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# FinTech Development in Greater Manchester: An Overview<sup>1</sup>

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## Abstract

This article analyzes the patterns of Fintech development in Greater Manchester, UK. Manchester is often called a northern capital of Fintech. We analyze different subsectors of FinTech and find that such sectors as payments, fintech loans, debt-based, reward-based and real-estate-based crowdfunding, big data analytics, data security, insurtech and regtech are the most growing areas. We also compare the Fintech structure in Manchester with that in London and other major cities in the UK and identify similarities and differences.

Keywords: FinTech, cryptocurrencies, digital finance, crowdfunding, Fintech in Manchester, data security  
JEL Codes: F30, G15, G18, G21, G24, G28, G32, G38, M13

## 1. Introduction

Greater Manchester<sup>3</sup> is naturally home to the largest regional FinTech ecosystem in the UK outside of London. It has a strong collection of financial technology businesses with more than 80 FinTech-related

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<sup>3</sup> It is the second largest metropolitan area in the United Kingdom and includes ten metropolitan boroughs: Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford, Wigan, and the cities of Manchester and Salford ([https://en.wikipedia.org/wiki/Greater\\_Manchester](https://en.wikipedia.org/wiki/Greater_Manchester)). For simplicity throughout the article Greater Manchester and Manchester are used interchangeably.

operations run out of the city region and 8,000 people working in the sector.<sup>4</sup> The city has attracted national as well as international firms. The FinTech ecosystem is competing with traditional banks and financial services companies such as for example Barclays, NatWest and The Cooperative Bank. FinTechs in Manchester conduct businesses in almost all subsectors of FinTech including digital payments, crowdfunding, online security and service design as well as software development and data analytics.

Manchester is internationally recognized as one of the most popular cities among students.<sup>5</sup> The five universities<sup>6</sup> in the city region also have a proven track record of working with industry on R&D projects, providing businesses in the city region with the opportunity to engage in expert FinTech-related research projects.

In this article we analyze the patterns of Fintech development in Manchester. We analyze different subsectors of FinTech and compare the Fintech structure in Manchester with that in London and other cities and identify similarities and differences. We find, for example, that such sectors as payments, fintech loans, debt-based, reward-based and real-estate-based crowdfunding, big data analytics, data security, insurtech and regtech are the most growing areas. We also find that job offers in such sectors as equity-based crowdfunding, cryptocurrency-related jobs, token issues and trading are not as strong in Manchester as compared with London.

Existing literature in FinTech area is fastly growing. For a general overview of Fintech industry basics see eg. Das (2019). Thakor (2020) focuses on the comparison of Fintech firms with traditional banking business.<sup>7</sup> Perkins (2020) provides an overview of FinTech in the US. Several reports cover the situation with FinTech in the UK.<sup>8</sup> To the best of our knowledge no paper has specifically focused on FinTech development in Manchester area.

Table 1 presents different areas of FinTech, corresponding activities<sup>9</sup> in each area and examples of businesses in Manchester in each area.

### **Table 1. Sectors of Fintech in Manchester.**

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<sup>4</sup> <https://www.investinmanchester.com/sectors/financial-professional-and-business-services/fintech>.

<sup>5</sup> <https://www.savethestudent.org/study-abroad/best-student-cities-in-the-world.html>

<sup>6</sup> University of Manchester, University of Salford, Manchester Metropolitan University, University of Bolton and University of Law ([https://en.wikipedia.org/wiki/Greater\\_Manchester#Education](https://en.wikipedia.org/wiki/Greater_Manchester#Education)).

<sup>7</sup> A growing line of literature is looking at comparison of specific areas of fintech with traditional banking (see eg. Thakor and Merton (2018), Cole, Cumming and Taylor (2019), Miglo (2020a) among others.

<sup>8</sup> See eg.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/801277/UK-fintech-state-of-the-nation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/801277/UK-fintech-state-of-the-nation.pdf)

<sup>9</sup> Although in the literature slightly different structures of fintech branches can be found we use one that can be found, for example, in Bank for International Settlements (2018a) and Thakor (2020). It covers most areas compared to other structures.

<b>Field</b>	<b>Activities</b>	<b>Types of businesses</b>	<b>Companies/Platforms/Systems</b>
Financing; Capital-raising services	Crowdfunding, ICO, STO, IEO	Crowdfunding platform, digital banks, ico-platform, sto-platform, token exchange	Assetz
Credit, loans	FinTech loans	P2P loans	MoneySuperMarket, Bankifi, Oaknorth, B-North, Mojo mortgages
Investments; investment management services	Algorithmic trading, roboadvise	Financial advisors, investment companies, investment banks	Alpha Zone Ltd, Barclays
Payments	Cryptocurrencies, on-line payment accounts, mobile payments, mobile wallets, cryptomining	Cryptotokens platform, cryptotokens exchange, digital payments providers, cryptomining companies, digital banks	Adyen, Bankifi, Radius, WorldPay, Easy Crypto Hunter
Others (regtech, insurtech, digital security etc.)	Digital insurance, regulation services, secure messaging etc.	Insurance companies, secure messaging companies, banks	MoneySuperMarket, NIVO, NatWest Group, Mojo mortgages

We will analyze each sector, and discover some patterns of development in each sector.

