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Agency Relationship and Financial Disclosure Effect on Information Asymmetry: Evidence from Mongolia

DOCTORAL DISSERTATION

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ABSTRACT

The corporate financial disclosure plays vital roles in effective functioning of capital market, improving national productivity through capital attraction and in turn the company benefits from the reduced cost of capital and increased accountability along with the reduction of information asymmetry among the stakeholders. The financial disclosure's ability to effectively fulfil these roles depends upon several factors. Among which the agency relationship dependent upon the company's ownership structure receive growing attention by the scholars. The findings from the prior studies show mixed results and there is a gap in literature on the evidence from developing country. This study contributes to filling this gap, along with its contribution on building unified theory through providing unique findings.

The information asymmetry perspective in financial disclosure enables to revealing the economic motivations behind the disclosure decisions. The ownership structure of company tends to rule the information asymmetry among the stakeholders. There is a clear interaction between the three concepts of financial disclosure, agency relationship and information asymmetry. However, this tripartite relationship has received less attention by the accounting, finance and economics scholars. The research stream is comparably young in global pan, as well as notably novel in Mongolian context. This study aims to investigating the relationship between the three concepts.

For this purpose, the initial steps of the study involve to exploring the methodologies to evaluate the agency relationship, financial disclosure, and information asymmetry. On this study, the agency relationship is measured by ownership concentration and ownership type; the financial disclosure is classified into mandatory disclosure in accordance with jurisdiction law and regulations, and voluntary disclosure beyond the requirements of law and regulations; and the information asymmetry is measured by the bid-ask spread. In relation to this breakdown of the key concepts, three main hypotheses are divided into eight sub-hypotheses.

It was predicted that ownership concentration negatively effects on mandatory and voluntary disclosure; but the various ownership types differently effect on the mandatory and voluntary disclosure levels. Regarding the association between agency relationship and information asymmetry, it was predicted that ownership concentration exacerbates information asymmetry and differences in ownership type effect on information asymmetry in varying degree. Referring to relationship between financial disclosure and information asymmetry, it was predicted that the both of mandatory and voluntary disclosures facilitate in reducing information asymmetry.

The study findings support the association between agency relationship and financial disclosure in terms of one largest shareholder effect over the both of mandatory and voluntary disclosures. However, the ownership concentration fails to show impact on the financial disclosures. The interaction between agency relationship and information asymmetry is not supported. Alternatively, the interaction between financial disclosure and information asymmetry is partially explained as there is a significant negative relationship has found between voluntary disclosure and information asymmetry. The mandatory disclosure does not show statistically significant effect on information asymmetry which can be caused from the weak performance of mandatory disclosure among the Mongolian Stock Exchange listed companies.

Key words: Agency relationship, Ownership structure, Financial disclosure,
Information asymmetry

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Table of Contents

List of Figures

List of Tables

TERMINOLOGY

Agency relationship	A contract under which the equity providers (principals), regardless of the size of investment, engage other parties (agents) to act on the principal's best interest
Agency problem	In the agency relationship context, the problem caused from the situation that agent overrides the principal's best interest
Financial disclosure	Deliberately released financial information in the forms of numerical and narrative with either mandatory or voluntary motives
Mandatory financial disclosure	Disclosures required by International Financial Reporting Standard for the countries which mandatorily adhere the standard
Voluntary financial disclosure	Financial disclosures made by a company which are not required in the jurisdiction law and regulations
Ownership concentration	Multiple large shareholders who own more than 5% of the company's shares
Ownership type	Defined by the one largest shareholder type who owns more than 20% of controlling shares
Information asymmetry	One party possesses certain information where the other party does not have the information due to limited or no access over the information and as a consequence the party cannot verify the information

ABBREVIATIONS

AIMR	Association for Investment Management and Research
AP	Ask price
BAS	Bid-Ask Spread
BAS_MD	Bid-Ask Spread around Mandatory Disclosure
BAS_VD	Bid-Ask Spread around Voluntary Disclosure
BOD	Board of Directors
BP	Bid price
CCMC	U.S Chamber's Center for Capital Market Competitiveness
CEO	Chief Executive Officer
CG	Corporate governance
CIFAR	Center for International Financial Analysis Research
DV	Dependent variable
EBRD	European Bank for Reconstruction and Development
FRC	Financial Regulatory Commission
HHI	Herfindahl-Hirschman Index
IA	Information Asymmetry
IAS	International Accounting Standard
IASB	International Accounting Standard Board
IBRD	International Bank for Reconstruction and Development
IV	Independent Variable
IFC	International Financial Corporation
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
ISIC	International Standard Industrial Classification
Ln	Natural Logarithm
MAINS	Mongolian Accounting Institute
MCSD	Mongolian Central Securities Depository
MD	Mandatory disclosure (applied in analysis and results' sections)
MDISC	Mandatory Disclosure (applied in sentences)
MOF	Ministry of Finance of Mongolia
MRPAM	Mineral Resources and Petroleum Authority of Mongolia
MSE	Mongolian Stock Exchange
N/A	Not Applicable
NCCG	Mongolian National Council of Corporate Governance
NSO	National Statistical Office
OECD	Organisation for Economic Co-operation and Development
OC	Ownership Concentration
OWN_type	Ownership type
PIN	Probability of Informed Trading

PLC's	Public listed companies
ROSC	Report on the Observance of Standards and Codes
SD	Standard Deviation
S&P’s	Standard and Poor’s
SME	Small Medium Enterprises
Std.Error	Standard Error
T&D	Transparency and Disclosure
VD	Voluntary disclosure (applied in analysis and results’ sections)
VDISC	Voluntary Disclosure (applied in sentences)
WB	The World Bank

I. INTRODUCTION

1. Research background, motivation and objective

1.1. Research background

Corporate financial disclosure is crucial for management communication with outside investors about the company performance (Healy & Palepu, 2001), essential for capital market effective functioning (Low, 1996; Black, 2000; Bushman & Smith, 2003) and in turn forges national productivity through capital accumulation (Lin, et al., 2014). Stiglitz (2017) and Bushman, et al. (2004) note that financial sector is all about collecting and re-producing information which forms the basis of efficient capital resource allocation. Financial disclosure effects on firm cost of capital through affecting on investors' actions and decision making (Beuselinck, et al., 2013) and plays a vital role in reducing information asymmetry between the management, insider shareholders and outside shareholders, potential investors (Healy & Palepu, 2001, Verrecchia, 2001). Lowenstein (1996) asserts that corporate disclosure forges accountability in the market as power without accountability appeals abuse.

