DETERMINANTS OF THE CAPITAL STRUCTURE AND INVESTMENT STRATEGIES IN THE FINTECH COMPANIES- A COMPARISON OF DEVELOPING VS DEVELOPED COUNTRIES

by

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DISSERTATION

Presented to the Swiss School of Business and Management Geneva

In Partial Fulfillment

Of the Requirements

For the Degree

DOCTOR OF BUSINESS ADMINISTRATION

SWISS SCHOOL OF BUSINESS AND MANAGEMENT GENEVA

MARCH, 2024

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ABSTRACT

DETERMINANTS OF THE CAPITAL STRUCTURE AND INVESTMENT STRATEGIES IN THE FINTECH COMPANIES- A COMPARISON OF DEVELOPING VS DEVELOPED COUNTRIES

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2024

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This study aims to identify the differences between developing and developed country firms concerning country-level determinants of capital structure. For this purpose, this study considers the theories of capital structures and evaluates the support of developing and developed country firms for the Pecking order and the Trade-off theory. However, the capital structure determinants have been evaluated and determined the connections between theory and how developed and developing country firms make their financing decisions.

The quantitative approach and data collection method were implemented for capital structure determinants based on the literature review and theories. The data was collected over 7 years between 2015 to 2021 and amounted to 250 firms. The study employed Hausman-Taylor regression to demonstrate the impact of debt ratio and long-term debt on the financial outcomes of developing and developed country firms to get a better understanding of the results.

Analysis of the results determined that the debt ratio of developing country firms had a significant negative relationship with GDP growth while long-term debt had impacted the risk-free rate negatively and inflation positively. This indicates that developing country firms need to finance their business operations with internal funds instead of using the debt that supports the Pecking Order theory. The developed country firms' debt ratio did not impact the GDP, inflation, risk-free rate, and share market return. The study findings evaluated that the macro

environment of developing country firms' long-term debt is reduced with the reduced inflation that potentially demonstrated the higher interest rates and unwillingness to finance debt with the increased cost of financial distress. The study also considered that the companies in developing countries have gradually become less leveraged across the world after the COVID-19 pandemic compared to the developed countries' firms.

This study provides a new perspective into the capital structure determinants and their impacting differences between developing and developed country firms based on debt-equity ratio, long-term debt, risk-free rate, inflation, GDP, investment, and share-market return.

Keywords: *Capital Structure, Debt Ratio, Developed and Developing Countries, Firms*

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INTRODUCTION

1.1 Background

Fintech or Financial technology refers to the usage of technology where financial solutions are provided. In the early 1990s, the term fintech was used in the "Financial Services Technology Consortium" and it was a project started by Citigroup to promote the efforts of technological cooperation (Hochstein, 2015, p.2019). Since 2014, the fintech sector has been given attention by consumers, industry participants and regulators. The fintech sector refers to the rapid and huge growth of the industry which represents the investment between 2014 which was between 12 billion US$ to 197 billion US$ which depends on both, the start-ups which are (FinTech 3.0) and traditional financial institutions (FinTech 2.0) (Anand and Mantrala, 2019, pp.19-31). More regulatory scrutiny was drawn towards the Fintech because of its rapid growth and appeared to be justified. Thus, a fundamental role is played by Fintech in infrastructure and finance. Therefore, in the current era, Fintech is considered to be a combination of information technology and financial services. Anyhow, there is a huge history behind the integration of technology and financial services. For a long time, technology and financial services have been intertwined and reinforced mutually. In 2008, the crisis of Global finance was a turning point which was the major reason for the growth of the fintech which facilitated the development of a new paradigm. The evolution of Fintech has posed many difficulties to lawmakers and entrepreneurs to balance both the advantages and

disadvantages of this innovation in the Fintech industry. This kind of balancing task is more challenging in emerging economies like Asia (Barberis, Arner and Buckley, 2019).

On a wider level, Fintech represents the implication of technology towards finance. Three unique observations arise from this definition. Firstly, FinTech is not completely new to the financial service sector. In the 19th century, the implementation of the first transatlantic cable successfully in 1866 by the Atlantic Telegraph Company (Hills, 2010) and the first use of the telegraph in 1838 provided the basic structure for financial globalization. These kinds of implementation were identified in the year around 1870 during the First World War where there was utilization of the transatlantic cable. The modern evolution of Fintech began in the year of 1967 with the implementation of the Automatic Teller Machine (ATM) by Barclays Bank (Lerner, 2013). The former chairman of the US Federal Reserve (1979-1987), Paul Volcker stated the importance of the role of innovation in financial services during the Global Financial Crisis in 2008. Therefore, the automatic teller machine is the most significant innovation in financial services which is convenient for people and prevents individuals from going to banks (Volcker, 2009).

Secondly, one of the prime purchasers was the financial services industry of global services and IT products. The total spend was about 197 billion US$ in 2014 (Lodge, Zhang and Jegher, 2015). It was not considered to be a recent trend which dated back to the mid-1990s when the fintech industry became the huge purchaser of IT, a position it retains to this day. Therefore, for at least twenty years the driving force in the IT industry is the traditional

financial services where the trend was not slow and the industry predicted double the spending of IT. Since in the 1980s, the fintech industry has been based on the manipulation and transmission of digital information. The ATM was considered to be the digital experience where the physical commodity is involved which includes cash.

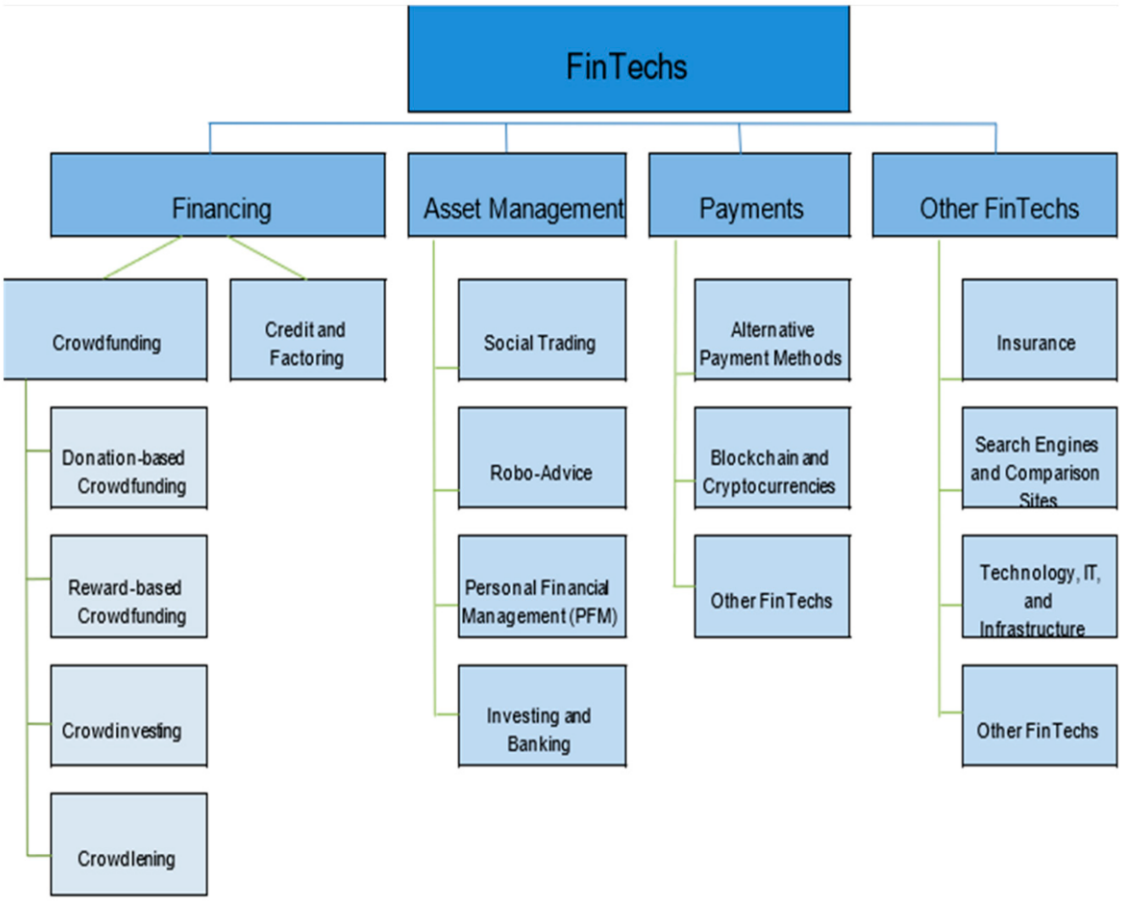

Figure 1.1

Overview of FinTechs (Source: Tepe, Geyikci, and Sancak, 2021, p. 2)

Thirdly, the term FinTech was related to the specific sector which was business and finance models, for instance, peer-to-peer (P2P) lending which covered the entire scope

instead of products and services which was provided traditionally by the Fintech services (Mirchandani, Gupta and Ndiweni, 2020, p.331).

In the 19th century, the technology and the finance were integrated to generate the first period of the financial globalization which lasted in the starting period of the First World War. In this period, the technology which includes steamships, canals, railroads and telegraphs where underpinned in the connection of finance across the borders where the rapid transmission is permitted for financial information, payments and transactions Globally. The significant resources were provided by the financial sector including steamships, canals, railroads, telegraphs and other technologies. In 1920, J.M. Keynes stated about the clear picture provided as a connection between the technology and finance in the first criteria of Globalization (Mirchandani, Gupta and Ndiweni, 2020, p.331)

1.1.1 The Fintech Industry Today- A Topology

The fintech industry has developed a typology based on the evolutionary analysis. The five major areas of the FinTech industry are, Finance & Investment, Financial operations & Risk Management, Infrastructure and Payments, Monetization and Data Security and Customer interface. Additionally, the technology is used based on the regulations.

1.1.1.1 Finance and Investment

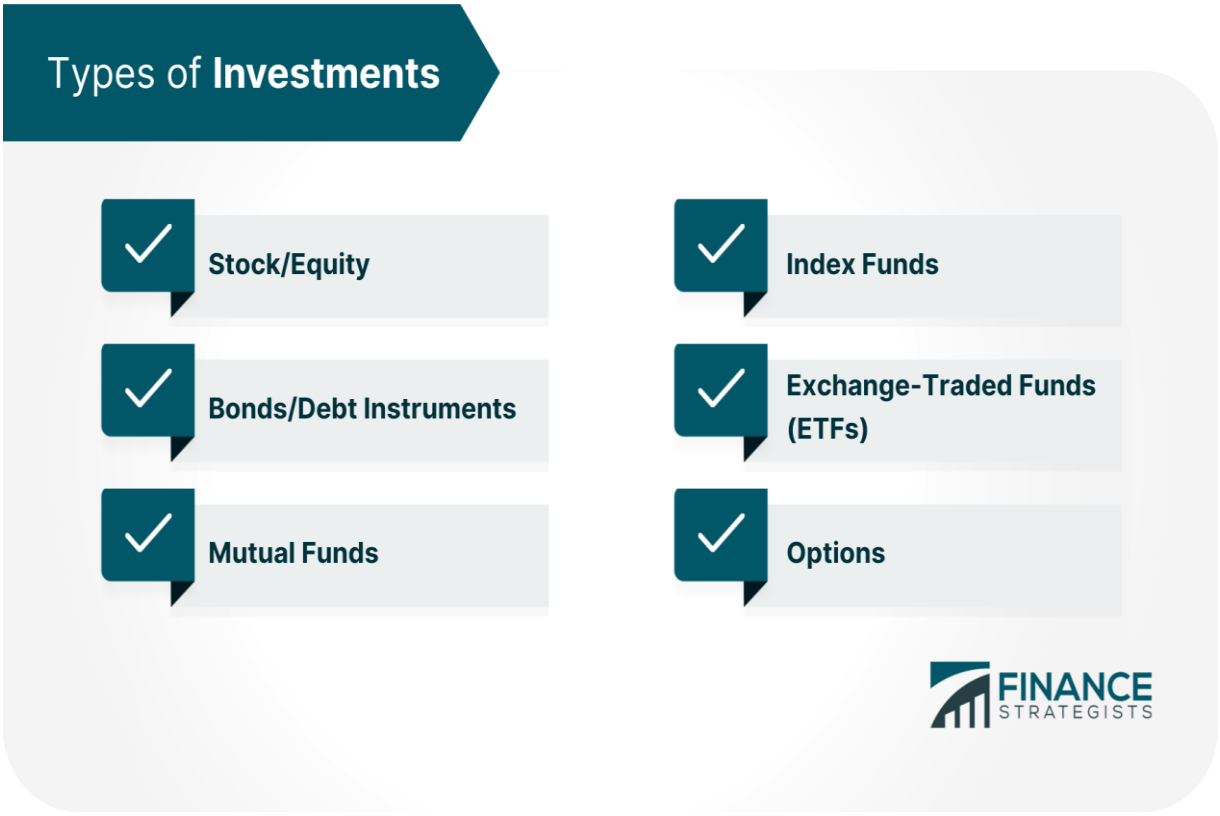

Figure 1.2
Financial Investment and its Types (Source: Tamplin, 2023)

In recent times, the law makers, investors and the public focuses more on the financing mechanism such as P2P lending and crowdfunding. Anyhow, the fintech company is developed beyond this narrow scope which includes implementation of technology such as listings, public offerings, private placements, private equity, venture capital and crowdfunding. For instance, the tech bubble, NASDAQ, in 1990s focused on the integration of technology and finance, which subsequently led to dematerialization of industries of security with the emergence of excessive frequent trading, dark pools and program trading.

Additionally, financing mechanisms are developed continuously looking ahead to find an alternative in extending the participation of Fintech in the field of automation services.

1.1.1.2 Financial Operations and Risk Management:

Figure 1.3

***Financial Sectors Exposure for Risk Management Operations (Source: Crouhy, Galai and Mark, 2006, p. 26*)**

Since 2008, financial operations & Risk Management have been the major factors of IT investment by financial firms. Legal procedures were formulated because of the huge number of regulatory changes that took place after the Global financial crisis. From the perspective of the evolution, finance theory was developed from an evolutionary perspective, in between the 1990s and 2000s the growth of quantitative techniques and finance theory was considered to be the major feature which was translated to risk management and institutions

of financial operations. The financial industry was constructed to other systems which was based on VaR which helped to increase the profits and risk management. It is obvious that the Fintech industry continues to develop by factors such as fines and cost and thus expands in the future.

1.1.1.3 Payments and Infrastructure

Payments through mobile communications and the Internet are mainly focused in the Fintech industry which is a major driving force specifically in emerging economies. Since 1970, Payments have been given more attention by the regulations which resulted in the growth of electronic payment systems in both domestic and inter-regional areas. This development, at present supports the global foreign exchange markets which was about 5.4 trillion US $. Similarly, the major features of the landscape of Fintech include infrastructure for settlement and securities trading along with the derivatives of OTC (Over the Counter) securities. The fintech industry is the area where opportunities are provided for other companies such as telecommunications and IT where other traditional financial institutions are disintermediated (Chiu, 2016, p.55).

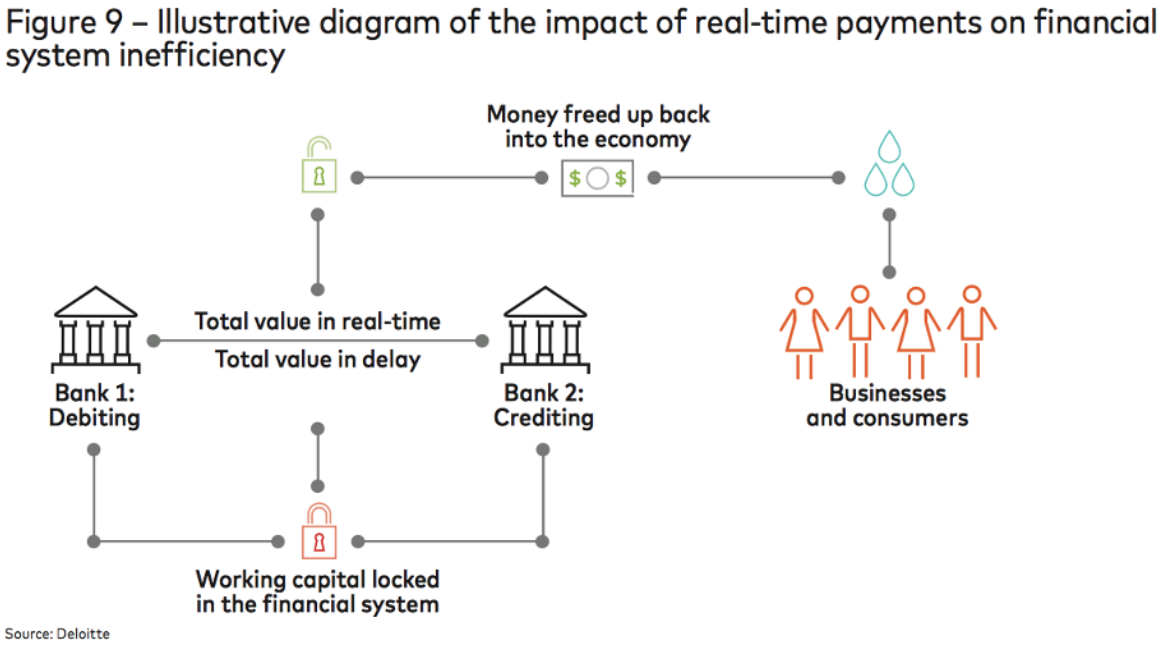

Figure 1.4
Payment service and Infrastructure in the Financial Sector (Source: Mondato, 2022)

1.1.1.4 Data Security and Monetization

The major themes of FinTech are FinTech 2.0 and FinTech 3.0 where the monetary value of the data was exploited. The stability of the financial service is considered to be a national security issue followed by a Global Financial Crisis. The digitalization of the financial sector has become especially susceptible to espionage and cybercrime which is latter significant in the case of geopolitics. Thus, the subsequent prone to these kinds of issues because of digitalization is considered and worked on by the consumers, participants of the industry, law makers, policy makers and Government. Similarly, the innovation of Fintech presents the application of "big data" which helps to improve the availability and efficiency of financial services (Hasan, Popp and Oláh, 2020, pp. 1-17).

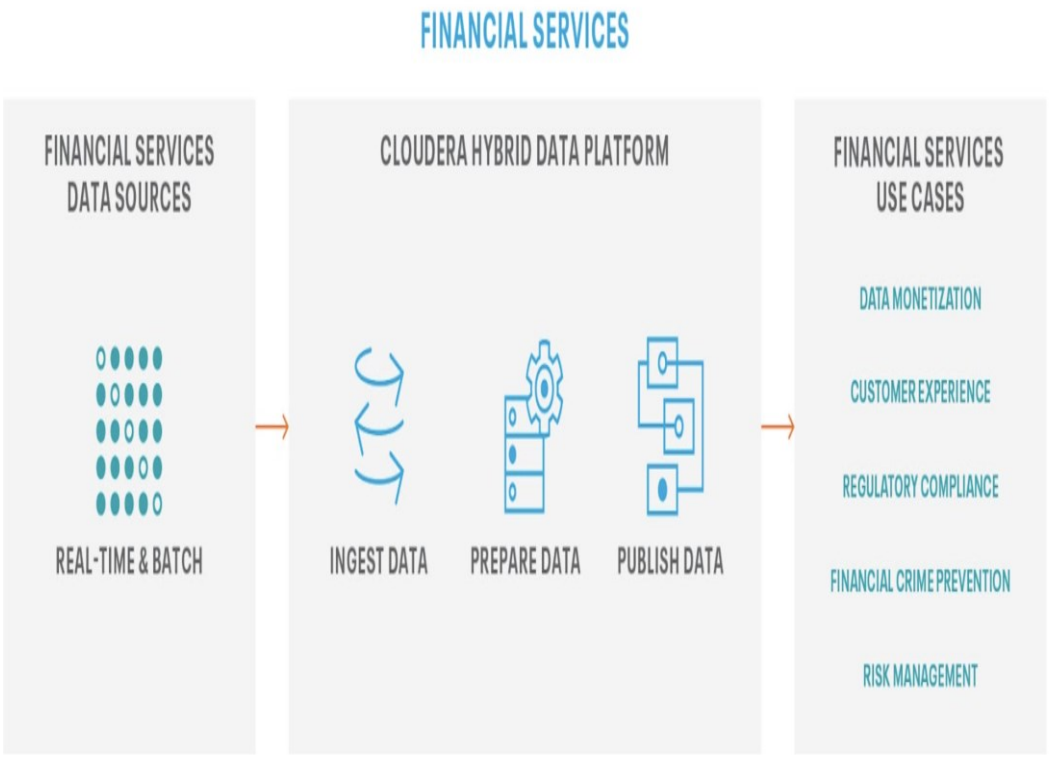

Figure 1.5

Discovering the Data Security and Monetisation in Financial Services (Source: Rodriguez, 2023)

1.1.1.5 Consumer Interface

In the case of Consumer Interface, mobile is used mostly in online financial services. It serves as the major reason for the development of traditional FinTech and non- traditional FinTech. The traditional Fintech industry is the area where the telecommunication and IT industries are seeking to establish to contest directly with the firms. In emerging economies, the factors integrate to support the next generation of the Fintech industry. The highest capacity is held by the competition with the financial sector traditionally where the massive

bases of consumers that already exist are leveraged by the competition with huge potential where the financial services and the products are introduced (Mirchandani, Gupta and Ndiweni, 2020, p.331).

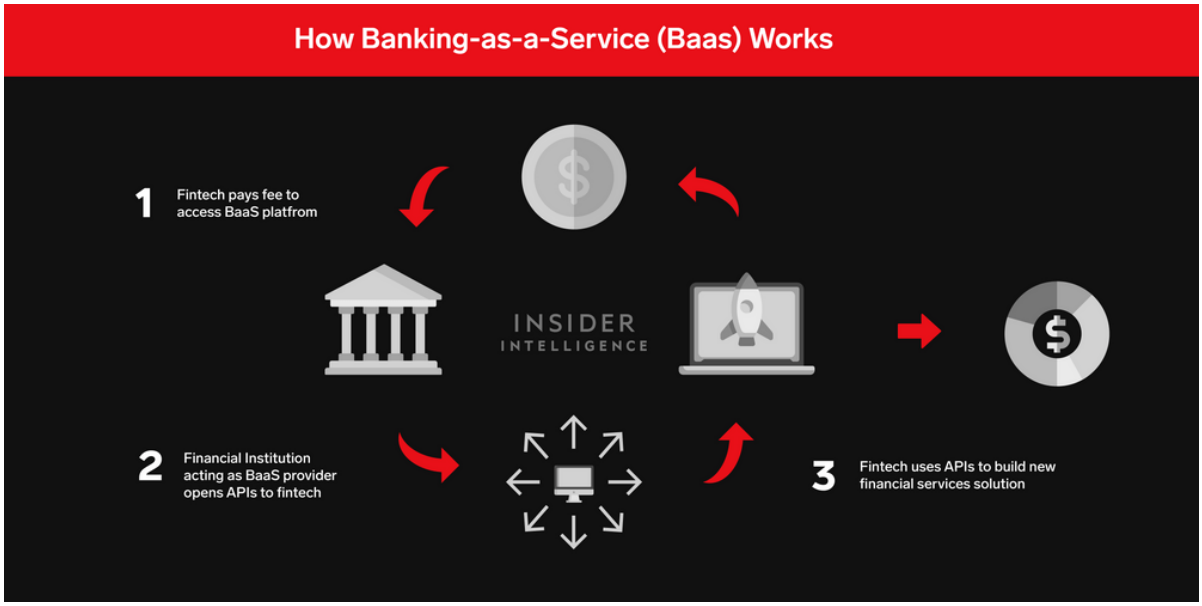

Figure 1.6

Consumer Interface in Banking service (Source: Insider Intelligence, 2023)

1.1.2 Innovations in Fintech

The transformation of financial services is Digital innovation. The innovations in the Fintech industry include mobile money, marketplace lending, peer-to-peer (P2P), crypto-assets and insurance technology, globally. In the previous decade, greater access is given to Fintech where the financial services were convenient for the retail industry. At the same time, the wholescale markets were transformed to DLT (Distributed Ledger Technology), Cloud Services and Artificial Intelligence which makes the financial services wider as the financial market trading, supervisory and regulatory technology. The new firms were emerged to apply

new technologies where the demand of the customer was met and the digital transformations were indicated by most of the incumbents which was considered to be the most strategic priority (Feyen et al, 2021).

Instead, the bank was led rapidly to close the gaps of internal processes of the digitalization along with the customer offerings, which helps the fintech to compete with big techs and large firms which has given entry to the competition (Frost et al, 2019, pp.761-799). The growth of these firms has enabled the market to be more diverse, inclusive, efficient & competitive which also raises the concentration. The competition was introduced by the innovation where the inclusion is enhanced in the emerging economies and the developing markets (Pazarbasioglu et al, 2020).

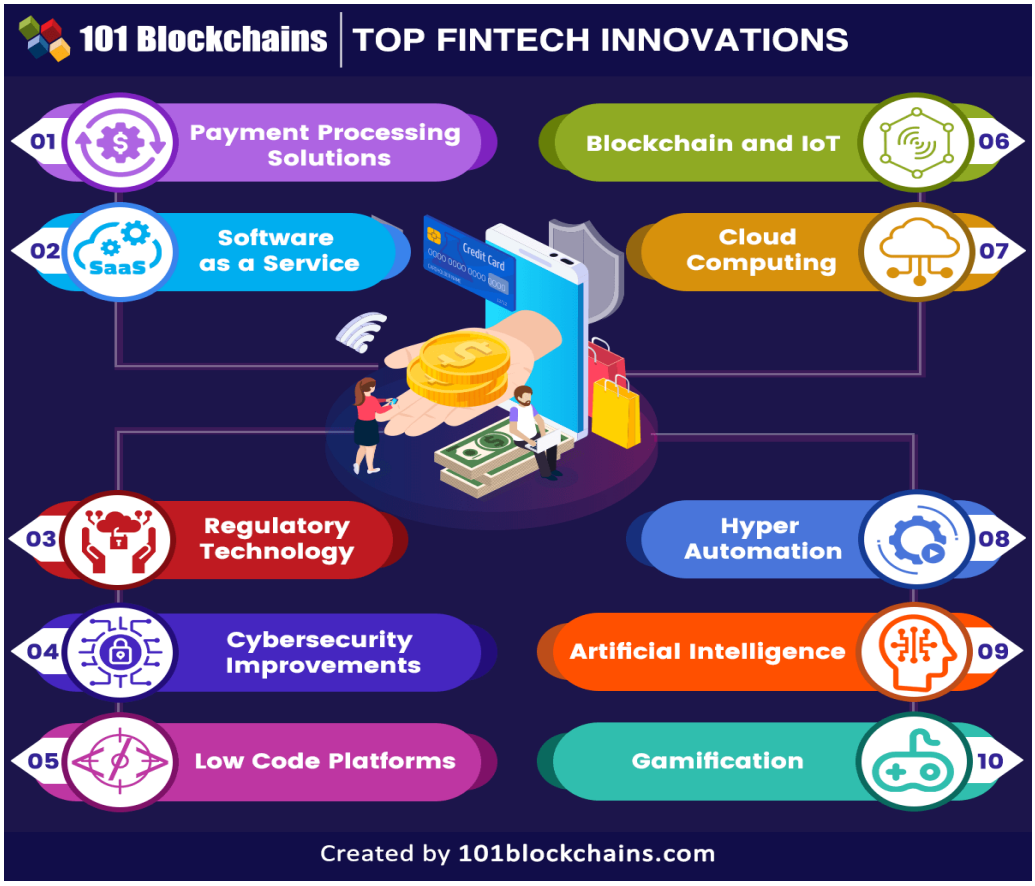

Figure 1.7

Top 10 Innovations of Fintech (Source: Weston, 2023)

Specifically, Fintech have thrived to develop the markets where there is lack of development in the financial system. Anyhow, the economies underlying the intermediation integrates with the innovative technology which results in the concentration of both the new financial and traditional service providers. The behaviours that are both anti- competitive or Monopolistic use platforms of big technology platforms which are scrutinized previously. The forward movement of financial services is similar to the configurations driven by the technology where the questions are grappled with regulators of how the landscape is supervised and regulated when the characteristics are increased by the business models and new players. Potential challenges were addressed to invest on protection of the consumer which includes privacy of the data, fair competition, financial integrity and financial stability. The pandemic that is COVID-19 initiated the digital transformation. Specifically, the digital connectivity is required to replace the interactions physically between the providers and the consumers in the processes of generating the financial services which is significant like the financial services, economies, navigation of individuals and the businesses at the times of Pandemic and during the times of post- COVID.

