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## **Research Paper**

**Creation and implementation of corporate accounts receivable securitization in the stock exchange – a solution to developing the financial market? A look at the Mongolian financial market.**

**Bachelor Thesis**

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**International Finance**

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## Declaration of Authorship

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## List of Abbreviations

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FCI	Facilitating Open Account - Receivables Finance
EBITDA	Earnings before interest, taxes, depreciation, and amortization
SPV	Special purpose vehicle
ABS	Asset-backed security
MBS	Mortgage-backed securities
RMBS	Residential mortgage-backed securities
CMBS	Commercial mortgage-backed securities
CDO	Collateral debt obligations
CBO	Collateral bond obligations
CLO	Collateral loan obligations
MSE	Mongolian stock exchange
FRC	Financial regulatory commission
MCSD	Mongolian central securities depository
GDP	Gross domestic product
BoM	Bank of Mongolia
COVID-19	2019 novel coronavirus
IPO	Initial public offering

## List of Tables

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Table 1	List of interview questions
Table 2	List of interviewed participants
Table 3	List of survey questions and answers
Table 4	Interview answers

## List of Figures

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- Figure 1 The factoring structure
- Figure 2 The global factoring volume
- Figure 3 The securitization process
- Figure 4 The securitization tranche notes
- Figure 5 The receivables securitization on the stock exchange
- Figure 6 Mongolian GDP growth
- Figure 7 The interest rate of Bank of Mongolia
- Figure 8 Top 20 index MSE

## Table of Contents

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<b>Declaration of Authorship</b>	<b>2</b>
<b>List of Abbreviations</b>	<b>3</b>
<b>List of Tables</b>	<b>4</b>
<b>List of Figures</b>	<b>5</b>
<b>Table of Contents</b>	<b>6</b>
<b>Abstract</b>	<b>8</b>
<b>1. Introduction</b>	<b>9</b>
1.1. Introduction	9
1.2. Research question	9
1.3. Thesis structure	10
<b>2. Literature Review</b>	<b>12</b>
2.1. Factoring	12
2.1.1. History	12
2.1.2. Advantages of Factoring	13
2.1.3. Disadvantages of factoring	13
2.2. Securitization	13
2.2.1. History	15
2.2.2. Advantages of securitization	15
2.2.3. Disadvantages of securitization	15
2.3. Solution	16
2.4. Country overview	17
2.4.1 Financial sector and monetary policies	18
2.4.2. Capital market	18
<b>3. Methodology</b>	<b>20</b>
3.1. Research plan	20
3.2. Research approach	20
3.2.1. Qualitative analysis	20
3.2.2. Quantitative analysis	22
3.2.3. Ethics of the interview and the survey	22
<b>4. Findings</b>	<b>24</b>
4.1. Findings	24

4.2. Result of hypothesis testing and regression analysis	24
4.3. Result of the survey/questionnaires	25
<b>5. Summary, Conclusions, Limitations, and Recommendations</b>	<b>27</b>
5.1. Summary	27
5.2. Conclusion	27
5.3. Limitations	28
5.4. Recommendations for further research	28
<b>References</b>	<b>29</b>
<b>Appendices</b>	<b>34</b>

## Abstract

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Working capital has an important role for any business and companies to operate and grow. Firms should carefully examine and manage their working capital as sometimes it could lead to massive chaos or even risk of bankruptcy. Therefore, firms should be choosing the most suitable for the company depending on the market capitalization, length of the payables, and the amount of liquid assets on the balance sheet. Receivable's finance is considered as the one of the quickest and most efficient tools to manage the firm's short-term coverage. As there are many different types of receivables financing, this research paper aims to investigate the most used ones in the financial market. Afterwards, the paper will come up with a new type of structured receivable finance that could be beneficial to the companies in Mongolia to settle its short-term financial need while developing the stock exchange and the financial market. Development of the stock exchange can play a crucial role in the growth of a country's economy as most countries with advanced economies are heavily supported by their stock exchange and capital markets. Hence, implementing the right structured financing model could be an innovative tool for further success of the financial market.



## 1. Introduction

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### 1.1. Introduction

Working capital management plays a crucial role in small to medium sized enterprise's financial performance and enhancement of its business growth. Many businesses that filed for bankruptcies are often caused by mismanagement or misuse of their working capital. Therefore, the shareholders' value in any businesses will be heavily reliant on managing its short-term cash flow and working capital (Obeng et al., 2021). Based on the research of Hasanuh et al.(2021) in regards to the effectiveness of working capital towards different financial indicators in the Indonesian companies, shows that the working capital has critical influence on the net profit of the company, which states that if working capital increases then subsequently the net profit follows. This shows how working capital management is associated with the growth and development of the company.

The working capital is composed of current assets minus the current liabilities. In current assets, it includes cash, inventories, and receivables. While in current liability, it includes payables, and accrued expenses. Working capital measures a company's short-term financial position on how a company is handling its short-term debt and its payable with its current asset. However, not all assets in the balance sheet considered liquid, such as inventory and receivables. Inventory would turn into liquid once the sales are made with cash, while receivables are the invoice or the credit from the customers that are waiting to be paid within a year. In this research paper, the author will explain the types of working capital financing using the receivables.

When businesses trade with each other, they usually record trade credit in their journal. Trade credit is where a customer buys a goods or services from a supplier but instead of direct pay, it issues invoices which to be paid at a later time. In order to grow and increase the sales, the companies often use the trade credit in their business operations. However, in the case of small and medium sized companies, it appears to be difficult to supply continuously with trade credit due to its limited amount of working capital (JIN & WANG, 2020). Hence these firms can use various methods to finance their capital, such as selling off their account receivables to a factoring company with a discounted value (JIN & WANG, 2020), or sell the accounts receivables by using a securitization tool or by collateralizing the asset (Benea & Duma, 2013). In this research paper, it will take a closer look at receivable factoring and receivable securitization methods, explaining the strengths and weaknesses of each option. In the later part, it will cover a feasible receivable financing solution that companies in the Mongolian market could use to finance its balance sheet.

### 1.2. Research question

Main research question:

- Will the creation and implementation of corporate receivables securitization in the stock exchange have a positive impact on the development of Mongolian financial market?

Sub-research question:

- Will the implementation of the corporate receivables securitization in stock exchange be attractive and beneficial to the investors?

The aim for this research paper is to answer both main and sub-research questions. Therefore, the author will explain a new type of securitization structure that helps companies in Mongolia to finance its working capital. Further the author will prove his concept by using multiple statistical approaches.

### **1.3. Thesis structure**

#### **Chapter 1: Introduction**

Introduction will briefly explain the overview of working capital, importance in a firm's financial performance and types of methods companies can use to finance the working capital. Research and sub-research questions will be mentioned in this chapter and It will cover a brief outlook of the thesis and its structure.

#### **Chapter 2: Literature review**

In this chapter, the author explains the different types of structured financing methods and describes the advantages and disadvantages that could potentially bring to the customer, supplier and investor. After carefully examining the market and highlighting the risks that are associated with the financing methods, the author will give a better financing receivables model which can be implemented in the Mongolian financial market.

