

The Evolution of the FinTech Market in the United States: An Analysis of Technology Investments and the Startup Ecosystem

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Abstract

This study analyzes the progression of the Financial Technology (FinTech) sector and its basic technological drivers in the United States, emphasizing investment trends and the entrepreneurial impact on the digital financial landscape.

The research employs a descriptive-analytical approach: the descriptive component outlines the evolution of the FinTech ecosystem, while the analytical component examines investment trends and technology drivers shaping the sector. The factors for technology investment were recalibrated by reassessing the compound annual growth rate (CAGR) using benchmark values from secondary market research. The resulting dataset presents smoothed trend estimations rather than separately recorded annual values, offering a solid empirical basis for the ensuing statistical models.

The results indicate rapid growth in the FinTech sector, with the United States retaining its leading global position due to strong technological infrastructure and substantial venture capital support, largely driven by the digital payments segment. The empirical study reveals remarkably robust and consistent positive correlations, with Pearson correlation coefficients (r) surpassing 0.978 ($p < 0.01$) in all models. Cloud computing demonstrated the strongest correlation ($r = 0.9856$), closely followed by AI ($r = 0.9854$). The computed regression models exhibited exceptional explanatory power, with coefficients of determination (R^2) ranging from 0.9579 to 0.9714. Blockchain technology yielded the largest marginal regression coefficient ($\beta = 1101.47$), highlighting its significant potential to transform conventional financial intermediation through decentralized finance (DeFi) ecosystems. The study indicates that the high correlation coefficients ($r > 0.97$) predominantly reflect a fundamental structural co-movement of technological investment cycles within the U.S. FinTech sector, which is intrinsically associated with the employed smoothed trend estimations. The report ultimately promotes strategic collaboration between traditional financial institutions and FinTech startups, emphasizing the need for adaptive regulatory frameworks that effectively reconcile entrepreneurial innovation with systemic financial stability and digital financial inclusion.

Keywords: FinTech; investment; startups; innovation; CAGR; Structural Co-Movement.

1. Introduction

In recent years, financial technology (FinTech) has become a pivotal catalyst for revolution inside the global financial system. Through the integration of sophisticated digital technologies, including artificial intelligence, blockchain, big data analytics, and cloud computing, FinTech has facilitated the creation of innovative financial services that enhance efficiency, accessibility, and customer experience in financial markets (Lee & Shin, 2018).

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These technological advancements have transformed conventional financial services by creating novel business models, such as digital payments, peer-to-peer lending, crowdfunding platforms, and cryptocurrency markets.

The escalating significance of FinTech is intricately associated with the digitalisation of financial services and the rising need for expedited, quick, and accessible financial transactions. Technologies including artificial intelligence, blockchain, cloud computing, big data analytics, and mobile platforms have facilitated the creation of novel financial products, such as digital payments, peer-to-peer lending platforms, robo-advisory services, crowdfunding, and cryptocurrency markets. These technological advancements have markedly enhanced the efficiency of financial institutions, reduced operational expenses, and broadened financial inclusion worldwide (Lavrinenko, Čižo, Ignatjeva, Danileviča, & Krukowski, 2023). The United States exemplifies one of the most mature and important FinTech ecosystems globally (Lee & Shin, 2017), attributable to its sophisticated financial infrastructure (Li & al., 2022), robust venture capital landscape, and significant concentration of creative firms. The U.S. FinTech industry has experienced rapid expansion, bolstered by rising investments in digital technology and the widespread adoption of online financial services (Gomber, Koch, & Siering, 2017). The proliferation of FinTech has profoundly altered the financial sector's competitive landscape. Conventional financial institutions are progressively implementing digital transformation strategies and partnering with FinTech startups to maintain competitiveness in a dynamic financial environment marked by technological disruption and innovation. Simultaneously, emerging technologies, including artificial intelligence, blockchain, cybersecurity solutions, and the Internet of Things, are integral to contemporary financial ecosystems, facilitating the creation of more secure, efficient, and data-driven financial services (Adhikari & al., 2024).

While FinTech has several potentials, its swift growth also introduces significant concerns concerning cybersecurity threats, regulatory compliance, financial stability, and data privacy safeguards. These problems underscore the need for a deeper understanding of the technology catalysts, investment patterns, and structural attributes of FinTech marketplaces, especially in major innovation hubs like the United States.

The FinTech business has garnered significant attention in academic research and policy discourse; yet, the predominant focus of extant literature is on the technological dimensions of financial innovation or the regulatory problems posed by developing financial technology. Prior research has investigated FinTech through lenses like financial inclusion, digital payments, blockchain applications, and technology disruption inside banking systems. Nonetheless, a significant deficiency persists in comprehensive studies that concurrently examine the technological underpinnings of FinTech and the funding dynamics driving its advancement within prominent financial ecosystems. The United States is a leading and impactful FinTech market worldwide; nonetheless, there remains a need for analytical research investigating the framework of FinTech technology investments and their correlation with the expansion of the FinTech ecosystem. Comprehending the role of investments in pivotal technologies like artificial intelligence, blockchain, cloud computing, cybersecurity, and the Internet of Things is crucial for discerning the strategic catalysts of financial innovation within the FinTech business (Kalai & Toukabri, 2024), (Bellardini & al., 2021).

This study seeks to address the research vacuum by examining the FinTech market and its foundational technologies in the United States, emphasising investment trends, technological advancements, and the influence of startups on the digital financial ecosystem. This study seeks to elucidate the determinants of the emergence of the FinTech sector and its prospective ramifications for financial services by examining these criteria, and to address the following hypothesis: that statistically significant correlations exist between diverse technological investments and the expansion of startups within the FinTech sector in the United States.

2. Review of literature

Financial technology (FinTech) denotes the utilisation of sophisticated digital technologies to enhance the efficiency, accessibility, and quality of financial services. In the last twenty years, FinTech has become a pivotal advancement in the global financial sector, especially in the United States, recognised as a premier center for financial innovation owing to its sophisticated financial infrastructure, robust venture capital ecosystem, and conducive technological landscape (Giglio, 2022) (Salem & Shahimi, 2025). The FinTech sector leverages various technologies, including artificial intelligence, big data analytics, blockchain, cloud computing, and mobile platforms, to deliver innovative financial products and services such as digital payments, online lending, robo-advisory services, crowdfunding, and cryptocurrency trading (Kou & Lu, 2025).

The progression of FinTech can be delineated through multiple phases. Initial advancements were linked to technology improvements in banking infrastructure, like automated teller machines (ATMs) and computerised trading platforms. Subsequently, the proliferation of the internet in the early 2000s enabled the advancement of online banking and electronic payment systems. The most substantial expansion occurred after the 2008 global financial crisis, as diminishing public confidence in conventional banking institutions enabled technology-driven startups to offer alternative financial solutions and innovative business models (Salem & Shahimi, 2025). The

FinTech market in the United States comprises several key categories, including digital payments, peer-to-peer lending platforms, wealth management technology (WealthTech), insurance technologies (InsurTech), and blockchain-based financial services. Within these divisions, digital payment systems constitute the most substantial and rapidly expanding element of the FinTech ecosystem, primarily propelled by the rising utilisation of mobile payment platforms and digital wallets (Balyuk, Berger, & Hackney, 2022).

The swift expansion of FinTech in the United States has been facilitated by various factors, such as technological innovations, rising consumer demand for accessible financial services, the proliferation of internet and smartphone usage, and substantial investments from venture capital firms (Garg, et al., 2023). Simultaneously, FinTech innovations have profoundly transformed the competitive dynamics of the financial sector by confronting traditional banking institutions and prompting them to implement digital transformation strategies or partner with FinTech startups to maintain competitiveness (Bogaard, et al., 2024).