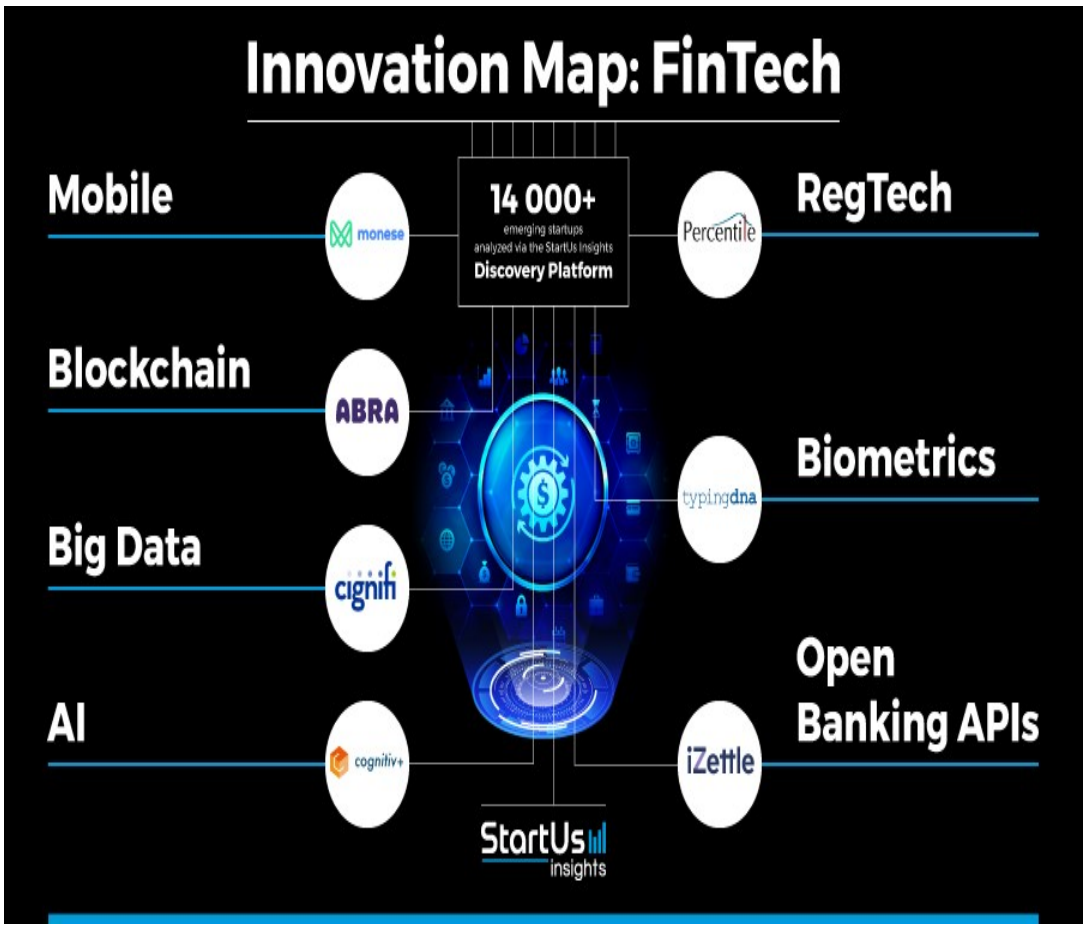

Figure 1.8

Innovation map of Fintech in Finance Service (Source: StartUs Insights, 2024)

For example, the shift towards the digital payments was accelerated during pandemic (Auer, Cornelli and Frost, 2020a). This kind of initiation is also the reason for the intensification of e-commerce, which is beneficial for the large tech industries and finance activities (Alfonso et al, 2021, pp.1-9). The Countries which followed strict rules and policies at times of COVID-19 and experienced a lower mobility have a huge increase in the downloads of apps regarding finances with the outbreak of Pandemic. Eventually, work was

accelerated on the digital currencies of the central bank (CBDCs) (Auer, Cornelli and Frost, 2020b).

1.1.3 Capital Structure of the Fintech Company

The decision based on the capital structure is considered to be one of the major issues which was provided to the capital structure which plays an important role in the determination of the performance of the industry (Mansour et al, 2022, p.10525). This significantly enhances the contribution of the company's potential to adapt to rapid and competitive varying economic environment (Norvaisiene, 2012, pp.505-516).

The decision on the capital structure is considered to be a complex process where the theories existing for the capital structure has explained many aspects of the complexity and diversity of the choices (Margaritis and Psillaki, 2010, pp.621-632). The Capital structures significantly refers to the investments of the company in the progress and operation of the company where various sources are used for funds. Therefore, an integration of the debt and the capital is presented with the finance of the companies and its operations (Harc, 2019, pp.87-101).

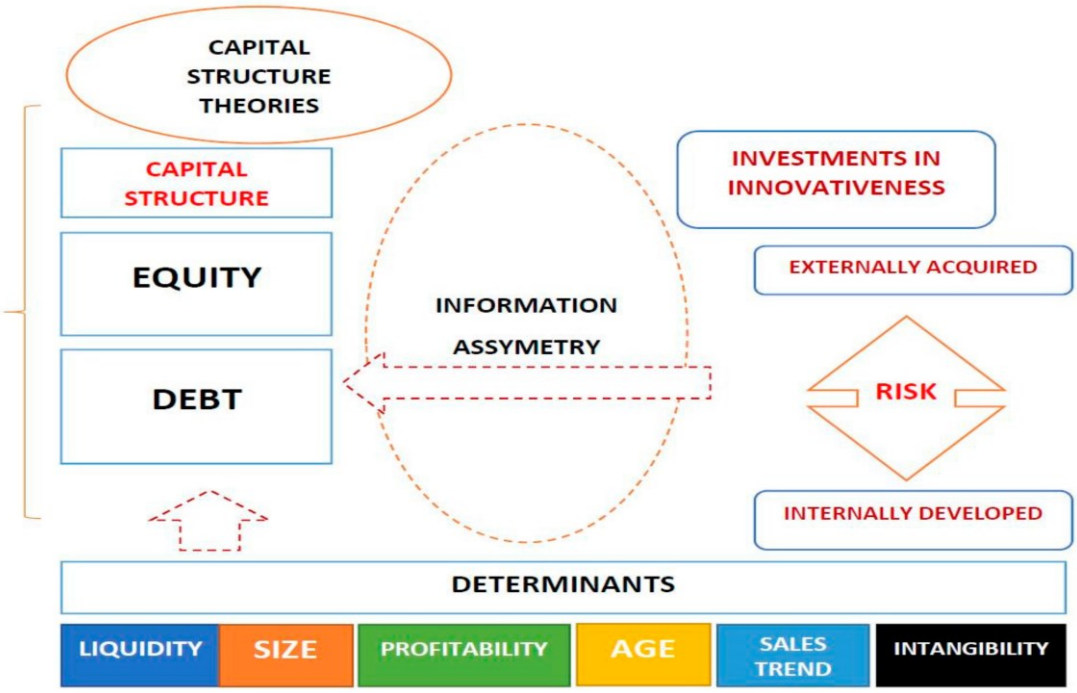

Figure 1.9

Capital structure of Fintech services (Source: Kedzior et al, 2020, p.221)

The firm has raised the capital additionally where the operations are invested to issue debt or equity for the hybrid securities. In these methods the disadvantages and advantages of the capital are obtained which is considered in making decision of the capital structure. The capital structure that is inadequate results in the costs that are high where the enhancement of the rates required are also affected in return and the selection of the stricter of the finance projects where the activities of the investments are limited and has the negative effect on the competitiveness and growth of the company (Norvaisiene, 2012, pp.505-516.).

The capital equity is used in the investment activities of the company which has its own disadvantages and advantages which is applicable to the use of debt capital. The most essential advantages of the financing equity are the reflection of the fact which do not have the term

fixed where more solvency is secured and the dependence on the creditors is also reduced. The capital is raised through the shares of the issue where the company became financially stronger where the credit rating and the solvency is improved where more favourable position are fixed which is related to the creditors who take new loans. Anyhow, the capital equity is more expensive in the form of financing which causes significant issues in prices and costs. Moreover, the ordinary shares of the issues raise the number of owners which lead to the loss of control over the industry (Erić et al, 2012).

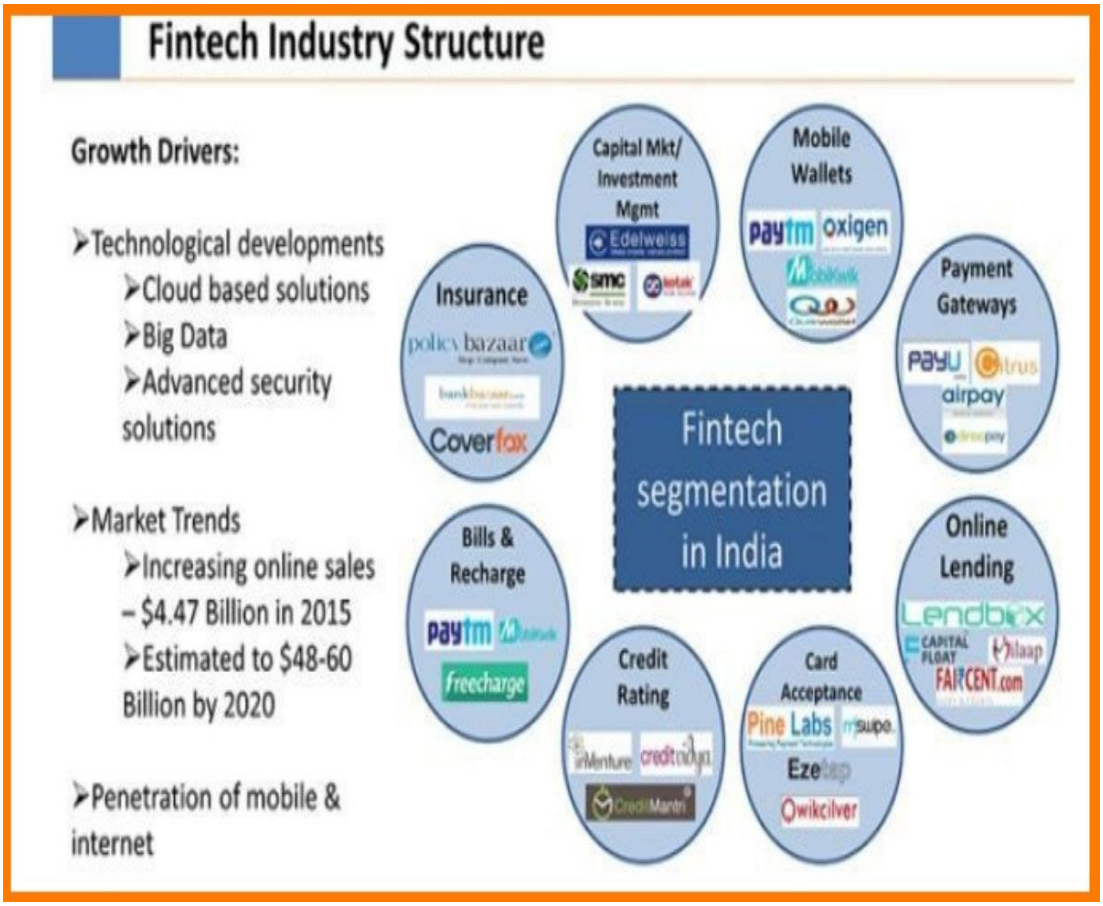

Figure 1.10

Capital Fintech structurization in India (Source: Shrivastava, 2020)

The advantages of investing in the activities of the company with the debt capital is referred to the fact where debt capital is used when there are limited time and the cost of the interest occurs only when the company has its own debt capital. The investments in the capital structure in addition to the tax advantages of the debt enhances the management discipline. Besides, the debt capital with the financing also has some disadvantages in the form of costs with the bankruptcy which also raises with the costs of agency. This results with the conflicts of the interest which is seen between the debt holders and the equity holders along with the restriction imposed towards creditors and flexibility loss (Jensen, 1986, pp.323-329).

The capital structure is decided to be one of the most significant and complex activities which affects the competitiveness and performance greatly along with the survival of the company of the market. Therefore, decision made on the capital structure of the industries is considered to be a very complex process where the theories were existed to explain certain aspects of the complexity and diversity of the choices where there was no universal theory of the capital structure with various theories where the choices regarding the capital structure of the firms were explained in various aspects. The major aim of the research is to compare the determinants of the capital structure of the companies that are analyzed and those factors are identified which has an impact on the choice of the capital structure of the firms in the Republic of Serbia. The objectives were achieved where the most significant theories of the capital structure were checked and the decisions were explained on the capital structure of the industries in the Republic of Serbia.

In developed countries, there was formulation of Capital structure theories which helped in the functioning of the capital markets. Thus, the significance is confined to the examination of the relevance to the developing countries. Recently, the growth is been evident in the research of the developing economies where a constrained amount of research is done in the Central and Eastern European (CEE). The context was identified and the further researches are also encouraged particularly in the context of developing countries.

The company in the Republic of Serbia is the first company where the divisions of the manufacturing company is analyzed from the manufacturing industry of the decisions for a very long period of the study conducted between 2006–2020. This certainly provides a framework where capital structure was understood in the developing country such as the Republic of Serbia (Hernádi and Ormos, 2012, pp.229-263).

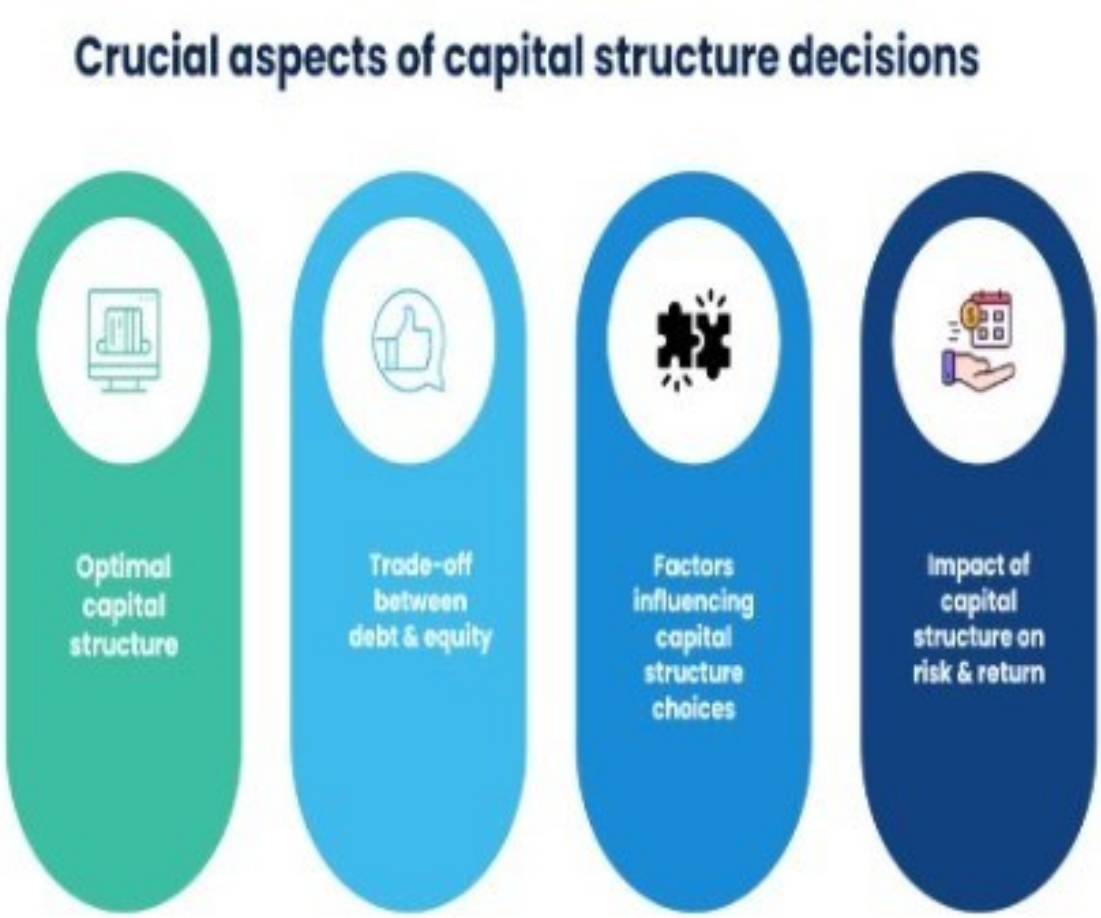

Figure 1.11

Crucial aspects of capital structure decisions (Source: Happay, 2024)

In the post-communist small towns, Mono-industrialism functions as a limit toward the sustainable development of the companies (Alexandrescu, Ștefănescu and Pop, 2022, pp.1-28). Moreover, the foreign corporations are significant to the alleviating poverty because of the direct investments from the foreign country where less favoured areas are mainly required in the CEE region where the social risk appeared (Cretan, Guran-Nica and Platon, 2017, pp. 305-348). The major aim of the law makers during the initial phase is the transition to create an adequate infrastructure where proper functioning should be guaranteed in the economy of

the market at the macroeconomic level, where the economic stability for a long-term is required for the transformation at the microeconomic level where the transformation is included in the behaviour of the agents of the economy (Colombo and Revoltella, 2003, pp. 179-197). The research focused more on the determinants of the capital structure of the company especially in the transformation of the microeconomy. There is lack of attention of the Managers which acts as a strategic parameter of the company, which includes capital structure optimization where the gaps are caused by the managers who are trained professionally. Other aspects include capital market underdevelopment, lack of guidelines in methodology and lack of application of models in local practice etc. (Beșliu et al, 2021, pp.192-210).

The Determinants of capital structure are internal and external factors which can be both firm specific and country specific which has an influence on the capital structure and its adjustment. Therefore, the internal factors can be controlled and governed by the managers whereas the macroeconomic factors cannot be controlled by managers (Mokhova and Zinecker, 2014, pp.530-540).

1.1.4 Investment Strategies in Fintech Companies

In the overall financial system, which includes financial services and payment systems an increasing role is played by cloud computing and cloud storage. The payment data and the financial data is stored in the cloud where the cloud computing implemented many innovations of fintech which includes credit decisions or evaluates which were instantaneous

and real- time payment. The companies no need to invest enormous financing in internal technology which tends to be a huge budget for smaller companies. Therefore, the companies can outsource to the service providers of the cloud computing where the cost can be shared with other companies. The playing field is levelled here, where the size alone is not considered as a significant determinant to reach the goal. The preferences of the consumers are also adapted where priority is given to do service faster with more transparency and convenience throughout online applications and services. The law makers are more concerned of the effect on the soundness, safety and stability of the financial systems. For instance, when an internet-based platform becomes ineffective, a huge impact is created on the payment system which leads to the exposure to a higher chance of cyber-attack and events related to it.

In the Fintech industry, the smart contracts and Blockchain are the buzzwords because block chain technology is based on the transactions of the bitcoin. The DLT (Digital Ledger Technologies) and the Blockchain are used to create different cryptocurrencies, ICOs (Initial Coin Offerings), Smart contracts and other applications for the payment. Thus, blockchain has the ability to replace the conventional financial technology in the future generations. The potential and role of the blockchain have some evidences that are disappointing initially which is not as disruptive which is predicted and the major challenge appears to be scalability. For instance, the transactions done through bitcoin is cleared only after ten minutes and thus expects to be longer similar to the block length as the it gets lengthier in the following years. This issue is worked by several tech experts and start- ups of tech where the platforms of the blockchain is allowed to have benefits from the segment of the economy via the utilization of

the detection of the identity, supply chain management, securitization and lending of the digital asset.

There is a rapid progression in the Fintech activities in all the areas of the financial systems. A huge number of consumers were benefited through Fintech, globally which made the financial system more effective. The enhanced growth of the services of the bank was offered by the Fintech industries where potential concerns were raised among the supervisors of the bank. The concerns and the legal challenges were related to the fintech considering the privacy of the consumer along with the disruption of the fintech towards the stability of the entire fintech industry. Though Fintech company improves the access to the credit which increases the company's effectiveness which helps to offer a faster and cheaper services in the financial system, there is no complete elimination of risk in the system.

The recent innovations on the retail banking services depends primarily on the advances of the technology which includes improved process of payment and more access to the internet. Since 1990s, access to internet is the rapid growth which helped to adopt online banking. The first online bank was the Security First Network Bank which was started in 1995. The first brick and mortar bank were Wells Fargo which launched the websites for checking account in online banking (Hernández-Murillo, Llobet and Fuentes, 2010, pp.1650-1663). In 2001, the U.S. had 1 million customers in eight banks. Globally, Banks have started to develop Software applications which helps customers to access the account online using the software. The adoption of Digital banking with some new frameworks were used to

address the risks related with these innovations (Arner, Barberis and Buckley 2016b). The determinants of implementing digital based banking are documented by the literature that is already existing.

Furst, Lang and Nolle (2002, pp.95-117) worked on the sample of a cross-section banks in 1999 where certain essential features were revealed and the decision of the bank was determined to adopt new technologies for the services of online banking which is considered to be more profitable. The size of the asset is found to be larger where present urban markets were included along with the subsidiary of the company.

Hernández-Murillo, Llobet and Fuentes (2010, pp.1650-1663) worked on the U.S. banks which has newly adopted online banking. The study confirms that the significant determinants of the adoption of the online banking must include demographic factors of the customers such as Internet access, education and household income along with other characteristics such as BHC (Bank Holding Company) subsidiary, non- performing loan ration, capital- to- asset ratio and branching intensity. The performance of the bank is also affected because of the adoption of online banking. There is a gradual decrease in the operation cost of the bank and the profitability is improved because of the adoption of the Internet. The studies conducted by DeYoung, Lang and Nolle (2007, pp.1033-1060) and Hernando and Nieto (2007, pp.1083-1099) revealed that the bank branches are not replaced by the Internet banking services because the online banking services appears to be an advantage and is not considered as a personal or physical banking services. Goddard, McKillop and Wilson (2009, pp.231-252) studied about the credit unions of the U.S. which does not offer Internet banking services to the customers mostly fails or bought by other institutions which provides online banking.

Recently, the financial technology is advanced because of the digitization in both the Wholesale and retail payments. Rysman and Schuh (2016, pp.27-48) investigated the developments recently in the mobile payments which helps in the faster payment of the systems. The companies related to technology have leaders to provide mobile payments in the Technology firms, then in the banking sector where potential benefits were suggested from the association between the fintech firms and the banks. The white- labelled technological services were provided by many fintech industry for their business partners. The alliance between the technology companies and banking sectors must aid in the digitalization of the process of credit decision and risk management.

1.2 Problem statement

The best method is always chosen in Project financing by the financial managers in the financing decisions of the organizations. The capital structure of each company is unique where the combined arrangement of equity and debt is reflected with various degrees of complexity. The debt is issued by the company where various methods are in stock which also contains a lot of negative repercussions that are unavoidable (Soehaditama, 2023, pp.1069-1078). The theories of different capital structure have proposed and indicated various strategies which helps to make the financial decisions where an effort is made to reinforce each theory which results in findings that are contradictory (Myers, 1984, pp.126-137). the constructions, physical assets and the operations of the business in the similar sector are compared often, thus the businesses have capital structure that are similar to each other.

Robichek and Myers (1966, pp.1-35) stated that under the circumstances of the ideal capital market, the values of the firms is independent to its capital structure. However, the criteria are questionable and is investigated further since it is not encountered frequently. According to Ahmeti and Prenaj (2015), the financing decisions has an effect on the capital cost which has an effect on the value of the firm. The optimisation of the capital structure has a direct effect on the performance of the company (Ahmeti and Prenaj, 2015).

Several strategies are provided by many countries where the ideal capital structure is obtained and implemented. According to Kraus and Litzenbergers (1973, pp.911-922) the Trade-off Theory, which is an ideal capital structure is been reached where the benefits of the tax of the interest were weighed and houses against the prices of the financial distress. The interest tax value protects the rationale of the finance misery and the costs are subjected to various degrees of opinion. Modigliani and Miller (1963, pp.433-443) proposed an Irrelevance Theory which forms the basis of the Trade-off Theory, where the businesses are additional to the entire debt which takes considerations of the expenses and risk of the financial trouble (Soehaditama, 2023, pp.1069-1078).

Myers and Majluf (1984, pp.187-221) proposed Pecking Order Theory which depends on the idea of the behaviours and the knowledge that are unequal which is considered to be another theory that is well- known where the managers are acquainted when compared to the investors and stakeholders. According to this theory, the firms attempt increase in the cash initially which is followed by loans that are provided where only equity is being considered.

The financial turmoil is the danger caused by external financing where the current circumstances are predicted inaccurately and the future of the company depends on the justification which is not willing to share the issues. The internal financing is preferred more where the cash produced internally is indicated which has more value to the shares of the issuance where the Pecking Order Theory fails typically to define the ratio of the ideal debt (Soehaditama, 2023, pp.1069-1078).

The growth in the revenue, financial performance and efficiency is famous ways to enhance the values of the company. The variables are based on the performance, which helps the firms to develop thus, the companies should work on proper metrics. The firm's value can be improved when the capital structure which is non- performance driven variable is designed properly. The value of the businesses should be concentrated more than focusing on the improvement of the characteristics performance which helps the company to make decisions more effectively considering the capital structures which is modified by the ratio of the debt to equity (Korteweg, 2010, pp.2137-2170). The change of ratio of debt to equity is riskier and thus may decrease the firm's value which improperly done and the event in the market place also reacts differently. The change in capital structure leads to insolvency and economic crisis (Artikis and Nifora, 2012). A concern is raised to be cautious regarding the changes made in capital structure which has an effect on the value of the firm. The study addresses the research gap about the factors that affect the debt ratio, their strong connection and positive or adverse correlation between the debt ratio.

1.3 Research Aim

The major aim of the study is to compare the determinants of the Capital Structure and investment strategies in Fintech companies between Developed and Developing countries.

1.4 Research Objectives

The objectives of this study are as follows:

1) To examine how the traditional financial system has changed as a result of FinTech.

2) To identify the determinants of the capital structure and investment strategies in the Fintech companies.

3) To determine whether decisions about financial leverage in a company vary significantly between developed and developing countries.

1.5 Research Questions

1. What are the traditional financial systems that has changed as a result of FinTech?

2. What are the determinants of the capital structure and investment strategies in the Fintech companies?

3. What are the decisions made on the financial leverage in a company that vary significantly between developed and developing countries?

CHAPTER II:

REVIEW OF LITERATURE

2.1 Early Phase of Fintech Development

In the early stages of development, technology and finance are interconnected and reinforced mutually. In the areas of administrative systems, there is rise of finance which is important for the change from the hunter-gatherer groups to the agricultural stages that are stable. For instance, there are written records which describes the information technology in its early stages in Mesopotamia. This helps them to govern the economic and administrative systems which includes financial transactions (Arner, Barberis and Buckley 2015, p.1271).

The process of development of written documentation and finance reinforce each other and is considered as one of the initial forms of information technology. Here there is a connection between technology and finance. Similar to this, finance has been intertwined in the early stages of the development of the money. Mervyn King, the former Governor of the Bank of England (2003-2013) stated that, “The story of money is… the story of how we evolved as social animals, trading with each other”. In the early 9000 BC, the countries such as Mesopotamia & Egypt used commodities such as livestock, grain & money. Precious metal was emerged and subdued the money because of inconvenience and cost of usage of commodities. In ancient countries like Egypt and Mesopotamia used metals for transactions. The metal coins were originated in Middle East and China and then it was used in the 4 th

century BC. In the seventh century the banknotes were appeared first in China. The first banknotes appeared in China in the 7th century AD " (King, 2016).

