# Impact of Environmental, Social, and Governance Factors on the Performance of FinTech Companies in the UK

Usman Amjad

Lecturer

Sheffield Business School, Sheffield Hallam University

Supervisor: Theodore Nwankwo

Lecturer

Sheffield Business School, Sheffield Hallam University

FinTAF conference 2023

Sheffield Hallam University

# **Abstract**

- Purpose How the share prices of listed financial technology (FinTech) companies in the UK respond to adoption of Environmental, Social and Governance (ESG) factors.
- Methodology A sample of 15 FinTech scrips has been taken from various international indices available on the Bloomberg. The sample companies have been categorized in low, medium and high ESG disclosures grid based on nine factors. The research is based on a little more than 15,000 daily closing prices from Aug 06, 2017 to Aug 05, 2022.
- **Findings** The results suggest that high EGS disclosure companies are showing least volatility (2.07% Standard Deviation) of prices which means lowest risk and highest stability in price movements and highest stability in stock performance. Low ESG Disclosure companies exhibited highest volatility with standard deviation of 7.29% in stock price movements during the past five years. This translates into highest risk and resultantly least stability in price movements and stock performance. On a return per risk basis, Medium ESG group ranks 1 on a 5 year time horizon.
- Research limitations/implications A limited number of companies has been selected as a sample. Daily closing prices have been taken in the research. In addition, past five years data (2017-2022) has been used in the research. There is no Fintech index available that covers UK fintech companies only. In addition, other areas of performance such as profitability measures could be explored with the impact of ESG.
- Keywords Sustainability, Environmental, Social, Governance, Climate change,
   Fintech, Stock Performance

# Introduction

The increasing concerns related to environmental impact including climate change, global warming, and carbon emissions have led businesses to focus on the social responsibility of corporates. Its relevance for financial institutions is considered important since, the industry at large consumes natural resources including energy, paper, and others that generate waste (Liu, et al., 2021). The focus of global environment protection agencies has shifted to effectively combat climate change. The rise in awareness of the public for sustainability and the impact of climate change on wellbeing is found to affect consumer behaviour, people are found to demand more environment-friendly and ecological products and services to support sustainable lifestyles (Checa and Agudo, 2021). The use of green and sustainable marketing and product development is found to provide a competitive advantage for firms (Gräuler and Teuteberg, 2014).

These firms are effectively able to differentiate their business activities and products and services from the competition. The marketing campaigns help firms to spread awareness to consumers about the sustainable nature of the products and services that are purchased or used (Gräuler and Teuteberg, 2014). Furthermore, it is also evident that the introduction of the Fourth Industrial Revolution (Industry 4.0) has led to exponential support for technologies and developing and sharing/ reshaping the economies. Financial institutions are facing challenges in offering sustainable products and services as the customer demands have inclined significantly (Najaf, Khalifa, Obaid, Al Rashidi, & Ataya, Does sustainability matter for Fintech firms? Evidence from United States firms, 2022). Najaf, et al., (2022) help to provide a detail that focuses on sustainable practices and performance as it has gained considerable attention and growth based on the interest of the stakeholders both at the domestic and global levels. Studies help to derive insights into the relevance of corporate social responsibility on financial performance with relevance to FinTech Companies and technologies (Liu, et al., 2021).

Fintech Companies are considered shortcuts for financial technology companies, the focus of FinTech Companies is to utilise the innovations and digital and modern technologies to enhance, automate, and improve financial services. The use of

FinTech is carried out to promote, support, and assist businesses, clients, and investors to effectively manage their financial activities through specialised software and applications (Al Hammadi and Nobanee, 2019).

## Overview of FinTech Companies in the UK

The grass root analysis carried out by Deloitte UK in the house of FinTech Companies, London is found to be a key player/ driver in the success of FinTech Companies in the UK. It is the world's second-highest ranked FinTech ecosystem throughout the world, with the greatest concentration of professional and financial services companies. The report shows that there are a total of 2,500 FinTech Companies in the UK, from Belfast, Durham, Edinburg, Bristol, Cardiff, Birmingham, and other cities. The growth of 21% was noticeable from 2011 to 2016 on year on year basis. The growth has declined however, it is found that a large number of FinTech activities are evident (Deloitte LLP, 2022).

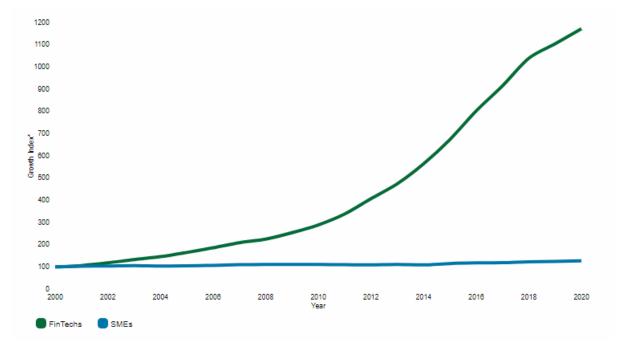


Figure 1: UK SME and FinTech Growth

The FinTech Companies in the UK are categorised in 8 with 23 different specialisms. The 8 broad categories include InsurTech, Lending, Banking, WealthTech, RegTech, Payments, Quote Aggregators, Auditing, Accounting, and Cashflow Management. In

the UK the strength is in WealthTech, Payment Technology, and Accounting which constitute 50% of the UK FinTech Companies (Deloitte LLP, 2022).

The largest segment of the market is banking with a total value for transactions at \$ 748.50 billion in 2022, furthermore, it is expected to grow by 40.9% in the year 2023. The payment (Digital payment) segment is considered to grow to 63.19 million by 2026. The average transaction value for the users within the lending segment is expected to reach \$ 217.60 thousand in 2022 (Statista, 2022). The outcomes derived from authentic internet sources also help to provide a detail that investments in FinTech in the UK fluctuated from 2018 to 2021 with a value of \$ 24.5 billion during the first half of 2021. The investments were highest in the third quarter of 2019 with a value of \$ 50.9 billion. The analysis shows that the FinTech market is growing in terms of investment and the number of total businesses.

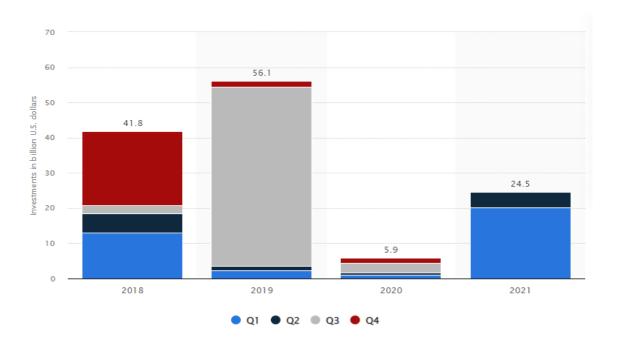


Figure 2: Investments in FinTech Companies in the UK (1st quarter 2018 – 2nd quarter of 2021)

#### FinTech and the Economy

The economic environment of the UK is found to be progressively digital with the highspeed internet and Smartphone penetration, growing e-commerce, the capability of analysing a large set of data, and the emergence and application of new

technologies. The introduction of FinTech Technology and Companies are found to support the shift of the economy towards digitalisation. The new businesses as well as existing ones can introduce players and business models to support the market needs. The increase in chances to meet customer expectations and unfulfilled needs and rise in competitiveness is linked with FinTech. Furthermore, more focused business strategies, higher efficiency/ reduction in inefficiency, and changes to the financial services are noticeable (Bank of England, 2019). The development of FinTech is considered important to support the resilience and efficiency of the financial system.

