Exploring New York City's Economic Sectors

HIGHLIGHTS

P. 1 35,000 NYC tech ecosystem workers are employed in Finance

P. 3 Finance and Insurance represented 30.9% share of total private sector payroll in 2014

P. 4 OnDeck Capital's December 2014 IPO valued the company at $1.32 billion

P. 6 NYC FinTech companies received $464.3 million in funding in 2014
FINANCIAL TECHNOLOGY, OR FINTECH, has emerged not only as a core competency of the financial services industry but as an important extension as well. New York City, the world’s financial capital and home to a rapidly growing tech ecosystem, is well-positioned to become the world leader in FinTech. New York City has the second largest tech ecosystem in the country behind Silicon Valley, but FinTech firms located in New York City enjoy a number of unique advantages not present in other areas of the country; for example, the city is home to a large talent pool with experience in the financial services industry. New York City’s FinTech startups also benefit from the presence of venture capital firms that have a strong connection to Wall Street and the financial services industry.1

Employment and Establishments

The growth of FinTech in New York City is aided by the city’s emergence as a hub of tech talent. According to the Partnership for New York City, high tech employment grew 21% in the city between 2006 and 2014, compared to 12% growth nationwide.2 The city’s tech workers are spread across industries, and financial services is one industry that has been particularly revolutionized by technology over the past 15 years. According to the NYC Tech Ecosystem report by HR&A Advisors, there were 291,000 workers in the New York City tech ecosystem in 2014; of these, approximately 35,000 (12%) worked in the Finance subsector.3 The importance of being a global financial hub is evidenced by employment figures; New York City and London each have an estimated FinTech labor force four times the size of that in San Francisco-Silicon Valley.4

There is no one NAICS Code for FinTech. We define it here as the following NAICS Codes: 511210, 518210, 522291, 522320, 523930, and 541511 (Software publishers; Data processing, hosting, and related services; Consumer lending; Financial transactions processing; Investment advice; Custom computer programming services). This is not an exhaustive list of NAICS Codes that contain FinTech companies, and not all companies within the selected NAICS codes are FinTech companies. This definition of FinTech is our best approximation given the available data.

Figure 1 shows the growth of total establishments and employment for six of the industries that FinTech companies belong to: software publishing, data processing, hosting and related services, consumer lending, financial transactions processing, investment advice, and custom computer programming services. The number of establishments in these areas grew by 57.6% between 2004 and 2014, while employment increased by 96.1% in the same period.

In 2014, 2.5% of establishments, 5.6% of jobs, and 17.1% of wages in Finance and Insurance nationwide were located in New York City.5 The number of Finance and Insurance establishments grew 22.5% from 2004 to 2014, while employment increased 1.7% in the same period (Figure 2). Employment in 2014 was down 6.9% from a pre-recession high in 2007. Finance and Insurance employment fell 3.1% nationwide from 2004 to 2014 (Figure 3).

![Figure 1: FinTech Establishments and Employment in NYC, 2004–2014](source)

![Figure 2: Finance and Insurance Establishments and Employment in NYC, 2004–2014](source)
Among Finance and Insurance subsectors (Figure 4), Credit Intermediation and Related Activities employment grew 6.4% from 2004 to 2014, while employment grew 3.9% in the Insurance Carriers and Related Activities subsector and 2.1% in the Securities, Commodity Contracts, and Other Financial Investments subsector. Employment fell 92.4% from 2004 to 2014 in the Funds, Trusts, and Other Financial Vehicles subsector.

Borough Comparison

Employment in Finance and Insurance is predominantly located in Manhattan, home to the financial hubs of Wall Street and Midtown. Manhattan’s share of Finance and Insurance establishments, employment, and industry payroll in New York City was 68.5%, 87.9%, and 96.7%, respectively. However, industry employment only increased 1.6% in Manhattan from 2004 to 2014, compared to growth of 18.7% in Queens and 21.2% in the Bronx over the same period.

“Silicon Alley” (originally used to describe the area between Union Square and the Flatiron Building in Manhattan) is home to such FinTech companies as Betterment and Gemini, but New York City FinTech companies are located in all five boroughs, notably in Brooklyn. Kickstarter, headquartered in Greenpoint, has over 100 employees.

