



# Reassessment of the FinTech industry

Report Prepared for Massachusetts  
Technology Collaborative



November 30, 2023

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In addition, KPMG would like to thank the FinTech Working Group and Advisory Board members for their input during this study.

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# 1. Overview

# Overview



## Executive summary

This Report was prepared with the objective of identifying and assessing the financial technology (“FinTech”) industry’s significant developments that have occurred in the years since the study released in October 2020, *Now, next and beyond: Analysis of the FinTech Ecosystem in the Commonwealth of Massachusetts* (the “2020 FinTech Benchmark”). As such, the Report serves as an important waypoint in the Commonwealth of Massachusetts’ (the “Commonwealth”) journey as a growing FinTech leader globally.

Massachusetts’ FinTech ecosystem has seen substantial growth and notable transformations over the past three years amid a historically challenging and uncertain environment. This is supported by both the perspective of the ecosystem participants, and evidence-backed key metrics.

The data indicate that the Commonwealth’s FinTech hub, centered in Boston, has experienced notable growth in the FinTech industry over the past three years, strengthening its position as a strong contender in the global market with the potential to attract and retain top talent. The data also show that employment in FinTech related industries in Massachusetts has increased overall, with FinTech related sectors ranking among the fastest-growing industries in the state. In addition, there has been a growing emphasis on collaboration and partnerships within the FinTech ecosystem noted by industry stakeholders.

This Report also highlights changes in labor market, investment, and other industry data during the last several years in order to track the evolution of activities and progress made by FinTech verticals since 2020. Finally, the Report traces the evolution of trends and evolving models of developing vibrant FinTech ecosystems in leading FinTech hubs nationally and globally, summarizing the salient takeaways for Massachusetts to consider.

Overall, the close connections between stakeholders in the Commonwealth’s FinTech ecosystem have helped to create a dynamic and thriving innovation hub that is well-positioned to compete with larger financial centers like New York City and San Francisco.

While there have been significant improvements, in order to maintain its ambition of becoming a leading global FinTech hub, Massachusetts’ FinTech leaders must continue to invest in and support the ecosystem. The Progress Report appearing on the right elaborates on the developments and opportunities for further strengthening this ecosystem.

## Progress Report

Key takeaways from stakeholders:

- **Talent and culture:** 39 percent of respondents indicated that sourcing talent in Massachusetts has improved since 2020. However, opportunities to improve continue to exist, particularly by promoting diversity within the ecosystem and increasing available resources to the talent pool.
- **Capital:** Massachusetts has emerged as a major player in the FinTech industry, ranking fourth in the nation in terms of funding received by FinTech companies for all of 2022. However, respondents noted mixed views regarding whether capital availability has improved. Suggestions to improve accessibility to capital include increased visibility efforts for venture capital (“VC”)s.
- **Policy and regulation:** Between a quarter and a third of survey respondents indicated that supportiveness of policy/regulations and compliance with regulations have improved. Still, many stakeholders seek stronger connections with policymakers, particularly in the form of a regulatory sandbox and increased opportunities to interact.
- **Infrastructure and technology:** The majority of FinTech ecosystem participants believe access to new technologies has improved. Opportunities for continued growth were identified as actively monitoring innovation across FinTech hubs, highlighting success stories, etc.
- **Interconnectivity:** About two-thirds of FinTech ecosystem survey respondents noted that collaboration with other FinTech stakeholders has improved from 3 years ago. The interconnectivity could continue to improve by prioritizing scaling ecosystem activities, among other initiatives.

# Findings and recommendations

In 2020, MassTech commissioned an inaugural assessment of the FinTech ecosystem in the Commonwealth of Massachusetts that established a baseline reading of the size, scope, and activities that define Massachusetts’ FinTech sector for benchmarking purposes. That study contained 16 recommendations for furthering development of the FinTech ecosystem in Massachusetts. In 2021, the Mass Tech Collaborative along with the members of the Fintech Working Group launched the Mass FinTech Hub to promote collaboration between leaders in Massachusetts, capitalize on Massachusetts’ comparative advantages to help drive growth in the FinTech ecosystem. Since then, the FinTech Hub has introduced new programming, including FinTech career fairs, promoting startup-corporate collaboration, mentoring and networking initiatives, angel investor education, and supporting regulatory innovation.




Following the 2020 FinTech Benchmark, the Mass FinTech Hub focused on the top five suggestions and findings from the study and implemented initiatives to support growth in the FinTech ecosystem within the Commonwealth. These initiatives included FinTech career fairs, project-based learning, mentoring programs, bootcamps, angel investment education and ecosystem promotion. These programs and initiatives involve a range of industry stakeholders including start-ups, financial services organizations, academia, investors, students, and regulatory bodies.








Based on the 2023 FinTech ecosystem survey (“2023 survey”), as well as one-on-one and focus group interviews, and desktop research, the Massachusetts’ FinTech ecosystem has significantly improved in the past three years along several dimensions. This study’s findings focused on five major industry attributes, which include **talent and culture**, **capital availability**, **policy and regulation**, **infrastructure and technology**, and **interconnectivity**.

The 2023 survey administered this year found that between about a quarter and two thirds of ecosystem participants perceive that all five industry attributes have improved over the past three years. The study suggests that the FinTech ecosystem is expanding and has potential for continued growth, with recommendations tailored to take advantage of these opportunities.

The following table provides several potential action items that could aid in the improvement and development of the Massachusetts FinTech ecosystem.

**Table 1:** Breakdown of Recommendations

| Themes   | Recommendations   |
|--|---|
| <b>Capital</b>   |   |
|  <p>Increase visibility efforts for venture capital</p>                   | <ul style="list-style-type: none"> <li>Targeted education and marketing campaigns that highlight opportunities and FinTech businesses that have scaled successfully may help attract more capital to the region.</li> </ul>   |
| <b>Interconnectivity</b>   |   |
|  <p>Improve interconnectivity of stakeholders across the Commonwealth</p> | <ul style="list-style-type: none"> <li>Initiatives geared toward activating talent networks for industry participants of different backgrounds and in different geographic locations may foster a stronger FinTech community.</li> </ul>  |
|  <p>Prioritize scaling ecosystem activities</p>                           | <ul style="list-style-type: none"> <li>Improving scalability and sustainability across all sectors of the FinTech ecosystem is an important step to increase the sale of its activities. One way to achieve this is to provide ecosystem participants with more targeted information and resources, such as information on relevant funding opportunities, opportunities to connect with professional services or legal advisors, etc.</li> </ul> |

| Themes  | Recommendations   |   |
|---|---|---|
| <b>Policy and regulation</b>  |   |   |
|    | Explore the creation of a regulatory sandbox                        | <ul style="list-style-type: none"> <li>A regulatory sandbox can provide a supportive environment for start-ups to test new ideas and products while reducing the regulatory burden on early-stage firms.</li> </ul>   |
|    | Increase opportunities to interact with policymakers and regulators | <ul style="list-style-type: none"> <li>Increased interactions may foster a greater level of the understanding of the needs of businesses with the policies and mandates of government, leading to greater forms of sustainable collaboration.</li> </ul>                      |
| <b>Talent and culture</b>   |   |   |
|    | Promote diversity of the ecosystem                                  | <ul style="list-style-type: none"> <li>Ecosystem organizers could work to establish mentorship and networking programs that connect underrepresented groups with leaders in the industry.</li> </ul>  |
|    | Increase available resources to talent pool                         | <ul style="list-style-type: none"> <li>There is an opportunity in the ecosystem to improve engagement with students in Massachusetts as a means to attract and retain talent.</li> </ul>  |
| <b>Infrastructure and technology</b>  |   |   |
|    | Play to the Commonwealth's strengths                                | <ul style="list-style-type: none"> <li>An approach to targeted growth in the FinTech space that builds upon the Commonwealth's comparative advantages in finance and technology sectors will be key to competing for talent and capital on an international level.</li> </ul> |
|  | Actively monitor innovation across FinTech hubs                     | <ul style="list-style-type: none"> <li>Implement periodic sweeps of successful models for fostering FinTech innovation. In addition, bridge agreements offer a means to share information across hubs.</li> </ul>   |
|  | Highlight success stories   | <ul style="list-style-type: none"> <li>Highlighting FinTech companies that have scaled successfully can also help attract more attention and investment to the ecosystem.</li> </ul>  |

## Methodology Summary

This Report contains a series of findings and recommendations that are based upon **100+ responses** to our 2023 survey, **30+ stakeholders** (hailing from traditional financial institutions, start-ups, universities, policy and regulations, accelerators/ incubators and capital providers) who participated in interviews and focus group sessions, and several listening sessions facilitated by the FinTech Working Group. These conversations, which reflect the “voice” of Massachusetts’ FinTech ecosystem, indicate that ecosystem stakeholders perceive significant developments since 2020.





## 2. Introduction

# Introduction



This chapter describes the background of the FinTech industry, provides the definition of FinTech relied upon in this Report, describes the goals of the 2023 Report, and provides an overview of the FinTech ecosystem's key components.

## Background

The year 2020 was a year of redefinition for FinTech, as the global pandemic led to seismic shifts in consumer behavior including accelerated digital adoption, e-commerce solutions, and contactless transaction and banking services. Over the subsequent year, investment in FinTech achieved new heights globally, amid soaring venture capital and private equity (“PE”) investment and an increase in strategic alliances and partnerships among traditional financial institutions, corporations, and FinTech start-ups. As of the second half of 2023, the pace of dealmaking came off its 2021 crest amid a more challenging macroeconomic headwinds, including the conflict between Russia and Ukraine, steep increases in the rate of inflation and interest rates, and tightening financial market conditions and lending. Global dealmaking in FinTech – including VC, PE and mergers and acquisitions – plunged to \$52 billion during the first half of 2023, marking the lowest level of FinTech funding since the third quarter of 2017.<sup>1</sup>

Even amid recent volatility, several bright spots remain in the FinTech sector. In the Americas region, FinTech funding climbed in the second half of 2022 from just shy of \$29 billion to \$36 billion.<sup>2</sup> In addition, the rapidly growing interest in the application of generative AI technologies offers new ways for businesses to interact with consumers in financial services, particularly in cybersecurity, insurance technology (“InsurTech”), and wealth management technology. In addition, digital assets, green banking, and environmental, social, and governance and sustainability (e.g., carbon credits, tokenized climate solutions) remain bright spots- that continue to drive investment and innovation.

## FinTech defined

FinTech may have formed at the intersection of financial services and technology. As new technologies are adopted by a larger number of organizations and supporting infrastructure and ecosystems develop to support innovation in financial services, an expansion and redefinition may be appropriate. For purposes of this study, FinTech is defined broadly, based upon the union of FinTech businesses and a broader set of FinTech activities.

As a vertical, FinTech refers to businesses that use technology to enable new products and services that enhance how financial services are delivered to businesses and consumers, but which fall outside of traditional financial services business models. In addition, FinTech encompasses traditional financial services businesses that use technology to improve a product or service, lower costs, or increase access. Technology is employed to support a variety of different financial activities that are changing banking and lending, transactions, insurance, digital security, personal finance, and advisory services. In keeping with the sector and subsector definitions utilized in the inaugural Report on Massachusetts’ FinTech ecosystem

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<sup>1</sup> KPMG. Pulse of Fintech H1’23: Global analysis of fintech funding. July 2023. Available online at: [kpmg.com/fintechpulse](https://www.kpmg.com/fintechpulse).

<sup>2</sup> KPMG. Pulse of Fintech H1’23: Global analysis of fintech funding. July 2023. Available online at: [kpmg.com/fintechpulse](https://www.kpmg.com/fintechpulse).

performed in 2020<sup>3</sup> (the “2020 FinTech Benchmark”), the FinTech vertical is bifurcated into several subsectors which are listed in the Appendix B. As a horizontal, FinTech refers to activities that support innovation within financial activities through the application of technology. This can encompass a broad range of activities that occur at both FinTech businesses and existing financial institutions, incubators and start-ups, at academic institutions, and within government. In this Report, each of these organization types is defined as a **stakeholder group**, the members of which form the bones of the Commonwealth’s FinTech ecosystem.

## Progress Report: 2023

The goal of this study is to perform a reassessment and progress Report of the FinTech ecosystem in Massachusetts prepared using the latest available information. The study provides insight into activities that have occurred in Massachusetts’ FinTech ecosystem since 2020, including new technologies, existing ecosystem trends, prospects for growth and development, investment and innovation, and connectivity between the Commonwealth’s FinTech stakeholders.

This progress Report serves to update and expand upon the 2020 FinTech Benchmark to catalogue the changes in perceptions and economic data that have occurred since 2020 among the many important elements of the FinTech ecosystem, including FinTech businesses, traditional financial institutions, capital providers, academia, policymakers, and other FinTech stakeholders.

## Ecosystem overview

The foundations of the Commonwealth’s FinTech ecosystem include a variety of stakeholders: capital providers, traditional financial institutions, entrepreneurs/founders and FinTech start-ups, universities/academics and students, policymakers and regulators, and accelerators / incubators and nonprofits. A brief definition of each stakeholder type can be found in Appendix C.

Within the Commonwealth, the FinTech Sandbox, Massachusetts FinTech Hub, MassChallenge, and MassTech Collaborative are among the key ecosystem facilitators and connectors. FinTech Sandbox is a nonprofit organization that provides start-ups with access to data and resources to help them develop and test their financial technology products. MassChallenge is a global start-up accelerator that provides resources and support to early-stage start-ups. MassTech Collaborative is a public agency that works to promote innovation and growth in the technology sector in Massachusetts. Lastly, Massachusetts FinTech Hub engages technology innovators, financial service and investment leaders, academics to spur regional innovation leadership growth of the Fintech ecosystem.

The framework for the ecosystem reassessment follows generally the framework that was developed in the 2020 FinTech Benchmark. Specifically, the ecosystem is assessed partly by measurement of outcomes such as investment, employment, research and development (“R&D”) expenditure, policy, and regulations, among others. In addition, the ecosystem is assessed partly by surveying the perceptions and sentiments of ecosystem stakeholders in order to develop an understanding both of the ecosystem as a whole and each of the major attributes that work together to create a functional ecosystem. These attributes include **talent and culture, capital availability, policy and regulation, infrastructure and technology, and interconnectivity**, consistent with the primary ecosystem attributes from the 2020 FinTech Benchmark.

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<sup>3</sup> EY. Now, next and beyond: Analysis of the FinTech Ecosystem in the Commonwealth of Massachusetts. October 2020. Available online at: <https://fintechsandbox.org>.





## **3. Current FinTech trends**



# Current FinTech trends



This chapter contains a description of current trends in FinTech, presents a read-out of the recent performance of Massachusetts’ FinTech ecosystem, and summarizes changes in the Commonwealth’s FinTech ecosystem during the last several years.

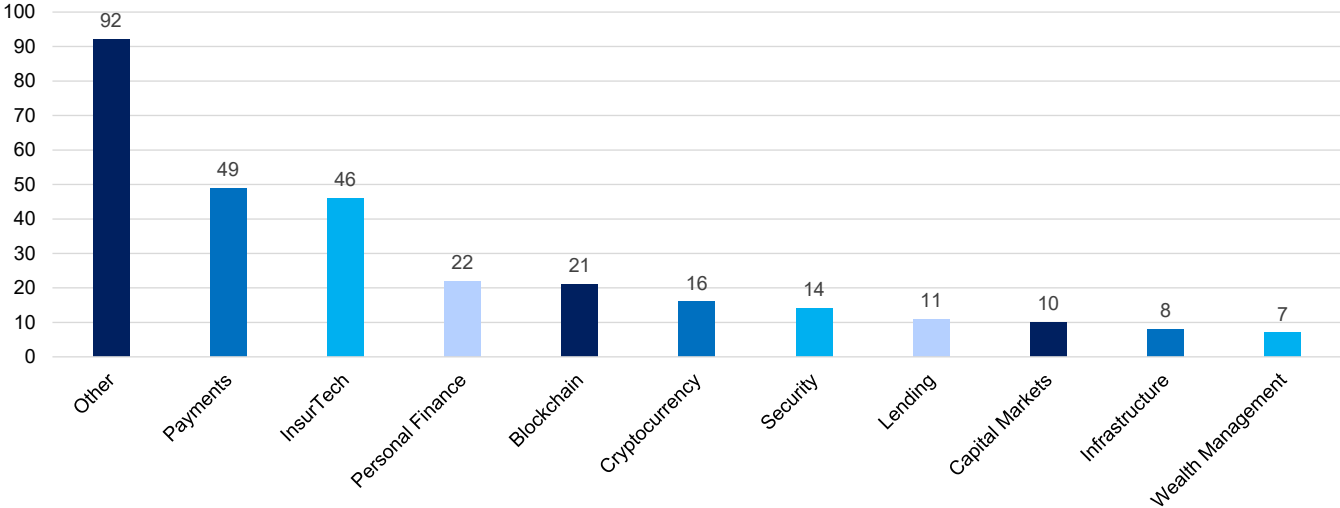
Amid the recent surge in investment following the pandemic and the subsequent volatility experienced by the FinTech sector globally, Massachusetts’ FinTech sector- profile has steadily increased. Over the three-year period ending mid-2023, FinTech-related VC increased more and subsequently declined less in Massachusetts than nationally, raising the Commonwealth’s VC investment to the fourth highest in the country during 2022.<sup>4</sup> This relative stability of VC investment—an important leading indicator of innovation and economic growth—augurs well for the health of local FinTech.

The following sections provide a deeper dive into the recent performance of FinTech in the Commonwealth, with a focus on investment, R&D spending, and employment and wages.

## Funding in the Massachusetts FinTech ecosystem

The total number and level of funding associated with FinTech-related VC deals provides important insights into the evolution of Massachusetts’ FinTech ecosystem. The following charts summarize nearly 300 VC deals that took place in Massachusetts FinTech sector<sup>5</sup> between January 2020 and May 2023.

Figure 1: Deal Count per Industry Vertical, 2020 – May 2023



<sup>4</sup> Pitchbook Data, Inc 2023. Accessed May, 2023.

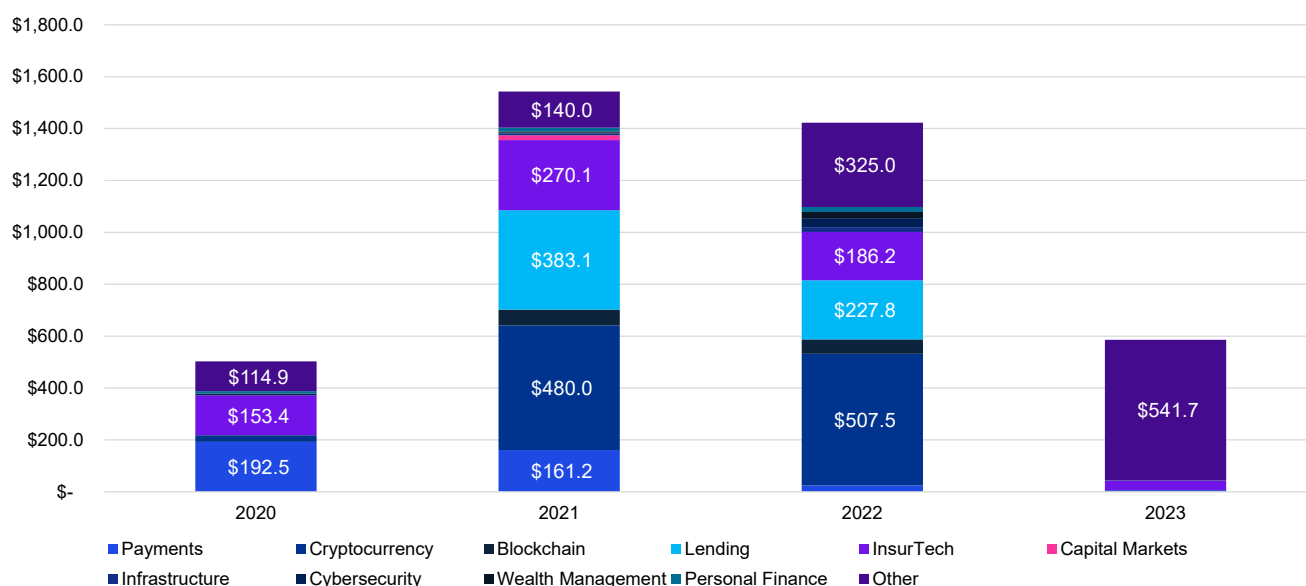
<sup>5</sup> FinTech sector as defined by Pitchbook.

**Figure 1** shows a breakdown of deal count per industry vertical among the FinTech deals in Massachusetts. Payments and InsurTech ranked among the top verticals in terms of deal count, in part due to the increasing popularity of mobile payments and personalized insurance plans. Personal finance and blockchain ranked as the third and fourth-largest investment categories, while cryptocurrency<sup>6</sup> came in fifth, with security and lending close behind.<sup>7</sup>

The breakdown of the amount of funding provided to each of the subsectors described in **Figure 1**, appears in **Figure 2**. The significant increase in funding across subsectors during 2021 is attributable to the effects of COVID-19, which accelerated the adoption of digital technologies and solutions, including FinTech solutions that facilitate remote transactions and payments. In 2022, the level of VC funding moderated across many FinTech subsectors, including InsurTech and lending, although cybersecurity bucked the trend.

The increase in cybersecurity funding aligns with increasing demand for AI-enabled cybersecurity tools more broadly as mature financial services and technology companies increasingly look to reduce risk and enhance data security. The decline in funding in other subsectors over time, such as capital markets, reflects softer economic growth and smaller deal volumes in the economic climate.

**Figure 2: Funding Provided to Subsectors in Massachusetts, 2020 – May 2023 (\$ millions)<sup>8</sup>**



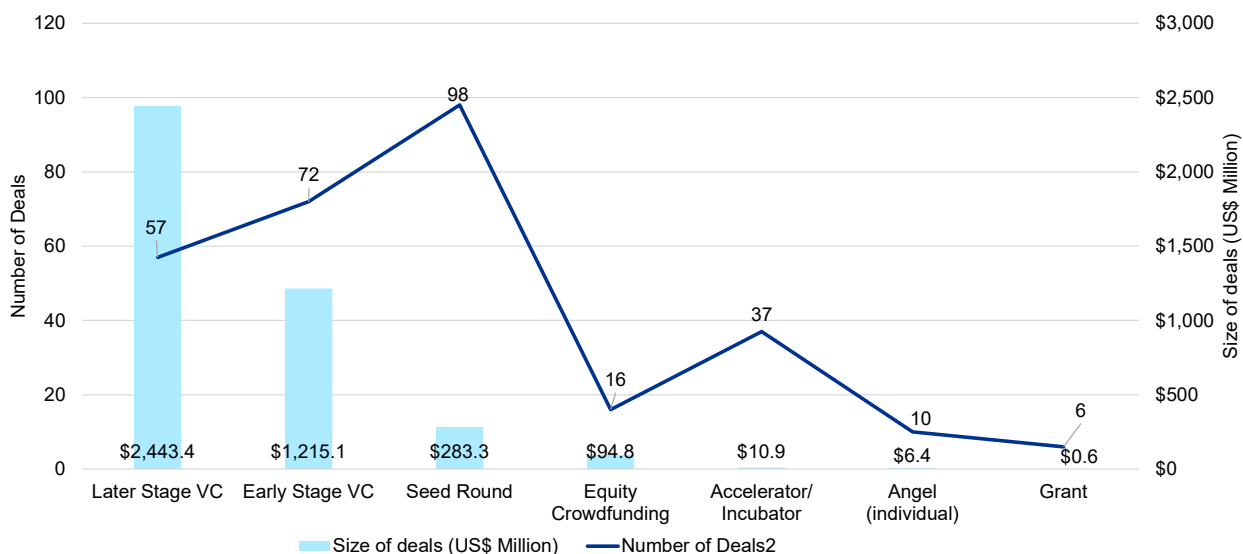
Later-stage VCs, which reflect investments in businesses that may have already fielded a successful product and look to scale, secured the single largest proportion of VC funding in the Commonwealth (**Figure 3**). Equity crowdfunding, accelerator/incubator, angel, and grant-related funding tends to represent much smaller proportions of total VC investments in Massachusetts; these funding stages also tend to represent smaller proportions in Massachusetts relative to the U.S. average shares.

