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Messages from the Co-editors-in-Chief

Thank you for reading the second issue of The Hang Seng University of Hong Kong (HSUHK) Business Review. This is a special issue on Fintech and we have carefully selected five articles on this important and timely issue.

HSUHK Business Review is a general business publication, produced by the Hang Seng University of Hong Kong, a private university in Hong Kong with around 5,000 students.

This publication serves as a platform for research and scholarship on business-related themes and topics. It is designed to stimulate discussions among academia, researchers, business professionals and other influential thought leaders about advances in business practice in East Asia.

It aims to circulate new business-related research and innovative ideas, especially surrounding interdisciplinary subjects, so that business professionals can benefit from the work that appears in this publication.

We encourage contributions from around the globe with a focus on East Asian business. We publish articles around 2,000 – 3,000 words in total. We welcome empirical, conceptual and methodological articles across the full range of business related disciplines, including but are not limited to Business, Management, Accounting, International Business, Supply Chain and Logistics, Tourism and Hospitality, Entrepreneurship and Innovation, Economics, Finance and Marketing. If you are interested in submitting your manuscript, please contact the Editorial Team at businessreview@hsu.edu.hk for further details.

Last but not least, our heartfelt gratitude is expressed to all corresponding authors, Editorial Board members, and Editorial Support Team for making this publication possible.

Please enjoy the read!!



Professor Bradley R. Barnes
Co-editor-in-Chief



Dr. Felix Tang
Co-editor-in-Chief



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01

FINTECH AND FINANCIAL SERVICES: CHALLENGES AND OPPORTUNITIES FOR EUROPE

Roman Matousek

Nottingham University, UK

Fintech is a fascinating topic, and financial innovation is reshaping a financial sector profoundly. There has been an ongoing extensive discussion about the impact of Fintech and financial innovation on the future role of banks and the disintermediation process. One of the key questions is how the banking system will be affected by the rapid implementation of new financial technologies into the daily bank operation activities and other financial institutions.

Fintech challenges and transforms the business models of traditional financial services providers, although it is too early to guess how precisely and how much the changes will 'disrupt' the ecosystem as a whole. Many Fintech firms are new on the market and operate as start-ups. The future development will prove whether these new companies will 'survive' their initial periods and their role within the market.

That is a broad coverage of their activities or very specialised firms that provide services to the large and established financial institutions. More and more large traditional banks are investing in financial innovation and have set up Fintech units within their organisations. Some have acquired Fintech firms – including Fintech banks – or formed partnerships with Fintech firms to provide specialised services.

From the managerial point of view, it is important to understand how the traditional banking business model will be reshaped as a result of Fintech. These changes are frequently addressed as the outcome of the "creative destruction" process. The process of creative destruction has been observed across other industries since the late 1990s. Fintech and financial innovation change the traditional business models in general by offering the new

forms of production, supply chain management, marketing strategies among other. In terms of the impact on financial services, there is anecdotal evidence that Fintech has been “creatively disrupting” the individual providers of financial services and financial markets. Financial technologies along with accelerated financial innovation define a new way of how financial services are accessed and delivered. They do not only affect the supply side of the provided services but they also reshape the experience of the individual users of financial services. It is important to acknowledge that the unprecedented innovation boom provided by financial technologies leads to the reduction of asymmetric information and reduces transaction cost.

There is a broadly defined consensus of how banks should proceed in their business by taking the advantage of new technologies: Firstly, they could adopt an open innovation

approach when know-how along with financial capital are used to develop and deliver new technologies that support new product developments. Other possible form is through collaboration across different industries. Such collaboration allows to create new and different skills that reflect the complexity of the development and implementation of the financial technologies and products and to determine original ways to generate added values. Finally, there are a number of so-called accelerators that include broadly defined financial services providers. Those providers use venture capital for supporting start-ups that concentrate on financial technologies and related business activities. It is recognised that the successful start-ups need to be linked with already established financial Fintech companies and financial institutions that allow them to test the developed technologies and products.

COMPETING AREAS

How should banks and traditional financial institutions proceed in this very highly competitive environment? Based on our initial view, one would suggest that one way of how to maximise the effect of highly flexible start-ups is that the traditional financial institutions including banks should try the full integration of these companies and established small sized Fintech companies. Such a horizontal integration across the different providers should help to accelerate the development and practical implementation of new technologies and product with the focus on customer satisfactions. In terms of providing new services, banks can choose different business models. If they decide to compete with newly established small companies that are flexible and highly innovative with supply of financial products, then banks jeopardise their position. In fact they will not be able to keep pace with those highly innovative

and specialised firms. The optimal strategy therefore is to ‘use’ and acknowledge these companies and to initiate close collaboration, partnership or even direct inclusion into bank business. Banks have to be aware that they face otherwise a problem of unbundling business activities. Those that can be easily unbundled and taken over by small and progressive firms are listed as follows:

Retail banking

- Lending and Financing,
- Payments and Transfers,
- Wealth and Asset Management,
- Markets and Exchanges,
- Insurance,
- Blockchain Transactions.

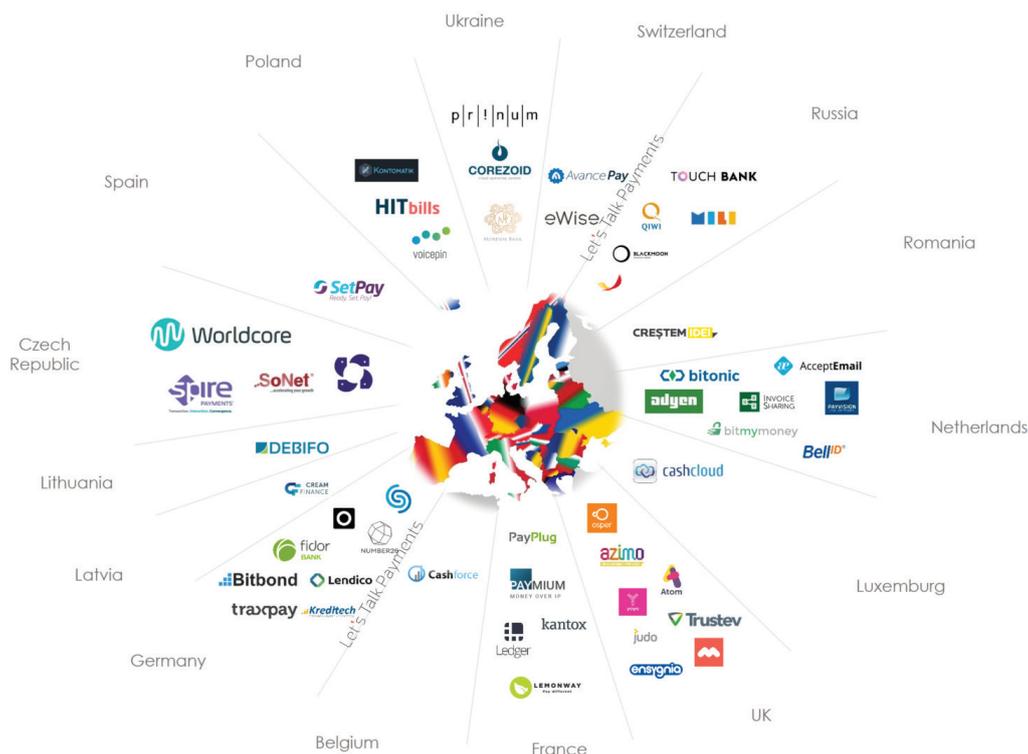
FINTECH IN EUROPE

Fintech companies in Europe are very flexible in terms of financial innovation – technology and product development. The ecosystem within which Fintech companies in Europe operate is well established and at the similar operational level as their competitors outside EU countries. There are a number of very dynamic start-ups and Fintech “unicorns” across the European countries. Chart 1 provides a brief overview about the structure and involvement of Fintech companies across Europe. There is a number of already highly respected start-ups and Fintech firms. These Fintech firms include Klarna, iZettle, Adyen, Funding Circle, TransferWise and POWA Technologies. Those mentioned are all European companies that have a worldwide international recognition. The UK is a leader in terms of the market share of Fintech companies in Europe. The second country with the highly established Fintech firms and start-ups is Germany. In Germany, there have been very ambitious companies in the area of financial innovation and technology. Germany has been successfully attracting a large proportion of the capital that is allocated across the European Fintech companies. Even some largest banks are involved too. Commerzbank has, for example, set up so-called Main Incubator and CommerzVentures through

