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PANDEMIC-DRIVEN BITCOIN PRICE DYNAMICS, ARTIFICIAL INTELLIGENCE PREDICTION, AND THE LOOMING QUANTUM THREAT

DINÂMICA DE PREÇOS DO BITCOIN IMPULSIONADA PELA PANDEMIA, PREDIÇÃO POR INTELIGÊNCIA ARTIFICIAL E A AMEAÇA IMMINENTE DA COMPUTAÇÃO QUÂNTICA

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Abstract
This study analyzes the price dynamics of Bitcoin within the context of the COVID-19 pandemic, exploring its debated role as a safe-haven or speculative asset. The research addresses how global economic uncertainty, catalyzed by the pandemic declaration on March 11, 2020, renewed interest in decentralized crypto-assets. Furthermore, two crucial technological factors shaping Bitcoin's future are considered: the growing application of artificial intelligence (AI) in predicting its volatile prices and the long-term threat that quantum computing poses to its cryptographic security. The methodology employed is qualitative and scenario-based, using historical price data only as a contextual baseline. Price projections are not derived from econometric models but are hypothetical estimates founded on the authors' interpretive judgment of investor psychology, particularly the tendency of wealthy investors to accumulate assets during crises. The study projects three scenarios: in the short-term (July 2020), a price between $9,000 and $10,000; in the medium-term (end of 2020), a value of $26,629; and in the long-term (2021), a price of at least $50,000. It is concluded that while precise prediction is impossible, Bitcoin's structural scarcity and strong speculative demand provide it with resilience. The analysis underscores that market sentiment is a key driver of its valuation.

Keywords: Bitcoin, COVID-19, Artificial Intelligence, Quantum Computing

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Resumo
Este estudo analisa a dinâmica de preços do Bitcoin no contexto da pandemia de COVID-19, explorando seu papel debatido como ativo de refúgio (safe-haven) ou como ativo especulativo. A pesquisa aborda como a incerteza econômica global, catalisada pela declaração da pandemia em 11 de março de 2020, renovou o interesse por criptoativos descentralizados. Além disso, são considerados dois fatores tecnológicos cruciais para o futuro do Bitcoin: a crescente aplicação da inteligência artificial (IA) na previsão de seus preços voláteis e a ameaça de longo prazo que a computação quântica representa para sua segurança criptográfica. A metodologia empregada é qualitativa e baseada em cenários, utilizando dados históricos de preços apenas como referência contextual. As projeções de preços não são derivadas de modelos econométricos, mas consistem em estimativas hipotéticas fundamentadas no julgamento interpretativo dos autores sobre a psicologia dos investidores, em especial a tendência de investidores de alta renda de acumular ativos durante crises. O estudo projeta três cenários: no curto prazo (julho de 2020), um preço entre US$ 9.000 e US$ 10.000; no médio prazo (final de 2020), um valor de US$ 26.629; e no longo prazo (2021), um preço de pelo menos US$ 50.000. Conclui-se que, embora seja impossível realizar previsões precisas, a escassez estrutural do Bitcoin e a forte demanda especulativa lhe conferem resiliência, sendo o sentimento do mercado um fator determinante em sua valorização.

Palavras-chave: *Bitcoin, COVID-19, Inteligência Artificial, Computação Quântica*

1. Introduction

The outbreak of COVID-19 has caused unprecedented disruption to global financial markets, leading investors to search for alternative assets capable of preserving value in times of crisis. On March 11, 2020, the World Health Organization officially declared COVID-19 a global pandemic, triggering an immediate and severe reaction in equity and commodity markets. Bitcoin, as the most prominent cryptocurrency, has drawn renewed attention due to its decentralized nature and limited supply. Yet, its role during such a systemic shock remains unclear: while some expect it to serve as a safe haven comparable to gold, others highlight its speculative features and extreme volatility.

