# Effects of Covid-19 pandemic on the key profitability factors of digital challenger banks. Starling Bank case study

by

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Submitted to

Central European University Private University Department of Economics and Business in partial fulfillment of the requirements for the degree of Masters of Arts

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## Author's declaration

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Vienna, 2 June 2021



## Abstract

The fintech sector is one of the most promising sectors in the financial services industry. Within the fintech sector, one of the most popular sub-categories is digital banking. This sector has experienced an unusual shock from the Covid-19 pandemic and its impacts have been unevenly distributed within the industry. This paper aims to examine the impacts of the pandemic on digital banking profitability.

The core case covered in the paper is the example of Starling Bank, which became profitable in October 2020 amid the pandemic, thus making it an important case study to understand the impacts of the pandemic on the digital banking industry. Besides Starling, the paper will benchmark and compare Starling to its key peers and competitors to identify what allowed Starling to break even while other players have been affected negatively.

Key profitability factors considered in the paper are the number of customers, customer behavior, product offering, and monetization models, as well as a fundraising activity. The number of customers switching to digital banking channels has significantly increased because of the pandemic thus accelerating customer base growth of the digital challenger banks. Combined with a growing number of customers using digital banks as their primary account, this strengthened the financial performance of many digital banks, including Starling Bank, which were better positioned to serve customers remotely during the pandemic. An important factor that distinguished Starling from peer banks was their ability to distribute governmentbacked loans in the UK which allowed them to significantly increase revenue with limited costs. Finally, Starling Bank was also well-positioned financially having secured a fundraising round right before the pandemic, which allowed them to have a cash cushion against possible negative effects of the pandemic.

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## **Chapter 1. Background**

## 1.1 About the fintech sector

The 2008-2009 financial crisis has resulted in a significant drop in consumer confidence towards traditional financial institutions opening the way for challengers to capture the market. Fintech has been rapidly growing for the past decade in many ways as a response to this fall in consumer confidence (Navaretti et al., 2018). The key drivers of the so-called "fintech revolution" (Gomber et al., 2018) are striving to capture profits from the traditional financial industry players by offering lower costs while improving quality of service and customer experience (Lee & Shin, 2018). Fintech companies operate in almost all financial areas, including banking, lending, payments, wealth management, insurance and they serve all types of clients from individuals and SMEs to corporates and financial institutions.

Key evidence of the growing importance of the fintech sector is the growing interest from investors. Globally, Fintech is the third largest startup sector by the amount of Venture capital investment attracted between 2016 and 2020, and in London it is by far the largest with 41% of all VC funding going to fintech as seen in figure 1 below (Dealroom, 2021).



Figure 1. Venture capital funding in startups by sector globally and in London (Dealroom, 2021)

Moreover, fintech funding is also constantly accelerating with funding amounts growing with nearly \$35 billion invested in the sector in 2019 as demonstrated in Figure 2 below (CB Insights, 2020a). This underlines that interest in the fintech sector is not only significant but is also growing in recent years.



Figure 2. Quarterly VC-backed fintech financing, Q4'15 – Q4'19 (\$ million) (CB Insights, 2020a)

### **1.2 About the digital banking industry**

Among all fintech segments, this paper will focus on the so-called digital challenger banks. They are also often referred to as neobanks, mobile banks, or virtual banks, which are used interchangeably to describe fully digital, branchless banking startups offering high levels of consumer experience for both retail and business customers. This is demonstrated by an independent survey conducted regularly in the UK as part of regulatory requirements (Ipsos Mori, 2021) – results in Figure 3 show that digital banks, incl. Monzo and Starling Bank rank top 1-3 among all UK banks both in overall service quality, as well as online and mobile banking services with over 80% of customers who would recommend them to their friends and family. In contrast, traditional large banks like Barclays and Lloyds have about 65% service quality rating.

## **Overall service quality**

We asked customers how likely they would be to recommend their personal current account provider to friends and family.

## Online and mobile banking services

We asked customers how likely they would be to recommend their provider's online and mobile banking services to friends and family.



#### Figure 3. Independent Survey of UK Banks service quality (Ipsos Mori, 2021)

The key advantage of neobanks compared to traditional banks is their significantly lighter cost structure since they do not have any branches that are a significant part of the expenses of traditional banks. Being able to save on costs and focus only on the mobile channel of delivery allows them to provide a better customer experience, compared to traditional banks who have to ensure consistent service delivery across multiple channels. Another advantage is their modern technology and core banking platform that does not rely on legacy technology that most of the traditional banks are built on – this allows both to improve customer experience and cuts IT costs.

Besides these back-end advantages, their focus on digital offering allows them to provide a modern customer experience with all the operations available 24/7 from a

smartphone app. Mobile apps of digital banks, in general, tend to provide a better customer experience than traditional banks as demonstrated by the case study conducted by BuiltForMars (2020) UX consultancy. This independent consultancy tested and ranked the UX quality of mobile apps of 12 UK banks based on account opening, ID verification, making payment, freezing card, and open banking authentication and on most of the criteria, digital banks performed better compared to traditional banks. For example, the case study shows that Revolut, Monzo, and Starling require significantly fewer "clicks" to open an account (see figure below), representing a more simplified and straightforward process.