The rest of the paper is organized as follows. Section 2 provides a review of a part of FinTech related to capital-raising services. Section 3 analyzes the payment sector including such innovative forms as cryptocurrencies. Section 4 focuses on fintech loans and Section 5 focuses on investment and wealth management services. Section 6 provides an overview of other parts of FinTech and Section 7 provides concluding remarks, discusses the limitations of our analysis, directions for future research as well as the state of fintech education in Manchester.

**2. Capital-raising services**

*1) Crowdfunding*

Crowdfunding is the practice of funding a start-up company or a project by raising funds from a large number of people ("crowd"). It is usually performed via the internet.<sup>10</sup> The concept can also be executed through mail-order subscriptions, benefit events, and other methods. Moritz and Block (2014), Cumming and Hornuf (2018), Estrin, Gozman and Khavul (2018) and Mochkabadi and Volkmann (2018) provide good reviews of the literature in this field.

There are four different types of crowdfunding: equity-based where investors will receive shares of the company; reward-based where investors are counting on some extra benefits from the company like future product discounts among other things; donation crowdfunding, where donations take place, which is good for nonprofits and social causes; debt-based crowdfunding where money comes in the form of loans.<sup>11</sup>

Reward-based crowdfunding often includes significant interactions between firms and funders/customers in the form of product feedback. Backers are able to pay different levels of money to receive items such as a Free youth membership for Whalley Cricket Club plus two adults memberships with a £60 pledge.<sup>12</sup> The highest level in that case was a £400 pledge to receive Sponsorship board paid for by MBSigns to display for four years on the perimeter of the pitch.

UK is one of the leading countries in the world when it comes to setting up crowdfunding campaigns. UK ranked 3rd in the world for crowdfunding in 2020, by the total amount of funds raised with crowdfunding.<sup>13</sup>

Crowdfunding is all the rage in the UK. Rewards-based crowdfunding sites like Kickstarter, equity-based UK crowdfunding sites like CrowdCube, and donation-based UK crowdfunding sites like Buzzbnk give entrepreneurs, non-profits, and creative types many outlets to raise funds for new projects and ventures. Below, we've put together a list of some of the top platforms that UK residents can use to crowdfund their next greatest idea. Be sure to leave a comment on this article if you find it to be helpful and let us know what type of crowdfunding project you plan on running!

Regardless of which model you choose there are 2 ways that the platforms typically get structured to allocate the funds. One of the structures is called the "all or nothing model". This model has a set goal to raise and a funding period set. Once the funding period comes to an end the project owner only receives the funds if the project's goal was met or surpassed. In the case that the goal was not met,

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<sup>10</sup> See, for example, Schwienbacher and Larralde (2012).

<sup>11</sup> Note that real-estate crowdfunding seems to be on the rise (See World Bank report 2020). Although it is hard to say theoretically what are the main differences between this type of crowdfunding and other types of crowdfunding

<sup>12</sup> <https://www.crowdfunder.co.uk/whalley-cricket-club-crowd-funding>

<sup>13</sup> Sources: <https://www.statista.com/outlook/dmo/fintech/alternative-financing/crowdfunding/united-kingdom>  
<https://p2pmarketdata.com/crowdfunding-statistics-worldwide/>,  
<https://www.thecrowdfundingcenter.com/data/places?location=GB>

the contributors are reimbursed their pledges or their credit cards aren't charged for their donation amount. The other structure used is known as the "keep what you earn model". This model allows the project owner to keep any and all funds raised during the funding period, regardless of if the initial goal was met or not. Crowdfunding platforms also have a variety of their own fee structures they use for the service they provide: commission, subscription or a flat fee.<sup>14</sup>

In terms of crowdfunding regulation, The Financial Conduct Authority (FCA), the regulator responsible for all financial securities and investment products, now largely regulates crowdfunding as well. The introduction of FCA regulation made crowdfunding safer and therefore attracted new investors who were previously discouraged by the risks. Most of the major platforms are already members of the UK Crowdfunding Association (UKCFA). Beyond general regulation, all platforms have their own rules. Crowdcube, for example, requires firms to have full amount of money asked for by the deadline. If they only have promises for some of that amount, they won't get any of it at all. The idea is that firms should be able to use the total investment specified to grow their venture – otherwise the future development of the firm is in doubts.<sup>15</sup>

#### *Debt-Based Crowdfunding in Manchester*

Assetz is a good example of company dealing with debt-based crowdfunding. It was launched in 2013 and since then developed a marketplace that has become a good platform for investors and businesses to invest and borrow. They have lent over £1bn to businesses and they have paid over £100m of gross interest to their investors.<sup>16</sup> In both 2018 and 2019, Assetz Capital was recognised as one of the UK's top 100 fastest-growing technology companies in the Sunday Times Tech Track 100. In 2020, Assetz Capital was also approved for accreditation as a lender under the Coronavirus Business Interruption Loan Scheme (CBILS) by British Business Bank, the government backed loan scheme to help the economy through Covid-19.