This uncertainty defines the central question of the present analysis: how will Bitcoin react in the context of the COVID-19 pandemic? The sharp increase in prices during February 2020 illustrates Bitcoin's price vulnerability to liquidity shocks and its potential to attract investors seeking hedges against inflationary pressures caused by unprecedented monetary stimulus. Predicting Bitcoin prices during pandemics is challenging, as historical precedent is limited. The last global pandemic, the 1918 Spanish flu (Taubenberger, 2006), occurred long before modern financial assets existed, making direct comparisons difficult.

At the same time, two parallel technological developments are shaping the debate around Bitcoin's future. First, artificial intelligence (AI) methods are increasingly applied to financial forecasting, offering new tools for analyzing Bitcoin's erratic price behavior and for developing data-driven investment strategies (Dutta et al., 2019). Second, the progress of quantum computing has sparked concerns regarding the long-term security of the cryptographic protocols underpinning Bitcoin transactions and mining (Aggarwal et al., 2017).

This paper analyzes Bitcoin's price behavior during a potential extended pandemic. None of these estimates would be valid if the pandemic comes to an end.

It also evaluates the role of AI in predictive modeling, and discusses the potential risks of quantum computing for the cryptocurrency ecosystem, always considering that affluent investors often exploit periods of crisis to accumulate assets at depressed prices, following a long tradition of value-oriented strategies that purchase when others sell (Graham & Dodd, 1934).

2. Literature review

2.1 Bitcoin as a Safe Haven or Speculative Asset

Since its inception in 2009, Bitcoin has been subject to extensive debate regarding its role in financial markets: is it primarily a speculative instrument, or can it function as a safe haven during times of systemic stress? Early studies highlight its extreme volatility, which often undermines its capacity to act as a stable store of value. Cheah and Fry (2015) analyzed speculative bubbles in the Bitcoin market and concluded that price movements are largely driven by investor sentiment rather than fundamental economic factors, indicating that Bitcoin behaves more like a highly speculative asset than a conventional safe haven.

Baur, Hong, and Lee (2018) extended this analysis by examining Bitcoin's correlation with traditional financial assets under different market conditions. They found that Bitcoin occasionally demonstrates safe haven properties during episodes of extreme equity market stress, but these effects are neither stable nor consistent. Similarly, Corbet, Lucey, and Yarovaya (2018) demonstrated that Bitcoin exhibits time-varying correlations with global equity and commodity markets, implying that its hedging potential is context-dependent and may not be reliable during prolonged crises.

Other research suggests that Bitcoin shares some characteristics with alternative hedging instruments such as gold or fiat currencies during specific periods. Dyhrberg (2016) compared Bitcoin with gold and the U.S. dollar, finding that while Bitcoin can mimic some hedging features, it remains highly sensitive to market sentiment and global liquidity shocks. Kristoufek (2013) further highlighted that Bitcoin's price is strongly influenced by online search trends and social media activity, reinforcing the idea that investor perception, rather than intrinsic value, drives market behavior.

Now, focusing on the medical context, epidemiologists faced significant uncertainty in predicting the future course of the COVID-19 pandemic due to factors like limited testing capacity and incomplete data. Consequently, their efforts prioritized protective measures over precise mortality projections. The Imperial College COVID-19 Response Team (2020) explained that the goal of suppression is to lower the virus's spread to manageable levels, ideally stopping it entirely, until a vaccine is available—potentially 18 months or more. They noted this would require ongoing or intermittent measures, with transmission likely rebounding if restrictions are eased too soon. Understanding this uncertainty is critical, as it frames the subsequent analysis of price dynamics and forecasting approaches under extreme macroeconomic shocks. This unpredictability in the medical context also reflects the challenges in financial markets, where incomplete information and rapidly changing conditions make it difficult to determine the fair price of Bitcoin.