Although FinTech offers numerous benefits, including enhanced financial inclusion, expedited transactions, and diminished operational costs, the literature also underscores various challenges and risks, such as cybersecurity threats, data privacy issues, and regulatory complexities stemming from the swift advancement of technology (Waliullah, George, Hasan, Alam, Munira, & Siddiqui, 2025). Thus, the FinTech market in the United States persists as a dynamic and swiftly growing sector that is transforming the framework of financial services while concurrently prompting significant inquiries about regulation, financial stability, and the prospective role of conventional financial institutions.

3. The research gap

Even though more and more people are conducting research on the FinTech sector in the United States, past studies have mostly focused on the sector's overall growth, new technologies, and how digital innovation affects financial services. Nonetheless, there exists a distinct deficiency of research connecting diverse technological investments (including artificial intelligence, blockchain, cloud computing, IoT, Cybersecurity, and FinTech Market) to the expansion and prosperity of companies within the American FinTech ecosystem. Moreover, the amalgamation of FinTech companies with conventional financial institutions and their influence on innovation and market growth has yet to be examined. Prior research has failed to deliver a thorough quantitative assessment of the effects of technical investments across many industries in the American economy.

This study seeks to address this gap by examining the evolution of the FinTech market in the United States, evaluating the influence of technology investments on startup growth, and elucidating the relationship between these investments and the American FinTech ecosystem.

4. Methodology

This study employs a descriptive-analytical research methodology to examine the structure and evolution of the FinTech market and its fundamental technologies in the United States. The descriptive method delineates the evolution of the FinTech system, whereas the analytical approach scrutinizes investment trends and the technology catalysts driving the business.

The variables for technology investment were recalibrated by re-evaluating the compound annual growth rate (CAGR) using benchmark values from secondary market research sources. The resulting dataset reflects smoothed trend estimates rather than independently recorded annual values. The elevated correlation coefficients ($r > 0.97$) indicate the fundamental co-movement of technological investment cycles inside the U.S. fintech sector.

4. 1. Research Design

The research employs a secondary data analysis framework, utilizing publicly accessible statistics reports, market research databases, and industry publications pertinent to FinTech technology and investment markets. The study examines the correlation between technical advancement and the growth of the FinTech ecosystem in the United States.

4. 2. Sources of Data

The data utilised in this study were gathered from many credible industry and research sources, encompassing market intelligence publications, financial technology research platforms, and international market analysis databases. These sources provide data on the size of the FinTech market, its growth rate, the amount of money being spent on new technologies, and the number of new businesses starting up. The report includes information on key FinTech technologies such as AI, blockchain, cloud computing, cybersecurity, cryptocurrencies, and the Internet of Things (IoT) to provide a comprehensive picture of the technological foundation of the FinTech industry.

4. 3. Framework for Analysis

To meet the study's goals, the analysis is based on three primary areas:

- **Analysis of Market Development:** This dimension looks at how the worldwide FinTech market is growing as a whole and compares it to the U.S. FinTech investment industry to show where the U.S. fits within the global FinTech ecosystem.
- **Analysis of Technology Investments:** The study looks at investments in important technological areas that help the FinTech business, such as artificial intelligence, blockchain technology, cloud computing, cybersecurity, cryptocurrencies, and the Internet of Things. This study's goal is to identify the IT areas that receive the most funding and make the greatest contributions to FinTech innovation.
- **Analysis of the Startup Ecosystem:** The study also looks into how FinTech companies are helping to drive innovation and growth in the industry by looking at the number of startups, the growth of the entrepreneurial environment, and the rise of FinTech unicorns in the US.
- **Data Analysis Techniques:** The research predominantly employs comparative analysis approaches and trend analysis. Investment trends and the application of emerging technologies within the financial technology sector are illustrated through graphs, statistical metrics, and market growth projections. The research employs descriptive statistics and Pearson's correlation analysis to assess the strength and direction of the association among the study variables, analyzing numerical data and market indicators to discern structural patterns within the United States financial technology sector.

5. Theoretical Framework of Financial Technology

FinTech signifies the amalgamation of technology and financial services, fostering innovation and revolutionizing conventional business Methods. Comprehending its theoretical framework elucidates its mechanisms, advantages, and regulatory obstacles.

5.1. Definition of Financial Technology (FinTech)

Financial Technology (FinTech) is a dynamic and interdisciplinary domain that exemplifies the profound integration of digital technologies into financial services over the last 10 years. It includes entities, platforms, and digital solutions that integrate finance, technology, and innovation management to improve the efficiency, accessibility, and quality of financial services. FinTech employs advanced technologies to enhance the creation and provision of innovative financial products and processes, lower operational expenses, broaden access to financial markets, and foster the emergence of new business models and entrepreneurial initiatives that are transforming the conventional financial sector (Nicoletti, 2017 ; Leong & Sung, 2018 ; Murchison et al., 2019). FinTech leverages cutting-edge digital technology to automate and enhance financial operations, enabling businesses, entrepreneurs, and consumers to optimize transactions, services, and decision-making through software, algorithms, and digital platforms. These solutions, available on both PCs and mobile devices, improve user-centricity, efficiency, and inclusiveness in financial services (Zeidy, 2022). Furthermore, FinTech revolutionizes the provision of financial services by enhancing client engagement, updating banking infrastructure, and offering swifter, more economical, and more comfortable options than conventional financial models (Rajesh Meena, 2023). Its applications span digital payments, lending platforms, wealth management, and decentralized finance, all of which enhance scalability, accessibility, and overall system efficiency (Ishaan Srivastava, 2025). Recent advancements broaden the domain of FinTech by highlighting the significance of emerging technologies, including artificial intelligence, machine learning, blockchain, cloud computing, big data analytics, and quantum computing. These technologies provide more intelligent, automated, tailored, and inclusive financial services, hence promoting financial innovation and inclusion (Kou & Lu, 2025).

This study operationally defines FinTech as a technology-driven sector of the financial industry that employs emerging digital technologies to enhance financial services, innovate business models, and generate new market opportunities. The progression is evaluated using indices of technological investment and the development of the startup ecosystem, encompassing venture capital investment, startup growth, innovation intensity, market accessibility, and the proliferation of FinTech-related entrepreneurial activities in the United States.

5. 2. Evolution and transformative trajectory

The evolution of FinTech is marked by a protracted shift from initial digital banking and financial globalization to a modern phase characterized by disruptive technology (R. Surabhi & S. M. Kumar, 2024). From 2020 to 2026, the sector progressed beyond mere digitization to a phase of "symbiotic evolution," characterized by the collaboration between established financial institutions and agile FinTech startups to sustain competitiveness (A. Singh & S. J, 2024).

This era is characterized by numerous significant developmental transitions:

- *The democratization of finance:* Instruments like robo-advisors and crowdfunding have transformed wealth management and capital accessibility, transitioning these services from exclusive, high-barrier models to inclusive, personalized platforms (Rajesh Meena, 2023).
- *Strategic integration:* Conventional banks have embraced digital strategies, including open banking efforts, which obscure the distinctions between established institutions and emerging competitors (N. Raviteja, 2024).
- *Technological maturation:* Developments in artificial intelligence (AI), machine learning (ML), and blockchain have evolved from experimental ideas to fundamental components of financial infrastructure (S. Gupta, 2025).