McGroarty and Mutsaka (2011) studied about modern economy. Transferable values are denoted by a technology called Money which is the major characteristics of modern economy. Moreover, in the early stages the computing technologies were emerged called as Abacus which promoted financial transactions. This development in evolution is viewed in the context of trade which evolves finance from an early stage in order to sustain the trade and commodities of that specific trade.

Double-entry bookkeeping is another form of technology significant to a modern economy. It emerged from the intertwined evolution of commerce & finance in the period of Renaissance & in the late Middle Ages. Today, the revolution in finance has been approved by many historians which was taken place in the Europe in 1600s and was included in banking, insurance and joint-stock companies which was fundamentally on the basis of the double-entry bookkeeping. In this way, the access to capital and finance was supported by technology development which was called as industrial development. Thus, the association between the technology & finance is long- standing, with the trajectory development which place its stage in the modern period. The speed of growth is enhanced in the past hundred years which is uncommon in the previous era. In the following subheadings, the developments in finance are outlined briefly in the financial technology between 19th and 20th centuries. This led to the foundation of FinTech (Akinyemi, Okoye and Izedonmi, 2015, pp.14-20).

2.1.1 Changes in the Traditional financial system

Changes in technology paved the way for changes in the strategies and structure of the regulations. As mentioned above, in the late 1960s, the finance was internationalized where innovative technologies were supported which includes stock exchanges and payment systems in electronic devices. This also supported significant growth in the regulatory cooperation in the cross- border via IOSCO and Basel committee. Additionally, in Europe and United States the innovative emerging risks were regulated by focusing on major efforts in the 1980s and 1990s. For instance, in FinTech developments, the regulatory interest ins seen in the keynote speech given by David Carse, then Deputy Director General of the Hong Kong Monetary Authority (HKMA) in 1999. Here, new regulatory framework was considered where e- banking was needed (Carse, 1999, pp.16-28).

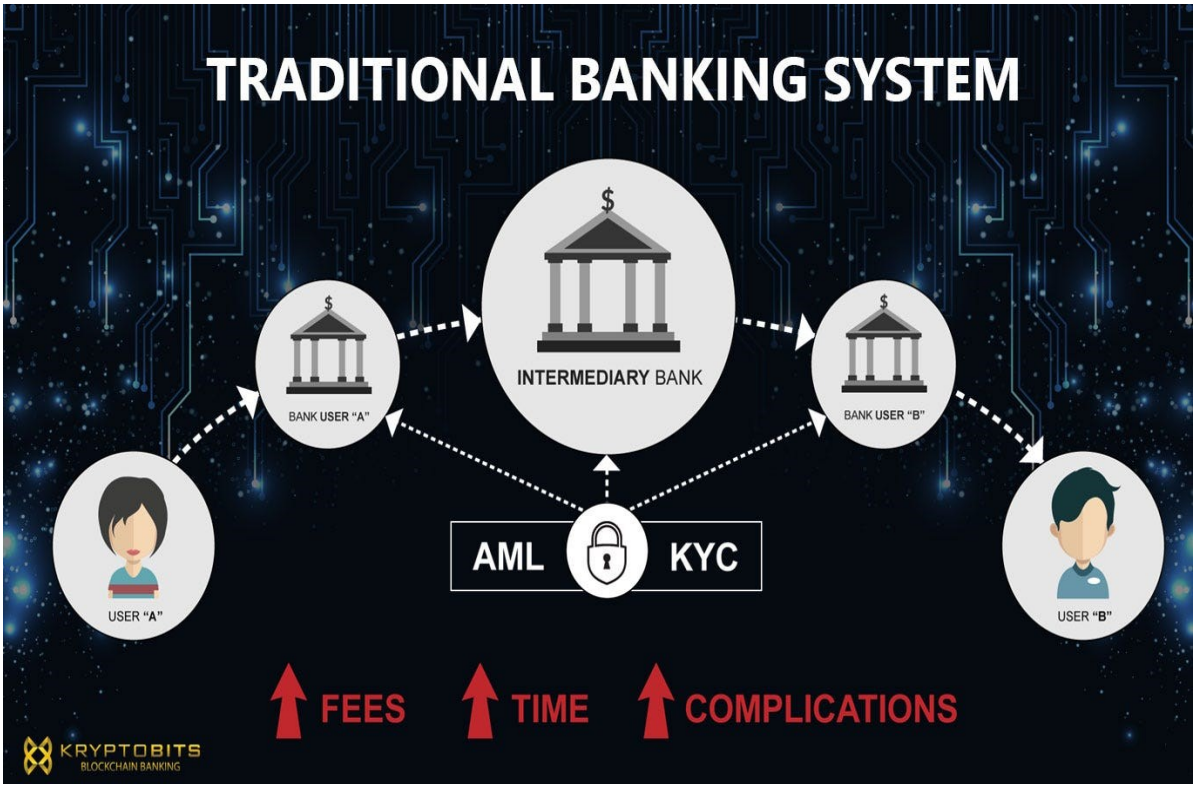

Figure 2.1

Traditional Banking System (Source: Exchange, 2018)

It is essential to note that in 1999, this speech was made as soon as the existence of e-banking initiated in 1980. These time frames were highlighted which includes the delay in the reaction of regulation and changes in the technology. The delay is often welcomed and predictable because it is consistent with market regulation that are effective. New innovation that are applicable are regulated to the financial sector where the advantages are limited. The innovations are stifled severely along with increasing the work of the regulatory agencies by preventive regulation, whereas the benefits are also limited (Menon, 2016).

Unlimited access is provided virtually and directly to the accounts and there is a need to eliminate the technology for the depositors which is present physically in the branch where the funds are withdrew. The electronic bank runs facilitated the e- banking development indirectly because there is no physical interaction where the friction is eliminated which arrives along with withdrawal. In turn, the ability is instant where the funds are taken and the stress in enhanced on the financial institution where there were problems of liquidity during the crisis of the bank (Arner, Barberis and Buckley 2015, p.1271).

It was found by regulators that banking in online creates new credit risks. The physical link is removed between the bank and the customers where there was expectation of the competition to increase. In a large scale, although consumers have positivity in the initial stages the pressure in the competition are problematic for the stability of the financial system.

For instance, the systematic risks are seen in the deregulation of the banking market of US in the 1980s, where there is a raise of deregulation. Secondly, the individual scale is smaller, when the constraints are known personally by a loan officer where the establishment of the loan was lost and the automated system has replaced this conventional system. The risks were outweighed by the benefits of online banking which has date. The organization has better data for understanding the credit risk of the borrowers and thus the financial institutions were enabled and the products were offered and was aligned better with the risk profile of the individual consumer. The big data analytics is emerged by preceding these insights and granular insights were provided into the profile of the consumer (Arner, Barberis and Buckley 2016b).

Anyhow, the risk was created between startups of the Fin tech and online banks, where the comparison was stopped because of the because Carse's speech (1987). Thus, the financial insights that are authorized can only be able to lead to the innovations of the technology. This distinction is the major key to understand the tipping point between FinTech 2.0 and FinTech 3.0.

2.1.2 The emergence of FinTech

In the past three decades, the financial industry has changed the digitalization particularly, where the crisis of the global finance acted as a watershed which led to the emergence of the abrupt FinTech industry (Arner, Barberis and Buckley 2017). In this way, it is suggested by the recent evidence that several markets have various structures which

moved towards the competition in the channels of the digital finance and towards the changes in the structures of pricing strategies (Cavallo, 2018, pp.105-119).

Philippon (2019) reports that the new entrants of the fintech is emerged and is driven by a traditional channel where the cost are high relatively in the service of the finance. Similar to this, Frost (2020, pp.70-89) argued that there are incentives that are greater for the entrance of FinTech in economies and the banking sectors are not competitional relatively.

The Financial Stability Board (2017) defines FinTech as "a digitally enabled financial innovation." The International Organization of Securities Commissions (2017) refers to it as "a variety of innovative business models and emerging technologies that have the potential to transform the financial services industry." The OECD (2017) suggests that FinTech not only involves the application of innovative digital technologies to financial services, but also the business models that is developed and the products also depends on these technologies including the process and digital platforms more generally (Servias, 2020).

Digital platforms are enabled in new distribution channels where financial services are included in the ecosystems where further search and cost of connectivity are reduced (Boot et al, 2021, p.100836). Gimpel, Rau and Röglinger (2018, pp.245-264) suggest that, the customer-centric perspective is adopted by the FinTech companies unlike other firms where the financial services are offered. The association between incumbents of the banks and entrants of the FinTech which is not driven by rivalry. It is common to have alliances even

though the highly specific aspects are referred frequently in the channels of services and businesses.

Broby (2021, pp.1-19) argues that the technology of the finance is changed to the future of the banking where there is an intermediate way bank. Lee et al (2021, pp.468-483) showed that innovation in the FinTech have some effects that are positive on banks. It was found that innovations of the fintech improved the cost efficiency of banks and also improvised the technology used by banks.

Li and Xu (2021, pp.1-28) showed that innovations in the financial data & in the clustering helped banks in various applications of the finance where fraud detection and evaluation of the credits are introduced. Similar to this, Abbasi, Alam and Huynh (2021, p.120454) found that innovation of FinTech are associated positively with the efficiency of the SME. Overall, the firms of the FinTech have shown to facilitate innovation in the financial sector as a whole. Anyhow, specific negative industry & its spillovers were revealed from some studies of the innovations of various Fin tech companies.

Buchak et al (2018, pp.453-483) discussed the growth of banking shadow to the technology related to the financial “innovations.” It was indicated by them that deficient or lack of regulation denoted the growth in huge numbers in the shadow bank industry (60%), whereas technology accounts for 30%. In this way, the emergence and the adoption of new technologies play a vital role in the bubble theory. However, innovation and bubbles occur many times.

Frehen, Goetzman and Rouwenhorst (2013, pp.585-607) found evidence for the explanation based on the innovation for the financial bubble for the first time (the South Sea bubble) in 1720. Thus, an emergent body of literature in unsurprising and has investigated the effect of FinTech on the stability of financial services. Foote and Willen (2018, pp.59-100) found that the transformation in the technology in the mortgage underwriting has 2000s housing boom. In such related activities, the information had cascade from consolidations of the debt by the lenders of the market place which resulted in the banks in an extension that is inefficient of higher credits and defaults. The startups and entrepreneurship Mostly, the former bank employees are the founders of Fintech companies who has left the job in the crisis of 2008.

Haddad and Hornuf (2019, pp.81-105) investigated the drivers of technology and economic which helped the entrepreneurs to create a FinTech company. Favourable economic conditions were found which includes the sources of funding and investment in ample amount where the infrastructure of the mobile network and the internet has been developed. This helped along with a qualified labour force that were increasing and the factors drives the rise of the startups of the FinTech. Laidroo and Avarmaa (2020, pp.555-572) found the establishment of greater FinTech where the intensity is characterized by countries that are smaller and having stronger communications and information technology, service clusters and experience which has a problem during the recent years.

Zavolokina, Dolata and Schwabe (2016, pp.1-16) argued that FinTech is not exclusively triggered by one driver of innovation of finance but is also influenced by integration of regulatory, economic, technological factors. Brandl and Hornuf (2020, p.8) found that the digital financial innovations in future cannot be decided by superiority of technology but by the factors of the institution. Recently, the success and emergence of such projects were related to their capability to the capital raise. Cumming (2021, pp. 11-37) investigated the FinTech pattern venture investments of the capital globally which is associated with other types of investments. It was found that the projects of the venture capital of the Fin Tech are common in countries having regulatory enforcement that are weaker and without financial center which is significant.

Cojoianu et al (2020, p.103988) found the areas having trust in lower levels in financial services where the entire investment of FinTech is less. In the case of demand side, Carbo-Valverde, Cuadros-Solas and Rodríguez-Fernández (2020, p.e0242412) identified that the financial services in non- bank can be adopted by the customers of the bank once the customers of digital bank are diversified and frequent where a degree of complementarity is suggested between the digital channels that is non- bank and bank. Gulamhuseinwala, Bull and Lewis (2015) studied on the adoption of FinTech at early stages which customers have high income and at a young stage. Frost (2020) revealed about the adoption which are associated with a cost having high conventional finance where the regulatory environment is supportive along with other macroeconomic factors. Furthermore, the rate of adoption is seen to be huge for companies that offers transfers of payment and money.

Voorhies and Radcliffe (2012) describes that the payments using digital method helps to overcomes the barriers of trust and also protect people from adopting different technologies. Similar to this, Ryu (2018, pp.541-569) examines about the willingness of the individuals to use the technologies based on finance. The authors also found that the legal risk has a negative impact on the continuance intention of the FinTech, where the strongest positive effect is the convenience. Some factors for governance and strategic which includes the experience of the former founder, customer centricity degree, cooperative partnerships existence with e- commerce firms & financial institutions where the adoption of FinTech services has increased.

In recent studies, the firms of FinTech have suggested the chances to enhance the inclusion of finance which includes the innovations of technology which enables the financial services towards the populations that are unbanked. In this way, the second stage of the digital payments are represented in the process of inclusion towards the financial digitalization (Radcliffe and Voorhies, 2012). In countries with the poor infrastructure, charges for the transfer of money are found to be more and therefore innovations in financial services helps people to make payments and transfer of money easily where they play a role in the attract a part of population. (Evans and Pirchio, 2015, pp.397-451).

Jagtiani and Lemieux (2018, pp.43-54) identified that the lenders of the FinTech can fill the gaps in the areas having few branches of bank which lends to provide borrowers which is credit worthy and those banks cannot be serving. This effect of FinTech on the inclusion

financially describes the economies that emerges with an unbanked population with the higher rates for adoption in the services of Fin Tech. In this way, countries such as South Africa, Mexico, India, China & Brazil the adoption rates were exhibited in a higher rate than average global rate.

2.2 Outline of Fintech

Fintech was initiated by establishing start-ups where technologies were used in the departments of payments, banking, analytics of financial data, market capital or financial management. Fintech has differentiated itself via innovations that are disruptive and has been developed from conventional financial firms with cultures that are innovative, niche services that are personalized, agile organization forms and solutions that are data dependent (Shin and Lee, 2018).

The start- ups of Fintech are innovative and are growing faster which leads to the development of industry of financial services. A significant enabler of fast firm growth is adequate Financing, which is a major element of success of a start-up recognized widely. Financing allows the organization in the investment of human and physical capital where new services or products are developed and new international markets are reached. Here the majority of higher growth in SME depends on an important enabler of rapid firm growth which allows human and physical capital and new services or products are developed and new international markets are reached. The development of SME depends on the financing

based on debt and on their funding than on the financing of equity (Brown and Lee, 2019, pp.37-45).

External financing can be accessed because it is considered to be a major issue for start- ups because of the opacity that is informational and it is not collateral. The other reasons are information of the asymmetric are present. Therefore, the debts and the startups are needed to be rationed. The debt is used and is related with the prospect to have a better performance for the start-ups. The peers are unlevered and the start-ups are compared for using debt which is important and have more chances to accomplish rapid growth in the employments and revenues (Robb and Robinson, 2014, pp.153-179).

The literature of the finances distinguishes between the debt of the business bank where the company's finance is lent and the debt for the trade of the businesses are lent from the suppliers. According to bank loan demand theory, the start- ups with high quality probably acquire business in bank for financing. Thus, the start- ups are selected by the individuals and the debt for the start-ups are borrowed from informed banks where the quality is signalled, credit history is initiated their reputations are built (Cole and Sokolyk, 2016, pp.40-60)

Meanwhile, high-quality start-ups fiancé and select only the informed banks. Moreover, banks are monitored once in a while where start- ups are allowed to perform and grow better. In this way, the association between the usage of bank in financing the debt in the initial years of establishment are positive and are helpful in the performance of the organization in the future (Robb and Robinson, 2014, pp.153-179).

The start- ups helps the suppliers to acquire information about borrowers via business association. The suppliers are also called as informed lenders. The problem on asymmetric information is mitigated like how the information about borrowers is obtained by the bank through financial associations with other organization. In start- ups the organizations are selected by the suppliers where the credit is extended among the base of the customer in that specific industry (Satyro et al, 2021, p.124781).

Ebiringa (2011, pp.85-95) states that financing in short term usually involves Business trade and is fixed at large scale in organization level. Thus, start-ups mostly rely on the debt from the bank for their business for financing in long- term for assets growth & operation. In the case of both long-term & short-term debt more monitoring & screening is required clearly where greater maturities are involved with extended durations. The debt in long term is focused more though there are differences between debt in the business bank and debt in business trade. The long-term debt is related to have better prospects for start- ups in fintech where the characteristics of start-ups are investigated deeply and stated the effect of the characteristics of the organization in the stage of long- term debt. The first hypothesis was related to the controlled environment of the start-ups of the fintech and by this way the investment for the long term is been affected.

Since 2008, because of the financial crisis the controlled environment for the start-ups in fintech became favourable. Few providers of financial services and banks have fiercely reacted and voiced out formally about the attempts applied to the controlled standards to the

start- ups of fintech, whereas for other fintech sectors, the increase growth is slowed down by the controlled uncertainity (Domingo, Piñeiro-Chousa and López-Cabarcos, 2020, p.119915). At present, there were no regulations for the start- ups of the fintech where few operates under the controlled radar. Other regulatory requirements provide the fintech with the cost effective, more customized, accessible financial services compared to other traditional organization and better services were offered at a lower cost. In consequent to this, the unregulated start-ups of the fintech are preferred by the managers which helps them to have a more long-term debt (Lee and Shin, 2018, pp.35-46).

2.2.1 Unregulated Fintech Start-ups - Long-term Debt Financing

Hornuf, Stenzhorn and Vintis (2022, pp.1662-1689) studied the effect of size on the start- ups of the Fintech which is different from each other. In fact, new firms which are similar to other industries in the start-up phase of the fintech organizations require resources to work where more sum of money is required in the development of the businesses. In general, the academic literature recognized that the start-up size has an effect on its capital structure. The rationale behind this theoretical view is associated with economies of the sale which is diverse and the information of the asymmetries, cost of transaction, market access and the risk exposure. In this case, start-ups at smaller scale are more expensive where this information based on asymmetries are resolved with the capability of the financiers. Here, start-ups at smaller scale are given to less capital and the same amount of capital at higher rates comparatively larger firms discourages the usage of debts externally.

Moreover, the entrepreneurs at their early-stage use money on their own to initiate the businesses where debt is collected externally according to the amount of capital needs where the financial resources of the entrepreneur is exceeded. In consequent, the fintech start- up can be huge when the fraction of the debt in the long- term offered by the organization (Cassar, 2004, pp.261-283).

Brown et al (2019, pp.885-904) stated that the structure of the asset is heterogenous because the sizes are heterogenous. Generally, the start-ups of the fintech are at huge proportions of intangible assets associated towards specific attributes because the investments and its expenditures are innovative. The sizes depend generally on the assets that are innovative and are mostly hard to value which also leads to problems in accessing the investments.

Storey (2016) studied on the debt financing which relies on secured lending through assets that are tangible. It is because of the contracting mechanisms that is preferred in the banks. The feature of the start-ups in fintech has a significant impact on financing where the opaqueness of the enhanced information is provided in the initial years and the certain option are not available for financiers and the financial risk are reduced by investigating the profitability of the present and the future. Initially, there must be reduction of adverse selection in the start-ups and the cost of moral hazards has pledged their assets to be collateral. Thus, start-ups having larger fixed assets acquires cheaper and easier access to financing. It leads to the higher level of firms. Moreover, the firm assets that are more tangible have value

with greater liquidation, the financial loss is reduced which is incurred by the lenders which is the default of the company and the assets of the firm is also realized.

Bigelli, Martín-Ugedo and Sánchez-Vidal (2014, pp.2419-2427) found that the long-term debt and the Bank financing which is associated with the proportion of the fixed assets where the organizations lack relatively with the tangible assets where the finance appears through the less formal issues or which is not financed, for instance personal bank debt.

2.2.2 Relationship between Asset Structure and Long-term Debt

Drasch, Schweizer and Urbach (2018, pp.26-42) studied on the investment in fintech by traditional financial institutions in various ways which includes the buying or acquiring the fintech organizations. Many opportunities are provided by the start-ups and banks gain these competitive advantages. In fact, the financial service providers and banks are required to construct capabilities which leverages or invest the fintech which are innovative and remained to be competitive. These start-ups exchange their insights where the banks are permitted to stay at the technology forefront and necessary funding are provided. In consequent to that, the start-ups of the fintech and its financing has influenced the owner type, where more funding is granted in this financial institution.

The characteristics of the finance and the capital structure explain the characteristics of the owner where the assumption of the signalling theory is stated for the start-ups. In the case of new firms, many mechanisms were available and the lenders potentially reduced the asymmetries of the information where the cost of agency is not available for such start- ups.

The signals were derived from the ownership derived from the reputation of the entrepreneurship which affects the decision of the financing (Alibhai et al, 2017).

2.2.3 Characteristics of Influences of Financing in Fintech Start-ups

Accenture (2016a) stated about the development of the investor capital. It includes equity crowdfunding, private equity, venture capital and angel investments. In the fintech organization, all these terms are phenomenal which reaches globally about $5.3 billion in the initial period of the year.

Acharya, Engle and Richardson (2012, pp. 59-64), studied about the important function performed by the investor capital where the equity shares of the company is purchased and the active role is taken to monitor and guide the company's portfolio. The major characteristics of the investor capital has entry directly into the unlisted capital of huge growth of the company via the equity and investments related to the equity. These instruments that are specific are utilized by the investors and not by the banks where the capital of these investors is made to be better with the innovative companies of the finance compared to the investor capital of other. The significant non-financial benefits of the investor at present have the development in the managerial culture and the governance of new corporate rules are introduced. Various possibilities are opened by these resources for start-ups which includes the growth of innovative technologies along with the products of the expansion for financial support, working capital for other financial operations.

2.2.4 Equity received by Fintech Start-ups Backed by Investors

Erel et al (2015, pp.289-328) studied on the equity provided for the Fintech. All these subjects to the IPOs, corporate venturing and M&As. Various objectives are servers by these forms of cooperation which includes the development of the complementary services or products which enters into innovative international markets the economies of the production are exploited in this scale and the technological risks are shared between them. The financial constraints are at ease in these operations for target firms particularly for lesser targets.

Generally, a start-up combines with another firm to enhance its growth in the business and to fend off the competition. These works are conductive at high rate of the innovation, particularly, where the partners are targeted in the industries related to it. A better capital structure and growth prospects are seen in a company when there is successful M&A. It encourages the financing. Particularly, the professionalism specific to the investor of the corporate acts as a guarantee for the lenders who has the possibility to allow capital grafting which has conditions with less burdensome and it is imposed in the market (Keil et al, 2008, pp.895-907).

Scheuering (2014) reviewed theoretical models that predicts the response which take over the threats where the target firms of the managers enhances and leverages both the debt issuance and usage of the debt capital which helps to repurchase the equity. The interest expenses were reduced form the base of the corporate taxes where an incentive is created to acquire the companies to finance the transaction of M&A with the debt.

2.2.5 Fintech Start-ups Subjected to M&A to Receive Long-term Debt Financing

Lemieux and Jagtiani (2018) studied on the start-ups that are technologically advanced with the types of firms which relies on the fintech. Alt and Puschman (2012, pp.203-215) found that the firms of the fintech differs generally with the basis of the sector it operates with banking or insurance. The process of business it is supported which includes payments, financing, investments, financial information, cross- process or advisory supports. The customer segment also targets the private, retail & corporate banking. The interactions include consumer-to-consumer, business-to-consumer & business-to-business and market positioning.

The start-ups of the Fintech differ in the models of the business, propositions of the values, mechanism operations and growth paths. In this way rapid growth is expected where debt in long-term is required for various purposes than the firms with less growth. Slowing down of the start-ups of the fintech requires funding of the finance in their regular activities. The start-ups of the having rapid growth seeks funding for the investment in R & D (Research & Development). In consequent the specialization of the activities of the fintech has an effect on the structure of the finance.

2.3 Determinants of Capital Structures of Fintech Companies

Modigliani and Miller (1958, pp.261-297) proposed a theory based on the capital markets where the indifference is suggested between the equity & debt. In 1963, Modigliani and Miller again proposed a debt preference based on the deduction of the tax on the payments

of the interest in the form of tax shield, and the proposal initiated the debate on the capital structure. Kraus and Litzenberger (1973, pp.911-922) supports Trade-off theory where the debt is used as a choice of financing where the benefits and the cost are considered. In these firms the theory postulates the optimal capital structure which is attained through the evaluation of the benefits and costs of the additional debt.

Jensen and Meckling (2019) proposed the relationship of the principal–agent in the agency theory where the costs of agency is identified and is related to each other's mechanism of financing. In contrast to the ides of the previous tax shield Masulis and DeAngelo (1980, pp.3-29) introduced the tax credits investment where the depreciation and the allowances of the tax credits are depleted as non-debt tax shields. Myers (1984) highlighted the hypothesis order pecking is implied clearly in the study by Donaldson (1961, pp.292-305). Myers and Majluf (1984, pp.187-221) introduced the asymmetry information and the costs of agency related to debts. Here the costs of bankruptcy were incorporated first by Jensen and Meckling (2019). The assumption of pecking order theory is related primarily with the asymmetries of the information compared to the risk where the managers favour the equity of debt in financing when the capital is obtained externally (Myers and Majluf, 1984, pp.187-221).

Jensen (1986, pp.323-329) assisted the utilization of the debt where the flow of the cash is enhanced inspite of the possible distress financially. Contrastingly, Baker and Wurgler (2002, pp.1-32) proposed the choice between equity and debt which relies on the situation of the ongoing market. When the investors are optimistic interest is shown in the capital markets

where the company is provided with the equity where the debt is also chosen. In the presence of various theories there are emphasis which are distinct with optimal capture structures which is determined when the optimal mix is conditional with the financing patterns.

These theories are supported by the Empirical literature but the works exists on the firms that are non- financial extensively. These assumptions of theories are not identified with any differentiation between financial and industrial firms. Thus, theoretical assumptions are used which includes theorem of MM where the factors are explored which affects the financial choices of the bank.

According to Miller (1995), the proposition of MM may or may not be applied to banks. In empirical studies, Gropp and Heider (2010, pp.587-622) studied on the similarities between the financing mix of the determinants for the both financial and non-financial organization. The evidence of the banks of the Europe and US indicates the leverage of the bank where similar importance were shown with the factors related to the capital structure where the firms that are non- financial. It was studied by Frank and Goyal (2009, pp.1-37) for the USA, where a pattern similar to the patterns of the organizations that are non- financial and the secondary- level of importance are provided to the capital requirements.

The capital requirements are deemphasized by the findings which was congruent with capital structure of optimal bank. Flannery (1994, pp.320-331) proposed a capital structure model. The author investigated the intermediaries of the finances along with its capital structure. It includes banks, where the debt for the short term is proposed. A vital role is

played in the optimal structure of banks since the risk was less in nature. The role is significant because the banks acts as a financial intermediary, intensive securities for information and illiquid finance.

Flannery (1994, pp.320-331) discussed about the investment in the banks which plays an important role in the projects of infrastructure which acts as a pre- requisite for faster economic growth. Myers and Rajan (1998, pp.733-771) stated that, in few conditions it is not easy for the organizations to increase the financing externally even when the liquidity is greater because the banks are in a place to have an illiquid project based on finance.

Diamond and Rajan (2000, pp.2431-2465) established a model, which is defined as "the optimal bank capital structure trades off the effects of bank capital on liquidity creation, the expected costs of bank distress, and the ease of forcing borrower repayment." In several countries, various empirical studies were conducted where the determinants explore the capital structure of the bank determinants. In such conditions there was usage of various studies where variables were used which was same as that of non- financial organizations

Few studies suggested that the banks are distinguished by particular characteristics from the non- financial organization where the choice for financing is significant. Although the capital structure is adopted by the banks, the financing mix is selected and is influenced by variables that are identical. It includes tangibility, volatility of earnings, profitability, six of the banks and its growth. All these structures are determined in the organizations that are non- financial in the both developed and developing countries. On the basis of this empirical

literature, the theories of the capital structure are assumed by the endorsement of significant factors. It may have an effect on the financing mix of the organization (Sheikh and Qureshi, 2017, pp.24-41).