2.2 AI and Machine Learning in Bitcoin Price Prediction

Predicting Bitcoin prices is a challenging task due to the cryptocurrency's high volatility and non-linear dynamics. Recent research has applied artificial intelligence (AI) and machine learning (ML) techniques to improve predictive accuracy. Gyamerah (2019) examined the performance of multiple ML algorithms, including Support Vector Regression (SVR), Random Forest, and generalized linear models, for forecasting Bitcoin prices using technical indicators. The study demonstrated that ensemble methods combining different models can improve prediction performance compared to single models, highlighting the potential of machine learning to capture complex patterns in cryptocurrency markets.

In addition, McNally, Roche, and Caton (2018) applied Long Short-Term Memory (LSTM) networks to Bitcoin time series data, showing that recurrent neural networks can outperform traditional time series models in short-term forecasting. These studies collectively suggest that AI-based approaches can be valuable tools for analyzing Bitcoin price behavior, particularly during periods of heightened uncertainty such as the COVID-19 pandemic, but does not clarify about how AI affects the price of Bitcoin substantially.

2.3 Quantum Computing Threats to Bitcoin Security

Quantum computing poses a potential long-term threat to the cryptographic foundations of Bitcoin. While practical quantum attacks are not yet feasible, several studies have explored their theoretical implications. Sattath (2018) analyzed the impact of quantum computing on Bitcoin mining, highlighting how Grover's algorithm could accelerate the mining process, potentially allowing quantum-enabled miners to gain a disproportionate advantage in proof-of-work systems. Although the immediate risk is limited due to current hardware constraints, these findings highlight vulnerabilities that may emerge as quantum technology advances.

Shor (1997) demonstrated that quantum algorithms could efficiently solve integer factorization and discrete logarithm problems, which underlie cryptographic primitives such as ECDSA, the algorithm securing Bitcoin transactions. This implies that sufficiently advanced quantum computers could eventually compromise key generation and transaction verification.

To address these potential vulnerabilities, post-quantum cryptography has been proposed as a mitigation strategy. Bernstein, Buchmann, and Dahmen (2009) review quantum-resistant cryptographic protocols designed to maintain security even against adversaries with quantum computing capabilities, emphasizing the need for proactive adaptation in blockchain systems.

Collectively, these studies emphasize that while quantum threats do not currently destabilize Bitcoin, ongoing monitoring and research are essential for future-proofing the network against emerging computational risks.

3. Methodology

This study employs a scenario-based qualitative methodology, grounded on real Bitcoin price data from January 2019 to April 2020. The subsequent percentage increase calculations for the different scenarios are not derived from econometric modeling or technical indicators, but rather formulated as hypothetical projections to illustrate how, under conditions of uncertainty such as the COVID-19 pandemic, investors might anticipate substantial gains regardless of limited empirical justification.

The analysis is exploratory in nature, combining descriptive use of past data with forward-looking hypothetical projections. This design emphasizes the role of

sentiment and expectation in shaping market narratives, rather than attempting to provide statistically validated forecasts.

The study also considers the complexity of Bitcoin price dynamics in the context of the ongoing COVID-19 pandemic, emerging AI-driven trading, and potential quantum computing threats. Attempting precise econometric calculations under such uncertain conditions is impractical, as market responses depend on numerous interdependent factors that cannot be fully captured quantitatively.

While quantum computing could potentially alter the process of Bitcoin mining and artificial intelligence may introduce disruptive elements, it is primarily the sentiment generated among investors by the possibility of these technological shifts—regardless of whether they materialize—that influences Bitcoin's price. Similarly, the human need for protection during widespread crises such as a global pandemic could intensify the demand for Bitcoin as a safeguard. Authors like Baur and Lucey (2010) observe that investors sometimes reallocate toward perceived safe-haven assets during periods of market stress to preserve wealth and reduce exposure to risk. Over time, despite its volatility, Bitcoin has demonstrated remarkable long-term growth, surpassing the performance of major benchmarks such as the S&P 500 (Coin Explorers, 2019).