The Bank of England in the report raises the importance and discovery of the role of FinTech in sustainability, how it leads to stability in the financial system, safety and soundness of the firms operating in the financial sector. The report provides an overview that the FinTech industry/ sector comprises of the existing/ established and other financial institution start-ups. The businesses in the sector are making use of the latest technology and applying them to a range of business areas which include lending, banking, investment, payments, and others (Bank of England, 2019). The application of technology in insurance is also considered to transform the industry. In a nutshell, it can be stated that the application of FinTech has led to improvement in the efficiency of businesses and also an economic lift for the UK.

#### **Research Aims**

The research aim developed from the preliminary research and personal interest is to critically evaluate the stock performance of Financial Technology (FinTech) Companies in the UK with a focus on environmental, social, and governance (ESG) disclosures.

Objectives of the research reflect on the direction towards the achievement of the research aim. The following research objectives are devised;

- Assess the stock performance of FinTech Companies in the UK (2017-2022),
- Derive an insight into the possible determinants of stock performance of FinTech Companies in general and in the UK,
- Assess the ESG disclosures in Fintech companies in the UK, and

 Determine the impact of ESG factors disclosures on the stock performance of FinTech Companies in the UK (2017-2022).

The motive is to derive insights from the past research related to the assessing the performance of the FinTech companies, investigating the determinants of stock performance, and the assessment of different ESG factors disclosures in general and further develop a focused approach to see their impact on the Stock performance of UK's FinTech Companies.

# **Literature Review**

# Study conducted on banking sector globally

There is notable direct association between social and environmental sustainable indicators and financial result of the banks and this impact is directed by quality of management and growth in loan (Nizam et al, 2019).

#### Study conducted on US Companies

Investors show great concern regarding sustainability measures and practices before they make investment decisions. There is a lesser sustainability and performance by Financial Technology Companies. Investors are sensitive and more inclined towards investing in non-Fintech Companies with better sustainability practices. In addition, sustainability practices and market value of Financial Technology Companies have inverse relationship (Najaf et al, 2022).

#### **Study conducted on Chinese Banks**

Composite ESG is not significantly influencing the financial performances of the banking sector of China and out of the sub-components of ESG i.e. Environmental, Social, and Governance the governance factors are significantly and positively impacting the Return on Equity and Net Interest Margin Profit of the banks. (Liu, Y. et al, 2021).

#### Study conducted on Indonesian Banks

Financial technology significantly and negatively influence all the four performance indicators (ratio of net interest income to total assets, ratio of net income to total assets, ratio of net income to total equity, and yield on earning assets) (Phan et al, 2020).

## Study conducted in the US, Asia-Pacific region and the Europe

High ESG stocks do not have a consistent direct relation on the investment performance as compared to the benchmarks and to low ESG stocks in the United States and the Asia-Pacific region. No proof for the superiority of strategies based on ESG factors in Europe too. (Auer and Schuhmacher, 2016).

# Methodology

The positivism research theory served as the primary foundation for the process of establishing the framework for this research study. The fundamental purpose of this line of investigation is to analyze the numerical datasets over the period of last five years (2017-2022) using a quantitative research approach. Five years data has been collected for 15 Fintech Companies in the UK. Daily closing stock price has been taken over the last five years that translates into nearly 15 thousand observations.

In order to analyze the financial performance of the FinTech Industry and individual scrips in United Kingdom ('UK") and on global front, we felt the need to first look into the various indices in UK and worldwide as there is hardly any sector based index or the existence of FinTech category in UK financial market hence we looked into various indices on Bloomberg, and found out 15 UK based Fintech scrips from these indices which are. The indices and the selected companies are attached in the Appendices.

A sample of 15 UK based Fintech Companies has been taken from these Fintech Indices available on the Bloomberg. Further information has been extracted from their latest annual reports available on their respective websites.

Upon digging deep into the indices listed above, we came up with 15 constituents to launch capital market performance study where we gathered the financial and technical stock movement data upto last five years and tried to figure out their performance benchmarks on different intervals such as:

1. Recent One Month Returns (HPY and ROI) - from July 06,2022 to Aug 05, 2022;

- 2. Recent One Year Returns from Aug 06,2022 to Aug 05, 2022;
- 3. Last Three Years Returns from Aug 06, 2019 to Aug 05, 2022;;
- 4. Last Five years Returns; from Aug 06, 2017 to Aug 05, 2022; and
- 5. Returns since December 2020, in order to exclude the impact of COVID 19 on market from Jan 01, 2021 to Aug 05, 2022;
- 6. Two year (2018 & 2019) Returns prior to COVID 19 from Jan 01, 2018 to Dec 31, 2019.

While Figuring out the benchmark, I excluded one scrip (SYME) which is an outlier for all intervals to come up with the better/ close representation of the benchmark and ranked the performance of the constituents on each interval. To calculating and ranking the performance of these scrips I used the Holding Period Returns ("HPY") which was based on the capital gains as well as earned dividend during that time interval as well as calculated the Return on Investment ("ROI") to come up with more relevant financial performance indicator. The ROI element is calculated on basis on compounded annual returns. The results are further decomposed into three categories top performers, top decliners and most volatile.

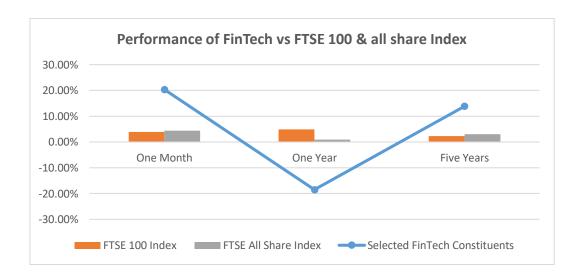
For the purpose of this research, stock performance evaluation has been conducted over the past five years for the selected sample of 15 UK Fintech Companies. The sample companies have been categorized in low, medium and high ESG disclosures grid based on nine factors. The nine factors are Global Reporting Initiative Disclosures, Task Force on Climate-related Financial Disclosures, independent verification of environmental policies, Business ethics policy, training of employees, female representation on Board (33%), Independent chairman of audit committee, Director assigned responsibility for CSR, CSR/sustainability committee (Najaf, Khalifa, Obaid, Al Rashidi, & Ataya, Does sustainability matter for Fintech firms? Evidence from United States firms, 2022). This methodology has been benchmarked from a similar study on Fintech companies in the USA by Najaf, et al., 2022. Each factor has been given equal weightage i.e. 1 for Yes and 0 for No. Based on this, a grid has been constructed with companies scoring 7 and above in High ESG Disclosure, between 4 and 6 in Mid ESG Disclosure and less than 4 in Low ESG Disclosure. Stock performance of Companies has been evaluated between these three categories and an attempt has been made to see whether high ESG Disclosure translates into high stock performance.