Financial disclosure is the reflection of the company's economic performance, and a product of a management's decision on financial reporting choices within the framework of regulating financial reporting standards, rules and regulations (Bushman & Smith, 2003). Financial disclosure is provided on the basis of mandatory requirements set by jurisdiction rules and regulations and also firms provide additional information on a voluntary basis (Holland, 2005; Beyer, et al., 2010). Scholars find that both of the mandatory and voluntary disclosures of the firms are varied depending on the country and firm specific characteristics (Dye, 1986; Wallace & Naser, 1995; Salter, 1998; Jaggi & Low, 2000). Financial disclosure literature is generally divided into three broad groups, including: how the disclosure effects on investors' decision making, how management discretions or firm economics effect on disclosure practice, and what is the optimal disclosure practice (Verrecchia, 2001). In financial disclosure research, it is crucial to examine influential factors which shape disclosure practice and the economic consequences from the disclosure while exploring the current practice.

Referring to the determinants of corporate financial disclosure, there is vast literature in relation to the effect of institutional and legal system (Christensen, et al., 2013; Cascino &

Gassen, 2015). Leuz & Wysocki (2008) note that advantages from the strong legal system can be overridden as the system ignores the effect of ownership structure on management decision makings. In line with Jiang, et al. (2011), and Beuselinck, et al. (2013) ownership structure demonstrates the underlying rationale for power of the management, and management decisions on financing and investment as well as the information disclosure. There is an interaction between ownership structure and information asymmetry concepts (Morris, 1987). Also, information asymmetry is vital to determining the disclosure policy (Armstrong, et al., 2016) and financial disclosures are important to reducing the information asymmetry (Healy & Palepu, 2001; Verrecchia, 2001). Authors comprehend that information asymmetry perspective in financial disclosure provides the basis of integrating this broad and previously loosely connected streams of disclosure literature (Healy & Palepu, 2001; Verrecchia, 2001).

1.2. Research motivation

Healy & Palepu (2001) explain the importance of capital market in matching the needs of economy participants as the public need of investing their additional saving into higher and better funds, and companies' need of reaching wider source of finance. However, there exists a trust problem that impedes the capital market trades in relation to investors' prevention from management expropriation of shareholders and ambiguity in company's ability to provide the expected return on behalf of their investment. There are several mechanisms of addressing this problem. Financial reporting and its disclosure facilitate to providing high quality information (Berndt & Leibfried, 2007) which addresses valuation and stewardship problem between the stakeholders (Beyer, et al., 2010). Corporate governance mechanisms serve as the system of providing reliable information as well as preventing company insiders to expropriate the investors fund (Bushman & Smith, 2003). With the involvement of financial accounting information the investment efficiency is improved (Biddle, et al., 2009).

Globally, the integrated research on capital market, governance and accounting are still growing and the mutual benefit for each of the research fields becoming more evident. Bartov & Bodnar (1996) and Verrecchia (2001) outline the importance of information asymmetry perspective in accounting, and the authors mention information asymmetry perspective has received the least attention by researchers. Verrecchia (2001) further alludes it is the rigor way to contribute towards comprehensive theory in disclosure, specifically the examination of less developed country is better at showing economic consequences from the disclosure level.

In consideration of the special context of Mongolia, it has passed more than decade since Mongolian former Corporate Governance Code was adopted in 2007, 25 years last since the IFRS adherence is regulated in 1993 according Accounting Law of Mongolia, and 26 years has taken to develop the capital market since the establishment of Mongolian Stock Exchange. However, the capital market of Mongolia has not yet effectively functioned, which is evidenced by the status on liquidity followed by lack of governance and financial information transparency (Bolortsogoo, 2017a; Bolortsogoo, 2017b). The weaknesses in information transparency among Mongolian public listed companies has been noted by international organizations (The World Bank, 2009; International Financial Corporation, 2013; OECD, 2016) and domestic organizations (National Corporate Governance Council, 2015), foreign researchers (Yener, 2008; Iijima, 2011; Cigna et al., 2017) and domestic researchers (Sanaser, 2011; Tuvshintur, 2012) as part of the assessment initiatives and research works on corporate governance. Despite the efforts taken by Mongolian regulatory bodies during the past decades, the similarity found from the aforementioned studies' finding was the sufficiency of the financial disclosures and transparency in the governance are still not satisfied even before and after the last ten years' time.

In 2017, very insightful and dedicated survey on IFRS implementation was conducted by Mongolian Accounting Institute (MAINS) as per the order of Ministry of Finance. The survey examines the both of measurement and disclosure compliance among the Mongolian large, medium and small enterprises while applying questionnaire method which was taken from accountants. The result shows IFRS implementation among Mongolian entities is 56,6 percent as per the end of 2016. The main factors for unsatisfactory IFRS implementation are explained by weakness in state policies and regulations and lack of accountants' knowledge and capacity. However, the study did not consider the governance and management issues who make a decision on financial reporting policies, choices and delegates the practice providers.

Later, Gantulga (2018) evaluates financial reporting quality of Mongolian public listed companies using the discretionary accruals method and he finds that only 19.5% of the sample companies have quality financial reporting during the financial years between 2012 and 2014. It was the first study which focuses on financial reporting quality. However, in his study with regards the methodology used to measure the financial reporting quality, one of crucial aspect of financial disclosure is not covered.

In the corporate governance field, several studies have evaluated the governance practices in Mongolian entities using self-constructed index methodology: Bailikhuu (2014) evaluates state ownership participated listed and limited liability companies' governance practice; Tuvshintur (2012) studies governance transparency and disclosure practice among listed companies. Each of the studies shows limited insight over the financial information and disclosure practice. However, as the purpose of the studies was not the discovery of financial information, accounting disclosure, those aspects are deeply studied.

In addition to the growing global research interest in the integrated research between corporate governance and accounting disclosure, so far, there is no prior academic study found on the intensity of accounting disclosure and its relevance to corporate governance mechanisms in Mongolian context. It is necessary to study the relevance between governance mechanisms and accounting disclosure and their combined effect on reducing information asymmetry. Verrechhia (2001) asserts the information asymmetry perspective enable the explanation of financial disclosure practices' economic consequences. Stiglitz (2017) persuades that the economics of information better explains the importance of the corporate governance, finance, and accounting.