5. 3. Prospects for Financial Technology

FinTech offers substantial prospects for (Ajambo & al., 2017):

- Enterprises of all sizes can benefit from FinTech by transitioning from cash to digital payments, which can save significant work hours. For instance, during the Ebola response in Sierra Leone, around 800 workdays were saved each month, aiding the faster delivery of essential services. Additionally, digital payments create a data trail that improves access to sales records, optimizes inventory management, and provides new data for lenders to assess micro-enterprises' creditworthiness.
 - Financial service providers can leverage FinTech to significantly reduce operational costs by up to \$400 billions annually and expand their customer base at a low cost, potentially generating over \$4 trillion in new deposits. This influx can enhance lending capabilities, promoting economic activity and liquidity, as evidenced by agent banking models.
 - Governments gain significant advantages from FinTech adoption, including improved public finances through digital payments that reduce corruption and enhance tax collection—as evidenced by Sierra Leone's annual savings of \$10.7 millions from digitizing payments, which supported healthcare for millions. Additionally, in Côte d'Ivoire, the introduction of mobile money for school fees led to increased transparency, better fund allocation to schools, and enhanced student data collection, benefiting both government services and mobile money providers.
- In light of the above, the findings can be summarized in the following (Figure 01):

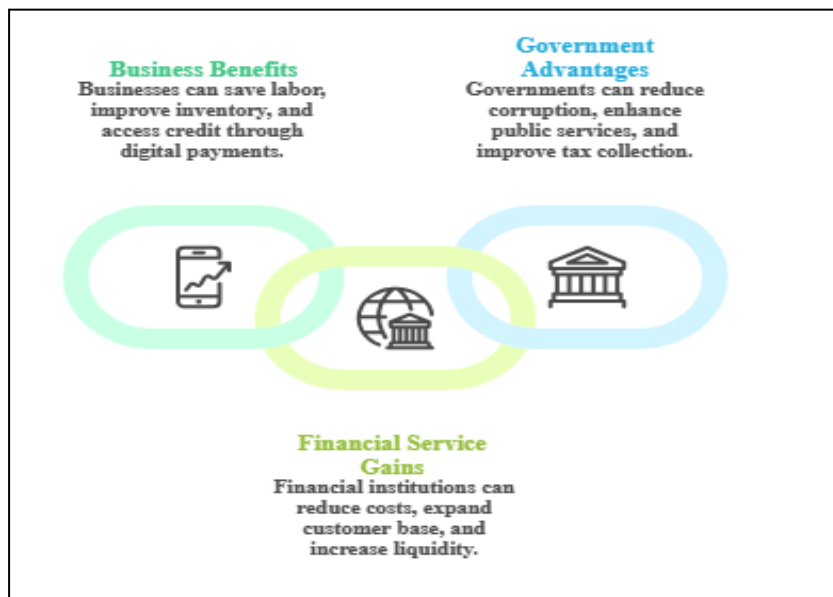


Figure 1. FinTech Opportunities
Source: Prepared by the authors.

5. 4. Financial Technology Innovations

The advancement of financial technology has been accompanied by numerous technological advancements that have jointly improved the efficiency, security, and accessibility of financial services. As stated by (Nonaka & Hayashi, 2017), the principal technology propelling FinTech advancements encompass:

- **Artificial Intelligence (AI) in financial analytics:** AI applications facilitate the analysis of intricate financial datasets, discovery of anomalies, appraisal of loan applications, detection of fraudulent activities, and assessment of consumer feedback. Moreover, AI-driven robotics can refine client interactions by leveraging technologies such as facial and voice recognition to enhance safety and expedite service delivery, while simultaneously mitigating cyber risks.
- **Blockchain technology** enables secure and transparent financial transactions for inter-company collaboration, especially in industries like insurance and interbank operations. It allows many stakeholders to access unalterable transaction records, thus improving trust and operational efficiency.

- Accelerated application development and "mobile-first" solutions: The utilization of Application Programming Interfaces (APIs) facilitates the swift creation of mobile-centric financial apps, enhancing the speed, adaptability, and client focus of financial services.
- Cybersecurity enhancement: FinTech companies and conventional financial institutions are adopting advanced cybersecurity strategies to counteract cyberattacks, thwart money laundering, and establish stringent information protection protocols, which encompass employee training and the implementation of sophisticated monitoring systems.
- Biometric multi-modal authentication: Technologies include facial recognition, fingerprint scanning, and various biometric measures that are progressively utilized to establish multi-layered authentication systems, thereby diminishing the risk of illegal access to accounts and sensitive financial information.
- The Internet of Things (IoT) facilitates intelligent financial solutions through the integration of IoT-enabled devices, such as wearable health trackers, with financial services like health insurance, hence enabling personalized offerings, risk assessment, and creative data-driven solutions. These innovations collectively demonstrate that FinTech is not just a minor enhancement in financial services but a disruptive force that improves operational efficiency, security, and consumer experience throughout the financial ecosystem.

5.5. Developing trends and essential elements

The FinTech landscape from 2020 to 2026 has been characterized by a shift towards decentralized systems and the adoption of sophisticated computational technologies. As the sector evolves, attention has shifted to encompass long-term societal effects and advanced risk management. Essential elements and trends encompass the following:

Table 1. Emerging Trends and Future-Oriented Components

Component	Function and Impact
Decentralized Finance (DeFi)	Enables transparent, intermediary-free financial ecosystems.
AI-Driven Analytics	Powers automated decision-making, personalized advice, and operational efficiency.
Blockchain Technology	Provides decentralized, secure, and transparent transactional capabilities.
Sustainable FinTech	Incorporates environmental and social responsibility into financial products.
Quantum Computing	Represents an emerging frontier for future security and processing capabilities.

Source: (A. Singh & S. J, 2024), (S. Gupta, 2025).

6. Results and discussions

6.1. Global FinTech Investment Market Size

The FinTech sector is attracting increasing global attention, with investments in the industry serving as an important indicator of the financial sector's development and its reliance on modern digital solutions.

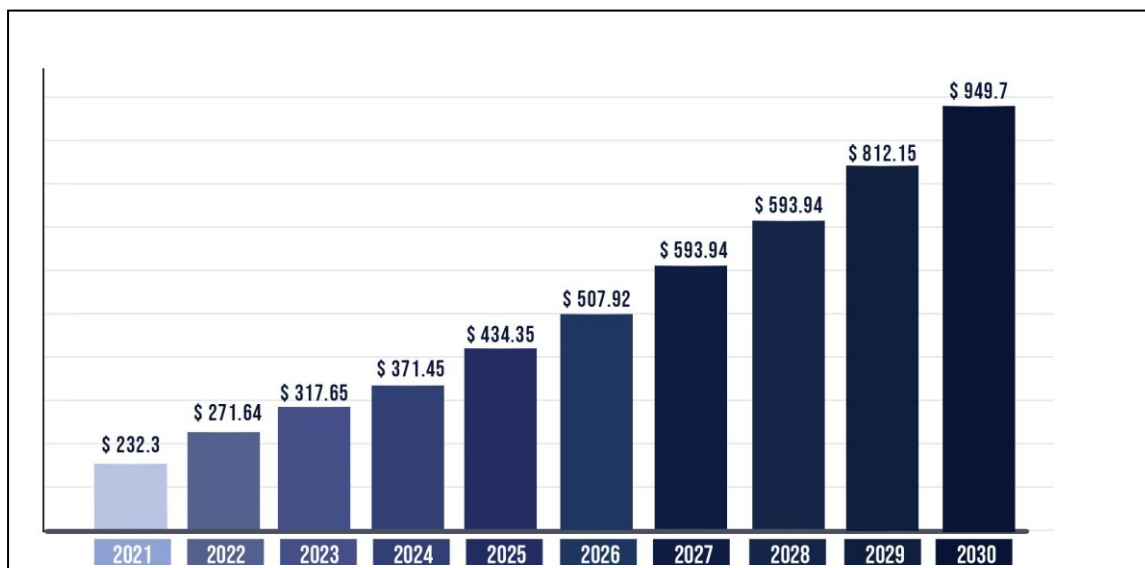


Figure 2. Global FinTech Investment Market Size (2021-2030 USD Billion)

Source: (Vision Research Reports, 2022).

The financial technology (FinTech) market is anticipated to expand from USD 232.3 billion in 2021 to USD 949.7 billion by 2030, more than quadrupling over the next decade. This swift, nearly exponential growth is propelled by digital transformation, extensive utilization of Electronic payments and digital banking, and the incorporation of artificial intelligence and big data analytics in financial services. The increasing financial inclusion and evolving consumer preferences for digital solutions are bolstering this growth, indicating a significant transformation of the global financial sector, with FinTech serving as a pivotal catalyst for innovation, competition, and regulatory challenges.