3.1 Literature Synthesis

Previous studies on cryptocurrency price volatility, machine learning applications in trading, and quantum computing risks are systematically reviewed (Ciaian, Rajcaniova, & Kancs, 2015; Gyamerah, 2019; McNally, Roche, & Caton, 2018; Shor, 1997; Bernstein, Buchmann, & Dahmen, 2009; Sattath, 2018).This synthesis may affect the construction of plausible scenarios and highlights key variables that may influence Bitcoin price trajectories.

3.2 Data Sources

Bitcoin price data from January 2019 to March 2020 are obtained from Statmuse. Additional context is provided using macroeconomic indicators, market volatility indices, and pandemic-related news from the World Health Organization (WHO).

Table 1 - shows the opening prices for each month of 2019.

Month and Year	Opening value ($)
December 2019	7,571.62
November 2019	9,193.99
October 2019	8,299.72
September 2019	9,630.59
August 2019	10,077.44
July 2019	10,796.93
June 2019	8,573.84
May 2019	5,350.91
April 2019	4,105.36
March 2019	3,853.76
February 2019	3,460.55
January 2019	3,746.71

Source: Statmuse

Table 2 - shows the opening prices for January and February of 2020

Month and Year	Opening value ($)
March 2020	8,599.76
February 2020	9,346.36
January 2020	7,194.89

Source: Statmuse

3.3 Scenario Construction

Three forward-looking timelines are proposed to explore potential Bitcoin price trends. Economic and finance literature shows that well-capitalized arbitrageurs and institutional players are uniquely positioned to buy into market dislocations, thereby absorbing sell pressure and helping prices revert toward fundamentals (Shleifer & Vishny, 1997). This pattern tends to occur especially during crises, or supposed times of crisis. In this context, the authors advance their own reasoned anticipation: rather than relying on analogies with other assets or formal econometric models, the projections presented here are grounded in our interpretive judgment and premonition about how investor psychology and structural scarcity may interact under pandemic conditions. The numerical ranges that follow should therefore be understood not as precise forecasts, but as illustrative scenarios reflecting our informed expectations of Bitcoin's potential trajectory.

1. **Short-term (Until July of 2020):** High volatility driven by pandemic-related uncertainty and market sentiment. Calculations will be based on 35.8% to 50.9% increase of the Bitcoin Opening price of 15 of April of 2020. Today, April 15, we used the opening price from Statmuse as the starting point, and the analysis was based on this value.

Note: As of today, 15 of April 2020, the Bitcoin opening price shows $6,629.1 USD.

2. **Medium-term (up to the end of 2020):** Calculations will be based on a 301.7% increase of the Bitcoin Opening price (15 of April of 2020).

3. **Long-term (beyond 2020):** Calculations will be based 654.2% of increase of the Bitcoin Opening price of 15 of April of 2020.

3.4 Justification

The chosen methodology allows for a flexible, reasoned exploration of Bitcoin's potential behavior in highly uncertain conditions. By focusing on scenario-based projections and expert interpretation, the analysis accounts for complex interactions between technological, economic, and social factors without relying on potentially misleading econometric predictions.

3.5 Limitations

This approach is inherently interpretive. Outcomes could not be precise predictions, but rather reasoned expectations based on available knowledge and literature. Future market behavior may diverge from these scenarios due to unforeseen developments.

4. Results and discussion

After reading the mentioned literature, we can confirm that Bitcoin price dynamics are inherently complex and multidimensional. At present, it is impossible to predict with certainty the precise value of Bitcoin, as its price is influenced by numerous interdependent factors, including macroeconomic conditions, technological developments, investor behavior, and speculative dynamics. Attempting precise econometric forecasts under such conditions is impractical.

It is clear that any alterations in technological variables, such as artificial intelligence (AI) in trading or quantum computing threats, could profoundly affect Bitcoin prices. Trading plays a crucial role in shaping Bitcoin's price, as the interaction between its limited supply and speculative demand generates strong fluctuations in value. Ciaian, Rajcaniova, and Kancs (2015) show that Bitcoin's price is primarily determined by market factors, where investors' buying and selling decisions create a dynamic environment that resembles a self-regulated market with high volatility.