which the capital is invested into start-ups. Deutsche Bank is also closely involved with Fintech centres in London, Berlin and Silicon Valley. That should accelerate its development activities in the use of digital technology. One of the most successful German Fintech companies is T- Number 26. The company expanded to six new countries to make its services available to users in France, Greece, Ireland, Italy, Slovakia and Spain. The company offers banking services without border in Europe. The company provides more than 80,000 customers with accounts for cash withdrawals, deposits and overdraft services up to 2,000 euros via a slick smartphone app. Chart 1 shows the distribution of Fintech companies in other EU countries. Undoubtedly the leader in Europe remains the UK that attracts the largest proportion of investment capital for Fintech companies.

Table 1 then provides information about market size, investment and employment in the leading international Fintech Centres. In terms of revenue the UK is a leader across those centres. As for invested capital California and New York are the most attractive destinations for investors.

Chart 1



Source: MEDICI Fintech

Table 1:

Leading International Fintech Centre (Developed economies): Unit GBP

Centre	Market Size	Investment	Employment
Britain	6.6b	524 million	61,000
California	4.7b	3.6 billion	74,000
New York	5.6b	1.4 billion	57,000
Singapore	0.6b	44 million	7,000
Germany	1.8b	388 million	13,000
Australia	0.7b	198 million	10,000
Hong Kong	0.6b	46 million	8,000

Source: EY Fintech

THE MAIN CHALLENGES FOR SUCCESSFUL PROGRESSION OF FINTECH IN EUROPE

In order to achieve the sustainable expansion of Fintech companies and overall activities it is essential that there is sufficient capital flow, labour quality – talent, business demand for services. An integral part of the successful

development of the financial products is the need for adequate regulation. In the following text we briefly overview these requirements.

CAPITAL

Fintech has attracted a large attention from investors who are willing to invest in different forms of capital. One of the prevailing forms of investment has been through venture capital. However, one may observe that there is a decline of the invested capital in 2018 particularly venture capital. PitchBook Platform reports that 196 deals have been completed for a total of €1.14 billion in 2018. That is only two-third of the total transactions reported in 2017. One

reason that could explain that drop is the saturation of the market. It obviously more difficult for start-ups to penetrate into the industry with fundamentally new ideas. They need to improve their network with other established companies but that proves to be more and more difficult. Therefore, one of the viable solutions is to establish links and with those banks that lack the flexibility of coming up with new innovative solutions.

TALENTS

Knowledge economy requires sustainable inflow of innovators, entrepreneurs and consequently highly flexible and innovative companies. This is particularly true for Fintech companies. But it is broadly acknowledged that the supply of talents in this particular field is rather limited. If we take a

case of the UK, it is estimated that sector will employ 76,500 people by the end 2018/19. It is important to stress that 42 per cent of Fintech workers are from overseas. The lack of talents in this particular area that is Fintech could prove to be a barrier for a further expansion.

BUSINESS DEMAND

In order that the Fintech industry expands, there is a need for a sufficient level of business demand. Table 2 shows the adoption rates of Fintech products. It is evident that Europe

is still far behind Asian countries. The adoption rates in the developed economies is surprisingly low.

Table 2

FinTech Adoption Rates

Share of digitally active population using the following FinTech services, by country 2017

Money Transfer	Financial Planning	Borrowing	Insurance
China: 83%	China: 22%	China: 46%	India: 47%
India: 72%	Brazil: 21%	India: 20%	UK: 43%
Brazil: 60%	India: 20%	Brazil: 15%	China: 38%
Australia: 59%	US: 15%	US: 13%	South Africa: 32%
UK: 57%	Hong Kong: 13%	Germany: 12%	Germany: 31%

Source: EY Fintech

REGULATION - SANDBOXES

There is a general consensus that the market for Fintech has to be appropriately regulated. The optimal way of how to regulate the products is by the creation of regulatory sandboxes. Empirical evidence indicates that sandboxes encourage innovation in financial products. The word sandbox has acquired new meanings. In the computer science world, a sandbox is a closed testing environment designed for experimenting safely with web or software projects.

The concept is also being used in the digital economy field, to refer to regulatory sandboxes. Sandboxes are actually testing grounds that are relevant in the Fintech world. The purpose of the sandbox is to adapt compliance with strict financial regulations. Sandboxes should allow the smooth growth and pace of the most innovative companies. They should

prevent any disruptions but also they do not affect consumer protection. The regulatory sandbox allows businesses to test innovative products, services, business models and delivery mechanisms in the real market, with real consumers. The sandbox is open to authorised firms, unauthorised firms that require authorisation and technology businesses. The sandbox seeks to provide firms with:

- the ability to test products and services in a controlled environment
- reduced time-to-market at potentially lower cost
- support in identifying appropriate consumer protection safeguards to build into new products and services
- better access to finance

CONCLUSION

We may assume that the future of Fintech companies is undoubtedly very promising but there is a cloud that hangs over the industry. It is important to see by how far policy makers will try to restrict Fintech industry through regulation. In other words, how successfully they will introduce the

'rules of a game' that ensure a 'level playing field' within the financial services industry. Regulation has to ensure that the customers will fully benefit from this remarkable and unique disruptive innovation process.

The content of this article was presented in the Fintech Symposium: Disruptive Innovation in Financial Services at The Hang Seng University of Hong Kong on 10 August 2018



02 | FINTECH SYMPOSIUM: DISRUPTIVE INNOVATION IN FINANCIAL SERVICES

David, Kam-hung Chui and Andy, Wui-wing Cheng
The Hang Seng University of Hong Kong

The Hang Seng University of Hong Kong has hosted the Fintech Symposium in August 2018 by applying a multi-stakeholder approach to early cultivate a culture of innovation in the academic community.

During the past few years, the term Fintech has become commonly used. To a novice reader, Fintech is the new market that integrates finance and technology. The marketplace is evolving fast and this revolution will re-define the financial ecosystem, user experiences and

even the global governance for the industry. For instance, the most disrupted sectors that we come across the most about are mobile payments and money transfers. Together with the growth of crypto-currency and the application of blockchain technology, financial disintermediation is made possible and has grabbed the attention of regulators all over the world. Fintech also provides a promise to facilitate broader financial inclusion by expanding access to financial services to those unbanked at a lower cost and risk.



FINTECH HUB

The Fintech Symposium aligns with the direction to develop Hong Kong as the major Fintech hub. The ideas exchange among various international and local institutions can

definitely provide inspiration and insight for both further research activities and collaboration between the academia and the industry.

“It is not big fish eats small fish, it is fast fish that wins”

Dr. George Lam, Chairman of Hong Kong Cyberport Management Limited



“...Cyberport has brought over 100 Fintech Funds so far...”

With the strategic “Greater Bay Areas” initiative, Dr. Lam expected that by 2025, the Area will become the number one bay area in the world in terms of GDP. Hong Kong, followed the State’s lead and can collaborate with neighbourhood provinces to create a digital banking ecosystem by serving as the key financial intermediation by conducting project financing and fund raising for startups.

IT IS ESTIMATED THAT DIGITAL ECONOMY WILL ACCOUNT FOR 80% OF THE WORLD'S GDP IN 2050.