6. 2. FinTech Investment Market in the United States

The FinTech-as-a-Service market is experiencing rapid expansion, signaling a significant shift in the global financial sector, according to the Grand View Research report. The market size rose from roughly 266.56 billion USD in 2022 to 307.29 billion USD in 2023, with forecasts predicting it will attain 949.49 billion USD by 2030, reflecting a compound annual growth rate of approximately 17.5%. This robust rise is ascribed to the rapid advancement of digital transformation, heightened reliance on digital financial solutions, and the use of artificial intelligence and big data analytics to deliver financial services.

Regionally, North America, particularly the United States, is the primary catalyst for this expansion, representing over 34% of the global market in 2022. This indicates the robustness of the digital infrastructure, elevated adoption of electronic financial services, and the presence of a sophisticated, inventive ecosystem comprising prominent financial hubs and top technology firms. The fintech market in the United States has grown from \$62.3 billion in 2020 and is projected to grow at a compound annual rate of 16.6% through 2030, propelled by payment services, loans, remittances, and various digital services. Payment services dominate the market, indicative of the swift adoption of digital systems and the advancement of financial inclusion, whilst loan and remittance services leverage artificial intelligence, big data analytics, and digital innovation (Grand View Research, 2023).

Future analyses predict the region's sustained preeminence, anticipating its share surpassing 40% in the coming years, driven by the proliferation of embedded finance services and the growing reliance on API technologies and cloud platforms. In this sense, the United States epitomizes the core of this development, owing to the concentration of startups and substantial expenditures in financial innovation, which augment its capacity to transform global financial business models. This entails escalating regulatory issues that require adaptable frameworks that balance innovation promotion with financial stability, mirroring the dynamic, competitive, and technology-driven characteristics of this sector within the American economy (Grand View Research, 2023).

6. 3. Comparison of FinTech Investment Market Size: Global vs. United States

Numerous countries are investing in financial technology (FinTech), however the market size varies considerably between the global context and the United States, indicative of differences in technological infrastructure and regulatory frameworks. This comparison aims to elucidate the principal distinctions and trends between the two marketplaces.

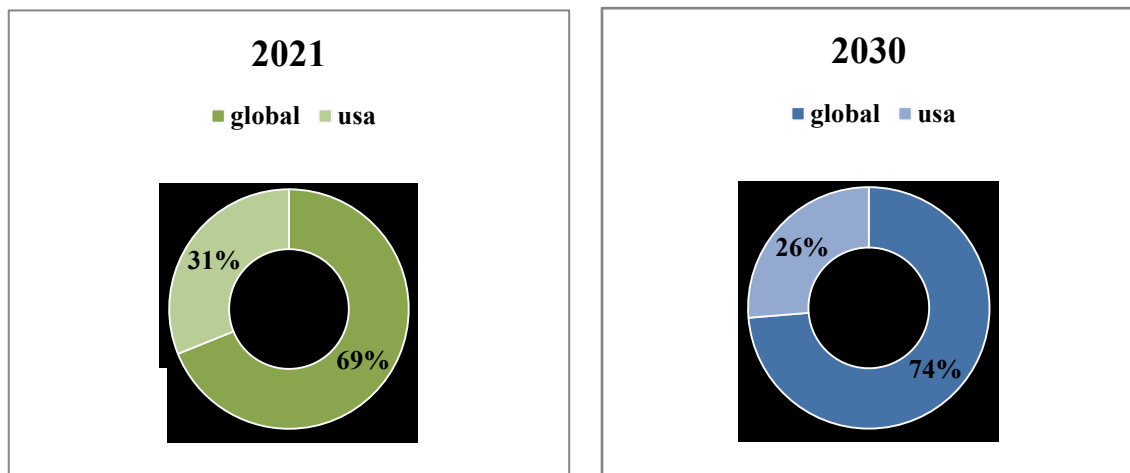


Figure 3. Comparison of FinTech investment market size between the global market and the United States

Source: Prepared by the authors elaboration based on Figure 2 and (Grand View Research, 2023).

The U.S. Market Size Compared to the World displays two pie charts showing a decrease in U.S. market share from 31% in 2021 to 26% in 2030, while global market share increases from 69% to 74%. This transition indicates accelerated growth in emerging countries, heightened worldwide investment, and enhanced geographic

diversification, implying that U.S. corporations may need to modify competitive strategies and broaden foreign operations to sustain their global standing.

6. 4. FinTech Technology Investment in the United States

Analyzing the magnitude of FinTech technology investments in the United States is essential for comprehending local market dynamics. This analysis delineates the technology domains that garner the greatest investor interest and mirrors developmental priorities within the U.S. financial ecosystem.

- *Artificial Intelligence (AI)*: is seeing swift expansion in the United States, propelled by robust involvement from both the private sector and governmental efforts designed to promote innovation and improve competitiveness across several industries. The subsequent graphic provides a summary of AI investment in the United States, emphasizing significant trends and sectoral objectives.

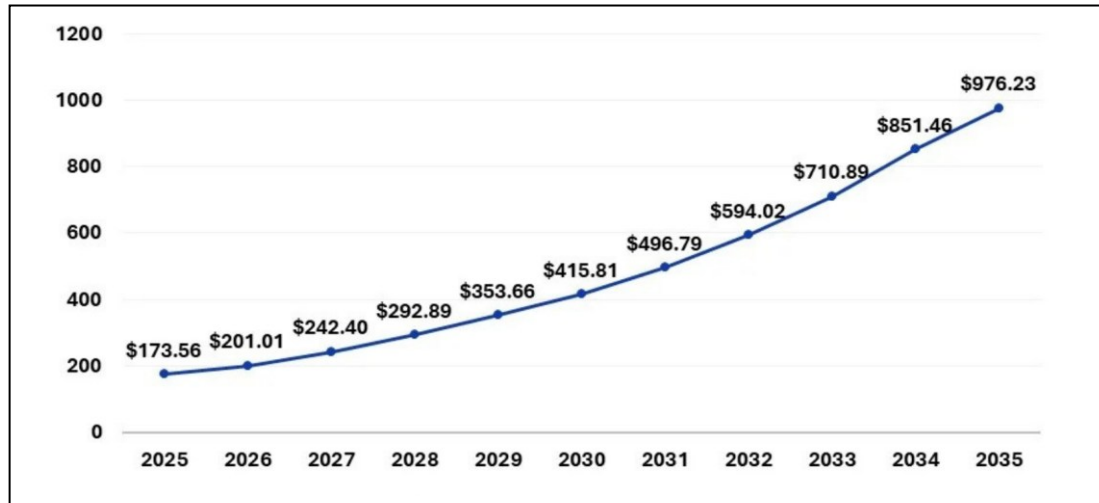


Figure 4. AI investment size in the United States (2025 -2035 Billion)
Source: (Precedence Research, 2026).

The illustration illustrates the U.S. artificial intelligence (AI) market from 2025 to 2035, anticipated to expand from USD 173 billion to USD 976 billion, nearly a sixfold increase. Growth intensifies post-2028, propelled by machine learning, generative models, process automation, and increasing institutional demand in healthcare, finance, industry, and defense. These developments underscore AI as a vital catalyst for economic expansion and technological competitiveness in the United States in the forthcoming decade.

- *Blockchain*: The blockchain technology market in the United States is experiencing rapid expansion, fueled by technological innovation, substantial corporate investments, and supportive government initiatives. Its adoption is growing across multiple applications, including payments and smart contracts, driving broader market penetration and reinforcing the technology's strategic importance in the U.S. financial ecosystem.