#### **Chapter 3: Methodology**

In this chapter, the author will make quantitative and qualitative analysis on the research topic. The qualitative analysis will be based on interviewing representatives of companies, potential investors and financial experts that work in Mongolian market. The qualitative analysis will test the behavior of the investors whether they are interested in such a type of product by collecting surveys in random samples from the population. The chapter will further analysis on hypothesis testing and regression analysis regarding the main research question and the sub-research question.

#### **Chapter 4: Findings**

In this chapter, the results from the hypothesis testing and the regression analysis will be introduced and based on the outcomes of the tests, the author will decide whether to accept or reject the answer. Later, the survey outcomes would be introduced as a supporting point to the main concept and to answer the sub-research question.

## **Chapter 5: Summary, conclusion, limitations and recommendations for further research**

Following the research result, this chapter will summarize the entire research paper and provide conclusions on the topic. Later in this chapter, the author gives his limitations that occurred during the research and makes his own recommendations on further research.

## 2. Literature Review

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### 2.1. Factoring

Factoring is considered to be the most efficient tool for smaller companies to raise capital once they get a limited amount of liquid assets to pay its debt (JIN & WANG, 2020). As seen in the figure 1, factoring can be defined as when a company sells its account receivables or the invoices to the factoring company while discounting the value of the asset in exchange for an instant liquid cash to cover its short-term financial obligations (Myers, 2010). Once the receivables or the invoices get paid, the amount will directly be transferred to the factoring company. The factoring company would be mostly banks or other financial institutions that buy the receivables. Unlike loan agreement, this method of financing doesn't involve two parties and doesn't consider the creditworthiness of the supplier, instead it involves 3 parties, consists of customer, supplier, and factoring company, and focuses more on the value of the receivables and creditworthiness of the supplier's customer (RĂVAȘ & DAVID, 2010). Factoring can be beneficial for companies that delay 30 to 90 days (RĂVAȘ & DAVID, 2010) or sometimes even up to 180 days or more (Kozarević & Hodžić, 2016) to collect its receivables by offering them up to 90 percent advance payment of the receivable amount and takes early as 24 hours to be funded (RĂVAȘ & DAVID, 2010).

#### 2.1.1. History

On the research of RĂVAȘ & DAVID (2010), the factor financing is believed to have originated around 4000 years ago during the reign of King Hammurabi of Mesopotamia and the first evidence of factoring was found on the ancient stone tablets. While in Rome, the first discounted promissory letter has been found. This may explain to us that the history and creation of factoring was as old as the history of business itself. The modern stage of factoring was largely developed during the European colonial era in America before the revolution. The factoring was started when England bought raw materials like animal fur, timbers, and cottons from the colonial states in America and the payment often gets delayed because of the long distance traveling between the two continents. Since the payment was taking a long period of time, companies in America sell its account receivables to the factoring company and increase the liquidity of the company. As time went by, the factor financing was playing a major role for financing the illiquid assets. After the 1980s, when interest rates rose in the United States, companies were committed to find another way of financing and therefore the usage of factor financing demand has increased dramatically.

Figure 2 shows that modern factoring has become the key financing tool for funding the working capital with the current global volume of factoring over 2.5 trillion Euros (Facilitating Open Account - Receivables Finance (FCI), 2020). According to the statistics made from Facilitating Open Account – Receivables Finance (FCI), the global factoring volume has increased

tremendously since the 2008 financial crisis. In 2018 the volume was worth 2,767 billion Euros and in 2019 it was worth 2,917 billion Euros. This volume slightly decreased in 2020 due to the 2019 novel coronavirus (COVID-19), global pandemic. In 2019, within the FCI member countries and territories, Eurozone takes the highest market share with 67.75%, followed by Asia Pacific zone with 23.57% and South America with 4.53% respectively. While the Middle East and Africa zone are considered to have the lowest market share with both below 1%, where Africa with 0.84 and Middle East with 0.34% (Facilitating Open Account - Receivables Finance (FCI), 2020).

### **2.1.2. Advantages of Factoring**

Factoring can be beneficial to all parties that are involved in the transaction including the supplier, customer, and the factor. It is a great way to get instant cash payment in exchange for their receivables for small to medium sized companies. In most cases the factor company will provide advance payment within 24 hours, in such a way that the supplier doesn't need to wait up to 90 days or even longer (Kozarević & Hodžić, 2016) to collect the payments from its customer (RĂVAȘ & DAVID, 2010). Factoring is considered to be easier than getting a loan from the bank as the bank will focus more on the creditworthiness of the supplier and monitor the financial data and ratios of the supplier, such as EBITDA, coverage and debt to equity ratios. While in factoring it reviews more on the receivables and customer's ability to pay the invoices (Myers, 2010).

Besides the main benefits that factor provides, there are several other in-direct advantages of factoring, such as improvement of the relationship between customer and supplier. Once the company sells its receivables to the factoring company, the supplier doesn't need to stress the customer to pay the receivables anymore (McGee, 1999). Instead, it will be factoring the company's responsibility to collect the invoices.

### **2.1.3. Disadvantages of factoring**

Cost of factoring can be the downside of this financing method. The factoring fee can depend on various kinds of reasons such as the amount of receivables, size of the customer, volume, and terms of sales (Benea & Duma, 2013). The fees usually lie between half to six percent of the invoice amount. Therefore, if the supplier is a small company with tight profit and cashflow, it may hinder their financial operation (Myers, 2010).

## **2.2. Securitization**

Another type of selling receivables is by securitizing the assets. While factoring is often used for smaller companies, on the research mentioned in the Harris & Dudney (2018) demonstrates that the non-financial companies that use securitization are 8-12 times bigger than their industry average with its debt, accounts receivables, earnings and growth rate. In other words, a securitization tool is often used for a larger firm than the factoring ones. In figure 3, the securitization can be defined as a process in which a company

creates its own subsidiary whose sole duty is to buy receivables from the parent company and sell or transfer those receivables into the investors. The subsidiary is usually called as a Special Purpose Entity (SPE) (Harris & Dudney, 2018) or as a Special Purpose Vehicle (SPV). The reasoning behind creating SPE is to use it as a bankruptcy remoting tool, meaning that if the parent company goes bankrupt, the SPE will not hold responsibility on it and the creditors of the parent company will not have access to the assets in SPE. Similarly, if the asset held in SPE defaults, the parent company will not be liable to it (Harris & Dudney, 2018). For that reason, securitization allows companies or banks to transfer the risk of receivables into the buyer side. The amount of assets in the SPV are mostly asset backed securities (ABS), meaning if the borrower defaults on the loan, then the investor has the right to own or use the collateralized asset. According to the report of Deloitte (2018) the ABS can be divided into different types of asset classes depending on their underlying collateralized asset. Mortgage-backed securities (MBS) is a financial asset that is backed by a single type of asset or a pool of asset classes. The pool of asset classes are often made-up from residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS). There is also collateralized debt obligation (CDO), which is a pool of high yield, fixed income or floating interest rate loans. CDOs are often divided into different types of tranches in order to attract and sell to the investors. CDOs include collateral bond obligations (CBO), meaning it is backed by a pool of unrated or corporate junk bonds and collateral loan obligations (CLO) meaning it is a pool of high-leveraged bank loans. CDO can either be passive or actively managed by professional managers. The report of Deloitte (2018) shows that the assets in SPV would be divided into different types of risk levels to attract and offer diversified investment options to the investors. These different levels will be known as the "tranche notes". Payments coming from the loans will be allocated by their risk level. The figure 4 shows that the less-risky asset tranche will have the seniority among other tranche levels and the first to be paid back to the investors, whilst less-risky tranches are often invested by pension funds, insurance companies and other investors that do not prefer taking risks. After all the senior and low-risk classes have paid, then the middle or mezzanine level tranches will be distributed. Lastly, the most junior level and high-risk tranches will get their profit. Junior tranche usually refers to high yield risky asset classes, and therefore investors like hedge-fund and other high-risk taking investors will be interested in this type of asset tranche. In the event that this pool of loans underperforms or defaults, the most junior tranches will be the first to shrink, hence these tranches have the most risks and higher return in the asset. The process of paying from the most senior level to the riskiest level tranches is known as the "cash flow waterfall" or just the "waterfall". In the same report of Deloitte (2018), the securitization has several more parties involved in the transaction, the most important parties include the Obligor or the one who is obliged to pay the loan, Originator or the one that is selling the asset, the Investor or the one who is buying, the Credit Rating