#### Number of clicks to create an account

#### *Figure 4. Number of clicks required to create an account (BuiltForMars, 2020)*

These advantages combined resulted in their growing popularity worldwide with the largest among them reaching tens of millions of customers, incl. Monzo with about 5 million customers (O'Hear, 2020), and Kakao bank with 12 mn customers (Statista, 2020). They also have large popularity among investors with some digital banks attracting hundreds of millions in private funding and reaching valuations of over a billion US dollars. For example, German

N26 has raised over \$819 million with a \$3.5 billion valuation (Crunchbase, 2021) and Nubank raised over \$1.5 bn total funding at a \$25 billion valuation (Smith, 2021) The digital banks are present globally and the map below (Figure 2) shows some of the most popular ones, but there are over 100 challenger banks currently active (Deloitte, 2020) and the map does not cover all of them.



Figure 5. Select digital banks worldwide (Cover Story, 2019)

Some of the key digital banking players covered in this paper include such companies as Starling Bank, Revolut, Monzo, N26, Bunq, and other European digital banks. However, to analyze profitability factors more exhaustively we would also compare how the pandemic affected the financial performance of other digital banks worldwide. The study will particularly focus on important Asian examples, including WeBank, MyBank, Kakaobank, and Paytm, as well as Australian Xinja, Brazilian Nubank, and American Chime. The players above have their similarities and differences, both in terms of the features and products offered and in terms of financial and non-financial performance. For example, Revolut remains one of the most global players with 13 million users across over 40 countries and offers various features beyond banking, including stock and crypto trading, insurance, and business payments. Another large player, Brazilian Nubank has over 34 million users in Latin America and focuses primarily on digital credit cards (Smith, 2021)

Many of these banks have launched in the last 5-7 years but there are quite a few examples of digital players operating much earlier. For example, the Russian Tinkoff bank has launched in 2006 and has never had any branches. Japanese E-Bank (now Rakuten Bank) was founded even earlier in 2000 and has been operating in digital format since. A few more examples of branchless banks can be found even earlier, but they have mostly operated through telephone rather than as digital banks. However, many of them have later re-launched as digital banks – for example, First Direct in the UK has started as telephone banking in 1999, and Activo Bank in Portugal was launched in 1994, but both later re-launched as digital banks. However, this paper would not actively cover this category of banks as they are significantly different from the current players and they have launched in significantly different economic context pre-2008 financial crisis.

#### **1.3 About Starling Bank case**

This paper would focus particularly on one of the most successful examples of digital banks – Starling Bank – that has become one of the first retail-focused digital banks in Europe to generate positive operating profits in October 2020 (Magana, 2020) and have maintained profitability since. Starling is a UK-based digital bank that has been founded in 2014 by Anne Boden, a former banking executive, to disrupt the banking industry. The startup received significant investment from investors and secured a full UK banking license before it went live in 2017. Initially, Starling targeted only retail clients offering them current account and a debit card, but in 2018 expanded to business banking as well. (Barrett, 2020). Currently, Starling Bank offers multiple features and is closest among peers to offering a full range of banking products, as seen in the table below.

	Starling	Revolut	Monzo	N26	Monese	Atom	Tandem	Bunq
Checking account	Y	Y	Y	Y	Y	Ν	Ν	Y
Savings account	Ν	Ν	Ν	Ν	Ν	Y	Y	Ν
Overdraft	Y	Ν	Y	Y	Ν	Ν	Ν	Ν
Lending	Y	Ν	Ν	Ν	Ν	Y	Y	Ν
Multi-currency	Y	Y	Ν	Ν	Y	Ν	Ν	Ν
Business accounts	Y	Y	Y	Ν	Y	Ν	Ν	Ν
Accounting	Y	Y	Y	Ν	Ν	Ν	Ν	Ν
Junior account	Y	Y	Y	Ν	N	Ν	Ν	N
Joint account	Y	N	Y	N	Y	Ν	Ν	Y

 Table 1. Comparison of core banking products offered by European digital bank (compiled by the author based on publicly available information on each bank's website)

As of January 2021, Starling Bank had over 2 million accounts, £5.4 billion in deposits, and £145 million in annualized revenue (Starling Bank, 2021). Since its founding, Starling raised nearly 700 million in total funding from various investors, including Goldman Sachs, Fidelity, Qatar Investment Authority, RPMI Railpen, Millennium Management and more recently reaching a valuation of £1.1 (~\$1.6) billion. This case study is particularly interesting for the study of the impact of Covid-19 on financial performance because Starling has been the first of its Western peers to break even and this happened during the pandemic.

Many of the peer companies are larger than Starling and/or are operating longer on the market but are still struggling to break even, hence comparison of Starling to these peer banks will help identify what helped Starling achieve such financial success and the role of the pandemic in this.

## **Chapter 2. Literature Review**

2 main aspects of this paper are separately covered by literature – literature examining profitability factors of digital banks and literature examining impact of Covid-19 pandemic on the digital banks. Unfortunately, there is very limited existing literature on both aspects.