Nonetheless, due to Bitcoin's intrinsic transaction capabilities, its limited total supply capped at 21 million coins (Nakamoto, 2008), and the fact that it is not backed by gold or any physical asset, its value primarily relies on scarcity, trust, and perceived utility, the price is unlikely to fall to zero over at least the next seven years.

Based on the reviewed literature and our estimations, quantum computing is not expected to have a significant impact on Bitcoin's price during this period. Our study is primarily grounded in the principle that wealthy investors tend to buy assets when prices are low, combined with the authors' informed assessment of potential future developments. Coming back to the scenarios, we obtained the following results.

4.1 Short-Term Projection (Until July of 2020)

In the short term, amid uncertainties related to developments in artificial intelligence and quantum computing, market participants are expected to retain confidence in Bitcoin. The projected value over the next three months is estimated to range between $9,000 and $10,000, reflecting sustained belief in the cryptocurrency from rich investors despite potential technological disruptions and socio-political issues.

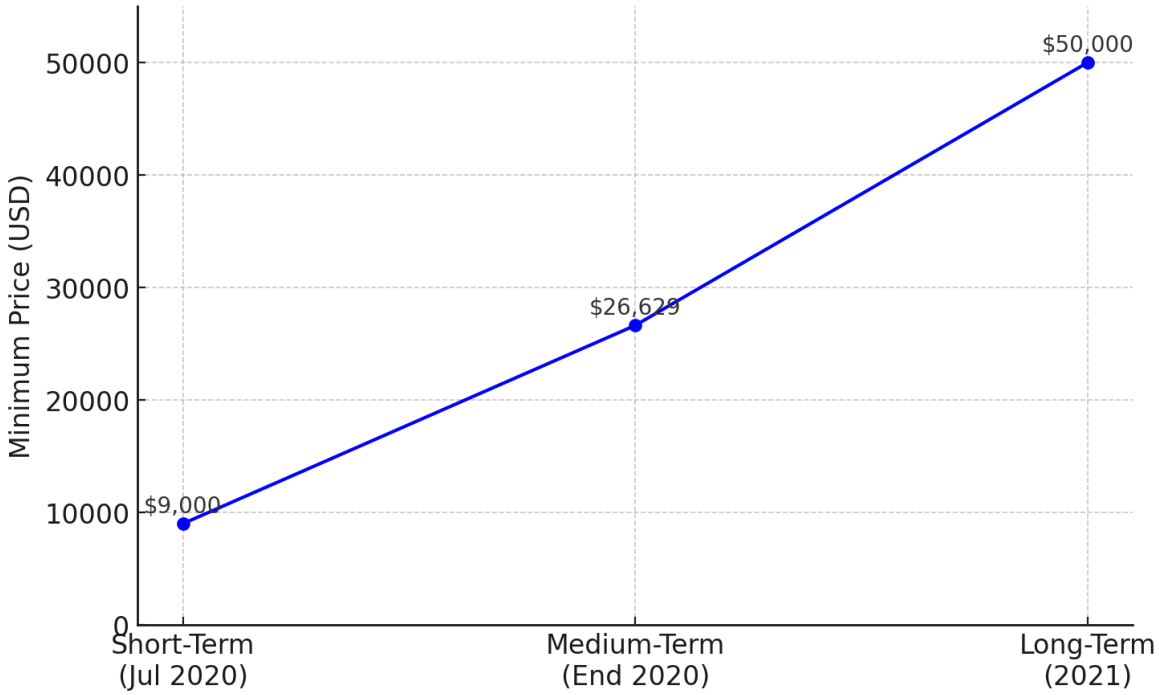
4.2 Medium-Term Projection (End of 2020)

Assuming the pandemic persists, Bitcoin could easily reach USD 26,629 by the end of 2020. This projection accounts for AI-driven trading, investor adaptation, and broader economic conditions influencing market sentiment—particularly the behavior of wealthy individuals taking advantage of lower prices.