<sup>6</sup> Blockchain technology-enabled applications are assessed separately from cryptocurrency, with cryptocurrency considered as a particular investment commodity, and not all developments using blockchain technology should necessarily be classified as cryptocurrency.

<sup>7</sup> The “Other” vertical consists of 92 deals whose descriptions do not fall under one of the previous FinTech verticals.

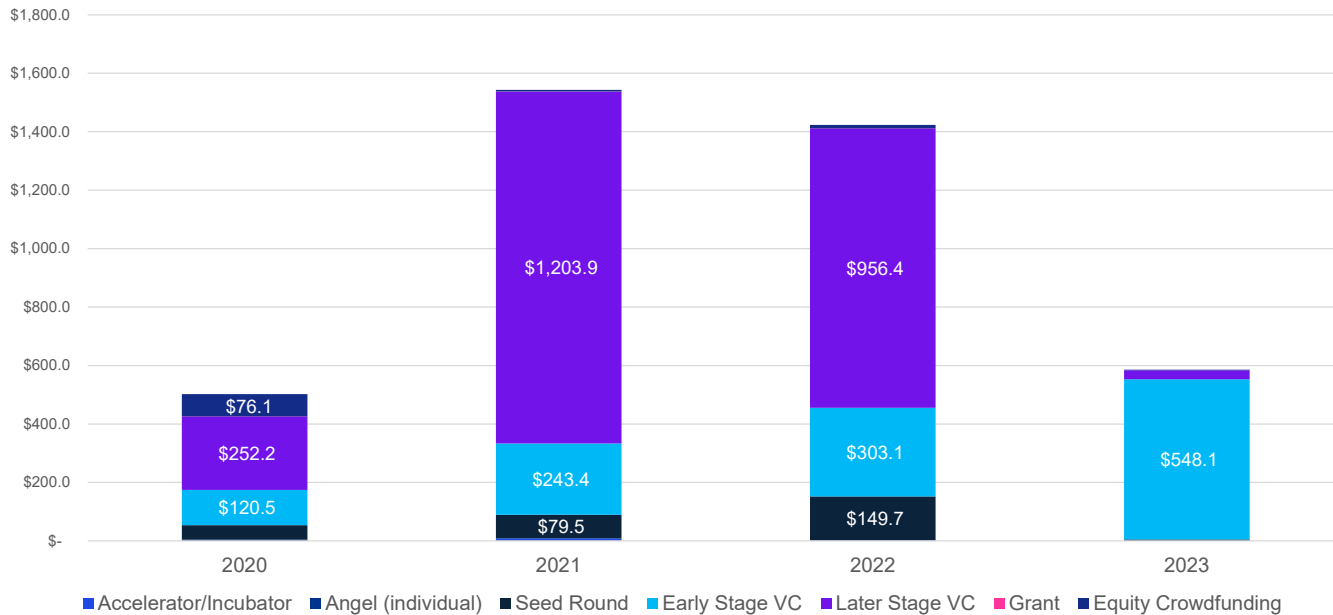
<sup>8</sup> Source: Pitchbook Data, Inc 2023. Accessed May, 2023.

**Figure 3: Deal Count and Size in Massachusetts per Funding Stage, 2020 – May 2023<sup>9</sup>**



KPMG’s analysis of deal size by funding stage (**Figure 4**) shows that later-stage VCs drove most of the increase in the amount of funding during the 2020 to 2023 period. Meanwhile, from 2020 to 2022 seed-stage deals saw a steady increase in funding to around \$125 million, while early-stage VC deals more than doubled to around \$300 million. Compared to the national investment pattern, VCs in Massachusetts appear to have increasingly favored early-stage investments over seed-stage and late-stage investments.

**Figure 4: FinTech Capital Funded by Stage in Massachusetts, 2020 – May 2023<sup>10</sup>**

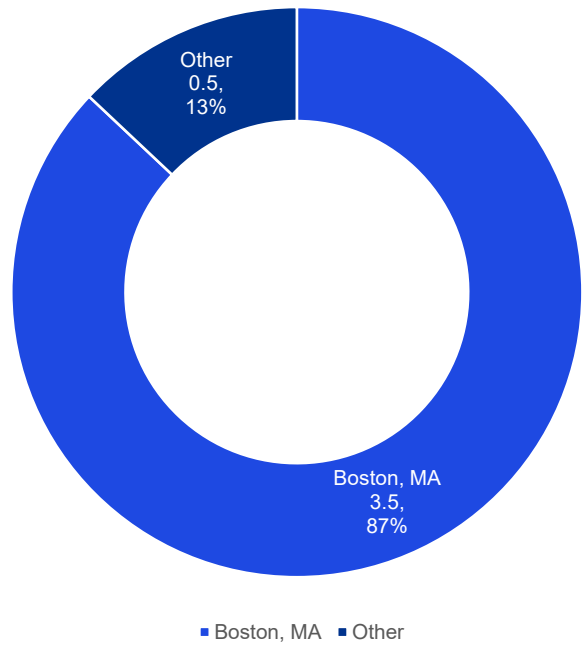


<sup>9</sup> Pitchbook Data, Inc 2023. Accessed May, 2023.

<sup>10</sup> Pitchbook Data, Inc 2023. Accessed May, 2023.

Over the past three years, the majority of capital invested in Massachusetts has been directed toward companies located in the Boston area. **(Figure 5)**. Although activity occurs throughout the Commonwealth, the Boston area serves as the central nexus for most of the major players in the FinTech industry in the state. In terms of aggregate VC dollars, this distribution does not appear to have varied much during the last three years.

**Figure 5:** FinTech Capital Funding in Massachusetts, 2020 – May 2023 (\$ billions, %)<sup>11</sup>



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<sup>11</sup> Pitchbook Data, Inc 2023. Accessed May, 2023.



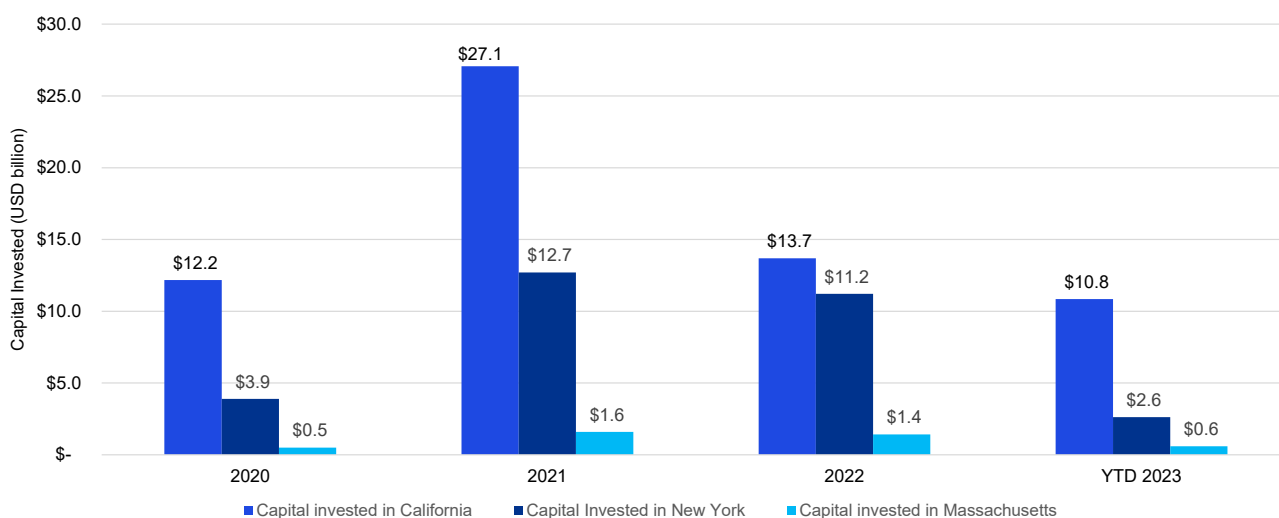
## Trends in capital flows in the leading FinTech hubs

Compared with other U.S. FinTech hubs, venture capital flows in the Commonwealth of Massachusetts have generally fared favorably in the post-pandemic environment.

In terms of its current scale, the overall level of VC funding in Massachusetts' is smaller than that of CA and NY, which contain the two largest FinTech hubs in the U.S. In 2022, Massachusetts' funding in the FinTech sector stood at approximately \$1.41 billion, while NY's funding was \$11.21 billion, and California's funding was \$13.69 billion.

Even so, despite recent macroeconomic challenges, over the past three years FinTech venture funding in Massachusetts has increased by a compound annual growth rate of more than 40 percent. As shown in **Figure 6**, Massachusetts and New York ("NY") experienced percentage increases greater than those observed in California ("CA") and the U.S. average.

**Figure 6: Funding of FinTech Companies by Hub, 2020 – August 2023<sup>12</sup>**

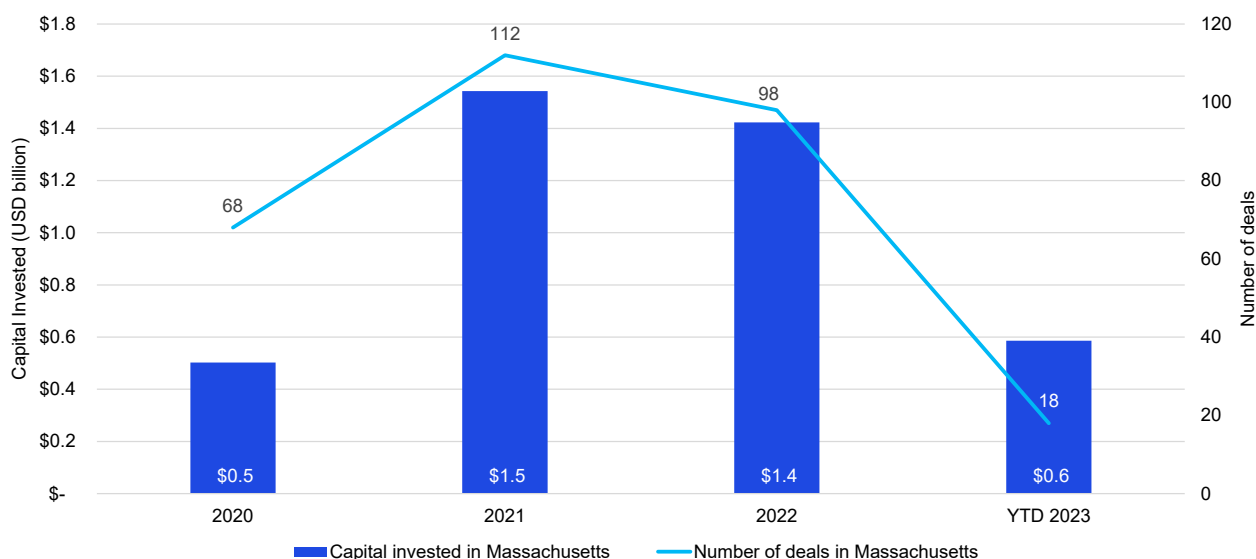


**Figure 7** illustrates funding received by FinTech companies in Massachusetts over time. Compared with the rest of the United States, the Commonwealth accounted for only 2 percent of all FinTech related venture capital investment in 2020. However, by 2022, Massachusetts received \$1.42 billion in funding, which represented approximately 3.5 percent of all FinTech related VC in the U.S. during the year. As of the data available through mid-2023, the Commonwealth was tracking at a similar proportion of VC activity.

<sup>12</sup> Pitchbook Data, Inc 2023. Accessed August, 2023.

Massachusetts ranked fourth in the U.S. in 2022 in terms of level of venture capital funding for FinTech companies, trailing behind only California, New York, and Florida. This ranking further highlights the progress that Massachusetts has made in attracting FinTech investment, as well as the potential for further growth and development in the future.

**Figure 7: Funding of Massachusetts FinTech Companies, 2020 – August 2023<sup>13</sup>**



In summary, Massachusetts has experienced greater success in attracting venture capital funding over the past few years. As measured in terms of deal count and volume, the Commonwealth’s profile as a leading FinTech hub is increasing as the state captures a larger share of FinTech funding nationally.

## R&D expenditure

R&D expenditures are another leading indicator of growth and innovation. In Massachusetts, strong R&D expenditures are driven by the Commonwealth’s university system, the primary source of such funding. Increases or decreases in expenditures on R&D tend to serve as a signal for future innovation.

Given the highly competitive nature of the FinTech sector, hubs that prioritize R&D investments may be more likely to foster the development of innovative products and services that business may use to differentiate from their competitors, benefiting the entire industry.

During 2021, Harvard, MIT, and Boston University, had the highest R&D expenditures in Massachusetts.<sup>14</sup> R&D spending at Harvard totaled \$1.3 billion, MIT spent \$949.1 million, and Boston University spent \$652.1 million.<sup>15</sup> This is a noticeable difference between the Massachusetts rankings and the national rankings, where public universities tend to receive more funding for R&D. Overall, the amount of R&D at universities benefits the local ecosystem in a number of ways. Firstly, strong R&D activity may lead to the creation of new technologies and innovations that become commercialized. Additionally, it can help to attract and retain top talent, as universities with strong research programs are often a draw for students and faculty members. Lastly, strong R&D is also correlated with entrepreneurship and start-up activity, as universities located in FinTech hubs nationally tend to provide resources and support for students and faculty members looking to start their own businesses.

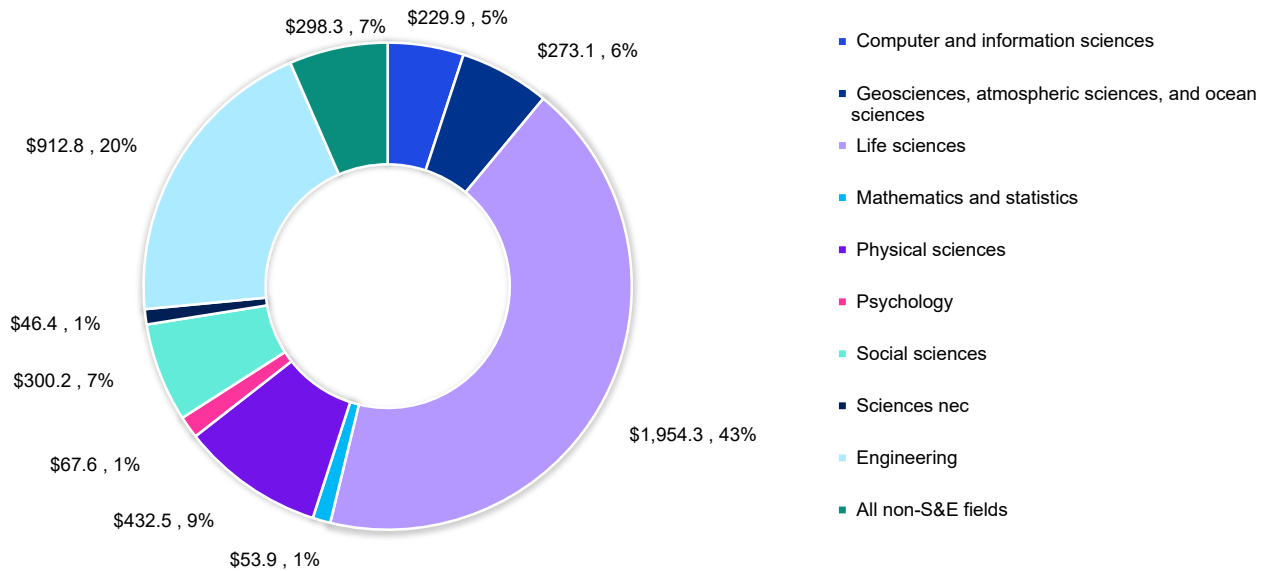
<sup>13</sup> Pitchbook Data, Inc 2023. Accessed August, 2023.

<sup>14</sup> Please note that 2022 data was not available as of the time of this report.

<sup>15</sup> National Center for Science and Engineering Statistics. Accessed July, 2023.

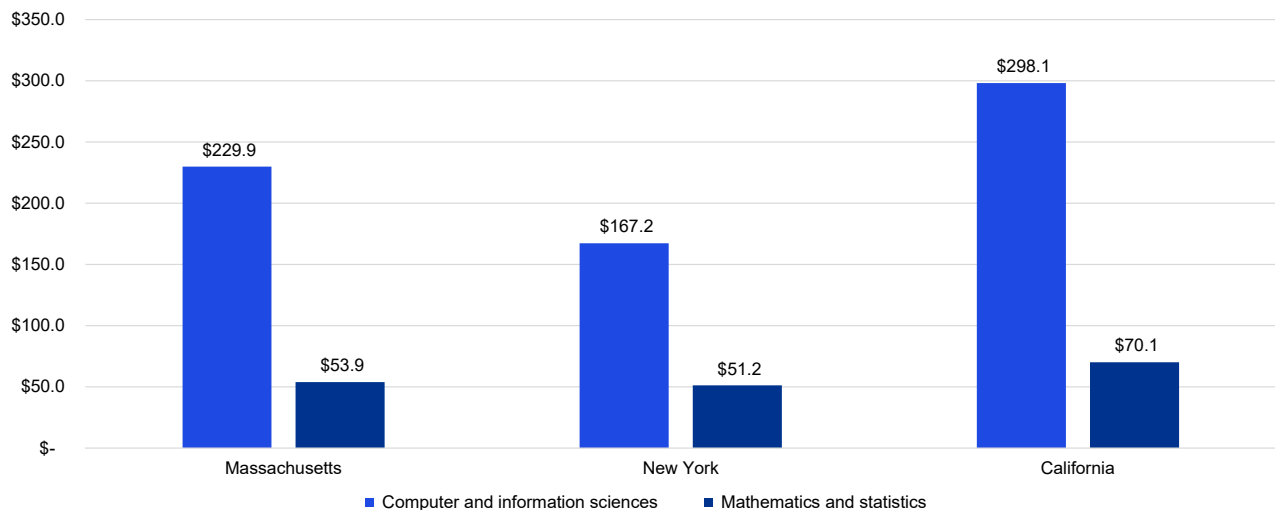
KPMG analyzed R&D expenditure in Massachusetts in 2021 to determine which sectors are receiving the highest levels of funding (**Figure 8**). The data reveal that life sciences and engineering are the major focus of R&D in the Commonwealth, accounting for nearly two-thirds of the expenditures. In contrast, mathematics and statistics, as well as computer and information sciences, make up a relatively small percentage of the R&D expenditures.

**Figure 8: R&D Expenditures by Sector – Massachusetts, 2021 (\$ millions, %)**



The statistics do not identify the FinTech subsector specifically, but R&D spending across computer and information sciences and mathematics and statistics sectors may serve as broad proxies for research in finance and technology spaces. In this regard, **Figure 9** illustrates that Massachusetts ranked second in university-related R&D expenses among the three leading states, including NY and CA. This pattern indicates that, despite California’s relative size and large number of schools, the Commonwealth’s high value of R&D spending is a distinguishing feature of Massachusetts ecosystem and, as feedback from ecosystem stakeholders presented later in this study shows, is widely regarded by ecosystem participants as one of its core strengths.

**Figure 9: University-related R&D Expenditures by Sector – MA vs. NY vs. CA, 2021 (\$ millions)<sup>16</sup>**



<sup>16</sup> National Center for Science and Engineering Statistics. Accessed July, 2023.

# Employment and wages

Tracking with investment over the last several years, the FinTech ecosystem is creating new job opportunities across a wide range of industries in the Commonwealth. As both established financial services businesses and FinTech start-ups continue to innovate and expand, they require a diverse range of skills and expertise to develop and deliver their products and services.

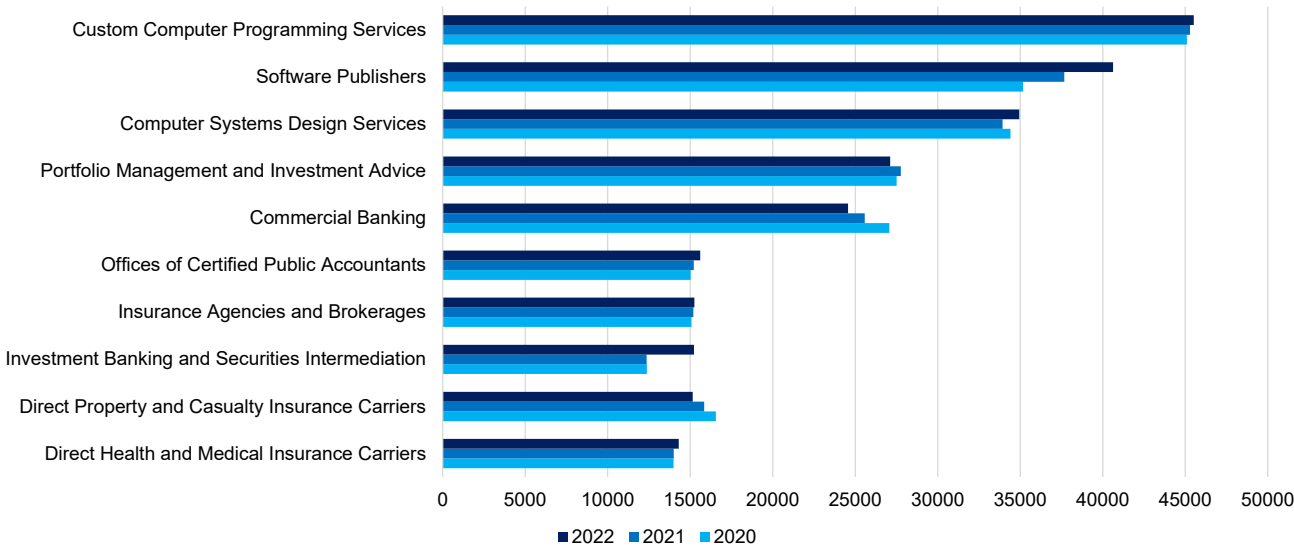
KPMG analyzed data from the Bureau of Labor Statistics’ (“BLS”) Quarterly Census of Employment and Wages (“QCEW”) to gain insight into the demand for FinTech jobs and employment trends in the industry. To identify trends in annual average employment levels, average annual establishments, and location quotient (“LQ”) trends (indicators of concentrations of activity), KPMG analyzed employment in FinTech-related industries during the three years ending 2022 (the last full year of data).