2.3.1 Profitability

The capital structure has many theories where various effects of the profitability of the organization is predicted based on the choice of equity or debt. For example, the positive earning of an organization is predicted by the theory of trade-off prior to the target kept by the taxes which has higher leverage ratios by which the tax shield is been benefitted. Thus, the positive association between the profitability and leverage is predicted. before taxes should target higher leverage ratios to benefit from tax shields. Hence, it predicts a positive relationship between leverage and profitability.

Frank and Goyal (2009, pp.1-37) studied on the usage of bankruptcy cost from the perspective of tax. Here a positive relation is maintained between the profitability and leverage. The authors also documented “that more profitable firms really do borrow more (not less).” Contrastingly, based on the asymmetry information, the theory of pecking order was suggested where the organizations having positive income must use internal finance, which does on provide any negative signal to the company. The debt is used and is followed by last resort called as equity. Therefore, the negative association of profitability of the organization to leverage is predicted using this theory. The theory assumes the free cash flow where the debt is used to reduce the availability of free cash to the utilization of manager because of

obligations provided to managers where the payment is made related to debt. The agency issues are mitigated between the managers and the shareholders which arises due to the shirking or opportunism of managerial system.

The profitability is concluded by many studies which is related negatively to leverage where the assumptions are endorsed based on the theory of pecking order. It includes studies conducted by Hoque and Pour (2018, pp.504-532). The empirical studies were conducted and it was limited. It was reported that the relationship between the profitability and leverage is negative.

Berger and Di Patti (2006, pp.1065-1102), studied on the data of commercial Bank, USA between the years 1990 to1995 where the hypothesis of free cash flow is endorsed and a higher leverage is related with efficiency with higher profit. Amidu (2007, pp.103-112) studied about the data from the banks in Ghana. The profitability was found to be negatively associated with the debt for the short- term and related positively to the debt for long- term.

2.3.2 Earnings volatility

In earnings volatility, the theory of trade-off was suggested and was found to be negatively related with the leverage of the organization. The unstable earning of the firm was expected to decrease the capacity of borrowing because of the debt issuance, where the organization obliges to make payments related to debts. If there is no stability in the earning, it can lead to distress financially. However, at times of negative earnings, the firm indebted had several benefits from the tax shield. The empirical study provided mixed results.

Titman and Wessels (1988) studied on the variable earnings and found no effect on the ratios of the debt. Similarly, an effect insignificantly to earn the volatility of the debt was reported. Shibru et al (2015) studied about the negative leverage of the earnings volatility which had an insignificant relationship. In contrasting to this, Sheikh and Qureshi (2017, pp.24-41) found about the earnings volatility which was related positively to the leverage of the book, where the predictions were inconsistent by using the theory of trade- off.

2.3.3 Tangibility

The physical assets were available in the organization which helped to predict the access to get more debt. The theory of trade off supported this argument along with the theory of pecking order. The Trade-off theory states that the organization having more assets that are tangible have inclined to receive more than the organization having reduced tangible assets. The Pecking order theory helps to predict the information asymmetry which helps to have assets that can be utilized as collateral.

Jensen and Meckling (2019) proposed the equity of under-pricing due to the information which is asymmetric and stated that the giving a debt which is collateralized can decrease the cost of agency. Long et al (1992) proposed that assets that is pledging to be collateral where several other problems are reduced which includes the selection that is adversed along with the moral hazard. Zingales and Rajan (1995) studied about the positive association between the leverage and tangibility for G7 countries in the cases of Japan where the leverage is increased to be proportional and the tangibility compared was higher. It is

because of the industrial groups in Japan, which operates with the main banking system under the system of keiritsu.

Gropp and Heider (2010, pp.587-622) also studies about the positive relationship between assets having collateral values along with several measures of leverage of the organization. Contrastingly, the tangibility is observed in various studies which can be related negatively to the leverage. For instance, Arko and Bokpin (2009) studied about the asset structure which has a negative correlation with the leverage.

Shibru et al (2015) studied about the relationship between the leverage and tangibility in the commercial banks of the Ethiopia. The findings revealed that the correlation was negative and also significant. Sheikh and Qureshi (2017, pp.24-41) observed that the tangibility is also negatively related with the book leverage of the organization.

2.3.4 Growth

Another significant factor that has an impact on the financing choice of the organization is the Growth potential. Based on the trade-off theory assumptions, the organizations having future opportunities receive less debt than the organizations with more tangible assets. The growth factor uses both agency theory and pecking order theory which helps in the prediction of the negative relationship between the leverage and growth opportunities.

Titman and Wessels (1988) observed that the opportunities of the growth potential is regarded as a value given to the capital assets by should not be collateralized. Anyhow, there

is no significant association between the leverage and growth which was found by the authors. Rajan and Zingales (1995, pp.1421-1460) studied on the ration of market-to-book which was used as a proxy for the opportunities for growth where the leverage with negative correlation was observed. On the other hand, a relationship which is positive between the leverage and growth opportunities in the case study was conducted in China.

A significant and positive effect of growth on the debt for the short term and there is a negative impact in the debt for a long- term was reported. The ration of market-to-book as proxy for growth where negative relation is stated to market and book the leverage was used. Similar to this, Shibru et al (2015) reported a negative and an insignificant association between leverage and growth. Sheikh and Qureshi (2017, pp.24-41) reported that the growth had a negative relation with a leverage which was studied in the commercial banks of Pakistan and it was assumed for the larger firms because of the cost of transaction that was lower and was related with the option of also found that growth was negatively related to book leverage in Pakistani commercial banks and assumed that was because of larger firms having lower transaction costs related to each financing option.

2.3.5 Bank size

Based on the theory of trade-off huge organizations have more power to borrow, and therefore has huge gearing ratios. When the size of the organization is larger, the organizations are more diversified and are less vulnerable to financial distress. Thus, the size is very important because of the bankruptcy of inverse proxy. The theory of Pecking order used in

the larger organization with internal resources that are sufficient and relies basically on the resources for the purposes of fundings. Therefore, a negative relationship is predicted between the leverage and size. According to transaction cost economics (Williamson, 1988) and agency theory (Jensen, 1986, pp.323-329) huge firms had ownership which is diluted and its usage is supported for the debt which mitigates the transaction and agency costs. The extra monitoring by the creditors were assumed and the obligation contractual to it reduces the opportunism of the managers.

Rajan and Zingales (1995, pp.1421-1460) studied about issuing the cost of equity or debt which is associated with the size of the organization. Furthermore, smaller firms were argued and is leveraged the larger firms because of borrowing from the banks in short- term. Mixed results are provided by the empirical study. A negative association is observed between the size and the debt for short- term. It was concluded that there is positive relation between the leverage and the size in the case of countries with G7, except in Germany which is negatively related with the leverage.

Chen (2004, pp.1341-1351) observed an insignificant and a positive relationship between leverage and size in the organization in China. Sheikh and Wang (2013) conducted a study in Pakistan and found that leverage in related positively with the size. The empirical studies showed mixed results. Amidu (2007) found a positive correlation between the size of the ratio of total debt and short- term debt. Gropp and Heider (2010, pp.587-622) conducted

a study on the banks of Europe and USA and found positive correlation between the book leverage and market.

Similarly, Shibru et al (2015) found a positive correlation between the leverage and size. Sheikh and Qureshi (2017) conducted a study in the conventional and Islamic banks in Pakistan and observed a positive correlation between the book leverage and size of the bank.

Hoque and Pour (2018, pp.504-532) conducted a study on the determinants that explores the structure of the finance, where the country- level factors and size of the bank was considered to be determinants. Bashir et al (2020, p.e0242412) used external factors as a macroeconomic determinant in the study of the capital structure of the banks. Mokhova and Zinecker (2014, pp.530-540) studied on the inflation rate and GDP growth which is regarded widely as the external factors for capital structure designing. Thus, the effect of the indicators that are macroeconomic had a control for the decisions of the capital structure where the growth of GDP was seen in the present study and inflation is seen in the control variables.

2.4 Fintech Ecosystem

A significant role is played by the Startups in the growth of the ecosystem of the fintech. This initiative owes to the investments in digitalization and technologies which is applicable easily to the finance sector. The start-ups are developed and is considered to be significant in the performance of the Fintech and thus many countries support the fintech financially Furthermore, attention is paid in these companies to some problems where the investments to be more successful. For instance, it is significant for the entrepreneurs to have

enough knowledge about the industry. Anyhow, the satisfaction of the customer is considered to make the investments. Contextually, it is important to provide an explicit definition of the expectations of the customer. The technological economic indicators of the success of the start-ups of the fintech in the United Arab Emirates was also investigated. The expectations of the customer were concluded to be met in such situations (Tsanis 2021).

Muthukannan et al (2021, p.102403) investigated Fintech ecosystems in Indonesia and the start-ups were found to focus on the development of the technology. In the system of fintech, financial institutions play a major role. For the success of the fintech, the system must be trusted by the users or else the developed ecosystem cannot be preferred by the customers. The study results recommended that the scalability of financial service delivery has been impacted positively by the mechanisms of decentralization, democratization, and localization of Fintech platform. However, it has been provided the significant implications for policy makers who are seeking for providing and governing the Fintech revolution and Fintech practitioners to facilitate the financial services.

Hornuf, Stenzhorn and Vintis (2022, pp.1662-1689) studied the start- ups of the fintech where the ecosystem of the fintech is considered to be sustainable. The continuity of the system is endangered in the present condition. The development of the financial institutions will enhance the reliability of the ecosystem of the fintech. Furthermore, it was found that, the investors who are oriented towards sustainability pledges huge amount of money where the campaigns are invested in more number compared to the ordinary investors. The findings showed that the

crown investors who are oriented towards sustainability considers about non- financial returns. The study contributes more to the investing which is socially responsible, investment of the motives of the individual and experiences that has an impact on the decision of the investment.

Turcan and Deák (2021, pp.126-139) studied on the innovation and transformation of the financial ecosystem. The study explored the relationship between fintech and the management. It also contributed on the emergence of Fintech paradigm and the Fintech ecosystem. The findings revealed about the typology called as comfort zoning. The operation that are efficient and effective of the companies is helpful in the successful development of the financial ecosystem.

Muganyi et al (2022, pp.1-20) reported the fintech ecosystem and its effectiveness in China. It was found that the performance is enhanced in the financial institution which is contributed of such purpose. The findings showed that the development of the financial sector is supported by the fintech. In the financial firms of China, the access to loans, deposits and saving are enhanced. The fintech organization is raised by using the regulatory technology of the fintech regulation which is important to increase the outcomes of the firms. Therefore, the regulators must follow policies which can balance the growth in the fintech system and the risks are also mitigated.

Ascarya and Sakti (2022) studied the model design of the micro-fintech for the Islamic institutions of microfinance in Indonesia. The performance of the financial ecosystem is

determined and considered to be important for its reliability. The findings of the study showed the requirement of tools used in micro- fintech, which includes payment, digital banking, financing peer- to- peer (P2P), & e- commerce. These are developed using BMT (Bank mobile technologies) by associating with the fintech company that is already existing, and can be applicable in both online & offline approach.

Daud, Khalid and Azman-Saini (2022, p.102667) identified the stability of the finance in the market which is considered to be essential for the growth of the ecosystem of the fintech. A crucial role is played by the institution of the finance in such process. In this study, the relationship between the financial stability of the fintech in sixty-three counties was investigated from 2006 to 2017. The findings showed that, financial stability can be promoted by fintech through data technology, cloud technology & artificial intelligence. The study also shows the impact of Fintech on the financial stability of the organization.

Michael and Korolevska (2021, pp.38-69) studied on the rules that are determined by the states which plays a significant role in the financial ecosystem. Competitive situations and inspection system that are effective are created by the states which plays a major role in the financial system. A significant role is played by the procurement law and procurement authorities in the Fintech development. The ecosystems and the platforms of the fin tech are developed by the public acquisition. Therefore, emergence of these types of Fintech encourages the compliance with the rules of the community at an international level.

Senyo et al (2022, pp.112-127) conducted a case study to generate theory by interacting with the organization in Ghana and other countries in Africa. In this study, the financial inclusion was designed which helps in the working of incumbents and new entrants. Three models were proposed from this study, which includes the process of having financial inclusion in countries that are developing in terms of practices, relationships and actors.

Chorzempa and Huang (2022) reviewed on the appropriate investment in the regulation & innovation of the fintech ecosystems in China. The development of Fin- tech has helped China to get transformed from a cash- based country to a global fintech leader. The study revealed about the reforms taken to overcome the competition lack in financial incumbents and the mechanism is also important ensure supervision and regulation which is enough for the innovation methods in the financial institutions.

Muryanto, Kharisma and Ciptorukmi Nugraheni (2022, pp.239-252) studied on the prospects and challenges of Fintech in Indonesia. A conceptual framework was designed to initiate and encourage the growth of the economy of the country. The findings revealed the challenges faced by the fintech economy which includes regulations that are inadequate, permit procedures that are complicated, fintech misuse which leads to terrorism financially, occurrence of rampant fintech business that are illegal, disputes between the consumers in the fintech sector. Constructions are required in these challenges where the legal framework was comprehensive because of the Fintech act.

Xue, Bai and Xiao (2022, pp.3898-3914) examined the relationship between fintech systems and corporate green technology innovation. An effective auditing system should be considered to increase the performance of the fintech system. The findings revealed that innovation of green corporate technology can be promoted significantly by Fintech. This promotion effect is important for the places in the eastern region which includes enterprises owned by the state, invention patents and environmental uncertainty which is lower.

Merello, Barberá and De la Poza (2022, p.121290) examined the key drivers of an effective fintech ecosystem. The results of their study highlighted the importance of effective regulations in this process. The study explicitly shows that the CSR report & the size of the company positively drives the Fintech companies because of the market value. The position in the green rank is related negatively to the market value.

Murinde, Rizopoulos and Zachariadis (2022, p.102103) reviewed on the enabled services of fintech which focuses on the risks and opportunities for banks. Statistical data were recorded regarding the bank level from 115 countries which acts as an indicator in the change in the banking system in this period of Fintech. The findings suggest that the banks may be replaced by the lenders of the Fintech because own platforms of fintech are developed. The study also shows about the infrastructures, regulations and frictions based geopolitical areas which designs the banking in the future.

Mainardes and da Silva Sousa (2022, pp.671-691) studied about the important role played by the customers in the fintech ecosystem. Customer demand is important for the

successful development of an ecosystem. The findings suggests that the trust, personal relationships and internal policies construction influences the client satisfaction in the firms which also influences the recommendations of the Word- of- mouth and loyalty of the customer.

Gunawardane (2022, pp.255-269), studied on understanding the experience of the consumer on the basis of the total journey of the customers. In the management of the financial services, customer journey and the issues were identified regarding the customer satisfaction and experience. Other interactions included regarding the customer journey are the service quality, trust of the customer, loyalty of the customer, commitment of the customer, retention of the customer and perceived value of the customer. Within this framework, customer expectations should be understood correctly.

Chouhan and Saraswat (2022) studied on the financial products that are innovative and at the same time that satisfy customers. This helps to create an effective fintech ecosystem. Sometimes, financial products fail to meet the expectations of the customer by placing the fintech ecosystem continuity in danger (Chouhan and Saraswat, 2022).

Aysan et al (2022) investigated the strategies of the fintech in the banks of Islamic countries. In this study the perspective of the banks were clarified according to digitalization where right decisions are taken by the banks according to the strategies of digitalization. The results show that, more implementation regarding fintech must be made in these banks.

Energy and capital investor is necessary in the fields of the development of the financial technology where counterparts are required for traditional banking system.

Dzogbenuku et al (2022, pp.113-136) studied on the experiences of digitalization from various customer groups. The study contributed about the positive relationship between the satisfaction and security, ease of satisfaction and convenience which is related with the payment systems in the markets that are emerging. Trust is emerged between the payment experience of various groups along with the satisfaction of the customer. The findings suggests that experience of the customer is positive related with the digital payment systems.

2.5 Fintech Business Models

Accenture (2016a), stated that since 2010, more 2,500 companies were invested with $50 because the fintechs defines the process where people strive to spend, move, invest, borrow, save, store and protect the money. The business models of the fintech were identified and implemented by the startups which includes insurance services, capital market, lending, crowdfunding, management of wealth and payment. In the following the working mechanisms, propositions and fintech firms in the business models are described.

2.5.1 Payment Business Model

Compared to the financial goods and service, payments are simpler. The firms that focus more the payments are able to have customer at a decreased cost. In the terms of adoption and innovation, the new payment capabilities rapidly operate. The fintech payment system have two markets namely the retail and the consumer payment and the corporate and

wholescale payment. In the daily basis, the frequently used financial services are Payments, which is one of the financial services that are least regulated.

Mellon (2015) stated that the fintechs of the retail payment and consumer includes mobile payments, peer-to-peer (P2P), mobile wallets, remittances, foreign exchanges, digital currency & real time payments. The experiences are improved by these services where the customers view the experience of the payments in the terms of accessibility of multi-channel, convenience and speed. These payment services using mobile are secure and convenient where the mobile devices are used to be familiar business model. The payment approaches include phone bill charges, websites, QR code, more card reader & payment without using credit card companies (Li, 2016). NFC is the widely used payment mode which includes the applications such as Samsung pay, apple pay & Google wallet. The most widely known - based mobile payment applications are Google Wallet, Apple Pay, and Samsung Pay. P2P payment services are another familiar payment for business model.

2.5.2 Wealth Management Business Model

One of the major wealth management business models in the fintech companies is the automated wealth managers which includes robo- advisors where financial advice is provided for the price fraction of a advisor in real- life. Algorithms are used by the robo-advisors where a asset mixture is suggested to be invested in the characteristics and preferences of the customer. The changes between the behaviour of the consumer and demographics are benefited by the business model where the strategies of the passive investment and automation

is been favoured where the structure is transparent free and simple and the economics of the units are permitted to no or low investments (Holland FinTech, 2015).

CFA Institute conducted a survey in April 2016 where many participants concerned more about the characteristics that are disruptive in these fintech companies which includes the wealth management sector (Sanicola, 2016).

2.5.3 Crowdfunding Business Model

The network of people is empowered by the fintech's crowdfunding, where new products are created and people are asked to control such products. Three parties are involved in Crowdfunding which includes the initiator of the project, the funding required by the entrepreneur where the supporting is interested in the project or cause and the organization moderates & facilitates relationship between the initiator and contributors. The organization enables and moderates the information access to various funding and initiative opportunities for the growth of goods and services. The crowdfunding based on rewards, crowdfunding based on donation, and crowdfunding based on equity are the most familiar crowdfunding business models. It an attractive option where many creative projects and small business are opted for it. The interest is charged in this event in the amount of crowdfunding where the rate of interest is set by the borrower which are comfortable and the refund is guaranteed in the stipulated period of time (Mollick, 2014). The fund can be returned from the project supporters where some types of rewards are given typically. Crowdfunding based on the Donation is a source to money for a project charity which is requested by the donators where

the money is contributed to it. Some recognitions based on monetary is received by the funder. The crowdfunding based on equity is an option appealing for medium & small sized companies where the requirements for the capital ratio is increased on the conventional banks which leads to the SMEs that are prioritized less by those banks.

2.5.4 Lending Business Model

In fintech companies, the P2P business lending and the P2P consumer lending is another effective trend in Fintech. The Fintechs' P2P is allowed by the businesses where the individuals are allowed to borrow and lend to one another. The efficient structure, the fintech lending of the P2P are capable to provide interest rates that are lower and the lending process are improved for the borrowers and the lenders. A significant and subtle distinction are seen in the bank where the fintech are involved technically by lending themselves where the lenders are matched with the borrowers and the fees are collected by the users. In this type of distinction, the fintech organizations are lending P2P presently where the capital requirements are met where the total amount lending is been influenced. Whereas, the banks are limited to lend debts (Williams-Grut, 2016). The fintech innovation in lending manifests itself in the use of alternative credit models, online data sources, data analytics to price risks, rapid lending processes, and lower operating costs. Anyhow, the behaviour of the interest depends on the failure and success of the business model, where the firms does not have control over it. The crowdfunding and lending of P2P varies in purpose. The crowdfunding of the primary purpose is based on the projects where the lending of P2P is consolidated with debt and refinancing

of credit card (Zhu et al, 2012). Examples of Lending fintechs include RateSetter, Zopa, SoFi, Prosper and Lending Club.

2.5.5 Capital Market Business Model

The capital market business model involves innovative fintech business models which has access on the broad spectrum of the capital market, which involves risk management, research, trading, foreign exchange & investment. Trading is the major area where the capital market fintech takes place. The traders and investors of the Trading Fintechs allows to connect with others, share and discuss knowledge and the orders are place to buy and sell the stocks and the commodities and the risks are monitored in the real time. The other area of the capital market business model in fintech in the transactions of the foreign currency. The transactions of the foreign currency are a service which is been dominated by the institutions of the finance. Fintechs reduces the costs and barriers for SME and individuals, because of the transactions in the foreign currency all over the world. Live pricing is seen in the users where the funds are received and sent in different currencies which is secured in real time through mobiles service. This service is offered by the Fintechs where the cost is lowered through the methods of the payment which was popular among the businesses and clients. For example, the fintech of capital market includes, Xoom, Estimize, Magna, eToro & Robinhood.

2.5.6 Insurance Services Business Model

In the business models of Insurance services, direct relationships are enabled by the fintechs between the customer and the insurer. The data analytics was used to match and

calculate risks. When the customers' requirements are widened, various products are offered to meet their requirements. Thus, healthcare, car, causality or the life insurance are included. The billing processes of health care is streamlined. The business model of insurance services is the most accepted conventional insurance providers. The data collection is increased with the help of the technology where the insurers allowed to expand from traditional model to modern sources and thus enhances the risk analysis. The fintech of the Insurance services that disrupts the insurance industry includes Sureify Labs, The Zebra, Ladder, CoverFox & Censio.

2.6 Decisions on Investments for Real Options and Fintech Projects

Morgan (2016), stated about the launch of In-Residence program regarding the startups of Fintech. The employees are allowed to work side by side to enhance their skills of innovations which helps in the faster operation of the banks. These types of programs help in the development of fintech. The survey conducted in the study describes the investment of financial institutions towards Fintech in several ways, which includes, technology companies which partners with the fintech, fintech services outsourced from the fintech, venture capital provided to Fintechs, acceleration of fintech startup, development of internal fintech and obtaining fintech. The fintech startups collaborate or compete with the financial institutions for the development of businesses and for the protection of venture capital.

Accenture (2016b) describes about the entire fintech investment in U.S., in which the venture that are collaborative is favourable where the investment is enhanced from 21% to

35% in the years between 2010 to 2015. Besides, in Europe, there is a decline in the investment of the collaborative fintech from 38% to 14% in the years between 2010 to 2015. The trends are opposite and thus attributes to different regulation in banking in these two different regions. New businesses are established by the startups when the regulations become more favourable and collaboration with the institutions are reduced.

2.7 Corporate Governance and Leverage

2.7.1. Board Size and Leverage

Balla and Mateus (2002, pp. 192-201) conducted research in Hungary on the capital structure. In this study the researchers found a connection between the size of the company and the leverage. The presence of small boards helps to generate and increase financial leverage. Thus, the size of the board has an effect on the leverage.

Wen, Rwegasira and Bilderbeek (2002, pp.75-83) studied about the relationship between attribute of the board of the organization capital structure of the organization. The findings suggests that managers face less leverage on the finance when the corporate governance is stronger. The approaches indicated the positive relationship between the financial ratios and size of the organization.

Alabdullah et al (2018) investigated the feature of the board which has an effect on the growth of the organization. The larger organizations limit the risk taken by the firms which avoids the increase of debt to a certain level. The findings of the study showed that enhancing the size of the board has a negative effect on the financial leverage. Therefore, financial

leverage is greater when the size of the board is smaller. Furthermore, the study contributes the evidences of the countries in the middle east especially in the service forms of independent boards and capital structure.

Tulung and Ramdani (2018) studied on the connection between the size, independence and performance of the board. The results showed that the size and independence of the board has an effect on the performance of the board. The findings revealed that there is a positive relationship between the size, independence and performance of the board.

Wasiuzzaman (2019, pp.1375-1399) studied on the irregularities of the information which is considered to be a serious issue in the case of larger organization than the smaller organizations. It describes the positive relationship between the size of the company and the debt. Large organizations are in a better location which is riskier in the diversified operations. The budgetary concerns are less in the larger organizations.

Dirman (2020, pp.17-25) studied about the financial distress This includes free cash flow, company size, leverage, liquidity and profitability. The findings of the study shows that profitability has a positive effect on the financial distress whereas the size of the organization has a negative effect on the financial distress. The other variables such as free cash flow, leverage and liquidity does not have any effect on the financial distress. The study concludes that there is an increase in the scope of an organization when there is a decrease in the financial distress.

2.7.2. Board Independence and Financial Leverage

Vafeas and Vlittis (2018, pp.505-518) studied on the independent board directors. The managerial management is supported by the increase in the percentage of the directors who are independent. It is considered to be more valuable among the shareholders where negative effect is mitigated which is caused by the level of the financial leverage and investment. The independent directors are investigated based on the effect of valuation effects, likelihood and consequence of long term. The findings have extended the value of independent directors to managers of the shareholders and to monitor the conflict between the customers and the shareholders.

Cavaco et al (2017, pp.106-121) investigated the relationship between the performance of the organization and the Board independence. An empirical strategy was developed where the fixed effects of the firms and the fixed effects of the director is estimated separately. The independence of the board is seen as an effect of the performance of the corporate because of the two forces opposite to each other. The two effects are related functioning of the board and process of nomination. The findings reveal that independence is correlated positively with the fixed effects of the individual whereas in the board functioning the independence is correlated negatively with the performance of the firm where there is a deficit in the information which is experienced by the members of the board.

McCabe and Nowak (2008, pp.545-566) conducted investigated the director's view on the procedures of the management in an Australian company. The importance of the role

of the independent director with the composition of the board directors were examined. The findings revealed that the long-term independent directors who have more knowledge and skills about the companies where the firms are enabled to reduce the scandals of the corporate and helps to increase the values of the organization.

2.7.3. CEO Duality and Leverage

Pham and Nguyen (2019, pp.387-409) investigated the effects of the governance mechanism of corporate on the leverage which is related to profitability in the emergence of the organizations. The financial choices of the organizations are determined by the CEO. The findings reveals that the impact of CEO duality on the financial leverage where the association of the profitability is considered to be negative. Sometimes, in CEO duality money is borrowed and is used for the projects which can be non- profitable to the organizations.

Teti et al (2017, pp.947-971) studied about the mechanism of the corporate governance which influences the acquisitions and merger performance. Regression analysis was used to examine 1596 acquisitions in the completed US market in the period between 2009 to 2013. The findings show that the CEO duality has an effect on the acquisitions returns. Therefore, there is a positive influence on the mechanism of corporate governance over the completed acquisitions.

Chau and Gray (2010, pp.93-109) investigated the association between the disclosure and levels of the ownership along with the board independence which has an influence on the chairman independently. The findings reveals that independent executive is positively related

with the voluntary disclosure. An autonomous executive has the potential to deal with the firm without any limitations but a special knowledge is required for such role.

2.8 Effect of Leverage on Firm Performance

Bae, Kim and Oh (2017, pp.29-40) studied about the effect of financial leverage in the performance of the organization. The association between the performance of the corporate and the financial leverage have two opposing sides which are contradictory. It can be both positive and negative. The association can lead to financial distress or sometime in a positive condition in the prospects of the organization. Specifically, the outcome of the organization uses higher leverage which helps in the increasing the activities of the marketing which can be expensive for an organization. Anyhow, the activities of the marketing strategies have positive influence in evaluating the organization and reduce the effect of the financial distress.

Ghardallou (2022, p.3513) examined the effect of the sustainability of the corporate in the financial performance of the organization. The effectiveness of the characteristics of the CEO is investigated which is linked with the financial performance of the organization. The findings shows that the CEO who has a longer tenure play positive role in performance of the organization. The structure of the debts hampers the performance of the organization, where the debt finance used by the organization can compete with the equity required by the organization during financial crisis.