# Findings and Analysis

#### Fintech market & its performance

It has been noted that various crises during last decade particularly in recent past have acted as the reason for the development of the FinTech Market which can be seen as the performance of this sector which has largely outnumbered the performance of FTSE 100 and FTSE All share Index, however at the same time it should be noted that the returns are highly volatile (which will be discussed and presented in following paragraphs). The performance FinTech during past five years is tabulated and presented below:

Index/ Benchmark	One Month	One Year	Five Years
Selected FinTech Constituents	20.34%	-18.49%	13.84%
FTSE 100 Index	3.93%	4.89%	2.34%
FTSE All Share Index	4.38%	0.96%	3.06%



It is pertinent to note that while outnumbering the benchmarks, FinTech sector is highly volatile which can be seen by looking at numbers of past one year, evidencing the gigantic losses as compared to the comparing indices. Similarly past one month performance of 15 selected companies has largely exceeded the results of comparing indivces. Moreover, five year performance of FinTech companies has also outnumbered that gains reported by indices which evidences that in better times gains registered from FinTech industry is significantly higher that market while in worse times it lossed way more than the entire market. It can also be witnessed through the five years standard deviation of the FinTech sector of 4.01%.

# **Outcomes / Findings Of The Study**

A summarized depiction of calculated numbers on the basis of holding period returns, return on investment and list of gainers/ losers is tabulated and discussed as follow:

#### **Holding Period Return:**

0				Н	IPY		
Constituent	Currency	1 Month	1 Year	Post Covid	3 Years	5 Years	2 Years Prior Covid
SYME	GBP	72%	-45%	-73%	-84%	-99%	-91%
GSC	GBP	9%	84%	N/A	N/A	N/A	N/A
FNTL	GBP	3%	-16%	19%	8%	34%	57%
WISE	GBP	36%	-53%	N/A	N/A	N/A	N/A
IHP	GBP	20%	-50%	-50%	-24%	17%	76%
IGG	GBP	24%	-7%	-4%	49%	34%	-3%
PSEF	USD	12%	-79%	-85%	N/A	N/A	N/A
LGEN	GBP	14%	3%	14%	30%	28%	24%
SGE	GBP	12%	4%	31%	12%	19%	-1%
GBG	GBP	22%	-41%	-45%	-6%	41%	83%
EXPN	GBP	12%	-7%	0%	21%	99%	64%
LSEG	GBP	8%	7%	-9%	29%	122%	110%
NETW	GBP	11%	-40%	-29%	-65%	-59%	24%
TCAP	GBP	30%	-27%	-28%	-31%	-58%	-25%
MONY	GBP	20%	-11%	-11%	-27%	-12%	0.25%
		20%	-18%	-21%	-7%	14%	27%

Above table portrays a picture of 15 FinTech companies on basis on individual hodling period returns on various time intervals which evidences that the fintech industry has performed remarkably during past one month with an average HPY of 20% with SYME, a company apparantly bottoming out after massive loses, leads the table with 72% gain registered during last one month. It is pertinenet highlight that not a single constituent from the chart has lost its value during last one month, however FNTL which is least benefitted scrip of the recent momentum has gained only 3% during last one month. The table also educates that the past three years arent remained good for the FinTech industry which includes the covid impacted tenure as well. The industry lost approximatly 7% during past three years with 18% in only last one year with Paysafe Limited, Wise, IHP and SYME losing the most with 79%, 53%, 50% and 45% respectively during past one year.

The overall performance during the time horizon of five years remained satisfactory for the industry with registering returns of 14% in past five years with the peak earning time of FY

2018 and FY 2019 when the industry gained 27% in two years. It was the time when excepting SYME, IGG, TCAP and SGE every company was resitering lucrative profits with LSEG leading the chart with 110% gain, followed by GBG 83%, IHP 76% and Experion registering a gain of 64% within a period of 24 months.

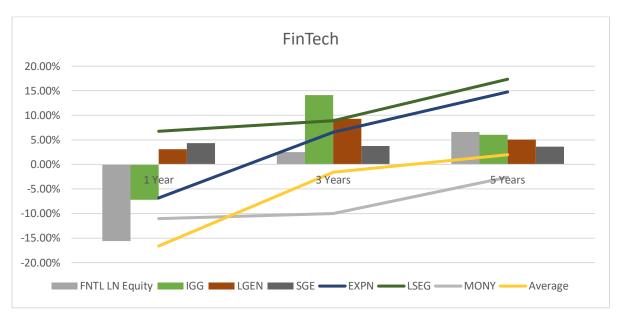
#### **Return on Investment:**

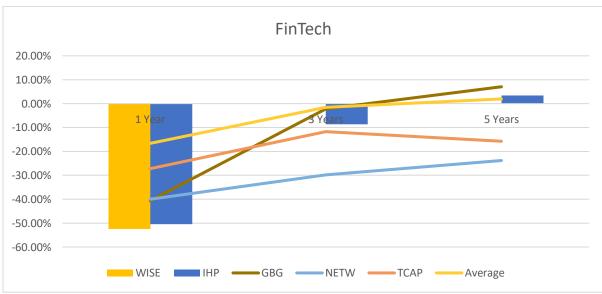
						I	ROI *		
Constituent	SD(5Y)	P/E	P/B	1 Month	1 Year	Post Covid	3 Years	5 Years	2 Years Prior Covid
SYME	24.87%	-4.58	-40.12	66822%	-45%	-56%	-46%	-62%	-70%
GSC	2.55%	-	-	178%	84%	N/A	N/A	N/A	N/A
FNTL	2.66%	13.27	2.32	36%	-16%	12%	3%	7%	31%
WISE	2.99%	5.14	2.27	3916%	-53%	N/A	N/A	N/A	N/A
IHP	2.61%	16.72	5.23	834%	-50%	-35%	-9%	3%	36%
IGG	1.89%	8.84	1.73	1215%	-7%	-2%	14%	6%	-1%
PSEF	4.90%	-1.34	1.12	308%	-79%	-70%	N/A	N/A	N/A
LGEN	1.95%	7.68	1.42	396%	3%	9%	9%	5%	11%
SGE	1.64%	25.66	6.20	294%	4%	18%	4%	4%	0%
GBG	2.35%	81.15	5.11	1021%	-41%	-31%	-2%	7%	35%
EXPN	1.80%	27.28	7.90	275%	-7%	0%	7%	15%	28%
LSEG	1.97%	87.27	1.95	151%	7%	-6%	9%	17%	45%
NETW	3.38%	24.64	2.31	252%	-40%	-19%	-30%	-24%	35%
TCAP	2.64%	214.93	0.55	2152%	-27%	-19%	-12%	-16%	-13%
MONY	1.93%	19.01	5.72	779%	-11%	-7%	-10%	-3%	0.13%
	2.52%	37.55	0.27	843%	-17%	-12%	-2%	2%	19%

<sup>\*</sup>Average ROI of the group is calculated by excluding SYME as outlier.

Above table is workedout on basis of presenting returns in terms of annual return rate on investments which clearly indicated that if the past one month performance is annualized the industry reports a mouth waterning return of 843% while for the past five years period the return on investment is 2% for the industry with LSEG leading the table with its 17% ROI for five years.

The return of individual scrips are also plotted on charts below to understand the performance track of Fintech companies in comparison to the calculated industrial average.





