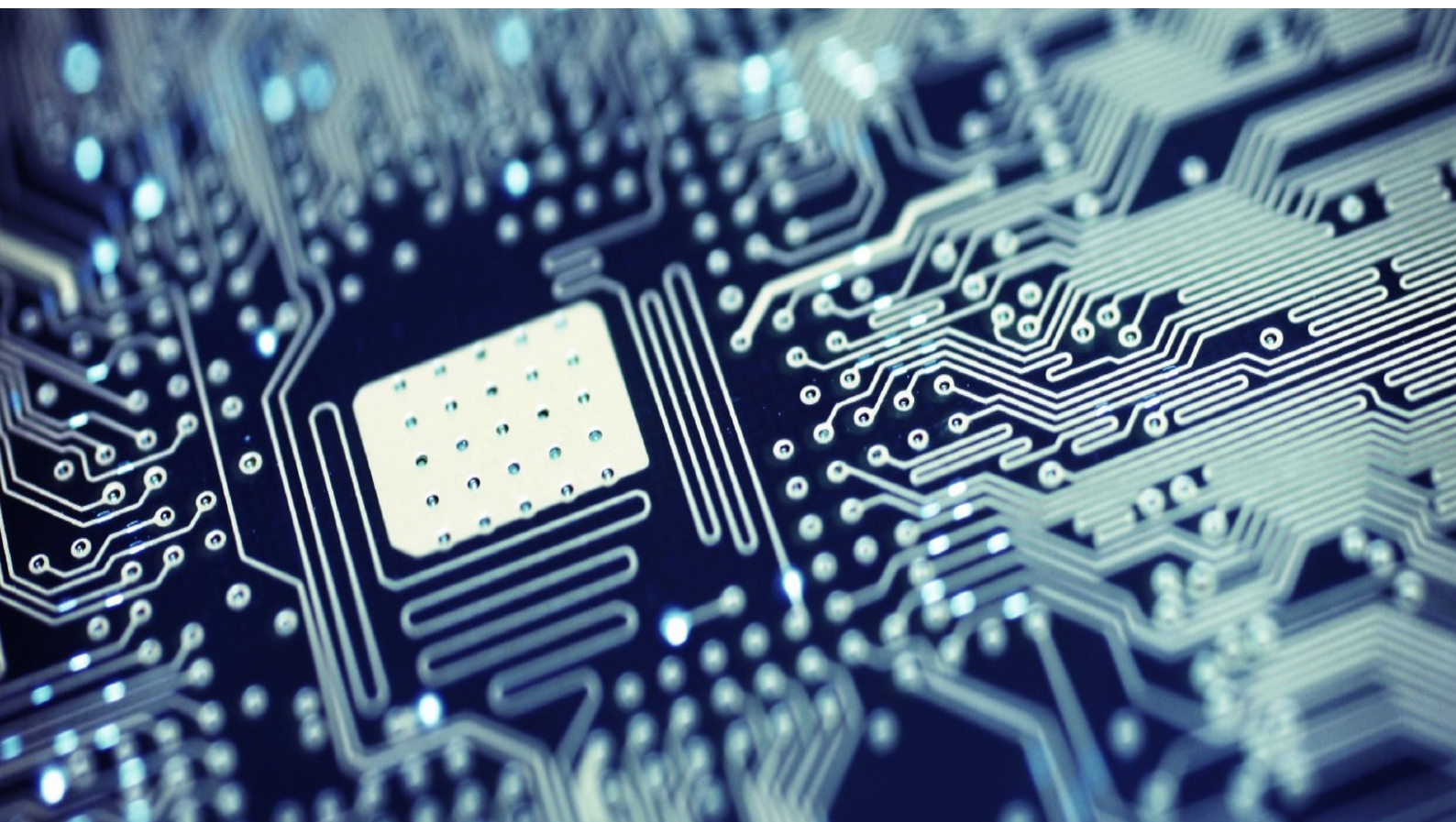




Trends and Innovations in Financial Services

JANUARY 2017



Financial Centre Futures





The Z/Yen Group

The Z/Yen Group (Z/Yen) helps organisations make better choices – our clients consider us a commercial think-tank that spots, solves and acts. Our name combines Zen and Yen – “a philosophical desire to succeed” – in a ratio, recognising that all decisions are trade-offs. One of Z/Yen’s specialisms is the study of the competitiveness of financial centres around the world. A summary of this work is published every six months as the Global Financial Centres Index.

TFSA

The Toronto Financial Services Alliance (TFSA) is a unique, public-private partnership dedicated to growing Toronto region’s financial services cluster and building it as a ‘top-ten’ global financial services centre. Established in 2001, TFSA is a collaboration involving three levels of government, the financial services industry and academia.

The author of this report, Mark Yeandle, would like to thank the teams at Z/Yen and the TFSA for their contributions with research and ideas.

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Executive Summary

Innovations in financial services are one of the key areas occupying senior executives in financial services firms worldwide. Things are changing and existing business processes are being disrupted at such a pace that it is often difficult to make sense of the developments in the industry.

In order to see through some of the confusion, this report provides an overview of the perceptions of international finance professionals and their views regarding recent trends and innovations in financial services and by FinTech.

The report was commissioned by the [Toronto Financial Services Alliance \(TFSA\)](#) and produced by the [Z/Yen Group Limited](#). The research was conducted via two online questionnaires as well as desk research and informal interviews with experts in the industry.

We studied ten current trends in financial services including Brexit, increased concern over data protection, increased regulatory pressures, increased transparency in asset and wealth management, increased volatility in oil & gas finance and the global slowdown in economic growth.

We also examined a number of specific areas of FinTech including cyber-security, mutual distributed ledgers (MDLs, aka blockchains) and new payment and transaction systems.

We also assessed how different financial centres may fare with the innovations taking place. The centres we asked about were selected to give a good coverage of the different geographical regions.

Trends and Innovations

Of the areas we researched, increased regulatory pressures and a general slowdown in economic growth are seen as the most significant areas. Brexit was in fourth place and viewed by many as a global issue rather than one that just affects the UK and the EU.

35% of our respondents felt that increased regulatory pressures would have a negative effect on financial centres with 55% thinking that the increase in pressure would have little or no effect.

We asked respondents to assess what effect the anticipated slowdown in economic growth would have on financial centres. 28% of responses said they expected a negative or very negative effect whilst 13% thought that the slowdown would have a positive or very positive effect. There were no significant variances from these average scores for the different financial centres.

We asked respondents to assess what effect the anticipated increase in central bank intervention would have on the competitiveness of financial centres. 28% of responses said they expected a negative or very negative effect whilst 13% thought that increased intervention would have a positive or very positive effect. Overall 59% of respondents thought that there would be little or no effect. A significant number of respondents confirmed that economic intervention was often necessary to promote growth and control domestic economies.

On 23 June 2016 the United Kingdom of Great Britain and Northern Ireland voted in a referendum to leave the European Union. Overall, 64% of respondents felt that this would have little or no effect on them. However, nearly 70% of respondents thought that Brexit would have a negative or very negative effect on the competitiveness of London.

Respondents felt that the European centres of Frankfurt and Luxembourg are likely to experience a positive effect from Brexit but that financial centres further away from Europe such as San Francisco, Sydney and Toronto would see little or no effect from Brexit.

Overall half of respondents thought that there would be little or no effect. The significant variances from the average were for Hong Kong and Singapore.

We asked respondents to assess what effect the anticipated increase in required levels of transparency in asset and wealth management would have on the competitiveness of financial centres. Overall half of respondents thought that there would be little or no effect. The significant variances from this average were for Hong Kong and Singapore where respondents felt that more transparency would have a negative or very negative effect (over 45% of respondents in both cases).

Other findings include:

- Over 60% of respondents thought that there would be little or no effect on financial centres from increased concern by governments and regulators on data protection;
- Respondents felt that Hong Kong and Singapore were in the strongest positions to benefit from an increased internationalisation of Renminbi trading. London and New York as leading global centres are also seen to have big opportunities;
- The top four global financial centres (London, New York, Singapore and Hong Kong) are seen to have good potential to gain from the increased use of Public-Private-Partnerships (PPPs) in infrastructure financing and from the growth in Islamic finance. Toronto was seen as having particularly good opportunities to gain from PPP initiatives.

FinTech

In terms of specific areas of FinTech, cyber-security was perceived as the single most significant area overall, with big data analytics and mutual distributed ledgers (MDLs aka blockchains) in second and third. Respondents from Asia and Europe thought that cyber-security was more significant than respondents from North America.

When asked about the importance of drivers for growth in FinTech, respondents' views were split very evenly between client demand, business process streamlining and cost savings.

We asked what the main factors were, that make technology so attractive to finance firms. The top two factors, by some margin, were security/data protection and cost reduction. Improved client retention and monetisation of data came third and fourth respectively.

We were keen to discover the main factors that might slow down the adoption of new technology in financial institutions. The existence of legacy systems was the leading factor but all eight factors we suggested scored fairly evenly.

When asked who were the most important innovators our respondents clearly feel that technology start-ups lead the way. Despite regular comments that banks have become technology companies they are well behind in terms of important innovations in the view of the respondents.

We asked respondents which financial sector would suffer the most disruption from advances in FinTech. Perhaps unsurprisingly, retail banking came top of the list. The insurance sector was second. We speculate that this is due to the possibilities for mutual distributed ledgers to revolutionise the sector.

Financial Centres

We asked respondents to assess the factors that were most important in creating an attractive environment for FinTech companies. The availability of skilled staff, the regulatory environment and access to finance were the three most important factors although many factors go together to form a favourable ecosystem for FinTech. The top five centres were London, San Francisco, New York, Singapore and Toronto.

Introduction

Disruption of financial services is one of the major issues being considered by top management in major financial institutions worldwide. Senior executives in virtually every sector of finance are wondering how much their business will be disrupted. Some see innovations in financial services as complete ‘game-changers’ whilst others foresee that new digital players will skim off some of their best customers or steal a share of their most profitable product lines. All are trying to determine whether they should ignore, acquire, partner or compete with their new technology driven competitors. One of the most publicised disruptive challenges is the one posed to financial services by new technology - often referred to as ‘FinTech’.

In order to see through some of the confusion, this report provides an overview of the perceptions of international finance professionals and their views regarding recent

trends and innovations in financial services and by FinTech.

The report was commissioned by the **Toronto Financial Services Alliance** (TFSA) in order to get an objective view on some of the more important innovations in some of the most important global financial centres.

Z/Yen Partners Limited has significant experience in researching and measuring the competitiveness of financial centres around the world. The Global Financial Centres Index (GFCI) developed by Z/Yen was first published by the City of London in January 2007 and has been updated every six months since then. In the course of this research Z/Yen has made contact with thousands of professionals around the world.

We are very grateful to all those who participated in our research and helped this research by offering their views.

“Things in the FinTech space are moving so quickly right now that I’m not sure if anyone is keeping up ...”

Investment Banker Based in Hong Kong

Methodology

The data used in this research comes from three main sources:

Two online questionnaires were distributed to a list of approximately 2,000 GFCI respondents. We received responses from over 300 financial services professionals between July and October 2016. We had 224 responses to the FinTech questionnaire and 211 to the innovations questionnaire. 127 respondents completed both questionnaires. This resulted in 308 unique respondents.

We also conducted a significant amount of desk research into innovations in the different financial centres as well as various elements of FinTech.

We conducted a number of informal interviews with experts in areas of financial services innovation.