Agency that access the security, the asset Manager, the Trustee, the Calculation Specialist and the provider of Credit Enhancement.

### **2.2.1. History**

The report of Huntingford (2019) mentioned that the history of securitization with forming a special purpose entity that issues securities has started long ago in the 16th century in Dutch province when they issued a bond that is backed by receivables from government taxes. Today the asset securitization has involved various types of financial instruments such as receivables, mortgages and car loans, and credit card payments. In 2018, there were more than \$1 trillion of securitization issued and most of them are funded privately by bank conduit or other specialized investors.

### **2.2.2. Advantages of securitization**

Likewise factoring, the receivables securitization has certain advantages, firstly it is a financial tool that converts illiquid assets such as loans, receivables or lease contracts into tradeable liquid assets which then can be sold in the capital market for investors. In other words, a quick way to cash out rather than expecting the invoices to be paid (Deloitte, 2018). Besides financing the receivables, it also benefits in an accounting perspective, as it allows companies to recognize the sale of the receivables into either gain or loss in the financial statements. Otherwise stated as it improves company's performance in that current-year (Benea & Duma, 2013) and it may allow companies to transfer its risk related to unsecured debt. It is also considered to be a low-cost funding method for receivable financing (Benea & Duma, 2013).

It also benefits investors by giving them an alternative investment option to invest and a new way to diversify their portfolio asset class. It is considered to be favorable from the macro-economy point of view, as if the banks securitize their receivables and sell it in the capital market for quick cash payment, then it eventually gives a possibility for banks to supply additional loans to the economy (Deloitte, 2018).

### **2.2.3. Disadvantages of securitization**

Although securitization has many beneficial outcomes to all parties involved in the transaction, there are still some downsides of this method. It is believed to have played a major role in the most recent 2008 global financial crisis. The report of Peicuti (2013) states that with the help of securitization, the banks have been able to diversify their risk profile and are able to increase their lending volume, which motivates other financial institutions to use the same approach. As more parties are involved in the same market, banks and other financial institutions started to lend to low-profile and poor credit scored customers which eventually increased the number of subprime loans in the market. These types of low-rated loans were attracting investors because they were giving higher returns than corporate bonds while having similar credit ratings. As securitization is a tool that allows risks to be transferred, the banks

were making more securitized assets that were made of subprime mortgages loans, and by the year of 2007, 58 percent of the U.S. residential housing loans have been securitized which was worth \$6.3 trillion.

Within the same report of Peicuti (2013), the recent subprime crisis confirms that mortgage securitization led to a significant drop in the quality of screening of the borrowers. Screening the borrowers brings additional cost to the banks and the fact that banks were planning not to hold these assets on their balance sheet, motivates them to create even more subprime loans. Another main cause would be the complexity of the securitization structure. Seeing the different types of layers of the SPV, investors had difficulty to understand the risks that are allocated in the securitization. Thus, the investors were solely relying on the ratings made from the credit agencies. However, in a highly oligopoly and competitive market like credit rating industry, agencies usually are not tended to turn down such offers of rating securitization. In the early times, the credit rating agencies were used to assess the credit risks and provided an independent evaluation for the securitization. However, the situation has changed as they were heavily influenced by the banks and assessed as per banks interest.

### **2.3. Solution**

Both financing methods of factoring and securitization have certain advantages and disadvantages on their own approaches. Factoring could be the fastest way to liquidate your balance sheet for instant cash while paying a higher fee. Whereas in securitization, it could be considered the most suitable way of financing but taking into consideration that securitization has played a major role in previous crises, investors and companies tend to avoid this type of product. Nevertheless, if the structure changes into a much safer option than the recent financial crisis and avoids those mistakes that were created during that time. Then, it could consider a safer alternative option for companies to sell off its receivables and investors to diversify their investment. The three main reasons of the 2008 financial crisis as follows;

- The first reason for the recent crisis was mainly caused by an unregulated financial environment. Regulatory agency was not monitoring transactions and that led to false evaluation from the rating agencies.
- The second reason would be the lack of transparency and the complexity of the securitized assets. During the crisis time investors were not exactly aware of what types of risks that they were going into.
- Thirdly, as banks were not bearing the default risk of the receivables, they were continuously creating the subprime loans.

In order to limit those risks to reoccur in the market, the author's solution is to involve the stock exchange for the accounts receivable securitization's transaction. Firstly, the stock exchange is a highly regulated place where a number of agencies and organizations monitor transactions and regulate the marketplace, consequently it mitigates the unregulated environment risk. For



instance, in Mongolian stock exchange case, any product that needs to be listed on the stock exchange would require a confirmation from the Mongolian Stock Exchange (MSE) and Financial Regulatory Commission (FRC) (Mongolian Stock Exchange, 2018), and any securities that would need a registration would also be monitored by the Mongolian Central Securities Depository (MCSD) as well. Secondly, since the obligor of the securitized receivables have to be a publicly listed company which would constrain the number of securitizations on the stock exchange. Hence, the financial information regarding the obliged company can be found publicly where individuals will have full transparency on the product that they are investing into. Publicly traded companies usually file a quarterly report to investors and present their quarterly financial positions. Like this, investors will be updated on the performance of the company every 3 months. Lastly it may decrease the chances of bad receivables, as the companies that list on the stock exchange are usually monitored by the regulators and have to follow the corporate governance codex (Mongolian Stock Exchange, 2018), which eventually strengthens the corporate culture and governance of the company. In order to further reduce the rate of default on receivables, few additional implementations could be applied such as the originator sharing the default risk or stock exchange accepting the securitization that only have higher cash and coverage ratios. As mentioned above, this can be a way to improve the performance of the stock exchange by creating an innovative product and structure which can eventually attract more investors to market. This structure would be very beneficial to a country like Mongolia where the capital market and stock exchange is usually considered weakly performed and immature in many manners.

Figure 5 shows the process of the receivable securitization in the stock exchange.