Profitability factors of digital banks, especially western ones, have not been covered in the academic literature due to a limited number of profitable examples historically. Starling Bank case study, examined in this paper, is the unique and recent event that happened only in October 2020 and did not result in significant coverage in the literature yet, which means that this paper has a strong novelty factor and contributes to the scarce academic literature on the topic. Existing literature tends to focus on non-Western examples as there are more successful digital banking initiatives in other markets currently. For example, research by Plotnikova and Kudryavtseva (2020) is based on a study of the Russian market and their conclusion is rather simplistic, identifying customer numbers and share of transactions through digital channels as key factors influencing the profitability of digital banks. In non-academic literature, there has also been some discussion of profitability factors of digital banks – for example, McKinsey (Bick et al., 2021) has recently published an overview of digital banks in Asian markets covering some profitability factors. Key factors they've identified are differentiated customer value proposition (including seamless UX, digital onboarding, fast loan approval, 24/7 support, attractive pricing), early focus on revenue-generating products (including loans, remittances, wealth management, and insurance), quick path to scale (in terms of customer numbers), and cost efficiency (enabled by existing customer base and large volumes of customer data for better targeting). However, this article focuses only on the Asian market which underlines the major gap in research on European digital banking segment profitability factors.

Regarding the second aspect of this paper, the effect of Covid-19 on digital banking, there is even scarcer literature available. This is primarily explained by the recency of digital

banking as a profitable industry (as discussed earlier) combined with the recency and ongoing nature of the Covid-19 pandemic. However, in this part of the literature, there are some recently published studies covering the impact of Covid-19 on the banking sector in general which might shed light on some aspects of the banking shared by both traditional and digital banking sectors. For example, Baicu et al (2020) have conducted a survey of 738 banking consumers in Romania to assess change in their banking behavior induced by the Covid-19 pandemic. They conclude that there is a direct positive correlation between the influence of the pandemic on consumer's lifestyle and their attitude towards the internet and mobile banking. They also provide evidence that this change might persist after the pandemic implying increased digitization of the banking sector as a whole which could impact the digital challenger banking sector significantly. On the other hand, studies analyzing the financial performance of banks (Elnahauss et al., 2021) have noted a strong negative effect of the pandemic on financial performance and financial stability of banks, as measured by accounting-based and market-based performance indicators, default risk, liquidity risk, and other indicators. Another research by Demirguc-Kunt et al (2020) has also shown similar conclusions when analyzing the performance of bank stocks demonstrating that the crisis and countercyclical lending role of the banks have negatively affected their stock market performance. These results might indicate that the banking sector as a whole has suffered from the pandemic possibly due to increased credit risk associated with defaulting businesses and customers. However, when discussing these effects in application to digital banks it is important to note that many of the digital banks do not focus on lending products and therefore might be less affected by the financial hit of the pandemic, which will be analyzed in further chapters.

## **Chapter 3. Determining profitability factors of digital bank**

This chapter would discuss potential factors influencing the profitability of digital banks leveraging existing literature discussed in the previous chapter and analyzing successful global cases of digital banks reaching profitability. Importantly, there are 2 sides to consider when determining factors influencing the profitability of any company – factors increasing revenue and factors decreasing costs side of the equation.

#### **3.1 Number of customers**

One of the first factors to be discussed is the number of customers that the bank has. The underlying logic of how a number of customers influence the profitability is clear as More customers mean more revenue from these customers both from interest income and from commission and fees income resulting in more revenue for the bank which is a necessary (but not sufficient) condition to achieve profitability. In addition to that, more customers theoretically allow digital banks to better leverage economies of scale and hence get more profit from each new customer.

Analyzing profitable digital banks worldwide shows that most of them are also among the largest in the world. Kakaobank, a South Korean digital bank, has 13 million customers, and reached profitability in 2019. Paytm Payments Bank based in India has over 40 million customers and became profitable in 2019. WeBank and MyBank, Chinese digital banks, have over 100 million customers each and reached profitability about 1 year after launch. All of these banks have local competitors with a lower customer base (e.g. K-Bank in South Korea, Airtel Payments Bank in India, aiBank in China) that are similar in most factors except for customer base and are not profitable further contributing to the idea that a large customer base is necessary for reaching profitability.

However, an increasing number of customers is not free and the banks have to pay significant customer acquisition costs, including marketing costs, onboarding costs, promo

bonuses for new customers, and more. This means that even if more customers should increase revenue, it may not directly lead to profitability if the costs of acquiring these customers outweigh the increased revenue they bring. Considering the 4 profitable examples, all of them have a significant strategic advantage compared to most of the other digital challenger banks – all of them have been built based on the existing ecosystem of users. Kakaobank has been launched by Kakaotalk – the largest social media network in South Korea and they have been able to cheaply acquire a very large customer base by tapping into their existing relationships with social network users. Similarly, WeBank has been launched by WeChat, also the largest social network and messaging app in China and Mybank has been launched by Ant Financial, owner of such e-commerce giants as Alipay and Aliexpress. Paytm Payment Bank has been launched by Paytm – the largest e-commerce and mobile payments player in India. Hence, all these successful examples had a large advantage of cheap customer acquisition strategies. Such comparison proves the point that low customer acquisition costs are an important factor in making the large customer base of the digital challenger banks profitable.