## Winners & Losers on different Intervals

Table below presents a close view of individual scrips in comparison to the industry averages on different time horizons:

Comptituent		Gain	ers/Losers EXC	sers EXCLUDING SYM AS OUTLIER					
Constituent	1 Month	1 Year	Post Covid	3 Years	5 Years	2 Yr Prior Covid			
SYME	65979%	-28%	-44%	-44%	-64%	-89%			
GSC	-666%	100%	12%	2%	-2%	-19%			
FNTL	-808%	1%	24%	4%	5%	12%			
WISE	3073%	-36%	12%	2%	-2%	-19%			
IHP	-9%	-34%	-23%	-7%	1%	17%			
IGG	372%	9%	10%	16%	4%	-20%			

PSEF	-535%	-63%	-57%	2%	-2%	-19%
LGEN	-447%	20%	21%	11%	3%	-7%
SGE	-549%	21%	31%	5%	2%	-19%
GBG	177%	-24%	-18%	-1%	5%	16%
EXPN	-568%	10%	13%	8%	13%	9%
LSEG	-693%	23%	7%	10%	15%	26%
NETW	-592%	-23%	-7%	-28%	-26%	16%
TCAP	1309%	-11%	-6%	-10%	-18%	-32%
MONY	-64%	6%	6%	-8%	-5%	-19%

The winning and losing scrips have also been tabulated in various parts according to different time horizons are summarized below:

# Past 30 Days Winners & Losers

Not a single selected FinTech scrip lost its value during past one month while I have ranked the top performing scrips, which reveals that SYME, WISE and TCAP are the leaders with SYME is actually showing a decent recovery after losing too much in past. Below table is produces to understand the ranking of top performers:

Ranking	Constituents	HPY	ROI	P/E	P/B
1	SYME	72%	66822%	-4.58	-40.12
2	WISE	36%	3916%	5.14	2.27
3	TCAP	30%	2152%	214.93	0.55
4	IGG	24%	1215%	8.84	1.73
5	GBG	22%	1021%	81.15	5.11
6	IHP	20%	834%	16.72	5.23

#### **Last one Year Winners and Losers**

As stated in earlier parts of the findings, the last one year was toughest time for the FinTech industry averaging 18% registered losses for the 15 companies as most of the companies losing their values noticeably except a few couple including a new comers (GSC) which is also leading the table with significant return, other winners along with GSC are ranked in below table:

#### Winners

Ranking Constituents	HPY	ROI	P/E	P/B	Ī
----------------------	-----	-----	-----	-----	---

1	GSC	84%	84%	-	-
2	LSEG	7%	7%	87.27	1.95
3	SGE	4%	4%	25.66	6.20
4	LGEN	3%	3%	7.68	1.42

#### Losers

The losing companies are large in number 11 out of 15 and have lost signifincatly with paysafe droping its value most among all. The table of losers during past one year also highlight some scrips with noticeble numbers as TCAP despite losing 27% is still trading at expensive P/E of 215x which may be due to its strong book value as P/B is only 0.55x. Below table shows the ranking from the largest loseer to the smallest:

Ranking	Constituents	HPY	ROI	P/E	P/B
1	PSEF	-79%	-79%	-1.34	1.12
2	WISE	-53%	-53%	5.14	2.27
3	IHP	-50%	-50%	16.72	5.23
4	SYME	-45%	-45%	-4.58	-40.12
5	GBG	-41%	-41%	81.15	5.11
6	NETW	-40%	-40%	24.64	2.31
7	TCAP	-27%	-27%	214.93	0.55
8	FNTL	-16%	-16%	13.27	2.32
9	MONY	-11%	-11%	19.01	5.72
10	IGG	-7%	-7%	8.84	1.73
11	EXPN	-7%	-7%	27.28	7.90

#### Past Three (03) Years Gainers and Losers

Considering the investment horizon of past three years starting from August 2019, the industry's performance remained negative with holding period loss of 7% and RoI of negative 2% annually. It is pertinent to mention here that the three years period includes a year of COVID impacted which resulted in sever losses to the industry and the investment world. The list of top winners ranking wise and losers is tabulated below:

#### Winners

Despite the industry lost collectively in past 3 years, there were some companies which were still performing beltter and reporting gains with IGG leading the table of winners by registering 49% HPY and 14% ROI. Winners are ranked as follow:

Ranking	Constituents	HPY	ROI	P/E	P/B
1	IGG	49%	14%	8.84	1.73
2	LGEN	30%	9%	7.68	1.42
3	LSEG	29%	9%	87.27	1.95

4	EXPN	21%	7%	27.28	7.90
5	SGE	12%	4%	25.66	6.20
6	FNTL	8%	3%	13.27	2.32

#### Losers

During past 3 years, the companies which impacted the FinTech industry most are SYME, NETW, TCAP, MONY and IHP. The list of only significant losers is presented in below table:

Ranking	Constituents	HPY	ROI	P/E	P/B
1	SYME	-84%	-46%	-4.58	-40.12
2	NETW	-65%	-30%	24.64	2.31
3	TCAP	-31%	-12%	214.93	0.55
4	MONY	-27%	-10%	19.01	5.72
5	IHP	-24%	-9%	16.72	5.23
6	GBG	-6%	-2%	81.15	5.11

## Five (05) Years Performance

During past five years the overall performance of FinTech remained decent registering average gain of 14% over the time horizon with 2% ROI. The list of scrips gaining and losing are tabulated below:

#### Winners

From the FinTech industry over five years the significant performers are LSEG and Experion gaining 122% and 99% respectively. The annual return on investment is calculated as 17% and 15% respectively. Other winners in ranking alongside aforementioned two companies is listed in below table:

Ranking	Constituents	HPY	ROI	P/E	P/B
1	LSEG	122%	17%	87.27	1.95
2	EXPN	99%	15%	27.28	7.90
3	GBG	41%	7%	81.15	5.11
4	FNTL	34%	7%	13.27	2.32
5	IGG	34%	6%	8.84	1.73
6	LGEN	28%	5%	7.68	1.42
7	SGE	19%	4%	25.66	6.20
8	IHP	17%	3%	16.72	5.23

#### Losers

During the timehorizon, while the entire industry performed well and produced gains SYME. NETW, TCAP and MONY were making losses with SYME lossing everything by 99% loss but still surviving and trying to recover from its bottom. Below list of losers is ranked from worst to bad:

Ranking	Constituents	HPY	ROI	P/E	P/B
1	SYME	-99%	-62%	-4.58	-40.12
2	NETW	-59%	-24%	24.64	2.31

3	TCAP	-58%	-16%	214.93	0.55
4	MONY	-12%	-3%	19.01	5.72

#### Two (02) Years Performance Prior to Covid-19 (CY 2018 & 2019)

The Performance of Fintech during two years prior to COVID 19 remained significantly well with HPY of 27% and termed as the best time period for the industry. However even in the best times there were some company which were performing well and losing too much. The list of successful companies is lead by LSEG posrting 110% HPY over the period of two years GBG with 83% gains during the time. However SYME and TCAP has lost 91% and 25% of their wealth during same time. The list of winners and losers is presented below with their respective rankings:

#### Winners:

Ranking	Winners					Losers				
	Constituents	HPY	ROI	P/E	P/B	Constituents	HPY	ROI	P/E	P/B
1	LSEG	110%	45%	87.27	1.95	SYME	- 91%	- 70%	-4.58	- 40.12
2	GBG	83%	35%	81.15	5.11	TCAP	- 25%	- 13%	214.93	0.55
3	IHP	76%	36%	16.72	5.23	IGG	-3%	-1%	8.84	1.73
4	EXPN	64%	28%	27.28	7.90	SGE	-1%	0%	25.66	6.20
5	FNTL	57%	31%	13.27	2.32	Constituents	HPY	ROI	P/E	P/B

Conclusively, It has been observed that the FinTech industry was largely outnumbering the performance of financial market before the emergence of COVID 19 as shown by its ROI of 19% annually till 2019. Then the COVID year destroyed the market as well as impacted the FinTech sector significantly which resulted in losses, however the mature companies continued to distribute the dividends and even after the crises if we see the five year performance of the sector a 14% gain is registered. In recent month the FinTech has gained momentum of growth with approximately 20% gain throughout the month.