#### **2.4. Country overview**

Mongolia is a landlocked country located between Russia and China, with abundant natural resources. With a population of only over 3.2 million and geographical land area with more than 1.5 million square kilometers, it is considered as the country with least density area per capita in the world. Mongolia has Gross Domestic Product (GDP) worth around USD 13 billion with per capita of USD 4,339 in 2019 (The World Bank, 2019). Figure 6 shows that Mongolia has experienced solid economic growth since 2016, by having 5.337%, 7.247%, and 5.159% of GDP growth in 2017, 2018, and 2019 respectively, and averaging 10 years GDP growth of 7.5532% from 2009 to 2019 (The World Bank, 2019). The main economic driver comes from the mining and heavy industries sector, where in 2019, it accounts for 25% of the GDP, 72% of the industrial output, 90% of the export of the country and 24.5% of the government budget (Ministry of Mining and Heavy Industry, 2020). Therefore, Mongolian economy is very vulnerable to the price fluctuation of metals and minerals commodities, especially the main export products such as copper, gold and coal.

### **2.4.1 Financial sector and monetary policies**

The financial industry which is known as the main source of the economy has been mostly dominated by banks, where in 2019, 13 commercial banks accounted for 93.7% of total assets in the financial sector (BANK OF MONGOLIA, 2019). Hence, long-term financing is usually involved with banks, and so raising capital from the stock market is often avoided.

The central bank of Mongolia (BoM), or also known as Mongol bank, has lowered the interest rate from 11% to 6% (BANK OF MONGOLIA, 2021) in response to boost economy against COVID-19 pandemic. The figure 7 shows that the interest rate in Mongolia is usually considered to be high with an average 10-year interest rate of 11.9% from 2009 to 2019, with highest of 17.25% in 2012 and lowest of 10% in 2009. The reason behind higher interest rate is mainly because of the inflation and the depreciation of the local currency Mongolian tugrik. The current inflation rate as of April 2021 is 5.6% with a targeted level of plus or minus two points of 6%. The 10-year average inflation rate from 2009 to 2019 was 8.04% with highest of 14.33% in 2012 and lowest of 0.74% in 2016 (BANK OF MONGOLIA, 2021). In 2019, the exchange rate for US dollar to Mongolian tugrik was 2,734.3, which is 3.4% depreciation from 2018. The daily average exchange rate volatility has been lowered by 0.014% from the previous year and reported as 0.01%. During the same year, the highest appreciation rate was 0.23% or by 5.99 Tugrik and highest depreciation rate was 0.28% or by 7.42 Tugrik. The daily exchange rate variation lies between plus or minus 2% (BANK OF MONGOLIA, 2019).

### **2.4.2. Capital market**

#### **History of Mongolian stock exchange**

Since the democratic revolution took place in Mongolia, the whole economy has shifted from the socialist regime economy into freer capitalist market-based economy. As the market changed, the government of Mongolia started to privatize the state-owned assets into the general public. Therefore in 1991, Mongolian stock exchange (MSE) was established by the decree of the Mongolian government to privatize state-owned assets, to create a competitive marketplace that increases economic efficiency and further development of the financial market in Mongolia (Mongolian Stock Exchange, 2019). Due to the fact that there were no personal savings or wealth from the prior economic market (B. & J., 2019), the government decided to give a one-time investment voucher, where people can buy the share of the company that's in the privatization program and the stock exchange acts as the intermediary party in the program. By using the investment voucher, 1.2 million people have become the owners of 475 state-owned enterprises (Mongolian Stock Exchange, 2019). After the massive privatization program finished in 1995, people had an opportunity to directly buy and sell shares of the listed companies through the stock exchange (B. & J., 2019). In May 25, 2005, the "Mongol Shiltgeen" became the first private company to raise capital from issuing shares to the public, known as the IPO (Mongolian Stock

Exchange, 2020). This was the beginning of private and limited liability companies to raise capital cheaper than debt through the stock exchange. In other words, before this IPO, the stock exchange was considered a market for privatizing and trading shares that only came from the previous state-owned companies. This action was actively continued till 2008, where 14 companies filed for IPO and raised 60 billion Mongolian Tugriks from the investors. Since then, from 2005 to 2017, only 1 IPO has been registered per year and in some years there were no listings at all (B. & J., 2019). The unattractiveness of raising capital from the public is mainly caused by not enough support from the government concerning the financial legislation and people were mainly not interested in investing in stock exchange but rather save their money in the bank (B. & J., 2019).

### **Current development of Mongolian stock exchange**

According to the report of Mongolian Stock Exchange (2019), MSE has raised a total capital of 187.5 billion Mongolian tugrik for around 40 enterprises and traded around 3.3 trillion tugrik worth securities, from its creation in 1991 to 2019. In 2019, It has a market capitalization of 2,690 billion tugriks, which increased by 7.2% from the previous year. As of 2019, there are 198 listed companies on the stock exchange of which 85.9% or 170 are fully owned by the general public, 5.1% or 10 companies are partially owned by the public, and 9% or 18 companies are fully owned by the state. During the same year, 21 companies were delisted from the stock exchange for failing to meet the criteria and requirements

The main index of Mongolia known as the TOP 20 index which weights for the biggest 20 firms listed on the stock have seen significant growth in the last few months. Figure 8 shows, on May 20, 2021, the current value of the TOP 20 index is 34,731 points which increased by 80% from year to date (Mongolian Stock Exchange, 2021). While the stock exchange has seen notable changes and strong growth in the recent timelines. However, the market share or the impact of the stock exchange in the financial market and economy is still considered low. The performance of the stock exchange, such as the number of products listed in the market and the liquidity ratio of the share is considered below average. The liquidity ratio of MSE is far behind other countries in Asia (B. & J., 2019) with 1.8% in 2020, which is lowered by 3.2 basis points from the previous year (News.mn, 2021). The average liquidity ratio for advanced stock exchanges usually lies between 70-90% (B. & J., 2019). The reason behind our liquidity is lower than other countries is mainly because of not enough players in the market, lack of financial products to attract investors, and the fact that most of the listed company's shares are centralized by few people and companies that don't trade or have no interaction at all (B. & J., 2019).

### 3. Methodology

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#### 3.1. Research plan

This research paper aims to test and find out if corporate receivables securitization in the stock exchange can be a successful tool for companies that operate in Mongolia to finance its working capital and eventually positively impact the overall development of the financial market. To answer this question, the author has to make a research approach relating to the main topic and explains the different types of methods that he used in this paper.

#### 3.2. Research approach

As there are two main methods of data collection for a research paper, the quantitative and qualitative approaches. The author will be using both methods to answer the research questions. The quantitative approach mostly deals with numbers and statistics while the qualitative approach will mostly cover the ideas and words from the participants. The qualitative research for this paper will be based on doing an interview and questionnaires for the targeted population including private business owners in Mongolia, professional bankers that have expertise in the domestic corporate environment, and potential investors. The reasoning behind choosing the target population in this approach is to understand expert's views on the topic and their responses towards the question. A total of 10 questions will be asked during the qualitative approach and all the answers of the question will be sorted as positive, negative, and neutral for further analysis of hypothesis testing ( $H_0, H_A$ ) and regression analysis ( $r^2$ ).