Hong Kong can adapt a ‘PPP’ solution through the collaboration among public sector, private sector and partnership arrangement to help startups to benefit from the Greater Bay Area.

However, Dr. Lam also pointed out that there are still many challenges to overcome. Hong Kong needs to set up more Fintech funds from private sector. The Hong Kong Exchanges and Clearing Company Limited should consider to provide a ‘green channel’ for Fintech companies to reach the market for funding. It is anticipated that the Fintech development between Mainland China and Hong Kong will continue to speed up to a new height and wider platform.

“ I alone cannot change the world, but I can cast a stone across the water to create many ripples”

quote of Mother Teresa by Mr. Nelson Chow, Chief Fintech Officer, Hong Kong Monetary Authority



The HKMA, as a regulatory authority, stands ready to embrace technology and changes that emerge in the course of Fintech development. HKMA has always put great efforts in striking a right balance between retaining appropriate flexibility for innovations, while making sure that customer interests are properly safeguarded during the course of Fintech development.

For the past few years, HKMA has launched supportive regulatory measures to boost Fintech development. The FFO was set up in March 2016 to facilitate the healthy development of the Fintech ecosystem in Hong Kong and

to promote Hong Kong as a Fintech hub in Asia. Six months after, HKMA launched the Fintech Supervisory Sandbox (FSS) which allows banks and their partnering technology firms to conduct pilot trials of their Fintech initiatives involving a limited number of participating customers without the need to achieve full compliance with the HKMA's supervisory requirements. This arrangement enables banks and tech firms to gather data and user feedback so that they can make refinements to their new initiatives, thereby expediting the launch of new technology products, and reducing the development cost.

Mr. Chow also emphasized the importance of recruiting new generation to the industry. To expand the talent pool for the development of the Fintech sector in Hong Kong by giving students an early exposure to the sector, Fintech Career Accelerator Scheme (“FCAS”) is a talent development scheme initiated by the HKMA and ASTRI to nurture talents to meet the growing needs of Fintech in Hong Kong. Students from participating universities are invited to apply for this scheme via a full-time, semester-based, internship where interns will be cosupervised by the HKMA, ASTRI, and banks on Fintech project.

BANKS JOINED FORCES WITH FINTECH ENTERPRISES

“...With Blockchain, it can reduce frauds and leads to substantial change in both trading and financial industries in future...”

Dr. Frank Tong, Head of Innovation Labs and Strategic Investments, HSBC

“ ...the applications of biometrics identification such as fingerprints, facial recognition in various scenarios including payment and settlement, data risk control ...”

Dr. Tong expressed that deep integration of information technology and finance continues to break financial frontiers and transform financial operations. There will be more collaboration and integration between Fintech and banking industry in future. HSBC has invested 15 to 17 billions US dollars in technology development and establishment of digital innovation lab. The Bank also adopts Distributed Ledger Technology (DLT, also known as Blockchain) to its daily operations and banking services worldwide. Fingerprints are used for the building access in the United Kingdom headquarters and facial recognition is used for the mobile banking service in China.



Currently, big data and cloud computing technology is an important cornerstone for banking operations. Biometrics technology will become the core technology for bank security and authentication and AI and Blockchain technology will be the disruptive technology for banking industry. The traditional banking sector is facing various challenges and must expedite innovation of the existing services to improve overall service quality.

CREATIVE DESTRUCTION VS DISRUPTIVE INNOVATION

“...London still has a dominant position in Europe as a hub for Fintech in financial services...”

Prof. Roman Matousek, University of Nottingham, UK



The question is whether or not a traditional banking business model will completely disappear as the outcome of the “creative destruction” process. The process that has been happening across other industries in last decades. Fintech companies provide the new forms of production, new marketing and new business models. What we have been observing so far is that Fintech is “creative disrupting” financial markets by innovative ways of how financial services are accessed, delivered and experienced.

The progress of Fintech in Europe is determined by capital, talent, access (business demand) and policy. Regulation is considered as the main challenge in Europe, such as the protection of personal data, there is no legislation for crowdfunding, no specific legislation on virtual currencies and the lack of ‘regulatory sandboxes’ for Fintech firms and their activities.

The future of Fintech companies is undoubtedly very promising but there is a cloud that hangs over the industry in terms of how far policy makers will try to restrict Fintech industry through regulation. It depends on how successfully the regulators will introduce the ‘rules of game’ that ensure a level playing field with the financial services industry. Regulation has to ensure that the customers will fully benefit from this remarkable and unique disruptive innovation process.

The Fintech Symposium was supported by the Research Grants Council of the Hong Kong Special Administrative Region (UGC/ IIDS14/B02/17)

03 | HOW DISRUPTIVE IS THE INNOVATION TO THE FINANCIAL SERVICES?

David, Kam-hung Chui and Andy, Wui-wing Cheng
The Hang Seng University of Hong Kong

ARTIFICIAL INTELLIGENCE (AI) REPLACES HUMAN?

The advances of AI development and its growth in application to Financial Services has revolutionized the interaction of human to machine. Not only does it bring efficiency to the operation but shaping our lifestyle to a whole new level of customer satisfaction. A set of AI machines by Alibaba recently became the first to beat a human score at a reading comprehension test. Also, in the medical field, surgical robots have emerged to take the role of human profession. This technology has its flaws too as worry over human tasks being taken over by machine. Dr. Seen-meng Chew, Head of Research at FinFabrik responded with a categorically "NO" and went on to say "while it seems to reduce the need of workforce, it creates new kinds of jobs as it going to change the lifestyle and the format and the structure of work". Mr. Larry Cao, Director, CFA Institutes and Ir Spencer Li, Charter President Innovation and Technology Association, both shared the same view.



Dr. Spencer Li added to Dr. Chew's comment, "If you damage one job type but it creates maybe three kinds of jobs, because we are living in the era of knowledge management. We are talking about high-tech, etc. So, for the people, they enjoy the service or product will be gone through a very good value change. Among the what value change, we can create different kinds of jobs, so that's why I'm very optimistic about...I am not afraid of the AI or robot replacing human jobs."



Dr. Chew went on to cite an example, "I attended an inaugural Tech economics conference in Seattle late last year which was well attended by the chief economists from various Tech firms, like Amazon.com, Uber, Microsoft, Google, you name it, you know, all the big Tech firms. They now employ a lot of economists for them. Now traditionally you would think that economists work in financial services companies to analyze the economy, keep track of the GDP and answer investors' questions about how the economy is doing and where should they invest their money. But nowadays, Tech firms are hiring economists too, what do they do? These Tech firms have a lot of data to analyze and need someone to make sense of the data. So they hire these economists to help them to analyze data, do a lot of statistical analysis and understand what is going on in the consumer behaviour and pattern. Amazon.com for example, now boasts to have more than 150 PhD trained economists working in Amazon and this is more than any investment banks. These PhDs would analyze the transaction data on the website (such

as price data, the purchasing data) and advise the company on (i) how to make the marketing based on their analysis to maximise the impact, (ii) how should they do their advertisements and so on. So this is one very small example of what economists can do at Amazon."

"Technology is something that is going to change the job structure. So what kind of jobs will be needed? No matter how analytical the computers become, humans need hand-holding, we need the psychiatrist."

Mr. Larry Cao presented another perspective by quoting an observation from Professor Christopher Pissarides a Nobel laureate for Economics, in a recent conference in Taiwan. "Technology is something that is going to change the job structure. So what kind of jobs will be needed? No matter how analytical the computers become, humans need hand-holding, we need the psychiatrist." Larry also admitted that there is a concern in the financial industry. He threw in a contrarian picture outlining by the following conversation. "Whenever Fintech companies are selling AI product/service to their clients, clients were asked "Where do they get the money from?". "We're just firing one-third of the analysts", an exaggerated response. The conversation continued, "When you say it doesn't naturally destroy jobs and it creates new jobs. What new jobs does it create and he said that we need people to label data." Larry wittingly commented, "So we need people understand finance so that they can label finance data, this creates data labelers. The question to you guys is, if you are all well-trained finance professionals, do you want to wake up one morning to become data labelers?" Just a different perspective.