4.3 Long-Term Projection (beyond 2020)

In the long term, concerns regarding technological threats, including quantum computing, are expected to diminish as mitigation strategies advance. Bitcoin prices are projected to reach at least USD 50,000 in 2021. This outcome reflects even more that elite groups, whose basic needs are already satisfied, tend to invest in Bitcoin with the expectation that its value will rise. By purchasing large volumes, these investors can move the market, contributing directly to upward price movements.

Figure 1 illustrates the projected minimum expected price of Bitcoin across three temporal horizons: short-term (until July 2020), medium-term (end of 2020), and long-term (2021). These projections are based on market sentiment analysis conducted amid the COVID-19 pandemic. None of these estimates would be valid if the pandemic comes to an end.



Source: Elaborated by the authors based on their own predictions.

5. Conclusion

Bitcoin's price behavior is influenced by a complex interplay of factors, including the COVID-19 pandemic, AI-driven trading, potential quantum computing threats, and broader digitalization trends. Precise prediction is inherently impossible, given the multidimensional and evolving nature of these variables.

As explained before, attempting to rely on elaborate formulas, econometric specifications or constructing tenuous links such as correlating the number of COVID-19 victims with Bitcoin price fluctuations would constitute a misallocation of effort and resources. The dynamics of Bitcoin's valuation are inherently multidimensional, influenced simultaneously by technological, regulatory, macroeconomic and behavioral factors. Any attempt to isolate a single explanatory variable risk oversimplifying a phenomenon that by nature resists reductionist approaches.

Although, the analysis presented in this study underscores that, while technological and macroeconomic disruptions can significantly affect market dynamics, Bitcoin's transaction capabilities and capped supply provide structural resilience, preventing extreme collapse. A significant portion of Bitcoin's price is driven by speculative behavior, as many investors purchase it with the expectation of obtaining substantial returns. This speculative demand amplifies price volatility and reflects the perception of Bitcoin not only as a medium of exchange but also as an investment opportunity.

Short-term, medium-term, and long-term scenarios indicate potential growth under varying conditions, highlighting how market confidence, technological adoption,

and investor perception collectively shape the cryptocurrency's trajectory. These projections are interpretive rather than deterministic, offering a framework to anticipate possible trends rather than precise numerical outcomes.

As we have seen, Bitcoin is extremely difficult to predict due to its multidimensional nature, making future attempts at econometric forecasting likely to fail. Therefore, future research could focus on government-issued digital currencies (CBDCs), which, although cryptographically related to Bitcoin, operate under a centralized framework. Unlike altcoins, whose prices are often strongly correlated with Bitcoin, CBDCs present a more stable and policy-driven environment for study. This area is likely to attract significant attention in the future, given the potential resistance from investors who value decentralized and unregulated systems, in contrast to state-controlled digital currencies. We believe that the only way for the population to adopt a CBDC is either through mandatory usage or by providing tangible benefits that incentivize its use. Understanding how market participants respond to CBDCs could provide important insights into the limits of government intervention in digital asset markets related to crypto.

Overall, the study emphasizes the need for flexible, scenario-based approaches when evaluating decentralized cryptocurrency markets, acknowledging both the opportunities and uncertainties introduced by technological innovation and global economic shocks.

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Ethical considerations: No institutional permission was required to conduct this study.