Most of the other digital banks, especially in the Western countries, operate independently and were launched as startups without any existing customer base. Hence, they usually face significant customer acquisition costs. For example, N26, a German digital bank, currently runs a referral campaign giving 20 euros for successfully referred clients (promotion valid as of April 2021) – this means that acquiring a new customer through this channel them costs at least 20 euro. Another estimate that can be calculated from available data comes from Monzo financial reports. In FY2020 they have spent a total of £16.8 million on marketing alone and their customers number increased by 2.3 million users in the same period. Depending on what proportion of these users came from advertisement and what proportion was a natural growth, we can estimate an average marketing cost per new user of £8 to £12. Besides marketing costs, however, there are also other costs associated with acquiring any new

customer, most importantly costs of conducting remote KYC verification of the identity documents. There are no reliable estimates of how much this costs, but this contributes to the costs of any new customer. This, in addition to the costs of servicing the acquired client, means that not all the new customers would be profitable and might cost more than they will bring. Accenture report on UK digital banks reports that on average they are losing £9 per customer (Accenture, 2019). It is important to note, though, that this only considers short-term revenue from the customers and it might still be profitable in long term to acquire new customers as companies only have to spend acquisition costs once while customers could bring revenue for long periods. However, this requires further analysis of churn rates and how many of the customers stay with the company for the long term and there is very limited data on this. However, the next part would examine how the quality of customers might affect the revenue they bring to the digital banks.

## 3.2 Customer spending behavior

To determine revenue generated from customers it is important to look not only at the raw number of users attracted but also at the quality of these users and the value each of them brings to the digital bank. Starling Bank often claims that it pursues sustainable growth in customer numbers rather than "growth at all costs" often pursued by competitors (Magana, 2020). Revolut, the largest UK digital bank by the number of customers, for example, has broken even once in March 2018 but then decided to pursue aggressive customer growth strategies, and their losses after that have tripled in 2019 (Browne, 2020). This strategy, thus, might negatively affect the bottom line of the digital bank, especially if the bank acquires millions of students and young professionals who do not earn or spend much money they will not be able to get as much revenue from them as from a lower number of older professionals with higher salaries and large savings. Therefore, it is important to consider the quality of the acquired customers as a profitability factor of digital banks. In this context, the quality of the

customer could be measured as a lifetime value (LTV), a measure of predicted net profit generated from the whole relationship with the customer. Unfortunately, it is difficult to get access to the data necessary to estimate this. We can, though, look at certain publicly available determinants of the LTV and later analyze how these factors have changed as the pandemic hit.

One indicator that determines the value of the customer is whether they use the digital bank as their primary bank. Primary account status refers to when customers use the bank as their main account – i.e. deposit salary, use for most payments, take loans, or make savings. Traditionally, this has been a problem for digital challenger banks as even though many users might open it to try out – not all of them will actively use it. And even among those who use it actively, many do not trust it enough to manage all of their transactions through the digital bank and still rely on traditional banks for large or important transactions. Changing this behavior has been one of the key challenges for digital challenger banks. This is important because when used as a primary account, the bank gets more touchpoints with their users increasing their revenue potential. For example, if the customer decides to deposit their salary into the digital bank the bank will then receive an interchange fee from merchants every time customers use their debit or credit card to buy something. Similarly, if the customer chooses to get a loan through that bank or put their savings into the bank, the bank also benefits from monetizing these products.

Another indicator that can be used to compare the "quality" of customers of different digital banks is the average deposits per customer that these digital banks hold. This measure is extremely important because the business model of most of the digital banks (unless they focus on lending products) largely relies on interchange fees, i.e. fees charged from merchants for card payments. And the amount of money spent by users using a digital bank's card, thus, directly translates into the bank's revenue. Average deposit is not a perfect predictor of the amount of money users spent because users may only spend part of that deposit, but this is the

closest data point available publicly. Based on 2019 annual reports, Starling was significantly above the peers with an average deposit of £999 per user, compared to Monzo's £252 per user and Revolut's £236 per user (Woodford, 2020). This serves as evidence that Starling's customers are more high value as they hold, and likely spend, more money on their current accounts. Moreover, this also supports the first indicator identified above, as higher average deposits serve as evidence that Starling Bank customers use it as their primary bank more often.

## **3.3 Product archetypes**

Digital banks are not uniform in the way they operate, features they offer, or the way they pursue monetization. In most cases, these challenger banks start focusing on one or two parts of the banking industry. For example, Starling has started focusing on retail current accounts and only later expanded into unsecured lending and business banking. They still do not offer such traditional banking products as savings account, mortgage or other forms of secured lending, credit cards, and a range of other features. On the other hand, Russian Tinkoff Bank has started and became profitable offering only credit cards and added other features later. WeBank and MyBank both became profitable by offering consumer and business lending products only, targeting underbanked segments. Another digital bank, Transferwise has started with international transfers and payments only. Revolut has focused on a multi-currency current account offering, later adding various investment and trading features and subscription plans for premium features, but not entering the lending market. Different archetypes of digital banks have been affected by the pandemic in different ways and this requires further examination.