1.3. Research objective

The main objective of this thesis is to investigate whether company's financial disclosure level is affectedly agency relationship of the company and how the two constructs effect on information asymmetry between the affected parties. To fulfil the objective, following goals are set:

a. Exploring the methodologies to evaluate financial disclosure
b. Evaluating current financial disclosure level among MSE listed companies
c. Exploring the methodologies to determine the main agency relationship

d. Determining the agency relationship constructs among the MSE listed companies
e. Analyzing the effect of agency relationship on financial disclosure
f. Exploring the methods to evaluate information asymmetry
g. Evaluating the information asymmetry level in Mongolian capital market
h. Analyzing the effect of agency relationship on information asymmetry
i. Analyzing the effect of financial disclosure on information asymmetry

2. Overview of Mongolia

Mongolia is landlocked country with 3,2 million populations, approximately 1,6 million square km territory and 2227 years history since Mongolian Statehood establishment (Office of the President, 2018). The country is rich in mineral resources including: gold, copper, coal, iron ore (MRPAM, 2017) and the mining sector consists of the 21,7 percent of GDP which is the largest sector followed by the wholesale and retail sector, and agricultural sector with 11,3 and 10,7 percent of GDP, respectively as of 2017 (NSO, 2017). The local currency of Mongolia is Tugrik, which is abbreviated as MNT and 1 United Stated Dollar is equivalent to 2.643,69 MNT as per December 31, 2018 rate announced by Mongolian Central Bank statistics (Mongol Bank, 2019).

The modern Mongolian economic, political and societal developments were emerged since peaceful Democratic Revolution in 1990afterthe exit from socialist regime which was continued for 70 years. Mongolia has been fluctuated between the greatest performing economy with 17,5 percent GDP growth in third quarter of 2011and the worst performing currency in August 2016 (Bloomberg, 2017). From the past ten years' performance between 2008 and 2017, the economy has been growing in average of 7,2 percent. The growing money demand followed by the economic growth is mostly generated through the monetary market with dominant role from the commercial banks (NSO, 2017; 2018).According to the Bank of Mongolia (2017) Annual Report, 95 percent of the total financial system assets are possessed merely by the banking sector, specifically by the 14 commercial banks and the rest of the assets are held by non- banking financial institutions, insurance companies, saving and credit cooperatives, and securities participants.

Capital market of the country plays insignificant role for the country's financial system, but it indicates there is a great importance of development (Danaasuren, 2015). The capital market is slightly developing that the total capitalization compared to GDP has reached its peak of 16,7 percent in 2011.Albeit, the proportion have been consistently declined to 5,1 percent since 2011 until 2015. After the year, there was a light of increase by 1,1 percent and 2,8 percent in 2016 and 2017 respectively (FRC, 2018).

In the next sub-sections, current status of Mongolian institutional context relevant to capital market, corporate governance, and financial reporting are introduced.

2.1. Highlights on the capital market regulatory framework

The capital market of the country is regulated by the Company Law (2011), Securities Market Law (2013), and Investment Fund Law (2013). The market is governed by Mongolian Financial Regulatory Commission (FRC). The commission was officially established in 2006 under the approval of Parliament of Mongolia with the specific purpose of ensuring financial market stability. Furthermore, the commission monitors the implementation of rules and regulations, acts as protecting the rights of investors, and sets control over the financial system including the participants in insurance, securities, non-banking, and savings and credit cooperatives.

Mongolian Stock Exchange is the only institution for capital market which was established in 1991 under the Mongolian Government resolution No.22 for the purpose of implementing state owned enterprises' privatization after economic transition of the country. The primary market trading was started in 1992 through the equal allocation of 475 state owned enterprises' vouchers to the every citizen of Mongolia. Afterwards in 1995, secondary market trading was commenced through privatization of 29 MSE financed brokerage firms. The first corporate bond trading and IPO launch were conducted in 2001 and 2005, respectively. According to FRC 2017 report, there are 300 public companies are listed at MSE. From the brokerage firms' record, there are 219 listed companies are registered. Of which, 250 and 188 companies have private ownership, respectively and for the rest of companies state ownership is involved.

Structure of the capital market participants

The capital market participants of Mongolia generally consist of listed companies, stock market specialists and investors (Danaasuren, 2015). As at the end of 2017, 88 entities are operating at the capital market with license from FRC and of which 52 are the brokerage dealer companies and others consist of underwriting companies, investment consulting firms, investing companies, commercial banks, investment management companies, and custodian banks (FRC, 2017). The number of market specialized entities are subject to the economic and market fluctuations. The highest peak of the growth has happened in 2012, however since the time the number was declining gradually despite the slight growth in 2016.

The number of listed companies has been declining since the start of 475 to 300 by 2017. The decline is partially explained in relation to high tax imposition and as a result listed companies have organized restructuring into smaller limited liability companies. After the privatization, stocks at listed companies were concentrated greatly which negatively affects share trading (Danaasuren, 2015).Based on the data collected from the website called 'marketinfo.mn'[1], among I and II tier companies at MSE in total of 51 companies, the average share concentration is 83 percent and which are possessed by in average of 4 shareholders by the end of 2017. MSE listed companies are classified into three tiers depending on their market capitalization and percentage of shares traded at the market.

As reported by Mongolian Central Securities Depository (MCSD, 2017), there are over 906 thousand accounts are registered at MCSD at the end of 2017. Of which in consideration of proportion of foreign and domestic investors, the number of foreign investors have declined since 2013 in relation to Mongolian economic and investment environment and the proportion of domestic investors ranges between 88 percent and 98 percent, during 2013 to 2017. The year 2012 was exceptional where the foreign investors had contributed 92 percent of the share purchases at MSE.

[1]Marketinfo.mn is the former independent analysts' website which provides the more detailed information on each MSE listed companies which are not publicized in the MSE website. Those information provided by the marketinfo.mn, includes: largest shareholders' information on all MSE companies, bid-ask spread prices of the shares (www.marketinfo.mn).

2.2. Financial reporting and Disclosure in Mongolia

Accounting development of Mongolia refers to three main phases: pre-revolutionary, centrally planned economy, and market economy era (Sainjargal, et al., 2017). Referring to Sainjargal, et al. (2017) the pre-revolutionary phase dates back XIV-XV centuries and continued up until the People's Revolution in 1921. After the revolution, Government of Mongolia faced a challenge to establishing economic, educational and health systems and as part of the system development, single and double-entry has been introduced (Dorj, et al., 2010). During the centrally planned economy between 1921 and 1990, accounting system has developed through three differing phases: single and double entry bookkeeping; memorial order; and journal order era (Dambadorj, 2011). After 70 years of socialism, contemporary accounting development has commenced since the Constitution of Mongolia is enacted in 1992 (Sainjargal, et al., 2017).