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, NAICS Code 52
Wages
Average wages in New York City for Finance and Insurance were $294,220 in 2014, 202% higher than the industry’s national average of $97,370. Real wages rose 31.9% from 2004 to 2007 but fell 10.3% between 2007 and 2014. Within Finance and Insurance, average wages were highest in the Securities, Commodity Contracts, and Other Financial Investments and Related Activities subsector ($404,840).

Finance and Insurance’s share of total NYC payroll was 30.9% in 2014, down from a pre-recession peak of 37.3% in 2007 (Figure 7). Finance and Insurance remains the largest industry in New York City in terms of payroll, and is the industry with the highest average wages.

Figure 7: Finance and Insurance Share of NYC Payroll

Source: New York State Department of Labor, Quarterly Census of Employment and Wages, NAICS Code 52

ELECTRONIC TRADING — AN EVOLVING INDUSTRY
While the floor of the New York Stock Exchange (NYSE) on Wall Street and the Nasdaq MarketSite at Times Square are where newly listed companies celebrate initial public offering and remain important fixtures of the city’s economy, securities trading itself increasingly takes place on computers. The vast majority of trades occur on electronic exchange platforms such as the NYSE (now owned by Intercontinental Exchange) or NASDAQ. A growing pool of electronic trades are also being exchanged on Alternative Trading Systems (ATS), which are trading venues that are typically regulated as broker-dealers rather than traditional securities exchanges. ATS are often used by investors to trade large blocks of shares.

A new entrant in the electronic trading market is IEX, a New York City-based equity trading venue led by President and CEO Brad Katsuyama. Profiled in Michael Lewis’ book Flash Boys, IEX began operating an Alternative Trading System (ATS) in October 2013; the company is currently applying to operate as a stock exchange. One of IEX’s distinctive features is a lag in the flow of trading information, designed to mitigate the advantages of high-frequency trading. IEX achieved its highest-ever market share of 1.86% in August 2015. According to IEX Head of Product Matt Trudeau, the New York City talent pool is key; the city represents a strong combination of financial services and tech.

Industry Trends
The growth of New York City’s FinTech ecosystem is dependent on the proliferation of new, innovative companies and the growth of the city’s talent pool. A successful tech company will influence other companies; successful entrepreneurs mentor others, and employees of successful firms may go on to found new ones. This is the cycle that made Silicon Valley a tech hub over the course of several decades, and it is present within New York City’s “Silicon Alley” community today.

<table>
<thead>
<tr>
<th>Category</th>
<th>NYC Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lending</td>
<td>OnDeck Capital, LendKey, Crowdnetic</td>
</tr>
<tr>
<td>Payments/Billing Tech</td>
<td>Venmo, Dashlane, CardFlight</td>
</tr>
<tr>
<td>Personal Finance</td>
<td>Betterment, LearnVest, BillGuard</td>
</tr>
<tr>
<td>Money Transfer</td>
<td>Payoneer, PeerTransfer, Transfast</td>
</tr>
<tr>
<td>Digital Currency</td>
<td>itBit, Coin.co, TradeBlock</td>
</tr>
<tr>
<td>Institutional Tools</td>
<td>IEX Group, Estimize, Kensho</td>
</tr>
<tr>
<td>Crowdfunding</td>
<td>Kickstarter, Orchard Platform, Onevest</td>
</tr>
</tbody>
</table>
CROWDFUNDING
Crowdfunding is the practice of raising capital from a large number of actors outside of the traditional financial market system. While traditional venture capitalists may invest in a company in exchange for equity in the company, and possibly a seat on a board of directors, crowdfunding companies such as New York City-based Kickstarter provide a platform for members of the public to invest directly in projects. This new fundraising model has helped fund the production of hardware, software, consumer goods, infrastructure projects, works of art, films, and albums. With the SEC voting to implement Title III of the JOBS Act in October 2015, non-accredited investors are now allowed to participate in equity crowdfunding and invest in startups.