#### *Reward-Based Crowdfunding in Manchester*

Although Manchester does not have a crowdfunding platform for reward-based crowdfunding (similar to Crowdcube or Seeds in equity-based crowdfunding in London or Assetz for debt-based crowdfunding) a lot of firms in Manchester used crowdfunding as a method of financing. For example an analysis of data on Kickstarter website (largest crowdfunding platform in the world) shows<sup>17</sup>, that in technology industry it was 180 campaigns originated from Manchester between 2010-2020. Examples of successful

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<sup>14</sup> [http://crowdfunding.cmf-fmc.ca/facts\\_and\\_stats/types-of-crowdfunding-platforms](http://crowdfunding.cmf-fmc.ca/facts_and_stats/types-of-crowdfunding-platforms)

<sup>15</sup>For more information about crowdfunding in the UK, see the UK Crowdfunding Association website or the Nesta UK Crowdfunding Directory.

<sup>16</sup> <https://www.assetzcapital.co.uk/our-story>

<sup>17</sup> Kickstarter (2021).

campaigns include The Nifty Minidrive, CodeBug Connect etc. Miglo (2021b) analyses the factors of crowdfunding campaigns success among technology firms in England and also compares the major cities. It is shown that the percentage of successful campaigns is positively associated with average level of education and access to ultrafast internet. It is also found that the crowdfunding probability of success among Manchester firms is higher than in Birmingham and Leeds, is slightly higher than in London and is lower than in Oxford and Cambridge.

## 2) Token Issues

Token issues for financing innovative companies include initial coin offerings (ICOs), security token offerings (STOs) and initial exchange offerings (IEOs).<sup>18</sup> The ICO phenomenon dates back to 2013. Since then, the number of projects has been growing exponentially, with over \$20 billion raised by December 2018 (Coinschedule, 2018). In a typical ICO, an entrepreneur raises capital by pre-selling utility tokens which give their owners the right to use the company's product or service once it is developed. Under STO, a company sells tokenized traditional financial instruments, like, for example, equity where tokenholders receive rights on a firm's future profits. In contrast to utility tokens, security tokens are regulated. The legal structures continue to evolve. In the US, for example, the Securities and Exchange Commission (SEC) applies the Howey test to determine whether an asset qualifies as a security. Essentially, investments are considered securities if money is invested, the investment is expected to yield a profit, the money is invested in a common enterprise and any profit comes from the efforts of a promoter or third party (Ante and Fiedler (2019)). The number of STOs is quickly growing. In January 2018 5 STOs were conducted (monthly) while in November/December 2018 there were more than 20 per month and it continues to grow.<sup>19</sup> Under IEO, a company sells tokens using the service of organized exchange for cryptocurrencies such as Binance, LBANK and Coinbene.<sup>20</sup> The exchange is directly involved in the selection of projects, organization and sale of tokens and becomes the key marketing partner of the project. IEOs had strong momentum in 2019 with largest Bitfinex IEO raising \$US1 bln.<sup>21</sup>

Most companies in the UK that have an experience of conducting an ICO, STO or IEO are London-based (eg. Coinfloor, Coincorner, BABB etc.). Closest to Manchester area, TOKIA id registered in Wakefield and has office in London and Vilnius (Lithuania). They used an ICO for finance their development. It's an innovative FinTech company dealing with cryptocurrencies exchange and trading.

## 3. FinTech Loans

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<sup>18</sup> For theoretical papers on tokens issues see, eg. Bakos and Halaburda (2018), Canidio (2018), Catalini and Gans (2018), Chod and Lyandres (2019), Cong, Li and Wang (2018), Garratt and van Oordt (2019), Gan, Tsoukalas and Netessine (2020), Li and Mann (2018), Lee and Parlour (2020), Holden and Malani (2019) and Miglo (2020b, 2021a).

<sup>19</sup> <https://hackernoon.com/will-2019-be-the-year-of-the-sto-understanding-stos-security-tokens-market-potential-over-icos-4d2502227220>

<sup>20</sup> Myalo (2019).

<sup>21</sup> ICO and IEO report (2020).

Lending is at the core of banking. With developments in big data analytics and other technological advances this area experienced a lot of innovations and new firm creation that led to the term “Fintech lending”. Classens, Frost, Turner and Zhu (2018) noted that Fintech lending has grown rapidly around the world in recent years. Fintech credit offers an alternative funding source for businesses and consumers, and may improve access to credit for underserved segments. It may enhance the efficiency of financial intermediation. However, it also gives rise to a number of challenges for regulators, such as for example, ensuring adequate consumer and investor protection.<sup>22</sup>

For example in the US, lending by such firms now makes up more than 36% of all personal loans, up from less than 1% in 2010 (Levitt (2018)). Potential reasons for the emergence and growth of fintech lending include rapid adoption of new technologies by consumers and economies; cost reduction compared to traditional banking costs; latest developments in payment technologies such as cryptocurrencies etc.