We studied ten areas of innovation in financial services:

- Brexit
- Growth of Islamic Finance
- Increased Central Bank Intervention
- Increased Concern over Data Protection
- Increased Regulatory Pressures
- Increased Transparency in Asset/Wealth Management
- Increased Use of Public-Private-Partnerships for Infrastructure Financing
- Increased Volatility in Oil & Gas Finance
- Internationalisation of Renminbi Trading
- Slowdown in Economic Growth

We also examined a number of specific areas of FinTech in this research:

- Big Data Analytics
- Cyber-security
- Mutual Distributed Ledgers
- New Credit and Risk Modelling
- New Trading Platforms
- Payment / Transaction Systems
- Peer-to-Peer Lending
- Personal Financial Management

We analysed how the perception of respondents varied with their location and industry sector. We also assessed how different financial centres may fare with the innovations taking place. The centres we asked about were selected to give a good coverage of the different geographical regions:

- Berlin
- Frankfurt
- Hong Kong
- London
- Luxembourg
- Montreal
- New York
- San Francisco
- Singapore
- Sydney
- Tel Aviv
- Toronto
- Vancouver

Current Trends and Innovations

The first part of our research was concerned with different elements of potentially disruptive innovations and changes in financial services. Many of these significant innovations in finance involve technology. The area of 'Fintech' is so pervasive that we devote a separate section to it (section 6 below).

The Trends and Innovations We Researched

In this section we examine a number of other innovations (although many also involve technological advances). The ten areas we researched are:

- Brexit
- Growth of Islamic Finance
- Increased Central Bank Intervention
- Increased Concern over Data Protection
- Increased Regulatory Pressures

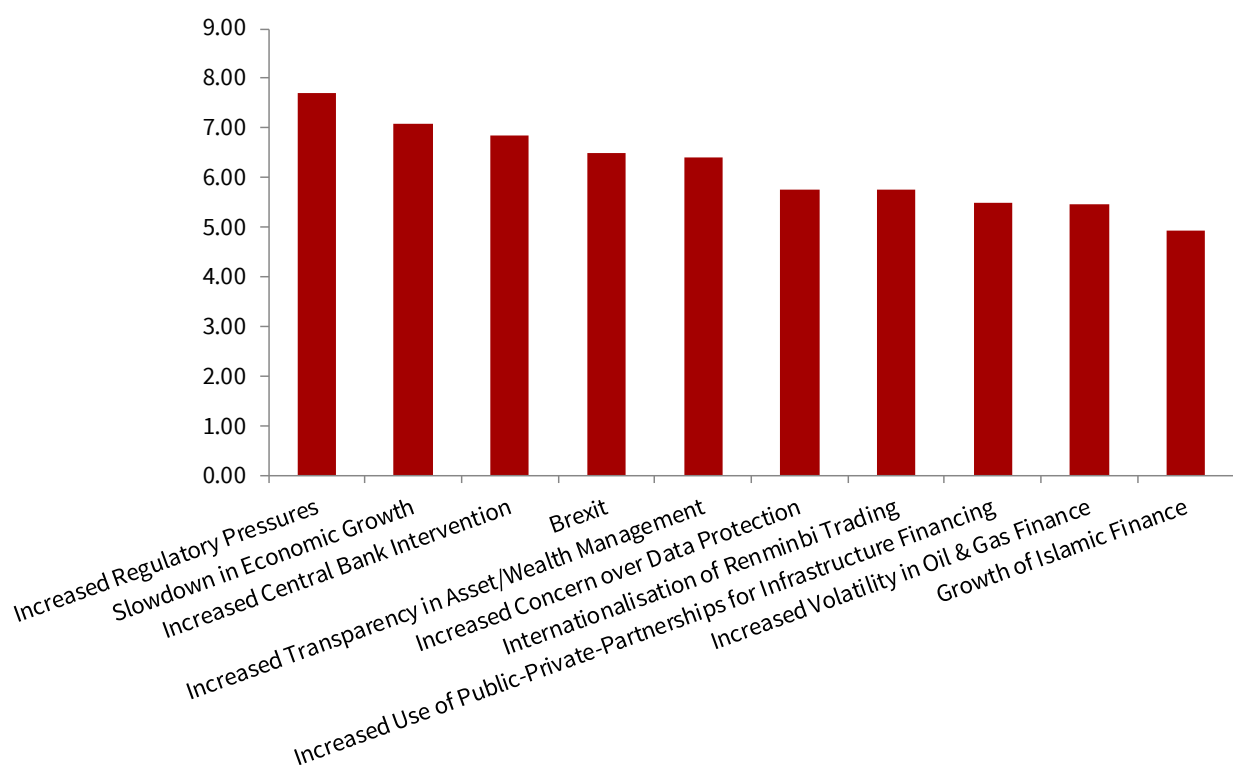
- Increased Transparency in Asset/Wealth Management
- Increased Use of Public-Private-Partnerships for Infrastructure Financing
- Increased Volatility in Oil & Gas Finance
- Internationalisation of Renminbi Trading
- Slowdown in Economic Growth

We asked respondents to our questionnaire how significant the ten areas of innovation would be to financial services over the next five years.

On a scale of one to ten with ten being the most significant, the results are shown below.

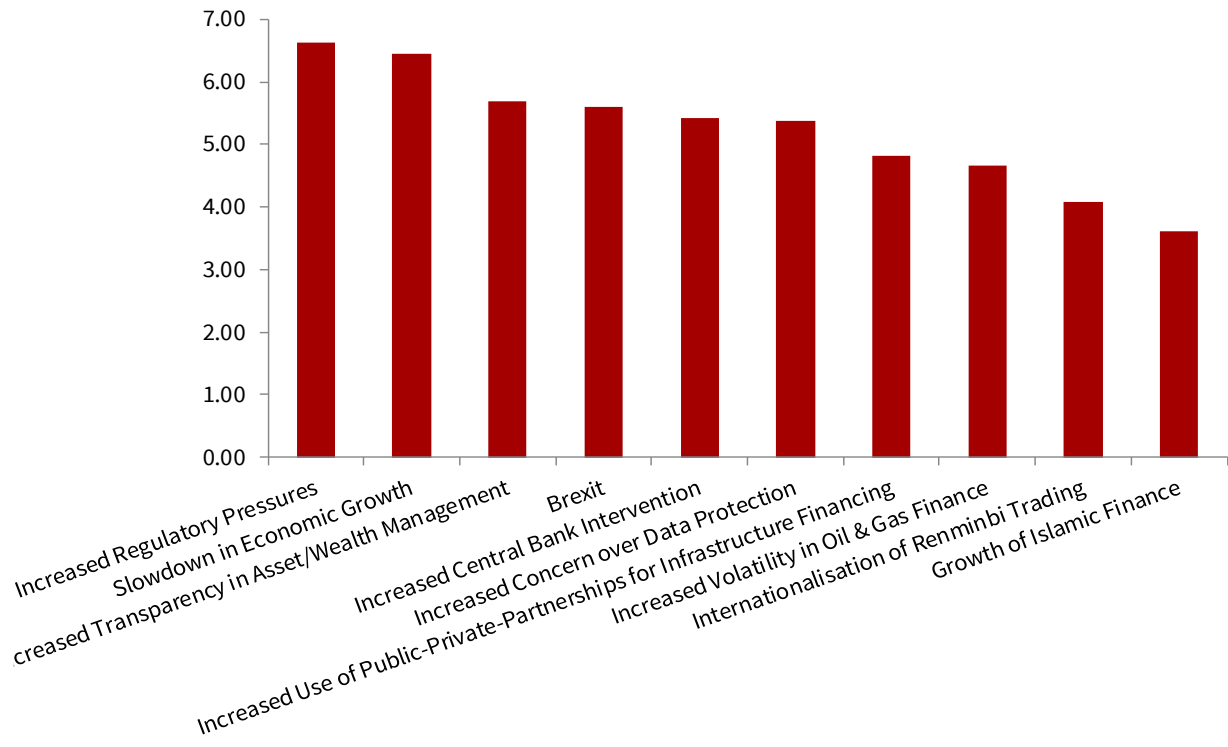
Increased regulatory pressures and a general slowdown in economic growth are seen as the most significant areas. Brexit is in fourth place and viewed by many as a global issue rather than one that just affects the UK and the EU.

Chart 1 | The Significance of Different Areas of Innovation



We also asked respondents how the areas of innovation would affect the company that they worked for. The overall results are fairly similar although the average scores (out of ten) were significantly lower:

Chart 2 | The Significance of Areas of Innovation in Respondent's Firm



“I don't think many people realise the full impact that the slowdown in growth will have on the world economy.”

Central Bank Economist based in South Korea

“Transparency and disclosure required by the international regulators is really stifling the private banking industry this year. I completely understand the need to reduce money laundering but the whole industry is really aching.”

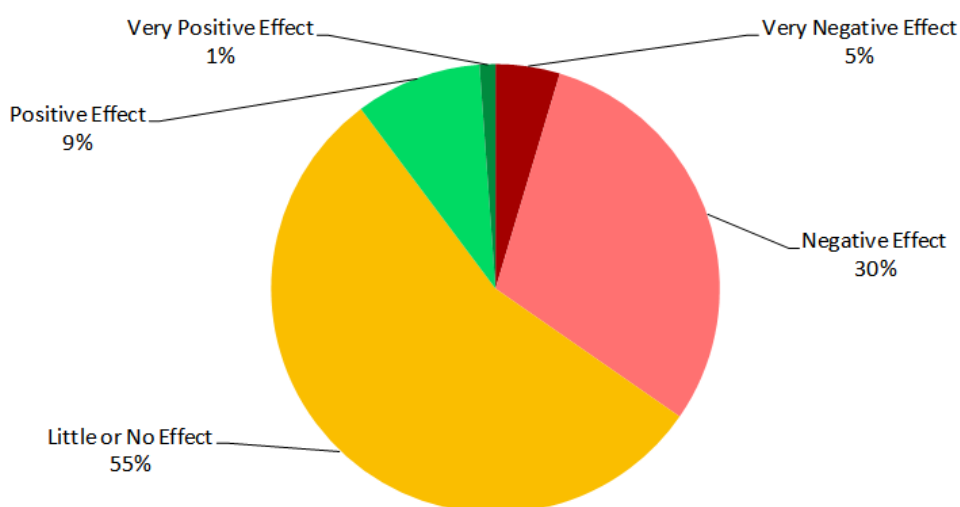
Private Banker based in Luxembourg

Increased Regulatory Pressures

We asked respondents to assess what effect an increase in regulatory pressures would have on a number of financial centres. 35% of responses said they expected a negative or

very negative effect whilst 10% thought that increased regulatory pressures would have a positive or very positive effect. The overall average of responses was:

Chart 3 | The Significance of Areas of Innovation in Respondent's Firm



Significant variances from these average scores were:

Centre	Very Negative Effect	Negative Effect	Little or No Effect	Positive Effect	Very Positive Effect
Berlin	0.0%	50.3%	45.2%	4.5%	0.0%
Frankfurt	2.3%	55.5%	32.9%	9.2%	0.0%
London	6.9%	33.9%	35.1%	22.4%	1.7%
Luxembourg	10.9%	33.9%	34.5%	20.7%	0.0%
Toronto	1.7%	22.0%	68.9%	5.1%	2.3%

“The big centres in the EU will continue to struggle with regulatory overdrive. This may benefit London.”

US Investment Banker based in London

“Regulations are increasingly international and most are written in English, so centers attracting English speaking lawyers and compliance teams may have an advantage.”