In relation to the current accounting practice and development in public listed companies, the main sources of legislations include: Accounting Law (2015), Audit Law (2015), Company Law (2001), Income Tax Law (2006). In conjunction to financial Transparency and Disclosure initiatives, main legislations include: Securities Market Law (2013), FRC Regulation on Security issuers' information transparency (2015), Corporate Governance Code (2014), and MSE Listing rules (2018).Formerly, Accounting Law was enacted in 1993 which requires entities to adhere International Financial Reporting Standards (IFRS).Thereafter, the law was revised in 2001and at the latest the law was revised in 2015 which requires public listed companies – joint stock companies – to adhere full IFRS. The other companies which qualify for small and medium entities (SME) criteria as stated in the law on SME of Mongolia is required to adhere IFRS for SMEs. The adherence of IFRS by the public listed companies is supervised by FRC and MSE.

Financial reporting quality research in Mongolia has been received less attention by the scholars. However, the deficiencies in Mongolia registered companies' quality of financial reporting and disclosure have been evidenced by the implementation of Law on Supporting Economic Transparency which was enacted in 2015. As part of the law implementation, 34,7 trillion tugriks of income and assets are revealed – which is 1,6 times greater than the Mongolian GDP. And the related financial reports of the companies are restated to integrate the change. This restatement calls for serious integrity issue on the published financial statements of the MSE listed companies. However, from the findings of Bolortsogoo (2017b), the capital market was not sensitive to financial statement information from the perspective of accounting restatement. This lack of sensitivity was partially explained in association with insufficient disclosure which shows 23,7% compliance with mandatory accounting disclosure. Accounting restatement may relate to the changes in accounting policy, but in more serious situations it is made due to accounting errors caused from deficiency in firms' internal control, or due to the proved fraudulent activities. From the study of Bolortsogoo (2017b), during the last 5 years between 2012 and 2016, public listed companies included in MSE Top 20 Index have restated their published financial statements 49 times out of the 137 financial statements years. Out of which 41% of restatement was incurred right after the enactment of Law on Supporting Economic Transparency (2015).

The determinants of financial reporting quality in MSE listed companies are studied by Gantulga (2018).The author has applied both qualitative – questionnaire based - and quantitative – discretionary accrual based - methods in determining the factors. For the study 60 and 77 listed companies are analyzed for the years between 2012-2014 and 2015-2016, respectively. The study result shows 19,5 and 10 percent of sample of listed companies qualify for quality financial accounting and remainder appears to have breached accrual basis of accounting for the corresponding observed years, respectively. The reduction in percentage of companies which qualify for quality financial statements is related to changes in accounting and tax law, implementation of Supporting Economic Transparency law and changes in other environmental factors in accounting.

Previously in 2011 and 2017, financial reporting quality in Mongolia has examined in relation to IFRS implementation by the collaborative team of World Bank and MOF. The both studies covered sample of firms from various sizes and industries. The results show, IFRS implementation among the sample firms were 49 percent in 2011 and 56,5 percent in 2017. This low level of implementation is explained in relation to lack of government policy, and deficiency in professionals' knowledge and skills. However, Gantulga (2018) criticized reports on percentage of the IFRS implementation mismatch with the quality of financial reporting in practice. He highlights the necessity of further investigation in financial reporting quality in Mongolia.

As noted in Ben-Othman & Kossentini (2015), studies involved with IFRS appropriateness in emerging countries are generally divided into two fields. The first refers to considering national contextual factors in adopting IFRS and latter refers to promoting full IFRS adherence and which enables the firms to increase competitive capability and financial market efficiency improvement. In Mongolian context, Bolormaa (2014) studied the ways to implement IFRS as it was found that IFRS implementation of Mongolia is not satisfactory even after 20 years since 1993. She recommends to developing national accounting standard which is consistent with IFRS. However, the recommendation did not separate listed companies from SME and other purpose entities in adopting domestic accounting standard, and this suggestion can have drawbacks for the development of capital market.

As stated at Corporate Governance Code of Mongolia (2014), one of the key roles of financial reporting is to increase investors' trust. According to provision No.8.1 Accounting Law of Mongolia (2015), for the entities which are entitled to adhere full IFRS the main financial reporting components include: 1) Statement of Financial Position, 2) Comprehensive income statement, 3) Statement of Changes in Equities, 4) Cash flow statement, and 5) Disclosures. Financial reporting quality is dominantly studied in relation to accounting standards' adherence and which consist of two areas: principle and measurements compliance and disclosure compliance (Brown, et al., 2014). However, in Mongolian context there is a research gap in disclosure and its compliance.

As aforementioned, financial information dissemination is regulated by MSE Listing Rules (2018) which overrides the 2015 version, FRC Regulation on Security issuers' information transparency (2015) which overrides 2013 version. According to the revised rules and regulation, MSE listed companies are required to publish information which can have the impact on securities' price and trading activity. The FRC regulation (2015), provision no.2 states the ways to disseminate information through periodic reports. As per the provision, periodic reports are to be disseminated semi-annually and annually basis. The contents must include: business operations, governance report, financial performance, shareholders, dividends, and other necessary information. And the above information is previously required to be published at company's and MSE website as well as other publication means of media as required by FRC. However in the revised regulation, requirement of other publication means is omitted.

2.3. Determinants of financial reporting and disclosure quality

Factors influencing on financial reporting can be classified at country and firm level (Tang, et al., 2016; Cascino & Gassen, 2015; Bolortsogoo, 2018b). However, the factor analysis has not reached its peak as the related models are endogenous in nature and it is potential that some factors are remain undiscovered (Brown, et al., 2014). During the recent years, researchers bring models specific to their research interest. Gaynor, et al. (2016) discuss financial reporting quality in conjunction to audit quality as which the outcome from each construct is conjoined. Albeit, the authors emphasize the importance of analyzing quality factors in separately. And when financial reporting quality is discussed in relation to compliance with standards, legal and political system comes at first (Francis, et al., 2003; Soderstrom & Sun, 2007; Christensen, et al., 2013).