AUTOMATED WEALTH MANAGEMENT
Automated Wealth Management companies, sometimes colloquially referred to as “robo-advisors”, use computer technology and algorithms to allocate funds across different asset classes. These companies, including NYC-based Betterment and LearnVest, raised a combined $290 million in venture capital funding in 2014, more than double the amount raised in 2013. Betterment is one of the largest automated investing services, with over $3 billion in assets under management for more than 120,000 customers. Led by founder and CEO Jon Stein, the company partnered with Fidelity Investments in October 2014, connecting Betterment to investment advisors interested in utilizing the automated service.

CRYPTOCURRENCY
Cryptocurrency is a form of alternative currency that uses cryptography to control the supply of new units. The most well-known cryptocurrency is Bitcoin, which has grown rapidly since its beginnings in 2009. As of November 2015, all Bitcoins in circulation were valued at a total of over $4.8 billion. While Bitcoin’s short history has featured significant volatility, the cryptocurrency gained added legitimacy through BitLicense, state regulations introduced in 2014 that allow the New York State Department of Financial Services to issue business licenses for companies engaged in virtual currency activities. New York City-based Gemini, founded by Cameron and Tyler Winklevoss, is the second company to operate under the BitLicense rules. Gemini seeks to become a secure, easy-to-use exchange for Bitcoin.

MONEY TRANSFER
Money transfer companies seek to reduce the role of middlemen and reduce the cost of transferring money. Peer-to-peer transfer of funds can be costly, especially when taking into account exchange rates when sending money abroad. Companies such as TransferWise claim to save users up to 90% in fees; these companies operate in a world in which $500 billion is sent abroad annually. New York City-based Venmo facilitates a different type of money transfer, the transfer of payments between users.

GLOBAL FINTECH
FinTech companies are also having a profound impact in many other countries around the world. M-Pesa has made it possible for Kenyans, Tanzanians, and others to deposit, withdraw, or transfer money using their mobile phones. M-Pesa transactions in Kenya were valued at 43% of the country’s GDP in 2013. iZettle is a Swedish company that facilitates credit card payments over smartphone or tablet; the service is available to users in nine countries in Europe and Latin America.
institutions. Kickstarter is a crowdfunding platform for creative projects, and Estimize crowdsources estimates of stocks and economic indicators. The following table lists the main categories of FinTech companies, with examples that are based in NYC.

The financial crisis accelerated the growth of FinTech, as the financial services industry realized the need for change. Big banks such as HSBC and Santander have created their own in-house VC funds to invest in FinTech startups, allowing the banks to monitor innovation within the sector. Partnerships between established banks and FinTech startups can be advantageous for both parties, overcoming the high barriers to entry of the financial services sector and broadening the consumer base for startups. A recent example of such a partnership was the acquisition of LearnVest by Northwestern Mutual.20

Large banks such as JPMorgan and Goldman Sachs have invested in FinTech startups such as Square, a mobile payments company, and Motif Investing, an online broker.21 According to Motif Investing co-founder Hardeep Walia, “I think there are great opportunities to partner, even though a lot of these technologies may be disruptive. If you’re going to get disrupted, smart firms are going to want to partner with companies that are most disruptive.”22

Startups and established banks can view each other both as competitors and as potential partners. Wells Fargo runs a Startup Accelerator, providing guidance to startups while gaining exposure to new technologies.

Citi Ventures has partnered with Plug and Play FinTech in order to launch a FinTech and Security Accelerator.23

In New York City, established financial firms are setting up tech hubs in order to benefit from emerging ideas and talent. MasterCard, Capital One, and JPMorgan Chase have all leased offices in Manhattan for tech and digital employees. Barclays PLC and Techstars are launching a FinTech accelerator to develop 10 companies in the investment banking, wealth management, and credit card sectors.24

While New York still sits second behind Silicon Valley in the global FinTech landscape, compound annual growth rates in New York from 2008 to 2013 doubled compared to Silicon Valley’s in terms of both deals (31% vs. 13%) and funding (45% vs. 23%).