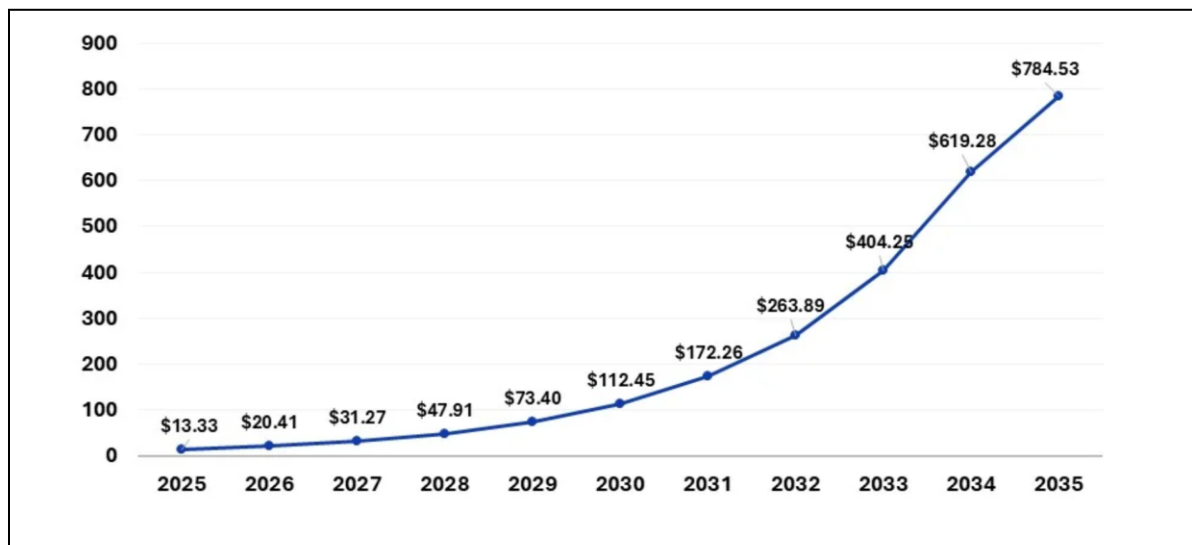


Figure 5. Blockchain investment size in the United States
Source: (Zoting, S., & Shivarkar, A, 2026).

The figure depicts the U.S. blockchain technology market from 2023 to 2034, growing from USD 5.68 billion to USD 619.28 billion, following an almost exponential trajectory. Growth accelerates sharply after 2027, driven by expanding enterprise applications, maturing regulatory frameworks, and rising investments in digital innovation. This transition from gradual adoption to rapid expansion highlights blockchain as a key driver of the future digital economy.

- *Cloud Computing*: Cloud computing represents a critical technology within the financial technology (FinTech) sector. The United States is a leading market, characterized by substantial investments, as illustrated in the bar charts of the following figure. These trends underscore the strategic role of cloud computing in enabling scalable, efficient, and innovative financial services.



Figure 6. Cloud computing investment size in the United States
Source: (Vision Research Reports, 2024).

The illustration illustrates the U.S. cloud computing market's expansion from USD 216.93 billion in 2023 to USD 1,380.57 billions by 2033, exhibiting a consistent and progressively accelerated trend. Growth is propelled by the rising acceptance of IaaS, PaaS, and SaaS models, expedited digital transformation, and the broadening applications of AI and big data analytics. These trends underscore cloud computing as a fundamental component of the U.S. digital economy and a catalyst for efficiency and extensive market maturation in the forthcoming decade.

- *Cybersecurity*: The financial technology sector is intrinsically vulnerable to cybersecurity threats, prompting significant investments in cybersecurity within the United States. The subsequent image depicts the magnitude and expansion of these investments, emphasizing the strategic significance of cybersecurity in protecting financial systems and bolstering the resilience of the U.S. digital economy.

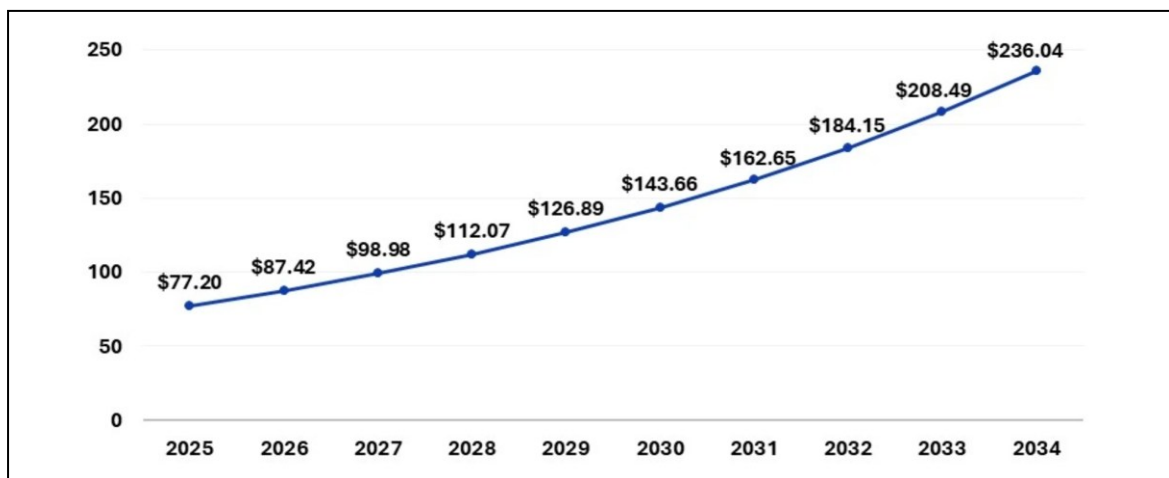


Figure 7. Cybersecurity investment size in the United States
Source: (Zoting, S., & Shivarkar, A, 2025).

The figure depicts the U.S. cybersecurity market from 2025 to 2034, growing from USD 70.20 billion to USD 236.04 billion, following a steady upward trajectory. Growth accelerates over time due to rising cybersecurity threats, increased adoption of digital infrastructure and cloud computing, and the proliferation of IoT and AI technologies. These trends highlight cybersecurity as a strategic priority for business continuity, data protection, and trust in the digital economy.

- *Cryptocurrencies*: The subsequent table encapsulates essential facts from Coinweb concerning cryptocurrency ownership in the United States, derived from data updated in 2023. The usage of cryptocurrency has increased markedly, with more than 48.8 million U.S. adults possessing digital assets, constituting roughly 14.36% of the adult population. The table delineates demographic trends, ownership patterns, investment behaviours, and performance insights, offering a thorough assessment of the present condition of bitcoin among Americans.

Table 2. Cryptocurrency Ownership and Investment Patterns among U.S. Adults (2023)

Category / Indicator	Statistic	Notes
Number of U.S. adults owning cryptocurrency	48.8 millions	Approximately 14.36 % of the adult population
Own or previously owned cryptocurrency	56 %	Around 145 million people
Trust in cryptocurrency among U.S. adults	25 % have moderate or high trust	3 out of 4 adults have low or no trust
Most common age group for cryptocurrency ownership	25–44 years	69.6 % of cryptocurrency owners fall within this age range
Awareness of cryptocurrency	81 % of adults	Increased from 69 % in 2020
Preferred cryptocurrencies	Bitcoin 83.2 %, Ethereum 48.7 %	Based on ownership of specific currencies
Cryptocurrency wallet size	Less than \$5,000: 55.48 %	Most common investment range among users
Monthly spending on cryptocurrency	Over \$1,000: 31.90 %	Indicates relatively high usage
Plans to increase investment in the future	55.34 %	Majority of investors plan to expand holdings
Investment performance	45 % reported below expectations	Self-assessed performance of holdings
Retirement account ownership	86 % of cryptocurrency owners	Compared to 63 % among non-owners

Source: (Munir, S., & Kazemian, S, 2023).

- *Internet of Things (IoT)*: The Internet of Things (IoT) industry in the United States is undergoing swift expansion, driven by ongoing technology advancements and broadening applications in critical areas such as healthcare and transportation. The subsequent figure depicts the magnitude and expansion of IoT investments, underscoring its strategic significance in facilitating digital transformation and enhancing operational efficiency within the U.S. economy.