Increasing consumer comfort with and use of technology, such as the iPhone (which debuted in January 2007), contributed to the emergence and growth of fintech lending. Between 2006 and 2016, the number of internet users around the world grew exponentially. By 2016, US and Chinese internet users, for example, totaled over one billion.<sup>23</sup> In the UK, in 2019 100 percent of all households with children as well as those with two adults had internet access.<sup>24</sup>

Fintech lenders potentially have cost advantages.<sup>25</sup> Lower fixed and operational costs allow fintech lenders to focus on small value loans more efficiently. It in turn increases small business credit access that traditionally face difficulties in raising funds from banks.<sup>26</sup> This credit rationing problem is well described in theoretical literature (see eg. Stiglitz and Weiss (1981)). The reasons behind this is that small businesses do not have usually a long credit history, they do not own a large amount of tangible assets that can be used as collateral, they do not usually have a good credit rating etc. Similar arguments can be applied to the market for private loans. Numerous fintech lenders use alternative data sources,

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<sup>22</sup> Fintech lending is analyzed separately from debt-based (P2P) crowdfunding discussed in previous section. For the latter the focus is on using crowdfunding platforms such as Lending club etc. The former exists in two primary business models emerged: direct lenders that originate loans to hold in their own portfolios, and indirect lenders that partner with an issuing depository institution to originate loans and then purchase the loans for sale to investors as whole loans or by issuing securities such as member-dependent. In contrast to traditional lending fintech lending usually is based on big data analytics and non-traditional data analytics which is a part of fintech technology developments. US Department of the Treasury (2016), UBS (2018).

<sup>23</sup> Statista, Internet Usage in the United States, 2018; Statista, Internet Usage in China, July 2016.

<sup>24</sup> <https://www.statista.com/topics/7223/internet-usage-demographics-in-the-uk/#:~:text=Standing%20at%20an%20impressive%2095.5,to%20Germany%20with%2079%20million.>

<sup>25</sup> See eg. Perkins (2018).

<sup>26</sup> Darden, Mason and Turner (2017).



big data, and machine-learning technology for credit decisions and monitoring.<sup>27</sup> Many banks partner with fintech lenders to access these technologies and the customers they serve.<sup>28</sup>

One can also note such factors as global financial crisis of 2008-2010. A reduction in available credit from traditional sources followed this crisis. Small businesses struggled to obtain credit as standards tightened during.<sup>29</sup> Lending volumes decreased etc.<sup>30</sup> In addition, interest rates were extremely low in post-crisis environment. Investors were looking for reasonable rates of return. Short-term interest rates were in historically low levels.<sup>31</sup> Fintech lending provided a new investment alternative to investors seeking a way to earn a yield in this low-rate environment.<sup>32</sup> Finally note that Fintech lenders faced less-strict regulation. Fintech lenders were not chartered like deposit-taking banks, and as a result, they avoided certain regulations although this situation is quickly changing.

The UK Lending FinTech ecosystem is one of the leading in the world. FinTech lenders employ the latest technologies to streamline the traditionally out-of-date and non-transparent lending process. FinTech has allowed lenders to power and accelerate their payment processing time and offer personalized experiences based on each loan and mortgage seeker's needs. Companies described below have constantly been innovating and boosting their market presence in Manchester.

### **OakNorth**

OakNorth Bank is an innovative UK bank for small and medium-sized companies that provides business and property loans. It gained regulatory approval in 2015. The Bank has approved over £600 million in new loans to support British businesses since the lockdown began on 23 March 2020, including £220m through the Coronavirus Business Interruption Loan Scheme (CBILS) and the Coronavirus Large Business Interruption Loan Scheme (CLBILS). In 2019, the bank's pre-tax profit was £65.9m, a 95% jump from 2018. OakNorth Bank aims to provide flexible and accessible debt finance (from £500k to £50m) to fast-growth businesses and established property developers/investors.

### **B-North**

B-North aims to deliver an outstanding borrowing experience for SME businesses and intends to offer competitive savings products to UK retail consumers and business customers. The SME lending bank recently **selected Wiserefunding as its risk grading partner** to speed up credit profile assessments of SMEs and support B-North underwriters to make better lending decisions. B-North utilises Wiserefunding's prediction solution alongside traditional human underwriting methods. The Manchester-based lender

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<sup>27</sup> Jagtiani and Lemieux (2017).

<sup>28</sup> For example, Barclays works with Propel, a specialist asset finance provider, to offer equipment and vehicle finance via an online platform to one million of their SME customers. <https://thefintechtimes.com/barclays-partners-with-propel-to-provide-smes-access-to-asset-finance/>

<sup>29</sup> Jagtiani and Lemieux (2016).

<sup>30</sup> Andriotis and Rudegeair (2018).

<sup>31</sup> US Department of the Treasury (2009) (accessed Dec. 17, 2018).

<sup>32</sup> Bank for International Settlements (BIS), (September 2018), Perkins (2018).

partnered with the RegTech platform TruNarrative to facilitate lending. The integration follows B-North's partnership with Mambu for core banking solutions and with nCino for loan origination procedures.