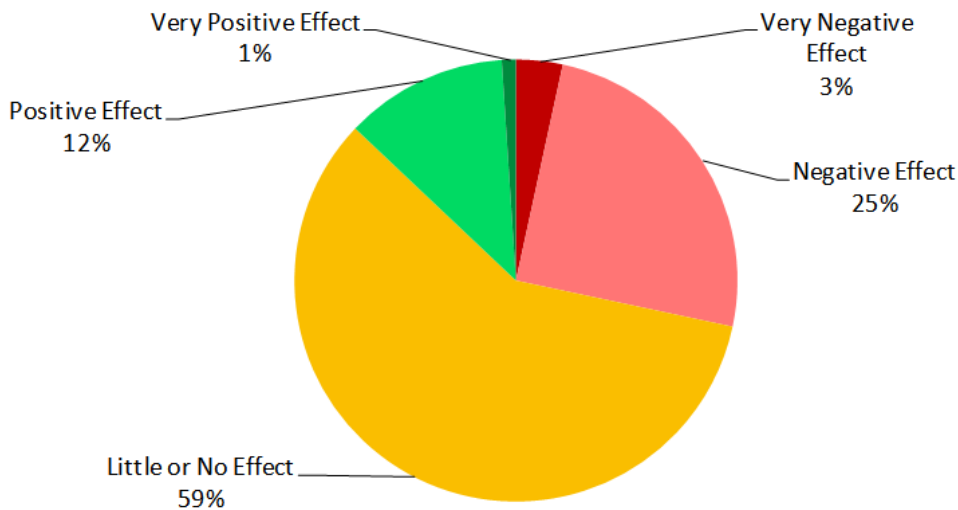
Lawyer based in Singapore

Slowdown in Economic Growth

We asked respondents to assess what effect the anticipated slowdown in economic growth would have on financial centres. 28% of responses said they expected a negative or very negative effect whilst 13% thought that the slowdown would have a

positive or very positive effect. There were not significant variances from these average scores for the different financial centres. The overall average scores were:

Chart 4 | The Slowdown in Economic Growth



“Will the Asian slowdown help the likes of London and New York to reassert their dominance?”

Investment Banker based in New York

This city needs infrastructure improvements badly but the economic situation prevents the government committing to spending.”

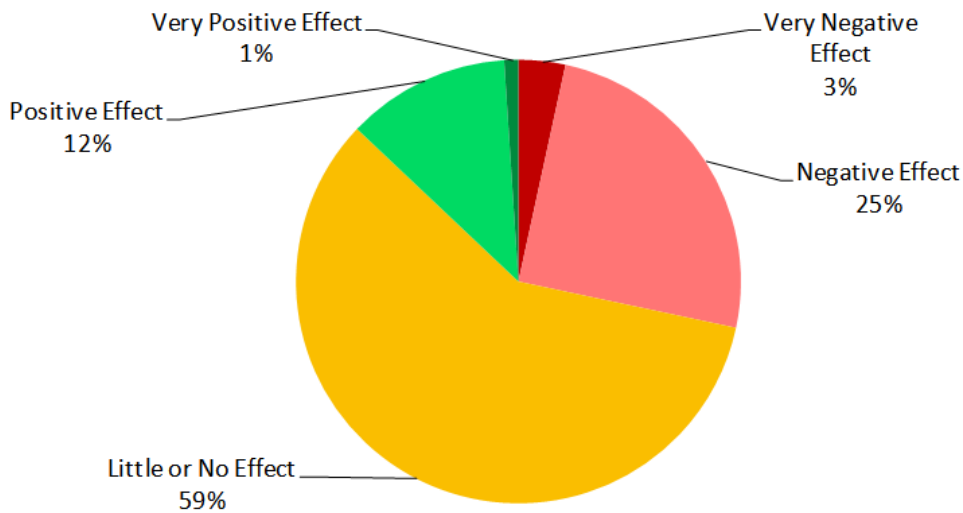
Local Government Official based in Shenzhen

Increased Central Bank Intervention

We asked respondents to assess what effect the anticipated increase in central bank intervention would have on the competitiveness of financial centres. 28% of responses said they expected a negative or very negative effect whilst 13% thought that increased

intervention would have a positive or very positive effect. Overall 59% of respondents thought that there would be little or no effect. The overall average scores were:

Chart 5 | The Significance of Central Bank Intervention for financial Centres



Interestingly the significant variances from these average scores were for London, New York and Frankfurt where respondents felt that more central bank intervention would have a positive effect (over 25% of respondents in all three cases). When

questioned about their responses, respondents confirmed that economic intervention was often necessary to promote growth and control domestic economies overheating.

“I think central banks are in danger of over extending their authority. Governments may want to retain more control in future.”

Asset Manager Banker based in Shanghai

“It remains essential that central banks intervene to keep their economy moving. I support quantitative easing in the UK.”

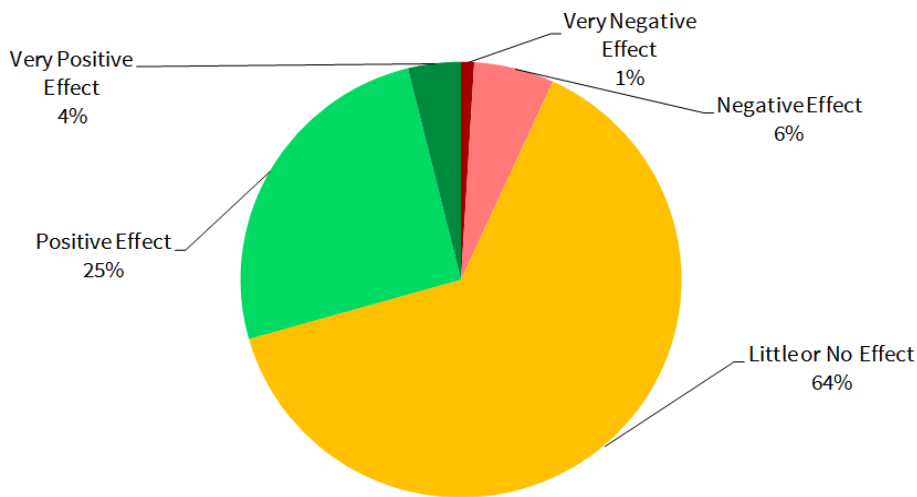
Regulator based in London

Brexit

On 23 June 2016 the United Kingdom of Great Britain and Northern Ireland voted in a referendum to leave the European Union. This could potentially have significant effects of the competitiveness of the UK, European and other worldwide financial centres. We asked respondents to our questionnaire to assess the effect of the competitiveness of

financial centres. Almost two thirds of respondents felt that there would be little or no effect overall and 7% felt there would be an overall negative or very negative effect. The overall results were:

Chart 6 | The significance of Brexit



There were a number of financial centres that showed significant variances to the overall average. Respondents felt that the European centres of Frankfurt and Luxembourg are likely to experience a positive effect from

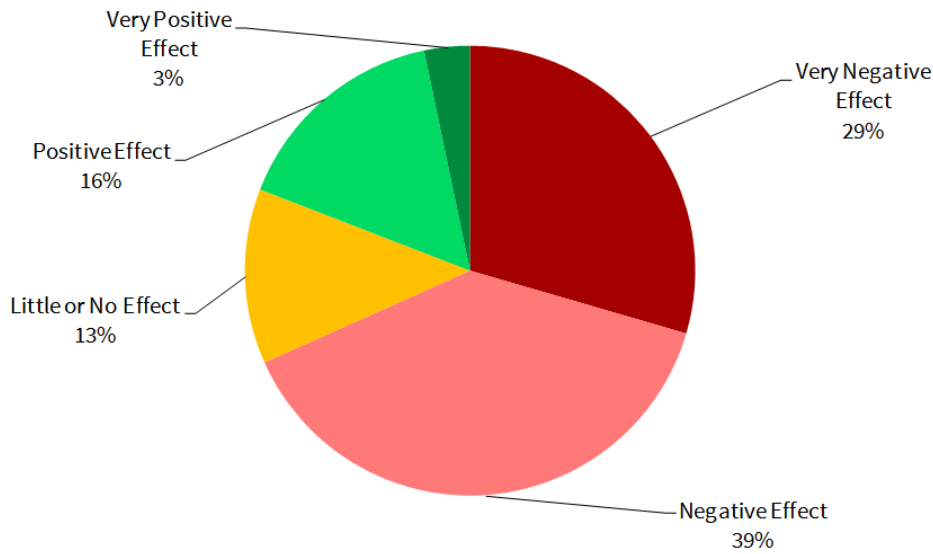
Brexit. Respondents also felt that financial centres further away from Europe such as San Francisco, Sydney and Toronto would see little or no effect from Brexit:

Centre	Very Negative Effect	Negative Effect	Little or No Effect	Positive Effect	Very Positive Effect
Frankfurt	0.0%	8.2%	14.2%	60.1%	17.5%
Luxembourg	2.2%	6.1%	44.4%	37.2%	10.0%
San Francisco	0.0%	2.2%	83.1%	14.8%	0.0%
Sydney	0.0%	11.0%	79.8%	7.7%	1.6%
Toronto	2.2%	1.6%	78.7%	17.5%	0.0%

As might be expected, the anticipated effect on London was far less favourable with nearly 70% of respondents thought that

Brexit would have a negative or very negative effect on the competitiveness of London:

Chart 7 | The Significance of Brexit for London



“London’s strength helps Europe – the relationship between London and Frankfurt is a win-win situation. Frankfurt might gain from Brexit initially but London will be a significant loss to the EU.”

Investment Banker based in Frankfurt

“Nobody knows what terms the UK will leave the EU on and nobody knows how Brexit will affect the rest of Europe.”

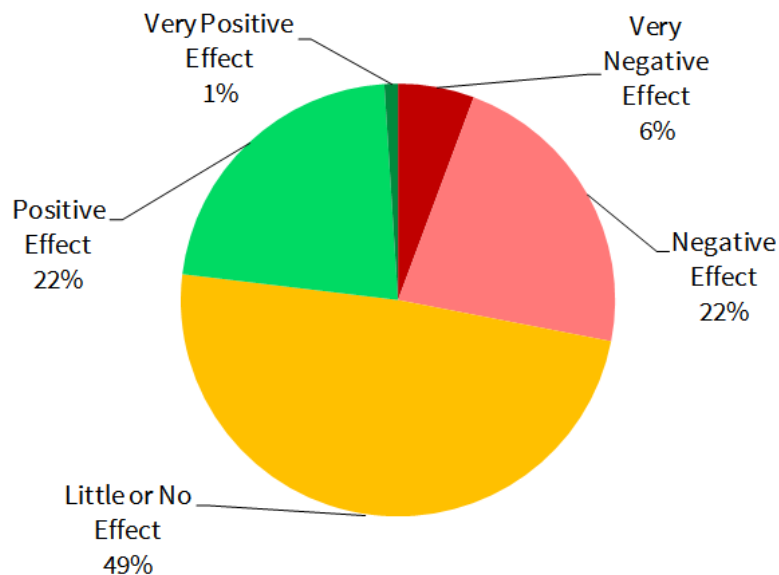
M & A Specialist based in Paris

Increased Transparency in Asset/Wealth Management

We asked respondents to assess what effect the anticipated increase in required levels of transparency in asset and wealth management would have on the competitiveness of financial centres. 28% of responses said they expected a negative or very negative effect whilst 23% thought that an increase in transparency would have a positive or very positive effect.

Overall 49% of respondents thought that there would be little or no effect. The significant variances from these average scores were for Hong Kong and Singapore where respondents felt that more transparency would have a negative or very negative effect (over 45% of respondents in both cases). The overall average scores were:

Chart 8 | The Slowdown in Economic Growth



“We have all seen what increased transparency has done to many wealth managers in Geneva . I think this is only the beginning.”

Wealth Manager based in Basel

“Secrecy, is often a valuable and entirely beneficial aspect of ‘private’ banking. The EU regulatory team are specialists at ignoring potentially un-intended consequences.”