Gantulga (2018) studies the factors influencing on financial reporting framework and classified the main factors into: government, economic factors, influence from international affairs, ethics, corporate governance, and accounting profession. Governmental factors include: regulatory framework and tax system. Economic factors include: capital market, and inflation level. Influence from international affairs, include: colonization history, foreign country's accounting standards, and international organization and IFRS. Professional ethics and national culture are referred into ethics factors. Ownership structure and group company participation are classified into corporate governance. In accounting profession, professional conducts, and audit practice are included. Further the author has conducted an additional study to quantitatively evaluate relative influence of factors on Mongolian financial reporting framework using the PESTLE+G environmental factor framework. PESTLE+G stands for: P-political, E-economical, S-social, T-technological, L-legal, E-ethical, G-governance. Evaluation is conducted through three stages of study: 1) interview with experts, 2) secondary data analysis, and 3) receive the filled evaluation form from the participants. On the basis of the studies, those factors influencing on financial framework is based on 0 to 5 scores: 0-very bad, 1-bad, 2-below the medium, 3-medium, 4-good, 5-very good. From the result: political factor is scored 2, the main reason lies at weak law enforcement and IFRS implementation. Economic factor scored 3 as the slow development of capital market and reducing trend in GDP increase. Social and cultural factor receives 3, because of the education supplies quality varies in a large scale. Technological factor gets 4 as result of ambiguity in if the accounting software is processes the transactions in line with IFRS, despite broadly application of software among the entities. Ethical factor receives 2, due to lack of supervisory and monitoring mechanism to reveal the ethical misconducts. The governance factor gets the lowest score of 1 which was affected by management and BOD's attitude towards the necessity of preparing financial statements in compliance with IFRS.

In consideration of previous studies and literature, it is found that there is positive relation between weakness in political, legal and governance factors and low financial reporting quality in Mongolian context. Bonetti, et al. (2016) study the effect of firm and country level governance on financial reporting quality. They reveal countries with weak in the both areas of legal enforcement and financial reporting oversight can enhance financial reporting quality through strong board level governance mechanisms, where the country and firm level governance mechanisms can substitutes each other.

2.4. Corporate Governance in Mongolia

As part of the improving capital market and business environment initiatives, formerly in 2007 Mongolian Corporate Governance Code was issued which was generally based on the OECD prescribed good Corporate Governance (CG) principles. Later, in 2014 the code was revised and avoided overly regulation for the listed companies. The Company Law of Mongolia (2011) requires listed companies to mandatorily apply certain elements of CG mechanisms which are consistent with best practices, including the requirements on: minimum number of board of directors, proportion of non-executive directors, differing committees.

The CG practice and regulatory framework efficiency and capacity have been studied by number of international and domestic researchers as well organizations. Formerly, in 2002 the shareholders right in Mongolia was studied for OECD Eurasian round table and in 2003 EBRD implemented a project for Developing CG regulatory framework and its implementation (NCCG, 2013). In general the both of reports conclude that CG in Mongolia is inefficient in terms of lack of transparency and disclosure (T&D), and deficiency in protecting minority shareholders.

Later, USAID researcher Yener (2008) conducted a detailed study on Mongolian governance practice through the interviews with representatives from listed companies, state organizations, limited liability companies, and banks. The interview questions were based on the CG Code of Mongolia (2007). The project team's main concluding remarks cover both of the directors/specialists and public education about CG, shareholders' right, further privatization of partially state owned companies, strengthening the regulatory institutions' effectiveness, and the transparency and disclosure at the trigger of further development.

In 2009, the group of researchers Molineus, et al. carried out CG Report on the Observance of Standards and Codes (ROSC) for Mongolia which set the OECD best practices as the benchmark. They have found there is a gap between law on book and its implementation. The deficient areas include: opacity in board nomination – generally filled by family members; lack of ownership and governance disclosure; financial reporting deficiency was observed in relation to IFRS compliance; and basic shareholders' rights are not protected.

Since the earlier studies, several studies were conducted for Mongolian companies' CG practice, contextual framework, and regulations' implementation. The researchers include: Japanese professor Iijima (2011), Sanaser (2011), Tuvshintur (2012), Bailikhuu (2014). Iijima, Sanaser, and Tuvshintur have participated in the CG survey as part of a same project team in 2011 and the purpose of the project was dedicated to understand the listed companies' CG approach, and how they cope with the environmental problems.

In 2013, IFC has collaborated with FRC of Mongolia and CG Development Centre of Mongolia to establish the baseline survey to assess CG practice. For the survey top 20 listed companies of Mongolia on the basis of their market capitalization have studied, through the application of the companies' 2011 data. For which OECD prescribed good practices are evaluated for each of the 5 sections, including: shareholders' right, equitable treatment of shareholders, stakeholder right, T&D, and board of directors' duties and responsibilities.

Later in 2013 and 2015, Mongolian National Council on Corporate Governance (NCCG) carried out assessment for entities from various sectors and the methodology of assessment was built on the IFC methodology. The focus entities include the participants from: listed companies, mining companies, state owned enterprises, commercial banks, non-bank financial institutions, savings and loan cooperatives, insurance companies, and audit companies. From IFC (2013), the general assessment has shown 27,5 scores, where in NCCG (2015) assessment the score has increased up to 53,4. The increase in score was explained that the Company Law was revised in 2011 and companies have adapted their structure in compliance with law and required committees have established within 3 years' time.

In 2014, Bailikhuu has evaluated the 9 state participated ownership plc's and limited liability companies 'governance through 9 categories of questionnaire based assessment method. The assessment categories include: shareholder right protection, shareholder meeting, board of directors, T&D, significant agreements, dividends, policies on governance, monitoring mechanisms. In general, the average score of 9 categories for each of the 9 companies where below 50 percent, ranges between 8 and 38 percent. All companies have shown below the 20 percent performance in T&D and significant agreements. In other categories, companies had varying performance.

In 2017, Cigna, et al. EBRD researchers studied Mongolian governance regulatory framework and its capacity to sustain quality governance on the basis of 5 main criteria: structure and functioning of board, T&D, internal control, rights of shareholders, and stakeholder and institutions. The team has applied holistic approach and at the initial phase questionnaire has sent to professional bodies, regulators, stock exchange and largest listed companies. In comparison to earlier studies, the findings revealed number of improvements within a decade. Basic shareholder rights are regulated, the proportion of executive directors is stated, nomination, remuneration and audit committees are required in law. However, the team observed the compliance is not satisfactory. Furthermore, there are some areas still need improvements from the legislative framework as well as performance: the board gender and qualification diversity, committee activities, publication of auditor reports, disclosure of related party transactions. Also the revised CG Code (2014) is criticized as it became less detailed and significant regulatory aspects were omitted.