## 4. Payments.

The global payments sector is massive and well positioned to benefit from improvements in speed, convenience, and cost brought by technology. An important part of fintech payments related activities and probably the most innovative ones are those related to cryptocurrencies. The latter started with a publication of Nakamoto in 2008. It followed with the creation of first cryptocurrency bitcoin. Several ideas make cryptocurrencies the subject of large amount of research. It includes the "no-middleman" concept for example since cryptocurrencies do not require banks to verify their transactions.

In recent year we can observe a strong growth in the market for payments and it will likely persist as check and cash usage decrease, and as digital commerce and mobile device usage advance. Growth will be pronounced in emerging markets, which are projected to constitute 60% of total payments revenue by 2026.<sup>33</sup>

The underlying problems in payments are speed, convenience, and expense. There exists a growing gap between current payments capabilities and those needed and expected in the digital economy—fast, convenient, and accessible to all.<sup>34</sup> One of the main ideas behind cryptocurrencies is "no middle men" such banks are required. This creates revolutionary opportunities for cost reduction and ultimately improving efficiency of payments. Several areas and industries/subindustries have emerged related to the development and functioning of cryptocurrencies including for example cryptomining activities.

Fintech and incumbents both offer value propositions in payments. Fintech companies, unencumbered by existing technology infrastructure and slow-to-change culture, are positioned to propose agile, innovative, and consumer-centric solutions, while incumbents are positioned to benefit from trust and reputation, as well as from scale and regulatory competencies.<sup>35</sup> Given the importance of payments and varied value propositions, both competition and collaboration exist between fintech and incumbents:

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<sup>33</sup> Noncash growth has occurred at the expense of checks, with credit and debit card usage increasing and cash usage for low-value transactions remaining prevalent. In China and emerging markets, adoption of mobile payments and wallets have driven growth. Going forward, noncash growth in emerging markets will be driven by three factors: promotion of cashless societies, technological innovations, and financial inclusion efforts; growth in mature economies will be driven by a combination of mobile payments and contactless technology/near-field communications. It is estimated that emerging markets will experience noncash transaction growth of 21.6% (CAGR) between 2016 and 2021. Capgemini and BNP Paribas (2017, 2018).

<sup>34</sup> Brainard (2018).

<sup>35</sup> Capgemini and BNP Paribas (2018).

Below are some examples of related companies in Manchester.

### **Adyen**

Adyen was founded in 2006 by a group of entrepreneurs, including Pieter van der Does and Arnout Schuijff. The existing payments technology consisted of a patchwork of systems built on outdated infrastructure. With the aim of helping businesses grow, the co-founders set out to build a platform capable of meeting the rapidly evolving needs of today's fast-growing global businesses. Adyen's founding team called the business Adyen – Surinamese for "Start over again" – and focused on building a modern infrastructure directly connected to card networks and local payment methods across the world, allowing for unified commerce and providing shopper data insights to merchants. The Adyen platform enables merchants to accept payments in a single system, enabling revenue growth online, on mobile devices and at the point of sale.

### **BankiFi**

BankiFi is enabling a bank to bundle their selection of white label micro services into a suite of open banking and accounting services from which their business customers can curate their own CEX.

### **Radius**

The Radius story began in 1990 when Bill Holmes set up a new fuel card company in the north of England called UK Fuels. After more than 20 years of growth and development across Europe, Bill then led a merger of more than 25 smaller businesses to establish a new major company capable of competing on a global basis. Today we have more than 23 offices in 15 countries and provide a market leading range of products and services to the small and medium fleet sectors. Many major oil companies choose to white label our fuel card and telematics products where we believe our investment in technology and software innovation give us a real edge in a very competitive environment. Technology and innovation are at the core of our approach to the market, we now have over 150,000 vehicles on our own telematics platform ensuring we are one of the world's fastest growing companies in this sector.

### **Easy Crypto Hunter**

Easy Crypto Hunter is the UK's premier GPU mining rig provider. Bringing a human touch to Crypto, we are your one stop shop for all your mining needs. Easy Crypto Hunter is not a financial advisor and cannot guarantee any mining return figures. We can only use the figures we have personally seen from rigs averaged over given time frames. Due to the changing nature of cryptocurrency, we cannot guarantee any future earnings figures. We have no control of the external market, but we're going to be here every step of the way with you and it's exciting we're all on this journey together.

Compared to London, Manchester firms seem to be more focused on using new technology in traditional payments while in London there are more firms dealing specifically with cryptocurrencies.

## 5. Wealth/investment management and brokerage

Following the emergence of online investment services, trade execution was fastly growing, with brokerage firms reducing per-trade charges and introducing new pricing models.<sup>36</sup> The next wave of innovations is related to fast implementation of algorithms (algorithmic trading) and robo-advisors.<sup>37</sup> To succeed in this environment, incumbents and digital managers (DM) are leveraging fintech.<sup>38</sup> Trading cryptocurrencies offers a lot of new opportunities for algorithmic trading. As shown, for example, by some recent research there are systematic opportunities for arbitrage in these markets.