The quantitative approach will be based on taking a survey of nine questions that will be distributed to the random sample of the population, in other words, the participants of the survey will be unknown and randomly selected from a group of people. There will be a total of nine questions asked throughout the survey, and the reasoning for the questions will mainly address to draw investor profile and their behavior and interest towards the receivable's securitization in the stock exchange. The result from the survey will be answering the sub-research question: "If the implementation of the corporate receivables securitization in the stock exchange be attractive and beneficial to the investors".

##### 3.2.1. Qualitative analysis

There are a total of 10 questions asked to the 10 participants during the interview and each question covers the idea of the main research question. The questions of the interview and the brief introduction to the participants will be found in Tables 1 and 2 in the appendix. The interviews have taken place

in Mongolia and most of the interviews were taken online by Zoom, Google meeting, Skype, and other types of video communication platforms due to the tight restrictions that were implemented in Mongolia during April and May, against novel coronavirus (COVID-19) pandemic. Sixty percent of the interviewed people were professional bankers and financial specialists who work in the Golomt Bank. The Bank is considered to be one of the biggest and well-known banks in Mongolia with total assets of 6.6 trillion Mongolian tugrik and with total deposits of 4.7 trillion tugrik. Twenty percent of the interviewed people are either executive officers of a private enterprise or a business owner that operates in Mongolia. Another twenty percent of the participants were investors.

Due to the participant's request, 3 people wanted to stay anonymous during the interview.

### **Opening dialogue of the interview**

*"Dear Participants,*

*I am genuinely appreciated meeting you today and I am expressing my gratitude towards you for kindly accepting my invitation and taking your valuable time to attend today's interview. All the information mentioned in today's meeting will be solely used on my thesis research project in Geneva Business School and kept strictly confidential. If anything is not clear during the interview feel free to stop me and ask questions.*

*Once again thank you so much for giving me the opportunity to take an interview from you today,"*

*Best regards,*

*Mungunkhuleg Munkhjargal,*

*Bachelor student of Geneva Business School.*

### **Hypothesis testing**

Once the author categorizes the results of the interview, into positive, negative, and neutral. The author will test both the Null ( $H_0$ ) and Alternative ( $H_A$ ) hypotheses to answer the research question based on the qualitative data.

Null and alternative hypothesis;

**Null hypothesis:**

$H_0: \mu = 0$  Creation and implementation of receivables securitization in stock exchange does not have a positive impact on the development of the Mongolian financial market

**Alternative hypothesis:**

$H_A: \mu \neq 0$  Creation and implementation of receivables securitization in stock exchange does have a positive impact on the development of the Mongolian financial market

While testing the hypothesis, there may be some errors that could occur in the result, namely the Type I and Type II errors.

Type I error – when we reject the null hypothesis while it was actually true.

Type II error – when we accept the null hypothesis while it was actually false.

In other words, we are accepting the result while it was not true. Therefore, to minimize and mitigate these errors to appear, we are using the standard error of mean and regression analysis to support our test.

Assuming there may be a chance of biases that could occur during the interview. We shall be testing our hypothesis with a 90% confidence level or a 10% level of significance.

**3.2.2. Quantitative analysis**

The quantitative analysis will be done by taking a survey from the random sample of the populations and analyzing the outcomes to see the investor's behavior and interest towards the corporate receivable's securitization product on the stock exchange.

**Survey/Questionnaires**

A total of 9 questions were asked from 31 randomly selected people by filling out a survey. The survey has been made on google forms and distributed online. The questions asked in the survey and answers will be found in table 3 in the appendix.

**Covering letter for survey/questionnaires**

*"The purpose of this survey is used only for an educational purpose and all the information gathered here will be a part of my thesis and kept strictly confidential. So, please kindly fill-up the survey at your most accurately possible and unbiased."*

*Thank you very much in advance for your participation,*

*Best regards,*

*Mungunkhuleg Munkhjargal,*

*Bachelor student of Geneva Business School*

### **3.2.3. Ethics of the interview and the survey**

In this research paper, the author fully understands the importance of ethical behavior professionally and tries his best to maintain the highest possible ethical standards during the interview and survey to make it successful. Therefore, during the interview and in the cover letter of the survey, the author clearly states that all the information during the questionnaires would solely be used for educational research purposes and other uses will be completely avoided. During the interview, the author holds the highest professionalism and has not performed any influential acts and biased behavior towards the participants to affect the responses.

## 4. Findings

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### 4.1. Findings

This chapter will review the result of hypothesis and regression analysis and see if the author should reject or accept the null hypothesis and if the random samples of the investors are interested in such a type of financial product.

### 4.2. Result of hypothesis testing and regression analysis

#### Null hypothesis:

$H_0: \mu = 0$  Creation and implementation of receivables securitization in the stock exchange does not have a positive impact on the development of the Mongolian financial market.

Testing at 90% confidence interval.

#### Alternative hypothesis:

$H_A: \mu \neq 0$  Creation and implementation of receivables securitization in the stock exchange does have a positive impact on the development of the Mongolian financial market.

Testing at 90% confidence interval.

#### Outcomes

As 10 questions were asked to the 10 participants, the author received a total of 100 outcomes, in which 54 answers were positive, 6 responses were negative and 40 answers were neutral. Overall, more than half of them had positive results and only 6 percent were negative. All the answers and more detailed explanation can be found in table 4 of the appendix.

Based on the outcomes of the result, we have the following information;

Observation = 10

Mean = 5.4

Mean absolute deviation = 1.4

Standard deviation = 2.15

To test our hypothesis, we need to calculate the standard error of the mean and the sample mean (total positive answers) out of the total outcomes. The formulas can be expressed as follows;

Standard error of the mean =  $\sigma/\sqrt{n}$ , a standard deviation divided by the square root of the observation.

Sample mean = Total positive answers / (total positive answer + total negative answers + total neutral answer)



So our calculations would be:

$2.15 / \sqrt{10} = 0.6811$  for the standard error of the mean, and  $54 / (54+6+40) = 0.54$  for the sample mean

With having a standard error of the mean of 0.6811 or 68.11% and sample mean of 0.54 or 54%, we can conclude that our standard error of the mean and the sample mean is greater than the critical values of 90% confidence interval of 1.6455% as two tailed test and 1.28% as a one tailed test. Thus, we would reject the null hypothesis and accept the alternative hypothesis of  $H_A: \mu \neq 0$ . In other words, the creation and implementation of receivables securitization in the stock exchange does have a positive impact on the development of the Mongolian financial market.

However, to minimize and mitigate the type I and type II errors of the hypothesis test, we use regression analysis as a supporting tool. Therefore, we will know how sure and how accurate the hypothesis test is. The calculation of the regression analysis is as follows;

Regression analysis ( $r^2$ ) = (total variations – explained variation)/total variations

So, we would need to first calculate the total variation and the explained the variation to calculate our regression.

Total variation =  $(5.4 - 1.4)^2 = 16$ ,

Explained variation =  $(2.15 - 1.4)^2 = 0.5625$

So, regression analysis ( $r^2$ ) would be =  $(16-0.5625)/16 = 0.9648$  or 96.48%.