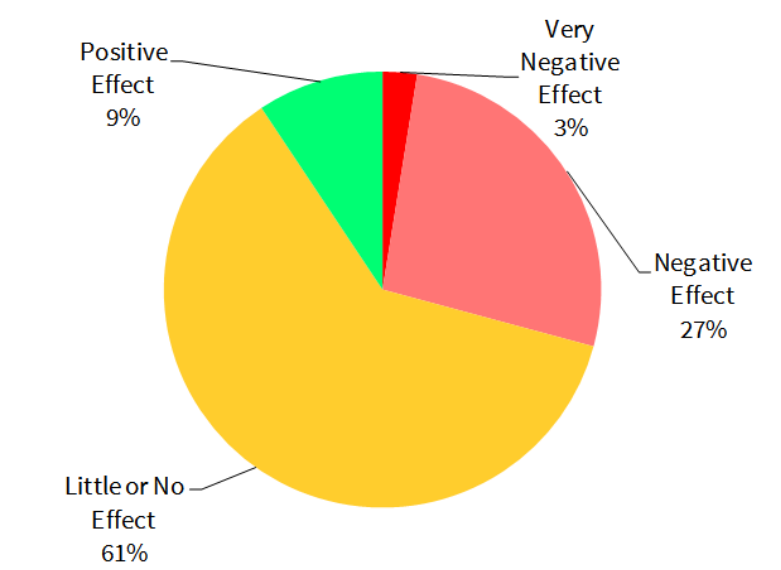
Asset Manager based in Zurich

Increased Concern over Data Protection

We asked respondents to indicate what effect an increased concern by governments and regulators on data protection would have on

financial centres. Over 60% of respondents felt it will have little or no effect:

Chart 9 | The Effect of Increased Concern over Data Protection



There were a number of financial centres that showed significant variances to the overall average. It is interesting to note that there is

little foreseen effect on competitiveness for the three Canadian centres:

Centre	Very Negative Effect	Negative Effect	Little or No Effect	Positive Effect	Very Positive Effect
Hong Kong	9%	48%	43%	9%	0%
Montreal	0%	23%	73%	4%	0%
Toronto	0%	26%	72%	2%	0%
Vancouver	0%	25%	74%	2%	0%
San Francisco	3%	22%	72%	6%	0%

“People just do not appreciate the new demands of governments and regulators regarding data protection. GDPR for example is a major step and one for which the industry is ill prepared.”

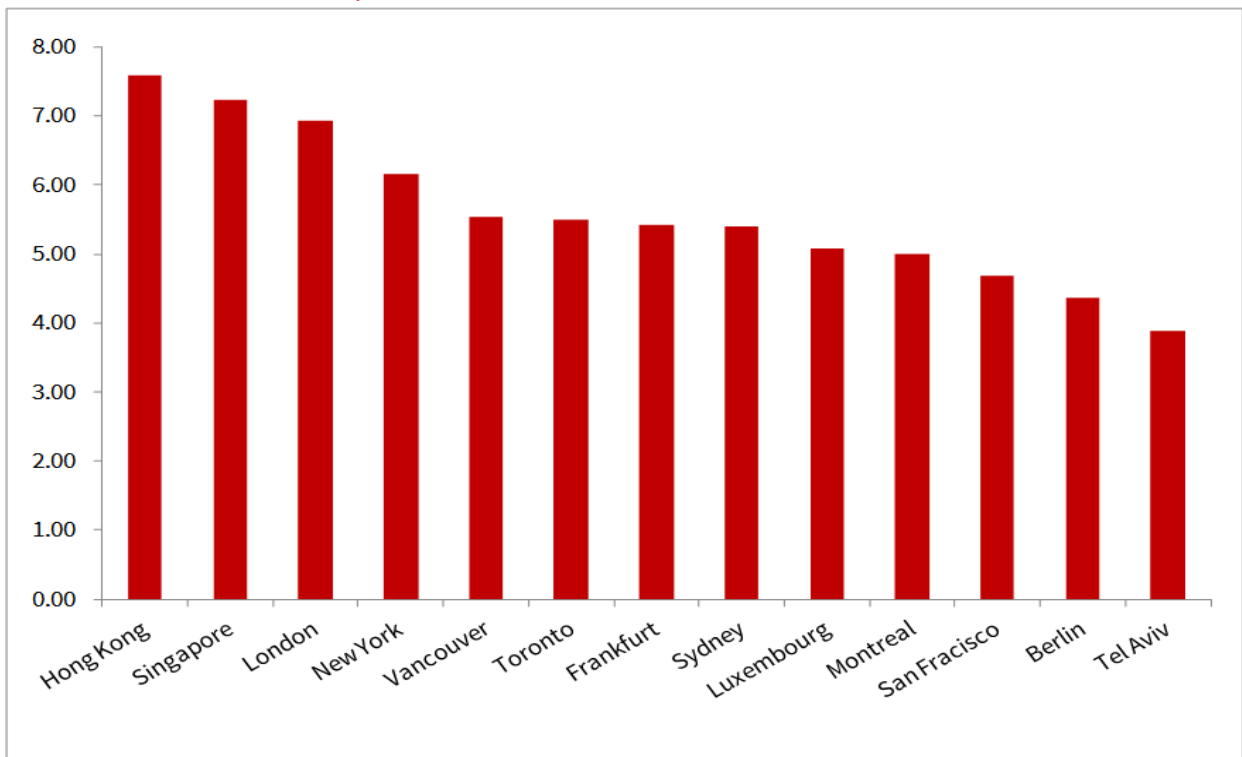
Retail Banker based in London

Internationalisation of Renminbi Trading

We asked respondents to rate the opportunities for financial centres based on the increase in Internationalisation of Renminbi Trading (on a scale of 1 to 10 with 1 meaning 'No Opportunities' and 10 meaning 'Huge Opportunities'). Respondents felt that Hong Kong and Singapore were in the strongest positions to benefit from an

increased internationalisation of Renminbi trading. London and New York as leading global centres are also seen to have big opportunities. Vancouver is also seen to be well positioned as it has been attracting interest from a number of Chinese finance organisations.

Chart 10 | The Effect of Internationalisation of Renminbi Trading



There were a number of financial centres that showed significant variances to the overall average. It is interesting to note that there is

little foreseen effect on competitiveness for the three Canadian centres:

“I am really looking forward to seeing full market activity for the Renminbi – Singapore is well positioned to become a big trading centre.”

Currency Trader based in Singapore

“I cannot see full convertibility of the Yuan for at least a decade – the Chinese are too used to maintaining control.”

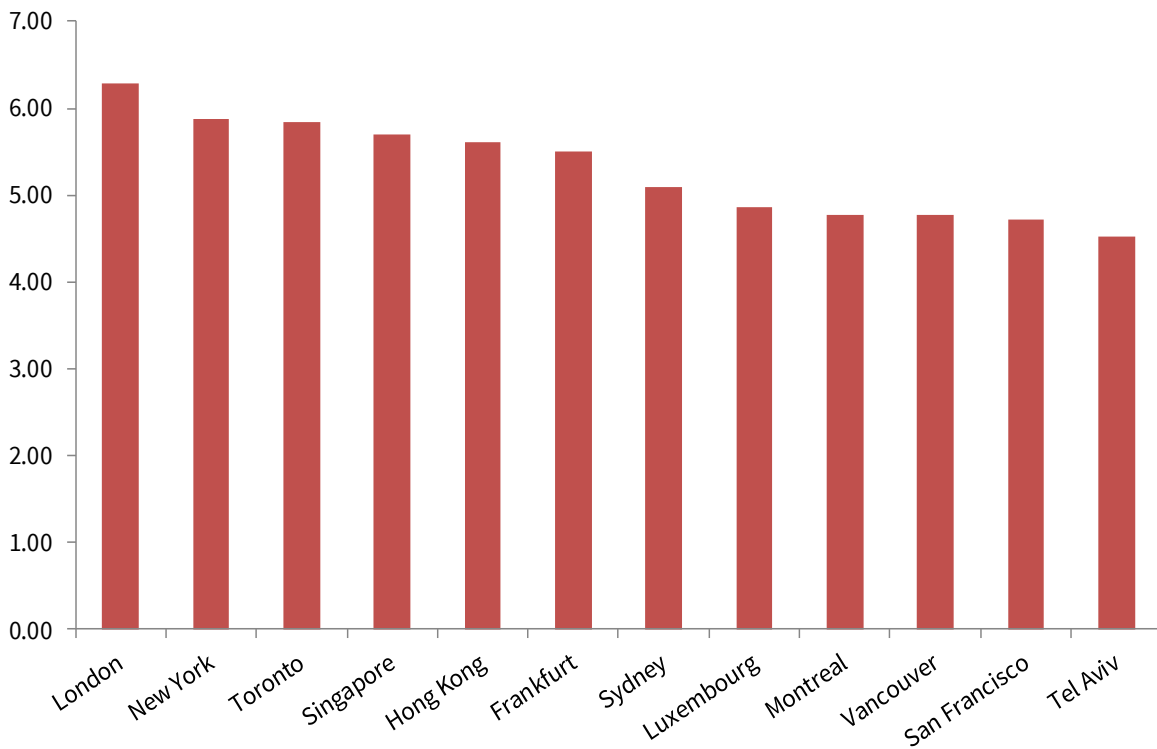
Economist based in London

Increased Public-Private-Partnerships for Infrastructure Financing

Public-private partnerships (PPPs) are a mechanism for government to procure and implement public infrastructure and/or services using the resources and expertise of the private sector. Where governments are facing ageing or lack of infrastructure and require more efficient services, a partnership with the private sector can help foster new solutions and bring finance. We asked

respondents to rate the potential that the following financial centres have to gain from the Increased use of Public-Private-Partnerships (PPPs) in Infrastructure Financing (on a scale of 1 to 10 with 1 being 'Very Little Potential' and 10 meaning 'Very Significant Potential'):

Chart 11 | The Effect of Increased Public-Private-Partnerships



The top four global financial centres are seen to have good potential and Toronto in particular is seen to have significant potential. Toronto has a number of organisations helping to promote infrastructure PPPs

worldwide and the city is home to some very strong global players investing in infrastructure worldwide.

“Canada is increasingly being recognized as a world leader in establishing successful public-private partnerships.”

Investment Banker based in Toronto

“Legal and institutional frameworks need to support this model of project and provide effective governance and monitoring mechanisms.”

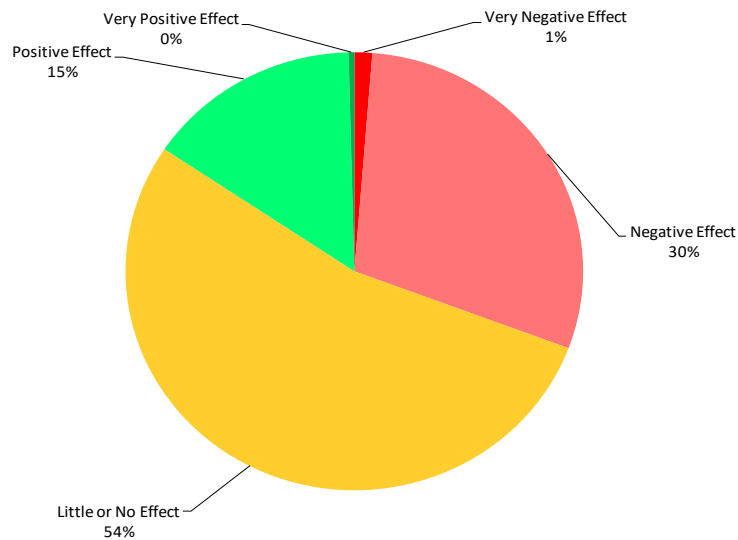
PPP Specialist based in London

Increased Volatility in Oil & Gas Finance

We asked respondents to rate the effect on competitiveness of financial centres due to Increased Volatility in Oil and Gas Finance. The results show that over half the

respondents thought that this increase in volatility will have much effect on most financial centres:

Chart 12 | The Effect of Increased Volatility in Oil and Gas Finance



There were several deviations from the overall average score. Berlin and San Francisco were felt to experience little or no effect whilst major trading centres like

London and New York will get positive effects for increasing volatility in any markets in which they trade:

Centre	Very Negative Effect	Negative Effect	Little or No Effect	Positive Effect	Very Positive Effect
Berlin	0%	23%	71%	7%	0%
London	0%	32%	33%	35%	0%
New York	0%	36%	31%	33%	0%
San Francisco	0%	19%	75%	7%	0%

“Oil and Gas price volatility is likely to have a big impact on all energy finance centres not just the Middle East.