DM introduced algorithms and digital platforms that have enabled low-cost portfolio construction, rebalancing, and monitoring based on objectives, risk tolerance, and other criteria.<sup>39</sup> Many large incumbents have responded with their own offerings.<sup>40</sup> DM including robo offerings surpassed \$200 billion in aggregate assets under management in 2017. An increase in low-cost robo offerings will only continue the trend of fee compression. A shift from actively managed funds to low-cost passive funds has persisted for years, and zero-cost exchange-traded funds (ETFs) and no-fee index funds may further accelerate this trend.<sup>41</sup>

Managers are beginning to leverage big data, AI, and machine learning to more effectively analyze investment opportunities, optimize portfolios, mitigate risks, and provide enhanced real-time insights to clients, all of which may enable stronger performance and may attract and retain clients.<sup>42</sup> To attract clients, mobile communication must be significantly improved. "The mobile channel now accounts for [nearly 35%] of client interactions...and is the fastest-growing channel across financial services," and clients increasingly prefer omnichannel solutions, presenting opportunities for managers that effectively couple digital and mobile capabilities with data-driven personal communication.<sup>43</sup> Personalized

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<sup>36</sup> These new models split advice from transactions: full-service brokers began charging on an asset-under-management basis versus fees per trade. PwC, Asset & Wealth Management Insights (2017), 6.

<sup>37</sup> Ngai, Zucker, Kennedy, and London (2018).

<sup>38</sup> PwC, Digital Wealth Management (2018).

<sup>39</sup> Ngai et al.; PwC, Asset & Wealth Management Insights, 10.

<sup>40</sup> Barclays has launched a digital wealth management services for current account customers with a minimum of £5,000 to invest. The new robo-advisor service, called 'Barclays Plan & Invest', was developed in partnership with Munich-based start-up Scalable Capital. The London-based wealth manager, which also serves investors in Germany and Austria, offers users personalised, globally diversified and fully managed portfolios.

<https://www.fintechfutures.com/2020/07/barclays-launches-robo-advisor-for-5k-investments-with-scalable/>

<sup>41</sup> In August 2018, Fidelity Investments became the first company to offer no-fee index funds, and in the first month, attracted nearly \$1 billion in assets. Eric Rosenbaum, "Fidelity's New No-Fee Index Funds Bring in \$1 billion in First Month," CNBC, September 4, 2018, <https://www.cnbc.com/2018/09/04/fidelity-offers-first-ever-free-index-funds-and-1-billion-follows.html> (accessed Dec. 27, 2018); Deloitte Center for Financial Services, 2019 Investment Management Outlook: A Mix of Opportunity and Challenge, 2018, 1, 5.

<sup>42</sup> "Fintech in Investment Management," CFA Institute, <https://www.cfainstitute.org/en/membership/professional-development/refresherreadings/2019/fintech-investment-management> (accessed Dec. 27, 2018).

<sup>43</sup> Without digital enablement, advisers cannot scale to serve a larger customer base, as there are only so many hours in a day and only so many calls that people can make; technology can enable a more efficient adviser team. Additionally, DWM clients reported satisfaction levels 5 to 10 times higher than incumbents' clients, suggesting that streamlined digital and mobile capabilities could provide improved experiences. Schiff and Taylor (2016); PwC, Beyond Automated Advice: How FinTech Is Shaping Asset & Wealth Management, 2016; PwC, Digital Wealth

communication is vital, and managers such as Morgan Stanley are combining machine-learning algorithms with analytics to assist financial advisers in generating customized advice for clients.<sup>44</sup>

Below are some examples of companies in Manchester.

### **Alpha Zone Ltd**

Alpha Zone Ltd is a well-established financial trading company leading the industry for over 10 years. We have spent this time investing in the skills and development of traders all over the world.

### **Barclays**

Barclays Technology Centre has a number of technology centres around the world but their main one is located just south of Manchester in Knutsford. This site is home to 4,000 staff who are employed in a variety of technology and infrastructure roles. Barclays have been located on the 35 acre site for over 40 years, with staff carrying out duties supporting the bank's global ICT infrastructure. Knutsford is where Barclays develop mobile applications, such as Pingit, which enables mobile phone users to make free payments to other UK mobile users directly and the Barclays mobile banking app. This division employs 400 people and is growing. There are also an additional 250 people working in informatics and analytics looking at the commercial opportunities in big data.

In London there is more focus on new types of trading such as algorithmic trading and also robo-advising etc. Probably because major exchange is located in London and there more trading firms there in general. So it remains to be seen what would be the next strategic steps in terms of development of this branch of Fintech in Manchester.

## **6. Other sectors of FinTech**

### *1) Insurtech.*

Just as insurance is a subset of financial services, insurtech is a subset of fintech. Insurtech is the use of technology to solve insurance-related problems. Insurtech utilizes technology to enter new insurance markets and to "squeeze out savings and efficiency from the current insurance industry model."<sup>45</sup> Because insurtech enables industry growth and improvement, it is generating significant interest. The insurance industry is massive, with global premiums of nearly \$5 trillion.<sup>46</sup> Despite the insurance industry's size, many products, services, and segments are unserved or underserved. Insurtech can fill the gap. For example, Amazon Protect (in the United Kingdom) offers protection against

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Management; Pooneh Baghai, Brant Carson, and Vik Sohoni, "How Wealth Managers Can Transform for the Digital Age," McKinsey, August 2016.