During the three years spanning January 2020 through December 2022, employment in FinTech related industries increased overall, led by gains in credit unions, colleges/universities, software publishers, and investment banking and securities intermediation. Employment increased in most subsectors of the Commonwealth’s financial and business and professional services. Meanwhile, employment decreased in commercial banking, direct property and casualty insurance carriers, and direct life insurance carriers. Broad-based increases in employment provide a sign that the FinTech ecosystem was able to rebound from the disruptions caused by the COVID-19 pandemic.

Measured in terms of employment, portfolio management and investment activities, commercial and investment banking, and insurance (property and casualty, health and medical, and life insurance) collectively account for more than 60 percent of the financial activities industry in the Commonwealth. During the last three years, employment has generally increased in Massachusetts’ insurance industry while remaining largely flat in portfolio management and investment activities. Employment decreased in commercial banking and savings institutions in the Commonwealth, although net hiring at Massachusetts’ credit unions more than offset these losses.

**Figure 10** below shows the top 10 FinTech related industries with the greatest annual average employment in Massachusetts and their change in average employment between the years 2020 and 2022.

**Figure 10: Annual Average Employment Level by Industry, 2020 – 2022<sup>17</sup>**

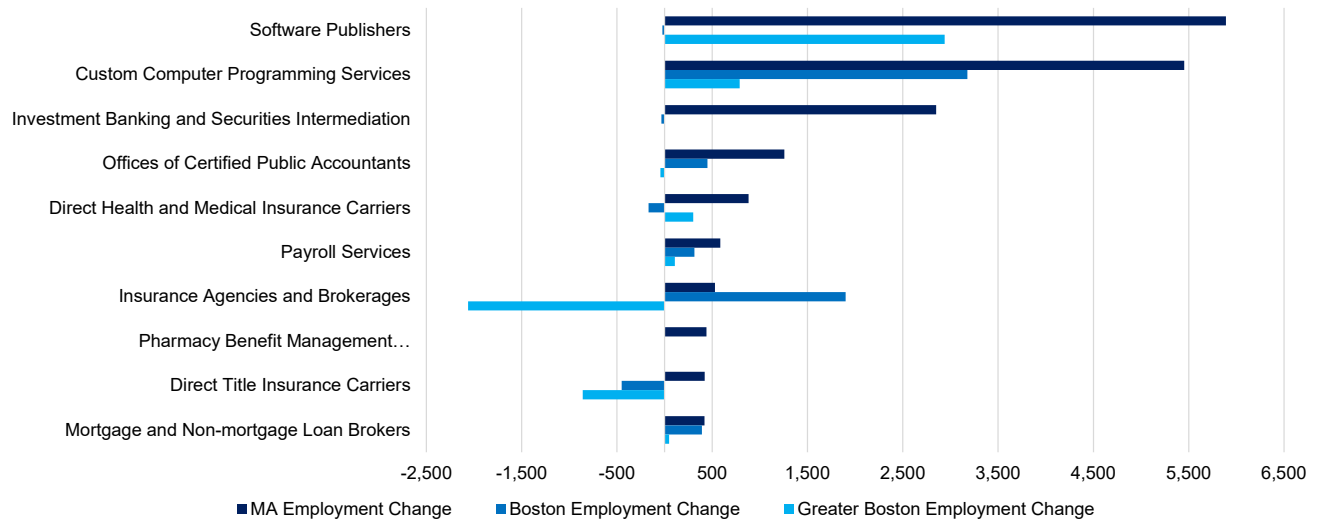


<sup>17</sup> Bureau of Labor Statistics’ Quarterly Census of Employment and Wages. Accessed July, 2023.



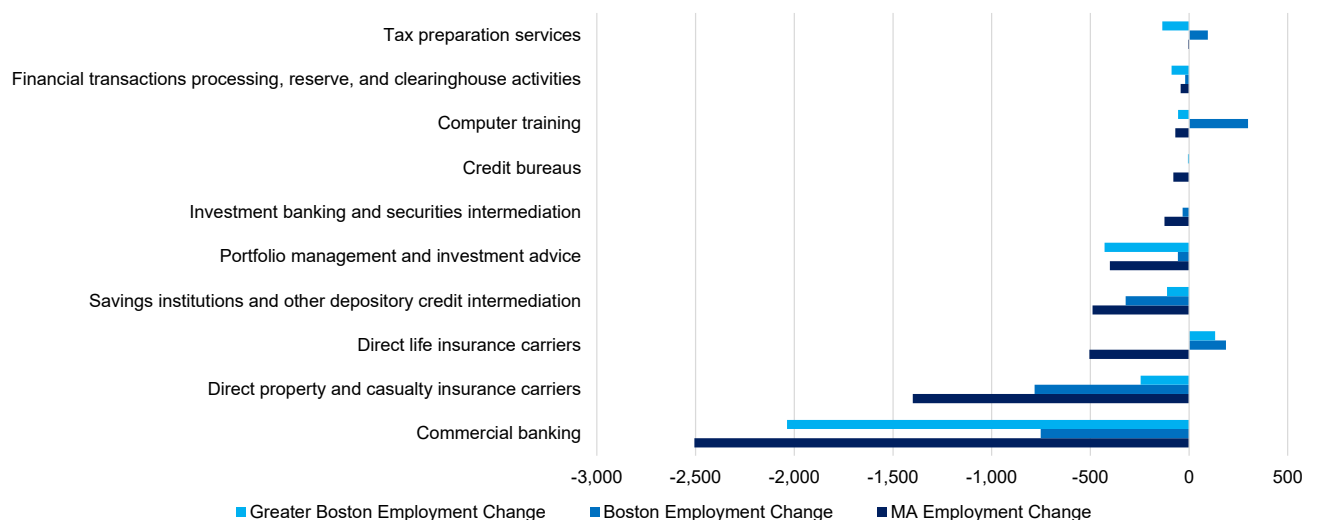
As illustrated in **Figure 11**, the top ten FinTech related industries in Massachusetts by growth in total employment include software publishers, academics and custom computer programming services. The software publishers industry had the greatest growth between 2020 and 2022. In contrast, insurance agencies and brokerages experienced a loss of talent in the Greater Boston area, which suggest that innovation in this area is concentrated in Boston.<sup>18,19</sup>

**Figure 11: Top FinTech-related Industries by Growth in Employment, 2020–2022<sup>20</sup>**



A small number of FinTech sub-segments experienced a decrease in employment over the three-year period, as shown in **Figure 12**. Among the industries that experienced a decline are commercial banking, insurance carriers and computer systems design services. These changes may be due to a variety of factors including a potential consolidation of the industry, increased efficiency, and competition for talent to other hubs.

**Figure 12: Top FinTech-related Industries by Decline in Employment, 2020–2022**



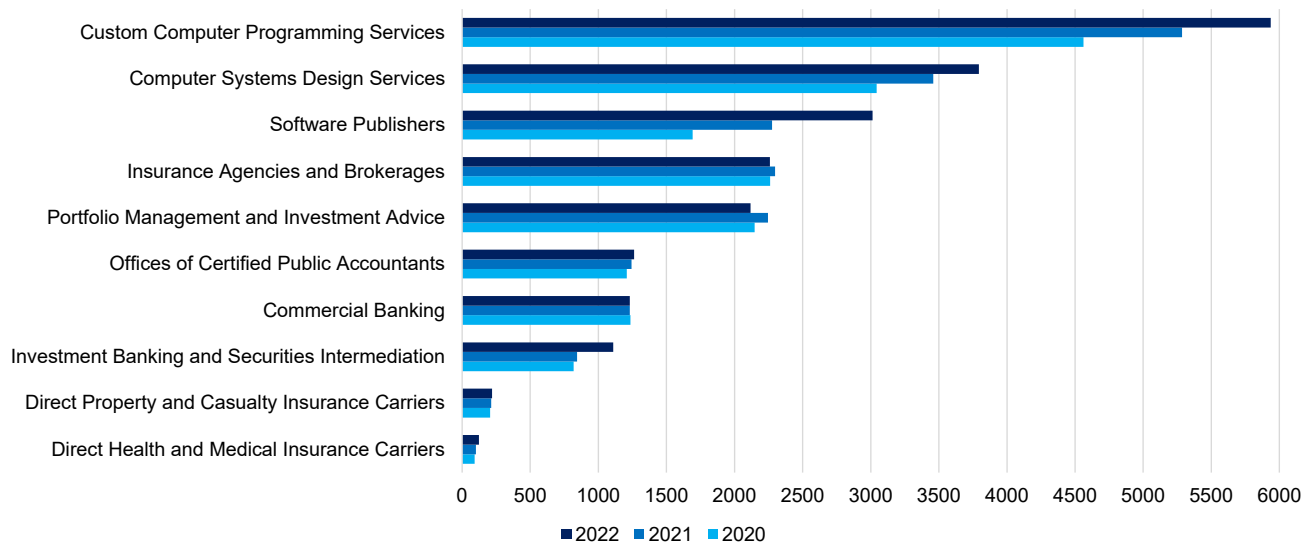
<sup>18</sup> Greater Boston area defined as Norfolk County, Plymouth County, Bristol County, Middlesex County, and Essex County.

<sup>19</sup> Boston area defined as Suffolk County (does not include Cambridge in Middlesex County).

<sup>20</sup> Bureau of Labor Statistics' Quarterly Census of Employment and Wages. Accessed July, 2023.

The number of establishments (individual locations of business) in FinTech-related industries in Massachusetts has also increased over the past three years. As seen in **Figure 13**, the number of establishments operating in custom computer programming and software publishing has increased amid an increase in small firm and start-up formation. According to the BLS, these industries are expected to be among the fastest growing nationally through the early 2030s.<sup>21</sup> This growth reflects increasing demand for technology services and solutions in various industries, including finance. Investment banking, other accounting services, and miscellaneous financial investment activities have also experienced an increase in the number of establishments in the last three years.

**Figure 13: Average Annual Establishments by Industry, 2020 – 2022<sup>22</sup>**



In summary, both employment and the number of establishments associated with FinTech activities has increased in Massachusetts during the last three years, reflecting the industry’s resilience following the COVID-19 pandemic. The pattern of growth reflects an increase in demand within computer programming and software publishing, insurance, portfolio management, and commercial banking sectors, which are among the largest and most prominent in Massachusetts’ FinTech sector.

<sup>21</sup> Bureau of Labor Statistics’ Occupational Projections and Worker Characteristics. September, 2023.

<sup>22</sup> Bureau of Labor Statistics’ Quarterly Census of Employment and Wages. Accessed July, 2023.



## **4. Massachusetts FinTech ecosystem reassessment**

# Massachusetts FinTech ecosystem reassessment



This chapter summarizes the results of the 2023 survey, identifies findings from the series of one-on-one and focus-group interviews held with various stakeholder groups during the second half of 2023, and summarizes the findings along major attributes of the Commonwealth's FinTech ecosystem.

This Report relies upon primary and secondary research to assess the state of the FinTech ecosystem in Massachusetts. It identifies stakeholders in various categories, evaluates their impact on the sector, and interviews individuals from within each category to gain insights into their experience with the ecosystem.

A total of **32** individuals were interviewed from five different stakeholder categories, including capital providers, traditional financial institutions including insurance, students, policymakers, and academia.

In addition, this Report summarizes the results from **101** respondents to the 2023 survey developed and administered by KPMG. The 2023 survey instrument was designed to measure responses from FinTech ecosystem participants. The 2023 survey was bifurcated into two forms: One version intended for **students** studying at a Massachusetts college or university and another for **professionals** working in some capacity in the FinTech ecosystem.<sup>23</sup>

The 2023 survey represents a snapshot of Massachusetts' FinTech ecosystem as of mid-2023. The 2023 survey results provide insight into the perceptions and expectations of a wide variety of ecosystem participants. The survey results therefore reflect the general sentiment these participants expressed about progress in FinTech during the last three years.<sup>24</sup> A detailed summary of the results is presented below.

## Introducing the Massachusetts FinTech ecosystem

### Reassessment of FinTech in Massachusetts

One of the most notable shifts has been the growth and influence of new technologies, such as mobile payments or AI. Multiple companies have introduced innovative platforms and technologies aimed at making payments more convenient and accessible for consumers. This has led to a marked increase in the number of people using their smartphones to carry out essential transactions and make payments.

Additionally, the use of data analytics and AI has only further expanded over the last three years. It has become essential for companies in the financial services sector to leverage these technologies to enhance their risk management, fraud detection, and customer engagement strategies. With the help of these tools and experience gained over time, they can quickly analyze vast amounts of data and show insights that were previously impractical to obtain.

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<sup>23</sup> The surveys were administered primarily between Monday, June 5 and Wednesday August 30. Survey respondents were contacted via email and provided a link to the online survey. Respondents were informed that the survey would be expected to take approximately 15 minutes to complete. The survey responses were submitted anonymously, and the names and organizations of the respondents were not recorded.

<sup>24</sup> A relatively small number of respondents for certain stakeholder types may not be generalizable to the broader FinTech ecosystem.



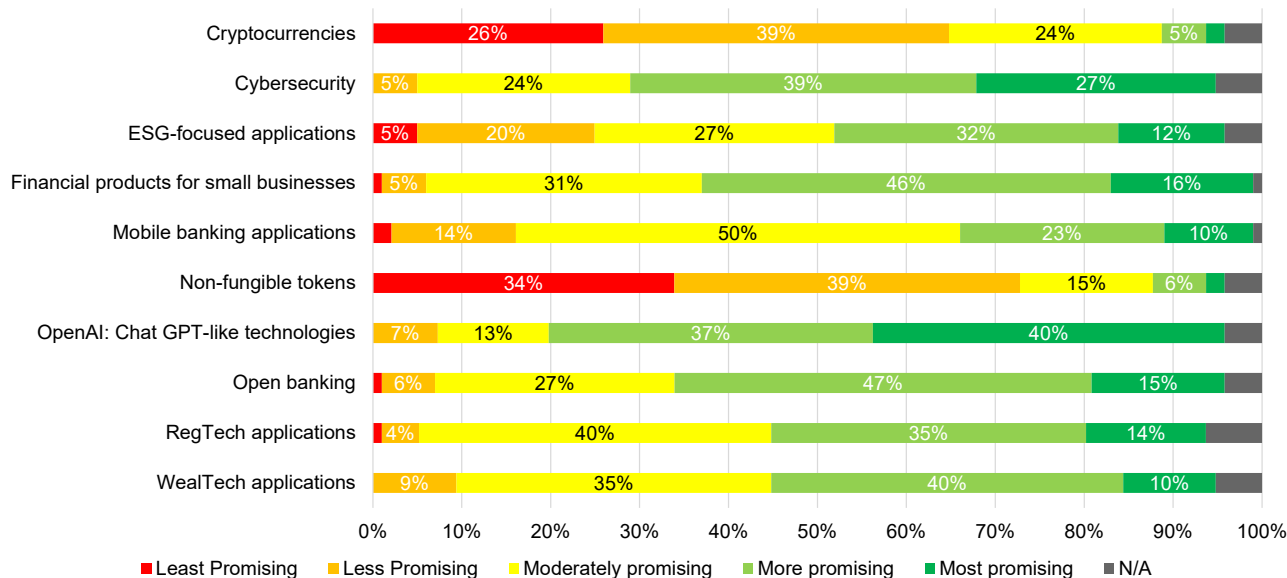
In addition to the above, there has been a growing emphasis on collaboration and partnerships within the FinTech ecosystem. Companies are coming together to create new products and services and drive innovation across the industry. This has led to some exciting developments such as the creation of mobile investment services platforms or personalized insurance plans for families, using the latest data science and technology.

The following section outlines some of the main insights and perspectives on the FinTech ecosystem, as Reported by stakeholders. It covers topics such as the primary growth opportunities and changes that have occurred in the ecosystem over the last three years, such as experience sourcing talent and capital, or the desire for stronger interconnectivity within the ecosystem.

### Overall themes of the 2023 survey

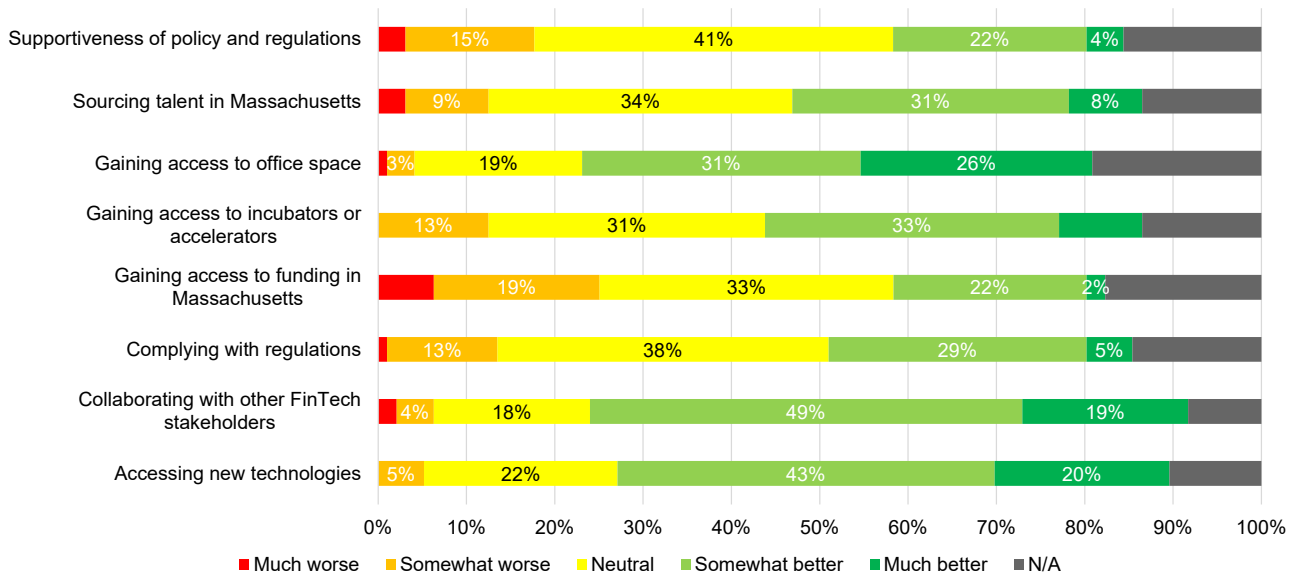
As a component of the 2023 survey, KPMG requested input from stakeholders to rank a range of technologies and applications in order of least to most promising, in order to gain a better understanding of the key opportunities in the FinTech industry. **Figure 14** illustrates the stakeholders’ believed opportunities for growth within the industry. According to stakeholders, the technology considered most promising is financial products for small businesses, with 46 percent of respondents rating it as more promising. The technology considered least promising is non-fungible tokens (“NFTs”), with 34 percent of respondents rating it as least promising. It is worth noting that financial products for small businesses can include equipment financing, electronic payment services, InsurTech, and other financial services designed to help small businesses manage their finances. As seen in **Figure 1**, payments and InsurTech were the top FinTech verticals in terms of deal count and funding received in Massachusetts.

**Figure 14: 2023 Survey – Perceived Main Opportunities in the FinTech Industry**



However, stakeholders believe that the ecosystem continues to face challenges such as access to capital, connectivity, regulatory compliance, and cybersecurity risks. There are also promising areas for growth, as stakeholders desire greater collaboration and support from industry leaders and government officials. The following sections outline Massachusetts’ strong foundation for its FinTech ecosystem and its potential for continued growth and innovation. It is important to mention that according to Massachusetts FinTech stakeholders, there is an opportunity to improve support from policy and regulators. In 2023, between 24 and 68 percent of respondents said that the ecosystem is either somewhat better or much better than it was in 2020 across various ecosystem elements.

**Figure 15: 2023 Survey – Strength of the Massachusetts FinTech Ecosystem**

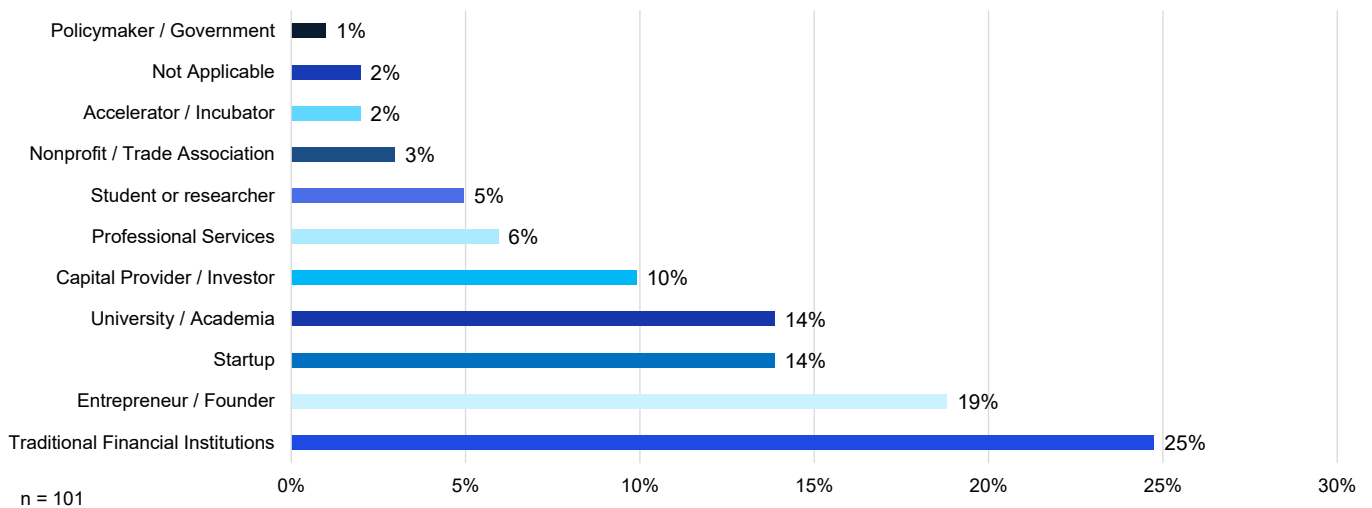


Overwhelmingly, the greatest strengths of the Massachusetts FinTech ecosystem according to the 2023 survey respondents are collaborating with other FinTech stakeholders, accessing new technologies, and gaining access to office space. Inversely, the greatest opportunities are in support of policy and regulations and gaining access to funding in state. The latter aligns with what many interviewees discussed during the series of one-on-one and focus-group interviews. These interviews were held with various stakeholder groups during the second half of 2023. These are discussed in more detail later in this section.