Investment Banker based in Toronto

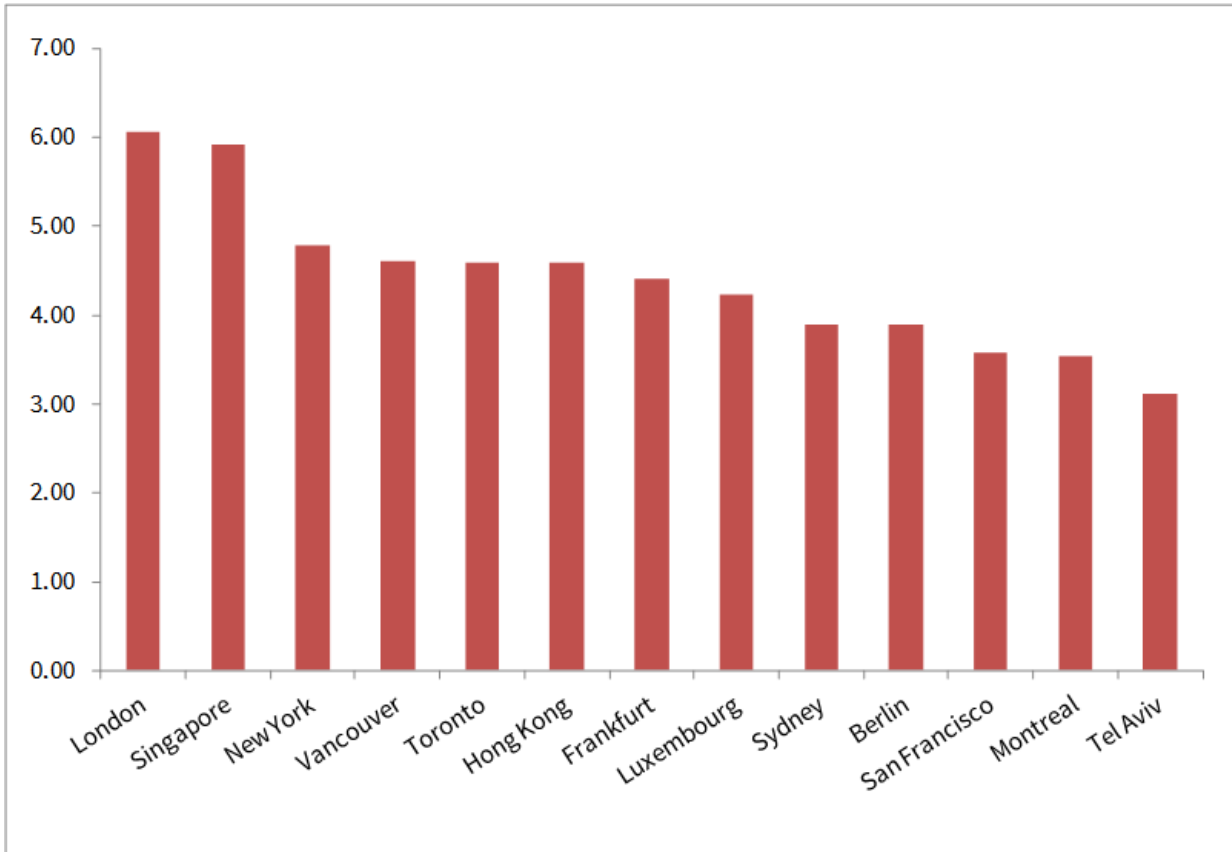
“Hydrocarbon trading is certainly an interesting game to be in right now!

The Growth of Islamic Finance

We asked respondents to rate the opportunities open to financial centres as a result of the Growth in Islamic Finance (on a scale of 1 to 10 with 1 meaning 'No

Opportunities' and 10 meaning 'Huge Opportunities'):

Chart 13 | The Opportunities Open to Financial Centres by the Growth of Islamic Finance



“Our Islamic finance business in London is growing. There are an increasing number of clients who want their investments run on Islamic principles.”

Commercial Banker based in London

“Islamic banking is certainly becoming much more ‘mainstream’ in Paris at the moment.”

Retail Banker based in Paris

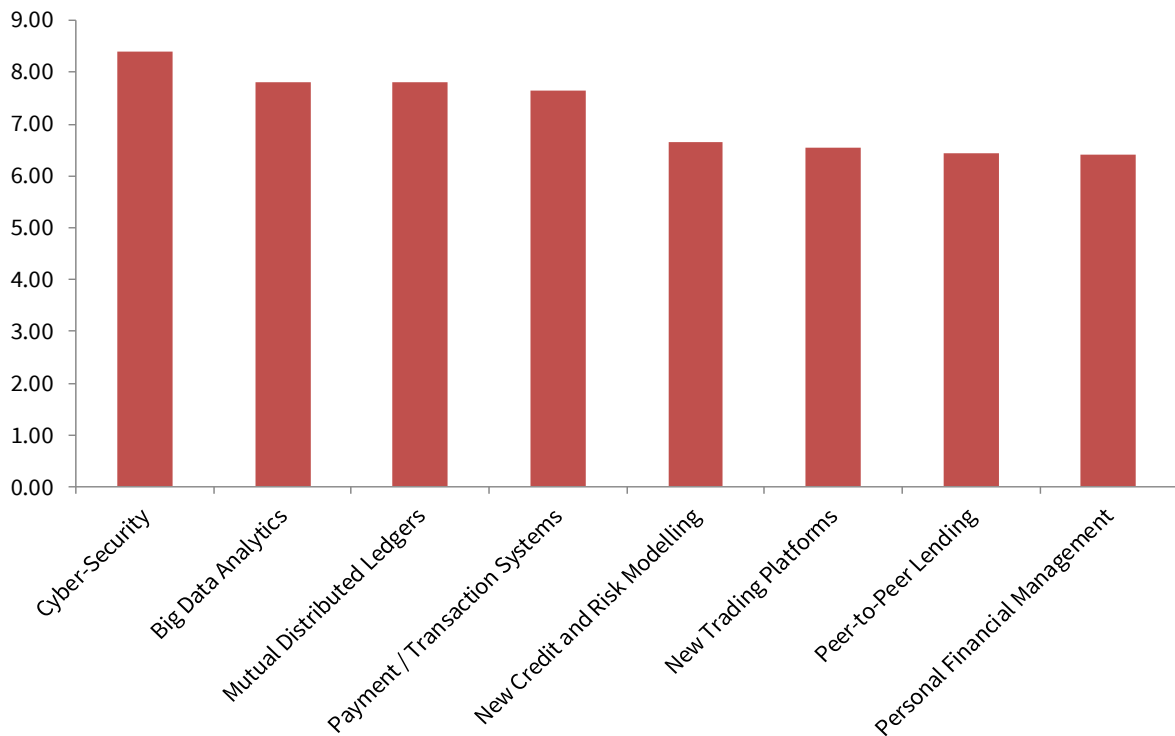
The Growing Importance of FinTech

The Areas of FinTech

We asked the opinions of finance professionals about a number of areas of FinTech. The question asked the respondents to rate the significance over the next five years

(on a score of 1 to 10 with 10 being the highest significance). The average scores of the eight areas were as follows:

Chart 14 | The Most Significant Areas of FinTech



Cyber-security is perceived as the single most significant area overall with big data analytics and mutual distributed ledgers just behind. Interestingly, Cyber-security was rated most significant by respondents in technology companies and the government and regulatory sector and less significant by respondents from the banking, professional services and insurance sectors. The next two areas, Big data analytics and Mutual distributed Ledgers, are of virtually identical significance according to our respondents.

The collection and analysis of large data sets, often referred to as Big Data Analytics, often uses ‘machine learning’ and ‘artificial intelligence’ to infer conclusions from large amounts of data. Mutual Distributed Ledgers (MDLs aka ‘Blockchains’ and widely known as the technology behind Bitcoin) are in third place.

Respondents from Asia and Europe thought that cyber-security was more significant than respondents from North America.

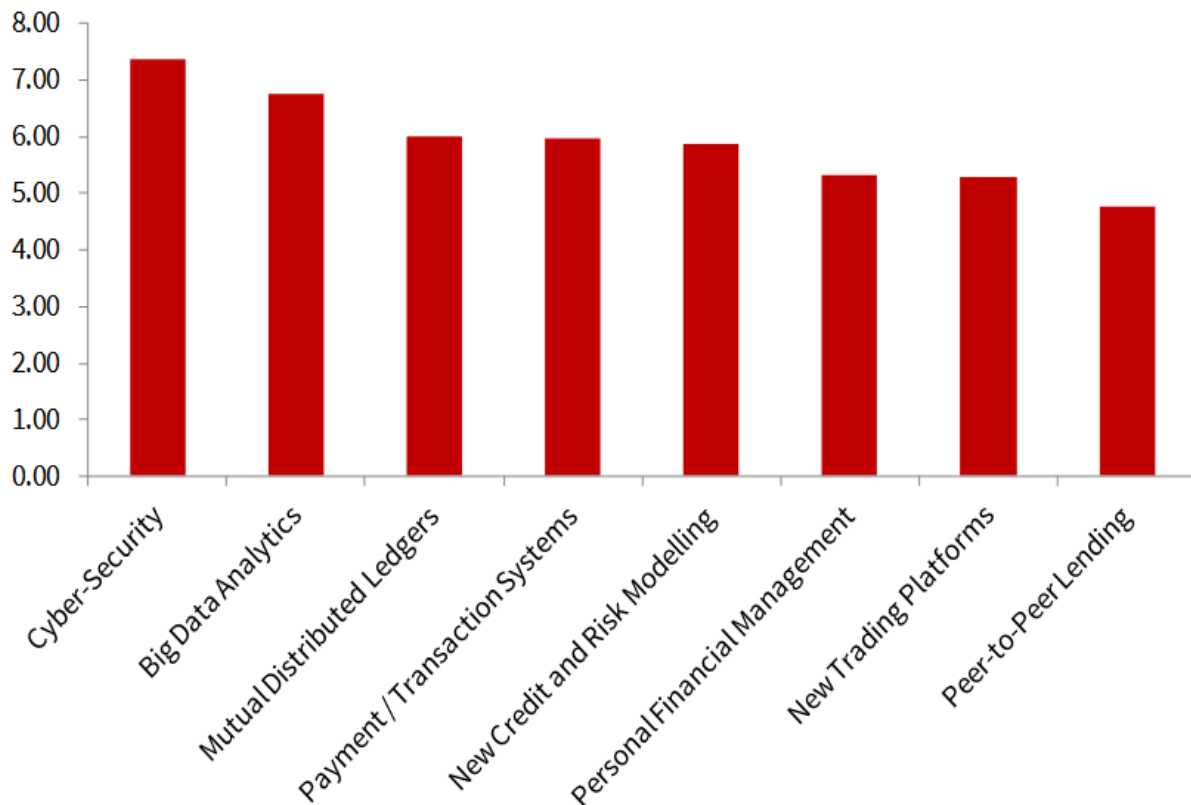
“Cyber-security is vital to all forms of FinTech, it is not just a ‘stand-alone’ area.”

Investment Banker based in Toronto

We asked a similar question but asking respondents to assess the impact on their own firm. Cyber-security and Big Data

Analytics were the two areas likely to have the greatest impact:

Chart 15 | The Most Significant Areas of FinTech For Firms



Again, Cyber-security was rated most significant by respondents in technology companies and the government and

regulatory sector and less significant by respondents from the banking, professional services and insurance sectors.