"The way I see is instead of seeing technology replaces job, I would say that we can look it from another angle, technology is changing the society. Some jobs are going to become obsolete but new job is happening. If you think about it many years ago that there's actually jobs of typist. That's a job you hire for someone to type, and but the technology doesn't actually make a robot that type for people, but they create personal computer, so everybody has a computer and no need for a typist anymore." Mr. Samson Lee, Founding Chairman, Belt & Road TechFin Association joined in the discussion.

"Being an academia, I think we have to change. It's not about that the job will disappear, surely, job will disappear but we are here to educate people for their new jobs." Prof. Roman Matousek, Director of Centre for Risk, Banking and Financial Services, University of Nottingham, UK. "I think we are still not preparing students for new job well. One way of how we can improve is to have closer collaboration in this industry.

This is still somehow missing. And this is similar to what I mentioned, demand and supply. What we do is supply...we supply. I teach a module for 20 years and as a lecturer I am very unwilling to prepare something different but I have to adjust to a new demand".

Dr. Chew added, "I just want to add another example close at home here, in The Hang Seng University of Hong Kong, can you imagine, that all your professors were robots? I don't think so? No matter how advanced the technology is, you still want humans to deliver the lectures rather than robots. I think, there are certain things that humans can deliver with human's touch and emotions, and the robots just can't do."



FINANCIAL SERVICES INTO A SEASON OF COLLABORATION?

We are facing a lot of innovations and emerging technology. The innovation market is creating oversupply of technology without a formal application tied up to and therefore changing the nature and the landscape just by justifying their existence. So there is a feeling of cart before the wheel to justify emerging technology's application. So, what is the right business model for the established financial service industry?

Larry responded, "Collaboration model is what everyone is talking about. Does it work for every partnership and what about the DNA of these firms. We didn't see banks able to do this on their own, it's not possible. In the banks, we wear suits and ties and we got the Fintech events typical Fintech events no suits and ties. So culture is very different the programmers come in shorts and the bank executive just would have dressed up. So the collaboration model emphasises very much say fifty-fifty so the Tech guys and the bank guys they have an equal say then in this process. Cause one side dominates because of the, you know, part of the because of cultural conflicts, it's never get the right result. So collaboration is actually the way to resolve this issue precisely because no one side will get it right."

Spencer responded to this issue, "Maybe in the future, banks take a different form which is different from our today's perceptions. So we will create more Fintech companies working together with the big banks and so the DNA will change in the coming 3 to 5 years. Just like the metamorphism, just like the butterfly. Fintech may represent bank or technology or financial companies, etc".

"I totally agree with the coming of collaborations", Samson added. Everyone has the same idea and, if you think about it, it's about convergence, right? "Now the combining from different industries, and creating new business models and new bundling services, and adding skills from different sides."

"Maybe in the future, banks take a different form which is different from our today's perceptions. So we will create more Fintech companies working together with the big banks and so the DNA will change in the coming 3 to 5 years."

Dr. Chew agreed on the point of convergence. "I think in the future, you know, different sectors, they will just converge and the line of distinction, the boundaries between different sectors will just become increasingly blur. If you spin the word Fintech and Techfin interchangeably because you don't really know what is the line of distinction, where is the boundary. So like a lot of Tech firms now, Google, you know, Alibaba, they do a little bit of they do, well, perhaps significant financial services business too. And traditional investment banks like Goldman Sachs, J.P. Morgan, they are also moving into the technology sector. Some even say that Goldman Sachs is actually a technology giant, wrapped inside under the name of an investment bank. I think maybe the business model in the future is that it becomes, doing a bit of everything but still focuses on the core business."

“CRYPTOCURRENCY” IS THE TREND?



Bitcoin is one of the 30 cryptocurrencies in the world but by far the well-known one the world refers to. Price of Bitcoin varies hugely and is known to have such a volatility that no one has seen in any of the known asset classes. It sounds more bad than good and yet the market is excited with many different development on this front such as ICO (Initial Coin Offering).

Samson addressed this with an example, “Holding shares have some claims as you own a piece of the company. A token currency is a lot riskier. Using mooncake as an example. An ICO company thinks about is a team of individuals and says I am going to make the best mooncake in the world. But it is just a startup idea, they have the secret recipe only, no team, no kitchen, nothing. When they go to seek early stage investors, if an investor is willing to take the risk by ordering 1000 boxes, the payment is to use for building the kitchen and building the team, a mutual deal. The issue is there is no regulations. If company is doing what they claim then it is fine but it may not be. The second point is, after the investor buys 1000 boxes of mooncake coupons from this startup, when they take the money, are they really going to go and put in the kitchen and put in the team and deliver the mooncake? No tracking, that’s the problem. Third point is, is the mooncake really that good? But that is a business risk they are taking. It’s very subjective. Even though the team

might be real and they are going to do what they claim they will do, the result might be different. But that’s a business risk. Samson highlighted, “But there are two more additional elements of this coupon. It’s actually a token in ICO, the additional element is this number of coupon is counted so they might say it’s only 1000 boxes. If the coupons and the mooncakes are really that good, demand goes up and some people will speculate. One box of mooncake may go up to \$500 to \$1000 so this is business risk. And then the second element of this cryptocurrency because of the blockchain is solved the trust issue to make the coin tradable between anonymous parties.”

Prof. Matousek commented from an academia view on the need of cryptocurrency. “What kind of value we create? We don’t create a value that distorts the economy because they provide cheaper and cheaper money. The money becomes easier and easier to borrow and what is happening in the society? We don’t save. In Europe, in Japan and China, still savings are high but in Europe, because of this cashless society, we don’t save and buy what one wants on credit. But this is the implications, and this is the sole implication during the global financial crisis they created bubble. These are the tokens you start speculating. You create artificial bubble but the bubble will burst.”

In support of cryptocurrency, Dr. Chew expressed “Tokenization, has the potential to replace investment bankers. Investment bankers are really the middlemen, that facilitate security transactions. So if tokens financing become the reality in the future in 20 to 30 years later, if you can use tokens to represent all assets and the other digitally, transferrable...tradable among individuals and corporations easily, then you don’t really need middleman anymore to facilitate securities transactions, So, one of the long-term implications of tokenization is that, you know, you can potentially replace bankers.”

FINAL COMMENTS



Mr. Larry Cao: AI is still long way to go. Not only because it takes a long time to develop but because AI is an unknown puzzle. AI is a real black box to sell to investment management firms, it's a real and ongoing challenge.



Dr. Seen-meng Chew: Fintech and AI are just going to change the way we live, the way we do work, so rather than fearing what's coming. It is better to embrace, pick up new skills, learn about the trends that are upcoming. We probably be in a better world.



Mr. Samson Lee: Credit card invented 70 years ago. Many of us took this fact for granted. When we grow up, credit card is just there. I think now we are in a very interesting timing. We are actually going to witness to switch from credit card to crypto. Crypto although is very controversial, it is actually getting a lot more attraction than we will realise. It is happening everywhere. If you go search online, even big investment bank Goldman Sachs they are doing their own crypto. All kind of clients are doing their own crypto project. It is not go away, so keep it open mind, you know, learn is not perfect, there are a lot of holes. There is still need a lot of regulation to make this perfect. But keep in mind, just think about stock. You think when stock market first came out, there is not a scam? Even today, there are a lot of scams in the stock market. But don't be intimidated by the negativities, open mind, look at the positive side. There are a lot of opportunities really being opened up by the crypto.