### Stakeholder Spotlight: FinTech by the numbers

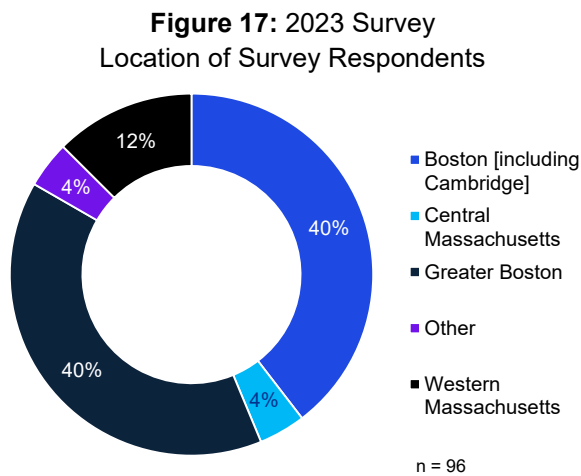
This section lays out information regarding the primary characteristics of the respondents to the 2023 survey. The characteristics are important indicators of who has responded to the 2023 survey and offer guidance regarding how best to generalize the results to the broader ecosystem. **Figure 16** shows a breakdown of how stakeholder respondents categorized themselves.

**Figure 16: 2023 Survey – Stakeholder Breakdown**



The high percentage of entrepreneurs/founders and start-ups reflects the vibrant entrepreneurial culture in Massachusetts as well as the potential for new companies to disrupt traditional banking and investment models.

The data presented in **Figure 16** also serves as the foundation for the findings and recommendations presented. It is worth noting that the data set may have biases, as certain groups may be overrepresented or underrepresented. This can affect the accuracy of the information provided and must be taken into consideration when making recommendations based on the findings.



In addition, roughly 80 percent of the 2023 survey respondents live in either “Boston” or the “Greater Boston” area. “Western Massachusetts” represents 12 percent of the answers, while “Central Massachusetts” and “Other” are each 4 percent. Greater Boston considers Norfolk, Suffolk, Plymouth, Bristol, Middlesex, and Essex Counties.

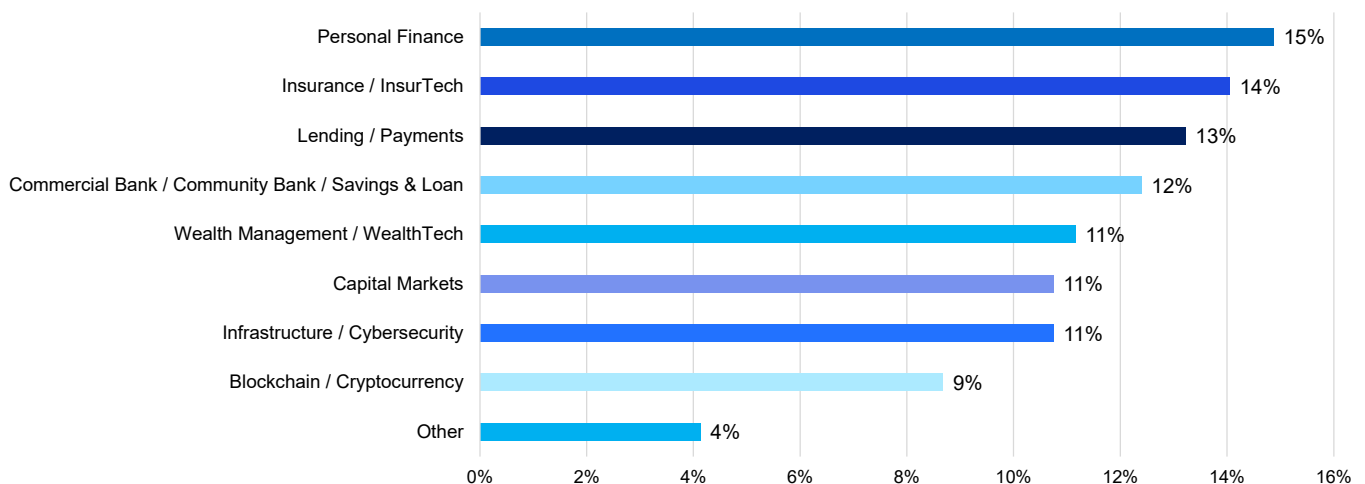
Respondents working at traditional financial institutions formed the single largest number of responses, followed by entrepreneurs/founders. The vast majority of respondents (approximately 79 percent) were located in Boston or the surrounding region (Norfolk, Suffolk, Plymouth, Bristol, Middlesex, and Essex Counties).

The concentration of FinTech stakeholders in the Greater Boston area and Boston proper is due to several factors, including the presence of major financial institutions and universities in the region as well as a strong entrepreneurial culture and access to VC. As shown in **Figure 17**, the growth of FinTech companies in Western Massachusetts and other parts of the state suggests that there is also potential for innovation and growth outside of the traditional city centers.

Additionally, the distribution of stakeholders across different regions suggests that there is need for policymakers and industry leaders to consider the unique needs and challenges facing FinTech companies in different parts of the state, and work together to create a more supportive regulatory and business environment that can foster innovation and growth.

Lastly, the breakdown of respondents by subsector provides insight into the specific areas of focus and innovation within the industry in Massachusetts. As seen in **Figure 18**, there are relatively even splits between subsector, but Personal Finance and Lending/Payments subsectors are slightly more represented among survey respondents than other sectors.

**Figure 18: 2023 Survey – Respondents by Subsector**



n=101

The 2020 FinTech Benchmark key industry themes are reassessed in this section. These themes include Talent and Culture, Capital, Infrastructure and Technology, Interconnectivity, and Policy and Regulation. The purpose of this reassessment is to capture the voices of the ecosystem and present respondents' thoughts and suggestions for continued growth. KPMG has included direct quotes from the interviews conducted to help support and explain stakeholders' views. It is worth noting that the findings in this section are not representative of the ecosystem, only of the perception of stakeholders in the ecosystem. The **Current FinTech trends** section of this study discusses the most representative research on the current standing of the industry in Massachusetts.

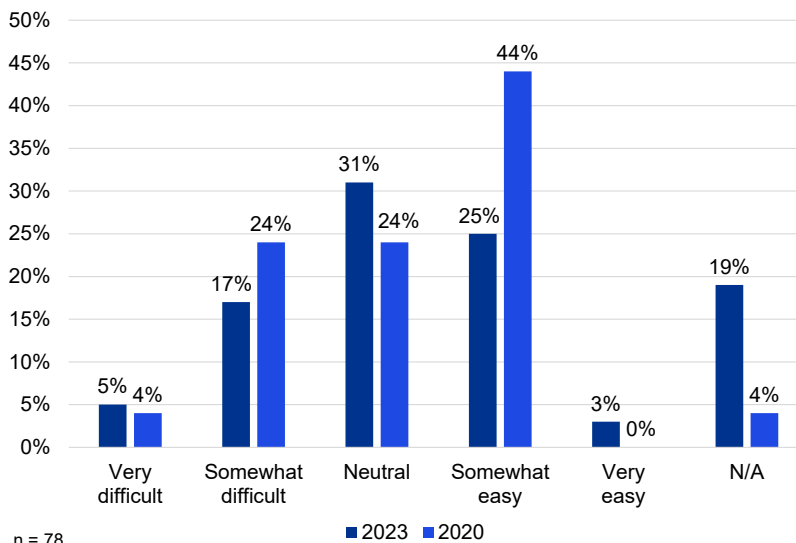
# Talent and culture

## Key themes

- Massachusetts is known for its strong economy and thriving innovation sector, but it has struggled to retain talent and ideas in recent years. Stakeholders believe that many individuals and companies have been drawn to the perceived greater opportunities and resources available in cities like New York and San Francisco or have sought out increased funding elsewhere.** This trend is perceived to be a concern for stakeholders in the ecosystem, who are working to address the issue and keep the state competitive in the global marketplace. However, the competition for talent and ideas remains fierce, and Massachusetts will need to continue to innovate and adapt to stay ahead of the curve. Another factor mentioned as a potential contributor to the talent and idea drain in Massachusetts is the high cost of living in the state, particularly in cities like Boston. Many individuals and companies find it difficult to afford the high rents and home prices in the area and choose to relocate to more affordable regions. Additionally, stakeholders note the state's regulatory environment is difficult to navigate, which can make it difficult for businesses to operate and innovate. However, stakeholders also note that Massachusetts has many strengths that make it an attractive place to live and work, including its world-class universities, highly educated workforce, and vibrant cultural scene.

To remain competitive in the ecosystem, it is crucial to have access to talent and make it easy to find. **Figure 19** depicts the experience of the 2023 survey respondents in sourcing talent in Massachusetts. The chart displays stakeholder sentiments in 2020 and compares it to the present day. As shown, the ecosystem has seen an improvement in the sourcing of talent.

**Figure 19: 2023 Survey – Experience Sourcing Talent**



By intentionally cultivating talent and innovation, rather than relying solely on organic growth, we can leverage our proximity to other regions, and seize opportunities for expansion.”

**Policymaker**

“Access to capital is a critical factor in this equation, and it can be difficult to ensure that organizations and corporate partners use technology in a way that aligns with its intended purpose. This is an area where there may be room for improvement and innovation.”

**Innovation hub leader**

“I’ve observed that there are many start-ups in the area that require funding, and some are even relocating from Boston to New York in search of it. It’s important that we not only provide mentorship to these start-ups, but also invest money into them to help fuel their growth and success.”

**Fintech founder**

“There is a shortage of individuals with both finance and technology skills, and there are a large number of job openings in Massachusetts that are difficult to fill.”

**Academic**



- Boston’s relatively small size creates opportunities for the FinTech ecosystem stakeholders to develop close and meaningful connections.** With a close-knit network of stakeholders, including start-ups, investors, and established financial institutions, Boston has fostered a culture of collaboration and knowledge-sharing that has helped to drive innovation and growth in the sector. As is evident from the stakeholder feedback, this sense of community extends to the city’s many FinTech events and meetups, which provide opportunities for stakeholders to connect and share ideas. Additionally, Boston’s strong network of accelerators, incubators, and other support organizations provides a wealth of resources for FinTech start-ups looking to grow and scale their businesses. Overall, the close connections between stakeholders in Boston’s FinTech ecosystem is perceived to have helped create a dynamic and thriving innovation hub that is well-positioned to compete with larger financial centers like New York City and San Francisco.
- Top in-state academic institutions provide a high level of access to talented individuals.** Massachusetts is home to several top academic institutions, including Harvard University, Massachusetts Institute of Technology, Worcester Polytech Institute, Boston University, Babson, Northeastern University, and Boston College, among others. These schools attract highly motivated and talented students from all over the world, many of whom are looking to stay in the area after graduation. This means that there is a large pool of potential candidates who are already located in the state and are well-educated and skilled. Additionally, stakeholders note that these schools often have strong career services departments that work with students to help them find internships and job opportunities, which can help to connect employers with talented individuals who are looking for work. Finally, many of these schools have strong alumni networks, which can be a valuable resource for employers who are looking to tap into a pool of experienced and successful professionals.
- There is a perception that funding in Massachusetts may not be as supportive of innovative or business-to-consumer (“B2C”) ideas as other regions and may be less willing to take risks in investing in these types of ventures.** One potential reason cited by stakeholders is that the state’s investment focus is largely on healthcare and biotech industries, which has tended to receive more attention from investors. Additionally, there may be a preference for more traditional industries and business models, making it more difficult for start-ups in emerging fields to obtain funding. Moreover, investors may not fully comprehend or be aware of the potential of such ventures, leading to hesitancy toward investing in them. However, it should be noted that this perception may not necessarily reflect the funding landscape in Massachusetts, as there are investors and organizations in the state that support innovative and consumer-driven ideas.

“The close-knit community in Boston facilitates connections between stakeholders from different sectors, such as established financial institutions and regulatory bodies.”

**Founder**

“While there is a lot of talent available in this area, accessing it can be challenging due to the competitive nature of the talent market. Start-ups may need to offer unique opportunities and incentives to attract top talent, as the ecosystem is highly paid and competitive. Additionally, turnover rates tend to be lower here compared to Silicon Valley, which can make it more difficult to find new talent as quickly.”

**Founder**

“We have great genius minds at our universities, who are redefining finance and looking “under the hood” for cool and interesting ideas that people want immediately, these market-facing things we are not as good at. We’re good at being smart enough to not be good at marketing. We do more intelligent-type work as opposed to marketing-type work.”

**Venture capitalist**

# Capital

## Key themes

- **In terms of structure and support within the state, Massachusetts is experiencing a shortage of VC and angel investing funding.** Stakeholders expressed a concern that the state is falling behind other tech hubs, such as Silicon Valley and New York City in terms of funding availability. Some stakeholders attribute this to a lack of diversity in the investor pool. Additionally, there may be a perception among investors that Massachusetts is not as attractive a market as other regions, due to factors such as high taxes and a high cost of living. There is a separate perception in Massachusetts that VC investors are not investing enough in Boston-based FinTech, despite the potential for promising opportunities. This is believed to be due to a focus on established successes, such as HealthTech, rather than investing in more niche or specialized areas. Despite these challenges, there are still many successful start-ups and innovative companies based in the state, and there is a strong community of entrepreneurs and investors working to support and grow the ecosystem.
- **Stakeholders in the ecosystem suggest that access to capital may be restricted by nonmonetary factors, and that a more robust community for networking and collaboration is necessary to facilitate connections between entrepreneurs and the resources they need to thrive.** Some nonmonetary constraints mentioned by stakeholders as limiting factors include a lack of mentorship and guidance for early-stage start-ups from established financial institutions, whether that is by incubating them, funding them, or providing mentorship. Another factor mentioned was a shortage of networking opportunities and events where entrepreneurs can connect with investors and other stakeholders, specifically in Western Massachusetts. Additionally, there is a perception that the ecosystem is not as supportive or welcoming to B2C start-ups, which can further limit access to capital. To address these challenges, stakeholders noted helpful initiatives such as Boston FinTech Week, Massachusetts FinTech Hub, and Massachusetts Technology Collaborative, among others, which help build stronger networks and communities within the ecosystem.

“One key opportunity for the MA Fintech ecosystem is to increase corporate engagement, as it can attract more people to the ecosystem. Another important factor is access to capital, which is not necessarily a geographic constraint but can be limited by the ecosystem. There are stories of other ecosystems where capital is readily available and perhaps that is because there is a better community for networking. Overall, improving corporate engagement and access to capital are important priorities for the MA Fintech ecosystem.”

**Financial institution**

“To further improve the Massachusetts FinTech ecosystem, efforts can be made to enhance collaboration between industry stakeholders, expand access to capital, and promote diversity and inclusion.”

**Student**

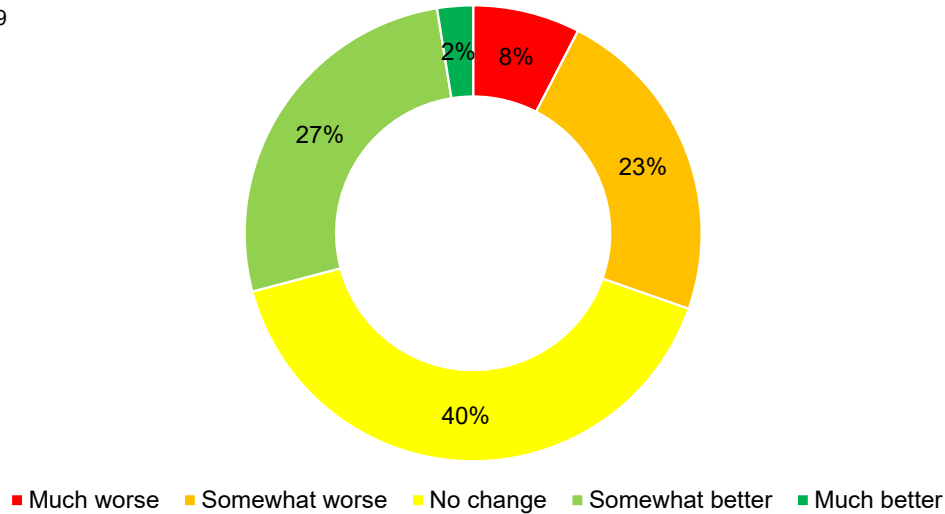
“We don’t succeed if we don’t funnel money into VCs. All Boston-based FinTech companies struggle raising capital from VCs in Boston. It is even worse with angel investing. It is an old style in terms of structure and valuation in Boston.”

**Fintech founder**

Based on the 2023 survey data, around 30 percent of respondents who have experienced raising capital in the past three years, believe that raising capital has improved.

**Figure 20: 2023 Survey – Experience Raising Capital Today versus Three Years Ago**

n = 79



- **Stakeholders suggest that by implementing more targeted initiatives in Massachusetts, the FinTech industry could see a greater level of commitment and access to resources, such as capital. Focusing on two to three key differentiators of the ecosystem could help to concentrate efforts and drive intentional growth in the industry.** For example, if a strong talent pool is identified to be a key differentiator, it might be worth working on ideas that help retain talent in the state rather than focusing on attracting new talent.

“We’ve noticed a lack of attention and support in the FinTech sector in Massachusetts, which is hindering its growth. We believe that by greater focus, we can reignite interest and encourage more investment in the industry, ultimately benefiting the larger ecosystem.”  
**Innovation hub leader**

# Infrastructure and technology

## Key themes

- **Massachusetts has a history of successfully developing and supporting emerging technologies.** According to stakeholders, the Massachusetts ecosystem has a rich history of supporting the development of new technologies, from biotech and pharmaceuticals to software and hardware. Stakeholders note that this may be due in part to the state’s strong education system, which includes some of the top universities in the world, as well as a thriving start-up ecosystem that encourages entrepreneurship and innovation. This has allowed it to become a leader in R&D. The COVID-19 pandemic increased demand for digital payments and created new opportunities for FinTech companies to develop and offer innovative payment solutions that meet the needs of consumers and businesses. The rapid shift to digital payments also highlighted the need for stronger cybersecurity measures and fraud prevention strategies, as well as the need for greater financial inclusion and accessibility for underserved communities.
- **There is a need to refine the content of FinTech’s strategic conversations and to align them with policy-driven goals.** Stakeholders note that such efforts could involve things such as identifying key policy-driven goals like increasing financial inclusion or promoting innovation and aligning conversations and initiatives around these goals. By doing so, the ecosystem works towards a common set of objectives, and efforts are directed towards the areas that are most likely to drive growth and success. Such efforts could involve creating more targeted initiatives and funding opportunities, as well as fostering collaboration and networking opportunities for industry professionals. Stakeholders perceive that the FinTech industry in Massachusetts has seen significant development from the ground up in recent years but now requires increased funding and staffing to amplify its growth.
- **Cybersecurity presents as both a major challenge and opportunity for the industry, according to respondents.** Cybersecurity is a critical issue for the FinTech industry, as it involves protecting sensitive financial information and preventing fraud and other malicious activities. As such, stakeholders view it as both a major challenge and opportunity for the industry. On one hand, stakeholders have noted that the increasing threat of cyberattacks and data breaches poses a significant risk to the industry and requires a strong focus on developing effective cybersecurity measures and protocols. This was mentioned to represent a major challenge, as cyber threats are constantly evolving and becoming more sophisticated.

“The pandemic has brought about challenges, including a disconnect between firms and workers, as well as difficulties faced by students in hybrid learning environments. Furthermore, companies like Zelle have emerged as strong competitors for Venmo, and the development of FedNow is noteworthy due to its potential impact on the industry. However, the majority of innovation appears to be driven by large corporations, which can create greater competition for smaller companies.”

**Academic**

“While there has been a lot of emphasis on encouraging collaboration and dialogue, it’s important to also prioritize refining the content of those conversations and ensuring they align with policy goals.”

**Innovation hub leader**

“We need to proactively try to map everyone in the ecosystem together. People have naturally gathered but never intentionally.”

**Innovation hub leader**

“Cybersecurity is an enabler for FinTech companies since it creates more opportunities for blockchain technologies.”

**Academic**

# Interconnectivity

## Key themes

- **Massachusetts has a strong ecosystem of organizations that inspire innovation in the FinTech industry.** Stakeholders noted that these organizations include accelerators such as MassChallenge and the FinTech Sandbox, which provide resources and support for early-stage start-ups. Additionally, stakeholder commonly mentioned there are a number of academic institutions in the state that are highly involved in the industry. Additionally, the Mass FinTech Hub has performed well on a relatively limited budget, but there is a perception that increased funding is needed to help move the needle on impact. To achieve this, stakeholders believe that additional staffing will be necessary in the future to help with outreach, as voluntary efforts may not be enough. The FinTech Sandbox was perceived to have a positive impact on the local ecosystem by stakeholders, but stakeholders were concerned that its funding might not be sufficient in the future. By addressing these issues and creating more intentional partnerships and collaborations, stakeholders believe that the FinTech industry in Massachusetts can continue to grow and thrive.
- **There is a lack of intentional partnerships between stakeholders in the FinTech industry in Massachusetts.** Stakeholders note that a lack of partnerships may mean that there may be missed opportunities for collaboration and networking, which can hinder the growth and success of the industry. To address this, stakeholders believe there is a need for more intentional efforts to foster partnerships and collaboration between industry professionals, policymakers, investors, and other stakeholders. This could involve, for example, creating more networking opportunities, hosting industry events and conferences, and developing targeted initiatives to support collaboration and partnership-building. According to stakeholders, the academic sector is highly involved in the Massachusetts FinTech ecosystem, while VC firms are somewhat less involved. There is a need to tap into the key strengths of the industry and differentiate via partnerships such as partnerships for start-ups with universities or established institutions. These organizations should be leveraged holistically to drive growth in the ecosystem. Additionally, stakeholders believe there is a need for a unified and amplified message of outreach which could be facilitated by the Commonwealth. Stakeholders believe that by proactively mapping and linking people

“There still seems to be a lack of public relations and understanding of the FinTech ecosystem outside of the Greater Boston area, despite initiatives like ‘Boston FinTech Week’ and ‘FinTech Sandbox’”

**Innovation hub leader**

“Mass FinTech Hub has done a tremendous job with a near zero budget, but the lack of budget makes it challenging to move the needle. They get some revenue from membership but not enough to make an impact. There needs to be specific staffing to help do proactive outreach. Voluntary help is not enough. If the Commonwealth had a larger role, it could invest in the organization until it can get to a membership level where it is self-supporting.”

**Innovation hub leader**

“Acknowledging the significance of existing companies, fostering closer collaboration with them, and actively attracting more talent and innovation can lead to greater success. The Massachusetts success story, exemplified by the establishment of Harvard and MIT, highlights the importance of building strong institutions and patiently waiting for their impact to unfold over time. By intentionally cultivating talent and innovation, rather than relying solely on organic growth, we can leverage our proximity to other regions, such as Ireland, and seize opportunities for expansion.”