<sup>44</sup> Deloitte, 2019 Investment Management Outlook, 6.

<sup>45</sup> "Insurtech," Investopedia, <https://www.investopedia.com/terms/i/insurtech.asp> (accessed Dec. 19, 2018).

<sup>46</sup> "Global Insurance Premiums Continued to Rise in 2017 with Emerging Markets Leading the Way, Latest Swiss Re Institute Sigma Study Says," Swiss Re news release, July 5, 2018.

accidental damage, breakdown, and theft of Amazon purchases ranging from washing machines to tablets.<sup>47</sup>

Insurtech can improve the quantity and quality of consumer interactions. Emerging technologies such as connected devices and advanced analytics make it possible to connect with customers and to derive better insights on individuals.<sup>48</sup> Better insights may support personalized products and may result in a shift from a reactive business model to a more sophisticated preventative model (i.e., a holistic model that seeks to prevent claims and increase customer well-being versus simply underwriting policies and reacting to claims).<sup>49</sup> AI and machine learning may increase the quality of customer interactions through convenient and expedited decision-making (e.g., automating underwriting, auto-adjudicating claims, and automating financial advice).<sup>50</sup> For example, Apple Inc. (Apple) is collaborating with Aetna Inc. to provide customers with Apple watches, which in turn may not only improve risk assessment but also reduce claims paid and improve customer engagement.<sup>51</sup> Prudential Financial, Inc., utilized natural language processing to create a chatbot that understands nonscripted questions, clarifies the requester's intentions, and delivers responses in a human-like conversation.<sup>52</sup> As AI capabilities continue to advance, AI will likely become more effective than humans and may reduce expenses and inefficiencies related to call center representatives, underwriters, and claims adjusters. Additionally, the cloud enables insurers to improve agility, scalability, and cost efficiency within digital operating models, and drones have been deployed to efficiently assess claims through unstructured data analysis (e.g., analysis of aerial images).

Below is an example from Manchester.

## **Ripe**

Ripe is a trailblazing insurtech business with a fresh approach. Their grasp of data, analytics and pricing means they can use their unique technology, underwriting MGAs and know-how to make it hard for existing players to compete with us when we enter a new market. Their vision is as follows: "To use technology, data and know-how to make buying insurance simple, clear, fast and tailored." They turn the approach of traditional insurers upside down. Whilst they love to bundle different types of cover so consumers pay for a package, at Ripe they allow consumers to build a policy that only includes the cover

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<sup>47</sup> Debuted in 2016. For additional information on Amazon in financial services, see eg. Capgemini, World Insurance Report, 2018.

<sup>48</sup> Capgemini, World Insurance Report, 17, 54, 56.

<sup>49</sup> PwC, Opportunities Await: How InsurTech Is Reshaping Insurance, June 2016.

<sup>50</sup> Chinese insurer Ping An utilizes AI for authentication and claims settlements. AI provides the ability to reduce claims settlement times from three days to 30 minutes, and UK-based Cytora has developed an AI-based risk engine that enables commercial insurers to target, select, and price risk.

Capgemini, World Insurance Report 2018, 41; "Opportunities Await."

<sup>51</sup> Capgemini, World Insurance Report, 20.

<sup>52</sup> Capgemini, World Insurance Report, 41.

they need. Traditional insurers love long, complicated proposal forms but at Ripe they make everything fresh, fast, clear and transparent.

## 2) Regtech

The cost and complexity of regulation and compliance continues to rise. Regulators and regulated entities have looked to technology to help address cost and complexity, given that several technologies can help solve problems and overcome challenges in the highly regulated financial services industry. Regtech is strategically important for financial services stakeholders, as evidenced by recent investment: between 2013 and 2017, investment in regtech totaled \$4.96 billion across 585 deals, and it continues to grow.<sup>53</sup>

Regtech may address the increasing cost of financial regulation. The costs of regulatory violations and the costs to protect against infractions are very large. As a result, the financial industry's compliance spend is massive. Technology could have the power to streamline compliance functions and thereby improve efficiencies and reduce costs. Technologies, such as robotics process automation, biometric authentication systems, big data and advanced analytics, the cloud, and APIs, offer tremendous opportunities to enhance existing compliance at reduced costs.

Banks can leverage natural language processing to determine which new regulatory requirements apply to their products and services, thereby facilitating the identification of compliance gaps. The United Kingdom's Financial Conduct Authority and the Bank of England launched machine-readable rulebooks, which may lead to incorporation within companies' regulatory systems.

AI-based regtech equips regulators and regulated entities with the ability to conduct pattern recognition, process natural language, and deploy predictive analytics; these capabilities enable regulators to better monitor markets and enable regulated entities to better monitor employees.<sup>54</sup> Market participants indicated that regtech offerings could facilitate a move from the standard review of words or phrases toward anomaly analyses of multiple languages, slang, tone, and coded vernacular.<sup>55</sup>

## 3) Others

Other prominent areas of fintech include the following:

*Digital banks.* Banks of various sizes, including Citigroup Inc. and Wells Fargo, are developing digital-only offerings, given the success experienced by digital-only banks in Europe.<sup>56</sup> It is argued that digital-

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<sup>53</sup> Davis (2017).