Ir Spencer Li: In this changing economy, HK government regulators like HKMA, and also bankers, universities, and also the employers must focus on how to develop talent. In these Fintech days and ages, I don't think a lot of youngsters know too much about this. Is our new generation ready for the change? This is a paradigm shift. So that's why we continue to educate, to input more energy by more business collaboration, just like HSU to continue to organise this kind of seminar, or advocate more new ideas to the public. So, I think the future is still bright, because Hong Kong is a lucky land. We had a lot of difficulties in the past, but we always have a lot of opportunities for us to enjoy in the future.



Prof. Roman Matousek: Being an academia, I have a different view, so I think we have to educate our students for their job and be prepared for the job. But I think our contribution is not only to listen to each other but also to teach our students to learn about the social implications of this change, the social implication on the economy, social behaviour, all these area, because there are positive and negative aspects and they are looking out. Everyone is so positive, everyone is bullish on the technology. So, our duty is to prepare our students for the new generation, for the new technology and so on. But as I have mentioned, this social economic aspect of the changes, we have to prepare them to think about it. Because they can rather become CEOs like you, they can change the society, can have a big influence on everyone.



From left to right:

Dr. David Chui (Moderator)
 Partner, XCES Capital Advisory LLC
 Associate Professor (Practice),
 Hang Seng University of Hong Kong

Mr. Larry Cao
 Director,
 Content, Asia Pacific
 CFA Institute, Hong Kong Office

Dr. Seen-meng Chew
 Head of Research, FinFabrik

Mr. Samson Lee
 Founding Chairman,
 Belt & Road TechFin Association

Prof. Roman Matousek
 Chair of Finance
 Director, Centre for Risk, Banking and Financial Services,
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04 | RIDING THE CRYPTOCURRENCY WAVE: HOW INVESTORS ACCESS THE CRYPTO MARKETS

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INTRODUCTION

Cryptocurrency markets have exploded onto investors newsfeeds over the last few years as digital assets, like Bitcoin and Ethereum, have transformed from a niche interest into a serious financial industry. This phenomenon and surge in interest, have been driven by the untapped potential of distributed ledger technology, commonly known as blockchain.

Yet, to the uninitiated individual investor, getting exposure to cryptocurrency world can look to be a complicated landscape. Also, there are risks abound in selecting a trusted exchange, user interfaces are often unfriendly and trading between currencies can be complex. Individuals also have the option to invest through ICOs (Initial Coin Offerings), STOs (Security Token Offerings) or through purchasing digital assets via OTC (Over The Counter) channels.

Increasingly, however, there has been a proliferation of indirect methods of investment which are helping to solve these cumbersome issues by granting easy access to investors as supporting infrastructure and adoption quickly develop. Professionals are joining this sector coming from traditional financial institutions and bring valued experience and skills, helping to tame this nascent asset class. As such, alongside existing venture capital firms which have been quick to embrace emerging technology, we are seeing the emergence of professionally (risked) managed funds, relieving much of the required time commitment of individual investors.

Within this publication we look to highlight some key ways that investors can access the cryptomarket and the associated pros and cons for each approach.

DIY (DO IT YOURSELF) DIRECT CRYPTO INVESTING

At present, the cryptocurrency market is still relatively small on a global scale when compared to traditional asset markets. Further, much of the digital assets held by investors are administered personally and there are many common barriers that withhold most investors from investing in cryptocurrencies.

A 24/7, volatile, unregulated marketplace creates an environment in which investors need to constantly be on guard. Minimal safeguards are available to investors. The market can swing on a single headline, requiring investors to monitor their holdings very closely.

To get initial access, one is required to purchase assets on a crypto exchange. This means that the investor needs to familiarize him/herself with the process of opening an exchange account, including (a) a time-consuming, but vital, KYC & AML (Know Your Customer & Anti Money

Laundering) process, (b) depositing fiat into an unknown entity's bank account, (c) using an unfamiliar user interface to a complicated trading platform. Furthermore, given the centralization of trading volumes, digital exchanges have also been magnets for nefarious actors and, as such, are prone to hackings. Millions in USD value have been stolen from exchanges in the past 12 months alone. This exemplifies the extent to which individuals themselves must take care of the security and custody of their own assets, which is another large time investment and responsibility on individuals who are looking to invest directly. The cryptocurrency asset class as a whole currently does not benefit from a fraction of the regulation that traditional banks and investment firms need to adhere to. Investors also need to handle the taxes themselves instead of receiving a comprehensive "gains and losses" report for a period of time from a provider.

Table 1: Individual / Direct access

	Benefits	Challenges
Purchase on Crypto Exchange	<ul style="list-style-type: none"> • Investors can pick assets they are comfortable with • Ability to exit market positions quickly • Ability to trade volatility (subject to investors time) • Open to any individuals, including retail 	<ul style="list-style-type: none"> • Counter party risks (solvency of exchange, risk of hacking) • Deposit of fiat into an unknown bank account • Withdrawal / transaction fees • Requires fundamental analysis of each digital asset invested • Requires self managed asset custody • Acquisition and administration of digital asset wallet • Opening an exchange account • Requires individual time to monitor investments • No legal protection (lack of regulation)

	Benefits	Challenges
ICO Project Funding	<ul style="list-style-type: none"> • Potentially strong return profiles • Ability to exit on markets for quick gains • Utility token may be of direct use 	<ul style="list-style-type: none"> • Time intensive analysis / research of ICO project • Potential for project collapse / multi level marketing • Potential for scam • May be purchasing at higher valuation than previous investors • Lack of liquidity • Lack of control over project development • Subject to unknown terms and conditions • Lack of regulatory oversight • Potentially poorly defined tokenomics

Following the mantra of “only invest into things that you understand”, investors must dedicate the time to do their own research and familiarize themselves with what they are buying. That said, even if one invests the time to investigate these opportunities, the relentlessly expanding crypto market makes it almost impossible to keep track of, and

analyze, the multitude of cryptocurrencies and ICOs in hopes of capturing and avoiding short-term price dislocations.

The required time investment to navigate this risky market, as well as the high transaction costs, has put off most investors despite the huge upside potential it offers.

PROFESSIONALLY MANAGED INDIRECT CRYPTO INVESTING - HOW CRYPTO-FUNDS HELP DEAL WITH THE CHALLENGES

The collective challenges facing individual investors have given rise to professionally managed portfolios of cryptocurrencies and tokens. As an adaptation of traditional funds, crypto funds make it easier for investors to navigate this new asset class. As an example: in traditional markets investors have a plethora of investment vehicles that they can choose from in order to gain exposure to certain markets without having to micromanage all of the risks; giving investors access, through a professionally managed fund, to the asset class of their choice. There are strong arguments that digital assets are best administered through a professionally managed indirect product, particularly as

the benefits of managing a risky asset class are arguably more significant than that of equities or bonds.

Instead of directly purchasing and trading cryptocurrencies, investors defer the responsibility to a crypto-fund which is managed by portfolio managers and traders, who are supported by risk management, legal and operations departments. In return, these investment specialists will collect a percentage via management and performance fees for their efforts to give investors risk adjusted return and a stress-free, effortless access to the crypto market.

Table 2: Collective / Indirect access

	Benefits	Challenges
Fund Vehicle	<ul style="list-style-type: none"> • Easy access to crypto market • Well established legal structures (Cayman Islands, BVI, Luxembourg) • Professionals actively manage strategy • Safer and professional custody • Provide balanced market exposure / diversification • Managed counter party risk • Required professional research lifted off investor • Reactive to market trends and information • Typically no wallet required • Typically no exchange account required 	<ul style="list-style-type: none"> • Fees charged by the manager • Illegitimate fund structures • Lock up periods • No control over allocation • Professional investors only typical min capital investment \$100K • Due diligence on investment team and structure

	Benefits	Challenges
Equity Investment	<ul style="list-style-type: none"> • Control, influence on the underlying company • Rights to profits • Potential to exploit specific market segments / projects • Less sensitive to regulatory pressure (Private placement) 	<ul style="list-style-type: none"> • Hard to value companies involved in blockchain • Requires indepth analysis of the firm • Considerable understanding of the team and business model • Sensitive to cash flow • Potentially sensitive to local fund raising / economic environment • Less sensitive to crypto market

The aim is to allow investors to gain exposure to all of the opportunities of the crypto market such as exponential growth and extreme volatility—while at the same time avoiding the downside risks associated with individual investments. Crypto-funds offer diversification. They can be actively managed and are continually reviewed by their management teams in order to keep up with the evolving marketplace. Further, fund managers will generally aspire to create sophisticated management techniques and guidelines that properly inform all investment decisions and navigate risky market environments.