**Policymaker**



together, Massachusetts can create a more connected and collaborative FinTech ecosystem to help drive growth and success in the field.

- **Stakeholders have expressed concerns about a lack of regulatory support from the state in the FinTech industry.** The general concern is that more limited regulatory support relative to other FinTech hubs may prevent start-ups from growing or push people and companies to move elsewhere. Stakeholders have expressed concerns that Massachusetts current tax incentives and support from the Commonwealth are not as attractive as other hubs. Additionally, it was noted by the 2023 survey-respondents that state officials have not offered a plan to stimulate the establishment and preservation of start-ups in the FinTech industry. Stakeholders have expressed concern that by not offering these incentives, Massachusetts may be missing out on the opportunity to build a competitive edge over other states in the industry. To address this, stakeholders believe there is a need for more intentional efforts to create a supportive regulatory environment that encourages innovation and growth in the industry.

“There is a need for greater urgency in the industry, as the world becomes more interconnected, and it becomes easier to overlook regions with more restrictions.”

**Innovation hub leader**

“Tax advantages are the weakest element of the FinTech ecosystem in Massachusetts. People and companies move based on incentives. The state should give suitable tax advantages voluntarily, such as additional grant money and lower restrictions to qualify for these grants. For example, Canada offers capital to FinTech companies.”

**Academic**

“The FinTech industry in Massachusetts has been struggling, and many believe this is due to the dominant nature of large financial corporations. State officials have not yet implemented a new plan to stimulate the establishment or preservation of start-ups, leading to a lack of focus and people leaving the state.”

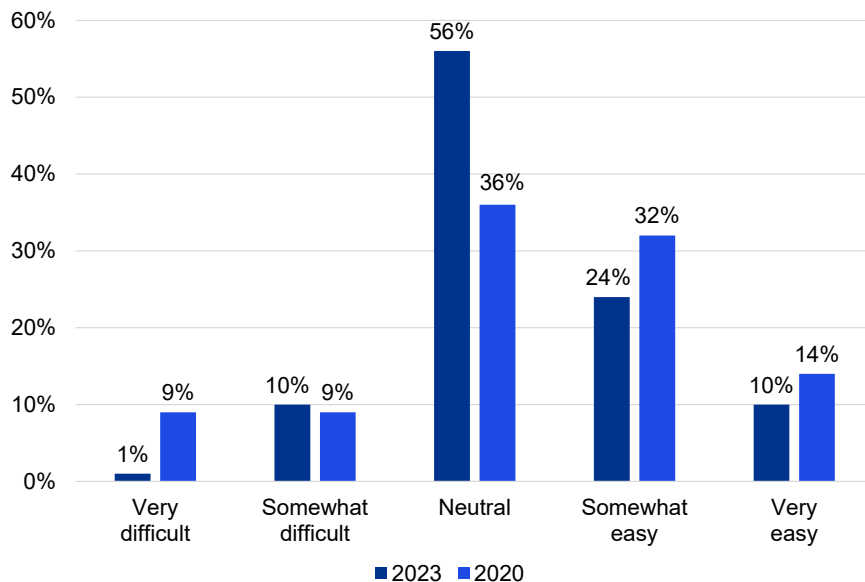
**Policymaker**

# Policy and regulation

## Key themes

- **Stakeholders believe that by fostering collaboration and support among industry professionals, policymakers, investors, and other stakeholders, there may be alternative ways to support start-ups in the FinTech industry.** One potential approach voiced by the 2023 survey-takers involved lowering regulatory barriers to entry, which may help to encourage innovation and growth in the field. By creating a more supportive and attractive environment for start-ups, Massachusetts can help to drive growth and success in the FinTech industry and build a competitive edge over other states. Based on interviews with ecosystem respondents, respondents believe that there is an opportunity to enhance the level of engagement between regulators and start-ups. Furthermore, there seems to be a challenge in accessing relevant information.

**Figure 21:** 2023 Survey – Experience in Navigating the Regulatory Landscape



- **Stakeholders have expressed that the greatest challenge in navigating the regulatory landscape in Massachusetts is a lack of engagement on the part of regulators with the start-up community.** This lack of engagement can hinder innovation and growth in the FinTech industry and prevent start-ups from reaching their full potential. As a result, it is important for regulators to engage with the start-up community and work collaboratively to create a regulatory environment that supports innovation and growth. The response data shows some stakeholders have a positive experience in this regard, but many interviewees agree that navigating the regulatory landscape has opportunity for growth.

“There is a systemic issue in New England for start-ups or young companies of basic issues like cost of living and high taxes that keep people away.”

**Innovation hub leader**

“Regulatory change should be advocated from the top down. The 17 Fortune 500s in Massachusetts could support mutually agreed-upon FinTech initiatives. FinTech is the common thread, the tie that binds, despite the industry they represent. Alignment with Massachusetts state agencies can be achieved through the lens of a blockchain FinTech initiative.”

**Financial institution**

“[Delays in the state agencies processing certain of our start-ups applications] highlights the need for a regulatory sandbox that would allow start-ups to develop insurance and banking products without facing unnecessary regulatory hurdles. Such a sandbox would encourage innovation and competition in the industry, ultimately benefiting consumers.”

**Founder**

“We’ve dealt with several agencies in trying to find ways to get capital funding. The process can be bureaucratic, and it is hard to see a cohesive support network across the agencies. It feels like we are making several pitches to each agency independently instead of building up a presence across all agencies.”

**Founder**

# Map of the ecosystem



This chapter visualizes a selection of the feedback received from the 2023 Survey and maps summarizing the location of various FinTech-relevant sectors across Massachusetts.

## Introduction

As Massachusetts' FinTech ecosystem has grown and changed over the last several years, the needs of ecosystem participants have evolved. This section contains several correspondences and mappings to illustrate the perceptions of Massachusetts' Fintech ecosystem stakeholders as of mid-2023.

The data underlying the visualizations and charts in this section are based primarily upon the 2023 survey responses, interviews with representatives from each stakeholder type,<sup>25</sup> and research regarding employment, establishments, and other data included in other sections of the Report.

### Key FinTech stakeholders

The heatmaps that appear in this section illustrate the perceptions of stakeholders with respect to different elements of the ecosystem and with respect to their interactions with other stakeholders. For purposes of these tabulations, the following stakeholder categories are defined in order to increase the cell size in an effort to create a more meaningful summary.

- **Traditional Financial Institutions (*includes professional services*):** Based on the 2023 survey results, traditional financial institutions include mostly large organizations (>5,000 employees) that were affiliated with insurance and banking industries.
- **Capital providers:** Capital providers are predominantly small organizations (<100 employees) that are affiliated with banking, insurance, blockchain technologies, cyber security, and personal finance. Includes VC firms.
- **Academic institutions:** Academic institutions who responded to the 2023 survey were primarily medium-sized entities (between 101 and 5000 employees). They were generally not aligned with any particular industry.
- **Entrepreneurs and start-ups:** Entrepreneurs and start-ups represent predominantly very small organizations (<10 employees) in the payments, personal finance, or banking industries.
- **Incubators/accelerators and nonprofits:** Incubators/accelerators include small organizations (<100 employees) that were affiliated with the banking and personal finance industries.
- **Other (*includes government*):** Based on the 2023 survey, these organizations were affiliated with payments and banking. There was a very wide range in organization size, with a number of respondents reporting greater than 5,000 employees and a sizable proportion reporting between 11 and 100.

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<sup>25</sup> KPMG notes that the 2023 FinTech Ecosystem Survey respondents and interview stakeholder group types were intended to be consistent with the stakeholder group in the 2020 Report. However, individual participants in 2023 may be different from the 2020 Report, as KPMG did not survey an identical group.

# Stakeholder perception map

As previously discussed in the **Massachusetts FinTech ecosystem reassessment** section of this study, according to prevailing sentiment within the ecosystem, there has been an overall improvement in its condition since 2020, with between 24 and 68 percent of respondents noting that the ecosystem elements included in the 2023 survey are either somewhat better or much better today than three years ago. Nevertheless, respondents indicate there is room for further improvement. Based on the 2023 survey, respondents broadly identified improvement in availability of capital, infrastructure and technology, and interconnectivity as among the primary aspects of the ecosystem most in need of growth. This sentiment is most evident among entrepreneurs, founders, start-ups, and capital providers. The subsectors of policy and regulation, as well as capital, are identified as key areas for improvement by the majority of stakeholders. These areas are deemed critical to the ecosystem’s overall well-being, and if improved, could potentially have a significant contribution to its future success.

**Table 2: Ecosystem Heat Map**

| Elements →                                     | Talent and Culture  | Capital   | Policy and Regulation  | Infrastructure and Technology   | Interconnectivity   |
|--|---|---|--|---|---|
| Stakeholders ↓                                 |   |   |  |   |   |
| <b>Capital Providers</b>                       | Most stakeholders in this sector believe access to talent to be somewhat strong or very strong.   | There is a need for a more significant capital deployment to diverse founders.* | Out-of-date and overly strict regulations are considered to infringe on the support from regulators.                         | When BioTech is removed from the early-stage funding ecosystem, sustainable tech, deep tech, MedTech, and tech still receive reasonably strong funding, although not as strong as BioTech.* | Most stakeholders indicated that there is a need for more programming to help launch entrepreneurs.*  |
| <b>Traditional FIs + Professional Services</b> | There is a high concentration of FinTechs and a sizable amount of various financial and insurance companies in MA— In addition to colleges and universities that bring a talented student base. | Most stakeholders indicated access to funding is challenging in MA.             | Policies are somewhat unclear, regulators lack knowledge of FinTechs, and examinations are inconsistent due to subjectivity. | Most stakeholders believe that development and support of new technologies in MA is strong.   | There is a diverse mix of players including nonprofits, private firms, and academia to drive impact through strong collaboration and cross-pollination. |



| Elements →   | Talent and Culture  | Capital  | Policy and Regulation  | Infrastructure and Technology   | Interconnectivity  |
|--|---|--|--|---|--|
| Stakeholders ↓   |   |  |  |   |  |
| <b>Entrepreneur / Founder + Startups</b>                       | Although talent is considered strong in MA, remote work and living costs are believed to drive talent to other states.* | MA startups focused on B2B are more likely to receive funding, while those focused on C2C are often overlooked.* | Many stakeholders who rated the ecosystem poorly feel that state regulators are not providing enough help. They would like to see more collaboration and grants for FinTechs.*     | A few stakeholders indicated that developing and supporting new technologies is difficult. However, the majority of stakeholders indicated that it is somewhat easy.* | Stakeholders lack awareness of relevant events and startups require greater connectivity with regulators as current legislation may not be fully aligned with creating an attractive environment for business growth in MA.* |
| <b>University / Academia</b>                                   | Stakeholders noted that sourcing talent in MA is somewhat easy.   | Access to capital was voted as strong by the majority of the stakeholders.                                       | Stakeholders have expressed a need for additional tax incentives. Moreover, they have emphasized the importance of establishing better communication channels with the regulators. | Many of these stakeholders believe that accessing new technologies today vs. 3 years ago is better, with a few stakeholders noting that there has been no change.     | Collaboration across stakeholders was indicated as strong by most stakeholders.  |
| <b>Accelerator / Incubator + Nonprofit / Trade association</b> | All stakeholders perceive access to talent as strong.   | Most stakeholders indicated that access to and availability of capital is neutral or somewhat easy in MA.        | Stakeholders suggest that enhanced support from industry leaders and government officials could be beneficial for those who are seeking to remain in MA.                           | Stakeholders noted that development and support of new technologies have improved over the past three years but still have room for growth.                           | Stakeholders indicated a need for greater ecosystem diversity rather than a concentrated effort from large players.  |







|   |   |
|---|---|
|   | Strong with element                               |
|   | Average within element                            |
| * | Respondents had mixed opinions about this element |

## Ecosystem connections mapping

This section contains a summary of stakeholder perceptions of their needs for interactions with other stakeholders in the ecosystem. Stakeholder perceptions of their own role and the roles of other stakeholders within the ecosystem shed light on both the degree of connectivity and the gaps that may exist.

The left column in the table below indicates how stakeholders best describe their organization, and the right column indicates the top three most selected responses to the question, “Which of the following participants in the ecosystem would you like greater access to?”. Respondents were allowed to choose up to three choices from the following: *Accelerator/Incubator & Nonprofit/Trade Association, Capital Provider/Investor, Entrepreneur/Founder & Start-up, Policymaker/Government, Traditional Financial Institutions & Professional Services, University/Academia.*

**Table 3: Ecosystem Connections Mapping**

| Which of the following categories best describes your organization?   | Which of the following participants in the ecosystem would you like greater access to?   |
|---|--|
|  <b>Accelerator/Incubator &amp; Nonprofit/Trade Association</b>          | <ul style="list-style-type: none"> <li>• Capital Provider/Investor</li> <li>• Entrepreneur/Founder &amp; Start-up</li> <li>• Policymaker/Government</li> </ul>                               |
|  <b>Capital Provider/Investor</b>  | <ul style="list-style-type: none"> <li>• Capital Provider/Investor</li> <li>• Entrepreneur/Founder &amp; Start-up</li> <li>• Policymaker/Government</li> </ul>                               |
|  <b>Entrepreneur/Founder &amp; Start-up</b>                              | <ul style="list-style-type: none"> <li>• Accelerator/Incubator &amp; nonprofit/Trade Association</li> <li>• Capital Provider/Investor</li> <li>• Policymaker/Government</li> </ul>           |
|  <b>Traditional Financial Institutions &amp; Professional Services</b> | <ul style="list-style-type: none"> <li>• Accelerator/Incubator &amp; nonprofit/Trade Association</li> <li>• Entrepreneur/Founder &amp; Start-up</li> <li>• Policymaker/Government</li> </ul> |
|  <b>University/Academia</b>  | <ul style="list-style-type: none"> <li>• Capital Provider/Investor</li> <li>• Entrepreneur/Founder &amp; Start-up</li> <li>• Policymaker/Government</li> </ul>                               |
|  <b>Other/Not Applicable (includes Policymaker/Government)</b>         | <ul style="list-style-type: none"> <li>• Accelerator/Incubator &amp; nonprofit/Trade Association</li> <li>• Capital Provider/Investor</li> <li>• Policymaker/Government</li> </ul>           |

The mapping of FinTech ecosystem needs shows how each of the stakeholder types responded to a question regarding the other types of stakeholders with which they would like greater interaction.

- Notably, the overwhelming majority of start-up or entrepreneur/founder respondents desired more access to capital providers and investors. These respondents generally indicated they sought “more access to investors” and/or “access to capital and networks.”
- In addition, most stakeholder types indicated they would like greater access to entrepreneurs/founders or start-ups. More than half of all of the accelerator/incubator and non-profit, capital provider/investor, traditional financial institutions and professional services, and university/academia respondents selected listed they would like greater access to this group. Capital providers who responded to the 2023 survey elaborated on this need, indicating “deployment of capital to diverse founders” was lacking.
- Access to incubators/accelerators broadly regarded by those surveyed to be ‘somewhat strong’ or ‘very strong’, and correspondingly a smaller proportion of stakeholders indicated they are seeking greater

access to incubators/accelerators. That being said, more than 40 percent of entrepreneurs/founders and start-ups and traditional financial institutions who responded to the 2023 survey indicated they would like greater access to incubators/accelerators.

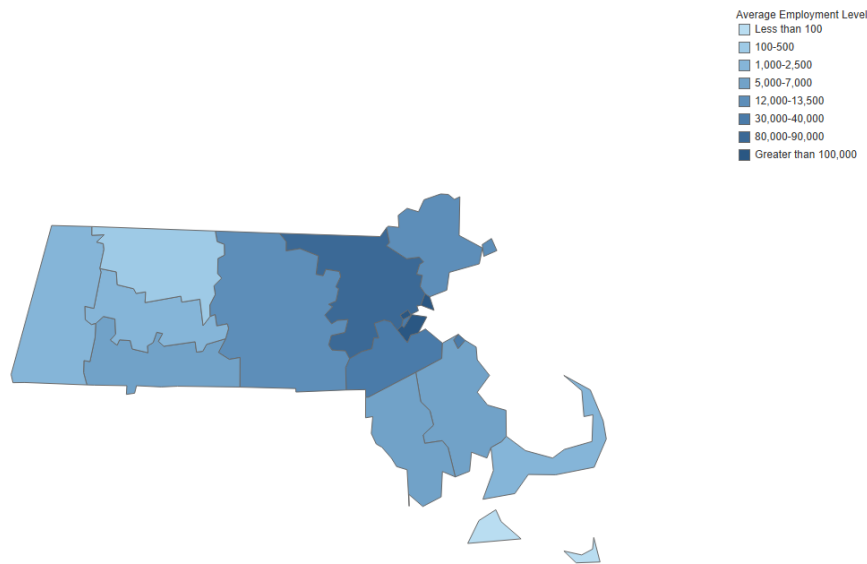
- Lastly, policymaker/government ranked among the top three across all respondent types. In particular, a significant percentage of capital providers, accelerator/incubators, and universities/academia respondents indicated that they generally seek greater access to policymakers. Respondents generally also responded that they perceived both the ease of doing business and support from policy and regulations within the Commonwealth to be weak or somewhat weak.

## Ecosystem location maps

This section contains a summary of geographic maps and data overlays for Massachusetts that collectively identify where the various components of the industry exist spatially. The resulting charts were generated using the BLS' QCEW data for the year 2022. FinTech industries by NAICS codes were identified by KPMG.<sup>26</sup>

**Figure 22** below shows the employment level of financial services and FinTech-related industry verticals within each of Massachusetts' 14 counties. Suffolk County, which includes Massachusetts' capital and largest city Boston, had the largest share of FinTech employment in the Commonwealth, followed by Middlesex County and Norfolk County, respectively. Comparatively, Dukes County and Nantucket County were the counties with the lowest FinTech employment, with employment levels of both at less than 100.

**Figure 22: FinTech Employment Level by Massachusetts County, 2022**



The following charts illustrate the location quotient for each the three primary components of Massachusetts' financial activities industry. These components include commercial banking, insurance, and wealth management. The LQs obtained are ratios that show each respective Massachusetts county's share of employment by industry, ownership, and size class in comparison to the U.S.' share. An LQ equal to 1.0 would indicate that the county has the same share of industry employment as the U.S. An LQ greater than 1.0 would indicate a greater share of industry employment in the county than the U.S.

The results for commercial banking are shown separately using NAICS code "5221" (Depository Credit Intermediation) and NAICS code "5231" (Securities and Commodity Contracts Intermediation and

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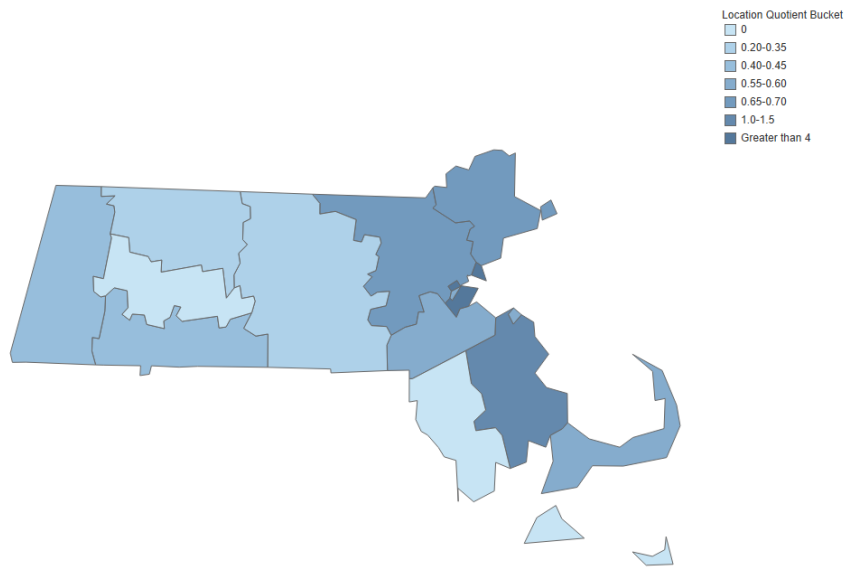
<sup>26</sup> While KPMG believes that Colleges, Universities, and Professional Schools (NAICS 611310) are an important element of Massachusetts' FinTech ecosystem, the industry was excluded from the following analysis.

Brokerage); NAICS code “5241” (Insurance Carriers) was used to represent the Insurance industry while NAICS code “5239” (Other Financial Investment Activities) was used for the Wealth Management industry.

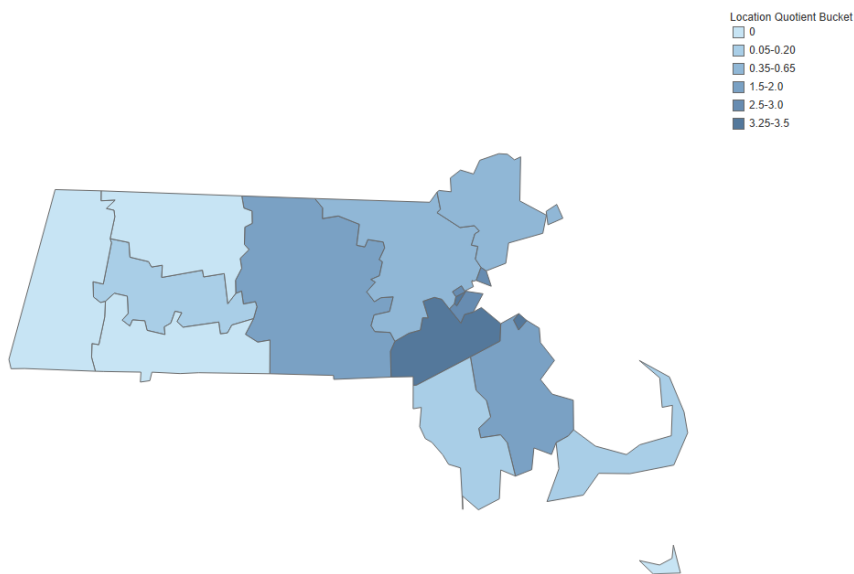
For commercial banking, the two methodologies yielded different results: Using NAICS 5221, Norfolk County and Suffolk County had the greatest and very similar LQ values. However, using NAICS 5231 led to Suffolk County having the largest LQ by a wide margin, while Norfolk County dropped to having the sixth highest LQ.

Norfolk County had the greatest LQ for the insurance industry. For wealth management, Suffolk County showed the largest LQ in 2022, with a value of greater than 9.0. In comparison with, the Commonwealth, as well as the nation, Suffolk County has a considerable and significant wealth management presence.