### **ESG Disclosures**

As discussed in the methodology chapter, below are the nine factors, three each from Environment, Social and Governance aspects.

1		Global Reporting Initiative Disclosures	Whether a company complies and follows global reporting standards or not. 1 for Yes, 0 for No.
2	Environment	Task Force on Climate- related Financial Disclosures	Whether a company follows global reporting standards or not. 1 for Yes, 0 for No.
3		Verification type (independent verification of environmental policies)	Whether the environmental policies/activities are independently verified or not. 1 for Yes, 0 for No.
4		Business ethics policy	A company with disclosed/ published business ethics policy is assigned a score of 1 while 0 for non-disclosure
5	Social	Employee CSR training	Average UK firm/company invests GBP 1,530/- on each employee per annum as per government findings, any FinTech company exceeding this amount has been assigned the score of 1, while 0 for below this amount.
6		Women in management (33% board)	Whether a company has 33% representation of females on BOD or not. 1 for Yes, 0 for No.
7		Independent chairman of audit committee	Chairman of audit committee is independent or not. 1 for Yes, 0 for No.
8	Governance	Executive director with responsibility for CSR	Companies with an executive director assigned a duty for CSR will get a score of 1 and 0 otherwise.
9		CSR/sustainability committee	Whether a company has a CSR/sustainability committee or not. 1 for Yes, 0 for No.

The companies complying a factor has been assigned a score of 1, while a non-complying company has been given 0. Companies with aggregate scores of 7 and above have been grouped in High ESG disclosure group, while companies scoring equal to or less than 3 have been categorized as Low ESG disclosure and companies scoring between 4 and 6 are kept in medium ESG disclosures. Based on this, stock performance of the three groups has been

analyzed collectively to explore the success of companies with ESG disclosure in different ranges.

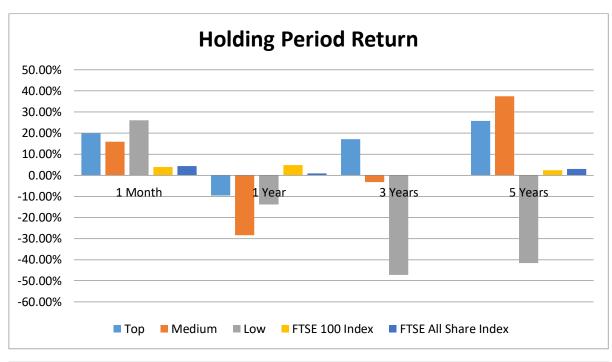
# **ESG Ranking**

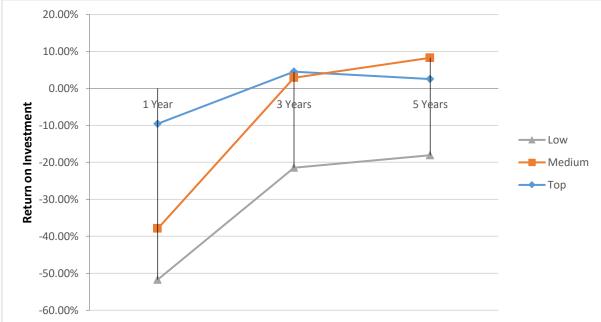
Group	ESG Score	Company	Rank
	8	IG Group Holdings PLC	1
High ESG Disclosure	8	Legal & General Group PLC	1
High E33 Disclosure	7	Experian Plc	2
	7	TP ICAP Group Plc	2
	6	The Sage Group plc	3
	6	London Stock Exchange	3
Medium ESG Disclosure	6	Moneysupermarket.Com Group PLC	3
	4	IntegraFin Holdings plc	4
	4	Paysafe Limited	4
	4	GB Group Plc	4
	3	Fintel Plc	5
	3	Network International Holdings Plc	5
Low ESG Disclosure	2	WISE Plc	6
	1	Supply@ME Capital Plc	7
	0	GS Chain PLC Company	8

# 4.1 Stock performance based on ESG Disclosures

Stock performance of the groups on basis of their Holding Period Return and Return on Investments on various investment time horizons has been analyzed, a summary of which is tabulated below:

ESG	НРҮ				ROI			22/20		
Group	1 Month	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	SD(5Y)	P/E	P/B
High	19.88%	-9.54%	17.18%	25.81%	-9.54%	4.54%	2.52%	2.07%	64.68	2.90
Medium	15.86%	-28.37%	-3.27%	37.48%	-28.37%	-1.63%	5.77%	2.56%	38.08	4.22
Low	26.10%	-13.79%	-47.27%	-41.52%	-13.79%	-24.39%	-26.35%	7.29%	9.62	(8.31)





# **Companies with High ESG Disclosures**

Companies with high ESG scores are among mature companies (trading at P/E of 64.68x) in the sector their price movements over the past five years reported least standard deviation (volatility) showing least associated risk and stability of prices, however as far as returns are concerned they ranked number 2 in shorter (1 month) and longer (5 years) time horizons while in medium time horizon (1 year and 3 years) they performed comparatively better and remained on top due to their least volatility and it was toughest time period on the industry.

#### **Companies with Medium ESG Disclosures**

The companies with medium ESG disclosure performed best in longest (5 years) time horizon as shown by HPY of 37.41% as compared to industry average of 13.84% in 5 year time horizon. However in latest time period (1 year) the returns posted by this group is lowest among all three groups. During the toughest time on industry since 2019 this group reported losses, however survived major collapse unlike the low ESG group.

#### **Companies with Low ESG Disclosures**

These companies remained mostly in losses except the recent past month when the prices are bottoming out. The prices during past five years remained highly volatile with standard deviation of 7.29%. Its results has outnumbered all other groups in shortest time period (1 month) however this cannot be termed as its success since it is a recovery from a deep dive.

In longer term (5 years horizon) companies with medium ESG exposure has performed well while in shorter term (recent one month) the companies with lowest ESG exposures has outnumbered the other groups however this group has an outlier (SUPPLY@ME CAPITAL PLC) with abnormally high returns. High ESG disclosure group has posted moderate results with lowest volatility which depicts that most of these companies are at mature stages. However, from the study it can be concluded that high ESG disclosure companies have lowest volatility which translates into less risk and more stable in terms of stock performance of the company.

# Conclusion

Fintech, a combination of Financial and Technology Companies is shaping the financial industry all around the world. They are effectively producing a disruption in the market for banking and financial services, and they are spurring innovation among the industry's established players as they continue to grow and extend their operations (Haddad & Hornuf, 2019). With the latest and emerging technological advances being employed in the provision of financial services, the concept is being evolved and refined every next day. The focus of cutosmers' attitudes and behaviors towards a more sustainable world has also resulted in an accelerated approach towards adoption of technology.