Various strategies aim for long-term appreciation through the application of asset management techniques that include, but are not limited to derivatives, hedging techniques and short selling. Experience of other risk markets helps, especially when looking to make calculated and well researched decisions to navigate a volatile asset class, such as cryptocurrencies.

This approach is a game changer for investors that have been hesitant to dive into digital assets. It is breaking down the barriers that kept them on the sidelines. They have access to a single product that can deliver:

- Easy access and entry
- Exposure to the exciting potential of cryptocurrencies which are uncorrelated with traditional asset classes
- A focus on higher liquidity and skilled mechanisms for making profits and lowering downside
- An understandable lens with which to view insights into the portfolio holdings

Much like their traditional counterparts, investors are patiently awaiting the US regulator, SEC, to approve the Digital Asset version of Exchange Traded Funds (DAETFs). It is clear that in terms of investment solutions these types of funds will provide significant benefits to both retail and institutional investors as this will grant another “easy to access” method for investors and likely will boost liquidity.

Finally, investors have one last choice to get exposure. They could invest directly into a blockchain or crypto startup. Conducting equity investments can entail significant capital expenditure, with other relevant sensitivities to cash flow, regulatory pressures and economic landscape. In addition, such an investment will also require significant time to perform the relevant due diligence on such a firm. The main benefit of a direct equity investment is that it provides investors control of companies in ways that ICOs don't, such as rights to profits and less sensitivity to market forces than secondary markets, depending upon the business model. Venture capital firms have been doing this for some time and an individual investor would need to be familiar with the venture capital fund and/or the company if they were investing directly into the company.

CONCLUSION

There are significant benefits accruing to investors regarding digital asset portfolio exposure. However, the means of exposure can vary significantly in their characteristics. There are drawbacks and benefits. From the direct investment side, whilst purchasing assets on exchange provides more flexibility and ability to trade the volatility in the market, there are significant risks that investors expose themselves to. At the same time, there is inherent requirement to invest significant time into educating oneself on the relative advantages of each asset. ICOs, another direct investment option, have the potential to generate strong returns and may well be useful to the investor despite the lack of liquidity, limited control or enforcement and potential for mismanagement by the underlying project owners. Overall, direct investment, as with any other asset classes, can require a higher time investment from an individual in order to monitor the numerous risks associated with investing and managing one's assets. One may argue that in addition the nascent, lightly regulated and distinctive characteristics of crypto-assets add further complexity to direct investment.

Professionally managed digital asset investment through indirect access is maturing and credible management solutions are increasingly coming to the fore. While there are some additional considerations associated with indirect investment e.g. fees, lock-up periods and minimum initial capital investment, these solutions are appropriate for investors looking for access to the digital asset class. Economies of scale also mean that professional funds offer comprehensive solutions in terms of safe custody, research, risk management and volatility exploitation. Should the SEC approve the launch of DAETFs, making crypto available to investors with improved liquidity, retail investors will have superior access to crypto-assets, heralding a significant shift in how the world invests in digital assets.

We see a future where much of the investment landscape will be dominated by funds providing investment solutions to professional, institutional as well as retail investors. As digital assets creep into the mainstream we will see an inexorable movement towards professional management of the digital assets.



05

EXPLORING THE RELATIONSHIP BETWEEN FINTECH ADOPTION, FINANCIAL LITERACY, AND FINANCIAL BEHAVIOR OF YOUNG GENERATION

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INTRODUCTION

In many countries and cities, including the Mainland China and Hong Kong, Fintech innovation and adoption are expected to grow further due to the improving regulatory framework and increasing numbers of Fintech solutions providers and aggressive promotion by the financial institutions and financial services providers.

While it can be argued that Fintech can help increasing the financial literacy (Gutierrez, 2017), it is also a concern whether the financial literacy of the Fintech application users are high enough to support them to manage and make well-informed decision for their personal finance matters such as spending, saving and investment.

In particular, the current young generation vis-a-vis the generations in previous decades, are exposed to more and

more complicated financial products and services which are actively promoted aggressively through the very convenient Fintech applications and different marketing media and channels. The lack of financial literacy may lead the younger generation making poorly-informed personal financial decisions which will have a knock on effect in their future.

This article is going to explore and investigate from relevant literatures the relationship between Fintech adoption, financial literacy and financial behavior, aiming at generating a better understanding of whether the Fintech adoption would lead to higher financial literacy or whether the Fintech adaptors exhibit financial literacy overconfidence and the impact of overconfidence on financial behavior such as financial advice seeking, participation in investment and management of personal finances.

FINTECH

The term “Fintech” either refers to the startups and ventures delivering IT-enabled financial services either to financial companies or directly to end-users, with retail consumers as the ultimate targets (Zavolokina et al., 2016; Micu and Micu, 2016; Yonghee et al., 2016; Lee & Lee, 2016; Arner et al., 2016) or simply as the financial technology and innovation which transforms and reshapes financial services sector or the financial products and services distributed via technology (Lee and Shin, 2018; Chen, 2016). No matter how the term is defined, Fintech is transforming banking, wealth management, investment and borrowing/lending practices. Players in financial services sector, no matter they are the traditional institutions or new ventures, have to build capabilities, to invest in, and leverage Fintech to sustain the competitiveness.

Common applications of Fintech include P2P lending, e-wallets, mobile point of sale, and mobile banking,

insurance, investment, etc. which are categorized systematically in existing literatures either as Fintech business models, markets, solutions, types of Fintech or e-finance services for businesses and individuals (Micu and Micu, 2016; Kalmykova and Ryabova, 2016; Lee and Shin, 2018).

In many countries and cities, Fintech innovation and adoption are expected to grow further. Take China as an example, Fintech development is speeded up by the improving regulatory framework to provide the momentum to the “new economy” to drive the country toward an era of social modernisation (Knowles, 2017; Chen, 2016). More research is necessary to get a better understanding of the interrelationship of the Fintech adoption with some essential issues. The following section reviews the literatures related to Fintech adoption.

FINTECH ADOPTION AND THE CONCERN

The common focuses of existing literatures about Fintech were legislation issues, investment decisions in Fintech innovation and managerial challenges, examining from the implementation and market development perspectives (Arner et al., 2016; Puschmann, 2017; Kauffman et al., 2015; Micu and Micu, 2016; Lee and Shin, 2018; Chen, 2016; Zhou et al., 2015).

However, the research on factors affecting Fintech adoption and its consequences is still at the embryo stage, with most literatures only taking mobile payment services as the common research context (e.g. Kim, et al., 2016; Dahlberg et

al., 2015; Kerviler et al., 2016; Ting et al., 2016). Little attention was paid to other Fintech applications such as P2P lending (e.g. Lee, 2017), personal finance and investment. From those limited existing researches, the focuses were about how the characteristics of the technology, the perceived costs and benefits as well as users attitude lead to the intention of Fintech adoption. Although there was call for considering consumer protection in Fintech development and regulation (e.g. Chen, 2016), in-depth investigations on the effects and impacts of Fintech on the well-being of Fintech end-users were quite limited. In particular, the relationship between Fintech adoption and financial literacy is inconclusive.