References

Aggarwal, D., Brennen, G. K., Lee, T., Santha, M., & Tomamichel, M. (2017). Quantum attacks on Bitcoin, and how to protect against them. *Ledger, 3*, 68–90. https://doi.org/10.48550/arXiv.1710.10377

Baur, D. G., & Lucey, B. M. (2010). Is gold a hedge or a safe haven? An analysis of stocks, bonds and gold. *The Financial Review, 45*(2), 217–229. https://doi.org/10.1111/j.1540-6288.2010.00244.x

Baur, D. G., Hong, K., & Lee, A. D. (2018). Bitcoin: Medium of exchange or speculative assets? *Journal of International Financial Markets, Institutions and Money, 54*, 177–189. https://doi.org/10.1016/j.intfin.2017.12.004

Bernstein, D. J., Buchmann, J., & Dahmen, E. (2009). *Post-quantum cryptography*. Springer. https://doi.org/10.1007/978-3-540-88702-7

Cheah, E.-T., & Fry, J. (2015). Speculative bubbles in Bitcoin markets? An empirical investigation into the fundamental value of Bitcoin. *Economics Letters, 130*, 32–36. https://doi.org/10.1016/j.econlet.2015.02.029

Ciaian, P., Rajcaniova, M., & Kancs, d. A. (2015). The economics of BitCoin price formation. *Applied Economics, 48*(19), 1799–1815. https://doi.org/10.1080/00036846.2015.1109038

Coin Explorers. (2019, April 15). Bitcoin outperforms Nasdaq 100, S&P 500, grows whopping 37% in 2019. Coin Explorers. Retrieved from https://coinexplorers.com/insights/bitcoin-outperforms-nasdaq-100-s-p-500-grows-whopping-37-in-2019-bdfwm3

Corbet, S., Lucey, B., & Yarovaya, L. (2018). Datestamping the Bitcoin and Ethereum bubbles. *Finance Research Letters, 26*, 81–88. https://doi.org/10.1016/j.frl.2017.12.006

Dutta, A., Kumar, S., & Basu, M. (2019). A gated recurrent unit approach to Bitcoin price prediction. *arXiv preprint arXiv:1912.11166*. https://arxiv.org/abs/1912.11166

Dyhrberg, A. H. (2016). Hedging capabilities of Bitcoin. Is it the virtual gold? *Finance Research Letters, 16*, 139–144. https://doi.org/10.1016/j.frl.2015.10.025

Ferguson, N. M., Laydon, D., Nedjati-Gilani, G., Imai, N., Ainslie, K., Baguelin, M., ... & Ghani, A. C. (2020, March 16). Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand. Imperial College COVID-19 Response Team. https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2020-03-16-COVID19-Report-9.pdf

Graham, B., & Dodd, D. L. (1934). *Security Analysis: Principles and Techniques*. McGraw-Hill.

Gyamerah, S. A. (2019). Are Bitcoins price predictable? Evidence from machine learning techniques using technical indicators. *arXiv preprint arXiv:1909.01268*. https://doi.org/10.48550/arXiv.1909.01268

Kristoufek, L. (2013). Bitcoin meets Google Trends and Wikipedia: Quantifying the relationship between phenomena of the Internet era. *Scientific Reports, 3*, 3415. https://doi.org/10.1038/srep03415

McNally, S., Roche, J., & Caton, S. (2018). Predicting the price of Bitcoin using machine learning. In *2018 26th Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP)* (pp. 339–343). https://doi.org/10.1109/PDP2018.2018.00060

Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. https://bitcoin.org/bitcoin.pdf

Sattath, O. (2018). On the insecurity of quantum Bitcoin mining. *arXiv preprint arXiv:1804.08118*. https://doi.org/10.48550/arXiv.1804.08118

Shor, P. W. (1997). Polynomial-time algorithms for prime factorization and discrete logarithms on a quantum computer. *SIAM Journal on Computing, 26*(5), 1484–1509. https://doi.org/10.1137/S0097539795293172

StatMuse. (2020). Bitcoin price monthly 2019-2020. StatMuse. Retrieved April 2020, from https://www.statmuse.com/money/ask/bitcoin-price-monthly-2019

Taubenberger, J. K. (2006). 1918 Influenza: the mother of all pandemics. *Emerging Infectious Diseases, 12*(1), 15–22. https://doi.org/10.3201/eid1201.050979

World Health Organization. (2020). Coronavirus disease (COVID-19) pandemic. WHO. Retrieved April 2020, from https://www.who.int/emergencies/diseases