Iqbal and Usman (2018) conducted a study to identify the association between the performance of the firms and financial leverage. The study was conducted in a Textile

company in Pakistan. The findings shows that the financial leverage has positive impact on the result on the asserts of the company, whereas the financial leverage has negative impact on the result on the equity of the company. When the debt is more and the rate of interest is high the equity value is decreased and has a negative effect on the performance of the organization. Whereas, the debt is positively related to the result on asserts of the organization. Therefore, the financial leverage has a positive effect on the performance of the organization when the equity amount is not exceeded by the debt amount.

Vithessonthi and Tongurai (2015, pp.1-29) studied on the effect of firm size on the association between operating performance and leverage. The study was conducted at Thailand especially during the financial crisis years between 2007 to 2009. The findings revealed the magnitude and the leverage effect while working on the performance of the firm where the size of the firm was considered to be conditional. Furthermore, the leverage had a negative impact on the performance of the large sized firms and positive for smaller firms. Therefore, the firms in Thailand have a negative association and idea of having debt is less compared to the cost needed for the firms. Therefore, a greater number of debts and high rate of interest decrease the value of the organization which leads to decreased performance of the firms.

2.9 Transition to Fintech in Developing Countries

Alshater et al (2022) conducted a study which reviewed about the development of Fintech in the Islamic countries between the regions of 2017 to 2022. A hybrid approach is

adopted in this study where the content and bibliometric analysis was integrated and research trend of the Fintech industry of the Arab countries were revealed. Scopus database was used and eight documents were retrieved and the VOS and RStudio viewer was used for data analysis. The output of the research was categorised using content analysis in Fintech companies which was directed to different streams. In this study the Fintech companies were cointegrated into the financial banks which was beneficial for the businesses in small scale. The fintech adoption also enhances the financial inclusion which helps the government to conquer crisis and SDG can be achieved. Anyhow, lower literacy in finance and no proper regulation can affect the growth of Fintech in the developing countries.

2.10 Development of Fintech System in Different Countries

Due to the financial crisis, there was emergence of FinTech 3.0. in the countries like Africa & Asia and also in western countries. The development of Fintech has helped in the economic development.

In Asia, about US$ 12 billion dollars have been invested in the year 2014 for the development of Fintech. In the countries like Singapore and Hongkong three accelerators of Fintech were established within one year and the countries were considered to be the largest contributors of Fintech globally. In Australia, a co-work space was dedicated in the fintech development. In Korea, an expanded version has been established for the development of Fintech which is called as London's prominent FinTech co-working space. In Kuala Lumpur Asian regulators were initiated which is one of the strategies of the fintech. Various factors

are attributed towards the growth rate of the market. In Europe and US, IT depends on the traditional bank which is lagged behind. Since there are more corruption in banking system owned by the state, the public has started to accepted the alternatives which is offered by the non- banks. Compared to other Asian regions, the infrastructure is less extensive in US and Europe. In Europe there are about 62.5 branches per 100,000 people whereas in other Asian regions there are about 12.5 branches. Therefore, the financial services based on mobile is comparatively attractive. As a result, mobile-based financial services and products are comparatively more attractive (Setiawan and Maulisa, 2020).

CHAPTER III:

THEORETICAL FRAMEWORK

3.1 Capital Structure

Any firm's capital structure has been categorized into equity and debt. Depending on the associated costs with financing and the cost of capital, investment decisions of a firm have been made. It can be issued debt and equity in different ways and thus the complexity level is being increased with issuances further. The preferred or common stocks is the most common equity form and the increased cost of capital is known to be the new issuances of equity (Modigliani and Miller, 1958, pp.261-297). Because of lower interest rates than banking loans, corporate bonds are considered less expensive in debt issuance. The weighted average cost of capital (WACC) is utilized when determining the cost of capital.

3.2 Irrelevance Theory

Two different versions of the Irrelevance theory were created by Modigliani and Miller (1958, pp.261-297). When the market is efficient, version one is true only which means no bankruptcy or transaction costs, symmetrical data, and no taxes resulted. Based on proposition one, the value of a firm does not rely on its capital structure in the efficient market (Modigliani and Miller, 1958, pp.261-297). The same value results for an unleveled firm and the levered firm. Thus, there is no value and no effect for a firm with an increased or reduced debt-to-equity ratio. The current value of future cash flows is determined by the value of a firm. In the second version of the theory, the increased leverage asserts the increased cost of equity

(Dhaliwal, Heitzman and Zhen Li, 2006, pp.691-723). Generally, if the cost of equity is more expensive than the cost of debt, the debt levels should be increased by firms to gain the advantage of the lower rate. The cost of capital cannot be reduced in firms with an increased debt-to-equity ratio based on the second proposition of Modigliani and Miller (Nicodemus and Wamugo, 2017, pp.84-105). Therefore, it will remain unchanged the cost of capital and increase the amount paid on equity with the increased borrowing.

For proposition one without taxes, the firm's value is constant irrespective of the capital structure. The propositions of Modigliani and Miller were modified to incorporate the tax considerations and the markets are not efficient always (Levati, Qiu and Mahagaonkar, 2012, pp.693-716). The present value of the interest tax shield will have a levered firm that would be the same value as an unleveled firm based on proposition one with taxes. If taxes are incorporated, interest payments are tax deductible for debt in the firm. Since interest is tax deductible, more interest will be paid if more debt a firm is taken which means the overall paid taxes of a firm will be reduced. The value of a firm will be increased with the outcomes from lower taxes that lead to more cash left over. It is a reasonable assumption that the interest expense increases with the increased debt (Blanchard, 2019, pp.1197-1229). Instead, the return value of a firm would have to be paid to equity holders without any expenses on interest and debt. It would have to be paid to equity holders or debt holders irrespective of debt or returns. Thus, a firm does not receive a tax shield as the payment to equity holders is not tax deductible, unlike payment to debt holders.

The financial leverage of a firm is correlated with the cost of equity with and without taxes in proposition two. However, the cost of equity is less sensitive to the changes of debt-to-equity ratio with the tax shield (Michalkova et al, 2021, pp.276-295). In proposition one, the simplistic view is criticized for not being anchored in reality. For example, the decision-making of a firm value would be much more complex and not able to be reduced to quantifiable calculations when the market is not efficient in reality. Based on proposition two, the costs of financial distress and bankruptcy costs are being ignored. The firm's value has been improved with the increased tax shield and debt only (Cao and Whyte, 2023, pp.1716-1735). The faultiness of the assumption is acknowledged by Miller and the firm has been exposed to bankruptcy when a firm has negative results over a few years to eradicate the tax shield.

3.3 Agency Theory

It is supposed to act in the firm's interest and the shareholders. The targets and relations between shareholders and management can be challenged possibly upon deciding and changing the capital structure. The best ways of a firm's financing like utility maximization should be known by managers through the information asymmetry. The agency issues can be caused potentially by equity issuance as demonstrated in the Pecking order Theory (Jensen and Meckling, 2019). Some of the agency relationships and costs can occur. The agency relationship is defined as a contract which allows engaging one or more persons (principals) with another individual (agents) to delegate some decision-making authority (Jensen and

Meckling, 2019) (Figure 3.1). Since the managers will always act in the equity interest, the agency issues would disappear gradually if the management of firms is handled by large shareholders or owners. Some control is left to the agent by the principal in the occurrence of costs. The sum of costs that occurred between the agent and the principal in the contracts is demonstrated as the agency cost. The agent would be made in their interest by ensuring the welfare is being covered by communication and bringing incentives by the principals to some extent. It makes easier to consider the agent's work with an establishing cost based on the development of monitoring procedures. Sometimes, the agent would be interested in gaining and establishing the trust of the principal while bonding costs created by the expansion of resources (Bendickson et al, 2016, pp.174-193). These costs would occur by establishing the core of the agency relationship for building mutuality.

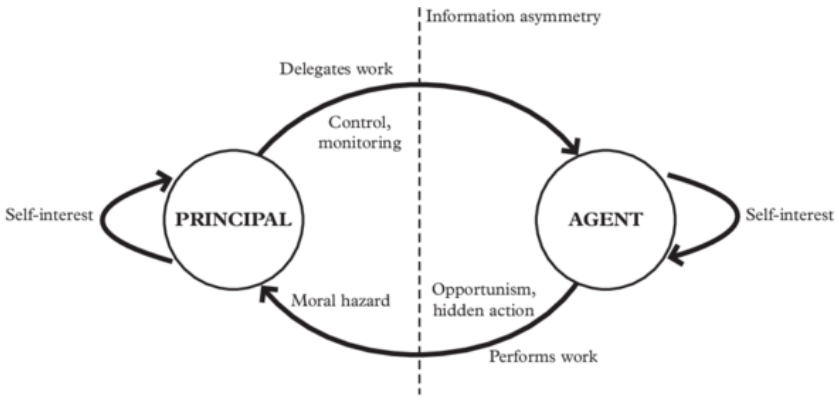

Figure 3.1

Agency Theory (Source: Snippert et al, 2015, pp.569-586)

The decision-making regarding welfare maximization for a firm has been limited in situations where the projects are abandoned owing to the old shareholders' interest which

might reduce the managerial revenue (agent). A residual loss creates an equivalent to the revenue loss. The agency costs have been affected by the capital structure. The hypothesis is recommended that the agency costs of outside equity are reduced and the firm value is increased with the higher leverage or a lower equity or asset ratio by fostering the managers to act more in the shareholders' interests (Shapiro, 2005). It can create agency costs between debtholders rather than the equity holders by higher leverage owing to the increased risk of bankruptcy and financial distress. Therefore, agency costs would be incurred in terms of additional interest expenses for an outstanding debt.

The hypothesis of agency costs has been tested in the banking industry and the results are aligned with the hypothesis. The higher leverage has resulted in increased profit efficiency in the banking industry even though there is a risk of agency costs with debt holders (Harvey, Lins and Roper, 2004, pp.3-30). Thus, the agency costs will be lower with the increased financial leverage resulting in reduced issues between the shareholders and the agent.

3.4 Trade-off Theory

The trade-off theory is contradictory to the higher debt levels' endorsement according to Modigliani and Miller (1963, pp.433-443). The complex decisions have been faced by financial managers with the trade-off between the cost of financial distress and receiving a tax shield from debt (Jarallah, Saleh and Salim, 2019, pp.204-211). However, the financial decisions regarding equity or debt will be differentiated in industries as they rely on different factors. To protect the profits from taxes, higher levels of debt may have been included for

tangible assets in the safe robust firms with higher profitability. It is not the most efficient way to issue debt for a firm with lower profits and more intangible assets (Lim, Macias and Moeller, 2020, p.105873). It is required to build the debt level appropriately based on trade-offs before affecting the value of a firm negatively and declining owing to the increased financial leverage. The organization needs to be refinanced, issued equity or reduce the investments in financial distress (Figure 3.2). However, all these factors would reduce the value of a firm.

The cost of drawbacks for financial leverage is the cost of financial distress. The promise of debt payment ultimately resulted in the issuance of debt. If the firm or a company is unable to pay the debtholders when unexpected things happen, thus the firm would be insolvent or bankrupt. The debt payments will try to cover the bankruptcy that comes with penalties that should be forced to pay by a firm while the remaining of the firm's retained earnings from selling assets. The authors criticized the theorem of Modigliani and Miller due to that it does not include the bankruptcy costs (Ahmeti and Prenaj, 2015).

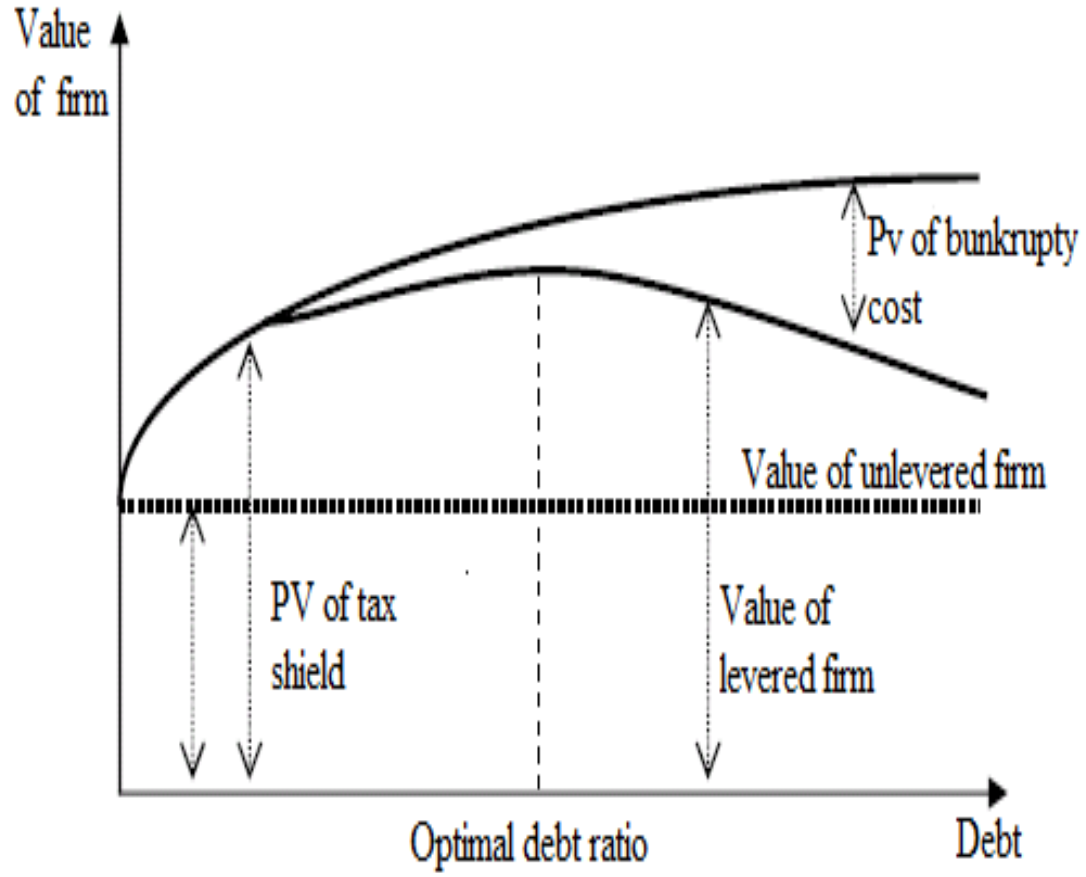

Figure 3.2

Trade-off Theory of Capital Structure (Source: Ghazouani, 2013, pp.625-636)

However, the capital structure of a firm has been optimized based on the trade-off between bankruptcy penalties and benefits of tax-shield by using the models in which a functional relationship should be there between the size of the debt payments and maximized firm value. Another considerable factor is the organisation's reputation and associated risks. Warren Buffer emphasized the importance of establishing a reputation and performing decision-making with integrity (Worden, 2003, pp.31-44).

In recent years, greater interest has been attracted from stakeholders regarding the reputational risks that constitute disbelief or beliefs in the actions of a firm. For example, banking organizations faced prominent losses in 2007 because of inefficient decision-making and internal frauds that caused scrutiny from the public (Miller and Rosenfeld, 2010, p.807). It requires making decisions that should contemplate increasing the debt ratio or some stakeholders might not be interested in making investments in the firm and not consider the firm's future. The increased debt level of a firm is unjustified with the disbelief that will lead to the reduction of investment opportunities and future losses in the organization.

With the increased debt amount, the firm's value is increased until reaching the optimal debt level in the trade-off model of capital structure. Instead, the firm's value will be reduced when a debt level is increased beyond an optimal point (Jungherr and Schott, 2021, pp.110-132). If the present value of the tax shield is closely related to the risks associated with the optimal debt ratio, the value of a firm is at its highest point and it will decline due to the financial distress risks. According to Johansson and Filip (2022), the trade-off theory significantly impacted the firm's value through its capital structure and increased the value with the increased debt levels to a certain point based on the tests conducted in the Fama-French industries. The study also demonstrated that the firm's value is increased by 5.5% by increasing the debt levels from 0 to 30% (Paseda, 2016). It is required to make a note that the tax shields would be effective when a firm generates positive results. Thus, the larger debt amounts might not be effective for weaker firms and instead, they should be recommended to finance the amount through the equity. The trade-off theory is unable to explain why

organizations perform well with no debt levels (Hackbarth, Hennessy and Leland, 2007, pp.1389-1428). The firm's value could be improved with good credit ratings based on the Trade-off theory which appears to finance its operations with internal funds.

3.5 Pecking Order Theory

Various existing capital structure theories were considered to establish the Pecking order theory which is the most recognized version upon different modifications and expansions. The earlier theories of financial decisions recommend that organizations embrace the projects of Net Present Value (NPV) irrespective of the financing (Bierman and Smidt, 2012). Therefore, the projects with positive net present value (NPV) should be considered for investments by the firms. External or internal financing could be implicated through the financing. The asymmetric information concept is considered in the pecking order theory (Fulghieri, Garcia and Hackbarth, 2020, pp.961-996). The changes in stock price owing to decisions and announcements taken by managers who should know about the real value of prospects, assets, and risks of firms than stakeholders and investors do. The external or internal financing could be chosen by the asymmetric information (Figure 3.3).

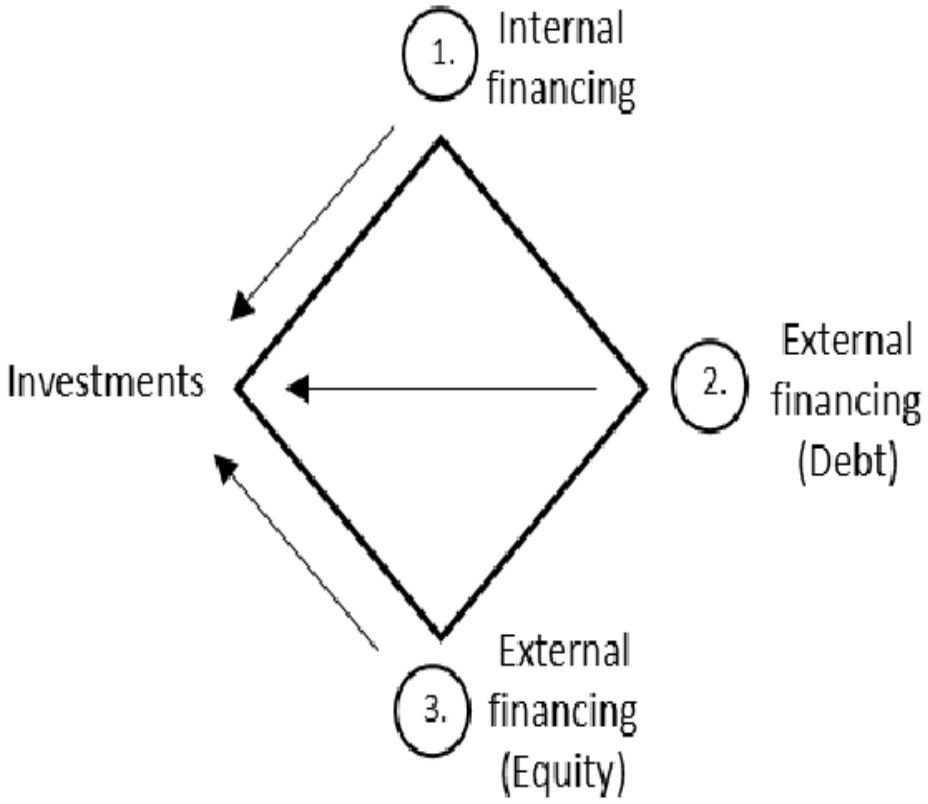

Figure 3.3

Pecking Order Theory (Source: Cirin, 2021)

The managers have acted in the interest of all shareholders in the equilibrium or "on average" issue share prices the same when they choose to make investments in NPV projects. If managers want to issue new shares, they should act with caution as the asymmetric data becomes important and larger. The cost to 'old' shareholders exceeds the project's NPV when a project is a good investment opportunity and the new equity at a low price relatively (Nukala and Prasad Rao, 2021, p.13). Ultimately, equity issuing means different things when financing decisions could send different signals to both potential and existing shareholders. Thus, the pecking order theory is argued as more behavioural in comparison with the trade-off theory

that focuses on the optimal debt ratio. A financing model is developed by considering the generated funds internally followed by issuing equity and debt (La Rocca, La Rocca and Cariola 2011, pp.107-130). The positive NPV projects have been financed based on liquid assets, marketable securities, or internally generated funds with the advantages of establishing the financial slack. Therefore, it is required to abandon projects owing to the reduced external funds. If a firm is liquid, issuing of equity would send negative signals negatively and the slack does not provide the opportunity to gain the shareholders' benefits for a firm.

Based on restrictive dividend payout programs, the financial slack could be achieved with internally generated funds. Simultaneously, dividends should not be paid with the issuing of shares. It is a better alternative to issue debt than issuing equity when the investment opportunities cannot be covered by internally generated funds in the firms which should strive to issue the securities with the safest options (Myers, 2001, pp.81-102). The attempts at the equity issuance can raise the interest conflicts and signals and it is less risky in the financing decisions according to Pecking order theory. The negative implications of financial slack have been illustrated. The motivation of managers or incentives to expand personal advantages could be lowered potentially by the large amounts of cash and other liquidities. Agency problems might occur when a firm has limited the dividends to establish the financial slack but large levels are reached and shareholders are found out that the slack should be paid out as dividends and not utilized for investments (Stein, 2003, pp.111-165).

The pecking order theory was examined in international settings in which the evidence was conflicted against the packing order tests for firms in the United States. The explanatory power of the theory was highlighted and civil law countries had higher explanatory power in comparison with those which implemented the common law. In Greek-based organizations listed on the ATHEX, the pecking order theory was examined but the importance of methodology was also studied (Chatzinas and Papadopoulos, 2018, pp.170-191). Two different methods were used in this research study, such as statistical analysis based on financial statements and the questionnaire dataset that was sent to all organizations. The research methodology should be planned carefully as the Pecking order theory is multi-layered and the method choice is very essential. In conclusion, Green firms were not suitable to implement the Pecking order theory because the deficiencies of methodology were highlighted that could be ineligible for making conclusions.

3.5.1 Signalling Theory of Debt

The relationship between capital structure and signalling theory has been extensively researched since it is similar to the pecking order theory. However, both signalling and pecking order theories have been established based on asymmetric data, in which accessing more information by managers compared to potential investors and shareholders (Miglo, 2011, pp.171-191). When managers are creating interest conflicts or agency costs, they might be hesitant to issue equity. Accordingly, the current firm's value should also be considered. The existing shareholders could be damaged by issuing equity when a firm is undervalued which

would imply selling shares at a bargain. The job market signalling and information asymmetry were studied by Ross (1978, pp.777-792). Typically, the managers know about the firm more than the shareholders and investors. However, statements have been sent by managers who have an idea of what they want to share with shareholders who interpret the messages. It could be interpreted as untransparent potentially through signalling according to the theory which recommended the managers to impact the stock price based on signalling of strengths and prospects. It has provided insights into the reasons because of similarities with the pecking order theory and the lack of research studies that discuss the signalling theory.

3.6 Critiques of Capital Structure Theories

The aforementioned theories are old and criticized in general. The theories of Modigliani and Miller gained a lot of criticism regarding their propositions because they did not provide clear conclusions. The original papers of Modigliani and Miller (1958, 1961 and 1963) were reviewed and concluded that a significant effect resulted on capital structure but their theorem cannot show the results of independency between a firm's value and capital structure. Since the theorem was quite old, there were changes regarding the financial, borrowing, and stock markets. The research studies were focused on developing the novel theorem based on Modigliani and Miller's theorem due to their critiques (Villamil, 2008, pp.1-7).

There should be a balancing act between the present value of financial distress costs that come from debt payments with large amounts and the present value of tax shields endorsed

by Modigliani and Miller according to the trade-off theory (1973). Several authors have tested the trade-off theory against the pecking-order theory in regarding varying results (Tong and Green, 2005, pp.2179-2189). The pecking-order and trade-off theories were studied in the Portugal region between 1998-2005 and the relationship between debt ratio and determinants of capital structure was investigated in the hypotheses' framework (Matias and Serrasqueiro, 2017, pp.19-33). Both theories did not demonstrate the decisions of capital structure for their sample fully. Moreover, the capital structure decisions can be illustrated in the SMES based on the assumptions of pecking order and trade-off theories. Further, the research study discussed that the debt levels should be adjusted by SMEs towards reaching the optimal levels according to the trade-off theory (Serrasqueiro and Caetano, 2015, pp.445-466). It would be expected to turn the more profitable and older SMEs tend to turn less towards debt based on pecking order theory.

The theories were criticized many times and the evidence that one of the theories supported while others rejected it. Before proposing the theory of Modigliani and Miller, the capital structure theory was not accepted generally but the theory failed in certain cases. The theories have been argued that they are part of capital structure and several aspects could be understood regarding the capital structure determination. An expected relationship has been provided for most chosen determinants. The baseline is provided for the determinants of capital structure while the objective is not to prove the theories. For example, the positive effects resulted against the debt ratio of the test results for determinant A within the Swedish listed organizations (Nordlund and David, 2023). Therefore, the reason why the determinant

is part of illustrating the capital structure is provided with the possible similarities with one or several capital structure theories.

3.7 Capital Structure

The implications for the cost of capital and determinants will be demonstrated in this capital structure. A higher return is demanded with the increased cost of capital. The debt is a less costly and simpler alternative but should be repaid and is also an interest to be paid continuously. As similar to the interest expenses on issued debt and comes with a higher risk premium, the dividend is paid to shareholders regarding the stocks even though it is considered to have a higher cost and equity does not have to be repaid like debt (Miller, 1977, pp.261-275). Thus, the weighted average cost of capital is increased with equity. The incoming cash flows will be relevant to the shareholders entirely as the firm can be chosen all equity that is financed for an unlevered firm.

By relying on the debt-to-equity ratio, financial leverage is created by issuing the debt and equity as well. However, the mix between equity and debt is called the capital structure. To emphasize the capital structure importance, the firm value can be increased and return measures have been improved such as Return on Equity (ROE) (Damodaran, 2007). As the interest can be deductible for the debt, the opportunity is provided for creating the firm value from tax shields under some conditions. Based on different views and diverging opinions of researchers and theories, capital structure is determined. The microeconomic variables and macroeconomic parameters have been influenced by the capital structure determinants.

However, the growth, size, and profitability are impacted microeconomic variables while the interest rate, tax rate, and inflation are the macroeconomic level aspects that control the determinants (Egbunike and Okerekeoti, 2018, pp.142-168).

3.8 Capital Structure Determinants

This thesis focused on demonstrating the capital structure determinants and their relationship with the theories.

3.8.1 Microeconomic Determinants

Since the microeconomic determinants differ between firms, they are expected to impact the firms differently. The earlier section discusses the differences between theories and how they impact the decisions of capital structure. However, the sample of listed firms in both developing and developed countries was chosen. Such a broad sample study will include the firms' analysis in terms of microeconomic or firm-specific factors. Due to the nature of firms' operations, the tangibility of assets differs among sectors. For example, firms from the construction industry have tangible assets like tools and machinery. On the contrary, many assets of patents and software are included in the Fintech firms (Gomber et al, 2018, pp.220-265). This research study focused on investigating the possibility of influences of determinants on the capital structure of firms.

3.8.1.1 Size

The internal funds would be preferred over external funds in the firms based on Pecking order theory and it may be accessible to these funds in larger organizations than the smaller firms. The internal capital may not be able to be generated by smaller firms since they are required to expand the business to seek external funding. Compared to small firms, larger organizations are more indebted and taking on more long-term debt as the previous research proved a correlation between financial leverage and a firm's size (Odit and Gobardhun, 2011, pp.113-126). On the other hand, it is difficult to increase long-term debt by smaller firms rather they depending on short-term debt financing. For example, smaller Finnish firms have tended to make financial decisions on internal funds that issue debt and equity based on the Pecking order theory. Guo and Jiang (2013, pp.375-395) showed that large firms in China have been correlated positively with leverage while smaller organizations struggled to access the equity financing market. Thus, the Chinese business market is distinct from other Western markets.