**Figure 23:** Location Quotient by Massachusetts County of Commercial Banking, 2022

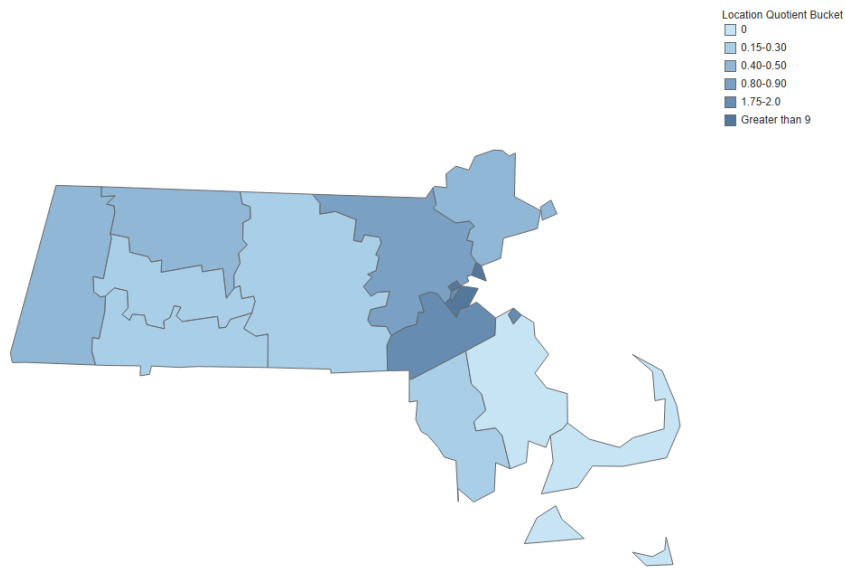


**Figure 24:** Location Quotient by Massachusetts County of Insurance, 2022



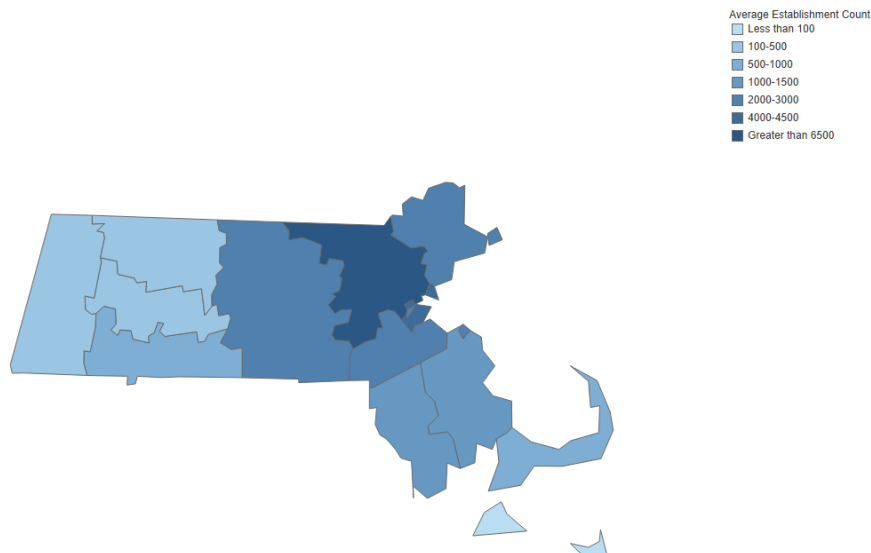


**Figure 25:** Location Quotient by Massachusetts County of Wealth Management, 2022



**Figure 26** below shows the FinTech establishment counts within each of Massachusetts' counties. Middlesex County had the greatest number of FinTech establishments in 2022, followed by Suffolk County. In comparison with the count of FinTech employment, the Suffolk County area has more FinTech related employers than Middlesex County, which has resulted in a higher employment level but a smaller number of establishments. Consistent with other indications, Dukes County and Nantucket County, in alignment with FinTech employment data, are the counties with the fewest FinTech establishments with both counties at less than 100.

**Figure 26:** FinTech Establishment Count by Massachusetts County, 2022





# 6. Benchmarking

# Benchmarking



This chapter summarizes the results of qualitative research regarding benchmarking activities and models for FinTech ecosystem development in other leading hubs. Key takeaways for Massachusetts are summarized and a detailed summary of qualitative research is presented.

## Introduction

Massachusetts can look to global trends and success stories in other leading FinTech hubs for transferrable growth opportunities. FinTech hubs tend to grow and expand in existing and emerging financial centers, but not all financial centers create vibrant FinTech hubs. Leading FinTech hubs tend to be located within financial centers that also boast well-established **innovation ecosystems** that unite technology-focused corporations, research-focused universities, and entrepreneurial talent in ways that activate start-up formation and attract venture capital. Financial centers with vibrant FinTech ecosystems are generally distinguished by their success in promoting mobility (geographic and occupational) and aligning the interests of entrepreneurs and existing financial institutions with the local economy's comparative advantages.

## Selecting leading innovation hubs

The purpose of this chapter is to provide an update to the qualitative benchmarking study in the 2020 FinTech Report. The benchmarking group presented in this chapter consists of three leading FinTech innovation hubs, including one global hub and two domestic hubs.

- **London:** One of the leading global FinTech hubs in terms of VC investment, number of active investors, and FinTech-related events.
- **New York City:** A leading U.S. east coast financial center and consistently ranked as the second leading FinTech hub in terms of investment in the FinTech vertical.
- **San Francisco:** In multiple measures, one of the leading domestic FinTech hubs, this U.S. west coast financial center has maintained its lead over other domestic and global FinTech hubs in terms of investment in the post pandemic years.

This section provides an overview of trends in FinTech, opportunities, challenges and risks from the perspective of each of these three leading innovation hubs. A summary of the strengths, weaknesses, recent innovations, and activities occurring within each leading innovation hub is presented below.

## Key takeaways

Several emerging trends observed from the three leading hubs can provide Massachusetts with guidance on how to further develop the local FinTech ecosystem. A summary of these trends includes the following:

- Since 2020, the level of FinTech activity in Massachusetts has generally increased relative to other hubs. For example, although FinTech-related VC funding in CA and NY remains several multiples of that in Massachusetts, the multiples have generally declined or remained stable through 2022 and early 2023.
- Leading hubs foster tighter connection between students in science, technology, engineering, math and FinTech careers through initiatives that target students interested in tech and other related subjects. Specialized FinTech degree programs, FinTech-related certificates, and bootcamps are relatively common in leading locations, especially London.

- Leading hubs are associated with substantial VC activity through leveraging local FinTech industry strengths in verticals such as payments, insurance technology, and AI.
- In leading FinTech hubs, policies and regulations exist that promote and support the advancement of FinTech. Examples include the establishment of a FinTech-related regulatory sandbox in the United Kingdom (“U.K.”), legislation that reduces regulatory barriers in California, and tax incentives that are accessible by FinTech businesses.
- New York City, San Francisco, and London all leverage their local talent pool and increasingly vie for talent with other global FinTech hubs. Although each of these regions is associated with a higher cost of living than Boston, barriers to entry for new talent are relatively low and networks within these regions are both large and accessible.
- FinTech related events in leading FinTech hubs serve as forums to connect with both regional and global members of the FinTech communities (e.g., investors, policymakers, entrepreneurs, and industry professionals).
- Other leading hubs have a slight edge over Massachusetts in terms of provision of seed funding for very early-stage FinTech businesses.

## Global FinTech trends

As a vertical, FinTech experienced significant volatility globally during the three-year period ending mid-2023. The following insights are from KPMG’s evaluation of funding levels and FinTech activity through the first half of 2023 (the latest available at the time of this Report).

In these first six months of the year, the FinTech sector remained challenged by macroeconomic factors including high inflation, increasing interest rates, geopolitical conflict involving Russia and Ukraine, and the collapse of several banks in the United States. This period represents a cooling off from the very strong rebound period that followed the COVID-19 pandemic. From the second half of 2022 to the first half of 2023, there was a significant drop globally in both FinTech funding and the number of FinTech deals. Despite market turbulence and a decline in funding in the Europe, Middle East, and Africa (“EMEA”) and Asia – Pacific (“APAC”) regions, the Americas saw a rise in FinTech funding during this time.

In many regions, the payments space, especially payments infrastructure, remains resilient. The payments sector continued to attract the largest share of FinTech funding, including the three largest deals globally. Cryptocurrency funding has been declining in the wake of sector challenges, but other opportunities for blockchain-enabled solutions and products remain robust based on VC investment in blockchain companies.

According to KPMG’s latest available *Pulse of FinTech* report, FinTech businesses appear to be focused on improving efficiencies as investors hold back amid market uncertainty. Investors have enhanced their due diligence processes and have begun to prioritize sustainability and profitable business models while FinTech businesses, in the face of uncertainty in funding and the rising cost of debt, focused on improving their operating performance and cash flows in order to make it through the downturn and better attract customers.<sup>27</sup>

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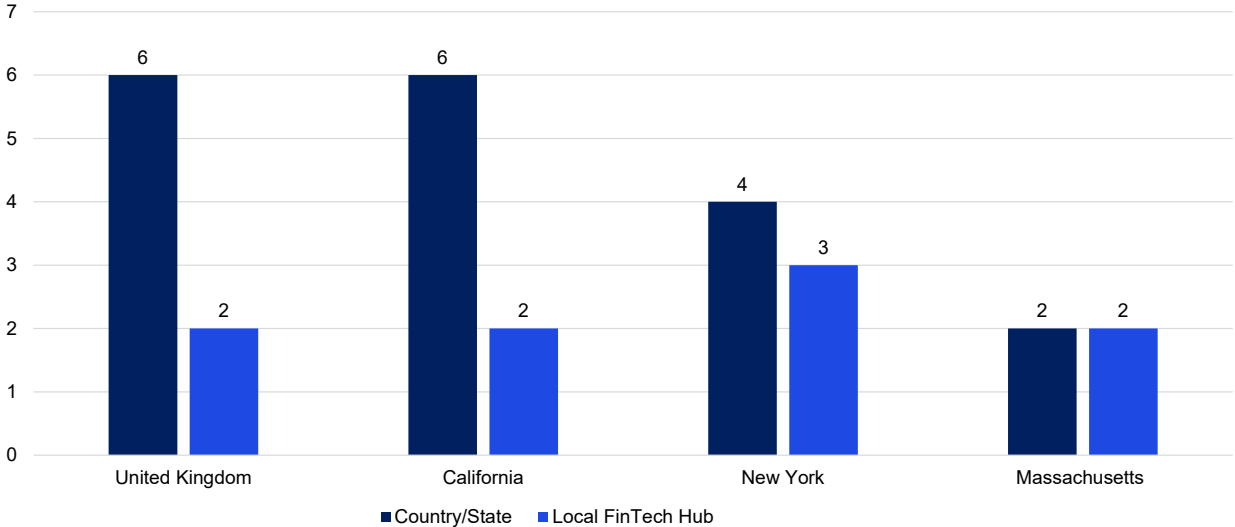
<sup>27</sup> “H1 2023 – Pulse of Fintech,” KPMG. Accessed August, 2023.

## Relevant statistics

This section will take a look at the top three FinTech hubs globally and compare these against Massachusetts' FinTech hub across the following elements: number of leading academic institutions; employment count; establishment count; wages; regional price parities; and VC investment.

Among relevant statistical data that helps showcase talent retention and attraction is the number of leading academic institutions located in the area. **Figure 28** shows the count of the top 50 academically ranked universities by FinTech hub. These locations include the U.K. and its hub London, NY and its hub New York City, and California and its hub in San Francisco compared to Massachusetts and its hub in the Boston area.

**Figure 27:** Count of the Top 50 Academically Ranked Universities by Location, 2023<sup>28</sup>



As previously discussed throughout this Report, Massachusetts boasts not only some of the top academic institutions in the country, but also a growing number of FinTech-focused academic programs and boot camps. It is worth noting that the leading FinTech hubs also have access to a significant number of universities that rank within the top 50.

As illustrated in **Figures 28–30**, KPMG compared Boston to New York City and San Francisco by FinTech employment, establishment count, and average annual wage.<sup>29</sup> The data indicate that Boston has experienced notable growth in the FinTech industry over the past three years, which positions it as a strong contender in the market. As such, Boston has emerged as an important player in the FinTech industry, with the potential to attract and retain top talent.

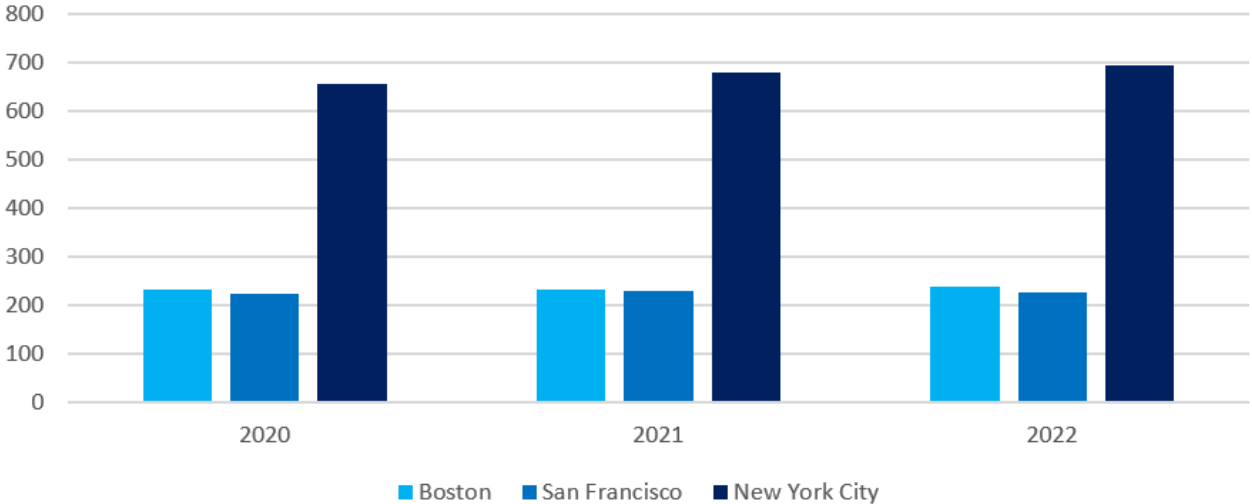
<sup>28</sup> ShanghaiRanking's Academic Ranking of World Universities. Accessed September, 2023.

<sup>29</sup> The data were obtained from the BLS' QCEW. The BLS' definitions for metropolitan statistical area were used to identify each hub, including "New York-Newark-Jersey City, NY-NJ-PA MSA" for the New York City hub, "San Francisco-Oakland-Hayward, CA MSA" for the San Francisco hub, and "Boston-Cambridge-Newton, MA-NH MSA" for the Boston hub. The industry "Colleges, Universities, and Professional Schools" (NAICS 611310) was excluded from this particular analysis.



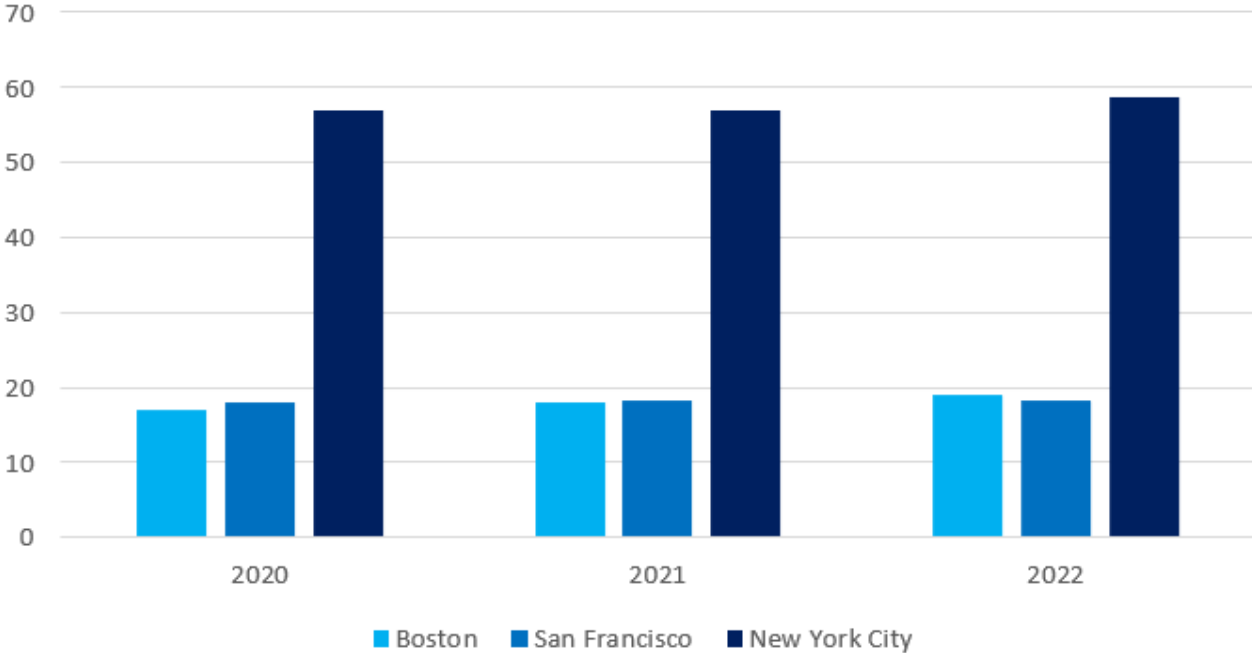
**Figure 28** compares Massachusetts' experience with that of the two other leading FinTech hubs in the U.S. FinTech related employment in the greater Boston metropolitan area has increased in percentage terms during the last three years by slightly more while employment in the same industries in San Francisco and New York.

**Figure 28: FinTech Employment, 2020–2022 (Thousands)**



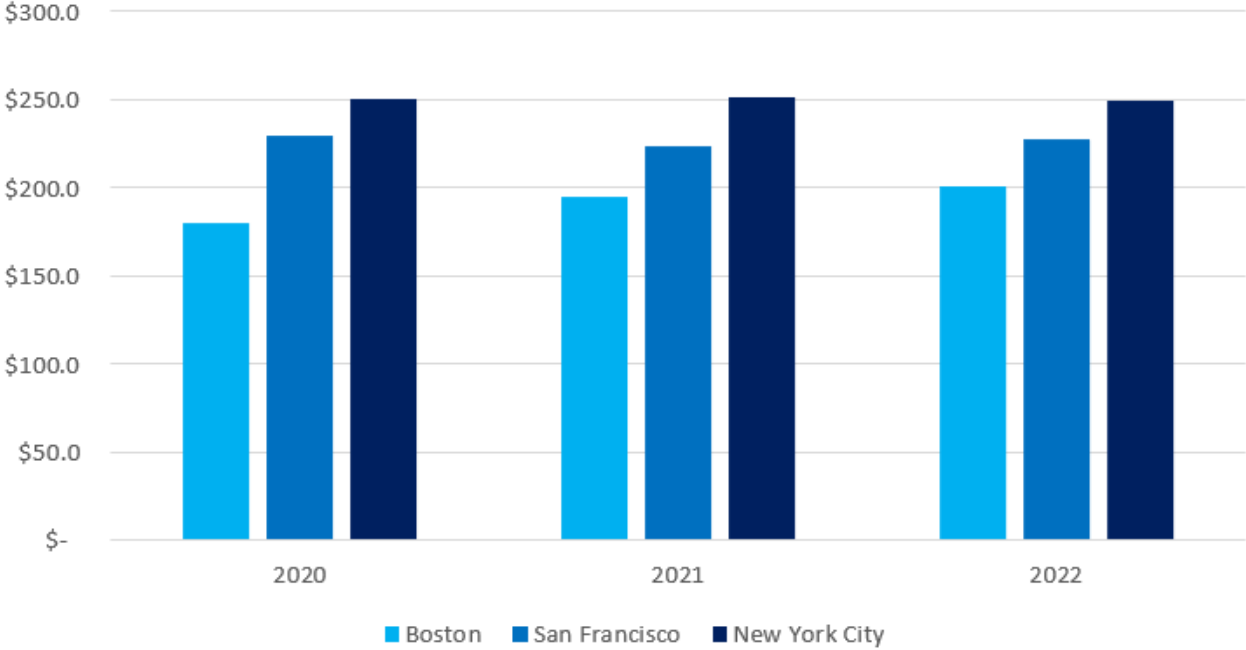
As illustrated by **Figure 29**, New York City leads with the highest number of FinTech establishments. It is worth noting that Boston and San Francisco have remained relatively close in terms of FinTech establishment count over the years, with Boston having a slight lead in 2022. Growth in the number of FinTech establishments in the greater Boston region is indicative of net new firm formation and start-up activity in several different FinTech sub-segments.

**Figure 29: FinTech Establishment Count, 2020–2022 (Thousands)**



As shown in **Figure 30**, New York City had the highest average wage in FinTech related industries in 2022, with San Francisco following behind. Boston, on the other hand, has had a relatively lower salary historically but has seen a significant increase in the past three years.

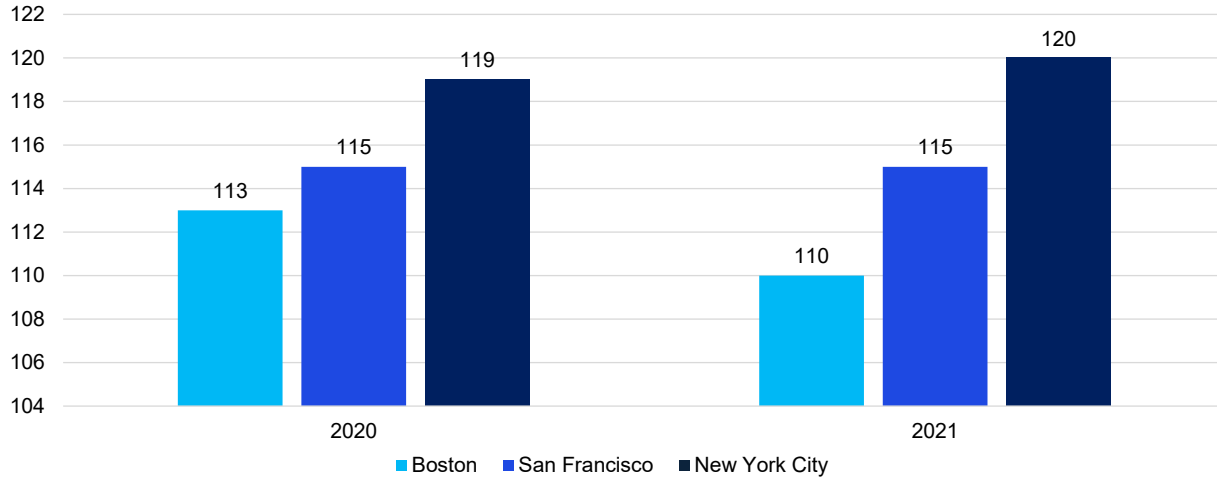
**Figure 30: Average FinTech Wage, 2020 – 2022 (\$ thousands)**



Wage and salary compensation varies significantly in the U.S. based upon differences in local supply and demand and living cost characteristics of each region. **Figure 31** below compares regional price parities (“RPPs”) by selected U.S. FinTech hubs to serve as a comparison point for benchmarking changes in the average wage.<sup>30</sup> Based on the RPPs data for Boston, New York City, and San Francisco, Boston consistently had a lower relative cost of goods and services compared to the national average in both 2020 and 2021. All three of these FinTech hubs show a significantly higher cost than the average for other U.S. metropolitan areas.