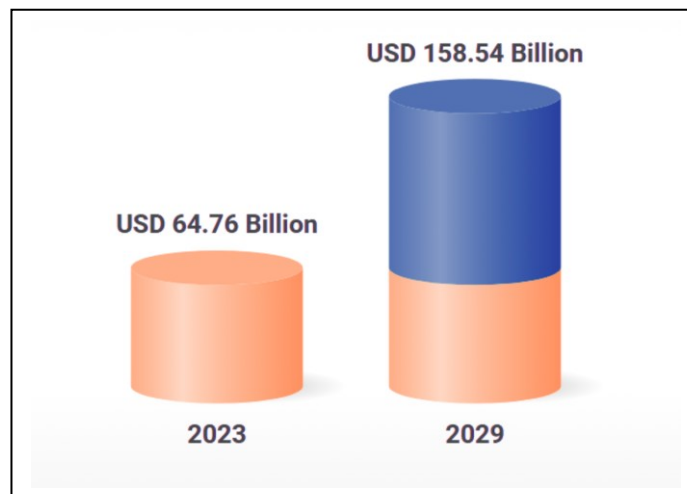


Figure 8. IoT investment size in the United States
Source: (ResearchAndMarkets.com, 2024).

The graph illustrates that the U.S. IoT market will increase from \$64.76 billion in 2023 to \$158.54 billion in 2029, with a projected CAGR of 15.9%. AI and big data analytics are helping smart industry, smart cities, healthcare, and transportation grow by making more uses for them. These trends point to a fast-growing sector driven by new technologies and more money being put into digital infrastructure.

- *Smart Contracts*: North America witnessed a market value of 0.93 billion USD in 2025. The region's dominance is attributed to its strong technological ecosystem and highly skilled workforce. Additionally, several smart contract startups have emerged in the region due to early blockchain adoption and a supportive startup ecosystem, enabling North American companies to lead the market and contribute to regional dominance. The American market is expected to reach 0.73 billion USD by 2026. According to the distribution of market share by end-user in the United States in 2024, as illustrated in the following figure, we find:

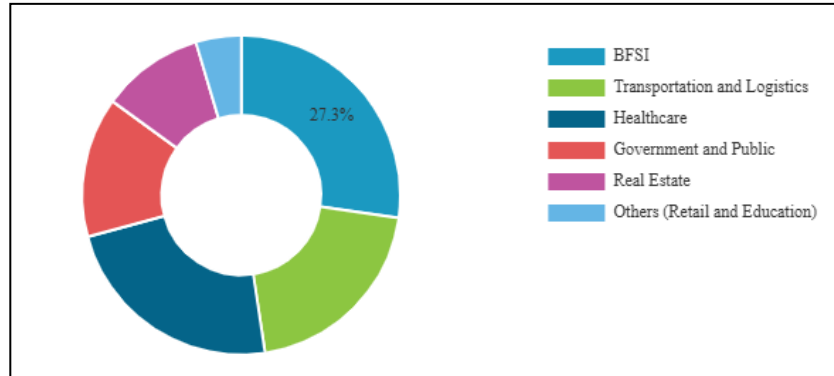


Figure 9. U.S. Smart Contracts Market Share, By End-Users, 2024

Source: (Fortune Business Insights, 2026).

From the figure above, we see that the largest share is held by the financial and banking services (BFSI) sector, with 27.3%, leading the adoption of smart contracts in the United States. Meanwhile, other sectors contribute 72.7% respectively: healthcare, transportation and logistics, the government and public sector, real estate, and other sectors (retail and education) significantly to market growth.

6. 5. Investment in FinTech Startups in the United States

Startups are central to innovation in the financial technology (FinTech) sector, and analyzing investment volumes in U.S.-based FinTech startups provides valuable insights into market dynamics and investor confidence in their transformative potential.

- *Number of FinTech Startups in the United States*: As of 2024, the United States hosts approximately 13,100 FinTech startups (Ruby .D, 2026), accounting for over half (51%) of the global total of 29,955, this exceeds the combined number of FinTech startups in all other countries, with the U.S. being home to some of the most valuable private and publicly listed FinTech companies worldwide (Fintech, 2021).

Table 3. Number of FinTech Startups in the United States (2020–2024)

Year	Number of FinTech Startups
2020	5,686
2021	5,779
2022	8,775
2023	10,755
2024	13,100

Source: (Ruby .D, 2026).

The examination of startup growth in the United States' financial technology (FinTech) industry from 2020 to 2024 indicates a distinct upward trajectory, demonstrating the sector's vibrancy. In 2020, the number of enterprises was 5,686, increasing somewhat to 5,779 in 2021, reflecting a growth rate of 1.6%. This suggests a condition of relative stability at the onset of the COVID-19 epidemic, as the market began to adjust to the demands of digital transformation. In 2022, there was a notable increase, with the number of firms reaching 8,775, reflecting a substantial growth rate of nearly 51.7%. This indicates a robust post-pandemic resurgence and a growing demand for digital financial services, including electronic payments, digital loans, and digital insurance. The upward trend persisted in 2023 and 2024, with the number of companies rising to 10,755 in 2023 (+22.6%) and 13,100 in 2024 (+21.9%), signifying a swift expansion of the American market in this sector, propelled by heightened investor interest and a transformation in consumer behaviour towards digital solutions. This substantial growth is ascribed to several critical factors, primarily the heightened dependence on financial technology following the pandemic, the escalating backing from venture capital for startups, and the accessibility of sophisticated digital infrastructure

and specialised human resources in the United States. The American market has experienced substantial growth in FinTech companies during this period, indicating a strategic transition towards digital innovation and a rising demand for sophisticated financial services, which generally corresponds with investment trends in this sector, notwithstanding some transient fluctuations.

- *The top FinTech unicorns in the US:* A unicorn is a company worth \$1 billion or more. These companies are very inventive and change the way things are done in the market. There are more than 1.4 million businesses in the United States, and 1,122 of them have become unicorns. The most recent one to join was Upwind on January 26, 2026. As of March 5, 2026, the U.S. has had four new unicorns, which is 11 fewer than the same time last year. This is a 73.33% drop. The United States has the most unicorns in the world, with the most of any country. San Francisco has the most unicorns (275), followed by New York City (159) and Palo Alto (46). Enterprise Applications has the most unicorns (675), followed by High Tech (280) and Consumer (232) (Unicorn, 2026).

- *The top 15 Fintech startups in the United States as of 2023:* The table below presents the rankings of the foremost FinTech companies in the United States for 2023, with Stripe dominating at a market valuation of \$95 billion, indicative of its global dominance in electronic payment solutions and digital payment infrastructure. A consortium of firms exemplifying various approaches in this industry follows, including Chime, which signifies the emergence of digital banks, and Plaid, which offers the infrastructure to link financial applications with bank accounts. The list features notable companies like SoFi, which signifies personal finance solutions, and Coinbase, indicative of the swift expansion of the bitcoin industry. Entities such as Ripple and Kraken exemplify the pivotal influence of blockchain technologies and cryptocurrencies in the evolution of financial services.

The list features startups specialising in specialist sectors, such as Toast, Inc., which offers financial solutions for eateries; Credit Karma, which concentrates on credit management; and Opendoor, which integrates financial technology with real estate. We also identify companies such as Robinhood and Brex, which cater to individual investors and entrepreneurs, respectively.

Table 4. Top 15 FinTech Startups in the United States (2023)

Rank	Top FinTech Startups in the United States
1	Stripe
2	Chime
3	Plaid
4	SoFi
5	Coinbase
6	Ripple
7	Toast, Inc.
8	Spur
9	Credit Karma
10	Opendoor
11	Root
12	Paydient
13	Kraken
14	Robinhood
15	Brex

Source: (Ruby .D, 2026).

This table illustrates the diversity of the financial technology ecosystem in the United States, spanning payments, digital banking, personal finance, digital currencies, investment, and real estate. This diversity indicates the robustness of innovation in the American market and the intense competition among firms to deliver more efficient and user-friendly digital financial products.