Current accounts have traditionally been considered as the least profitable and in many cases loss-making part of the traditional banking business. The original proposition of European and US digital banks, including Starling, Revolut, Monzo, Chime, and many more, was that by cutting costs of running bank branches they will be able to offer current accounts profitably (Barrett, 2020). However, most of the challengers have realized that this will be difficult even

with lower operational costs and have started diversifying into other banking segments. In many cases, current account offering on their own remains unprofitable with one notable exception being Paytm Payments Bank. Payment Bank license, unique to India, restricts the activities they could engage into primarily transactional ones, and Paytm has been the only payments banks to date that has been able to become profitable despite these restrictions. This is likely due to an extremely large customer base and following economies of scale. Other payments banks in India, incl. Airtel Money, IndiaPost Payments Bank, Fino, NSDL, are still struggling to break even despite having over 10 million customers in some cases. Some of them, for example, Aditya Birla Group and Chola, have already given up on the business model and closed their banking products (Majumdar, 2020). These examples demonstrate that breaking even purely on current accounts is extremely difficult and requires a very large customer base to effectively leverage economies of scale. It is important to note that there are significant economic differences between Indian and European markets, so the number should not be translated directly to estimate thresholds of profitability. However, they still indicate the approximate scale required to break even on transactional banking.

Another important archetype of digital banks is lending focused business model. Examples mentioned above are Tinkoff, WeBank, MyBank, Nubank and to some extent Kakaobank and Starling Bank. Traditionally, lending income has been the largest driver of revenue for banks (Koskinen & Manninen, 2019). Stories of successful digital banks support the idea that this remains true in the case of digital banks as well. All of the examples above, except for Nubank, are currently profitable and lending constitutes their main source of revenue. Even Nubank is profitable in its domestic market (Brazil) and losses are coming from its recent expansion to other Latin American countries. In comparison, domestic competitors of these banks that do not focus on lending remain unprofitable or failed altogether. In Russia, the examples are Touchbank and Rocketbank that focused on transactional banking only and have both shut down due to lack of profitability prospects in 2018 and 2020 respectively. In Brazil, it is Banco Neon, a digital bank focusing on debit cards and current accounts, that remains deeply unprofitable, unlike Nubank, its direct competitor focusing on credit cards. In South Korea, Kakaobank's competitor K-Bank has started transactional and its efforts to push into lending space failed because of regulatory problems which led to K-bank remaining strongly unprofitable despite being launched 3 months earlier than Kakaobank.

Overall, the products offered to affect the profitability of the digital bank. And it seems that the lending business model has been one of the most profitable in the banking sector and most of the profitable digital challenger banks have embraced this model to achieve profitability. In the following chapter, this paper would analyze whether Covid-19 has affected this situation.

## 3.4 Fundraising

Fundraising, raising money from usually private investors like Venture Capital funds or Private Equity funds, is an essential part of running an unprofitable startup. This investor money is necessary to cover any initial costs of establishing and running a business while the fintech is reaching the necessary scale to generate profits. Fundraising amount also affects how fast can the fintech grow – fintech with a lot of funding is able to spend more on customer acquisition and product development, compared to peers with less funding. There is limited literature directly discussing the importance of fundraising for fintech startups, but the underlying logic is straightforward and therefore does not require extensive discussion.

## **Chapter 4. Impact of Covid-19 on key profitability factors**

This chapter would consider all factors identified in Chapter 4 and would discuss how Covid-19 has affected them both in positive and negative ways. This chapter would leverage the Starling Bank case study, along with elements of other case studies, in order to analyze and make conclusions.

## 4.1 Customer number growth induced by Covid-19

Starling Bank had exceptional customer growth in 2020 both in terms of the retail and business user base. The number of retail accounts grew from 866,000 to 1,520,000 in a year between October 2019 and October 2020, while the number of business accounts grew from 74,000 to 256,000 in the same period (Starling Bank, 2020b). There are reasons to believe that this customer growth has been caused by the pandemic. Most importantly, due to lockdowns across the world customers were forced to use digital channels to interact with many services that they have not previously considered, and banking is clearly one of them. In the prepandemic world, many users still preferred to conduct financial activities in a face-to-face manner, but when forced to use digital channels this could have motivated them to try out digital challenger banks that provide a better experience.

Research by AppAnnie (Sydow, 2021) analyzed demand growth for finance mobile apps across several large countries. They conclude that there have been 15% more finance app downloads globally in 2020 compared to 2019 (Figure 6) with a substantial increase in April 2020, when the pandemic hit most of the countries globally. More importantly, hours spent in finance apps increased by 45% YoY in 2020 (Figure 7). This statistic does not only cover banking apps but still demonstrates significant growth in demand for consumer financial services through digital channels.

#### Finance Apps Downloads, 2020 vs. 2019



Figure 6. Finance App Downloads, 2020 vs 2019 (Sydow, 2021)



Hours Spent in Finance Apps (Billions), 2020 vs. 2019

Figure 7. Hours Spent in Finance Apps (Billions), 2020 vs 2019 (Sydow, 2021)

The same report shows even more interesting observation, showing that fintech apps are significantly more popular in terms of average monthly sessions compared to traditional banking apps (Figure 8) – up to 10.8x times in some countries, with a 3x difference in the UK.

