412)	(0.014)	(0.051)	(0.016)	(0.016)	(0.007)	(0.007)
Second Week Sunday	0.006	-0.004	-0.001	0.001	0.000	0.011	0.001	0.006	0.196	0.011	0.098*	-0.004	0.003	0.006	0.005
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.450)	(0.014)	(0.051)	(0.016)	(0.017)	(0.007)	(0.007)
Third Week Sunday	0.004	0.000	-0.005	-0.026	-0.004	0.020	0.003	-0.005	0.442	-0.011	0.041	0.002	0.010	-0.006	-0.005
	(0.009)	(0.015)	(0.004)	(0.019)	(0.008)	(0.015)	(0.007)	(0.006)	(0.450)	(0.014)	(0.051)	(0.016)	(0.016)	(0.007)	(0.007)
Fourth Week Sunday	0.013*	-0.009	0.001	-0.007	-0.006	0.015	0.004	0.003	0.035	0.002	0.120***	0.006	-0.003	-0.003	0.004
	(0.008)	(0.013)	(0.003)	(0.016)	(0.007)	(0.013)	(0.006)	(0.005)	(0.383)	(0.012)	(0.043)	(0.013)	(0.014)	(0.006)	(0.006)
Constant	0.001	0.005*	0.002**	0.003	0.002	0.000	0.002*	0.000	-0.108	0.004*	0.007	0.004	0.002	0.001	0.000
	(0.002)	(0.003)	(0.001)	(0.004)	(0.002)	(0.003)	(0.001)	(0.001)	(0.084)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.002	0.001	0.001	0.004	0.001	0.005	0.001	0.001	0.007	0.001	0.021	0.000	0.001	0.001	0.001

Table 5.1.b (continuous): Last two weeks of the month effect *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.001	0.002	0.001	0.003	-0.003	-0.004	0.002	0.002	0.165	-0.002	0.009	0.005	0.004	-0.003	-0.001
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.184)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Tuesdays	0.012	0.001	-0.002	0.001	0.009	0.023	-0.010	-0.002	-0.190	-0.003	-0.019	0.005	0.001	0.005	0.000
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.483)	(0.015)	(0.056)	(0.017)	(0.018)	(0.008)	(0.008)
Tuesday	-0.005	-0.007	0.002	-0.001	-0.001	-0.015*	0.005	0.002	0.142	0.005	-0.008	-0.003	-0.012	-0.002	0.002
	(0.006)	(0.009)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.266)	(0.009)	(0.030)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	0.001	0.004	0.001	0.001	0.003	0.004	0.002	0.000	-0.147	0.004	0.013	0.003	0.002	0.002	0.001
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.101)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.000	0.000	0.001	0.004	0.001	0.000	0.006	0.000	0.001	0.001	0.003	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.005	0.004	0.000	0.004	-0.002	-0.001	-0.001	0.001	0.246	-0.004	0.010	0.005	0.005	-0.004	-0.001
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.179)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Wednesdays	-0.015	-0.009	0.004	-0.008	-0.004	-0.004	0.006	0.004	-0.803*	0.012	-0.027	0.001	-0.003	0.012	-0.000
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.007)	(0.475)	(0.015)	(0.056)	(0.017)	(0.018)	(0.008)	(0.008)
Wednesday	0.002	0.006	-0.002	0.003	0.001	0.001	-0.001	-0.003	0.779***	0.001	-0.020	-0.006	-0.003	-0.009**	0.000
	(0.006)	(0.009)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.267)	(0.009)	(0.031)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	0.000	0.003	0.002*	0.001	0.002	0.002	0.003*	0.001	-0.231**	0.005	0.015	0.004	0.001	0.003**	0.001
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.098)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.056	0.001	0.002	0.002	0.001	0.002	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP

Last 2 Weeks	0.005	0.004	0.001	-0.001	-0.001	0.001	0.001	0.000	0.000	-0.002	0.007	0.004	0.000	-0.000	0.001
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.178)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Thursdays	-0.011	-0.009	0.001	0.027	-0.005	-0.012	-0.007	0.007	0.962**	-0.005	-0.002	0.007	0.029	-0.015*	-0.012
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.469)	(0.015)	(0.057)	(0.017)	(0.018)	(0.008)	(0.008)
Thursday	0.007	-0.006	0.001	-0.020*	0.002	0.010	0.006	-0.002	-0.809***	0.007	-0.006	0.001	-0.002	0.002	0.003
	(0.006)	(0.009)	(0.002)	(0.011)	(0.005)	(0.009)	(0.004)	(0.004)	(0.258)	(0.009)	(0.031)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	-0.000	0.004	0.001	0.004	0.002	0.000	0.002	0.001	-0.011	0.004	0.013	0.003	0.000	0.002	0.001
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.098)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.001	0.000	0.005	0.000	0.002	0.001	0.000	0.064	0.001	0.000	0.001	0.005	0.002	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.003	0.005	0.001	0.002	-0.003	-0.002	0.001	0.001	0.112	-0.006	0.008	0.005	0.004	-0.002	-0.002
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.184)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Fridays	0.003	-0.015	-0.004	0.004	0.009	0.006	-0.006	-0.000	0.184	0.025	-0.005	0.004	-0.001	-0.003	0.008
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.482)	(0.015)	(0.057)	(0.017)	(0.018)	(0.008)	(0.008)
Friday	-0.013**	-0.000	-0.002	-0.005	-0.002	-0.004	-0.006	-0.007*	-0.226	-0.017**	-0.025	-0.010	0.002	-0.002	-0.002
	(0.006)	(0.009)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.266)	(0.009)	(0.032)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	0.003	0.004	0.002*	0.002	0.003	0.003	0.004**	0.001	-0.095	0.007**	0.015	0.004	-0.000	0.002	0.002
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.100)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.004	0.001	0.001	0.001	0.000	0.000	0.002	0.002	0.009	0.004	0.002	0.002	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.002	0.004	0.001	0.006	-0.002	0.001	-0.001	0.002	0.133	0.001	0.016	0.009	0.010	-0.003	-0.001
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.184)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Saturdays	0.006	-0.008	-0.002	-0.018	-0.002	-0.012	0.007	-0.004	0.035	-0.027*	-0.069	-0.022	-0.037**	0.003	0.002
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.483)	(0.015)	(0.058)	(0.017)	(0.018)	(0.008)	(0.008)
Saturday	0.003	0.010	0.001	0.016	0.004	0.000	-0.003	0.005	-0.114	0.015*	0.011	0.008	0.009	0.006	-0.003
	(0.006)	(0.009)	(0.002)	(0.011)	(0.005)	(0.009)	(0.004)	(0.004)	(0.266)	(0.009)	(0.031)	(0.009)	(0.010)	(0.004)	(0.004)
Constant	0.000	0.002	0.001	-0.001	0.002	0.002	0.003**	-0.000	-0.111	0.003	0.010	0.002	-0.001	0.001	0.002
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.101)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.001	0.000	0.003	0.000	0.001	0.000	0.001	0.006	0.003	0.002	0.003	0.007	0.002	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
Last 2 Weeks	0.002	0.004	0.000	0.004	-0.001	-0.003	0.000	0.001	0.190	-0.003	-0.011	0.005	0.006	-0.002	-0.002
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.183)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
Last 2 Weeks Sundays	0.005	-0.008	0.002	-0.006	-0.008	0.010	0.000	-0.001	-0.361	0.008	0.112**	0.000	-0.009	-0.002	0.002
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.482)	(0.015)	(0.056)	(0.017)	(0.018)	(0.008)	(0.008)
Sunday	0.006	-0.004	-0.001	-0.004	0.002	0.007	0.004	0.003	0.263	-0.004	0.016	0.001	0.002	0.001	0.003
	(0.006)	(0.009)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.266)	(0.009)	(0.031)	(0.009)	(0.010)	(0.004)	(0.004)

Constant	-0.000	0.004	0.002	0.002	0.002	0.001	0.002	-0.000	-0.164	0.006*	0.010	0.003	-0.000	0.002	0.001
	(0.002)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.002)	(0.001)	(0.100)	(0.003)	(0.012)	(0.004)	(0.004)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.002	0.001	0.000	0.001	0.000	0.003	0.000	0.000	0.011	0.000	0.012	0.001	0.001	0.000	0.000