<sup>54</sup> American Bankers Association, 4; Davis; FINRA.

<sup>55</sup> FINRA, 4; Davis.

<sup>56</sup>Schaus (2018)

only offerings enable banks to appeal to digital-first consumers, while serving them at lower rates given the lack of overhead and other costs (e.g., branch maintenance costs).<sup>57</sup> In Europe, digital-only bank offerings, referred to as “neobanks” or “challenger banks,” have attracted millions of millennials.<sup>58</sup>

*Digital exchanges.* In addition to enabling cheaper trading, fintech has enabled faster trading. High-frequency traders utilize powerful computers and complex algorithms to “analyze multiple markets and execute orders based on market conditions,” transacting in a large number of orders at fractions of a second. Brad Katsuyama developed a new exchange to combat potential issues with HFTs: IEX Group, Inc.’s, Investors Exchange. It exchanges charge for data on quotes, bid-ask spreads, and other information, and charge for proximity to computers (i.e., “colocation”), a critical piece in accessing market data as fast as possible.

*Financial data solutions.* The importance of data is not limited to data gleaned from exchanges. Financial data providers are a vital component of the fintech landscape. Companies include CB Information Services, Inc. (CBInsights), Bloomberg L.P., and S&P Global Inc. (S&P Global). For example, S&P Global provides ratings information, credit analytics, news and insights, and a market intelligence platform, all of which enable financial services professionals, government and regulatory agencies, and other stakeholders to “make decisions with conviction.”

Below are some examples of companies in Manchester.

## **NIVO**

Nivo is a network that makes providing regulated services easy.

## **Xero**

Xero offers a cloud-based accounting software that connects people with the right numbers anytime, anywhere, on any device. For accountants and bookkeepers, Xero helps build a trusted relationship with small business clients through online collaboration. Founded in 2006 in New Zealand, Xero is one of the fastest growing software as a service companies globally. Currently they lead the New Zealand, Australian, and United Kingdom cloud accounting markets, employing a world-class team of more than

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<sup>57</sup> <https://www.americanbanker.com/opinion/the-right-approach-to-digital-only-banks>.

<sup>58</sup> Growth has been particularly strong in the United Kingdom, potentially because “officials have been concerned about the power of large banks in the wake of the [GFC], and they see the start-ups as weakening the hold of traditional lenders. [Additionally, the] authorities have adopted policies such as a ‘regulatory sandbox,’ allowing...challenger banks to test new financial products and get feedback from regulators before proposing them to customers.” While “challenger banks” and “neobanks” are terms that are used broadly and synonymously, the former can include established firms seeking to compete with larger institutions, while the latter tends to refer to new digital mobile companies. Satariano (2018), <https://www.nytimes.com/2018/09/23/technology/online-bankingmonzo.html>; “The Rise of Challenger Banks,” KPMG, <https://home.kpmg.com/xx/en/home/insights/2018/02/rise-of-challenger-banks-fs.html> (both accessed Dec. 30, 2018).



3,000+ people. Forbes identified Xero as the World's Most Innovative Growth Company in 2014 and 2015.

## 7. Conclusion

This article analyzes the patterns of Fintech development in Greater Manchester, UK. Manchester is often called a northern capital of Fintech. We analyze different subsectors of FinTech and find that such sectors as payments, fintech loans, debt-based, reward-based and real-estate-based crowdfunding, big data analytics, data security, insurtech and regtech are the most growing areas. We also compare the Fintech structure in Manchester with that in London and other major cities in the UK and identify similarities and differences. We find, for example, that Manchester has higher rates of success than Liverpool and Leeds, slightly higher rates than in its major rival London and lower rates than Oxford and Cambridge.

As was previously mentioned, although crowdfunding is a new way and potentially more efficient way of financing for entrepreneurial firms as compared to traditional financing, the analysis shows that the cost and efficiency are important factors for crowdfunding and the research should continue aiming at revealing most important factors that can help to reduce the cost and improve the efficiency of crowdfunding campaigns. Perhaps in future the focus of research should be on such factors as asymmetric information (Miglo and Miglo 2019), moral hazard (Strausz 2017, Chemla and Tinn 2019, Schwienbacher 2018) etc.<sup>59</sup> discovered in literature on crowdfunding. With the accumulation of more data more research is expected in these areas.

Finally note that a high quality education system is an essential part of the successful development of fintech in Manchester. It's hard to overstate the importance of education since the area is very complicated and requires a superior knowledge of econometrics, microeconomics, accounting, mathematics, game theory, contracts, law etc. Part of the research done for this article was collecting information about existing fintech programs in Manchester.<sup>60</sup> Fintech programs exist in most universities. Most of them are not specifically focused on small or medium sized companies. Some universities however are working on creating such a program. For example, University of Salford is implementing a fintech program that focuses on entrepreneurial aspects of fintech.

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<sup>59</sup> See also Belitski, Caiazza, and Lehmann (2019).

<sup>60</sup> We mostly use public available information from university and college websites.

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