While it can be argued that Fintech can help increasing and improving the financial literacy because it facilitates financial inclusion by offering easier and more frequent access and exposure to variety of financial information, knowledge and products (Gutierrez, 2017; Buckley and Webster, 2016), it is also a concern whether the financial literacy of the Fintech applications end-users are high enough to support them to manage and make well-informed decision for their personal finance matters such as borrowing, spending, savings and investment (Buckley and Webster, 2016; Wachira & Kihui, 2012; Miller et al., 2009). Furthermore, the adoption of financial services was found not based on financial literacy level in some previous research (e.g. Wachira and Kihui, 2012). Given the above arguments were either at the conceptual discussion level or only empirically tested in single country, more empirical research is necessary to get a better understanding of their relationship.

A particular concern is that the current young generation, vis-a-vis the generations in previous decades, are exposed to more and more complicated financial products and services

which are actively promoted aggressively through the very convenient Fintech applications and the related marketing media and channels. The lack of financial literacy may lead the younger generation making poorly-informed personal financial decisions which will have a knock on effect in their future. This concern is supported by research findings that young users are early adopters of various Fintech products such as money transfers and financial planning (Gulamhuseinwala et al., 2015), and the fact that financial literacy worldwide is being found very low, including countries where Fintech adoption rate is high, such as China (Klapper et al., 2015).

To deal with the above concern and to identify further research direction, the fundamental theoretical base should be identified. The following section looks for possible cues from relevant literatures focused on traditional financial service provision channels, in which the relationship between financial literacy and adoption of various financial services are reviewed. Some extended concepts such as “financial literacy overconfidence” and “perceived financial literacy” will also be examined.

FINANCIAL LITERACY

Financial literacy is about the knowledge, skills, awareness, attitudes and behaviour to manage financial resources for effective decision making of financial matters to achieve financial wellbeing (Yuan and Jin, 2017; OECD, 2015; Paiella, 2016). Financial literacy may improve one’s ability and capability to deal with macroeconomic shocks (Paiella, 2016; Klapper et al., 2013).

Lusardi and Mitchell (2014) conceptualized financial literacy as “people’s ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions” (Lusardi & Mitchell, 2014, p. 6). Three elementary concepts of financial literacy were identified. The first is the numerical capacity to do

computations involving interest rates, such as compound interest. The second is the concept of inflation; and the last one is the understanding of risk diversification. Financial literacy measurement items were developed accordingly and have been adopted by various studies.

Empirical research found that individuals are less likely to have proper retirement planning if they are less financially literate (Lusardi and Mitchell, 2007a). Furthermore, because of this, those individuals would accumulate a lower level of wealth (Hilgert et al., 2003). In addition, individuals who are less financially literate are less likely to invest in the stock market, holding less diversified portfolios and less likely picking mutual funds with lower fees (Guiso and Jappelli,

2009; Hastings and Tejada-Ashton, 2008 and van Rooij et al., 2011, cited in Paiella, 2016). Furthermore, they fail to take advantage of financial innovation (Campbell, 2006; Lusardi and Mitchell, 2007b). In addition, individuals who are less financially literate tend to make poor debt management decision such as making excessive debt, taking loans with higher fees or interest, less likely refinancing mortgages when market interest rates is falling, and are more likely to

have problem with or even default on sub-prime mortgages (Paiella, 2016; Campbell, 2006).

In fact, financial literacy worldwide is being found very low, including countries where Fintech adoption rate is high, such as China (Klapper et al., 2015). It deserves knowing more about what factors might affect the financial literacy level.

IS FINTECH ADOPTION A DETERMINANT OF FINANCIAL LITERACY?

Literature review found that factors affecting financial literacy level are age, gender, education level, and the annual income. Relative to men, women were found having a lower level of financial literacy. Comparing with the younger population, the older population performed better. Furthermore, households with higher education level or income had more knowledge in investment than their counterparts with lower education level or income (Volpe et al., 2002; Mouna and Anis, 2017).

Although there is conceptual proposition that Fintech can help increasing and improving the financial literacy because it facilitates financial inclusion by offering easier

and more frequent access and exposure to variety of financial information, knowledge and products (Richard and Mohammad, 2018; Gutierrez, 2017; Buckley and Webster, 2016), no empirical research has been done to prove the argument. Indirectly, if we argue that Fintech is a financial socialization agent because it is a media of digital financial services that increase the frequency of engaging in financial knowledge and learning opportunity, Fintech may have a positive effect on financial literacy of young generation (Isomidinova and Singh, 2017). However, the relationship was still inconclusive because an earlier similar study found no relationship between financial socialization agents and financial literacy (Albeerdy and Gharleghi, 2015).

FINANCIAL LITERACY AND FINANCIAL BEHAVIOR

Research found that a high level of financial literacy has a positive impact on management of personal finances (Navickas et al., 2014) and higher participation in the derivatives markets (Hsiao and Tsai, 2018).

Also, there is a branch of financial literacy research associating “financial literacy overconfidence” with financial behavior. By surveying both the self-assessed and measured financial literacy, the degree of self-perceived

literacy that is not perceived by actual financial literacy is an indicator of overconfidence. Research found that people with higher confidence or overconfidence tend to seek for less professional financial advice in saving, investment, stock market participation and mortgage decision (Porto and Xiao, 2016; Kramer, 2016; Xia et al., 2014). The concern is the overconfident people may claim they understand advice or financial products but actually they do not (de Zwaan et al., 2017).

RESEARCH GAPS, IMPLICATIONS AND CONCLUSION

Literature review shows that research on factors affecting Fintech adoption and its consequences is still at the embryo stage. Existing knowledge cannot provide conclusive answer about whether the Fintech application users are financially literate to manage and make well-informed decision for their personal finance matters such as spending, saving and investment. In-depth investigations on the effects and impacts of Fintech on the well-being of Fintech end-users were quite limited. In particular, the relationship between Fintech adoption and financial literacy is inconclusive. Furthermore, availability of research is scarce about the consequence of Fintech adoption such as the tendency of seeking fewer financial advice, more active participation in investment products due to overconfidence in their financial literacy resulting from more exposure to financial products and services when using Fintech applications. Although some relevant research findings are identified, but their applicability and generalizability to the new research context in the Fintech era remain questionable. One implication is that more attention to financial literacy is required for Fintech research.

Literature review also confirms that more attention should be paid to the young generation. This is because the financial literacy level of younger population is lower than the older population. In particular, the current young nowadays are exposed to more innovative financial products and services which are actively promoted aggressively through the very convenient Fintech applications channels. The lack of financial literacy may lead the younger generation making poorly-informed personal financial decisions which will have a knock on effect in their future. This leads to another implication that more research should be conducted to understand whether the Fintech adoption can enhance their financial literacy or result in overconfidence, as well as the impact to purchase decision involvement for financial services. It could provide insights to policy makers as well as education sectors on the needs to enhance the financial literacy of the new generation for the well-being of the individuals as well as the society.