Table 5.2.b: First three weeks of the month effect *Coingecko* dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First 3 Weeks	-0.005	-0.004	-0.001	0.001	0.001	-0.001	-0.001	-0.000	-0.000	0.002	-0.007	-0.004	-0.000	0.000	-0.001
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.178)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
First 3 Weeks Thursdays	0.011	0.009	-0.001	-0.027	0.005	0.012	0.007	-0.007	-0.962**	0.005	0.002	-0.007	-0.029	0.015*	0.012
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.469)	(0.015)	(0.057)	(0.017)	(0.018)	(0.008)	(0.008)
Thursday	-0.004	-0.014	0.002	0.007	-0.004	-0.001	-0.001	0.005	0.153	0.002	-0.008	0.008	0.026*	-0.013**	-0.009
	(0.008)	(0.014)	(0.004)	(0.017)	(0.007)	(0.014)	(0.006)	(0.005)	(0.391)	(0.013)	(0.048)	(0.014)	(0.015)	(0.006)	(0.006)
Constant	0.004	0.008	0.002	0.003	0.001	0.001	0.003	0.001	-0.011	0.002	0.020	0.007	0.001	0.002	0.001
	(0.003)	(0.005)	(0.001)	(0.007)	(0.003)	(0.005)	(0.002)	(0.002)	(0.149)	(0.005)	(0.018)	(0.005)	(0.006)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.001	0.000	0.005	0.000	0.002	0.001	0.000	0.064	0.001	0.000	0.001	0.005	0.002	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
First 3 Weeks	-0.003	-0.005	-0.001	-0.002	0.003	0.002	-0.001	-0.001	-0.112	0.006	-0.008	-0.005	-0.004	0.002	0.002
	(0.004)	(0.006)	(0.002)	(0.008)	(0.003)	(0.006)	(0.003)	(0.002)	(0.184)	(0.006)	(0.021)	(0.006)	(0.007)	(0.003)	(0.003)
First 3 Weeks Fridays	-0.003	0.015	0.004	-0.004	-0.009	-0.006	0.006	0.000	-0.184	-0.025	0.005	-0.004	0.001	0.003	-0.008
	(0.010)	(0.017)	(0.004)	(0.021)	(0.009)	(0.016)	(0.008)	(0.006)	(0.482)	(0.015)	(0.057)	(0.017)	(0.018)	(0.008)	(0.008)
Friday	-0.010	-0.015	-0.006	-0.001	0.006	0.002	-0.012*	-0.007	-0.042	0.007	-0.031	-0.006	0.001	-0.004	0.006
	(0.008)	(0.014)	(0.004)	(0.017)	(0.007)	(0.014)	(0.006)	(0.005)	(0.403)	(0.013)	(0.047)	(0.014)	(0.015)	(0.006)	(0.006)
Constant	0.005*	0.008	0.003**	0.004	-0.001	0.001	0.005**	0.003	0.017	0.002	0.023	0.009*	0.004	0.000	-0.001
	(0.003)	(0.005)	(0.001)	(0.007)	(0.003)	(0.005)	(0.002)	(0.002)	(0.154)	(0.005)	(0.018)	(0.005)	(0.006)	(0.002)	(0.002)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.004	0.001	0.001	0.001	0.000	0.000	0.002	0.002	0.009	0.004	0.002	0.002	0.001	0.000	0.000

Table 6.b: Monthly effect from *Coingecko* dataset:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
January	0.001	-0.002	-0.005*	0.007	0.007	0.005	0.006	-0.004		0.002	0.060*	0.002	0.017*	-0.005	-0.005
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)		(0.009)	(0.034)	(0.011)	(0.010)	(0.005)	(0.004)
o.January									-						
Constant	0.002	0.004	0.002**	0.002	0.001	0.001	0.002*	0.001	-0.085	0.004	0.009	0.004	-0.000	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.077)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260