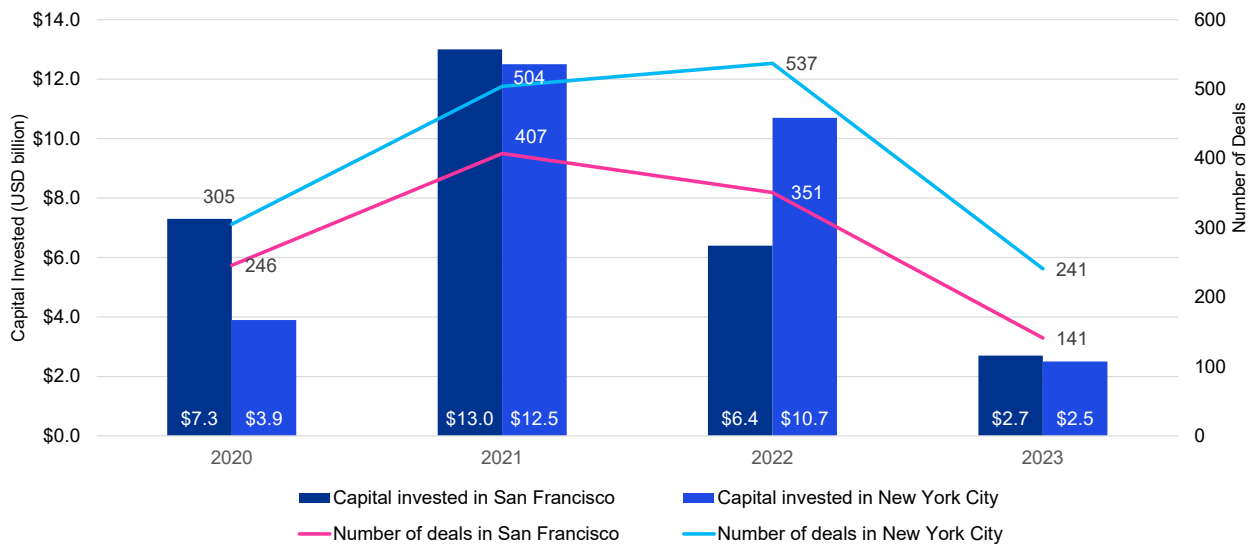
<sup>30</sup> The RPPs values for each hub were determined by using the BEA’s definitions for metropolitan statistical area for each hub, including “New York-Newark-Jersey City, NY-NJ-PA MSA” for the New York City hub, “San Francisco-Oakland-Berkeley, CA MSA” for the San Francisco hub, and “Boston-Cambridge-Newton, MA-NH MSA” for the Boston hub.

**Figure 31: Regional Price Parities by US FinTech Hubs, 2021, (U.S. = 100, %)<sup>31</sup>**



The following chart shows the annual VC investment and number of deals in NY and San Francisco. In 2022, the NY FinTech sector received the highest amount of VC investment, but as of mid-2023 (based on year-to-date figures available at the time of this study), capital investment in the San Francisco FinTech sector appears to be increasing more than in NY in terms of capital investment. While NY has the highest number of deals in the FinTech sector compared to other hubs, the value of capital invested in San Francisco reveals that deals in San Francisco are on average larger than those in NY. Massachusetts has smaller scale and less funding activity than NY and California, but as previously discussed in the **Current FinTech trends** section, Massachusetts ranked fourth in 2022 in terms of funding received by FinTech companies in the U.S. Additionally, funding in Massachusetts has been steadily increasing over the past few years.

**Figure 32: VC Investment in the FinTech Sector in NY vs. California, 2020 – August 2023<sup>32</sup>**



<sup>31</sup> Source: Bureau of Economic Analysis. Accessed September, 2023.

<sup>32</sup> Pitchbook Data, Inc 2023. Accessed August, 2023.

# London

## Overview

With one of the greatest concentrations of financial and professional services, London serves as one of Europe's leading tech ecosystem hub, as well as among the top-ranking FinTech ecosystems globally, despite increasing global competition, regulatory uncertainty due to Brexit, and Covid-19.<sup>33</sup> The London and the surrounding region in the U.K. also represents the second-largest destination for FinTech investment, following the United States.<sup>34</sup> This is a continuing trend, with London FinTech investment second only to San Francisco in 2019.<sup>35</sup> Leading FinTech subsectors in the U.K. include payments, regulatory technology, and insurance technology.<sup>36</sup>

London is regarded as the key driver of the U.K.'s success in FinTech, with approximately two thirds of all of U.K. FinTech businesses headquartered there. According to a recent estimate, London accounts for as much as 10 percent of the global market share.<sup>37</sup> London is also the most successful place in Europe for unicorn companies to establish new start-ups. By 2022, 27 London-founded unicorns produced the greatest number of new ventures in comparison with other European hubs, including Berlin, Paris, and Stockholm.<sup>38</sup>

## Talent and culture<sup>39</sup>

- The U.K. has a strong and world-class education system. In 2021 and 2022, the total number of students enrolled in approximately 285 U.K. higher education institutions was over 2.8 million.<sup>40</sup> In comparison, California is the state with the greatest number of college enrollments (about 2.6 million students) at about 750 higher education institutions.<sup>41</sup>
- Of the top 25 highest academically ranked world universities, four were located in the U.K. London itself is home to three universities within the global top 100.<sup>42</sup> The strength of research universities with strong finance and technology programs is a distinguishing feature for many financial centers that give rise to a vibrant FinTech ecosystem.
- In a 2020 evaluation of FinTech in the U.K., five universities in the U.K. were mentioned to offer dedicated FinTech masters programs, including Imperial College London, a top 25 ranked global university. Currently, there are 18 universities in the U.K. that offer masters programs in FinTech.<sup>43</sup> This specialization in degree programming in favor of FinTech is another feature that is becoming more commonplace among FinTech hubs and regions that serve as feeders.
- The U.K. has shown considerable improvement over the last decade at promoting science, technology, engineering, and mathematics ("STEM") careers. Since 2011, there has been unprecedented growth in students opting to take on STEM subjects, including computer science, engineering, and biology. Acceptances into computer science courses between 2011 and 2020 increased by nearly 50 percent, while acceptances to engineering courses rose 21 percent.<sup>44</sup>
- The U.K. offers a global talent visa in digital technology to sponsor highly skilled tech workers for two years. Professionals who specialize in software development and information technology operations ("DevOps"), software engineering, user-experience ("UX"), and user-interface ("UI") are in high demand

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<sup>33</sup> Kalifa Review of UK Fintech

<sup>34</sup> "United Kingdom – County Commercial Guide," International Trade Administration

<sup>35</sup> "Fintech Focus," KPMG UK

<sup>36</sup> "United Kingdom – County Commercial Guide," International Trade Administration

<sup>37</sup> Kalifa Review of UK Fintech

<sup>38</sup> "Europe and Israel's Start-up Founder Factories," Accel, Dealroom

<sup>39</sup> Based on level of detail available at time of publication, certain statistics in this section utilize U.K. wide statistics as a proxy for the London FinTech hub.

<sup>40</sup> "Higher Education Student Statistics: UK, 2021/22 – Student Numbers and Characteristics," HESA

<sup>41</sup> "College Enrollment & Student Demographics Statistics," Education Data Initiative

<sup>42</sup> "2023 Academic Ranking of World Universities," Shanghai Ranking

<sup>43</sup> "Masters in Financial Technology (Fintech) in UK," GoUK

<sup>44</sup> "More Young People Are Taking STEM Subjects Than Ever Before," UK Department for Education

for U.K. FinTech businesses. These firms are also open to hiring European union professionals outside of the U.K. if the local talent market is insufficient.<sup>45</sup>

## Capital

- The U.K. attracted the majority of FinTech funding in the EMEA region in the first half of 2023, accounting for half of the region's 10 largest deals.<sup>46</sup>
- In 2022, the market value of U.K. technology companies reached over \$1 trillion, joining the United States and China as the only countries to achieve this milestone.<sup>47</sup>
- Investments in FinTech in the U.K. grew by \$9.1 billion in the first half of 2022, a 24 percent increase from the same period in 2021.<sup>48</sup>
- London is home to almost 70 percent of the U.K.'s PE and VC investors. In 2020, the city attracted 91 percent of all the capital flowing into U.K. FinTech. London's technology firms attracted nearly \$20 billion in VC funding in 2022, double the amount of the investment raised in any other European city and the fourth largest amount of any city worldwide. London start-ups also receive an average of more than \$18 million in early-stage investment, which is around eight times the U.K. average.<sup>49</sup>
- London's FinTech firms raised a total of \$9.7 billion in 2022, greater than any other city globally.<sup>50</sup>

## Policy and regulation

- The U.K. FinTech sector benefits from a relatively supportive regulatory system. The Financial Conduct Authority ("FCA") and the Prudential Regulation Authority are two bodies that strive to build a competitive and innovation-friendly business environment. Key initiatives that have helped the U.K. become a leader for policy-led innovation include the FCA's Regulatory Sandbox, Global Financial Innovation Network, Open Banking framework and AI Sector Deal. The FCA's Innovation Hub was also developed to reduce the regulatory burden for FinTech companies.<sup>51</sup>
- In the first half of 2023, the U.K. passed the Financial Services and Markets Act 2023, which includes measures to enhance the U.K.'s leadership and competitiveness in the financial services and FinTech spaces. The desired consequences of this legislation are to make the U.K. an attractive place to have an initial public offering, create the foundation for the regulation of crypto assets to promote adoption, and establish sandboxes to facilitate testing of new technologies in the sector.<sup>52</sup>

## Infrastructure and technology

- Due to its position as a global financial center, coupled with a considerable technology talent pool, relatively supportive business and regulation environment, and large globally connected consumer base, London provides a natural environment for FinTech to flourish.<sup>53</sup>
- Since 2022, the number of FinTech companies has grown to over 2,500. With the predicted growth rate, it is projected that the number of FinTech companies will double by the year 2030.<sup>54</sup>
- Six of the top 10 FinTech companies in the country are headquartered in London.<sup>55</sup>
- Based on 2021 data, London was found to have about a 136 percent year-over-year increase in the number of FinTech jobs. The average tenure for London professionals was found to be around 1.4 years.<sup>56</sup>
- While the bulk of FinTech activity is concentrated in London, its influence has helped establish several strong FinTech nodes around Greater London and the South and Southeast of England, including Milton Keynes, Oxford, Brighton, Southampton, and Bournemouth. Some of these nodes are currently developing into emerging clusters in their own right, such as Reading and Cambridge.<sup>57</sup>

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<sup>45</sup> "Global FinTech Talent Report," Robert Walters Group

<sup>46</sup> "H1 2023 – Pulse of Fintech," KPMG. Accessed August, 2023.

<sup>47</sup> Start-up Genome

<sup>48</sup> "United Kingdom – County Commercial Guide," International Trade Administration

<sup>49</sup> Start-up Genome

<sup>50</sup> Start-up Genome

<sup>51</sup> "Fintech," UK Department for Business & Trade

<sup>52</sup> "H1 2023 – Pulse of Fintech," KPMG. Accessed August, 2023.

<sup>53</sup> Fintech-Focus-2020-UK.pdf (crowdfundinsider.com)

<sup>54</sup> "The UK Fintech Ecosystem," London Stock Exchange

<sup>55</sup> "Fintech Focus," KPMG UK

<sup>56</sup> Kalifa Review of UK Fintech

<sup>57</sup> Kalifa Review of UK Fintech



## Interconnectivity

- There are 581 accelerators and incubators in the U.K..<sup>58</sup> Notable accelerators and incubators include FinTech Innovation Lab London, 100x Impact Accelerator, and Level39, as well as several corporate accelerators such as Bank of England's FinTech Accelerator, Barclays Accelerator, NatWest Entrepreneur Accelerator, JP Morgan, and Goldman Sachs.<sup>59</sup>
- The U.K. has five FinTech bridge agreements with other global FinTech hubs including Singapore, South Korea, China, Hong Kong, and Australia. These customized agreements are able to develop key opportunities for expansion and collaboration by reducing barriers to international markets.<sup>60</sup> The U.K. also has a "Start-up Launchpad" with India that promotes strong relationships between the two countries' start-up ecosystems.<sup>61</sup>

## New York City

### Overview

New York City is the United States' single largest city by population and contains the country's largest consumer base. In addition, NY state boasts very strong concentrations of research-oriented universities with leading programs in finance. These factors, in collaboration with its long-standing status as a global financial center, have helped place New York City among the highest ranked hubs nationally and globally.<sup>62</sup> The city's growing specialties include decentralized finance and democratizing access to financial services.<sup>63</sup> One of the 10 largest FinTech companies in the United States in 2023, OpenSea, is headquartered in New York City.<sup>64</sup>

### Talent and culture

- New York City is able to offer a diverse and highly skilled talent pool enabled by a pipeline of graduates from world-class academic institutions. Four of the top 50 universities ranked by academics are located in NY state, with three of them directly in New York City.<sup>65</sup> The city ranks first in the Northeast U.S. in total number of STEM grads and second in the nation for highest number of residents who are scientists and engineers.<sup>66</sup>
- Eight universities in NY state offer FinTech degree programs, including various bootcamps, and bachelor's and master's programs. Six of these universities are located in the New York City area. In comparison, five universities in Massachusetts offer FinTech degree programs.<sup>67</sup>
- In 2015, New York City launched the Computer Science for All initiative. Since its inception, the program has trained over 100,000 students. The City University of New York's ("CUNY") 2X technology program has also doubled the number of CUNY graduates with tech-related bachelor's degrees since the program's creation in 2017.<sup>68</sup>

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<sup>58</sup> Tracxn

<sup>59</sup> "Fintech Focus," KPMG UK

<sup>60</sup> "Fintech," UK Department for Business & Trade

<sup>61</sup> "United Kingdom – County Commercial Guide," International Trade Administration

<sup>62</sup> Start-up Genome

<sup>63</sup> Area Development

<sup>64</sup> "The 10 Biggest Fintech Companies in America 2023," Forbes

<sup>65</sup> "2023 Academic Ranking of World Universities," Shanghai Ranking

<sup>66</sup> Start-up Genome

<sup>67</sup> FintechDegrees.org

<sup>68</sup> Start-up Genome

## Capital

- New York City is ranked second in national FinTech investment, with more than \$10.4 billion in VC invested in 2022, in comparison with \$2.3 billion invested in NY's FinTech sector in 2015. There is also about \$8.8 trillion held by NY's financial and insurance institutions.<sup>69, 70</sup>
- AI has been a particularly strong sector in New York City, in terms of capital. In 2022, generative AI companies in NY raised over \$483.6 million over 38 funding rounds. Alphasense, a market intelligence search engine powered by AI, was able to achieve unicorn status with \$100 million in additional Series D funding in April 2023.<sup>71</sup>

## Policy and regulation

- In 2022, the Federal Reserve Bank of New York ("FRBNY") launched the Innovation Advisory Council. The goal of this advisory group is to present views and perspectives to the FRBNY on emerging issues related to financial technologies and digital innovation, the application and market impact of these technologies, and the potential impact of the FRBNY's ability to achieve its mission.<sup>72</sup>
- The Qualified Emerging Technology Company certification and Capital Tax Credit program provide tax credits for businesses that are considered qualified emerging technology companies ("QETCs"). These QETCs are companies located in NY state that have total annual product sales of \$10 million or less that either fit a set of primary products or services or have R&D activities in the state.<sup>73</sup>

## Infrastructure and technology

- The number of technology jobs in New York City has grown by over 140 percent over the last decade. With the city's explosive growth, it has been able to cement its status as the nation's second largest FinTech hub behind San Francisco. As of 2022, the technology sector accounts for 5.2 percent of the city's total private sector employment, nearly two times greater than 2010.<sup>74</sup>
- The NY metro area's finance and insurance industry and related occupation concentration is at least three times the national average.<sup>75</sup>
- New York City is well-positioned in many of the emerging tech sub-industries poised for growth. The city has experienced start-up growth of at least 50 percent in 10 different tech fields since 2016, including blockchain, real estate tech, artificial technology, and augmented reality. As of 2022, there are over 25,400 tech-enabled start-ups in New York City, as well as 35 FinTech unicorns.<sup>76</sup>
- Banks, capital market firms, and insurers have become increasingly interested in the benefits of a local FinTech cluster. Unlike Silicon Valley, New York City is able to offer proximity of a considerable potential customer base of financial institutions and a vast existing financial technology workforce, in addition to its burgeoning venture ecosystem. As such, the city is naturally a competitor to be a world leader of FinTech capital.<sup>77</sup>
- 2021 data revealed that New York state's year-over-year increase in the number of FinTech jobs was around 246 percent. The average tenure for FinTech tech professionals is about 2 years.<sup>78</sup>

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<sup>69</sup> Empire State Development

<sup>70</sup> "Fintech's Golden Age," Accenture, Partnership for New York

<sup>71</sup> Start-up Genome

<sup>72</sup> "New York Fed Launches Innovation Advisory Council," Federal Reserve Bank of New York

<sup>73</sup> NYC MyCity: Official Website of the City of New York

<sup>74</sup> "New York's New Jobs Engine," tech:nyc, Center for an Urban Future

<sup>75</sup> Bureau of Labor Statistics (BLS)

<sup>76</sup> "New York's New Jobs Engine," tech:nyc, Center for an Urban Future

<sup>77</sup> "The Rise of Fintech: New York's Opportunity for Tech Leadership," Accenture, Partnership for New York City

<sup>78</sup> "Global FinTech Talent Report," Robert Walters Group

## Interconnectivity

- There are 296 accelerators and incubators in New York City.<sup>33</sup> FinTech Innovation Lab, cofounded by the Partnership Fund for New York City and Accenture, is an accelerator program that has supported over 300 early-stage FinTech companies, created more than 2,500 jobs, and raised over \$2.5 billion.<sup>79</sup>
- Several notable FinTech events take place in New York City. NY FinTech Week is an annual, large-scale forum with more than 17,000 founders, investors, and financial service professionals in attendance. NY FinTech Women is a key gathering for bringing together and empowering women within the FinTech industry.<sup>80</sup> In addition, there is the FRBNY conference on FinTech, which brings together leading academics, policymakers, and industry leaders to further their understanding of the impact, implications, and direction of FinTech.<sup>81</sup>

## San Francisco

### Overview

San Francisco has continually ranked among the top global FinTech hubs and the largest in the U.S.<sup>82</sup> The area is also home to Silicon Valley, the world's preeminent hub for technology and innovation, creates a strong core to support FinTech innovation.

Seven of the 10 largest FinTech companies in the U.S. of 2023 (Stripe, Chime, Ripple, Plaid, Brex, Bolt, and Alchemy) are headquartered in the area, as well as other notable companies including PayPal, Intuit, Credit Karma, Mercury, FalconX, and Square.<sup>83</sup> As of 2021, the San Francisco area has 14 FinTech companies that classify as unicorns, with eight added just that year.<sup>84</sup>

### Talent and culture

- Six of the 25 highest ranked global universities by academics are located in California.<sup>85</sup>
- Four schools in California provide degree programs in FinTech, including a bootcamp and master's programs.<sup>86</sup>
- Silicon Valley is considered to be home to many of the U.S.' best and brightest STEM minds. The area is also known for having the great concentration of tech companies in the country. Stanford University, which is located in the heart of Silicon Valley, has produced the founders of Nike, Google, Hewlett Packard, and Yahoo, as well as 59 Nobel laureates and 17 astronauts.<sup>87</sup>
- In 2021, the San Francisco State University launched the "FinTech Initiative" to provide students with an understanding of the intersection between finance and technology, increase financial literacy, and improve job prospects for students. The initiative includes a FinTech Fellows program that involves FinTech courses and alumni career services, biannual FinTech conferences that together academics, industry leaders, and policymakers to discuss FinTech-related issues, and an investment fund managed by students.<sup>88</sup>

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<sup>79</sup> FinTech Innovation Lab

<sup>80</sup> Start-up Genome

<sup>81</sup> Federal Reserve Bank of New York

<sup>82</sup> Start-up Genome

<sup>83</sup> "The 10 Biggest Fintech Companies in America 2023," Forbes

<sup>84</sup> "Global FinTech Rankings Report: Bridging the Gap 2021," Findexable

<sup>85</sup> "2023 Academic Ranking of World Universities," Shanghai Ranking

<sup>86</sup> FintechDegrees.org

<sup>87</sup> Startup Genome

<sup>88</sup> San Francisco State University

## Capital

- Six of the 10 most active global investors in FinTech VC deals since 2017 are in California, with five located in the San Francisco Bay Area. These investors include 500 Global, Coinbase Ventures, and Soma Capital.<sup>89</sup>
- San Francisco has a strong history in creating world-famous FinTech businesses. Step, a financial platform aimed at youth, has raised a total of \$500 million while Ascent, an insurance payments platform, raised a \$30 million Series A.<sup>90</sup>
- FinTech company Stripe, located in the San Francisco Bay Area, had the greatest global financing in the second quarter of 2023 at \$6.9 billion.<sup>91</sup>

## Policy and regulation

- In 2020, the California Consumer Privacy Act (“CCPA”) was introduced. This Act gave residents of California control over their data and aimed to protect consumers without generally restricting information collection. A study conducted on the effects of the CCPA found that the privacy protections offered by the Act made users more willing to share data with FinTech businesses.<sup>92</sup> These findings offer insight into how state-level legislation can positively impact FinTech, as many FinTech firms often require large amounts of consumer data. While consumers may not always be willing to freely share their data, privacy policies like the CCPA provides consumers with greater control and transparency over their own data and allows them to feel more at ease about its potential use. Legislation like the CCPA may be able to lower regulatory barriers for FinTech firms without sacrificing consumer protections.

## Infrastructure and technology

- Silicon Valley provides the San Francisco area with an existing pool of talent and the infrastructure to support businesses that have a strong technological focus. The area is also known for having a strong access to funding, high level of knowledge, and considerable connections that help it maintain its standing as a leading tech hub.<sup>93</sup>
- The Bay Area has a technology occupation concentration at least twice the national average.<sup>94</sup>
- San Francisco has about a 200 percent year-over-year increase in the number of FinTech jobs, based on 2021 data. The fast pace of the local job market means that professionals are often willing to wait to join the most relevant job opportunity and company. The average tenure of FinTech professionals is typically around 1.8 to 2 years.<sup>95</sup>

## Interconnectivity

- There are 425 accelerators and incubators in the San Francisco area<sup>96</sup> Since 2010, VC firm 500 Global's Flagship Accelerator Program has provided funding for early-stage start-ups in Silicon Valley. The firm offers a seed investment of \$150,000, as well as access to full programming that is focused on start-up growth and scaling.<sup>97</sup> Other notable accelerators include Y Combinator, Techstars, and Plug and Play Tech Center.<sup>98</sup>
- San Francisco also hosts many FinTech events. The University of California Santa Cruz, San Francisco State University, and the Federal Reserve Bank of San Francisco jointly cohost the FinTech Conference. The conference features experts from industry, academia, policymakers, and regulators and gives

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<sup>89</sup> Pitchbook Data, Inc 2023. Accessed August, 2023.