This underlines that fintech apps, in general, are more "engaging" for their users, supporting the argument that they offer higher quality customer service compared to traditional banking apps.



Figure 8. The difference in the number of average monthly sessions between fintech and traditional banking apps (Sydow, 2021)

To assess whether a number of customers of digital banks, in particular, has been affected by the pandemic we will want to compare them to the pre-pandemic growth rates. The graph below (Figure 9) demonstrates how the number of customers of select digital banks has been changing for the past 5 years. All the data has been self-reported by banks and has been collected by the author of this paper from various press releases to build the graph.



Figure 9. Number of customers (in thousands) of select digital banks

As we can see, there has been significant growth in the absolute number of customers across most of the digital bank players. Revolut, for example, added about 5 million new users in a year, compared to 8 million that it has attracted in the previous 4 years of operation. Even smaller players like Tide have doubled their customer numbers in 2020. However, there is no obvious inflection point in the growth rates, as they are in line with previous years and do not provide enough evidence to claim that pandemic has significantly increased growth in the number of users. To prove that this growth was indeed fueled by the Covid-19 we will have to also use other evidence of changes in consumer approach to banking. One such evidence is the survey of fintech firms conducted by the World Bank (2020) which concludes that on average, the number of new customers of all fintech firms has increased by 22% in H1'20 compared to H1'19 and transaction volumes increased by 11% in the same period. When looking only at digital banking companies, the report shows a 10% increase in transaction volumes. This shows that the fintech firms indeed feel the increase in customer demand for their services due to the pandemic.

This also coincides with the trend for current account switches increasingly going from traditional banks to challenger banks as reported by Deloitte (2020). The UK has a government-

supported Current Account Switch Service program that obliges all major banks to simplify switching between different banks – customers can just apply for the service in their new bank and all of their incoming and outgoing payments to their old bank account will be automatically and for free transferred to their new bank account. Importantly, this service regularly publishes statistics on which banks customers change to and from. As we can see in Figure 4 below, in Q4 2019 13.5% of all current account switches went to challenger banks, compared to 2.3% in Q2 2018. This demonstrates that the transition from traditional to challenger banks has been happening at more and more increasing rates even before the pandemic. However, during the pandemic, Starling Bank is leading the race for current account switches. In Q2 2020 Starling reported that they have recorded 12,000 net customers through the Current Account Switch Service, which is more than any other UK customer bank (Starling Bank, 2020b). Similarly, Starling has been among the top 3 banks by net transfers in Q3 2020 (12,000 net customers, top 1 bank), Q4 2020 (13,000 net customers, top 2 bank), and Q1 2021 (16,000 net customers, top 2 bank). This provides additional evidence that Starling's growing popularity is in part led by the increased demand from attracting not only new businesses but also existing companies dissatisfied with the quality of their current bank provider (BACS, 2020-2021).



Sample of c. 4% of total annual account flow in the UK9

#### Figure 10. UK Current Account switching service statistic (Deloitte, 2020)

However, the evidence above primarily covers the increase in retail customer demand because they constitute a significant majority of the overall customer number in all banks in the sample. Starling Bank however also experienced an even faster growth rate of business customers. According to Anne Boden, CEO of Starling Bank, this has been strongly driven by the fact that Starling has been the first digital bank in the UK to be authorized to disburse the government-backed Bounce Back Loan Scheme (BBILS) and the Coronavirus Business Interruption Loan Scheme (CBILS) (Boden, 2020). There is also external evidence that the industry is attracting more business customers because of Covid-19. UK Open Banking Implementation Entity (OBIE, 2020) in collaboration with Ipsos Mori has recently published an important report covering the changes in business behavior during the pandemic. According to that report, 50% of surveyed businesses are using some form of open banking enabled products, with 3 in 5 of them starting to use such products in the past 6 months (the survey was conducted in October 2020) and a majority of these being directly caused by the Covid-19. This is strong evidence that UK SMEs are increasingly adopting digital tools in general, which partially explains a 2.5 times increase in the number of business customers of Starling Bank. However, more important evidence from that report is about the number of businesses that changed their current account provider recently. Historically, a very little number of businesses have changed their current account provider with only 4% of the businesses surveyed in 2016 have reported changing the bank in the last year. However, in the latest survey, 20% of the businesses reported changing the financial products they are using in the past 6 months, 10% indicating that they have changed the current account provider in particular with a further 20% strongly considering a switch in the next 6 months. Among the Open Banking tool users, these numbers are even higher with 17% who already switched the business bank provider and 31% strongly considering it. This evidence proves that during the pandemic trends for changing the business bank provider have strongly accelerated.

One more important conclusion from the number of customers graph presented earlier (Figure 9) is that Starling is not among the largest banks even in the UK. Both Revolut and

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Monzo, the other 2 major UK digital banks, are significantly larger in scale, and some like Brazilian Nubank (not on the graph) have over 30 million customers, almost 20 times more than Starling Bank has. However, only a handful of banks that are larger than Starling have reached profitability with almost all the successful ones being in Asia. This raises an important question of the importance of the raw number of customers for the financial performance of the digital bank.

## 4.2 Customer behavior changes induced by Covid-19

This higher quality of customers might be one of the reasons why Starling became profitable faster than its peer digital banks. However, the pandemic likely had changed the quality of customers and this should be analyzed as well.