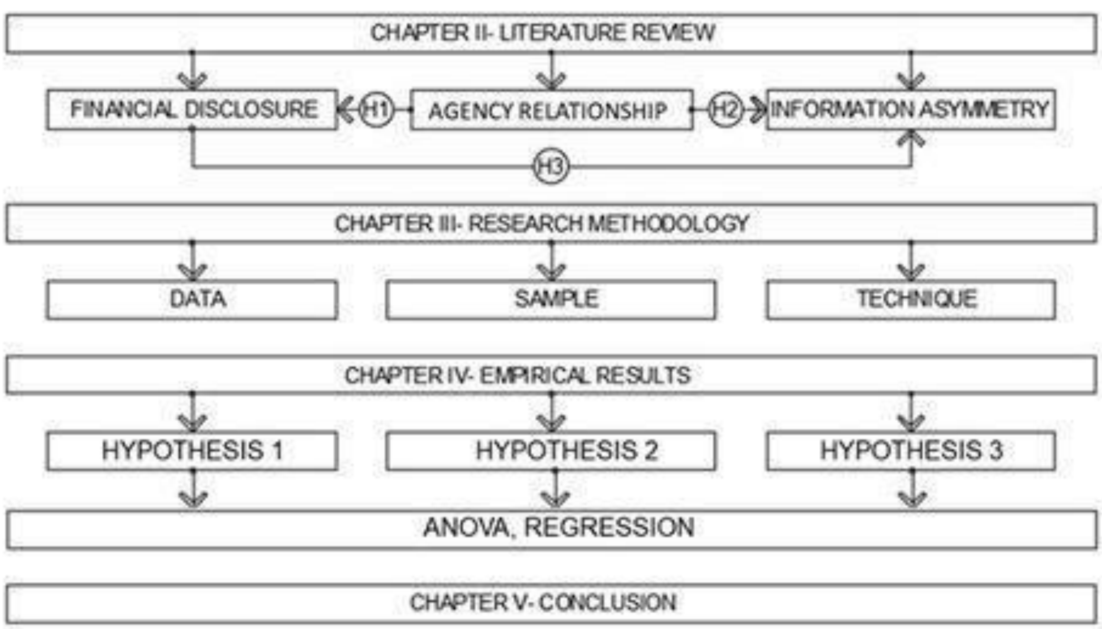
The main values of good corporate governance are transparency, accountability, responsibility and fairness and for which disclosure lies at the heart (Yener, 2008). And the corporate governance mechanisms at the firm and country level effects on transparency as well as the quality of information provided (Bonetti, et al., 2016). The above mentioned researchers ‘results and recommendations were generally focused on governance issues which document that there is lack of transparency and disclosure among the listed companies to enable deeper analysis as well as to provide information to the investors which effect on protecting the investors’ right.

According to Bushman & Smith (2003, p.66), “publicly traded companies’ transparency is defined as widespread available relevant and reliable information on periodic performance, financial position, investment opportunities, governance, value and risk”. Considering the necessity of financial disclosure research in Mongolia and the importance of integrating the CG research in accounting, the study will attempt to examine the disclosure practice in relation to specific CG mechanisms.

3. Thesis outline

The thesis outline is depicted in *Figure 1*. As illustrated in the figure, the thesis involves 5 main chapters including this introduction chapter 1. The prior literature will be reviewed in relation to the key constructs and based on the literature the hypotheses will be built in Chapter 2. In Chapter 3, the research methodology to the hypotheses will be decided. The main discussion of the chapter includes: Data and sample selection and research techniques. Chapter 4 refers to the empirical results from the test of hypotheses. The study findings, limitations, future researches are concluded in Chapter 5.

Figure 1. Structure of the thesis



Source: Own construction

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Information disclosure is broadly understood as the information revealed by the company (Hermalin & Weisbach, 2012). Bushman & Smith (2003) and Standard & Poor's (2002) examine the information disclosure as part of a transparency system and classify the disclosure into: Past information - financial performance and position; present and future information - governance firm value, risk, and investment opportunities. According to McKinsey & Company (2002) 'Global Investor Opinion Survey' findings, financial disclosure and its quality are the most concerned aspect by the investors in their decision making. Most recently PwC (2018) investor survey finding shows that the information disclosure is remained among the high importance factors for investors' decision making as the investors see it is vital for building a trust between company and its investors. Stiglitz (2017) denotes financial sector is all about collecting and re-producing information which forms the basis of efficient capital resource allocation. The quality information about the company is crucial for macro and micro settings.

This research is focused on the capital market effectiveness from the perspective of financial information disclosure by the public listed companies (plc). Precisely, the thesis aims to investigate the relationship between agency relationship and financial disclosure and their effect on information asymmetry. The main theme of the research is financial information disclosure and hereafter it is referred as financial disclosure.

The chapter consists of four sections. Literature on financial disclosure is reviewed in section 1. According to Verrecchia (2001) financial disclosure literature is broadly divided into three intertwining groups: i) 'Association based disclosure which involves the studies that examine investors' and individuals' reaction afterwards disclosure; 2) 'discretionary based disclosure' that involves the studies where managers put discretion over the information disclosure; 3) 'efficiency based disclosure' involves the preference of disclosure arrangement without the prior information.

The agency relationship is considered as the influential factor on financial disclosure. Related literature is conferred in section 2. In other words, the section reviews how the differences in agency relationship and the associated conflicts among the key decision makers influence on the financial disclosure decisions. In line with Verrecchia (2001), the section involves discretionary based disclosure research.

In the section 3, the literature on agency relationship and financial disclosure effect over information asymmetry are reviewed. The type of literature is related to association based disclosure as per Verrecchia (2001) classification. In the last section, the hypotheses building are conferred.

1. Financial disclosure literature

As an inception of the review, the definition and classifications of financial disclosure, and the determinants of financial disclosure are discussed. Cost and benefit considerations of financial disclosure are reviewed in sub-section 1.1.Then the positive accounting theories in disclosure literature are reviewed in sub-section 1.2.

Financial disclosure definition and classification

Financial disclosure definitions are precise and not contradictory. As mentioned earlier, information disclosure is about the information that is revealed to the public (Hermalin & Weisbach, 2012). Gibbins, et al. (1990, p.122) define financial disclosure as “any deliberate release of financial information, whether numerical or qualitative, required or voluntary or via formal or informal channels”. In line with Gibbins, et al. (1990) hereafter the financial disclosure is referred as those financial information disclosed to the public either in a form of quantitative or qualitative and either mandatory or voluntary through any form of information channels.