The table below aims to elucidate the top 15 solutions and services in the financial technology (FinTech) sector in the United States, as previously discussed:

Table 5. Market Valuation and Specialization of FinTech Companies in the USA (in \$ Billion)

Rank	Company	Market Value (\$B)	Specialization
1	Visa	415.1	Digital Payments Network
2	Mastercard	316.9	Payment Processing & Network
3	PayPal	221.7	Online Payments & Digital Wallet
4	Square	97.2	Merchant Payments & POS Solutions
5	Coinbase	64.7	Cryptocurrency Exchange
6	Affirm	37.2	Buy Now, Pay Later (BNPL)
7	Bill.com	30.8	Financial Automation & B2B Payments

8	Chime	25.0	Digital Banking (Neobank)
9	Robinhood	23.6	Retail Investing & Trading
10	Upstart	16.8	AI-Based Lending
11	Ally Financial	16.6	Digital Banking & Auto Finance
12	SoFi	14.4	Personal Finance & Lending
13	Plaid	13.5	Financial Data Infrastructure
14	Ripple	10.0	Blockchain & Cross-border Payments
15	Toast, Inc.	8.0	Restaurant Payments & POS

Source: (Choudhary, P, 2023).

The table underscores the preeminence of leading payment firms in the United States' fintech industry, highlighting the critical role of payment infrastructure in the global financial system. It demonstrates rapid expansion in digital payment systems and cryptocurrencies, alongside a distinct diversification in business models encompassing alternative finance, digital investing, and financial data infrastructure. This encapsulates a vibrant and innovative FinTech landscape, bolstered by substantial investments and cutting-edge technologies, augmenting its influence on the evolution of financial services.

6.6 Statistical Analysis of Technology Investment and Startup Growth

6.6.1. Research Dataset

The database utilized in this study was constructed from the data shown in the preceding figures and tables, employing the Compound yearly Growth Rate (CAGR Back-Projection) methodology to estimate the yearly values for the period 2020–2024. These values are approximations based on reported growth trends and do not reflect directly observed annual data. All variables are presented in billions of US dollars as per the following table:

Table 6. Research Dataset — Technology Investment Variables (USD Billion) and FinTech Startups (Units)

Year	Startups (Units)	FinTech Market	AI	Cloud Computing	Cyber-security	IoT	Block- chain
2020	5,686	62.30	72.84	124.51	35.79	41.60	1.58
2021	5,779	72.64	86.59	149.82	40.95	48.21	2.42
2022	8,775	84.70	102.95	180.28	46.86	55.88	3.71
2023	10,755	98.76	122.40	216.93	53.62	64.76	5.68
2024	13,100	115.15	145.51	261.03	61.35	75.06	8.70

Source: Compiled and computed by the authors based on Grand View Research (2023), Precedence Research (2026), Vision Research Reports (2024), ResearchAndMarkets.com (2024), Ruby (2026).

6.6.2. Descriptive Statistics

Table 7 presents the descriptive statistics for all examined factors. The average number of FinTech companies over the period was 8,819, with a standard deviation of 3,207, indicating significant volatility in growth. Cloud computing achieved the largest average investment (USD 186.51 billion), whilst Blockchain recorded the lowest (USD 4.42 billion) but shown the greatest relative variability.

Table 7. Descriptive Statistics

Statistic	Startups	FinTech Market	AI	Cloud	Cyber-security	IoT	Block-chain
Mean	8,819	86.71	106.06	186.51	47.71	57.10	4.42
Std Dev	3,207	20.93	28.79	54.10	10.12	13.25	2.85
Min	5,686	62.30	72.84	124.51	35.79	41.60	1.58
Median	8,775	84.70	102.95	180.28	46.86	55.88	3.71
Max	13,100	115.15	145.51	261.03	61.35	75.06	8.70

Source: Authors' calculations.

6.6.3. CAGR Comparative Analysis

Table 8 displays the Compound Annual Growth Rate (CAGR) for all variables throughout the 2020–2024 timeframe. Blockchain technology exhibited the most significant growth rate (53.18% CAGR), surpassing all other technologies, with FinTech startups following at 23.20%. Cloud Computing (20.33%) and AI (18.89%) saw significant growth, affirming their strategic importance as key drivers of the FinTech ecosystem.

Table 8. CAGR Comparison (2020–2024)

Variable	2020 Value (B\$)	2024 Value (B\$)	Absolute Growth	CAGR (%)
Blockchain	1.58	8.70	×5.5	53.18%
FinTech Startups*	5,686	13,100	×2.3	23.20%
Cloud Computing	124.51	261.03	×2.1	20.33%
AI	72.84	145.51	×2.0	18.89%
IoT	41.60	75.06	×1.8	15.90%
FinTech Market	62.30	115.15	×1.8	16.60%
Cybersecurity	35.79	61.35	×1.7	14.42%

* Startups are expressed in units, not USD Billion.

Source: Authors' calculations based on data from the article under study.

6.6.4. Pearson Correlation Analysis

To address the research gap identified in prior literature, which is marked by a paucity of studies connecting diverse technological investments (including artificial intelligence, blockchain, cloud computing, IoT, Cybersecurity, and FinTech Market) to the growth of startups in the fintech sector, a Pearson correlation analysis was performed to assess the strength and direction of the relationship between these variables, as detailed in the subsequent tables: The findings indicated that all correlation coefficients were highly statistically significant at the 1% level ($p < 0.01$), demonstrating a robust and sustained positive association between various forms of technical investments and the growth rate of the startup ecosystem.

Table 9. Pearson Correlation Matrix

Variable	Startups	FinTech Mkt	AI	Cloud	Cyber	IoT	Block- chain
Startups	1.000	0.985	0.985	0.986	0.985	0.985	0.979
FinTech Market	0.985	1.000	1.000	1.000	1.000	1.000	0.989
AI	0.985	1.000	1.000	1.000	1.000	1.000	0.990
Cloud	0.986	1.000	1.000	1.000	1.000	1.000	0.991
Cybersecurity	0.985	1.000	1.000	1.000	1.000	1.000	0.987
IoT	0.985	1.000	1.000	1.000	1.000	1.000	0.988
Blockchain	0.979	0.989	0.990	0.991	0.987	0.988	1.000

Note: All correlations significant at $p < 0.01$ (***). N = 5.

Source: Authors' calculations.

Table 10. Correlation of Technology Investments with FinTech Startups

Technology Variable	Pearson r	p-value	R ²	Significance
Cloud Computing	+0.9856	0.0021	97.14%	*** (p<0.01)
AI	+0.9854	0.0021	97.11%	*** (p<0.01)
FinTech Market	+0.9850	0.0022	97.02%	*** (p<0.01)
IoT	+0.9849	0.0022	97.00%	*** (p<0.01)
Cybersecurity	+0.9845	0.0023	96.92%	*** (p<0.01)
Blockchain	+0.9787	0.0037	95.78%	*** (p<0.01)

Note: *** $p < 0.01$; N = 5 (2020–2024).

Source: Authors' calculations.

The results presented in the tables above demonstrate that all correlation coefficients are highly statistically significant at the 1% level ($p < 0.01$), indicating a robust, stable positive correlation between different forms of technological investment and the growth rate of the startup ecosystem.

6.6.5. Simple Linear Regression Analysis

Six straightforward linear regression models were developed to assess the correlation between technology investment (independent variable) and the growth of FinTech startups (dependent variable). The models indicate that technology investment is a statistically significant predictor of startup growth in all specifications.

Table 11. Regression Analysis Results

Model	Equation	R ²	Adj.R ²	Pearson r	p-value
Startups ~ FinTech Market	$Y = -4,268 + 150.93X$	0.9702	0.9603	+0.9850	0.0022
Startups ~ AI Investment	$Y = -2,822 + 109.76X$	0.9711	0.9614	+0.9854	0.0021
Startups ~ Cloud Computing	$Y = -2,077 + 58.42X$	0.9714	0.9619	+0.9856	0.0021
Startups ~ Cybersecurity	$Y = -6,068.78 + 312.02X$	0.9692	0.9589	+0.9845	0.0023

Startups ~ Internet of Things (IoT)	$Y = -4,794.01 + 238.39X$	0.9699	0.9599	+0.9849	0.0022
Startups ~ Blockchain Technology	$Y = +3,952.70 + 1,101.47X$	0.9579	0.9438	+0.9787	0.0037

Note: Y = FinTech Startups (units); X = Investment variable (USD B); N = 5; all models significant at $p < 0.01$.