According to an analysis by CB Insights, the four key focus areas of FinTech for the top 12 venture capital firms are lending, personal finance management, payments technology, and bitcoin. FinTech deals by the top 12 VC firms nationwide grew by 61% between 2010 and 2013.25

The changes in banking regulations that have taken place over the past few years have spurred the proliferation and growth of FinTech companies specializing in risk management, data analytics, and trading platforms. According to McKinsey & Co., there were more than 12,000 startups in the United States focused on banking in 2014.26

### Total VC Funding for NYC FinTech Companies

Total VC funding for New York City FinTech companies grew 71.3% from 2013 to 2014, and funding is up 652.5% since 2008 in nominal terms. Global investment in FinTech ventures tripled in 2014, with $12.2 billion in funding compared to $4.1 billion in 2013. This 201% investment growth compares to 63% overall growth of VC investments in 2014.24

#### Figure 8: Selected VC funded deals for NYC-based FinTech companies since 2010 (in $millions)

<table>
<thead>
<tr>
<th>Company</th>
<th>Funding Amount</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>OnDeck Capital</td>
<td>$77.0</td>
<td>(Mar 14)</td>
</tr>
<tr>
<td>IEX Group</td>
<td>$75.0</td>
<td>(Sep 14)</td>
</tr>
<tr>
<td>Betterment</td>
<td>$60.0</td>
<td>(Feb 15)</td>
</tr>
<tr>
<td>ShopKeep POS</td>
<td>$60.0</td>
<td>(July 15)</td>
</tr>
<tr>
<td>SR Labs</td>
<td>$53.0</td>
<td>(Jan 13)</td>
</tr>
<tr>
<td>Lightspeed Financial</td>
<td>$30.0</td>
<td>(Oct 10)</td>
</tr>
<tr>
<td>LearnVest</td>
<td>$28.0</td>
<td>(Apr 14)</td>
</tr>
<tr>
<td>TxVia</td>
<td>$27.5</td>
<td>(Oct 10)</td>
</tr>
<tr>
<td>Payoneer</td>
<td>$25.0</td>
<td>(Mar 14)</td>
</tr>
<tr>
<td>iBid</td>
<td>$25.0</td>
<td>(May 15)</td>
</tr>
<tr>
<td>Reval</td>
<td>$23.0</td>
<td>(Mar 11)</td>
</tr>
<tr>
<td>Intent Media</td>
<td>$22.7</td>
<td>(Jul 14)</td>
</tr>
<tr>
<td>Group Commerce</td>
<td>$21.0</td>
<td>(May 12)</td>
</tr>
</tbody>
</table>

Source: CB Insights DealSearch database; using CB Insights’ “fintech” company list
The recent growth of FinTech is evidenced by the fact that the four largest funding deals for FinTech startups have occurred in the past two years; these four deals went to OnDeck Capital, IEX Group, Betterment, and ShopKeep POS.

Accelerators and Incubators

**FinTech Innovation Lab**
The FinTech Innovation Lab is a 12-week program that provides six companies with space, funding, and mentors from participating financial firms. Since 2010, the program has aimed to connect financial technology firms with leading financial firms and VCs. The program is run by the Partnership Fund for New York City, an arm of the Partnership for New York City, and Accenture. The program culminates in a Demo Day, during which the companies present their technologies to an audience of bank executives, investors, and journalists. Participating startups have raised $175M in funding after graduation from the program and have created 205 jobs. CB Insights, which provides and analyzes data on private companies, is a notable graduate of the program.

**Barclays Accelerator**
The Barclays Accelerator in New York City is a partnership between Barclays and Techstars that provides startups with mentors, co-working facilities, and networking opportunities. The New York City program began in July 2015 and culminated in a Demo Day in October. Techstars will invest $20,000 in each of the startups in exchange for a 6% stake in the company.

**ValueStream Labs**
ValueStream Labs was founded in 2013 as an accelerator that specializes in supporting FinTech startups in the early stages of a company’s growth process. ValueStream Labs’ accelerator program lasts for four months; the first company to graduate from the program was Estimize, a company that crowdsources estimates of economic indicators. According to ValueStream Labs’ Managing Partner Greg Neufeld, “the entire financial services industry is going to be reinvented with technology, and we think there is US$ 1.25 trillion in the US alone that’s up for grabs.”