The ability to demonstrate the capital structure of a firm is explained in relevant to the firm size based on the investigations of small and medium-sized enterprises in Eastern and Central Europe (Mateev, Poutziouris and Ivanov, 2013, pp.28-51). In comparison with the smaller firms, a higher debt-to-equity is included in the larger firms. By considering short-term bank loans, smaller firms can increase their financial leverage but they do not have access to long-term debt. It seems to be the financial source for medium-sized firms that use bank

loans when they want to finance with debt but get access the long-term debt, unlike smaller firms.

3.8.1.2 Profitability

Different approaches are recommended for capital structure theories in firms by relying on their profitability. The borrowing is more for a profitable organization according to the trade-off theory for shielding the profits from taxation. On the contrary, there is less requirement for borrowing and instead, a profitable firm is believed that it will utilize internal funds as the primary source of financing based on Pecking order theory (Frank and Goyal, 2008, pp.135-202). If the firms are profitable, the debt-to-equity ratio will be reduced. The relationship between leverage and profitability was investigated according to the Pecking order theory and the study was evident that it is negative for both Japanese and USA-based firms (Revest and Sapio, 2012, pp.179-205). It is not sufficient enough for profitable firms to take on the additional risk in despite of the tax shield benefits provided by leverage.

Previous studies found that there is no association between profitable firms and greater debt levels but the opposite is true. These findings would be contradictory to the research on capital structure and profitability (Addae, Nyarko-Baas and Hughes, 2013, pp.215-229). Both recent and older studies showed that there was a positive correlation between leverage and profitability. More short-term debts can be used in more profitable firms based on the studies that listed the firms in Ghana and overall the profitability and debt are correlated positively. It is very important to consider the differences between developing and developed nations' firms.

The research study concluded that debt is the most considerable factor as a source of financing profitable firms, specifically in the service and manufacturing industry. Therefore, these contradictory results will be led based on different factors.

Different measures of return are chosen in different research as profitability can be defined in many ways. The measures are considered as a return on equity, return on assets, and earnings before income and taxes. As the capital structure differs between industries, it is important to find out what sources of financing could be impacted in profitable firms (Robb and Robinson, 2014, pp.153-179). Both intangible and tangible assets are involved in the firms. However, brand equity, research and development, and intellectual properties are included in the intangible assets while they are not deemed to be related to the capital structure determinants. The tangible assets of firms are physical and contain the equipment, inventory, and cash. It should be required to consider the tangible assets as safer in the firms and have a positive correlation with leverage according to trade-off theory since they can be valued easily and sold off during financial distress (Harc, 2015, pp.213-224). Favourable agreements can be made by firms if they have a lot of tangible assets that appear to be leveraged highly.

The research study discovered that long-term debt and tangible assets are correlated positively in Portuguese SMEs, but there is a negative relationship between short-term debt and tangible assets (Serrasqueiro, Matias and Salsa, 2016). Another study found that the firms focused on aligning the maturity of their assets with the maturity of their borrowings while a

long-term loan is required for long-term assets optimally but it can be challenging to get such loans in younger SMEs.

3.8.1.3 Age

To shield the debt from taxation, the profitable firms should have to increase their debt levels in support of the trade-off theory. It is not necessarily to be more profitable in more mature and older firms but they can easily get debt if they want. Moreover, the benefit of receiving lower interest rates on loans from more experienced and older firms as they can grow over time and maintain good relationships with financial markets. On the other hand, younger firms have intangible assets as they have not had time to grow and fewer options are provided when it comes to financial decisions (Lim, Macias and Moeller, 2020, p.105873). The older firms should be able to receive good borrowing terms of high quality with a lower debt-to-assets ratio. Compared to the older firms, the younger firms are more leveraged even though they face greater financing constraints through borrowings. To determine the differences in financing decisions, debt is categorized into long-term debt and short-term debt. The studies discovered that long-term debt is correlated positively with age, but short-term debt is correlated negatively.

3.8.1.4 Growth

It should be preferred to generate internal funds rather than external financing sources based on Pecking order theory. Thus, it should be required to pay more attention towards external financing when firms might not be very profitable with higher growth potential. The

firm's growth is influenced strongly by the financial decisions between equity and debt. It has been required to finance the future investments of firms if they have good growth opportunities. In contrast with the Pecking order theory, debt has been used as a source of financing in firms which expected to grow in the future and have positive earnings growth (Frank and Goyal, 2008, pp.135-202). The study concluded that firms had lower levels of financial leverage if they were less likely to borrow and showed the fastest growth.

3.8.2 Macroeconomic Determinants

Depending on a country, the capital structure determinants are influenced by macroeconomic factors. Due to this reason, the research is focused on finding out the differences between developing and developed country firms. For example, Sweden is a developed country which has a target inflation rate of 2% per year for maintaining inflation at a stable level without the risks of high inflation or deflation (Kenny, Ögren and Zhao 2023, pp.223-249). One of the monetary tools is the interest rates for maintaining the inflation at 2% in the inflation changes. The interest rates would keep as low due to the lower inflation rate. In Sweden, the tax deductibility is about 30% on paid interest which allowed the firms to protect their profits and increase the firm's value.

3.8.2.1 Corporate Tax Rate

It has been endorsed the debt to receive the tax shield according to the first proposition of tax in Modigliani and Miller (1963). Thus, the firm value would be increased and predicted that there is a positive relationship between debt ratio and effective tax rate. These effects have

not reached a consensus based on the theories of capital structure. The increased financial leverage could be incentivised by higher tax rates for receiving a higher tax shield. The choices of capital structure investigated for internal capital markets and found that a 10% higher tax rate increases the ratio of debt-to-assets for firms by 2.8% (Johansson and Filip, 2022).

Another study found that higher taxes and financial leverage are negatively correlated (Ali, Rangone, and Farooq, 2022, p.55). It should be required to pay a lower pretax income than the all-equity firm as the levered firm pays interest on the debt. A levered firm receives a lower net income from shareholders but the total income is higher for shareholders if a firm receives a tax shield for debt on paid interest. The effective tax rate is considered one of the important determinants since the laws and regulations have been applied nationwide. The paid tax over the earnings before taxes (EBT) is the effective tax rate that provides the exact percentage of earnings paid as taxes. The EBT does not rely on the debt ratio that has been decreased by the interest. The contradictory results have been provided in previous research studies regarding the leverage and tax rate.

3.8.2.2 Inflation

According to the first and second propositions without taxes in Modigliani and Miller's theorem, a perfect capital market is assumed perfect capital markets that rely on perfect certainty without transaction costs and taxes. Uncertainty in the economy is caused by high inflation which makes difficult the prediction of future prices due to price fluctuation. It is a type of risk that wants to be avoided by firms, but it is difficult to do in practice. These risks

can be alleviated by firms. The tax shield can be damaged as the firm's profitability can be more uncertain with the increasing inflation. The financial risk could be mitigated by the firm upon reducing the leverage. The study concluded that debt is favoured in the capital structure when the after-tax return on equity loses value and inflation is increased (Akeem et al, 2014, pp.39-57). In the Hochman and Palmon model, the debt-to-asset ratio is declined without leveraged-related costs. The taxes or any costs relevant to debt are not included in this model according to Modigliani and Miller's theory for a capital market (Johansson and Filip, 2022). The tendencies to increase the debt financing with the increased inflation were shown if a model was changed to include the financial costs. The debt ratio is reduced if inflation is increased according to Bas (2012). This study made a distinction between long-term and short-term debt ratios and firms prefer to use long-term debt compared to short-term at a higher inflation rate.

3.8.2.3 Repo Rate

If the market environment changes, conflicting interests could result between financial managers, bondholders, and shareholders according to the Agency theory. Thus, managers are fostered to shift the capital structure with the changes in the interest rate that could have the potential to result in the instability of a firm. Bas (2012) discussed that the developing countries' capital structure included the raised interest rates in firms to restrict the financing of business operations with long-term debt. The alternative solution of financing is chosen relevant to the short-term debt. The financial managers attempted for debt if they believed

lower interest rates were favourable for their capital investment. Moreover, the short-term debt has been issued in the firms if short-term rates are lower relevant to the interest rates of long-term debt.

The financial managers are issued the debt by incentivizing the lower interest rates and the decision has been impacted by interest rates. The organisations tried to correlate debt issuance and low-interest rates. The firms could be led to issue equity with higher interest rates that result in costly debt. However, the equity issuance is related to the stock price. It is more likely to gain the benefit of retiring debt and issuing equity when a firm increases its stock prices. By relying on the repo rate, the interest rate at which money can be borrowed by firms from commercial banking organizations, thus a repo rate is a macro-economic determinant that impacts the interest rate ultimately (Maranga and Nyakundi, 2017, pp.1-16). For example, the Swedish central bank can use the repo rate as a determinant for the regulation of interest rates due to its macro-economic nature, but the firms need to consider the possible changes in the debt ratio.

CHAPTER IV:

METHODOLOGY

4.1 Overview of the Research Problem

The research study has been focused on developing an understanding of capital structure in business and economics through the common interest in corporate finance. However, there are different capital structure theories and how financial managers can select the right debt levels and equity to gain the firm performance and value (Kruk, 2021, p.155). Both developing and developed countries are distinct in terms of bank loan amounts or may lower or increase the tax rate in the corporate firms which could change the tax shields potentially. The earlier research studied the results for determinants of capital structure between 1987 and 2000 in emerging countries only that lacking in presenting the data findings to differentiate the determinants for a capital structure of Fintech organizations between developing and developed countries (Sibindi, 2016). Therefore, this study will provide updated outcomes for determinants of capital structure across all industries in developing and developed countries for FinTech companies. These results will provide macroeconomic relationships between banking and financial firms when setting out the borrowing rates and monetary policies. The firms can be navigated based on the effects of a capital structure through the macro-economic relationships.

It is valuable to investigate the Fintech firms that have operations over several sectors as the firms may differentiate based on debt ratio and financial performance (Papadimitri,

Pasiouras and Tasiou, 2021, pp.5103-5121). This study intends to provide a broad knowledge of business and finance, specifically capital structure determinants of financial management. There are differences in capital structure theories that are highlighted in various studies which have created a research interest further and contributed to the study objective. However, earlier studies provided similar conclusions relevant to the capital structure determinants it might become biased by those results. A loss of objectivity may result as it is one of the most crucial aspects of the study. The previous research studies neither determined the capital structure value and what is the meaning of finance (Hirdinis, 2019, pp. 174-191). As a result, the study will focus on staying objective and not in any pressure to get a specific result. Moreover, previous research is lacking in the consensus of awareness about the associated risks with the objectives of a study. Therefore, it has made the study to provide insights into the capital structure in financial firms from developing and developed countries (Khoa and Thai, 2021, pp.45-52). Ultimately, the study will focus on Fintech firms in developing and developed countries to broaden their knowledge of the impacts of their financial decisions.

4.2 Research Design

4.2.1 Ontology

Two categories are included in the concept of social ontology, such as objectivism and constructionism. The independent existence of social entities and phenomena of social actors are included in objectivism. Both positivism and objectivism are related to social reality with an objective view, whereas constructionism includes reality with a subjective view and can

be affected by external influence (Debele, 2019, pp.82-92). Thus, the reality of every person relies on the contextual situation.

Since the research study will analyze the determinants for a capital structure and strategies of investment in Fintech organizations, examine the influence of FinTech on traditional financial systems, and how financial decisions vary between developing and developed countries, the objectivist view is adopted to maintain the neutrality in the contribution of data collection and analysis. The risk of our ideas and values affecting the research results is eliminated with an objectivist view.

4.2.2 Epistemology

It is defined as the knowledge, of what should be considered, and what should not be included in a certain context. Epistemology is further categorized into interpretivism and positivism. Interpretivism includes the interpretation of knowledge to understand and objectivity cannot be assured. On the other hand, positivism means that facts are obtained from experience objectively by rationality and logic (Younus and Zaidan, 2022, pp.61-79). However, it is perceived as a social reality differently by people owing to social aspects that impact values. The thesis is focused on providing insightful data on the micro and macro-economic variables and debt levels of firms.

	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive; testing of theory	Inductive; generation of theory
Epistemological orientation	Natural science model; in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

Figure 4.1

Differences between Qualitative and Quantitative Research Approaches (Source: Clark et al, 2021)

The positivist approach is chosen for this research to achieve good representation and reliability from the data collection and analysis (Mohajan, 2020, pp.50-79) (Figure 4.1). Therefore, primary source data will be collected to meet the research objectives by performing data analysis without the interpretation of personal views. Significantly, the research study needs to be generalized over a wide population. Instead, large amounts of data can be collected within a short period. The extensive data collection enables the generalized results obtained

from macroeconomic determinants and their impacts on the debt ratio in the research method (Egbunike and Okerekeoti, 2018, pp.142-168). In addition, the collected data will also derive the significant changes in financial leverages of developing and developed countries. This thesis will be considered a positivist approach with data collection on a large-scale for disclosing the trends and correlations between determinants of capital structure and financial strategies and the debt level.

4.2.3 Research Approach

The deductive and inductive approaches are included in the research approach. Accordingly, the inductive approach is used to make general conclusions from observations based on the ability to understand what the data mean and how likely something is to be true. Inductive reasoning is an appropriate method in the case of a qualitative study since it concludes the data findings beyond the given results (Azungah, 2018). In contrast to the inductive approach, the view between theory and research is investigated which would test an existing theory in the deductive approach. In this method, the results are analyzed upon data collection to evaluate the hypothesis, in which the relationship between dependent and independent variables is determined using regression analysis. It allows us to make a conclusion with accurate results which is why our research study has adopted a deductive approach (Zalaghi and Khazaei, 2016, pp.23-37). Furthermore, the research studies and data collection must be appropriate to make trustworthy conclusions with trust-worthy regarding the determinants that affect debt levels of Fintech firms.

The research study should consider correct premises in a deductive approach as a prerequisite for deriving conclusions that give reliable data. The earlier or existing research used a similar approach for determinants of capital structure to confirm the logical nature of a deductive approach (Johansson and Filip, 2022). This study is focused on proving the relationships to test the significance or non-significance without involving uncertainty issues. Therefore, the deductive approach is a suitable method for a research study.

4.2.4 Research Strategy

Quantitative research is the process of collecting and interpreting the data by looking out for correlations among variables through the statistical methods of data analysis (Figure 4.2). Quantitative research is used to test and validate numerical data as it enables to replicate of the results while providing reliable results in comparison with the qualitative data (Yilmaz, 2013, pp.311-325). The findings of the study are viewed as objective results. It is possible to perform data collection for quantitative methods on a large scale that ensures reliable conclusions. Both secondary and primary data collection can be utilized for a quantitative study. The secondary data is collected in this research, including 250 firms' financial data over 17 years from 2005 to 2021.

Figure 4.2

Quantitative Research Design (Source: Jain, 2023)

According to Collis and Hussey (2021), a positivist research method is highly relevant to the quantitative study. The objective results will be derived from the quantitative research strategy in association with deductive reasoning. This study has integrated data to make reasonable assumptions with the natural research approach. A deeper understanding of the results with the analyzed data is derived using a qualitative research approach that lacks generalizability. The secondary or primary data can be included in the quantitative study to

provide the correlation of variables while allowing greater generalizability through data collection although it may not understand the underlying behaviour (Antwi and Hamza, 2015, pp.217-225). The secondary data collection of financial data collected between 2005 and 2021 that will contribute to the extensive data to enable the generalizability of data findings.

4.3 Ethics

It is important to consider the ethical aspect of researching as the problems may raise in different business research phases based on the perspective of Bell, Bryman and Harley (2022). In research, the ethical issues included the 'harm to participants' that involves both psychological and physical harm. The risk of 'harm to participants' is reduced drastically because the study is quantitative and secondary data collection from public sources. Several studies demonstrated some signs of harm encountered, where employment security, integrity of participants, and emotional health are jeopardized. However, issues like 'lack of information consent' may raise that indicate the privacy of participants when presenting the data to make informed decisions regarding their participation (Zyphur and Pierides, 2017, pp.1-16). Most probably, there is no chance of encountering this issue. When searching for sources, data privacy will be maintained throughout the phases of the research method based on 'invasion of privacy' and 'deception' for invading the individuals. It is important to include the ethical considerations for firms in the research study. However, deception is elaborated as the concept of presenting the research study objectives and purpose to potential participants. The research study will deceive the participation of no individuals as the human research

sample or physical respondents are not included (Bell, Bryman and Harley, 2022). The actual purpose of the study and objectives should be conveyed when presenting the results that require an ethical standpoint. All secondary data should be legally obtained to avoid false interpretations (Husaeni and Jayengsari, 2020, pp.453-471). The ethical standpoints are also there regarding copyrights and data management. Therefore, data collection and processing will be performed without any ethical issues in this research study.

4.4 Variables and Proposed Hypothesis

4.4.1 Dependent Variables

According to Rayan (2008), total debt ratio is broadly defined as financial leverage. The author also opined that the ratio is not appropriate to measure the leverage since a lack of indication for financial distress in the future study. Moreover, it is not interesting to claim that the total liabilities include pension liabilities and account payables (Friedman, 1982). Furthermore, it is not enough to use the total debt ratio only for the measurement of leverage owing to the involvement of trade credits and short-term debt (Song, 2005). Accordingly, the financing of current assets and capital management is used in the short-term debt that is deemed to have other determinants that lead to the biased interpretation. Consequently, total debt is not enough for a measurement of financial leverage.

The literature studies used the market value or book value of equity as a denominator for their calculations (Chen, Cheng and Hwang, 2005, pp.159-176). The book-based and market-based leverage ratios are backward looking, and forward looking, respectively.

According to Chipeta and Mbululu (2013, pp.69-80), the market value should be utilized as the valuation of the company rather than the book value. Giannetti (2003, pp.185-212) claimed that the market value was considered an important aspect but limited to the database because some companies were provided the market capitalization data only restricting the explanatory power of data findings. Antoniou, Guney and Paudyal (2008, pp.59-92) described that the accounting rules with distortions reflected by book values whereas the more realistic view is provided by the market value which is approximate to the firm's intrinsic value. The previous studies argued that the factors which do not control the organization can determine the market value of the debt ratio. Similarly, Jensen (2001, pp.297-317) demonstrated that market value can result in irrelevant managerial actions due to market fluctuations. The value of assets is captured by book leverage and the current market values (Ozdagli, 2012, pp.1033-1069). Therefore, this does not change the future decisions for investment like market value. To achieve robust and efficient results, the total debt ratio and long-term debt are considered to indicate the financial leverage of firms. Therefore, both long-term debt and total debt ratios are considered for financial leverage.

Total debt ratio = Total debt/Total Assets

Long-term Debt Ratio = Long-term debt/Total Assets

4.4.2 Independent Variables

Capital Structure Determinants

The variables like inflation, GDP growth, risk-free rate, investment, and share market return are examined in alignment with the earlier discussions based on macroeconomic effects. These five macroeconomic indicators are used in this study to test against firm-specific variables. The relationship between leverage and several macroeconomic indicators is examined by researchers. We chose the aforementioned macroeconomic variables relevant to financial leverage ratios that reflect the current economic state.

4.4.2.1 GDP

Frank and Goyal (2009) demonstrated that the optimal debt value is increased with the increased cash flow. A higher degree of debt financing is preferred in firms when operating the higher economic growth that is characterized by a lower probability of bankruptcy and high cash flow. The opposite results are true during an economic recession. However, GDP is used as a financial indicator that will be undertaking the debt and servicing the debt costs. The earlier studies investigated the relationship between GDP growth and leverage directly which showed mixed results (Akhtar et al, 2021, pp.1-38). A negative influence was shown on firm leverage in several studies (Mokhova and Zinecker, 2014, pp.530-540; Ab Wahab and Ramli, 2014, pp. 930-945). However, these studies were concerned mostly with developing or emerging economies. There was a positive relationship with financial leverage based on the studies of Hanousek and Shamshur (2011, pp.1360-1376) which characterized the transition economies by substantial economic changes. The pecking

order theory can demonstrate the recurrent negative relationship with internal funds or higher cash flows.

Hypothesis 1: There is a negative relationship between GDP growth rate and financial leverage.

4.4.2.2 Inflation

Previous studies extensively addressed the inflation effect on capital structure. According to Nyamita, Nyamita and Dorasamy (2014, pp.189-202), the value of a loan reduces with the higher inflation over time. The increment in the degree of debt financing is increased with the increased inflation owing to the higher value of tax reduction on debt. Hanousek and Shamshur (2011, pp.1360-1376) evaluated the results of capital structure that showed a positive and strong impact due to inflation. Moreover, it also provided more varying results like determining the positive relationship between market leverage and inflation (Frank and Goyal, 2009, pp.1-37). Gungoraydinoglu, Çolak and Öztekin (2017, pp.167-192) described that debt financing with a lower degree can be achieved by firms if they operate under an environment of higher inflation. Furthermore, a positive relationship is resulted between long-term debt ratio and inflation which is negatively related to the short-term debt ratio and total leverage. In case of the total-debt ratio, there is a negative relationship with the inflation due to the after-tax real capital return in spite of the capital costs that increase over a period of inflation (Baker and English, 2011, p.197). Most of these studies showed that a positive relationship exists between inflation and debt.

Hypothesis 2: There is a positive relationship between inflation and financial leverage.

4.4.2.3 Risk-Free Rate

In general, the increased risk-free rate would lead to reduced debt financing since it is the cost of debt financing. Mokhova and Zinecker (2014, pp.530-540) argued that profit-driven banks would be motivated by higher interest to increase loans for the private sector. According to trade-off theory, it is required to consider the tax benefit of interest as it reduces the tax burden. Therefore, the capital structure of a financial firm needs to be concerned about the tax which shows a positive relationship with debt. Moreover, the empirical results of Zafar, Wongsurawat and Camino (2019, p.1598836) were evident that the leverage and interest or risk-free rate positively related with the leverage. On the contrary, a negative relationship was found for emerging economies in the study of Mokhova and Zinecker (2013, pp.2533-2546). Nenu, Vintilă and Gherghina (2018, p.41) described a negative relationship between debt financing and risk-free rate by studying the relationships in transition economies.

Hypothesis 3: There is a negative relationship between risk-free rate and leverage.

4.4.2.4 Share-Market Return

According to Chambers, Sezgin and Karaaslan (2013), the share-market return is an important parameter to evaluate the impact of capital structure from the perspective of macroeconomic variables because it influences equity rather than debt. However, the market timing theory justifies the influence but is not relevant to the trade-off theory and pecking-

order theory (Zurigat, 2009). Accordingly, the market timing theory demonstrates the making of decisions to issue equity or debt relevant to the share market that is overvalued or undervalued. It is required to undervalue the share market by a company if it is more willing to issue the equity rather than debt (Dong, Hirshleifer and Teoh, 2012, pp.3645-3683). The share-market return is measured based on the ratio of capitalization of the share market to GDP.

Hypothesis 4: There is a positive relationship between share-market return and leverage.

4.4.2.5 Investment

Since the financial growth opportunities cannot always use internal funds, it is often required to turn to debt. In this sense, the growth opportunities will enhance the financial leverage based on pecking-order theory (Adair and Adaskou, 2015, p.1006477). On the contrary, the trade-off theory describes that firm growth can increase the costs of financial distress. Further, the issues relevant to free cash flow are reduced and debt-related problems are increased with the firm growth. That means, the leverage is less with the growth. Shamsi and Farjana (2016) demonstrated financial leverage is negatively related to growth. The market-to-book value is used and determined that a positive relationship between leverage and market-to-book value. The higher market-to-book value would have included more profitable firms and are subject to reduced borrowing costs (Schwert, 2020, pp.905-947). On the other hand, the alternative financing method is considered to be negatively related to

leverage. The firms issue equity generally in the market timing theory if stock prices are higher contrary to the pecking-order theory, which outweighs the adverse selection risk with the value of issuing equity (Miglo, 2011, pp.171-191). The study uses investment as a parameter for business growth opportunities.

Hypothesis 5: There is a positive relationship between investment and leverage.

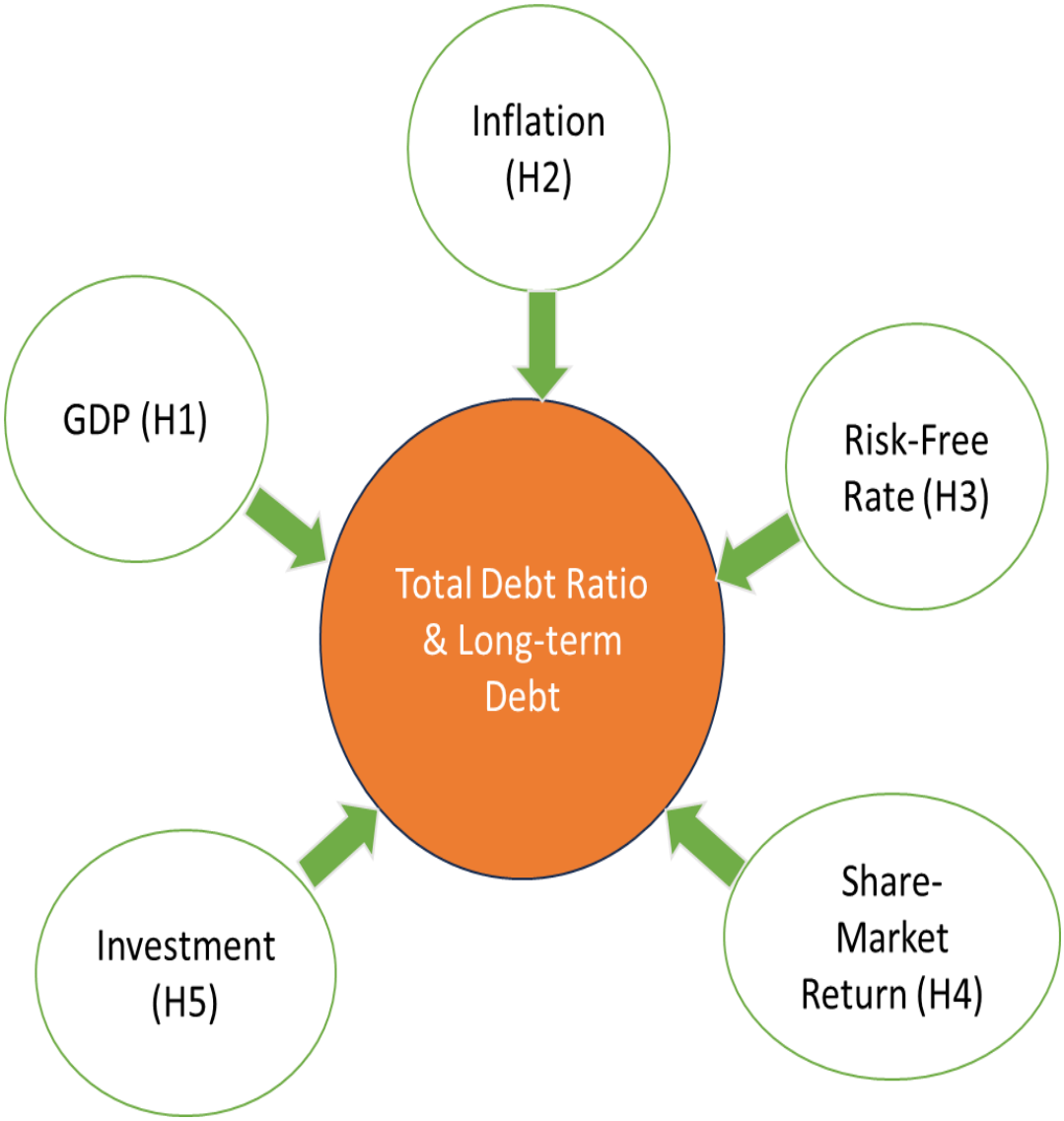

Figure 4.3

Conceptual Model (Source: Author)

As shown in Figure 6, the conceptual model was developed by proposing five different hypotheses based on dependent variables such as long-term debt and total debt ratio while independent variables are share market return, investment, GDP, risk-free rate, and inflation.