<sup>90</sup> Startup Genome

<sup>91</sup> “Venture Pulse Q2 2023,” KPMG

<sup>92</sup> “Privacy regulation, fintech lending, and financial inclusion,” Center for Economic Policy and Research

<sup>93</sup> Startup Genome

<sup>94</sup> “San Francisco Bay Area Retains Top Spot on CBRE's Annual Scoring Tech Talent Report” CBRE

<sup>95</sup> “Global Talent Shortage Threatens Growth of Fintech Sector” European Business Magazine

<sup>96</sup> Tracxn

<sup>97</sup> 500 Global

<sup>98</sup> “Climate FinTech: Mapping an Emerging Ecosystem of Climate Capital Catalysts,” New Energy Nexus

opportunities for discussion of FinTech key issues and networking with FinTech experts and leaders.<sup>99</sup> FinTech Retreats provides a forum for fostering collaboration between government agencies, financial institutions, founders, legal and consulting firms, venture firms, and academics.<sup>100</sup> FinTech Talents Embedded Finance & Super-Apps North America brings together a community that includes banks, ecommerce companies, financial institutions, FinTech businesses, and tech innovators for lessons from various FinTech professionals and networking opportunities.<sup>101</sup>

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<sup>99</sup> San Francisco State University

<sup>100</sup> FinTech Retreats

<sup>101</sup> FinTech Talents





## 7. Recommendations

# Recommendations

The following section delineates a series of potential opportunities for advancement and progress in the Massachusetts' FinTech ecosystem. These items are organized into five categories, including capital, interconnectivity, policy and regulation, talent and culture, and infrastructure and technology. The recommendations are based on the comprehensive research effort undertaken by KPMG as summarized in this Report, which incorporates both qualitative and quantitative data-gathering methods, such as the 2023 survey, one-on-one and focused group interviews, and desktop research. The recommendations are informed by the perceptions and suggestions of ecosystem participants, statistical data, and observations from other leading markets. These recommendations are intended to provide insights for Massachusetts' FinTech ecosystem.

## Capital

### Increase visibility efforts for venture capital

As discussed in the **Massachusetts FinTech ecosystem reassessment** section of this study, some FinTech ecosystem participants perceive VC funding in Massachusetts to be more limited. However, as illustrated in **Figure 6**, FinTech funding in Massachusetts has increased by a CAGR of more than 40 percent in the past three years. In addition, Massachusetts ranked fourth in 2022 in terms of funding received by FinTech companies nationwide, trailing only California, NY, and Florida. As a percentage of gross state product, FinTech VC funding in Massachusetts is among the highest nationally.<sup>102</sup> Therefore, perceptions of a lack of access of capital in Massachusetts may reflect a lack of broader awareness of suitable opportunities or a mismatch between entrepreneurs and VC niches. This can be an issue because it may discourage potential investors and entrepreneurs from pursuing opportunities in the state. Additionally, if stakeholders are not aware of the funding opportunities that do exist, they may miss out on potential investments and partnerships.

Ecosystem accelerators or incubators have the potential to assist start-ups by developing broader connections to VCs in Boston and throughout the Northeast that are categorized by FinTech subsector or cause. This approach could allow start-ups to identify and connect with VCs that align with their specific objectives and values more easily. Broader connections will not only help start-ups secure funding but also foster relationships with VCs that can offer valuable guidance and support. Overall, creating a repository of VCs in Boston could be a valuable tool for ecosystem accelerators or incubators to support start-up success.

## Interconnectivity

### Improve interconnectivity of stakeholders across the Commonwealth

As previously discussed in the **Massachusetts FinTech ecosystem reassessment** section of this study, ecosystem participants residing in Western Massachusetts expressed that they would like to see more FinTech events in their area. It is worth noting that as illustrated in **Figure 5**, most of the capital invested in Massachusetts—almost 90 percent—has been directed toward companies located in the Boston area over the past three years. A large majority of start-up activity occurring in Boston adds to the concentration of the

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<sup>102</sup> U.S. Bureau of Economic Analysis, "SASUMMARY State annual summary statistics: personal income, GDP, consumer spending, price indexes, and employment". Accessed September, 2023.

events in that region. However, if ecosystem participants do not feel engaged then it can lead to a lack of diversity and representation within the ecosystem. This can limit the range of perspectives and ideas that are being shared, as well as inhibit opportunities for growth. A potential initiative to improve connectivity and collaboration across Massachusetts could involve organizing FinTech-focused events, meetups, and establishing more coworking spaces across the state that focuses on stakeholders from diverse backgrounds and subsector focus. In addition, ecosystem hub leaders could increase efforts to hold networking events in areas outside of Boston to bring components of the FinTech industry, particularly in Western Massachusetts, together. Lastly, creating FinTech sub-groups or champions to lead efforts in other parts of the state could be valuable as well.

Several stakeholders who replied to the 2023 survey cited a need for increased diversity and inclusion among FinTech start-ups. FinTech organizations in other markets are increasingly focused on promoting inclusion as well. As a comparison, New York City holds multiple events each year including NY FinTech Week, NY FinTech Women, and the New York Fed Conference on FinTech, each of which bring together several types of stakeholders to discuss the direction of FinTech.

## Prioritize scaling ecosystem activities

The Massachusetts FinTech ecosystem has all the essential elements in place for success, but the scale of its activities must increase. Improving scalability and sustainability across all sectors of the FinTech ecosystem in Massachusetts is an important step to becoming more accessible. One way to achieve this is to provide ecosystem participants with more targeted information and resources. Such information could include, as an example, information on relevant funding opportunities, opportunities to connect with professional services or legal advisors, upcoming changes in regulatory requirements, or recent industry trends, among other topics. Additionally, utilizing technology tools could help to provide immediate support and guidance to participants, improving their overall experience and satisfaction with the ecosystem.

In addition, improving interconnectivity across stakeholders in the FinTech ecosystem should focus on greater engagement with policymakers and regulators, which is an aspect highlighted in the [Map of the ecosystem](#) section as an aspect that industry stakeholders seek. By better understanding the needs of ecosystem participants, policymakers and regulators can also work more effectively to address those needs. This may involve increased investment, closer coordination with other stakeholders, and more targeted activities geared towards FinTech. Ultimately, improving interconnectivity and engagement with policymakers and regulators could help to create a more supportive and collaborative ecosystem that can better serve the needs of all stakeholders.

## Policy and regulation

### Create a regulatory sandbox

A regulatory sandbox is a program that allows individuals or companies to test new financial or insurance products and services on a temporary basis, without having to comply with the usual licensing and regulatory requirements of the state. The concept of a regulatory sandbox in Massachusetts has been a recurring theme in the FinTech ecosystem. This was suggested in the 2020 FinTech Benchmark and mentioned again in the 2023 survey by various stakeholders. Specific comments from the 2023 survey highlighted the importance of considering a regulatory sandbox to provide a supportive environment for start-ups to test new ideas and products while reducing the regulatory burden on early-stage firms for a defined period of time. A regulatory sandbox in Massachusetts that is focused on FinTech firms might help foster stronger growth in the ecosystem, as start-ups may be hesitant to pursue new ideas if they are unsure of how they will be received by regulators.



It is worth noting that regulatory sandboxes have been successfully implemented in several other hubs. For example, California's regulatory sandbox was established through legislation signed into law by Governor Gavin Newsom in 2018. The legislation authorized the California Department of Business Oversight to create and administer the program, which was launched in 2019. In addition, in 2021 North Carolina enacted a new law that formed a regulatory sandbox. It also commissioned the formation of an "Innovation Council" that serves to receive and approve applications for entry.<sup>103</sup> The program was created in response to the growing need for regulatory flexibility in the rapidly evolving FinTech industry and is part of a broader trend towards regulatory sandboxes in other jurisdictions around the world.

## Increase opportunities to interact with policymakers and regulators

To ensure the continued growth and success of the FinTech industry in Massachusetts, it is important to identify areas where investment is most needed and involve policymakers and regulators as necessary. As noted in the [Massachusetts FinTech ecosystem reassessment](#) section, ecosystem participants have expressed a desire for greater connection points with policymakers and regulators generally.

One potential solution could be to establish regular meetings or forums where ecosystem participants can engage with policymakers and regulators to discuss issues and opportunities in the industry. Additionally, ecosystem organizers could work to establish partnerships with government agencies and policymakers to provide more targeted support and resources to start-ups and other ecosystem participants. This could involve providing funding or other incentives to encourage the development of innovative FinTech solutions that address key challenges in the industry. For example, in NY, the START-UP NY program allows for tax benefits to businesses that are based in approved locations near colleges and universities. These approved businesses can operate tax-free for a period of time and access advanced research laboratories, development resources, and experts in key industries which encourages and promotes start-up creation in the state. By involving policymakers and regulators more actively throughout the ecosystem, Massachusetts could create a more supportive and collaborative environment that encourages innovation in the FinTech sector.

## Talent and culture

### Promote diversity of the ecosystem

Several stakeholders in the FinTech ecosystem have suggested focusing on promoting diversity and inclusion and emphasizing individual characteristics as a means to enhancing the FinTech ecosystem. This is an important issue because if stakeholders do not feel represented in the ecosystem, they may seek out other hubs that are perceived as more diverse and inclusive.

To further enhance diversity and inclusion, ecosystem organizers could consider a variety of approaches such as hosting events and workshops focused on diversity and inclusion, partnering with organizations that promote diversity and inclusion, and providing resources and support specifically targeted towards underrepresented groups in the ecosystem. Additionally, ecosystem organizers could work to establish mentorship and networking programs that connect underrepresented groups with established leaders in the industry, providing them with valuable guidance and support.

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<sup>103</sup> Financial and Insurance Regulatory Sandbox, North Carolina Innovation Council. Accessed October, 2023.

## Increase available resources to talent pool

As a part of the 2023 survey and findings from the series of one-on-one and focus-group interviews held, KPMG found that there is an opportunity in the ecosystem to improve engagement with students in Massachusetts as a means to attract and retain talent. In particular, students who attend college in Massachusetts indicated that they have difficulties finding FinTech jobs in the state.

Given the strong talent pool that already exists within the state, FinTech oriented businesses should consider new strategies to engage with students. FinTech can help connect with students through centralized FinTech-specific job boards where human resources from FinTech firms can post opportunities. FinTech firms could also create opportunities for more individualized face-to-face interactions, particularly with smaller firms that may not have capacity to attend university job fairs. In addition, expansion of specialized, FinTech-focused undergraduate and graduate programs among Massachusetts' universities could be helpful in creating a skilled pool of FinTech workers in the state. Several universities in Massachusetts currently offer such programs.

## Infrastructure and technology

### Play to the Commonwealth's strengths

Advancing the Massachusetts ecosystem will require coordinated efforts among multiple organizations and stakeholders. As part of the 2023 survey and findings from the series of one-on-one and focus-group interviews, leading ecosystem participants noted that while there are many important initiatives in motion, there is also an opportunity to create a more focused work plan to achieve success in the Massachusetts FinTech hub. Several ecosystem participants suggested that organizers could consider delegating specific tasks to organizations around Massachusetts to help achieve these goals. This could involve creating teams and champions to lead specific initiatives and assigning tasks to help achieve these goals. As highlighted in the **Current FinTech trends** section, the ecosystem has grown significantly in the past three years, but to compete with hubs like California and NY, it will need to take a more focused approach that emphasizes subsectors in which Massachusetts already possesses a comparative advantage. By prioritizing key initiatives and leveraging the strengths of different organizations and stakeholders, Massachusetts could create a more cohesive and effective ecosystem.

### Actively monitor innovation across FinTech hubs

To ensure that the hub is constantly improving and learning from other hubs, periodic updates regarding the activities occurring in other FinTech hubs may help inform and assess the potential for similar initiatives in Massachusetts. A periodic assessment might entail analysis of successful practices from other hubs, pending legislation in other regions that may be relevant for FinTech, and changes in investment and start-up activity, among other things. Massachusetts can look to leverage and model innovative and successful initiatives from both established and emerging hubs.

Certain leading practices in other hubs may translate well into the Commonwealth's ecosystem. For example, the U.K. has instituted multiple FinTech bridge agreements with other global FinTech hubs including Singapore, South Korea, China, Hong Kong, and Australia. These agreements promote information sharing, such as emerging trends and regulatory issues, between governments and create an environment to share areas of best practices among counterparts. To stay ahead of the curve, Massachusetts needs to dedicate resources to constantly research and implement new ideas. By doing so, the Commonwealth can stay at the forefront of innovation in the FinTech space.



## Highlight success stories

This Report shows significant growth in various segments of the Commonwealth's FinTech ecosystem. However, based on feedback from stakeholders including entrepreneurs, students, and VC providers, there is a prevailing sentiment that Massachusetts still has room to grow in terms of its global eminence as a top FinTech hub. To address this, Massachusetts should highlight its homegrown success stories involving start-ups, founders, innovative technologies developed at local universities, FinTech spinouts, industry-led innovation models, and/or corporate partnerships.

Highlighting FinTech companies that have scaled successfully can also help attract more attention and investment to the ecosystem. Additionally, the Commonwealth could improve upon its global brand by implementing initiatives and events that emphasize the ecosystem's leading industries, tight-knit local community, and opportunities to form close connections with other industry stakeholders.



# 8. Appendix

# Appendices



|   |           |
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| <b>A. Glossary</b>                              | <b>61</b> |
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## A. Glossary

| Acronym / Portmanteau  | Definition  |
|------------------------|---|
| 2020 FinTech Benchmark | Now, Next and Beyond: Analysis of the FinTech Ecosystem in the Commonwealth of Massachusetts (2020) |
| 2023 Survey            | 2023 FinTech Ecosystem Survey   |
| AI                     | Artificial Intelligence   |
| APAC                   | Asia – Pacific  |
| B2B                    | Business to Business services   |
| B2C                    | Business to Consumer services   |
| BEA                    | U.S. Bureau of Economic Analysis  |
| BioTech                | Biotechnology   |
| BLS                    | U.S. Bureau of Labor Statistics   |
| CA                     | California  |
| CAGR                   | Compound Annual Growth Rate   |
| CCPA                   | California Consumer Privacy Act   |
| COVID-19               | Coronavirus Disease of 2019   |
| CUNY                   | City University of New York   |
| DevOps                 | Software Development and Information Technology Operations  |
| EIU                    | Economist Intelligence Unit   |
| EMEA                   | Europe, Middle East, and Africa   |
| ESG                    | Environmental, Social, and Governance   |
| FinTech                | Financial Technology  |
| FRBNY                  | Federal Reserve Bank of New York  |
| HealthTech             | Health Technology   |
| InsurTech              | Insurance technology  |
| MassTech               | Massachusetts Technology Collaborative  |
| NFTs                   | Non-Fungible Tokens   |
| NY                     | New York  |
| P2P                    | Peer to Peer Services   |

| Acronym / Portmanteau | Definition  |
|-----------------------|---|
| PE                    | Private Equity                                    |
| RegTech               | Financial Regulatory Technology                   |
| RPPS                  | Regional Price Parities                           |
| SEC                   | Securities and Exchange Commission                |
| STEM                  | Science, Technology, Engineering, and Mathematics |
| QCEW                  | Quarterly Census of Employment and Wages          |
| QETCs                 | Qualified Emerging Technology Companies           |
| UI                    | User-Interface                                    |
| U.K.                  | United Kingdom                                    |
| UX                    | User-Experience                                   |
| VC                    | Venture Capital                                   |
| YTD                   | Year to Date                                      |



## B. Definition of FinTech verticals

| FinTech Vertical            | Definition  |
|-----------------------------|---|
| Blockchain                  | Core business activities based upon distributed ledger technology and/or relating to uses of cryptocurrencies and enabling technologies   |
| Capital markets             | Sales or trading, primary or secondary capital market activities, and related technologies  |
| Infrastructure and security | Data analytics software for financial activities, cybersecurity for financial activities, and regulatory and compliance or fraud prevention software  |
| InsurTech                   | Core business activities across the insurance value chain, including corporate platforms, brokers, cyber insurance, underwriting software, claims software, and digital sales enabling technologies |
| Lending                     | Technologies related to intermediation activities for the provision of money or credit to businesses or consumers, related technologies providing analytics or reporting to lenders                 |
| Payments                    | Businesses and technologies that utilize technology to transfer financial assets as a service (including B2B, B2C, and P2P transfers)   |
| Personal finance            | Activities that utilize technologies to aid consumers in managing budgets and expenditures  |
| Wealth management           | Activities that apply technology in ways to lower costs or improving access to wealth management services for retail investors  |

## C. Description of ecosystem stakeholders

A brief definition of each stakeholder type can be found in the table below.

| Stakeholder                                  | Description  |
|--|--|
| Traditional financial institutions           | Includes banks, wealth management or asset management, insurance companies, and other financial intermediaries that perform financial activities for customers   |
| Entrepreneurs/Founders and FinTech start-ups | Includes organizations that form new business ventures or are employed in scaling up such new enterprises  |
| Universities/Academics and students          | Includes those who are dedicated to academic research, education, or related activities for development or transfer of new technologies to the private sector  |
| Policymakers and regulators                  | Includes those who create or enforce regulations, laws, or other guidance or oversight for financial activities at the international, federal, or state levels   |
| Accelerators/Incubators and nonprofits       | Includes programs or organizations that serve as nest beds for early-stage ventures to access capital, receive professional or organizational guidance, or serve as connective tissue for other ecosystem stakeholders     |
| Capital providers                            | Includes individuals or institutions that provide funding or investment capital to businesses or entrepreneurs; this can include venture capitalists, angel investors, PE firms, and other types of financial institutions |

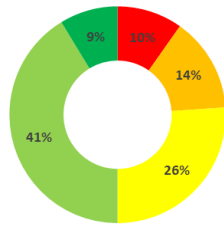
## D. Additional 2023 survey results

This section presents data summaries relating to responses to several questions that participants in the FinTech 2023 survey provided.<sup>104</sup>



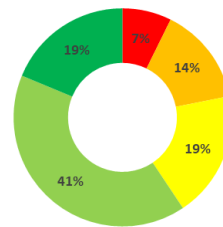
<sup>104</sup> The *n* (count of respondents) in each chart excludes those that answered “N/A” or otherwise did not respond. If *n* (count of respondents) is not included in the charts it can be assumed that *n* equals 96, which is the total size sample (excluding respondents to the student questionnaire).

### Availability of and Access to Capital



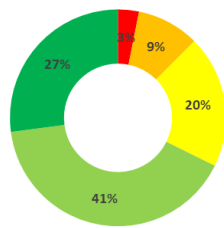
Very weak Somewhat weak Neutral Somewhat strong Very strong

### Collaboration Across Stakeholders



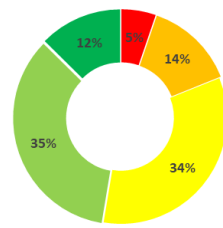
Very weak Somewhat weak Neutral Somewhat strong Very strong

### Development and Support of New Technologies



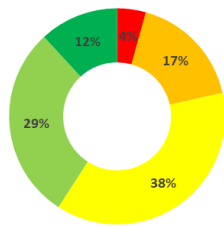
Very weak Somewhat weak Neutral Somewhat strong Very strong

### Ease of Access to Customers



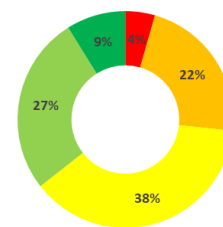
Very weak Somewhat weak Neutral Somewhat strong Very strong

### Ease of Doing Business in the State



Very weak Somewhat weak Neutral Somewhat strong Very strong

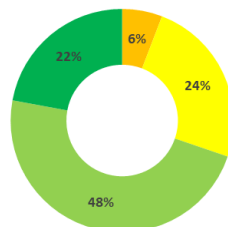
### Ease of Access to Customers



Very weak Somewhat weak Neutral Somewhat strong Very strong

### Accessing New Technologies Today vs. 3 Years Ago

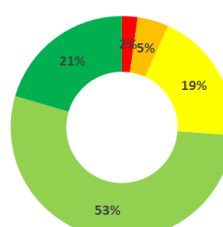
n = 86



Much worse Somewhat worse No change Somewhat better Much better

### Collaborating with FinTech Stakeholders Today vs. 3 Years Ago

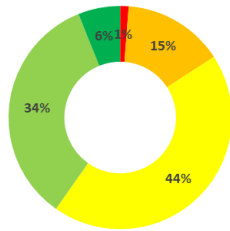
n = 88



Much worse Somewhat worse No change Somewhat better Much better

### Complying with Regulations Today vs. 3 Years Ago

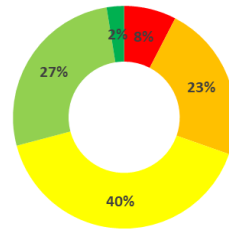
n = 82



■ Much worse ■ Somewhat worse ■ No change ■ Somewhat better ■ Much better

### Gaining Access to Office Space Today vs. 3 Years Ago

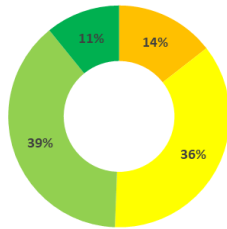
n = 79



■ Much worse ■ Somewhat worse ■ No change ■ Somewhat better ■ Much better

### Access to Incubators or Accelerators Today vs. 3 Years Ago

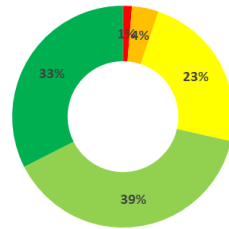
n = 83



■ Much worse ■ Somewhat worse ■ No change ■ Somewhat better ■ Much better

### Gaining Access to Office Space Today vs. 3 Years Ago

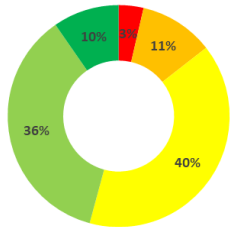
n = 77



■ Much worse ■ Somewhat worse ■ No change ■ Somewhat better ■ Much better

### Sourcing Talent Today vs. 3 Years Ago

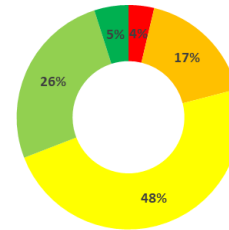
n = 83



■ Much worse ■ Somewhat worse ■ No change ■ Somewhat better ■ Much better

### Supportiveness of Policy and Regulations Today vs. 3 Years Ago

n = 81



■ Much worse ■ Somewhat worse ■ No change ■ Somewhat better ■ Much better



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