On a higher level, during the pandemic number of customers who consider digital banks their primary bank account has increased significantly. According to the Cornerstone Advisors survey conducted in June 2020 (Shevlin, 2020), 6% of US adults with a checking account consider a digital bank to be their primary bank, which represents a 67% increase from the same survey conducted in January 2020 (pre-pandemic). To further represent the importance of changes, Shevlin articulates that Chime (leading US digital bank) is now the 10<sup>th</sup> largest bank in the US when compared based on the number of users who consider it primary bank (4.3 million users).

On a more granular level, an important change to analyze is the change in average deposits held by the customers. From one side there are a lot of people losing their source of income due to the pandemic which might negatively affect the digital bank's quality of customers. On another side, there have been government support schemes to support people who lost their income, as well as increased savings patterns for people who did not lose their job, which both could contribute to an increase in the average deposits held by the digital banks. In fact, Starling Bank's published financials demonstrate that the second effect was stronger for

its customer base. Between October 2019 and October 2020, the average deposit of retail clients has increased from £900 to £1625, deposits of sole traders increased from £1700 to £3100, and deposits of businesses increased from £11,250 to £14,900. Combined this resulted in 340% growth in customer deposits (from £897 million to £3957 million) from only a 90% increase in the number of customers. (Starling Bank, 2020b) Unfortunately, there is no comparable number published for the peer banks, but even on their own, these numbers demonstrate that the quality of customers in Starling Banks has substantially increased during this year.

Another effect that pandemics had on customer quality is their spending patterns – especially on international spending, which usually brings higher interchange revenue compared to domestic spending. The pandemic has significantly dropped international travel and international spending. Despite this, Starling bank has experienced a 20% growth in interchange revenue between July 2020 and October 2020 due to increased primary accounts growth, customer engagement, and domestic spending (Starling Bank, 2020b). This is likely explained by the fact that Starling has strategically focused more on domestic spending even before the pandemic, especially compared to the peers like Revolut whose main marketing point is that they offer a multi-currency card to be used during international travels.

## **4.3 Covid-19 impacts on different product archetypes**

Starling Bank's revenue for October 2020 when they broke even is 60% net interest income, making lending the largest revenue source for the bank (Starling Bank, 2020b). For comparison, in FY 2019 net interest income constituted only about 40% of revenue (Starling Bank, 2020a). Interestingly, the increase has been primarily driven by the pandemic, in particular by government-backed business lending programs (CBILS and BBLS) that were introduced by the UK government. Starling was the first digital bank to offer these loans because they were able to leverage their existing business lending infrastructure, and this allowed them to rapidly capture a large part of consumer demand (Magana, 2020). In

comparison, Tide, another UK business-oriented digital bank, did not have any lending infrastructure before the pandemic but tried to offer CBILS and BBLS despite this. Unfortunately, they have failed to do it in time and faced strong consumer backlash from businesses that were not able to get access to these lifelines from the government. Another UK competitor, Monzo, also did not offer any lending products and they have experienced a strong negative impact from the pandemic. The negative impact on Monzo has been particularly evident in the valuation drop they have experienced in July 2020, which would be further discussed later in the paper.

However, government-backed lending has been an exception rather than a rule in the impact of the pandemic on the digital lending sphere. Lenders that were not able to offer government loans have suffered tremendous losses in 2020 as a result of the pandemic. This is explained by the thousands of businesses that had to remain closed during the lockdowns and had to default on their loans, as well as millions of people who lost income and were not able to repay their consumer loans. Moreover, all these factors meant that lenders faced difficulties disbursing new loans because of difficulty distinguishing good and bad borrowers in unusual crisis conditions. Some of the high-level examples of failed digital lenders include RateSetter and OnDeck. RateSetter, a UK-based P2P lender was acquired by MetroBank for a mere £12 million, compared to over £200 million estimated valuation in 2019 (Gaw, 2020). OnDeck, another online lending company, has been hit strongly by the pandemic facing an increase in loan delinquencies due to coronavirus and posting Q1 2020 losses of \$59 million and was acquired by Enova in July 2020 (Fuscaldo, 2020). This is further supported by the World Bank (2020) survey of fintech companies, according to which digital lending is the only fintech sector that experienced a year-on-year drop in transaction volumes in H1 2020. Moreover, the survey shows a 9% increase in non-payments and defaults on outstanding loans, as well as a 14% increase in arrears or late repayments.

Overall, the impact of the pandemic on the lending business model is ambiguous. In the case of Starling Bank, government-backed business lending has become a driving force for the bank to reach profitability. However, in many other cases of the online lenders that were not able to offer government loans, the pandemic effect has been strongly negative as a result of significantly and unexpectedly worsening conditions of the borrowers leading to defaults and late repayments.

## 4.4 Covid-19 impact on digital banks fundraising

Another factor considered in this paper is the fundraising environment and the impact of the Covid-19 on it. Fundraising is exceptionally important for fintech startups, especially unprofitable ones, since raising funds is essential to continue operating. Figure 5 below shows the evolution of fintech funding and a number of funding deals across all sectors.