State of the NYC Ecosystem

Betterment CEO Jon Stein doesn’t see his company as a disruptor; rather, he sees Betterment’s existence as “more of an evolution.” Betterment and other leading companies of the NYC FinTech ecosystem have been made possible by an evolution of thinking regarding financial services, an evolution of technology, and in many cases, an evolution out of necessity. Stein cites the burden of planning and funding retirement as one such necessity, as the burden has largely shifted from companies to individuals.

While companies in the NYC FinTech ecosystem have taken inspiration from Silicon Valley, the ecosystem has evolved in unique ways. There is a close proximity between NYC’s tech and FinTech companies—closer than in Silicon Valley. Recruiting a young, tech-savvy staff is easy due to the appeal of New York City itself. According to Stein, 90% of Betterment employees are not native New Yorkers; a company like Betterment needs to be in NYC, because “the people that we want are here.” NYC FinTech companies benefit from a tech talent pool as well as a financial services talent pool. While tech skills are integral to the success of FinTech companies – according to Matt Trudeau, Head of Product at equity trading venue IEX, “(IEX is) a tech company” – familiarity with finance and with financial regulations is invaluable.

FinTech in NYC has a promising future, yet barriers to further evolution remain. There are many young tech-driven companies, but few are already established and successful. It is hard for growing companies to find experienced candidates for senior management positions. While the city’s early-stage ecosystem is strong, a greater focus could be placed on helping these young companies make the transition to mid- to late-stage startups. Continued evolution will come through ongoing cross-industry collaboration, facilitated by organizations such as the New York Tech Meetup and the Empire Startups FinTech Meetup, and through the continued genesis of NYC-based FinTech companies. According to Trudeau, “the clustering effect is really critical.”
End Notes

5 QCEW (http://www.qcew.org)
7 Kickstarter (https://www.kickstarter.com/team)
8 QCEW; All wages are expressed in 2014$, which were inflated using the non-seasonally adjusted annual CPI for Urban Wage Earners and Clerical Workers for New York-Northern New Jersey-Long Island, NY-NJ-CT.
10 Trudeau, Matt. Interview by Kyle Marks. 17 March, 2015
14 Kickstarter (https://www.kickstarter.com/)
16 CB Insights
17 CoinDesk (http://www.coindesk.com/)
18 Transferwise (https://transferwise.com)
28 TechCrunch, “NYC’s FinTech Innovation Lab Calling Tech Talent to Wall Street.” (http://techcrunch.com/2010/12/02/nycs-fintech-innovation/)
29 FinTech Innovation Lab NYC (http://www.fintechinnovationlabnyc.com/)
31 Estimize (https://www.estimize.com/)
33 Stein, Jon. Interview by Kyle Marks. 27 March, 2015
34 Ibid.
35 Trudeau, Matt. Interview by Kyle Marks. 17 March, 2015
36 Stein, Jon. Interview by Kyle Marks. 27 March, 2015
37 Trudeau, Matt. Interview by Kyle Marks. 17 March, 2015
38 Finkelstein, Alex. Interview by Kyle Marks. 23 April, 2015

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About NYCEDC
The New York City Economic Development Corporation is the City’s primary engine for economic development charged with leveraging the City’s assets to drive growth, create jobs and improve quality of life. NYCEDC is an organization dedicated to New York City and its people. We use our expertise to develop, advise, manage and invest to strengthen businesses and help neighborhoods thrive. We make the City stronger.

About NYCEDC Economic Research & Analysis
The Economic Research and Analysis group from NYCEDC’s Center for Economic Transformation conducts economic analysis of New York City projects, performs industry and economic research on topics affecting the City and tracks economic trends for the Mayor, policy-makers and the public as a whole. As part of its goal of providing up-to-date economic data, research and analysis to New Yorkers, it publishes a monthly New York City Economic Snapshot as well as the Trends & Insights series of publications covering such topics as Tech Venture Capital Investment, Borough & Local Economies, and Industry Economic Sectors. It also sponsors the Thinking Ahead series of events that brings together thought leaders and stakeholders to discuss and debate key issues shaping New York City’s economic future.

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