The classification of the financial disclosure is important alike in any other disciplines. Nobes (2011) states that the cornerstone of better understanding the phenoma in any field is the classification. Financial disclosure is classified by the scholars in identical forms. Holland (2005), Holm & Scholer (2010), Beyer, et al. (2010), Beuselinck, et al. (2013) classify the financial disclosure in terms of disclosure requirements and management discretion. According to the scholars, financial information disclosed in line with jurisdiction’s regulatory requirement refers to mandatory disclosure and those other disclosures made as part of management’s decision making for the purpose of signalling its good performance is referred as voluntary disclosure. This voluntary disclosure deliberation is called as disclosure opportunism in Gibbins, et al. (1990) and Holland (2005). In contrast to disclosure opportunism, Gibbins, et al. (1990) discuss that disclosure can be made on the basis of existing norms which is not related to mandatory requirements. This disclosure motive is called as disclosure ritualism.

Therefore according to Gibbins, et al. (1990), Holm & Scholer (2010), Beyer, et al. (2010), Beuselinck, et al. (2013) financial disclosure in this thesis is classified into mandatory disclosure (MDISC) and voluntary disclosure (VDISC).

Determinants of financial disclosure

The level of financial disclosure is affected by the both of country and firm level factors. There is a massive research which studies the effect of specific or group of factors in the financial disclosure. In the country level factor setting, Salter (1998) studies the economic and capital market development of a country influence on the firm financial disclosure effectiveness. He finds effectiveness of the company's financial disclosure is better at the developed countries than the emerging countries, also the level of disclosure is positively related to the regulation level. Jaggi & Low (2000) take account the jurisdiction's legal system - common law or code law and cultural value. The common law countries have shown higher financial disclosure than code law countries and the cultural value has shown insignificant and mixed result on financial disclosure level, respectively. The studies show that accounting standard adhered by a country effects on the financial reporting quality, among which studies related to IFRS and financial reporting quality are strongly growing (Palea, 2013). Works held by Christensen, et al.(2013) and Cascino & Gassen (2015) study the specific quality characteristics of financial reporting under mandatory IFRS adoption and find that the quality characteristics are improved when the country's reporting enforcement is strong.

According to Dye (1986) mandatory and voluntary disclosures are affected by the intensity of industry competition. He argues where the competition is higher, the both of mandatory and voluntary disclosures increase and in less competitive industries voluntary disclosure can be reduced more in contrast to mandatory disclosure. Hermalin & Weisbach (2012) discuss that the increase in level of disclosure must be cautiously decided as it is related to increase in CEO remuneration and increased pressure to CEO as a result the agency problem can be exacerbated. However, the authors highlight that determining the level of firm disclosure practice is important as the proposition is not related to the firms with poor disclosure practice and for which cases the increased disclosure benefits to both agent and principal.

Recent studies show that the effect of weaknesses in the country's reporting enforcement on financial reporting quality can be mitigated through effective firm level governance (Bonetti, et al., 2016) and the strength of corporate governance is found to shape the disclosure level and quality (Verriest, et al., 2013). Beyer, et al. (2010) denote that the information demand by the capital market impacts on the firm's financial disclosure practice, however the firm level corporate governance practices have the significant role in shaping the financial disclosure. Referring to the findings by Cascino, et al. (2016), professional investors consider the both of the financial reporting quality and the firm's corporate governance in their decision making. "Corporate governance framework of a company is expected to ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including financial disclosure" (OECD, 2004, p.22).In line with Jiang, et al. (2011), and Beuselinck, et al. (2013) the corporate governance mechanisms explain the rationale for disclosure decisions in reference to the management incentives. Therefore, companies' corporate governance mechanisms' effect on financial disclosure is studied in this thesis. The related discussion and review will be covered in section 2 of this chapter.

1.1. Cost and benefit of disclosure

The benefits from the financial disclosure are received when the role of financial disclosure is fulfilled at certain extent. Therefore, the role of financial disclosure is briefly reviewed at first. Corporate disclosure is integral to firm's information system which is dedicated to protect and support the interest of investors in making informed decisions on investment and enabling the investors to participate in voting through quality corporate information which enhances the investors' confidence over the firm, effective capital allocation and forges economic growth (CCMC, 2013). The financial disclosure is one of the key corporate disclosures (PwC, 2018; S&P's, 2002; Bushman & Smith, 2003).

Financial disclosure is essential means of communicating company performance to outsiders (Healy &Palepu, 2001) and it serves for effective capital market functioning through better informed and quality investment decisions (Healy & Palepu, 2001; Bushman & Smith, 2003; Bushman, et al., 2004; Singhvi & Desai, 1971) which attracts more external finance for the better performers and forges economic development in emerging countries (Rajan & Zingales, 1998). The quality financial disclosure enables the corporation to be more effectively governed(McKinsey & Company, 2002; Beuselinck, et al., 2013; Armstrong, et al., 2016) and the information gap between the company and finance providers can be narrowed through the financial disclosure (Low, 1996; Armstrong, et al., 2016) which improves the trust between investors and company (PwC, 2018).

According to prior literature one of the most significant role of financial disclosure is to reducing the adversities caused by information asymmetry between external parties and insiders (Verrecchia, 2001; Healy & Palepu, 2001; Beyer, et al., 2010). The studies considering information asymmetry perspective in disclosure is growing in number and which is greatly involved to accounting literature on disclosure in the last couple of decades (Kothari, 2001). Verrecchia (2001) proposes the importance of information asymmetry perspective in disclosure research for building solid theoretical fundaments and understanding the relative endogeneity and exogeneity in accounting disclosure literature.

Benefits of financial disclosure

Without the analysis on economic benefits of disclosure, financial accounting lacks the economic motivations and researches would not have gone beyond bookkeeping rules (Verrecchia, 2001). Beuselinck, et al. (2013) discuss financial disclosure benefits for the company is in the reduction of cost of capital and increase in future cash flows. Similarly, Beyer, et al. (2010) classify the role of financial disclosure into: valuation role and stewardship role. Valuation role is also referred as information role (Kothari, 2001) which enables to reduce the adverse selection problem among potential investors prior to their trade. Adverse selection arises when there is lack of reliable information about the securities traded at the market. One outcome caused from the adverse selection is that investors are unable to differentiate the performance of firms. On the other hand, investors may delay or redeem the decision on share purchases (Beuselinck, et al., 2013). Clarkson, et al. (1996) mention that shares with this information risk can only be priced if the investor portfolio is filled with similar type of shares in the case that there is lack of information or the economy is comparably undeveloped. In addition, Armour, et al. (2009) assert that effective disclosure mechanisms play an important role to reducing agency costs caused from agency problem through enabling the principles to oversee the agents' action. Thus, the opportunism by the agents are able to be screened out in the capital markets.