Figure 11. Fintech funding and number of deals (CB Insights, 2020b)

As we can see, a number of deals have dropped significantly from 2019 levels and are dropping quarter-over-quarter. However, the total amount of funds raised from these deals dropped only in Q1 of this year but has been continuously growing since then. These 2 trends can be explained by the fact that the average value of each deal has increased in 2020 driven in particular by the drop in the number of small funding rounds for new startups. This means that more established players that were successful pre-pandemic did not experience major disruptions in the funding availability, but smaller and new players have definitely been affected negatively by the pandemic-induced lack of investor confidence.

Starling, being the more established player that had a route to profitability, has been able to successfully raise money during the pandemic. They have raised £100 million in February and May 2020 from JTC Group and Merian Global Investors (O'Hear, 2020). This allowed them to successfully continue operating with a cash cushion despite the pandemic and allowed them to employ more aggressive strategies, in particular in lending that was discussed earlier. Building upon their success in reaching profitability, Starling has further raised a £272 million Series D funding round in March 2021 reaching a valuation of £1.1 billion. (Starling Bank, 2021)

In comparison, Monzo had to cut its valuation by 40% in June 2020 in order to raise the £60 million funding round necessary to continue operations in the pandemic (Finextra, 2020). This demonstrates that Monzo was hit by the pandemic and the repercussions of this valuation cut, both in financial and reputational terms, would likely continue affecting Monzo's operations in the future. Another similar example is Atom Bank, another UK-based digital bank, which had to cut its valuation by nearly 50% from \$660 million to \$330 million in March 2021. However, it is not clearly linked to the pandemic and might be related to other reasons. Another example of the effect pandemic had on the fundraising market comes from Australia. Small and recently launched challenger bank Xinja had to shut down their activity in December 2020 citing the increased difficulty of raising funds because of Covid-19. This example is particularly interesting because they already had announced a record investment of \$433 million from a Dubai investment group, but the investment was delayed due to the pandemic (Derwin, 2020).

These examples demonstrate the important effect that the pandemic had on investor behavior which played a detrimental role in determining winners and losers of the digital banking market. Some players were lucky to have established investor relations and good financial prospects to attract money despite the crisis, while new and smaller players that required funding in 2020 to continue operations have been put under extreme uncertainty and in some cases failed to overcome it.

## **Chapter 5. Conclusion**

Concluding, there are 4 key factors that directly influence the profitability of the digital challenger banks – number of customers, customers' wealth and spending behavior, products offered by the bank, and their fundraising from investors. Having more customers allows banks to generate more revenue from them, but it is also important to keep customer acquisition costs below the lifetime value to be able to generate sustainable profits. Moreover, it is important to acquire good quality customers – customers who deposit more money into their bank accounts (either because they have more income or because they use a digital bank as their primary account) bring higher lifetime value for the bank. Besides customers, strategic choices of the digital bank also play a significant role in their path to profitability – offering high margin products like lending or wealth management brings banks to profitability faster than offering low margin services like current accounts. Finally, maintaining continuous fundraising from private investors while unprofitable to sustain constant growth is another important factor that allows digital banks to reach profitability faster.

All 4 discussed factors have been directly affected by the pandemic. A number of customers have been affected positively across most of the digital banks driven by a limited need for physical interactions and an increased need for high-quality digital channels, which are a key advantage digital challengers have compared to incumbents. Customer wealth and spending behavior have been affected both positively and negatively, with some people losing the income sources while others were able to benefit financially from the pandemic-induced changes. Starling Bank's focus on more financially stable customers and the trusted brand they built, compared to its peers, allowed them to improve average customer quality during the pandemic thus increasing their profitability. In terms of product proposition, Starling has been uniquely positioned among its peers being the only digital bank in the UK offering their small and medium business customers access to government-backed coronavirus relief loans

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thanks to their full banking license and established lending infrastructure. This allowed them to significantly increase their lending revenue without incurring almost any costs or risks thus driving them strongly towards profitability. Finally, Starling also had a strong funding position due to raising funds In February 2020, just before the pandemic hit which provided them with a large cash cushion and allowed them to weather pandemic negative hits without major reputational or financial losses.

## **Chapter 6. Policy recommendations**

Policy recommendations of this thesis are directed at 2 main actors, digital bank executives and government agencies regulating the digital banking sector.

Policy recommendations for digital bank executives:

- Focus on sustainable customer growth, bringing high-value customers, and limiting customer acquisition costs as opposed to aggressive at-all-costs focus on a pure number of customers employed by some of the digital banks.
- Focus on high margin products like lending might allow the bank to reach profitability faster but also places it under higher risks associated with lending and in crisis, it might negatively affect your performance – trade-offs should be actively and continuously managed.
- Keeping a strong cash cushion would allow to better weather any unexpected crisis situation, even if it might hinder growth rates – trade-offs should be actively and continuously managed.

Policy recommendations for government regulators:

- Digital banks provide high value to customers both directly and by increasing competitive pressure on traditional banks – their development should be encouraged and supported on regulatory level by removing unnecessary entry barriers and actively considering them in regulatory decisions
- When designing policy response to any consider introducing aspects directly benefiting challenger banks, including allowing and encouraging them to distribute any government funding or loans to businesses and the general population

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