References

- Albeerdy, M.I. and Gharleghi, B. (2015). Determinants of the Financial Literacy among College Students in Malaysia. *International Journal of Business Administration*, 6(3), 15-24.
- Arner, D. W., Barberis, J., & Buckley, R. P. (2016). 150 years of Fintech : An evolutionary analysis. *Jassa The Finsia Journal of Applied Finance*, 3, 22.
- Buckley, R.P. and Webster, S. (2016). Fintech in Developing Countries: Charting New Customer Journeys, *Journal of Financial Transformation*, 44.
- Campbell, J. (2006). Household finance. *The Journal of Finance*, 61, 1553–1604.
- Chen, L. (2016). From Fintech to Finlife: the case of Fintech Development in China. *China Economic Journal*, 9(3), 225-239
- Dahlberg, T., Guo. J. and Ondrus, J. (2015). A critical review of mobile payment research. *Electronic Commerce Research and Applications*, 14, 265-284.
- de Zwaan, L., Lee, C., Liu, Y. And Chardon, T. (2017). Overconfidence in financial literacy: implications for planners. *Financial Planning Research Journal*, 3 (2), 31-46.
- Gulamhuseinwala, I., Bull, T. and Kewis, S. (2015). FinTech is gaining traction and young, high-income users are the early adopters. *The Journal of Financial Perspectives*, 16-23.
- Gutierrez, C.M (2017). FinTech Can Help Increase Financial Literacy, *HuffPost* [online], 21 Aug. available from <https://www.huffingtonpost.com/entry/fintech-can-help-increase-financial-literacy_us_59a720c6e4b02498834a8e5a>
- Hilgert, M., Hogarth, J., and Beverley, S. (2003). Household Financial Management: the Connection between Knowledge and Behavior, *Federal Reserve Bulletin, Washington, DC*.
- Hsiao, Y.J. and Tsai, W.C. (2018). Financial literacy and participation in the derivatives markets. *Journal of Banking and Finance*, 88, 15-29.
- Isomidinova, G. and Singh, J,S,K. (2017). Determinants of financial literacy: a quantitative study among young students in Tashkent, Uzbekistan. *Electronic Journal of Business & Management*, 2(1), 61 - 75.
- Kalmykova, E. and Ryabova, A. (2016). FinTech market development perspectives. SHS Web of Conferences, 28
- Kauffman, R. J., Liu, J., Kauffman, R. J., & Ma, D. (2015). Competition, cooperation, and regulation: Understanding the evolution of the mobile payments technology ecosystem. *Electronic Commerce Research and Applications*, (November).
- Kerviler, G., Demoulin, N.T.M. and Zidda, P. (2016) Adoption of in-store mobile payment: Are perceived risk and convenience the only drivers? *Journal of Retailing and Consumer Services*, 21, 334-344.
- Kim, Y., Park, Y.J., Choi, J. And Yeon, J. (2016) The adoption of mobile payment services for Fintech. *International Journal of Applied Engineering Research*, 11(2), 1058-1061.
- Klapper, L., Lusardi, A. and Oudheusden, P.V. (2015). Financial Literacy Around the World: Insights from the Standard & Poor's Rating Services Global Financial Literacy Survey < http://gflec.org/wp-content/uploads/2015/11/3313-Finlit_Report_FINAL-5.11.16.pdf?x87657>
- Klapper, L., Lusardi, A. and Panos, G. (2013). Financial literacy and its consequences: evidence from Russia during the financial crisis. *Journal of Banking & Finance*, 37 (10), 3904–3923.

- Knowles, B. (2017). Is fintech the way forward for China's economy? CTMfile [online], 18 Oct. available from <<https://ctmfile.com/story/is-fintech-the-way-forward-for-chinas-economy>>
- Kramer, M.M. (2016). Financial literacy, confidence and financial advice seeking. *Journal of Economic Behavior & Organization*, 131, 198-217.
- Lee, I. and Shin, Y.J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges, *Business Horizons*, 61, 35-46.
- Lee, S. (2017). Evaluation of Mobile Application in User's Perspective: Case of P2P Lending Apps in FinTech Industry. *KSI Transactions on Internet and Information Systems*, 11(2), 1105-1117.
- Lee, S., & Lee, D. (2016). A Study on Fintech Based on Actual Cases. *International Journal of U- and E- Service, Science and Technology*, 9(8), 439-448.
- Lusardi, A., and Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5-44.
- Lusardi, A., Mitchell, O.S. (2007a). Baby Boomer retirement security: the role of planning, financial literacy, and housing wealth. *The Journal of Monetary Economics*, 54, 205-224.
- Lusardi, A., Mitchell, O.S. (2007b). Financial literacy and retirement preparedness: evidence and implications for financial education. *Business Economics*, 35-44.
- Micu, I. and Micu, A. (2016). Financial Technology (FINTECH) and its Implementation on the Romanian Non-banking Capital Market. *SEA - Practical Application of Science*, 11, 379-384.
- Miller, M., Godfrey, N., Levesque, B. & Stark, E. (2009). The Case for Financial Literacy in Developing Countries: *Promoting Access to Finance by Empowering Consumers*. World Bank, DFID, OECD, and CGAP joint note.
- Mouna, A. and Anis, J. (2017). Financial literacy in Tunisia: Its determinants and Its implications on investment behavior. *Research in International Business and Finance*, 39, 568-577.
- Navickas, Gudaitis, T. and Krajnakova, E. (2014). Influence of financial literacy on management of personal finance in a young household. *Business: Theory and practice*, 15(1), 32-40.
- OECD (2015). *2015 OECD/INFE toolkit for measuring financial literacy and financial inclusion*. Paris: Organization for Economic Cooperation and Development.
- Paiella, M. (2016). Financial literacy and subjective expectations questions: A validation exercise. *Research in Economics*, 70(2), 360-374
- Porto, N. and Xiao, J.J. (2016). Financial literacy overconfidence and financial advice seeking, *Journal of financial service professional*, 70(4), 78-88
- Puschmann, T. (2017). Fintech. *Business & Information Systems Engineering*, 59(1), 69-76.
- Richard, K. and Mohammad, H. (2018). FINTECH: FinTech Entrepreneurs versus Banks in Indonesia. *Advanced Science Letters*, 24(1), 264-266
- Wachira, M. and Kihui, E. (2012). Impact of Financial Literacy on Access to Financial Services in Kenya. *International Journal of Business and Social Science*, 3(19), 42-50.
- Xia, T., Wang, Z. and Li, K. (2014). Financial literacy overconfidence and stock market participation. *Social Indicators Research*, 119, 1233-1245.

Yonghee, K., Young-Ju, P., Jeongil, C. and Jiyoung, Y. (2016). The Adoption of Mobile Payment Services for "Fintech". *International Journal of Applied Engineering Research*, 11(2), 1058–1061.

Yuan, Y. and Jin, M. (2017). Financial Literacy in China: Priorities and a Direction. *CDS Working papers, Washington University in St. Louis*, 17-37

Zavolokina, L., Mateusz, D., & Gerhard, S. (2016). FinTech – What's in a Name? *In Thirty Seventh International Conference on Information Systems* (pp. 1–12).

Zhou, W., Arner, D.W. and Buckley, R.P. (2015). Regulation of digital financial services in China: last mover or first mover? *Tsinghua China Law Review*, 8(1), 25-62.

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The Hang Seng University of Hong Kong (HSUHK) is a non-profit private liberal-arts-oriented university in Hong Kong with five Schools (Business, Communication, Decision Sciences, Humanities & Social Science, and Translation) and around 5,000 full-time students. Adopting the “Liberal + Professional” education model which incorporates the iGPS “desired graduate attributes” framework, HSUHK is a residential institution which puts quality teaching and students’ all-round development as its highest priorities. Aspiring to be a leading private liberal-arts-oriented university in the region, HSUHK features top-quality faculty members, award-winning green campus facilities, innovative degree programmes, impactful research on corporate sustainability, and excellent student support services, with the aim of nurturing young talents with critical thinking, innovative minds, human caring attitude, moral values and social responsibilities.

About School of Business

School of Business aspires to offer one of the finest student experiences in business education in Hong Kong and is committed to providing an educational experience based mainly on small group delivery that fosters student engagement. The School currently offers a four-year undergraduate Bachelor of Business Administration (BBA) programme with pathway concentrations in Accounting, Banking and Finance, and Marketing; a BBA in Corporate Governance; a BBA in Financial Analysis and a BBA in Management. Recently, the School has embarked on a new initiative to launch a Master of Science in Entrepreneurial Management and this was offered in the 2018/19 academic year. In line with the vision to become a reputable global business school and build on robust strengths in teaching, learning and research, the School plans to seek AACSB accreditation and preparation is now underway.

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