“Cyber-security is obviously critical to all areas of FinTech, it is hard to split it from Mutual Distributed Ledgers – I see a major use of MDLs as improving Cyber-security.”

FinTech Consultant based in London

“We are currently developing our offering of mobile payment systems but security is our number one concern.”

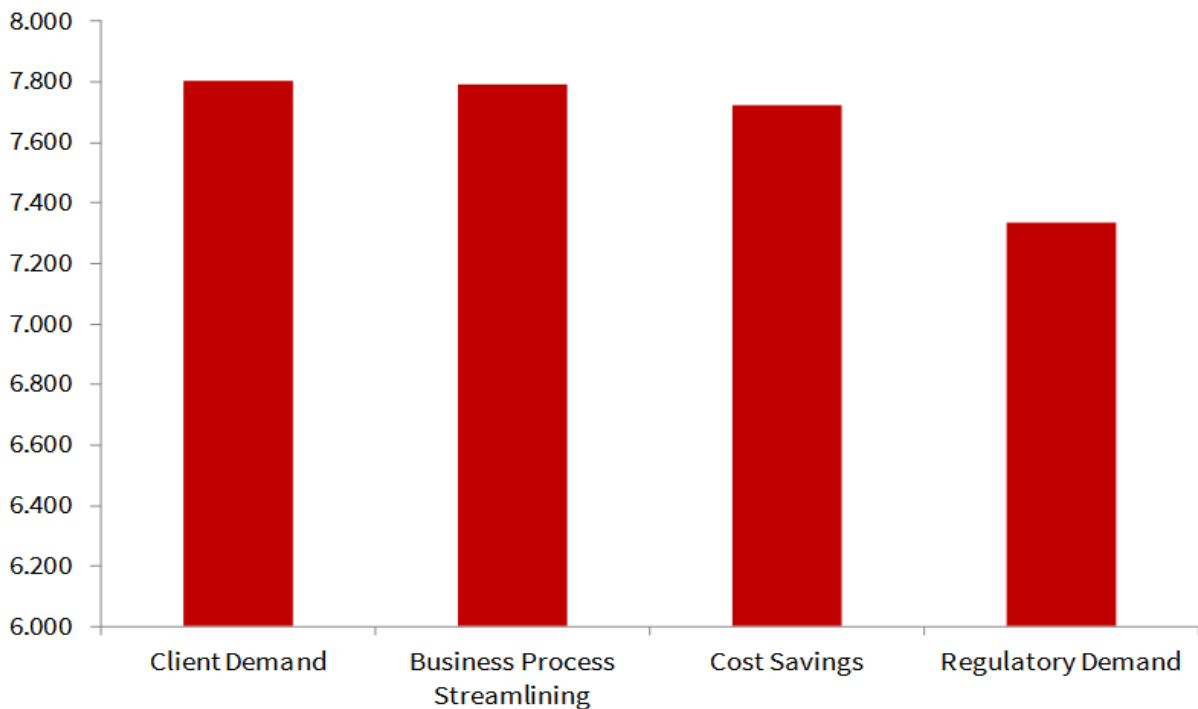
Retail Banker based in Casablanca

Drivers for Growth

When asked about the importance of drivers for growth in FinTech (again on a scale of 1 to 10 with 10 being the highest importance) respondents' views were split very evenly

between client demand, business process streamlining and cost savings:

Chart 16 | Drivers for Growth



“At the end of the day we are driven by client demand although satisfying the regulators is obviously important too.”

Retain Banker based in Germany

“Streamlining our business helps us to cut costs - the two go hand in hand.”

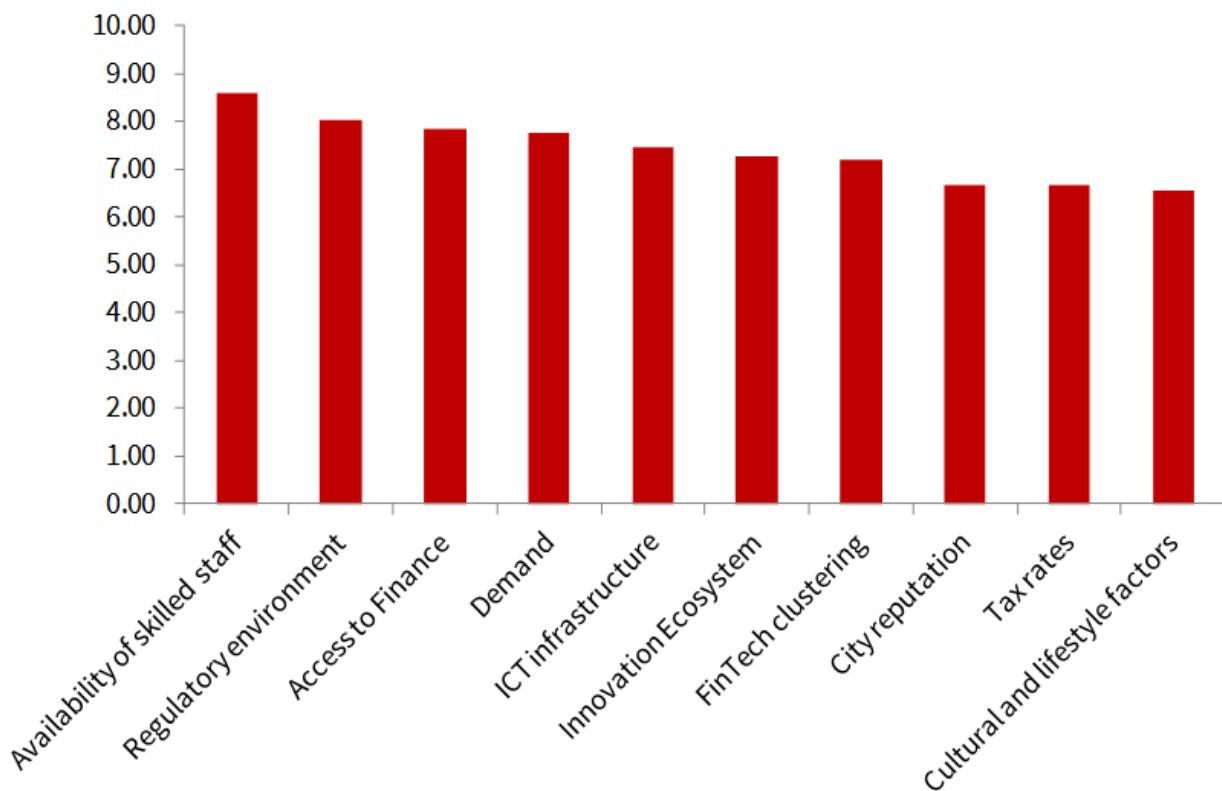
Investment Banker based in Toronto

Factors that Attract FinTech Companies

We asked respondents to assess the factors that were most important in creating an attractive environment for FinTech companies. The availability of skilled staff, the regulatory environment and access to finance were the three most important

factors. Although many factors go together to form a favourable ecosystem for FinTech and all the factors we asked about were judged as fairly equal:

Chart 17 | What Attracts FinTech Companies?



“It is important in FinTech to remember you need access to ‘Fin’ expertise not just ‘Tech’ expertise.”

FinTech Expert based in Guernsey

“Good people are the key to FinTech development and an ecosystem/cluster of relevant skills is needed by all centres in order to develop.”

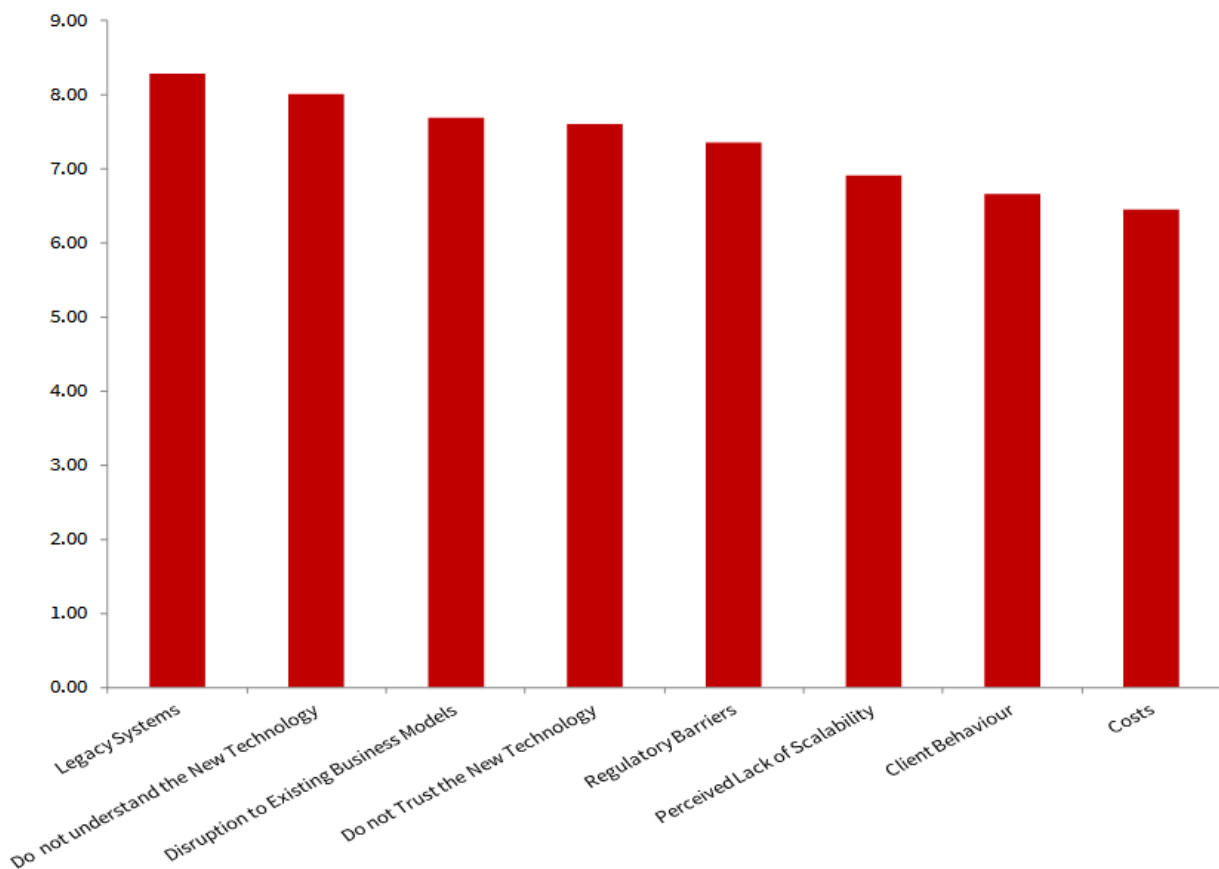
Investment Banker based in Toronto

The Adoption of FinTech

We asked about eight factors that can slow down the adoption of new technology in financial institutions. The existence of legacy

systems was the leading factor but all eight featured fairly evenly:

Chart 18 | The Adoption of FinTech



“The fear of huge disruption to existing ways of doing things, coupled with fear of the new technology inhibits our investment decisions. Risk is our business but we don’t like taking risks with technology.”

Investment Banker based in New York

“We seem to be perpetually held back by our existing systems.”