Table 4.1

List of Explanatory Variables and Predicted Outcomes

Determinants	**Measure**	**Hypothesis**
GDP (Gross Domestic Product)	Annual growth rate of GDP	Negative (H1)
Inflation	Annual rate of change on customer prices	Positive (H2)
Risk-Free Rate	Rate of return on investment with a zero chance of loss	Negative (H3)
Share-Market Return	Share Market Capitalization/GDP	Positive (H4)

Investment	Market value per share/Book value per share	Positive (H5)

Table 4.1 is the summary of proposed hypotheses to determine the impact of explanatory variables on financial leverage in terms of total debt ratio and long-term debt.

4.5 Sample and Population

This study used the population that consists of all listed firms, 100 firms from developing countries like China, India, Mexico, Brazil, etc. and 150 firms from developed countries like the UK, USA, Canada, European countries, etc. The data collection is performed using a trading or financial analysis software, known as Refinitiv Eikon, in which the data about financial determinants can be collected over a period of 65 years (Nizam, Shafai and Asari, 2023, pp.72-81). This study will need financial data of firms between 2005 and 2021 years. This software is also provided key figures that suitable for this study. Many of the financial determinants were collected using Eikon software and the macroeconomic determinants through the Central Bureau of Statistics from different countries (Muhamad Yusuf et al, 2020, pp.23-29). The statistical software IBM SPSS 26.0 tool and Microsoft Excel are used to perform data analysis. However, Excel is used to conduct data sampling, sorting or cleaning through determining errors and irregularities within the data. The statistical testing was carried out in SPSS once data processing was performed to make tables appropriately.

The variables contained in the data are required to conduct the regression analyses. The data of 250 firms was included in the sample that contain all relevant independent and dependent variables. The sample was tested in different ways to ensure that reliable results were achieved. Thus, the results concluded that they should not skew towards any industry which led to data variation in the observations in terms of total debt and long-term debt ratios.

Table 4.2

List of Chosen Variables

Dependent Variables	**Independent Variables**
Total Debt Ratio	Inflation
Long-term Debt	GDP
	Risk-Free Rate
	Share-Market Return
	Investment

The chosen variables are presented in Table 4.2. There are some differences in previous studies regarding the capital structure determinants (Gharaibeh and Saqer, 2020, p.364). Therefore, the measurements that correspond to the purpose of the study have been

chosen. Thee appropriate key figure is created using the total debt ratio in the modelling. In alignment with the previous research, the determinants have been chosen carefully and the measurements are evaluated equally (Ramli, Latan and Solovida, 2019, pp.148-160). It is worth mentioning that the determinants of some studies are excluded from this research study. However, five different determinants (independent variables) were included in the study to test against the debt ratio. The results are not united always when choosing the determinants through capital structure theories and previous studies. This study was used to determine the reasonable impacts of debt ratio in Fintech firms from developing and developed countries. Moreover, the capital structure may also affect by other determinants but it is not possible to include each determinant in the study. Accordingly, the determinants were selected for this study. The debt ratio was chosen as the dependent variable that is demonstrated as a relative measurement. It is identical relatively in previous studies for the measurement of debt ratio. Some studies categorized debt ratios into long-term debt or short-term debt (Bontempi, Bottazzi and Golinelli, 2020, p.101666). In this research, the investigations on independent determinants were evaluated to provide the different relative effects on long-term and total debt ratios.

4.6 Data Collection

The data sample was extracted from different FinTech firms that operating in developing and developed countries. No specific activity codes are there for Fintech firms although a certain consensus is there regarding a Fintech company. Thus, the FinTech

companies were identified by listing all companies in the FinTech ecosystems of countries as a primary source. Overall, 266 firms were shortlisted, out of which 10 startups since they integrated into the banking structure. However, the bank divisions cannot be considered as FinTech firms. The sample was considered the FinTech firms that were created originally as independent organizations and established with banking alliances or capital injections of banking organizations. Based on the studies of Haddad and Hornuf (2023, pp.1761-1792), six firms were eliminated as they offer technological services for other financial companies rather than core financial services. A total sample of 250 Fintech organizations from developing and developed countries was considered with the financial data from 2005 to 2021.

4.7 Data Analysis

4.7.1 Research Model

The data regression models are used by following earlier studies for examining the relationship between leverage ratios and explanatory variables (Bintara, 2020, pp.28-35). As the study is focused on evaluating the firm dimensions rather than periods, the cross-sectional model is chosen instead of period models. By considering the sample of 250 firms for a period of 17 years (2005 to 2021), the cross-sectional models were reinforced upon building the hypothesis. The following equations are presented as follows:

$$Total\ Debt - Ratio_{it} = \propto_i + \beta_1 GDP_{it} + \beta_2 Inflation_{it} + \beta_3 Risk - free\ Rate_{it} + \beta_4 Share - Market\ Return_{it} + \beta_5 Investment_{it} + u_{it}$$

$$Long - term\ Debt_{it}$$

$$= \propto_i + \beta_1 GDP_{it} + \beta_2 Inflation_{it} + \beta_3 Risk - free\ Rate_{it}$$

$$+ \beta_4 Share - Market\ Return_{it} + \beta_5 Investment_{it} + u_{it}$$

Where β is the coefficient of the independent variable, Total Debt-Ratio$_{it}$ and Long-term Debt$_{it}$ represent the dependent variables (where t = time and i = identity), $\propto_i$ (i=1, 2, …. n) is an unknown intercept for each identity, and u_{it} is an error term.

4.7.2 Regression Analysis

The relationship between variables can be analyzed using the regression analysis that determines the strength of a relationship among variables. It requires the freedom of analyzing the relationship that requires at least three observations. A one-to-one relationship would be there with two observations only that leads to the R-square value as one and not able to analyze the strength of relationships (Thrane, 2019, pp.1-19). Since the model would become more potent with three additional observations, three degrees of freedom would be given with two variables and five observations. A simple linear regression or multiple regression can be made through a regression analysis. For instance, a simple linear regression model can be expressed as Yi = $\boldsymbol{\alpha}$i + $\boldsymbol{\beta}$1Xi + ε, in which one independent variable and one dependent variable are included. The best-fit line can be drawn through regression while allowing the observations of the X-axis that could demonstrate the change in the Y-axis (Kropko and Kubinec, 2020, p.e0231349). The relationship between variables from preconceptions is described based on a hypothesis that discusses the influence of one variable on the other. A

relationship between two variables is either negative or positive when the Beta value is non-zero. The impact of variables on the dependent variable will be concluded after analysis of the relationship among variables.

The multiple linear regression is used to determine the relationship between one dependent variable and multiple independent variables. The formula of Yi= αi + β1Xi + β2X2 … βnext + ε is used for multiple regression. Moreover, the R-square is lowered for regressions when observations are randomly scattered (Manasa, Gupta and Narahari, 2020). Thus, a lower degree of explanation is resulted for an independent variable in relationship with the dependent variable if an unexplained deviation resulted from a regression with the lower value of R-square. It is required to determine the R-square value since it reveals the effect of independent variables on dependent variables. Similar to Song (2005), the study used a multiple regression model for evaluating the relationship between various independent variables relevant to capital structure and dependent variables of financial leverage like total debt ratio and long-term debt.

This study uses the multiple regression model for determining the capital structure based on explanatory variables through data collection. However, these variables are tested to explain the capital structure of Fintech firms from both developed and developing economies. Similar to the studies of Johansson and Filip, 2022, the regression model is used for testing the determinants as explanatory variables without considering the control variables.

4.7.3 Statistical Interpretations

Multicollinearity

In general, multiple regression resulted in the multicollinearity if there is a strong correlation between independent and dependent variables. For that, the correlation value should be higher than 0.9. Moreover, it is not easier to find out the difference between the effects of independent variables due to the less trustworthy values (Collis and Hussey, 2021). For instance, it is essential to consider one of the independent variables for a study if in case a higher correlation exists between two variables. It is also better to remove the variable if it has less relevance to the study. Moreover, the variance inflation factor (VIF) is used to measure the degree of multicollinearity among various independent variables (Al-Abbadi, Alshawabkeh, R. and Rumman, 2021, pp.1463-1472). If VIF is greater than 10 for a variable, it is required to be included in the study.

Heteroscedasticity

It is challenging to perform interpretations of regression analysis when it undergoes a common issue of heteroscedasticity. However, it is caused when an unexplained variation of a dependent variable is increased or reduced due to the increased value of an independent variable on the X-axis. Moreover, it will not hold a consistent shape over the regression line throughout the data observations (Astivia and Zumbo, 2019). The regression model would become appropriate or efficient when the X variable is lower and observations are nearer to the line. The ideal results revealed that the no variation of observations with the increasing

data values on the X-axis. The heteroscedasticity errors can be tested using Cook-Weisberg or BreuschPagan test in statistical analyses, but this study uses robust clustering for possible errors (Li & Yao, 2019). Therefore, the coefficient does not affect but more reliable significance and standard errors are provided.

Significance Level and P-value

The significance level is described as the probability of determining the results as statistically significant or insignificant based on rejecting or accepting a null hypothesis, respectively. The most common levels of significance are 0.05, 0.01, and 0.1. The null hypothesis can be rejected for a lower p-value. Before conducting the tests, the significance level is decided but not calculated. However, this research study is considered a significance level of 5% which means the results are significant if the p-value is lower than 0.05 (Yousuf, 2022, p.57).

Winsorization and Outliers

The outliers are the result when observations deviate from other values at an abnormal distance. They can cause issues in small samples as they might result in skewed outcomes in the data analysis. When a lot of outliers are there, the larger samples also cause problems. The winsorization can be utilized to avoid outliers or extreme values whether they are high or low. It is not appropriate to remove all outliers from the model (Collis and Hussey, 2021). However, the outliers are being adjusted instead of removed through winsorization, including moving the outliers that are above or below the chosen percentile. It has winsorized the

dependent and micro-economic variables by redefining values above the 99th percentile and the value below the first percentile (Sharma and Chatterjee, 2021). This way the data sample is skewed less likely towards extreme values.

Correlation

It is used to investigate the association between two variables that do not disclose which variables show the impact on the other. The correlation is disclosed as the relationship between variables either it is positive or negative or no relation. Depending on the variables, the strength of correlation can also be varied between two variables. One variable increases the other variable when a correlation exists.

4.8 Conclusion

This study explores the features of Fintech firms in terms of their impact on debt financing. However, a sample of 250 firms with their financial data was considered that are listed from both developing and developed countries from 2005 to 2021. The data was collected to determine the effect of debt financing on various aspects of macroeconomic capital structure determinants, such as investment, risk-free rate, inflation, GDP, and share-market return. This reflects the impact of Fintech firms on long-term debt and total debt ratio as linear functions to investigate their relationship with the explanatory variables (independent variables).

CHAPTER V:

RESULTS

The current research study aims to evaluate the investments of fintech companies and their impacts on capital structure. However, a significant shift has resulted in the technological advancement in the fintech industry recently. Various organizations working towards entering into the Fintech market like Facebook and Google which introduce online payment systems (Bethlendi and Szőcs, 2022, pp.38-48). This research study has focused on analysing companies in the Fintech industry that are listed on the Nasdaq only from developing and developed countries. Moreover, the data was collected for seven years from 2015 to 2021 FYs for 250 companies from developed and developing countries. The data analyses were performed, including descriptive statistics, correlation, and panel regression models. Furthermore, descriptive statistics and inferential analyses, including correlation and regression analyses have been performed and interpreted in the results.

5.1 Descriptive Analysis

The empirical results of descriptive statistics have been demonstrated in this section. Initially, the differences in capital structure between developed and developing countries allow us to study these groups individually. Then, descriptive statistics of variables have been presented along with the correlation and panel regression analysis.

5.1.1 Debt-Equity Ratio

The cross-sectional average of the total debt ratio of all firms of developed and developing countries during the period of 2015 to 2021 was presented as shown in Figure 5.1.

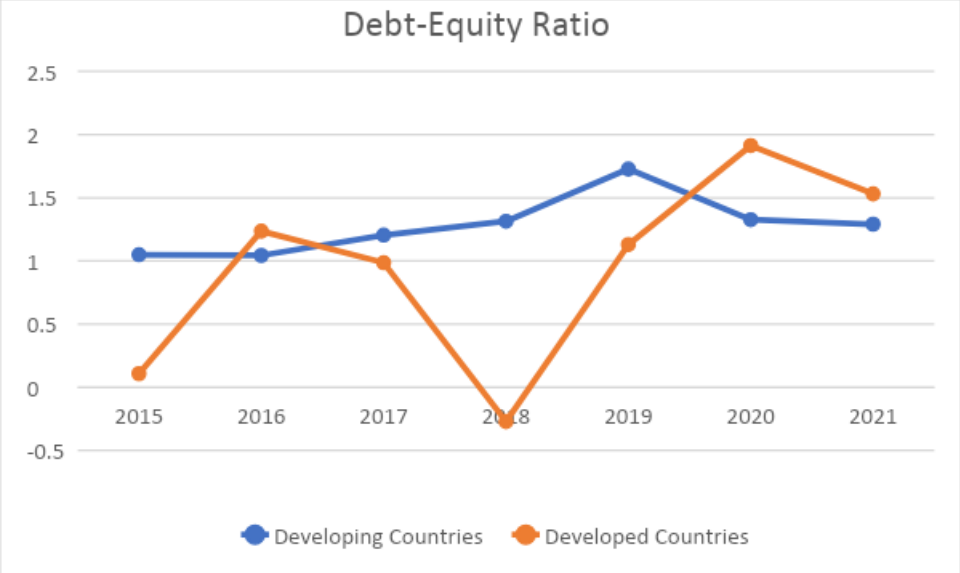

Figure 5.1

Average Debt-Equity Ratio for Firms of Developing and Developed Countries

The differences between developing and developed countries are categorised for average total debt-equity ratio as shown in Figure 5.1. The higher debt ratios were reported from 2015 to 2019 for developing countries except for 2016 FY compared to the developed countries. The lowest average debt ratio was resulted in 2018 for developed countries. Moreover, the average debt-equity ratios were higher in the 2020 and 2021 FYs for developed countries compared with developing countries. Figure 5.1 provides another important insight that the capital structure responses differed in 2019 due to the COVID-19 crisis among the firms of developing and developed countries. The graph clearly showed that firms in

developing countries had started to deleverage in 2020 and continued to reduce the average total debt ratios. On the other hand, firms in developed countries deteriorated owing to the COVID-19 pandemic and improved afterwards. It is noteworthy to consider the recent increase in the average total debt ratio of the firms of developed countries.

5.1.2 Long-term Debt

The average long-term debt for all financial firms of developing and developed countries was compared by using below Figure 5.2.

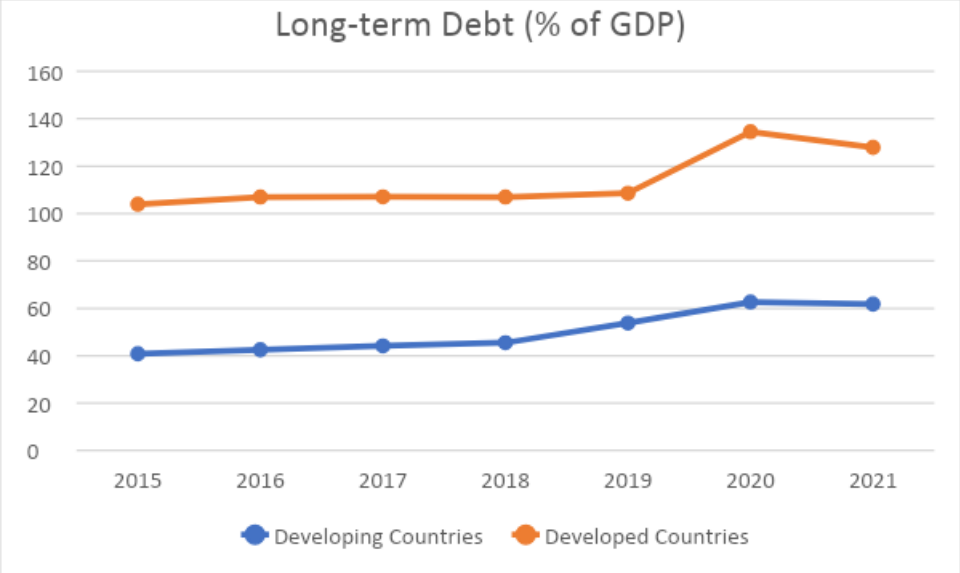

Figure 5.2

Average Long-term Debt for Firms of Developing and Developed Countries

Figure 5.2 compares the average long-term debt for developed and developing countries. However, the developed countries showed higher long-term debt from 2015 to 2021 on average compared to all companies from developing countries. It is important to consider

that both developing and developed countries' firms were evident in the increased long-term debt in 2020 and 2021. The lowest long-term debt resulted in 2015 FY for all of the financial organizations in developing and developed countries.

5.1.3 Share-Market Return

The developing countries and developed countries have been compared in terms of average share-market return from 2015 to 2021 FY.

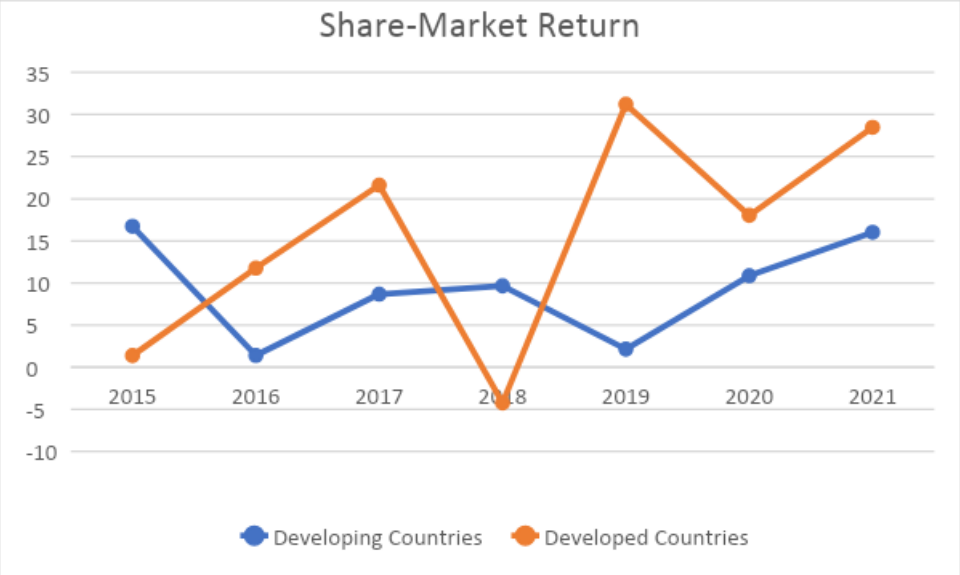

Figure 5.3

Average Share-Market Return for Firms of Developing and Developed Countries

As shown in above Figure 5.3, the firms of developed countries reported higher share-market returns from 2015 to 2021 except for 2015 and 2018 FYs compared to the organizations from developing countries. The developing countries' firms showed increased share-market returns in 2015 and 2018 FYs than the firms of developed countries. It is evident

that the lowest share-market return was observed in 2018 for developed countries' firms, then increased in 2019 and again reduced in 2020 due to the COVID-19 impact. Similarly, the developing countries' firms reported a decreased share-market return in 2019 FY owing to the pandemic of COVID-19. Therefore, the firms of developed countries were able to earn higher returns on their investments than the companies of developing countries.

5.1.4 GDP

The average GDP results were compared between developing and developed countries as shown in Figure 5.4.

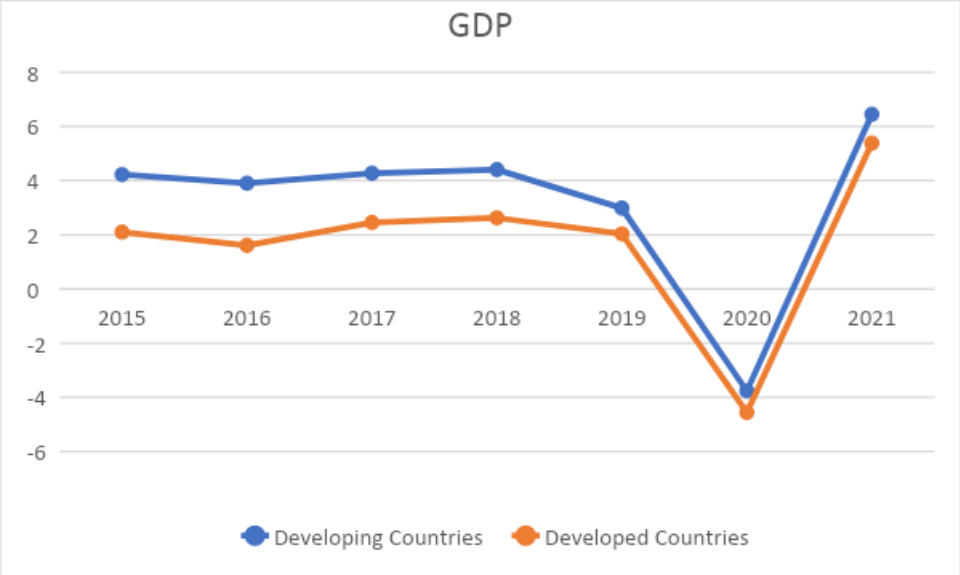

Figure 5.4

Average GDP for firms of Developing and Developed Countries

Figure 5.4 depicts the average GDP for firms in developing and developed countries. The above graph shows the increased average GDP growth for firms in developing countries in comparison with the firms in developed countries from 2015 to 2021. Specifically, both the financial firms of developing and developed countries resulted the lower GDPs in 2020 due to the COVID-19 pandemic crisis. Both developing and developed countries' firms showed an increased GDP in 2021. Thus, developing countries' firms have higher GDPs, indicating they have higher average business incomes with increased consumer demands than developed countries.

5.1.5 Inflation

The inflation results for all companies in developed and developing countries are presented using the below Figure 5.5 below.

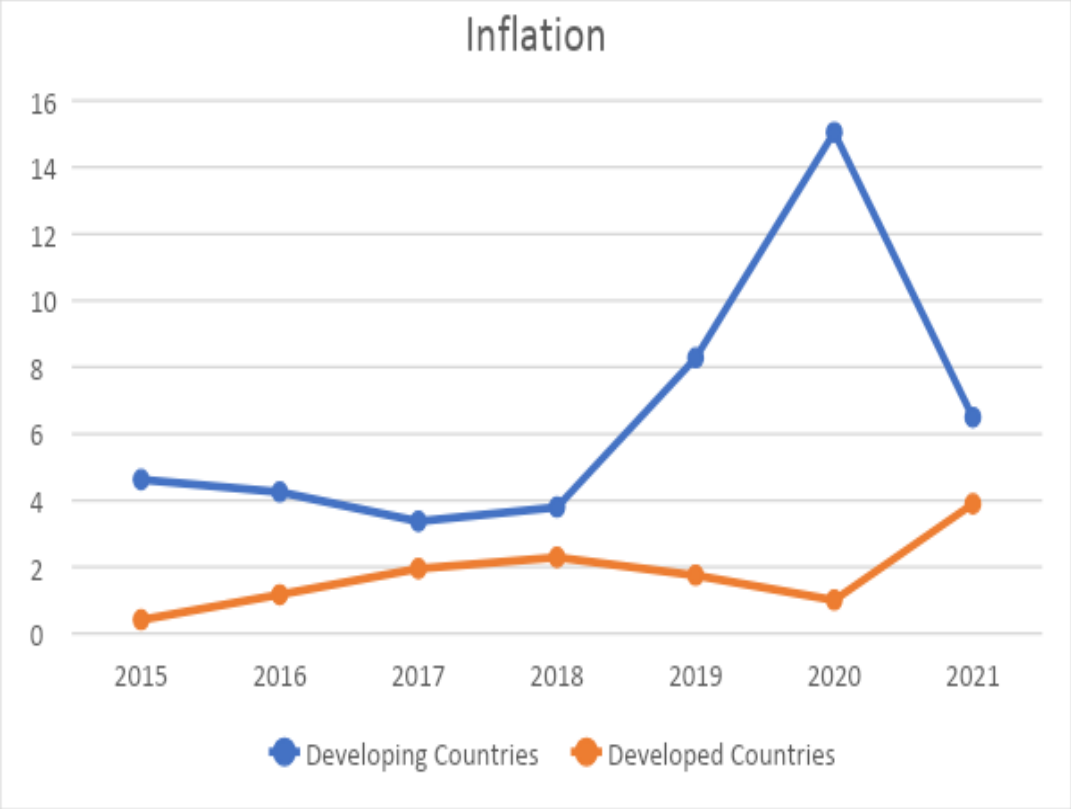

Figure 15.5

Average Inflation for Firms of Developing and Developed Countries

The companies of developed countries reported lower inflation rates from 2015 to 2021 when compared to firms of developing countries (Figure 5.5). In 2020, developing countries' firms showed an increased inflation rate due to the crisis of COVID-19. However, the low and stable inflation rates were more beneficial for the good economy of firms in developed countries than in developing countries.

5.1.6 Risk-Free Rate

Figure 5.6 depicts the results of the risk-free rate for all firms in developed and developing countries from 2015 to 2021.

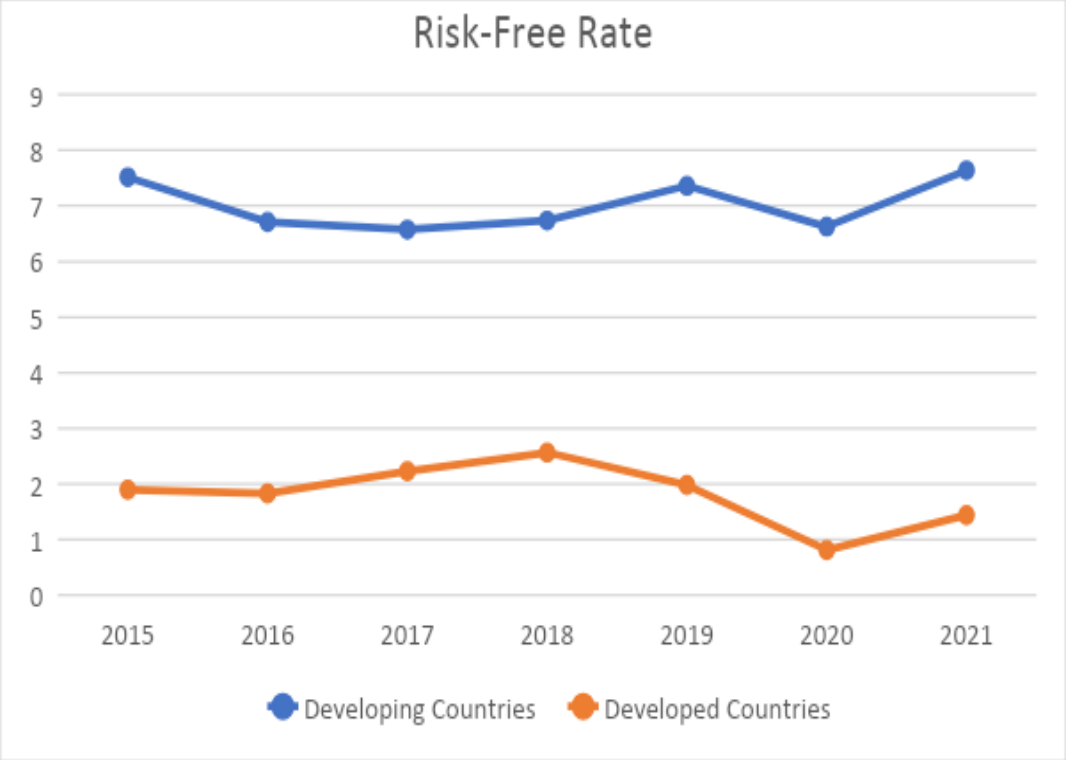

Figure 5.6

Average Risk-free Rate for firms of Developing and Developed Countries

The average risk-free rates were compared between all firms of developed and developing countries as shown in Figure 5.6. The graphs reported the increased risk-free rates for companies of developing countries than the developed countries' firms from 2015 to 2021. The lowest risk-free rates were observed in 2020 due to the COVID-19 pandemic for both developed and developing countries' firms. The firms improved the risk-free rate in 2021. Therefore, financial firms of developing countries have higher risk-free rates that represent better investments than the firms of developed countries.