The research has been carried out to see the impact of Environmental, Social and Governace factors on the stock performance of Fintech Companies in the UK. Since FinTech is not classified as industry type in financial market of UK, a sample of 15 FinTech scrips has been taken on the basis of research from the various international indices available on the Bloomberg. The research has not only been based on a little more than 15,000 daily closing

prices but also analyzed the performance of scrips in various dynamics and resultantly, it has been observed that the sample portfolio was registering significant gains (ROI – 19%) and outnumbering the performance of FTSE all share and FTSE 100 index before COVID 19 hit the global market. Then the COVID impacted year destroyed the markets which impacted the FinTech sector significantly and resulted in severe losses. On the contrary, the mature companies continued to distribute the dividends and recovered progressively even in distressed time. The sample portfolio registered returns of 14% in past five years as compared to FTSE 100 and FTSE All share index which registered returns of 2.34% and 3.06%. The peak earning of the sample portfolio was in FY 2018 and FY 2019 when it gained 27% in two years. Recently, alongside FTSE 100 and FTSE All share index, FinTech has also gained momentum of growth which is way more than the mentioned indices.

Similarly, we took another deep dive into the numbers and characteristics of these 15 companies and assigned scores on basis of their social, environmental and governance engagements with qualifying factors of compliance and disclosures. Resultantly we ranked these companies into Top, Mid and Low levels of EGS disclosures. Then we aggregated the numbers achieved by these groups and analyzed their performance which taught us that there seem to be a link of ESG compliance with the volatility which is witnessed through our analysis on the groups that the high EGS disclosure companies are showing least volatility (2.07% Standard Deviation) of prices which means lowest risk and highest stability in price movements and highest stability in stock performance. Low ESG Disclosure companies exhibhited highest volatility with stadard deviation of 7.29% in stock price movements during the past five years. This translates into highest risk and resultantly least stability in price movements and stock performance. On a return per risk basis, Medium ESG group ranks 1 on a 5 year time horizon.

The research comes with the limitations that should be considered and overcome in future studies. A limited number of companies has been selected as a sample and performance evaluation has been done with respect to stock performance. Daily closing prices have been taken in the research, further studies could be conducted using weekly or monthly closing prices. In addition, past five years data (2017-2022) has been used in the research. Data could be explored for a more number of years e.g. past ten years. There is no Fintech index available that covers UK fintech companies only. Possible future research areas could be to work for a Fintech index for UK market only. In addition, other areas of performance such as profitability measures could be explored with the impact of ESG.

#### References

- Aaker, D. A., & Keller, K. L. (1990). Consumer evaluations of brand extensions. Journal of Marketing, 54(1), 27. https://doi.org/10.2307/1252171
- Abbasi, K. (2019). Data sharing and opening up research. *Journal of the Royal Society of Medicine*, 112(6), 211-211. https://doi.org/10.1177/0141076819855176
- Al Sahaf, M., & Al Tahoo, L. (2021). Examining the key success factors for startups in the Kingdom of Bahrain. International Journal of Business Ethics and Governance, 9-49. https://doi.org/10.51325/ijbeg.v4i2.65
- Alam, N., & Zameni, A. (2019). The regulation of fintech and cryptocurrencies. *Fintech In Islamic Finance*, 159-171. https://doi.org/10.4324/9781351025584-11
- Analysing quantitative data. (2005). How to Develop Children as Researchers: A Step-by-Step Guide to Teaching the Research Process, 107-116. https://doi.org/10.4135/9781446212288.n11
- Ardiansyah, F., Siregar, H., Hakim, D. B., & Siregar, M. (2020). Determinants affecting profitability and stock returns for smaller banks listed on the Indonesia stock exchange. Jurnal Aplikasi Bisnis dan Manajemen.

  https://doi.org/10.17358/jabm.6.3.679
- Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. Journal of Social and Clinical Psychology, 4(3), 359-373. https://doi.org/10.1521/jscp.1986.4.3.359
- Bandura, A. (1991). Social cognitive theory of self-regulation. Organizational Behavior and Human Decision Processes, 50(2), 248-287. https://doi.org/10.1016/0749-5978(91)90022-1

- Belotto, M. (2018). Data analysis methods for qualitative research: Managing the challenges of coding, Interrater reliability, and thematic analysis. *The Qualitative*\*Report. https://doi.org/10.46743/2160-3715/2018.3492
- Chapter 3. The landscape of Fintech. (2018). Fintech, 21-34. https://doi.org/10.1515/9781547400904-003
- Chen, L. (2016). From Fintech to Finlife: The case of Fintech development in China. *China Economic Journal*, 9(3), 225-239. https://doi.org/10.1080/17538963.2016.1215057
- Chishti, S. (2016). How peer to peer lending and crowdfunding drive the FinTech revolution in the UK. *Banking Beyond Banks and Money*, 55-68. https://doi.org/10.1007/978-3-319-42448-4\_4
- Chueca Vergara, C., & Ferruz Agudo, L. (2021). Fintech and sustainability: Do they affect each other? Sustainability, 13(13), 7012. https://doi.org/10.3390/su13137012
- Chueca Vergara, C., & Ferruz Agudo, L. (2021). Fintech and sustainability: Do they affect each other? Sustainability, 13(13), 7012. https://doi.org/10.3390/su13137012
- Davidson, E., Edwards, R., Jamieson, L., & Weller, S. (2018). Big data, qualitative style: A breadth-and-depth method for working with large amounts of secondary qualitative data. *Quality & Quantity*, *53*(1), 363-376. https://doi.org/10.1007/s11135-018-0757-y
- Dorfleitner, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). The FinTech market in Germany. *FinTech in Germany*, 13-46. https://doi.org/10.1007/978-3-319-54666-7\_4
- ElGhazali, A. F., & Dol, S. S. (2020). Aerodynamic optimization of unmanned aerial vehicle through propeller improvements. Journal of Applied Fluid Mechanics, 13(3), 793-803. https://doi.org/10.29252/jafm.13.03.30414
- Elsden, C., Feltwell, T., Barros Pena, B., Nissen, B., Gloerich, I., Speed, C., & Vines, J. (2020). Designing futures of money and FinTech. *Companion Publication of the*

- 2020 ACM Designing Interactive Systems
- Conference. https://doi.org/10.1145/3393914.3395904
- Evaluation of mobile application in user's perspective: Case of P2P lending apps in FinTech industry. (2017). *KSII Transactions on Internet and Information*Systems, 11(2). https://doi.org/10.3837/tiis.2017.02.027
- Ferrari, R. (2016). FinTech impact on retail banking From a universal banking model to banking Verticalization. *The FinTech Book*, 248-252. https://doi.org/10.1002/9781119218906.ch65
- Figure 1.7. Taylor rule interest rates and forecast for the United Kingdom. (n.d.). https://doi.org/10.1787/888932376364
- Fintech foundations: Convergence, blockchain, big data, and AI. (2022). *Global Fintech*. https://doi.org/10.7551/mitpress/13673.003.0004
- Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLOS ONE*, *15*(5), e0232076. https://doi.org/10.1371/journal.pone.0232076
- Haddad, C., & Hornuf, L. (2016). The emergence of the global Fintech market: Economic and technological determinants. SSRN Electronic
  Journal. https://doi.org/10.2139/ssrn.2830124
- Hill, J. (2020). ESG, SRI, and impact investing. Environmental, Social, and Governance (ESG) Investing, 13-27. https://doi.org/10.1016/b978-0-12-818692-3.00002-5
- Hodson, D. (2021). The politics of <scp>FinTech</scp>: Technology, regulation, and disruption in <scp>UK</scp> and German retail banking. *Public Administration*, 99(4), 859-872. https://doi.org/10.1111/padm.12731