In the regression analysis, if the R squared is equal or close to one, that means we can be perfectly sure that the result is accurate. As our R squared is very near to the one by having the value of 0.9648 or 96.48%. We could conclude that we are 96.48% accurate on the creation and implementation of receivables securitization in the stock exchange does have a positive impact on the development of the Mongolian financial market.

#### **4.3. Result of the survey/questionnaires**

As table 3 shows that out of 31 people who filled out the quantitative survey, more than 77 percent of them were from the age group of 18-25 and more than 48.4% of them answered they have an intermediate level of finance whilst 38.7% say they have experts in this field. Hence, 87.1% of them had an above-average financial understanding. This concept can be close to accurate as on question 4, which asks about their job background, 51.6% answered they work in a business environment and 25.8% mentioned they come from the banking and finance sector. 41.9% of the participants answered, they

prefer putting their money on savings account in the bank than any other types of asset classes, this is mainly because the interest rate in Mongolia usually considers high and thus the banks provide a higher return. However, in 2020, the central bank of Mongolia has lowered the interest rate by 500 basis points from 11% to 6% (BANK OF MONGOLIA, 2021), which influences the investors' behavior to put their money into different types of asset classes, such as shares or corporate bonds. For that reason, stock and corporate bonds had been chosen by 38.7% and 9.6% of the participants, respectively. The appealing part with this question was that only one person has chosen cryptocurrency or the riskiest-asset class of the category, despite being the trending topic in recent months. This could state that the majority of the participants are not risk-takers regardless of the age group of 18-25 weights the most. As younger people tend to be more aggressive when it comes to risk profiles. The amount of money that the participants would invest was pretty much equally selected for every four options. Furthermore, 77.4% of the people have voted that they will be interested if the new product will list on the stock exchange and more than 80% of them said they would be interested to buy a receivable securitization from publicly listed companies with fully transparent information. For that reason, we may conclude that according to the survey that the majority of the participants that have intermediate or higher knowledge of finance are interested in corporate receivables securitization in the stock exchange.

## 5. Summary, Conclusions, Limitations, and Recommendations

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### 5.1. Summary

This research paper, strongly explains the types of financing methods for working capital using the account receivables. Factoring and receivable securitization are both able to support and improve a company's financial performance and become the solvency of the illiquidity issues. Nevertheless, both methods have weaknesses and risks associated with them. Thus, the author gives the idea of selling receivables in the stock exchange, where it could be a better-regulated environment and a more transparent solution. Therefore, the author tried to test the creation and implementation of this financial product in the Mongolian market with multiple testing approaches. The main approach used in the paper was taking interviews from people that have professional finance backgrounds, executive managers of the companies, and investors. Based on the outcomes of the interview and questionnaires, the author used hypothesis testing and regression analysis to test whether to accept or reject the hypothesis and accuracy of the result. The outcomes of the test and analysis show that the receivables securitization indeed can be creatable and implementable in the Mongolian market and does have a positive impact on the whole financial system. In addition to the interview, this paper was supported by the survey taken from the random sample, in which most of the participants had either knowledge of finance or had a business background. Hence, the survey could be considered accurate based on the career background of the participants. The result of the survey demonstrates that random sample participants tend to be interested in the receivable's securitization on the stock exchange. Therefore, this paper approves that receivables securitization has a positive impact on the financial market as it could consider a new way for companies to diversify their receivable's funding and an innovative approach to liquidate their working capital by selling it through the stock exchange. On the other hand, investors who have a limited option of investment, benefit by having an additional investment class and diversify their portfolio.

### 5.2. Conclusion

The financial market in Mongolia is heavily dominated by banks and the impact of the stock exchange's role on the economy is considered relatively low. Since the stock exchange is considered to be poorly developed (B. & J., 2019), the number of financial products that are listed in the stock exchange is limited. Only traditional investments such as stocks, bonds, and treasury bills are listed and other alternative products such as derivatives and financial contract products are still not available on the stock exchange. Nevertheless, in 2020, the first-ever mutual funds have been registered in the stock exchange (Ard financial group, 2020) and followed with other similar financial products. The Mongolian stock exchange has shown improved results in recent years. However, taking into consideration that it has already operated

for 30 years, the current development, and the fact that the stock liquidity ratio is low compared to other Asian countries (B. & J., 2019), the author would conclude the Mongolian stock exchange is underdeveloped. The primary purpose of this research paper is to find an alternative product on the stock exchange that could increase the capital market's efficiency of the financial market. Therefore, with the securitization structure mentioned in this paper, the stock exchange in Mongolia could experience some positive results in the future and increase its role in the whole financial market.

### **5.3. Limitations**

During the research project to test if the creation and implementation of receivables securitization in the stock exchange could positively affect the financial market in Mongolia, a few limitations and difficulties appeared. The main limitation and difficulties were the quality of the interview and the number of participants. The fact that the world is currently in a fight with the COVID-19 global pandemic, Mongolia had severe lockdowns during April and May. These months are the time where the author had decided to do his majority of the literature research and empirical research. As everyone was staying at home, the author who planned to take his interview and questionnaires physically has been canceled. However, an online interview was the only solution, unfortunately not every invited participant felt comfortable with a remote interview and some of them had to kindly refuse the author's invitations. Even during the online interview some technical issues and challenges have occurred such as poor audio quality, microphone distortion noise, frozen screen, and sudden computer crash. Hence, the author hasn't interviewed as much as he planned for.

### **5.4. Recommendations for further research**

Although this research paper provides an idea of implementing a new type of financial structure that limits the risks that happened in the previous subprime crisis by making it more transparent and applying it in a better-regulated environment. It is still possible for reoccurring the past subprime crisis or even a bigger one. Therefore, as an author of this research paper, I would strongly recommend doing further research, especially on the assessing process of the receivables and monitorization of the transactions, as these are the weakest parts in this structure. My second recommendation for further analysis would be to make more study on the substitute financial product of the receivable's securitization. In this paper, the author only explains the most typical ones in the market. Hence, a further study on similar types of products would be needed as there are still plenty of other financing structures out there. The last recommendation that the author would give is to do testing with more people involved, as the author mentioned previously, he hasn't interviewed as many people he intended for. Thus, the more people interviewed, the more accurate the result would be.