Table 5.1 provides the descriptive statistics for all variables used in the analysis for firms of developed countries. These variables are long-term debt, debt-equity ratio, GDP, investment, share-market return, risk-free rate, and inflation.

Table 5.1

Descriptive Statistics for Firms of Developed Countries

Variable	Obs	Mean	Std. Dev.	Min	Max
DebtEquity~o	493	.8288438	8.07	-81.75	84.11
LongTermDe~P	2,457	97.19398	36.92598	27.3	217.6142
Sharemarke~n	1,386	11.92797	15.96324	-36.55	32.15
Investment~n	1,365	58.10922	75.38623	.23	226.5
GDP	2,440	1.650134	2.378247	-11.03086	7.52491
Inflation	2,440	1.987391	1.128519	-1.35	4.697859
Riskfreera~y	2,185	2.653542	1.079432	.67	5.74

As shown in Table 5.1, the average debt-equity ratio was reported as 0.829 with minimum, maximum, and standard deviation of -81.75, 84.11, and 8.07 for developed countries. The average long-term debt was 97.194 with a standard deviation of 36.926, a minimum of 27.3, and a maximum of 217.614. Moreover, the average share-market return of developed countries was 11.928 reported a standard deviation of 15.963, a minimum value of -36.55 and a maximum value of 32.15. The average GDP was 1.65, the average inflation was

1.987, and the average risk-free rate was 2.65 for developed country firms. However, the average long-term debt was higher than the debt-equity ratio, share-market return, investment, GDP, inflation, and risk-free rate from 2015 to 2021 FYs in 250 firms for developed countries. The maximum value and standard deviation were shown higher for the investment parameter, i.e. 226.5, and 75.386, respectively while the minimum value was higher for 27.3 for long-term debt.

Table 5.2 depicts the descriptive statistics for all firms of developing countries regarding the financial aspects of debt-equity ratio, long-term debt, share-market return, GDP, investment, inflation, and risk-free rate.

Table 5.2

Descriptive Statistics for Firms of Developing Countries

Variable	Obs	Mean	Std. Dev.	Min	Max
DER	682	1.194783	2.046971	-6.1	32
LongTermDe~P	1,707	43.53378	23.85036	1.6	248.1
Sharemarke~n	1,224	12.53892	23.68177	-51.13	150.01
GDP	1,717	4.499193	4.094058	-17.66895	21.45206
Inflation	1,641	6.246404	21.66456	-2.430968	557.2018
Riskfreera~y	1,522	7.247523	4.728586	1.15	57.14

The developing countries' firms also have higher inflation rates with 6.246 than the developing countries' firms with 1.987 inflation rates on average as shown in Table 5.2.

Furthermore, the average value of the risk-free rate was reported as a higher value of 7.248 for companies based in developing countries than the firms in developed countries, i.e. 2.654. It displays the greater variability between developing and developed countries' firms, including 4.729 and 1.079, respectively.

Table 3.3

Significance Test Results for Firms of Developed and Developing Countries

	Developed Vs. Developing Countries			
	Mean Difference		**Variance Ratio**	
Variable	**T-stat**	**p-value**	**F-stat**	**p-value**
Debt-Equity Ratio	0.528	0.301	1.847	0.293
Long-Term Debt	-4.696	0	0.163	0.001
GDP	3.804	0	8.385	0.004
Inflation	1.164	0.128	675.788	0

Risk-Free Rate	2.273	0.017	78.159	0.002

Table 5.3 shows the results for T-test and F-test of developed and developing country firms. However, the sig. value was considered as 0.05 for this study. The mean difference outcomes showed that the p-values were lower for long-term debt, GDP, and risk-free rate with 0, 0, and 0.017 (<0.05), respectively. The variance difference p-values were lower for long-term debt, GDP, inflation, and risk-free rate with 0.001, 0.004, 0, and 0.002, respectively. The mean differences were statistically significant at the 5% level for long-term debt, GDP, and risk-free rate at the 5% level (Yang et al, 2021, pp.525-542). Furthermore, variance differences between developing and developed countries were significant statistically at a 5% level for GDP, long-term debt, inflation, and risk-free rate since their p-values were lower than 0.05.

Table 5.4

Descriptive Statistics for Country-Level Data in Developing Countries

		Debt Equity Ratio		Long Term Debt		Share market Return (%)		GDP		Inflation		Risk-free rate (10-year treasury rate)	
Country	**N**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**
Argentina	51	1.38	1.649	62.065	19.17	39.09	30.674	2.256	5.892			19.3	20.39
Bangladesh	51	7.406	1.043	32.212	5.648			6.341	0.981	6.899	1.632	9.35	1.741
Brazil	170	0.872	1.077	69.446	14.59	12.79	18.237	2.021	3.173	5.588	1.833	11.61	2.538

Chile	51	2.749	1.378	15.912	10.09			3.45	3.773	3.357	1.778	4.971	1.047
China	187	0.367	0.433	41.976	13.8	12.32	40.018	8.521	2.718	2.514	1.609	3.298	0.282
India	374	0.651	0.9	58.294	13.22	10.54	11.155	6.128	3.394	6.783	2.607	6.971	0.939
Indonesia	102	0.841	0.633	30.241	6.097	17.34	19.252	4.94	1.881	5.622	3.055	8.32	2.092
Malaysia	17	0.283	0.088	50.294	6.714	5.855	13.069	4.211	3.135	2.194	1.507	3.819	0.444
Mexico	68	0.915	2.705	36.118	11.13			1.667	3.357	4.16	0.928	7.094	0.991
Nigeria	51	1.022	0.749	19.241	9.096	7.982	30.955	4.249	3.048	11.99	3.416	12.24	2.638
Philippines	51	0.888	1.116	50.006	6.915			4.873	3.911	3.759	1.857	5.563	1.834

Poland	51	3.691	2.952	51.124	3.977			3.862	2.249	2.254	1.676	4.089	1.494
Romania	34	0.129	0.061	30.247	12.27			3.345	4.303	4.086	2.791	5.929	2.517
Russia	102	0.504	0.582	11.141	2.968	6.431	12.258	2.578	4.023	7.985	3.665	8.095	1.918
Saudi Arab	68	0.83	0.705	15.726	10.78			3.112	3.378	2.994	2.67	3.491	0.604
South Africa	68	1.522	1.372	45.788	13.25	12.45	15.557	1.996	2.852	5.192	1.786	8.27	0.817
Thailand	51	1.614	1.19	43.489	5.045	6.42	14.765	2.788	3.11	1.9	1.96	3.181	1.232
UAE	85	1.494	5.044	18.476	9.314			3.107	3.786	1.884	3.319		

Vietnam	51	1.513	0.827	38.771	5.731	16.22	34.625	6.112	1.425	7.044	5.795	7.282	3.177
Zimbabwe	34	1.98	1.183	96.525	62.57			2.609	9.701	77.52	165.1		

Based on the analysis of country-level data of developing countries for descriptive statistics, the average debt-to-equity ratio was higher for Bangladesh country while a higher dispersion was reported for UAE country from 2015 to 2021 (Table 5.4). Zimbabwe country had a higher average long-term debt of 96.525 and a greater dispersion of 62.57 compared to other developing countries firms. This country also had increased inflation of 77.52 with a higher variability of 165.1. The share-market return was reported at a higher value of 39.09 for Argentina country and the dispersion rate was higher for Chile. Argentina also had an increased risk-free rate of 19.3 and a dispersion rate of 20.39. Among all firms of developing countries, China had a higher growth rate of GDP with 8.521 and Zimbabwe had a greater dispersion of 9.701.

Table 5.5

Descriptive Statistics for Firms of Country-Level Data in Developed Countries

		Debt Equity Ratio		Long Term Debt		Share market Return (%)		Investment		GDP		Inflation		Risk-free rate (10-year treasury rate)	
Country	**N**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**

															Average	
Australia	68								2.54	0.873	2.329	0.873	3.357	1.393		
Canada	323	-0.462	12.84	53.33	7.777		1.973	2.008	1.638	2.326	1.797	0.752	2.395	1.002		
Denmark	34			38.3	5.249				1.322	2.24	1.451	0.906				
France	102	1.01	0.99	89.39	18.66				1.009	2.855	1.242	0.773				
Germany	85	2.666	7.691	153.7	8.014				1.255	2.508	1.489	0.778				
Japan	34			176.1	29.24				0.413	2.341	0.264	0.894				

United Kingdom	493	1.825	8.897	140.2	29.94		15	18.32	1.418	3.059	1.956	0.814	2.395	1.001
United States of America	1386	0.567	5.79	88.72	20.41	11.928	15.963	78.01	80.19	1.801	2.07	2.155	1.256	2.756	1.07

Table 5.5 depicts the results for comparison of all firms of developed countries. The average debt-equity ratio was reported higher value for Germany while higher variability was shown for Canada. Japan country's firms had higher long-term debt of 176.1 on average with the increased variability for firms of the United Kingdom. The organizations of the USA had having higher average investment of 78.01 and a higher variability of 80.19. Moreover, Australia country had shown an increased average GDP of 2.54 and the dispersion rate was higher for the UK with

3.059. The average inflation was higher for Australia country with 2.329 while a higher variability was shown for Japan. The risk-free rate also reported increased results for Australia country with 3.357 and the higher variability with 1.393.

All the above-mentioned results depicted that there are significant differences between firms in developing countries and developed countries as well. Among all differences, it is noted that the developing country firms reported stable and improved financial leverage from 2015 to 2021. Thus, the differences existed between developing and developed country firms concerning the capital structure responses. The next section will include inferential statistics to evaluate the correlation and regression analyses for firms in developing and developed countries.

4.2 Correlation Analysis

Table 5.6

Correlation Analysis

Variables	Debt-Equity Ratio	Long-Term Debt (% of GDP)	Share market Return (%)	GDP	Inflation	Risk-free rate (10-year treasury rate)

Debt-Equity Ratio	**1**		
Long-Term Debt (% of GDP)	-0.028	**1**	
Share market Return (%)	0.046	0.223	**1**

GDP	0.004	-0.351	0.134	**1**	
Inflation	0.023	-0.043	0.031	-0.044	**1**

Risk-free rate (10-year treasury rate)	0.054	-0.303	0.011	0.109	0.554	**1**

The total debt ratio was positively correlated with share-market return, GDP, inflation, and the risk-free rate (0.046, 0.004, 0.023, and 0.054) while the long-term debt was negatively correlated (0.028) (Table 5.6). The share-market return was correlated positively with long-term debt (0.223), GDP (0.134), inflation (0.031), and the risk-free rate (0.011). Moreover, the long-term debt was negatively correlated with GDP, inflation, and risk-free rate (-0.351, -0.043, and -0.303). The GDP was negatively correlated with inflation (-0.044) and positively correlated with a risk-free rate (0.109). Furthermore, inflation and risk-free rate were positively correlated with 0.554, which seems to be the highest among other variables. The remaining variables were not sufficient enough to consider multicollinearity. According to the Pecking Order theory, the

relationship between the risk-free rate and share-market return is compatible with the total debt ratio based on capital structure theories. On the other hand, the total debt ratio is compatible with inflation and GDP according to the trade-off theory.

5.3 Regression Analysis

The panel regression analysis was conducted to examine the relationship between capital structure determinants. However, the Hausman-Taylor random effects model was used to evaluate the data findings (Utami et al, 2021, pp.81-88).

5.3.1 Developing Countries

Debt-Equity Ratio:

The regression analysis was performed to analyse the relationship between the debt-equity ratio (dependent) and financial variables like share-market return, GDP, inflation, and the risk-free rate (independent variables) using the Hausman-Taylor model.

As shown in the above results, the p-value was significant for GDP, i.e. 0.007 (<0.05) which means the developing country firms' debt-equity ratio impacted the GDP. Thus, it rejects the null hypothesis. The remaining financials like share-market return, risk-free rate, and inflation were not affected by the debt-equity ratio in developing country firms due to the higher p-values, such as 0.632, 0.745, and 0.622, respectively. Therefore, the results indicated the debt-equity ratio of firms in developing countries impacted the GDP. As a result, there is a negative relationship between GDP growth and financial leverage in terms of debt-equity ratio.

```
Fixed-effects (within) regression               Number of obs      =       474
Group variable: Year                            Number of groups   =        17

R-sq:                                           Obs per group:
     within  = 0.0183                                         min =         1
     between = 0.2676                                         avg =      27.9
     overall = 0.0189                                         max =        68

                                                F(4,453)           =      2.12
corr(u_i, Xb)  = -0.4328                        Prob > F           =    0.0778
```

DER	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Sharemarket~n	.0013599	.0028341	0.48	0.632	-.0042097	.0069295
GDP	-.0491494	.0180007	-2.73	0.007	-.0845247	-.0137742
Inflation	-.0066099	.0203292	-0.33	0.745	-.0465612	.0333413
Riskfreerat~y	-.0117837	.0239041	-0.49	0.622	-.0587604	.035193
_cons	1.078119	.1714799	6.29	0.000	.7411244	1.415114
sigma_u	.14697573					
sigma_e	.93876112					
rho	.02392566	(fraction of variance due to u_i)				

```
F test that all u i=0: F(16, 453) = 0.67                     Prob > F = 0.8257
```

Long-term Debt:

The relationship between long-term debt (dependent) and independent variables like share-market return, risk-free rate, inflation, and GDP was analysed based on the Hausman-Taylor regression model.

```
Fixed-effects (within) regression               Number of obs      =       1,151
Group variable: Year                            Number of groups   =          17

R-sq:                                           Obs per group:
     within  = 0.0396                                         min =          53
     between = 0.0675                                         avg =        67.7
     overall = 0.0434                                         max =          69

                                                F(4,1130)          =       11.64
corr(u_i, Xb)  = 0.0385                         Prob > F           =      0.0000
```

LongTermDeb~P	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Sharemarket~n	.0462502	.0281356	1.64	0.100	-.0089536	.101454
GDP	-.1185457	.2168434	-0.55	0.585	-.5440067	.3069153
Inflation	-1.121733	.2017136	-5.56	0.000	-1.517509	-.7259581
Riskfreerat~y	1.252026	.2415396	5.18	0.000	.7781095	1.725943
_cons	44.21008	2.352478	18.79	0.000	39.59436	48.82579
sigma_u	9.2341566					
sigma_e	18.128581					
rho	.20600757	(fraction of variance due to u_i)				

```
F test that all u i=0: F(16, 1130) = 13.42                     Prob > F = 0.0000
```

The regression results depicted that the inflation and risk-free rates were impacted by the long-term debt of firms based in developing countries. Because p-values were obtained as 0.000 (<0.001) for both inflation and risk-free rate that means the null hypothesis is rejected at a 1% significance level. Thus, long-term debt has impacted the inflation and risk-free rate. The long-term debt of firms in developing countries has been affected by the risk-free rate and inflation. These results reported a positive relationship between inflation and long-term debt while a negative relationship showed between risk-free rate and long-term debt.

5.3.2 Developed Countries

Debt-Equity Ratio

```
Random-effects GLS regression                   Number of obs     =       204
Group variable: Year                            Number of groups  =         7

R-sq:                                           Obs per group:
     within  = 0.0000                                         min =        27
     between = 0.6965                                         avg =      29.1
     overall = 0.0193                                         max =        31

                                                Wald chi2(4)      =      3.92
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.4164
```

DER	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Sharemarket~n	-.0829202	.045928	-1.81	0.071	-.1729374	.0070969
GDP	.0893686	.2787041	0.32	0.748	-.4568813	.6356186
Inflation	.0672128	.4960664	0.14	0.892	-.9050596	1.039485
Riskfreerat~y	-1.459588	1.062879	-1.37	0.170	-3.542792	.6236165
_cons	4.377067	2.48418	1.76	0.078	-.491836	9.245969
sigma_u	0					
sigma_e	6.2676937					
rho	0	(fraction of variance due to u_i)				

The debt-to-equity ratio of firms in developed countries did not impact the share-market return, inflation, GDP, and risk-free rate based on the above results of a regression model. However, their p-values were 0.071, 0.892, 0.748, and 0.170 (>0.05) which indicates the null hypothesis is accepted at a 5% significance level. Thus, there is no relationship between the debt-equity ratio of firms based on developed countries and share-market return,

risk-free rate, GDP, and inflation as well. In conclusion, the debt-to-equity ratio did not affect the GDP, risk-free rate, share-market return, and inflation of developed country firms.

CHAPTER VI:

DISCUSSION

Based on the collected dataset of fintech firms incorporated from 2015 to 2021, this study examined the financing of 250 companies from developing and developed countries through the analysis of impacts on their characteristics on long-term debt. The provided results and data analysis outcomes demonstrated the characteristics that help firms receive debt financing. It is more likely to receive the financing of long-term debt by fintech start-ups which are unregulated and owned by more than one entity or wholly owned by a corporation or financial institutions. In this study, the characteristics were elucidated for 250 firms in developing and developed countries based on financials in terms of debt-equity ratio, share-market return, long-term debt, inflation, GDP, and risk-free rate.

The cross-sectional average of the total debt-equity ratio for all firms was presented within the respective groups, including developed vs. developing countries (Figure 5.1). In our data set, all countries were included China, India, Brazil, South Africa, Nigeria, Malaysia, Indonesia, Vietnam, Argentina, Thailand, Mexico, Bangladesh, Chile, Zimbabwe, Philippines, Poland, Russia, Romania, Saudi Arabia, and UAE. Developed countries were considered as the United States of America, Canada, the United Kingdom, France, Denmark, and Australia. However, the developing countries have showed increased average debt-equity ratios from 2015 to 2019 FYs excluding 2016 FY in comparison with the developed countries. Moreover, the developed countries showed increased debt ratios in the 2018, 2020, and 2021 FYs. The average debt-equity ratios analyses showed important insight to provide the differences in

capital structure responses to the COVID-19 pandemic crisis among financial firms in developing and developed countries. In 2016, the developing country firms were deleveraged financially and continued to recover from 2017 to 2019, again reducing the trend of debt ratios on an average from 2020 to 2021 due to the COVID-19 pandemic. On the other hand, developed country firms continued to improve the average debt ratios although they entered into the COVID-19 pandemic and improved afterwards. Therefore, the average total debt-equity ratio of the developed countries for 250 firms showed an increased trend after the COVID-19 pandemic which was contradictory to the results of developing countries' firms.

The data analysis results disclosed the average long-term debt for developing and developed countries (Figure 5.2) for 250 firms during the period from 2015 to 2021 FYs. However, fintech firms showed an increased long-term debt trend from 2015 to 2021 on average in both developed and developing countries. The highest average long-term debt ratios were reported for developed country firms from 2015 to 2021 than the developing country firms. As firms of developed countries showed higher long-term debt, they can able to finance equipment, inventory, working capital, and refinance existing debt than the firms in developing countries. Moreover, the increased share-market returns were shown for developed country firms in 2016, 2017, 2019, 2020, and 2021 FYs than the developing country firms (Figure 5.3). The COVID-19 pandemic impact was negatively associated with the share-market return in firms of developing countries. Specifically, they reported a reduced share-market return in 2019 and increased again in 2020 and 2021. In comparison with the developed country firms, they showed reduced share-market returns that indicate that higher returns could

be earned by the firms of developed countries regarding their investments compared to the companies of developing countries.

The average GDP growth showed an increased trend from 2015 to 2021 for developing country firms than the developed country firms (Figure 5.4). Both developing and developed country firms reported the lowest GDPs in 2020 after the COVID-19 pandemic and increased again in 2021. Thus, developing countries' firms have higher GDPs, indicating they have higher average business incomes with increased consumer demands than developed countries. The companies of developed countries reported lower inflation rates from 2015 to 2021 when compared to firms of developing countries (Figure 5.5). In 2020, developing countries' firms showed an increased inflation rate due to the crisis of COVID-19. However, the low and stable inflation rates were more beneficial for the good economy of firms in developed countries than in developing countries. The average risk-free rates were compared between all firms in developed and developing countries (Figure 5.6). The increased risk-free rates for companies of developing countries than the developed countries' firms from 2015 to 2021. The lowest risk-free rates were observed in 2020 due to the COVID-19 pandemic for both developed and developing countries' firms. The firms improved the risk-free rate in 2021. Therefore, financial firms of developing countries have higher risk-free rates that represent better investments than the firms of developed countries.

Table 5.1 and Table 5.2 provided the descriptive statistics of the financial variables like risk-free rate, share-market return, investment, GDP, debt-equity ratio, inflation, and long-term debt that were utilized in the study analysis for developing and developed countries

(country-based descriptive statistics) over the period from 2015 to 2021. The average total debt ratio (0.829) was lower for developing country firms than the developed country firms' average debt ratio (1.195). From Table 5.1, the average long-term debt was higher at 97.194 for developed countries than the developing countries' firms, i.e. 43.534, a difference is statistically significant (Table 5.1). Moreover, the average share-market return was lower for developed countries than the developing countries (11.928 Vs. 12.539). The average GDP was resulted for higher in firms based in developing countries in comparison with the firms of developed countries (4.5 Vs. 1.65) while it was significant with the higher variability (4.094 Vs. 2.378). The developing countries' firms also have higher inflation rates with 6.246 than the developing countries' firms with 1.987 inflation rates on average. Furthermore, the average value of the risk-free rate was reported as a higher value of 7.248 for companies based in developing countries than the firms in developed countries, i.e. 2.654. It displays the greater variability between developing and developed countries' firms, including 4.729 and 1.079, respectively. The mean differences were statistically significant at the 5% level for long-term debt, GDP, and risk-free rate at the 5% level (Yang et al, 2021, pp.525-542) (Table 5). Furthermore, variance differences between developing and developed countries were significant statistically at a 5% level for GDP, long-term debt, inflation, and risk-free rate since their p-values were lower than 0.05 (Table 5.3).

Based on the analysis of country-level data of developing countries for descriptive statistics, the average debt-to-equity ratio was higher for Bangladesh country while a higher dispersion was reported for UAE country from 2015 to 2021 (Table 5.4). Zimbabwe country

had a higher average long-term debt of 96.525 and a greater dispersion of 62.57 compared to other developing countries firms. This country also had increased inflation of 77.52 with a higher variability of 165.1. The share-market return was reported at a higher value of 39.09 for Argentina country and the dispersion rate was higher for Chile. Argentina also had an increased risk-free rate of 19.3 and a dispersion rate of 20.39. Among all firms of developing countries, China had a higher growth rate of GDP with 8.521 and Zimbabwe had a greater dispersion of 9.701.

The average debt-equity ratio was reported higher value for Germany while higher variability was shown for Canada (Table 5.5). Japan country's firms had higher long-term debt of 176.1 on average with the increased variability for firms of the United Kingdom. The organizations of the USA had having higher average investment of 78.01 and a higher variability of 80.19. Moreover, Australia country had shown an increased average GDP of 2.54 and the dispersion rate was higher for the UK with 3.059. The average inflation was higher for Australia country with 2.329 while a higher variability was shown for Japan. The risk-free rate also reported increased results for Australia country with 3.357 and the higher variability with 1.393. It is noteworthy that the developing country firms reported stable and improved financial leverage from 2015 to 2021. Thus, the differences existed between developing and developed country firms concerning the capital structure responses.

The total debt ratio was positively correlated with share-market return, GDP, inflation, and the risk-free rate (0.046, 0.004, 0.023, and 0.054) while the long-term debt was negatively correlated (0.028) (Table 5.6). The share-market return was correlated positively with long-

term debt (0.223), GDP (0.134), inflation (0.031), and the risk-free rate (0.011). Moreover, the long-term debt was negatively correlated with GDP, inflation, and risk-free rate (-0.351, -0.043, and -0.303). The GDP was negatively correlated with inflation (-0.044) and positively correlated with a risk-free rate (0.109). Furthermore, inflation and risk-free rate were positively correlated with 0.554, which seems to be the highest among other variables. The remaining variables were not sufficient enough to consider multicollinearity. According to the Pecking Order theory, the relationship between the risk-free rate and share-market return is compatible with the total debt ratio based on capital structure theories. On the other hand, the total debt ratio is compatible with inflation and GDP according to the trade-off theory.

The regression results of the Hausman model show that the GDP growth and debt-equity ratio were inversely correlated in developing country firms. These results were analogous to the study of Asgari and Izawa (2023) that indicated that GDP growth has been impacted negatively on financial leverage. Moreover, the inflation and risk-free rate have been impacted by the long-term debt which means a negative relationship resulted between long-term debt and risk-free rate and a positive relationship between long-term debt and inflation. In the case of developed country firms, the debt-equity ratio of firms did not impact the inflation, GDP, risk-free rate, and share-market return as well.

CHAPTER VII:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

The country and firm-level determinants of the capital structure of the 250 firms were analysed in this study based on different financial parameters like debt-equity ratio, long-term debt, investment, risk-free rate, inflation, and GDP. However, the countries and respective firms were included and categorized into developed and developing countries to compare the financial results of companies. This study conducted a comprehensive analysis of the capital structure of 250 firms from both developing and developed countries from 2015 to 2021. The debt structure of the analyzed firms determined the firm-specific determinants of capital structure such as long-term debt, GDP, risk-free rate, inflation, and investment. The analysis results revealed that the main firm-specific determinants of leverage vary and country-specific determinants differ across the developing and developed countries. It is essential to consider the country-specific factors that contribute to the economic development status of countries.

Although the debt-equity ratios of the firms are higher in developed countries from 2020 to 2021, the capital structure has been affected by operating in a developed country. In the panel data regression, the clustering effect was observed for debt ratios for developed country firms. The financial aspects have gradually declined for developing country and developed country firms during 2019 due to the COVID-19 pandemic. Moreover, the firms have increased leverage after COVID-19 but developed country firms showed enhanced performance in terms of GDP, risk-free rate, inflation, debt-equity ratio, investment, and long-term debt in 2020 and 2021 than the developing country firms.

These data findings have implications for developed and developing country firms and their investors across the world. It indicates the firms could control their leverage based on the management of firm characteristics irrespective of the country they are operating their business operations as the financial parameters are the main determinants of the capital structure. Thus, it should be considered the development of a developing or developed country as secondary in the decisions of capital structure. These results illustrated that the investors who expected the uncertainty of the global market could gain the advantage from diversifying into developing countries while deleveraging could be achieved in those countries more quickly.

Future research will be focused on investigating the corruption level and industry-level factors within developing and developed countries as determinants of firm leverage. The current study provides advantages since the fintech firms have successfully provided the financial landscape that has disrupted or changed the financial industry. Primarily, this study evaluated the financing of fintech firms from developing and developed countries based on quantitative studies. Many studies were focused on a single factor within the broad panorama of different fintech firms instead of analysing the impacts of several factors of fintech firms and comparing the results for developing and developed country firms. Therefore, this study was differentiated from earlier studies with the identification and analysis of determinants, including debt-equity ratio, long-term debt, GDP, risk-free rate, inflation, and investment that enable financial firms to improve financial growth. This empirical study of fintech firms provides great insights for researchers and practitioners to make decisions efficiently.

This study identified the causal factors in terms of managerial implications to provide valuable insights for increasing the possibility of receiving long-term financing in the case of firms from developed countries in comparison with developing country firms. From the perspective of a managerial view, the partial loss of control of an organization has been prevented by debt financing that entails equity financing in terms of rights and participation in the decision-making of a company. The managers and owners of firms in developed countries can run their business operations with effective debt financing without the investors' involvement in the business strategies.

On the other hand, the research findings would be beneficial for financial organizations that would allow the fintech companies to invest in the ideal financing recipients in exchange for the technological benefits. The obtained results would be useful for researchers and would create interest for policymakers since they could able to highlight the fintech firms' advantages that imply the firms should be treated efficiently and promptly.

This study has some limitations like the estimations control many financial factors while others may be essential. Thus, future research should improve the proposed basic model of capital structure determinants by comparing the developing and developed country firms. The minority use of business debt has recommended that there is an existence of important differences between these firms and their capital structure decisions. Furthermore, this research could be extended to explore whether the financing of fintech firms in developed and developing countries impacts their profitability and growth in subsequent years.

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