- K. H. Chung, K., P. Zięcik, A., & Sterling, C. (2017). undefined. Asia Pacific Journal of Developmental Differences, 4(1), 17-33. https://doi.org/10.3850/s2345734117000036
- Kalmykova, E., & Ryabova, A. (2016). FinTech market development perspectives. *SHS Web of Conferences*, 28, 01051. https://doi.org/10.1051/shsconf/20162801051
- Langley, P., & Leyshon, A. (2020). undefined. *New Political Economy*, *26*(3), 376-388. https://doi.org/10.1080/13563467.2020.1766432
- Leong, K. (2018). FinTech (Financial technology): What is it and how to use technologies to create business value in Fintech way? *International Journal of Innovation,*Management and Technology, 74-78. https://doi.org/10.18178/ijimt.2018.9.2.791
- Liu, Y., Saleem, S., Shabbir, R., Shabbir, M. S., Irshad, A., & Khan, S. (2021). The relationship between corporate social responsibility and financial performance: A moderate role of fintech technology. Environmental Science and Pollution Research, 28(16), 20174-20187. https://doi.org/10.1007/s11356-020-11822-9
- Majid, U., & Vanstone, M. (2018). undefined. *Qualitative Health Research*, 28(13), 2115-2131. https://doi.org/10.1177/1049732318785358
- Mills, K. G. (2018). Fintech, small business & the American dream. https://doi.org/10.1007/978-3-030-03620-1
- MOHAJAN, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, 7(1), 23. https://doi.org/10.26458/jedep.v7i1.571
- Najaf, K., Haj Khalifa, A., Obaid, S. M., Rashidi, A. A., & Ataya, A. (2022). Does sustainability matter for Fintech firms? Evidence from United States firms.
  Competitiveness Review: An International Business Journal.
  https://doi.org/10.1108/cr-10-2021-0132

- Nicoletti, B. (2018). Fintech and procurement finance 4.0. *Procurement Finance*, 155-248. https://doi.org/10.1007/978-3-030-02140-5 6
- Pagano, M. S., Sinclair, G., & Yang, T. (n.d.). undefined. Research Handbook of Finance and Sustainability, 339-371. https://doi.org/10.4337/9781786432636.00027
- Phenomenological perspective. (2017). *An Applied Guide to Research Designs: Quantitative, Qualitative, and Mixed Methods*, 168
  176. https://doi.org/10.4135/9781071802779.n14
- Phillippi, J., & Lauderdale, J. (2017). A guide to Field notes for qualitative research: Context and conversation. *Qualitative Health Research*, 28(3), 381-388. https://doi.org/10.1177/1049732317697102
- Rahim, N. F., Bakri, M. H., & Yahaya, S. N. (2019). Fintech and Shariah principles in smart contracts. *FinTech as a Disruptive Technology for Financial Institutions*, 207-220. https://doi.org/10.4018/978-1-5225-7805-5.ch009
- Rahim, N. F., Bakri, M. H., & Yahaya, S. N. (2019). undefined. *FinTech as a Disruptive Technology for Financial Institutions*, 207-220. https://doi.org/10.4018/978-1-5225-7805-5.ch009
- Realizing the promise of America for embracing diversity. (2021). *Embracing Diversity*, 29-40. https://doi.org/10.2307/j.ctv1khdp1s.7
- Renz, S. M., Carrington, J. M., & Badger, T. A. (2018). Two strategies for qualitative content analysis: An Intramethod approach to triangulation. *Qualitative Health Research*, 28(5), 824-831. https://doi.org/10.1177/1049732317753586
- Romānova, I., & Kudinska, M. (2016). Banking and Fintech: A challenge or opportunity? *Contemporary Studies in Economic and Financial Analysis*, 21-35. https://doi.org/10.1108/s1569-375920160000098002

- Rosenberg-Naparsteck, R. (2006). Rochester, New York. African American Studies Center. https://doi.org/10.1093/acref/9780195301731.013.44996
- Ruggiano, N., & Perry, T. E. (2017). Conducting secondary analysis of qualitative data:

  Should we, can we, and how? *Qualitative Social Work*, 18(1), 8197. https://doi.org/10.1177/1473325017700701
- Ryu, H., & Ko, K. S. (2020). Sustainable development of Fintech: Focused on uncertainty and perceived quality issues. Sustainability, 12(18), 7669. https://doi.org/10.3390/su12187669
- Ryu, H. (2018). Understanding benefit and risk framework of Fintech adoption: Comparison of early adopters and late adopters. *Proceedings of the 51st Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2018.486
- Safi, S., Thiessen, T., & Schmailzl, K. J. (2018). Acceptance and resistance of new digital technologies in medicine: Qualitative study. *JMIR Research Protocols*, 7(12), e11072. https://doi.org/10.2196/11072
- Shah, S., & Ramamoorthy, V. E. (2013). Integrating individual social responsibility in a corporate framework: The SAI way. Soulful Corporations, 415-432.
  https://doi.org/10.1007/978-81-322-1275-1\_11
- Sung, A., Leong, K., Sironi, P., O'Reilly, T., & McMillan, A. (2019). undefined. *Journal of Work-Applied Management*, 11(2), 187-198. https://doi.org/10.1108/jwam-06-2019-0020
- The role of Fintech for the capital markets union. (2019). *Capital Markets Union and Beyond*. https://doi.org/10.7551/mitpress/11080.003.0014
- Toraman, S. (2022). Media review: Mixing methods in social research: Qualitative, quantitative, and combined methods. *Journal of Mixed Methods Research*, *16*(3), 378-380. https://doi.org/10.1177/15586898221077567

- undefined. (2004). *The SAGE Encyclopedia of Social Science Research Methods*. https://doi.org/10.4135/9781412950589.n896
- Vecchiato, R. (2017). Disruptive innovation, managerial cognition, and technology competition outcomes. Technological Forecasting and Social Change, 116, 116-128. https://doi.org/10.1016/j.techfore.2016.10.068
- Vollero, A. (2022). Understanding greenwashing. Greenwashing, 1-20. https://doi.org/10.1108/978-1-80117-966-920221001
- Yang, H. (2017). The UK's Fintech industry support policies and its implications. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2919191
- Abbasi, K. (2019). Data sharing and opening up research. *Journal of the Royal Society of Medicine*, 112(6), 211-211. https://doi.org/10.1177/0141076819855176
- Alam, N., & Zameni, A. (2019). The regulation of fintech and cryptocurrencies. *Fintech In Islamic Finance*, 159-171. https://doi.org/10.4324/9781351025584-11
- Analysing quantitative data. (2005). How to Develop Children as Researchers: A Step-by-Step Guide to Teaching the Research Process, 107-116. https://doi.org/10.4135/9781446212288.n11
- Belotto, M. (2018). Data analysis methods for qualitative research: Managing the challenges of coding, Interrater reliability, and thematic analysis. *The Qualitative*\*Report. https://doi.org/10.46743/2160-3715/2018.3492
- Chen, L. (2016). From Fintech to Finlife: The case of Fintech development in China. *China Economic Journal*, 9(3), 225-239. https://doi.org/10.1080/17538963.2016.1215057
- Chishti, S. (2016). How peer to peer lending and crowdfunding drive the FinTech revolution in the UK. *Banking Beyond Banks and Money*, 55-68. https://doi.org/10.1007/978-3-319-42448-4\_4