R-squared	0.000	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.005	0.000	0.004	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
March	-0.006	-0.000	-0.004	0.014	-0.007	0.003	0.002	-0.001	0.114	-0.003	0.022	0.007	0.005	0.005	-0.002
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.199)	(0.009)	(0.032)	(0.011)	(0.010)	(0.005)	(0.004)
Constant	0.002	0.004	0.002**	0.001	0.002	0.001	0.003**	0.001	-0.107	0.005*	0.012	0.004	0.001	0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.086)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.001	0.002	0.001	0.000	0.000	0.000	0.002	0.000	0.001	0.001	0.000	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
June	-0.007	-0.007	-0.002	-0.013	-0.004	-0.013	-0.006	0.000	0.142	-0.012	-0.016	-0.002	-0.009	-0.001	-0.003
	(0.006)	(0.010)	(0.002)	(0.012)	(0.005)	(0.010)	(0.004)	(0.004)	(0.199)	(0.008)	(0.032)	(0.009)	(0.010)	(0.004)	(0.005)
Constant	0.002	0.005*	0.002**	0.003	0.002	0.003	0.003***	0.001	-0.112	0.005**	0.015	0.005	0.002	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.086)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.000	0.002	0.000	0.003	0.001	0.000	0.003	0.002	0.000	0.000	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
July	0.001	-0.003	0.001	0.004	-0.005	0.001	-0.002	-0.000	0.082	-0.006	-0.019	0.006	0.010	0.001	-0.002
	(0.006)	(0.010)	(0.002)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)	(0.199)	(0.008)	(0.033)	(0.009)	(0.010)	(0.004)	(0.005)
Constant	0.002	0.004	0.001*	0.002	0.002	0.002	0.003**	0.001	-0.101	0.005*	0.016*	0.004	0.001	0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.086)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
August	-0.003	-0.003	-0.001	0.011	-0.004	0.025***	-0.001	-0.004	0.097	0.001	-0.035	0.028***	0.006	0.009*	0.000
	(0.006)	(0.010)	(0.003)	(0.014)	(0.005)	(0.010)	(0.004)	(0.004)	(0.337)	(0.009)	(0.030)	(0.010)	(0.012)	(0.004)	(0.004)
Constant	0.002	0.004	0.002**	0.001	0.002	-0.000	0.003**	0.001	-0.091	0.004	0.018*	0.002	0.001	0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)	(0.001)	(0.080)	(0.003)	(0.010)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.000	0.000	0.001	0.000	0.009	0.000	0.000	0.001	0.000	0.002	0.009	0.000	0.001	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
September	-0.009	-0.005	-0.004*	-0.010	0.000	-0.006	-0.009**	-0.005		-0.012	-0.026	-0.008	0.000	-0.008*	0.000
	(0.006)	(0.010)	(0.003)	(0.016)	(0.005)	(0.010)	(0.004)	(0.004)		(0.009)	(0.032)	(0.011)	(0.012)	(0.005)	(0.005)
o.September									-						

Constant	0.002	0.005	0.002**	0.003	0.002	0.002	0.004***	0.001	-0.085	0.005**	0.016*	0.005*	0.001	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)	(0.001)	(0.077)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.001	0.001	0.000	0.001	0.002	0.001	0.000	0.001	0.001	0.001	0.000	0.001	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
October	-0.003	0.011	0.005**	-0.020*	-0.004	0.004	-0.001	0.000		-0.000	0.016	-0.011	-0.011	-0.006	-0.004
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)		(0.009)	(0.032)	(0.011)	(0.010)	(0.005)	(0.004)
o.October									-						
Constant	0.002	0.003	0.001	0.004	0.002	0.001	0.003**	0.001	-0.085	0.004*	0.013	0.005*	0.002	0.002	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.077)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.000	0.001	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.001	0.000

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
November	0.007	-0.005	0.007***	-0.009	-0.002	0.000	-0.004	0.012***		0.006	-0.025	0.001	0.002	0.001	0.008*
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.010)	(0.004)	(0.004)		(0.009)	(0.036)	(0.011)	(0.010)	(0.005)	(0.005)
o.November									-						
Constant	0.001	0.005*	0.001	0.003	0.002	0.002	0.003**	-0.000	-0.085	0.004	0.016*	0.004	0.001	0.001	0.000
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.077)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.002	0.001	0.000	0.000	0.000	0.003	0.000	0.000	0.001	0.000	0.000	0.000	0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VARIABLES	ADA	BNB	BTC	CAKE	DOGE	DOT	ETH	LTC	LUNA	MATIC	SHIB	SOL	UNI	XMR	XRP
December	0.009	0.006	-0.001	0.004	0.007	-0.001	0.000	0.000		-0.007	-0.016	-0.012	-0.001	0.002	0.005
	(0.006)	(0.010)	(0.003)	(0.012)	(0.005)	(0.009)	(0.004)	(0.004)		(0.009)	(0.036)	(0.011)	(0.010)	(0.005)	(0.004)
o.December									-						
Constant	0.001	0.004	0.002**	0.002	0.001	0.002	0.003**	0.001	-0.085	0.005*	0.015	0.005*	0.002	0.001	0.001
	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.001)	(0.077)	(0.003)	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)
Observations	1,760	1,788	3,392	682	3,157	723	2,561	3,389	160	1,203	679	854	694	3,003	3,260
R-squared	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.000