Source: Authors' calculations.

The linear regression analysis results presented in the table above indicated robust and statistically significant positive correlations between the number of startups in the FinTech sector and several technological variables examined from 2020 to 2024. All models exhibited elevated coefficients of determination (R^2), ranging from 0.9579 to 0.9714, indicating that the independent variables can explain between 95.79% and 97.14% of the variation in the number of startups, thereby demonstrating the robustness of the linear associations among these variables.

The initial model, correlating the quantity of startups with the magnitude of the fintech industry, yielded a coefficient of determination ($R^2 = 0.9702$), indicating that roughly 97.02% of the variance in startup numbers is attributable to the growth of the fintech sector. The Pearson correlation coefficient ($r = 0.9850$) was attained, signifying a robust positive correlation. The regression coefficient ($\beta = 150.93$) signifies that each increment of one billion US dollars in the fintech market correlates with an anticipated rise of about 151 startups.

The second model, pertaining to investment in artificial intelligence, attained a value of ($R^2 = 0.9711$), one of the highest recorded among the models, underscoring the critical role of investments in artificial intelligence in facilitating the growth of startups within the fintech sector. The regression coefficient suggests that a one billion dollar increase in artificial intelligence funding correlates with the creation of around 110 extra businesses.

The third model concerning cloud computing investment exhibited the greatest explanatory power among all models ($R^2 = 0.9714$), with a correlation coefficient of ($r = 0.9856$), affirming the crucial significance of cloud infrastructure in augmenting the digital innovation landscape. The model's results suggest that each additional billion dollars invested in the cloud is associated with an estimated increase of approximately 58 new companies.

The fourth cybersecurity model achieved a coefficient of determination ($R^2 = 0.9692$), with a regression coefficient of 312.02, one of the highest observed in the study. This signifies that investing in cybersecurity is essential for bolstering user confidence and digital financial institutions, thus fostering the creation of new enterprises in the fintech sector.

The fifth model concerning the Internet of Things (IoT) demonstrated significant explanatory power ($R^2 = 0.9699$), with the regression coefficient suggesting that each additional billion dollars invested in this sector correlates with an estimated growth of around 238 startups. This phenomenon may be attributed to the growing significance of smart devices and interconnected data in advancing digital financial services.

The sixth model pertaining to blockchain technology had the lowest coefficient of determination among the models ($R^2 = 0.9579$), however it remained very strong, affirming the robustness of the link. The regression coefficient attained a value of 1101.47, the highest across all models, signifying that investments in blockchain significantly influence the growth of startups in the fintech sector, due to the innovative solutions this technology offers in digital payments, smart contracts, and digital assets.

All p-values were below 0.01, confirming the models' significance at a confidence level exceeding 99%. Consequently, the null hypothesis may be rejected, affirming the presence of statistically significant correlations between diverse technical investments and the growth of startups within the fintech sector. The elevated correlation coefficients (exceeding 0.97) indicate a robust positive relationship between the examined variables, corroborating recent trends that identify the advancement of digital technologies as a principal catalyst for growth in the United States' financial technology ecosystem.

6.6.5. FinTech Startup Growth Analysis

Table 12. Year-over-Year Startup Growth

Period	Start	End	Net Change	Growth Rate
2020–2021	5,686	5,779	+93	1.64%
2021–2022	5,779	8,775	+2,996	51.84%
2022–2023	8,775	10,755	+1,980	22.56%
2023–2024	10,755	13,100	+2,345	21.80%
2020–2024 (CAGR)	5,686	13,100	×2.3	23.20%

Source: Authors' calculations based on Ruby (2026).

The data displayed in the table above indicate a substantial upward growth trajectory in the number of startups from 2020 to 2024. The total commenced at 5,686 enterprises in 2020, rising to 13,100 by 2024, an increase exceeding 2.3 times over four years. The growth rate during this period fluctuated considerably; in the initial phase from 2020 to 2021, the sector recorded modest growth of only 1.64%, presumably reflecting the economic impacts of the COVID-19 pandemic. Nevertheless, the landscape transformed significantly in the subsequent period (2021–2022), as the growth rate surged to 51.84%, resulting in a net increase of 2,996 enterprises, representing the

most substantial growth spike across the whole analyzed timeframe. During the subsequent two years (2022–2023) and (2023–2024), growth steadied at elevated levels, achieving 22.56% and 21.80% respectively, signifying the sector's shift from a period of vigorous recovery to a time of maturity and sustained growth. The compound annual growth rate (CAGR) of 23.20% during the period substantiates this observation, surpassing typical averages across several economic sectors, indicating substantial vitality and a conducive environment for entrepreneurship.

Conclusion

1. Integration of Empirical Results

This paper offers a comprehensive empirical examination of the United States' financial technology (FinTech) ecosystem amid the swift structural changes to the global financial architecture from 2020 to 2024. Empirical evidence from regression and correlation models repeatedly indicates that the rise of FinTech companies is not an isolated event but a systemic outcome of substantial structural investments in developing digital technologies. The statistical analysis produced four crucial findings:

- A strong and steady co-dependence exists between digital infrastructure and entrepreneurial growth, with cloud computing and artificial intelligence (AI) leading the way, demonstrating exceptional Pearson correlation coefficients above ($r = 0.985$, $p < 0.01$).
- The computed regression models had remarkable explanatory power, with coefficients of determination (R^2) between 0.9579 and 0.9714. This affirms the pivotal function of technical investment as a macroeconomic catalyst of market dynamics.
- The empirical findings emphasize the disruptive characteristics of Blockchain technology; although it produced the lowest R^2 (0.9579), it exhibited the highest marginal effect ($\beta = 1101.47$), highlighting its significant potential to fundamentally transform conventional financial intermediation via decentralized finance (DeFi) and smart contracts.
- The analysis identified a clear pattern of structural convergence in technology investment cycles. The strong correlation and regression coefficients demonstrate a synchronized structural co-movement among different digital vectors, confirming that the post-pandemic digital transition functions as an integrated, co-evolving ecosystem.

2. Theoretical and Practical Contributions

This research holds scholarly significance due to its ability to address the empirical gap concerning the cumulative, synergistic consequences of emerging technology. These findings theoretically enhance the literature on innovation-driven growth in intricate financial systems, providing a paradigm to explain how technology investments evolve from operational optimization tools into structural catalysts for the emergence of unicorns and market valuation.

This study offers a strategic framework for venture capitalists and fintech entrepreneurs, demonstrating that the efficiency of cloud infrastructure and data-driven operational intelligence are the key factors for the survival and scalability of financial startups in volatile environments.

3. Methodological Constraints and Limitations

Academic rigor requires recognizing that the strongly linked empirical associations observed in this work indicate significant explanatory trends and structural alignments within the US digital ecosystem, rather than conclusive proof of pure linear causality. The remarkably elevated values of (r) and (R^2) can be largely ascribed to the structural co-movement characteristic of synchronized technology investments from 2020 to 2024. In this framework, progress in one area (e.g., cloud computing) systematically stimulates innovations in related domains (e.g., AI and cybersecurity). Consequently, prudence is necessary when applying these particular empirical standards to developing economies or other time periods.

4. Policy Implications

The article highlights the need for adaptable regulatory frameworks to address the growing risks associated with the digital surge, including cybersecurity vulnerabilities, data privacy breaches, and regulatory compliance challenges. Monetary authorities and supervisory agencies must develop flexible regulatory sandboxes that carefully balance the promotion of entrepreneurial innovation, the preservation of systemic financial stability, and the safeguarding of consumer protection.

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