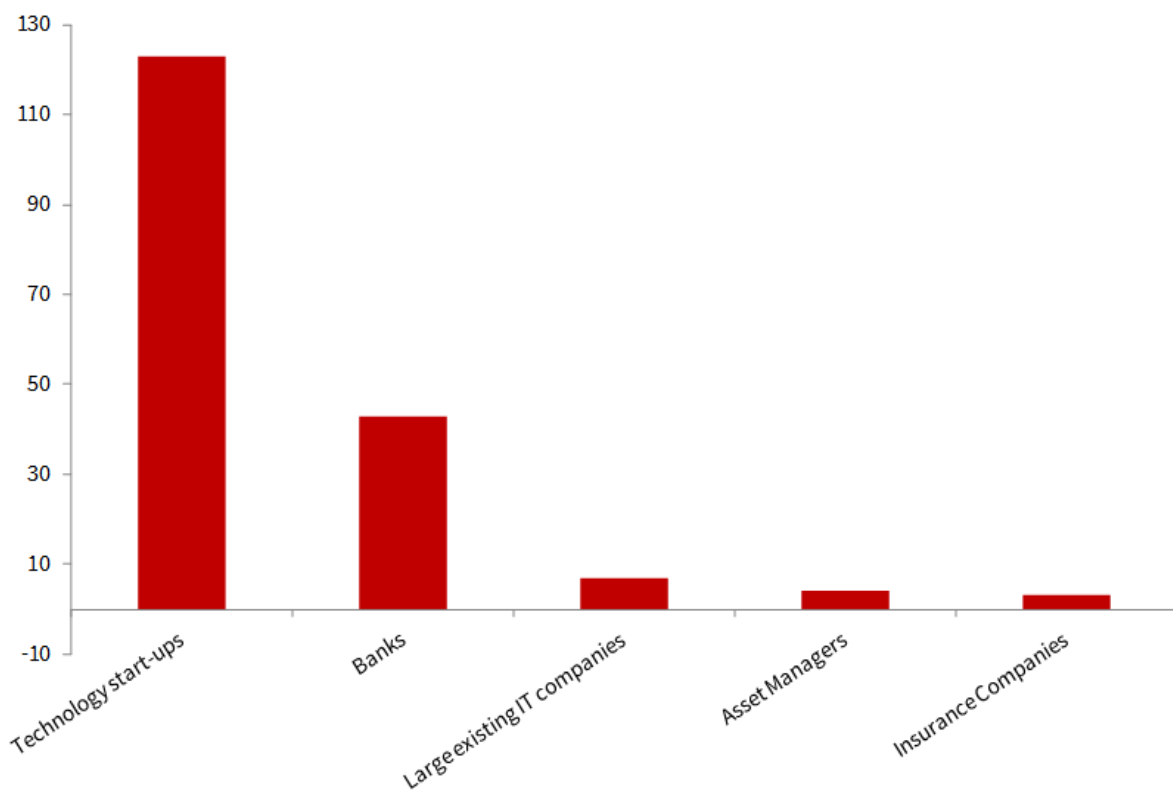
COO of Global Bank based in London

The Innovators

When asked who were the most important innovators our respondents clearly feel that technology start-ups lead the way. Despite regular comments that banks have become

technology companies, they lag behind start-ups by a considerable margin:

Chart 19 | Who are the Real innovators?



“Banks develop technology to improve their performance but it is the technology companies that create the real game-changers.”

Investment Banker based in Vancouver

“I used to work in San Francisco and may return there one day but the UK and Canada are both becoming much stronger venues for technology start-ups.”

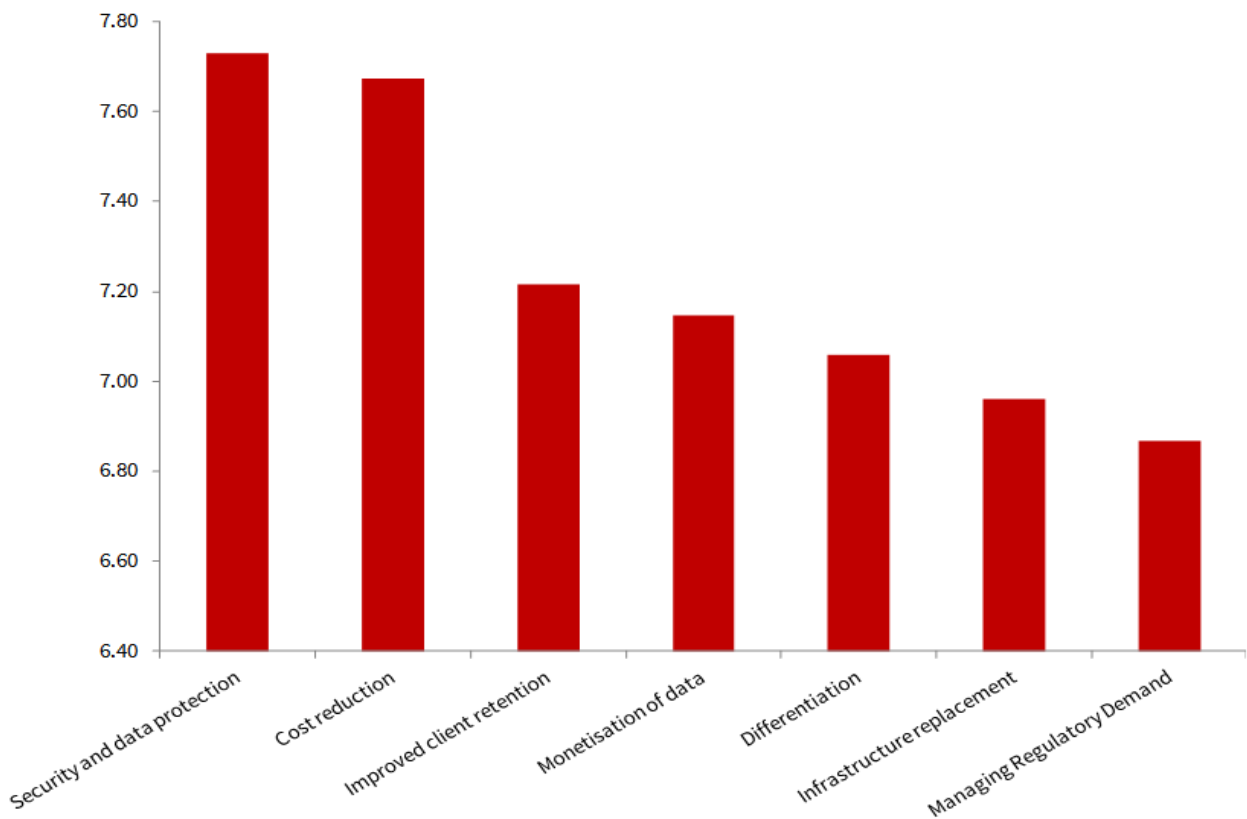
FinTech founder currently based in London

Why is FinTech Attractive?

Why are technology solutions so attractive to finance firms? Our respondents say that

security/data protection and cost reduction are by far the most important factors:

Chart 20 | Why is FinTech Attractive?



“I believe that data protection and security are the real drivers in FinTech – most other improvements are ‘nice to have.’”

Asset Manager based in Zurich

“It is all about being competitive. Security is almost a ‘given’ and after that it is about giving the client what they want.”

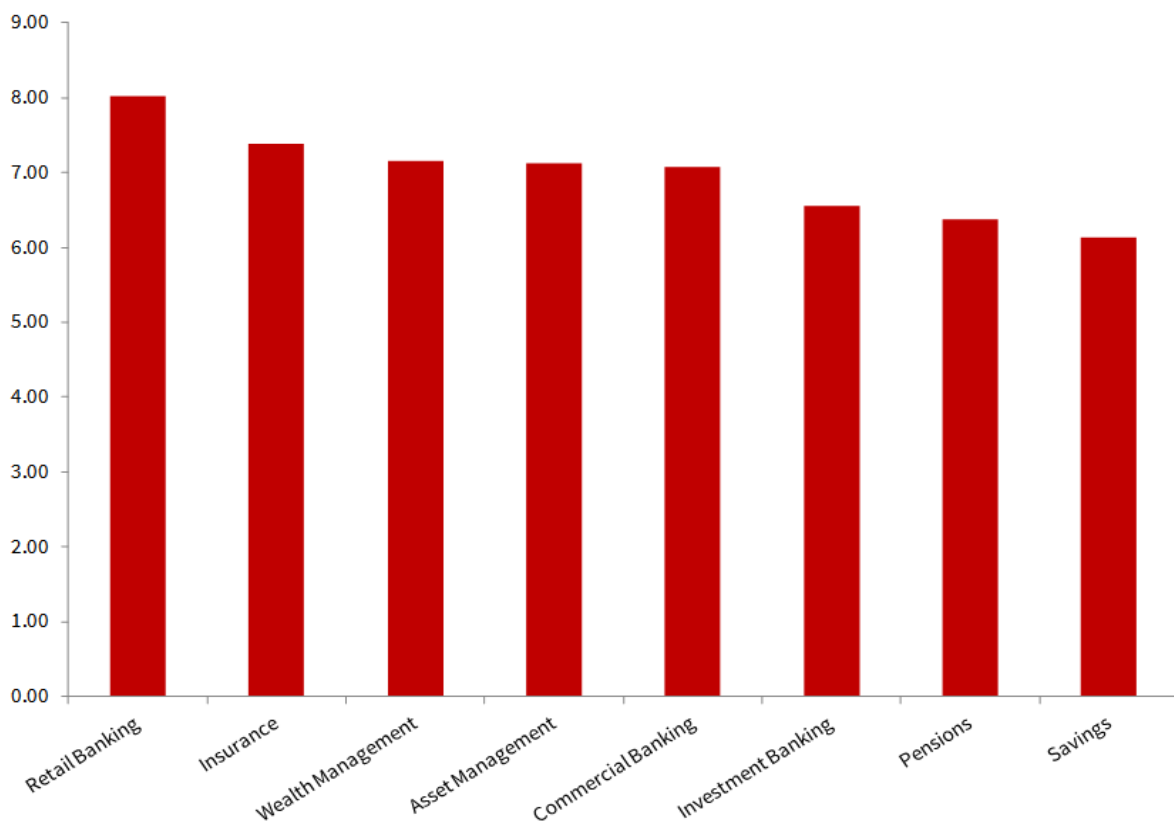
Investment Banker based in Toronto

Financial Sectors—Which Will Be Affected Most?

We asked respondents which financial sector would suffer the most disruption from advances in FinTech.

Perhaps unsurprisingly, retail banking came top of the list:

Chart 21 | Financial Sectors



“FinTech will have an effect on all sectors of finance but as a retail banker I wonder how my relationship with clients will look in ten years time.”

Retail Banker based in New York

“It is time for the insurance industry to enter the 21st century. I think block chains could play a major part.”

Insurance Manager based in London

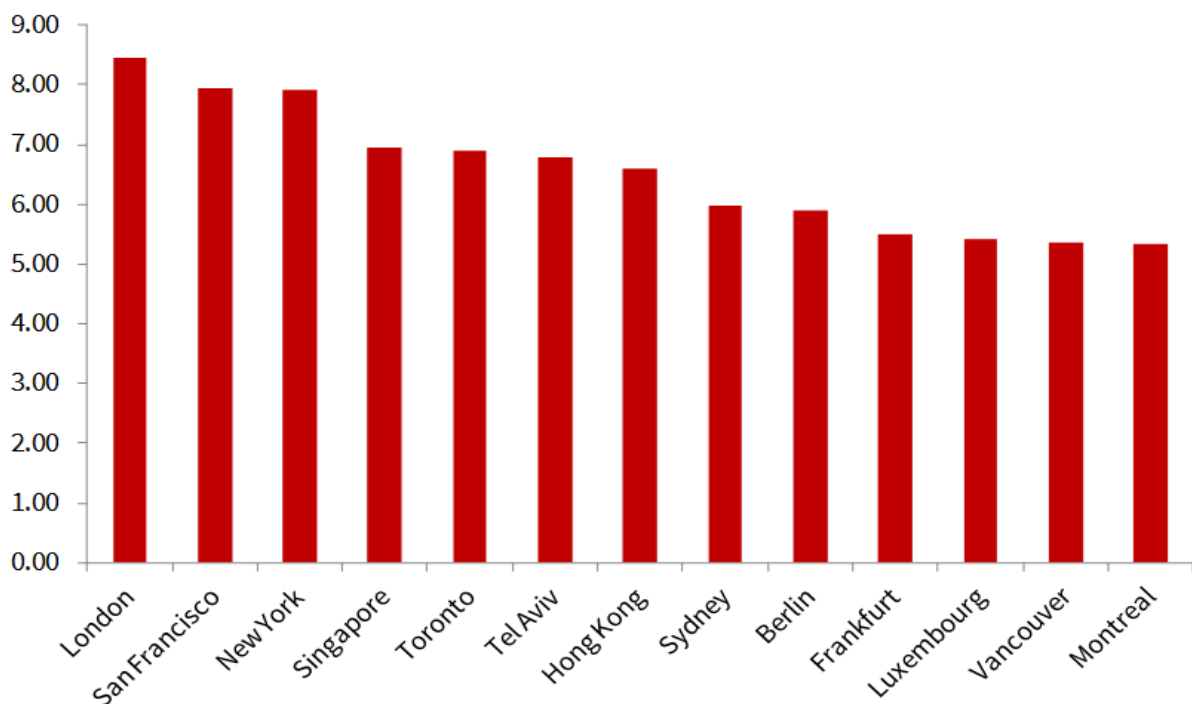
FinTech Centres

The Leading FinTech Centres

Bearing in mind the factors of competitiveness for attracting FinTech companies we asked our respondents to rank a number of financial centres based on the current levels

of FinTech activity. London was ranked top with San Francisco and New York not far behind:

Chart 22 | The Leading FinTech Centres Now



“London and New York are not just leading financial centres but leading FinTech centres too – these days you can’t have one without the other.”