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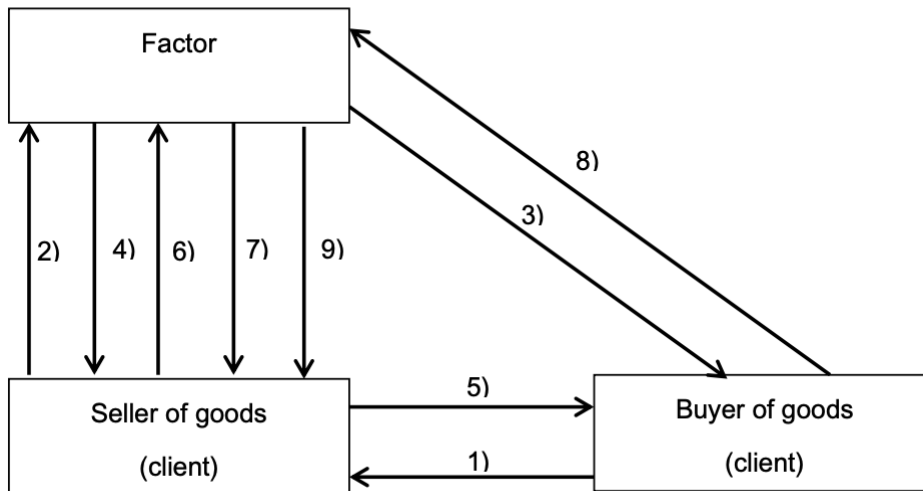
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## Appendices

Figure 1. The factoring structure

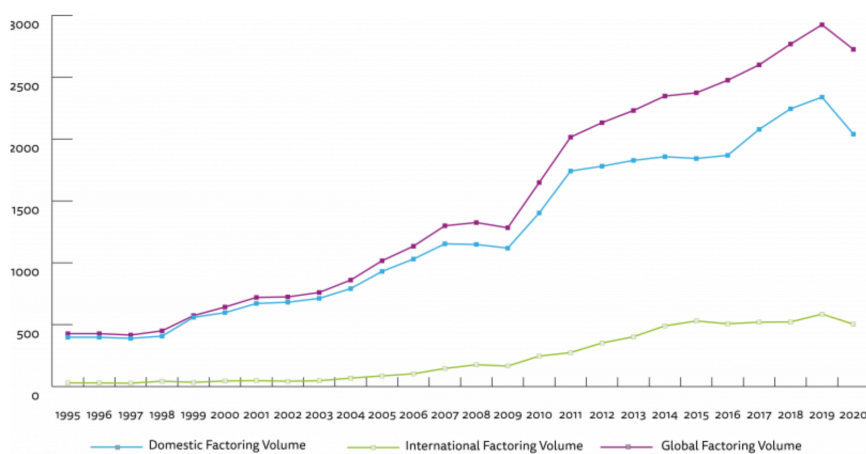


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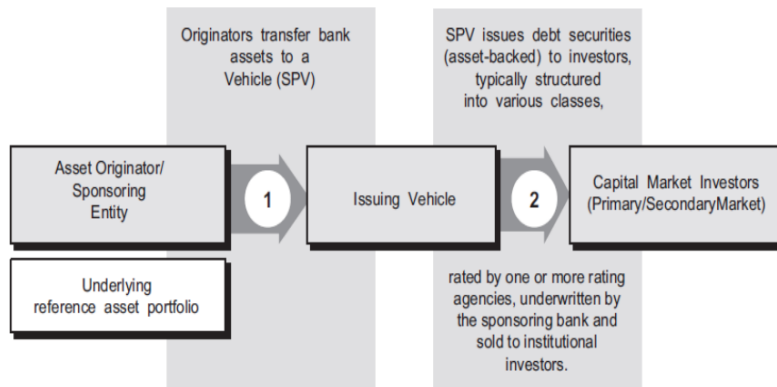
Figure 2. The global factoring volume

### Factoring Statistics (in Euro billions)



Source: <https://fci.nl/en/factoring-statistics>

Figure 3. The securitization process



Source:

<https://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=e002fe46-0f34-4078-aeec-78f69032134e%40sessionmgr4008>

Figure 4. The securitization tranche notes

Note structure	Rating of tranches
Senior Tranche Note 1	AAA/ AAa
Senior Tranche Note 2	AA/Aa
Senior Tranche Note 3	A/A
Mezzanine Tranche Note 1	BBB/ BBa
Mezzanine Tranche Note 2	BB/Ba
Mezzanine Tranche Note 3	B/B
Junior Tranche Note	Unrated

Source:

[https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/financial-services/lu\\_securitization-finance-solutions.pdf](https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/financial-services/lu_securitization-finance-solutions.pdf)

Figure 5. The receivables securitization on the stock exchange

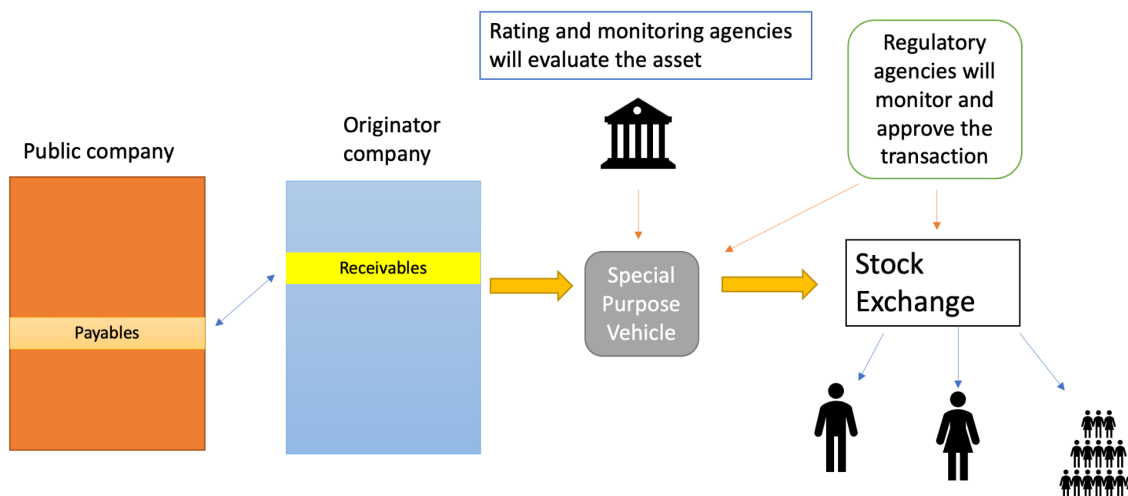
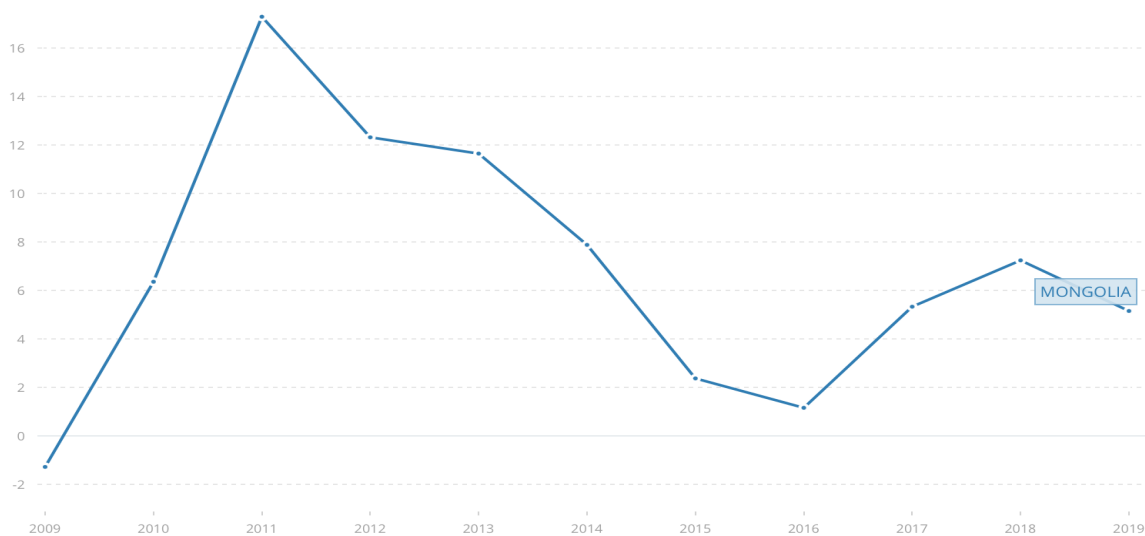