- Davidson, E., Edwards, R., Jamieson, L., & Weller, S. (2018). Big data, qualitative style: A breadth-and-depth method for working with large amounts of secondary qualitative data. *Quality & Quantity*, *53*(1), 363-376. https://doi.org/10.1007/s11135-018-0757-y
- Dorfleitner, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). The FinTech market in Germany. FinTech in Germany, 13-46. https://doi.org/10.1007/978-3-319-54666-7\_4
- Elsden, C., Feltwell, T., Barros Pena, B., Nissen, B., Gloerich, I., Speed, C., & Vines, J. (2020). Designing futures of money and FinTech. *Companion Publication of the 2020 ACM Designing Interactive Systems*Conference. https://doi.org/10.1145/3393914.3395904
- Evaluation of mobile application in user's perspective: Case of P2P lending apps in FinTech industry. (2017). *KSII Transactions on Internet and Information*Systems, 11(2). https://doi.org/10.3837/tiis.2017.02.027
- Ferrari, R. (2016). FinTech impact on retail banking From a universal banking model to banking Verticalization. *The FinTech Book*, 248-252. https://doi.org/10.1002/9781119218906.ch65
- Fintech foundations: Convergence, blockchain, big data, and AI. (2022). *Global Fintech*. https://doi.org/10.7551/mitpress/13673.003.0004
- Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLOS ONE*, *15*(5), e0232076. https://doi.org/10.1371/journal.pone.0232076
- Haddad, C., & Hornuf, L. (2016). The emergence of the global Fintech market: Economic and technological determinants. SSRN Electronic
  Journal. https://doi.org/10.2139/ssrn.2830124

- Hodson, D. (2021). The politics of <scp>FinTech</scp>: Technology, regulation, and disruption in <scp>UK</scp> and German retail banking. *Public Administration*, 99(4), 859-872. https://doi.org/10.1111/padm.12731
- Kalmykova, E., & Ryabova, A. (2016). FinTech market development perspectives. *SHS Web of Conferences*, 28, 01051. https://doi.org/10.1051/shsconf/20162801051
- Langley, P., & Leyshon, A. (2020). undefined. *New Political Economy*, *26*(3), 376-388. https://doi.org/10.1080/13563467.2020.1766432
- Leong, K. (2018). FinTech (Financial technology): What is it and how to use technologies to create business value in Fintech way? *International Journal of Innovation,*Management and Technology, 74-78. https://doi.org/10.18178/ijimt.2018.9.2.791
- Majid, U., & Vanstone, M. (2018). undefined. *Qualitative Health Research*, 28(13), 2115-2131. https://doi.org/10.1177/1049732318785358
- Mills, K. G. (2018). Fintech, small business & the American dream. https://doi.org/10.1007/978-3-030-03620-1
- MOHAJAN, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, 7(1), 23. https://doi.org/10.26458/jedep.v7i1.571
- Nicoletti, B. (2018). Fintech and procurement finance 4.0. *Procurement Finance*, 155-248. https://doi.org/10.1007/978-3-030-02140-5\_6
- Phenomenological perspective. (2017). *An Applied Guide to Research Designs: Quantitative, Qualitative, and Mixed Methods*, 168
  176. https://doi.org/10.4135/9781071802779.n14
- Phillippi, J., & Lauderdale, J. (2017). A guide to Field notes for qualitative research: Context and conversation. *Qualitative Health Research*, 28(3), 381-388. https://doi.org/10.1177/1049732317697102

- Rahim, N. F., Bakri, M. H., & Yahaya, S. N. (2019). undefined. *FinTech as a Disruptive Technology for Financial Institutions*, 207-220. https://doi.org/10.4018/978-1-5225-7805-5.ch009
- Rahim, N. F., Bakri, M. H., & Yahaya, S. N. (2019). Fintech and Shariah principles in smart contracts. *FinTech as a Disruptive Technology for Financial Institutions*, 207-220. https://doi.org/10.4018/978-1-5225-7805-5.ch009
- Realizing the promise of America for embracing diversity. (2021). *Embracing Diversity*, 29-40. https://doi.org/10.2307/j.ctv1khdp1s.7
- Renz, S. M., Carrington, J. M., & Badger, T. A. (2018). Two strategies for qualitative content analysis: An Intramethod approach to triangulation. *Qualitative Health Research*, 28(5), 824-831. https://doi.org/10.1177/1049732317753586
- The role of Fintech for the capital markets union. (2019). *Capital Markets Union and Beyond*. https://doi.org/10.7551/mitpress/11080.003.0014
- Romānova, I., & Kudinska, M. (2016). Banking and Fintech: A challenge or opportunity? *Contemporary Studies in Economic and Financial Analysis*, 21-35. https://doi.org/10.1108/s1569-375920160000098002
- Ruggiano, N., & Perry, T. E. (2017). Conducting secondary analysis of qualitative data:

  Should we, can we, and how? *Qualitative Social Work*, 18(1), 8197. https://doi.org/10.1177/1473325017700701
- Ryu, H. (2018). Understanding benefit and risk framework of Fintech adoption: Comparison of early adopters and late adopters. *Proceedings of the 51st Hawaii International Conference on System Sciences*. https://doi.org/10.24251/hicss.2018.486
- Safi, S., Thiessen, T., & Schmailzl, K. J. (2018). Acceptance and resistance of new digital technologies in medicine: Qualitative study. *JMIR Research Protocols*, 7(12), e11072. https://doi.org/10.2196/11072

- Sung, A., Leong, K., Sironi, P., O'Reilly, T., & McMillan, A. (2019). undefined. *Journal of Work-Applied Management*, 11(2), 187-198. https://doi.org/10.1108/jwam-06-2019-0020
- Toraman, S. (2022). Media review: Mixing methods in social research: Qualitative, quantitative, and combined methods. *Journal of Mixed Methods Research*, *16*(3), 378-380. https://doi.org/10.1177/15586898221077567
- undefined. (2004). *The SAGE Encyclopedia of Social Science Research Methods*. https://doi.org/10.4135/9781412950589.n896
- Yang, H. (2017). The UK's Fintech industry support policies and its implications. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2919191

# **Appendices**

# 7.1 Fintech Indices

- 1. Solactive Fintech Index
- 2. FTSE Global Fintech & Blockchain Index
- 3. Indxx US Fintech and Decentralized Finance Index PR
- 4. Indxx Global FinTech Thematic v2 Index NTR
- 5. UBXXFINT Index
- 6. BI Global Fintech & Payments Valuation Peer
- 7. BlueStar Fintech Index Net Total Return
- 8. Indxx Global FinTech Thematic Index NTR
- 9. STOXX Global Fintech

#### 7.2 Selected Constitutents

- 1. Network International Holdings Plc ('NETW")
- 2. TP ICAP Group Plc ("TCAP")
- 3. Moneysupermarket.Com Group PLC ('MONY")
- 4. London Stock Exchange ("LSEG")
- 5. Experian Plc ("EXPN")
- 6. GB Group Plc ("GBGP")
- 7. Supply@ME Capital Plc, ("SYME")
- 8. GS Chain PLC Company ("GSC")
- 9. Fintel Plc ("FNTL")
- 10. WISE Plc ("WISE")
- 11. IG Group Holding Plc ('IGG")
- 12. IntegraFin Holdings plc ('IHP")
- 13. Legal & General Group Plc ('LGEN")
- 14. Paysafe Limited ("PSFE")
- 15. The Sage Group plc ("SGE")