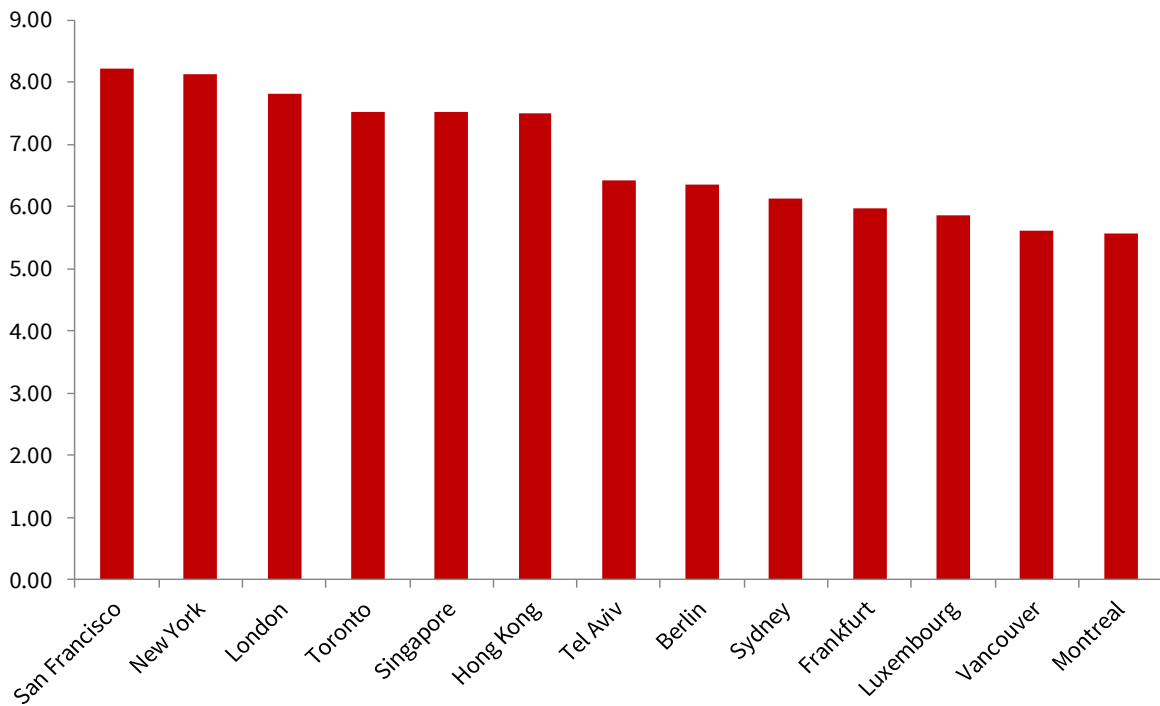
Investment Banker based in Toronto

“San Francisco and Boston are both very hot in this space at the moment.”

Venture Capitalist based in San Francisco

We asked respondents to assess the centres on their ability to attract more FinTech activity in the future:

Chart 23 | The Leading FinTech Centres of the Future



“Tel Aviv continues to impress me as a great place for innovation.”

Banker based in Dubai

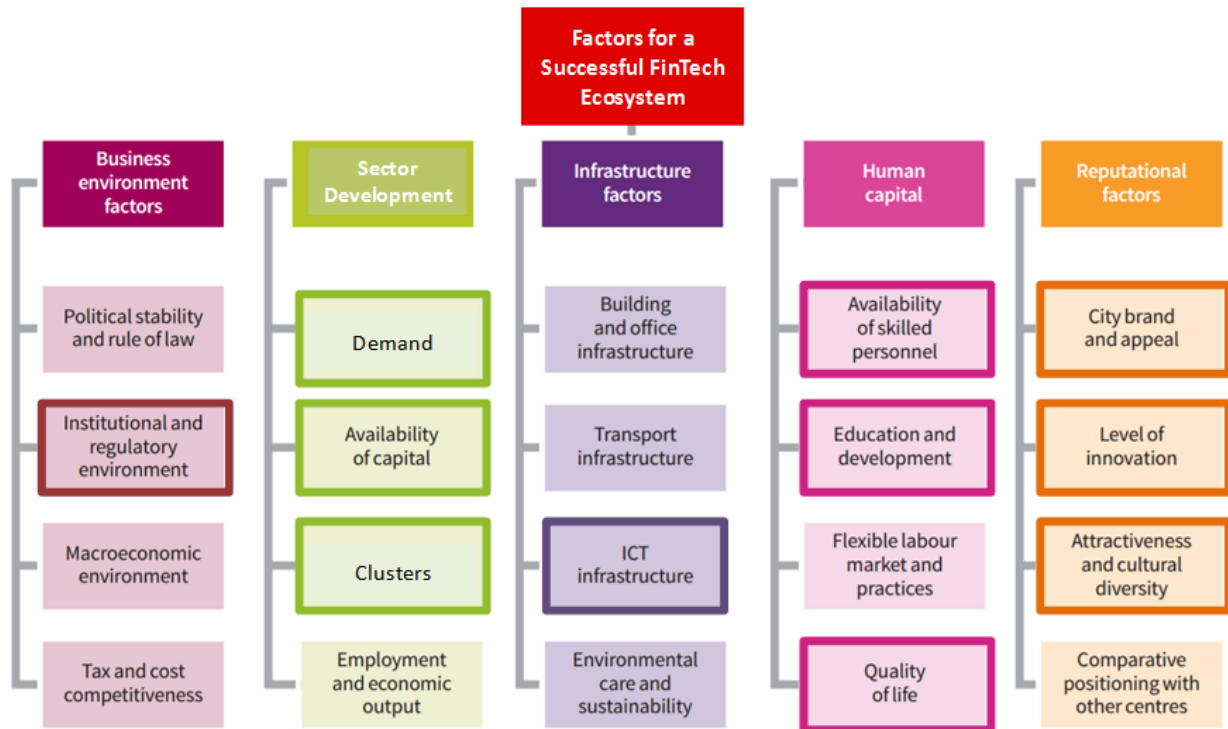
“Toronto is developing a strong FinTech ecosystem—it is a place to watch.”

Pension Fund Manager based in London

What does it take to be a FinTech Centre?

We have developed a taxonomy of factors that combine to make a successful financial centre. The research we have conducted on FinTech centres leads us to conclude that a

similar taxonomy can be used to determine the factors for a successful FinTech centre:



Whilst all these factors are important, the ones with heavy outline are the ones that have particular relevance in the development of a thriving FinTech centre:

The Institutional and regulatory environment is obviously a vital component of any business ecosystem. Regulatory and tax support for start ups and new market entrants with innovative business models seems to be a pre-requisite. The UK, Singapore, Australia and Canada seem to offer solid, appropriate and supportive environments.

Demand is another important factor. Consumer and corporate demand and willingness to adopt new technology is key in trying to develop a FinTech cluster. Section 6.4 above looks at the factors that affect

demand for FinTech solutions.

The availability of capital is also a key requirement. Regulations and tax systems can do a lot to encourage or discourage venture capitalists, start-up fund providers or seed and growth capital.

Business clusters form another powerful element in the mix of a successful FinTech centre. The existence of a strong financial services hub will help FinTech if other drivers are in place. There is no surprise that the leading four global financial centres (London, New York, Singapore and Hong Kong) feature in our list of the top ten FinTech hubs. Nine of our top ten FinTech hubs appear within the top forty Global Financial Centres.

All infrastructure matters for business but sound ICT infrastructure is clearly a 'must have' for technology businesses. Most developed cities take ICT infrastructure for granted but there are significant differences in speed and reliability of ICT infrastructure in financial centres.

The availability of skilled personnel is another prerequisite of a successful FinTech centre. Successful people like living in successful places and a welcoming cosmopolitan centre attracts people. Education and development contribute to the availability of skilled people. Especially relevant for FinTech are good mathematicians, engineers and software coders. The proximity of good universities are also a key factor.

The appeal and attractiveness of a city, the quality of life that it offers and the cultural diversity within a city are all factors that encourage people who work in the FinTech sector. FinTech employs many young people so cities that are attractive to young people are more likely to be able to recruit.

Levels of Innovation in all areas are also important. If the right factors are present for innovation generally, then it is likely that a centre will have many of the pre-requisite factors for a FinTech cluster.

Based on the above criteria the top ten existing or potential FinTech clusters are situated within the following cities (listed in alphabetical order). It happens that our list of FinTech centres are also all within the Expert Market top twenty FinTech centers):

Berlin – a lively arts scene, attractive to young people, a record of innovation, a good quality of life and moderate cost of living.

Hong Kong – a major financial centre, clients on the doorstep, a good cosmopolitan workforce, and a reputation for ICT infra-

structure and good availability of capital.

London – a history of innovation in finance and other areas, a thriving city with a strong cultural element, good lifestyle for young people, government and institutional support, strong demand from financial institutions and existing business clusters.

Montreal - great cultural diversity, availability of skilled personnel and good government / institutional framework.

New York – a thriving city with a good lifestyle for young people, government support, strong demand from Wall Street, existing business clusters and good availability of well qualified and experienced people.

San Francisco – clearly in the top three, home to existing giants, good start-up funding and availability of skilled personnel.

Singapore – a modern welcoming, cosmopolitan city with a wealth of talent, good institutional support and advantageous tax levels.

Sydney – another leading financial centre, plenty of demand, a great lifestyle and quality of life, good availability of capital, modern infrastructure and a strong cluster of start up businesses.

Tel Aviv – Originally known especially for cyber-security, this is now a global FinTech centre. Availability of capital, a history of innovation, a supportive government and a vibrant and cultural city.

Toronto – very strong government support, low cost of accommodation, great cultural diversity and plenty of capital available.



Financial Centre Futures is a programme within Long Finance that initiates discussion on the changing landscape of global finance, seeking to explore how finance might work in the future.

Financial Centre Futures comprises the Global Financial Centres Index, which measures and assesses the competitive-

ness of existing financial centres on a bi-annual basis, thanks to input provided by several thousand financial services professionals worldwide.

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The Toronto Financial Services Alliance is a unique, public-private partnership dedicated to growing Toronto region's financial services cluster and building it as a 'top ten' global financial services centre. Established in 2001, TFSA is a collaboration involving three levels of government, the financial services industry and academia.



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