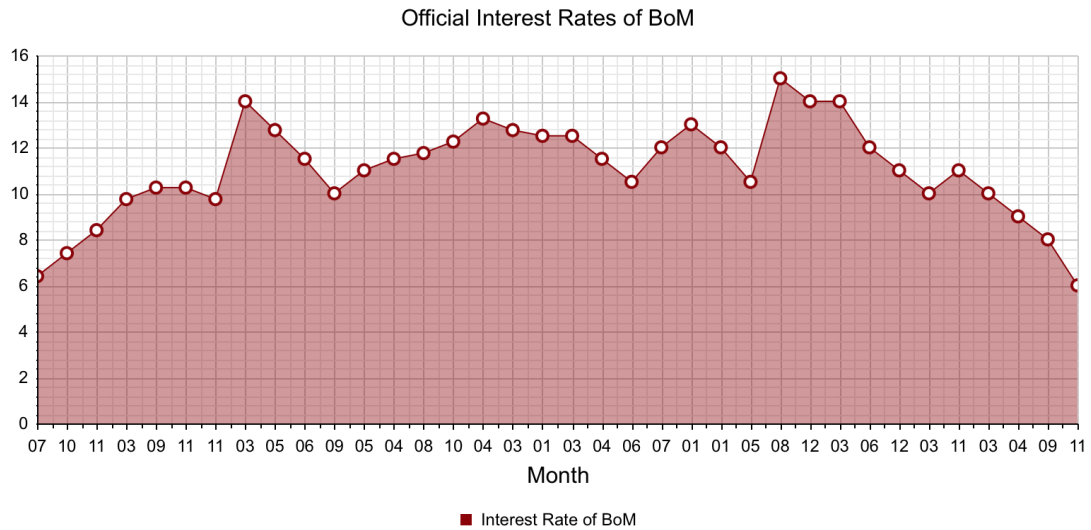
Figure 6. Mongolian GDP growth



Source:

<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2019&location=MN&start=2009>

Figure 7. The interest rate of Bank of Mongolia



Source: <https://www.mongolbank.mn/eng/dblistmongolbankrate.aspx>

Figure 8. Top 20 index MSE



Source: [http://mse.mn/en/mse\\_top\\_20/265](http://mse.mn/en/mse_top_20/265)

Table 1. List of interview questions

Interview question
1. In your opinion, do you think Mongolian Stock Exchange has been underperforming in the last 30 years?
2. In your opinion, do you think Mongolian Stock Exchange lacks financial products?
3. In your opinion, do you think a new financial product will enhance the growth of the stock exchange?
4. In your opinion, do you think receivable's securitization would be a good idea for companies to liquidate their balance sheet?
5. In your opinion, do you think the receivable's securitization in the stock exchange would increase the transparency?
6. In your opinion, do you think receivable's securitization in the stock exchange will have a better regulation environment?
7. In your opinion, do you think receivable's securitization could be a cheaper financing method than other options?
8. In your opinion, do you think investors would be interested in buying receivable's securitization?
9. In your opinion, do you think it will have a positive impact on the stock exchange?
10. In your opinion, do you think improving the stock exchange would develop the further financial market in Mongolia?

Table 2. List of interviewed participants

Name of the Participants	Job title
Mr. Baljinnyam N.	Credit analyst of policy and analysis department of corporate banking division, Golomt Bank
Ms. Nomin D.	Corporate manager of commercial and industrial department of corporate banking division, Golomt Bank
Ms. Batkhishig S.	Credit analyst of policy and analysis department of corporate banking division, Golomt Bank
Mr. Ochir T.	Operation manager in custodian banking department, Golomt Bank
Mr. Murun U.	Economist in the economic research department of treasury division, Golomt Bank.
Mr. Baatar S.	Account manager in mining and infrastructure department of corporate banking division, Golomt Bank
Mr. Mungunshagai M.	Private business owner and investor, representative and managing director of Swiss Education Group Mongolia, and former owner of a 3-star hotel.
Anonymous 1	Executive officer of a private company
Anonymous 2	Investor
Anonymous 3	Investor

Table 3. List of survey questions and answers

Questions	Answers (31 participants)
1. What is your age?	<ul style="list-style-type: none"> <li>a. Up to 18 (0%)</li> <li>b. 18-25 (77.4%)</li> <li>c. 24-45 (12.9%)</li> <li>d. More than 45 (9.7%)</li> </ul>
2. What is your gender?	<ul style="list-style-type: none"> <li>a. Male (77.4%)</li> <li>b. Female (22.6%)</li> </ul>
3. What is your level of education?	<ul style="list-style-type: none"> <li>a. High school diploma (12.9%)</li> <li>b. Bachelor's degree (64.5%)</li> <li>c. Master's degree (22.6%)</li> <li>d. Doctoral degree (0%)</li> </ul>
4. What field do you work in?	<p>Open question;                      Most repeated answer: Finance and Banking (25.8%)                      People with business background: 51.6%</p>
5. How do you rate your knowledge of finance?	<ul style="list-style-type: none"> <li>a. Advanced (38.7%)</li> <li>b. Intermediate (48.4%)</li> <li>c. Below average (9.7%)</li> <li>d. No answer (3.2%)</li> </ul>
6. What type of investment class do you prefer?	<ul style="list-style-type: none"> <li>a. Bank savings (41.9%)</li> <li>b. Domestic and international stock (38.7%)</li> <li>c. Corporate and government bond (9.6%)</li> <li>d. Cryptocurrency (3.2%)</li> <li>e. Other (3.2%)</li> <li>f. No answer (3.2%)</li> </ul>
7. How much would you intend to invest?	<ul style="list-style-type: none"> <li>a. Up to 1,000,000¥ (9.7%)</li> <li>b. 1,000,000¥ - 3,000,000¥ (35.5%)</li> <li>c. 3,000,000¥ - 10,000,000¥ (25.8%)</li> <li>d. More than 10,000,000¥ (29.0%)</li> </ul>
8. Would you be interested in a	<ul style="list-style-type: none"> <li>a. Yes (77.4%)</li> </ul>



new financial product list on the stock exchange?	b. No (22.6%)
9. Would you be interested in receivable's securitization from publicly listed companies with high transparency levels?	a. Yes (83.9%) b. No (16.1%)

Table 4. Interview answers

Question	Positive	Negative	Neutral
1	3	1	6
2	7	0	3
3	7	0	3
4	5	1	4
5	5	0	5
6	6	1	3
7	1	2	7
8	4	0	6
9	8	0	2
10	8	1	1
<b>Sum</b>	<b>54</b>	<b>6</b>	<b>40</b>