In relation to stewardship role, the disclosure helps to reduce moral hazard effect of information asymmetry (Beyer, et al., 2010) that arises after the contractual dealing between the firm and investor. They emphasize that lack of information diminishes the shareholders 'ability to exercise their decision making rights. The authors comprehend that company financial disclosure environment is shaped by interaction between information and agency problems. The above literature discussed in this section calls the necessity of information asymmetry perspective in financial disclosure while considering agency problems of the firm.

Costs of financial disclosure

Verrecchia (1983) provides theoretical examination on firm financial disclosures and he predicts that higher the proprietary costs lower the firm's incentive to disclose. Gray, et al. (1990) note that firms hesitate to provide sufficient disclosure due to a fear that the information can be abused by competitors. In Low (1996), Verrecchia (2001), and Cohen (2003) the reluctance for full disclosure is explained in relation to subsequent cost, that the most significant one is proprietary cost. The authors have found inverse relation between the extent of disclosure and proprietary cost. Therefore, firms' need to make a trade-off between increased financial disclosure for rising firm value, and keeping the information to prevent competitive information leakage to the rivals (Darrough & Stoughton, 1990).

Apart from external costs arising from the disclosure, authors also study internal processing costs. Cooke (1992) and Beuselinck, et al. (2013) highlight the preparation, assurance, and publicizing costs associated with disclosure. Hermalin & Weisbach (2012) study disclosure cost in relation to the corporate governance mechanisms. The authors caution that increase in disclosure leads to an increase in CEO pressure which calls for increased CEO salary or turnover. But they explicitly mention that the proposition does not work for situations where the disclosure is below the minimum. Hermalin & Weisbach (2012) propose to study the level of disclosure in relation to if it is below the minimum obligations or providing more information to signal the performance of the firm.

1.2. Theoretical approaches in financial disclosure research

The financial disclosure research is one of the strands of accounting research. The theories in accounting research are interchangeably applied in financial disclosure literature. The accounting and disclosure theories are broadly based on the positive and normative approaches. The positive approach connects the theory and empirical tests as which seeks to provide explanations and predictions for accounting practice (Watts & Zimmerman, 1986; Kothari, 2001). As noted in Kabir (2005), the normative approach attempts to prescribe the foundations of accounting procedures, financial report contents, and accounting measurement (Ijiri, 1975; Watts & Zimmerman, 1986). The two approaches are reviewed separately as follows.

Positive approach in accounting theory

Positive accounting theory fundaments are started to be built in the middle of 20th century that the financial methods on accounting is introduced by researchers including, Ball & Brown (1968) and Beaver (1968). Later in 1979, Watts & Zimmerman published the article about "The demand and supply of accounting theories: The market of excuses" which aims to identify accounting theory determinants to explain how research outcome is changed when the factors change. They assert that accounting standards and regulations affect the self-interest as well as the actions of the involved parties and which make the positive approach in accounting research more suitable than the normative approach. The main philosophy behind the positive accounting theory is that management incentives are systematically related to accounting choices (Demski, 1988; Samani, 2015) and its role is to provide explanations and predictions for accounting practice (Watts & Zimmerman, 1986; Kothari, 2001).

Positive accounting theory has shed a light on expanding accounting knowledge in its early stage of development and Demski (1988) proposed to integrate governance issues as part of the expansion. In 1990, Watts and Zimmerman contend that firm's implicit and explicit contracts such as ownership structure, capital structure and bonus plan effects on the set of accounting procedures chosen by management within their freedom of discretion. Urquiza, et al. (2010) denote that the theories in accounting and disclosure research are highly linked to the determinants of the financial disclosure. There is a massive research on the relationship between the contracts and accounting choices. Among them ownership structure effect on accounting choice is significantly studied (Beuselinck, et al., 2013). According to Kothari (2001), Jensen & Meckling (1976) and Ross (1977) forge the roots of Watts & Zimmerman (1978, 1979, 1983, 1986)'s series of work to developing positive accounting theory. The widely applied and challenged theory in accounting as well as governance literature is agency theory (Lambert, 2001) and signalling theory. Jensen & Meckling (1976)'s agency theory represents positive approach. The detailed discussion with regards the agency theory will be held in section 2 of this chapter. The signalling theory will be reviewed in section 3.

Normative approach in accounting theory and mandatory disclosure

Normative approach in accounting involves the measurement and recognition of transaction in accounting (Ijiri, 1975). It has been long stated that there is no comprehensive theory in accounting (Fields, et al., 2001; Schroeder et al., 2016) and in corporate disclosure (Verrecchia, 2001). In the absence of comprehensive disclosure theory, Godfrey, et al., (2010) argue that accounting standards play an important role as its' Conceptual framework defined by the standard setters can be presumed as the structured theory in accounting and disclosure. In the accounting and disclosure literature, number of studies related to International Financial Reporting Standard (IFRS) is increasing (Palea, 2013) in relation to the popularity of the standards all over the world[2]. The disclosure decision made by the management in compliance with the obligatory requirements and standards[3] is called as mandatory disclosure (Holm & Scholer, 2010). Mandatory financial disclosure is the component of firm's financial statements' set (IASB, 2014; MOF, 2012). In the first order, it is expected that disclosure is made in compliance with the accounting standards and in the second order other voluntary disclosure is made as per management discretion.

[2] In more than 126 jurisdictions IFRS is obliged to be complied (IFRS, 2017).

[3] In this thesis IFRS is taken as a base standard. IFRS enables the companies to disclose more information beyond the legal requirement as if the firm considers that would enhance financial statement users' understanding about the firm financial performance and position.

The qualitative characteristics prescribed in Conceptual Framework of International Accounting Standard Board (IASB) is applied to measure and evaluate the quality of financial disclosure in companies. Those characteristics include core and supporting characteristics. The core characteristics are relevance and faithful representation. The supporting characteristics are comparability, verifiability, timeliness, and understandability. Wallace & Naser (1995) synthesize the characteristics of financial disclosure quality into 5 categories: 1) adequacy for defined purpose – e.g. compliant with accounting standards; 2) informativeness – predictive potential of share prices and returns, in some literature it is called value relevance (Barth. et al, 2001); 3) timeliness; 4) understandability; 5) comprehensiveness – extent of more detailed information.

Literature on qualitative characteristics: In accounting and disclosure literature, many studies applied the qualitative characteristics of IASB Conceptual Framework. The relevance characteristic is studied in terms of value relevance in Palea (2013), and some authors provide detailed methodology on value relevance measurement (Dechow & Dichev, 2002; Holthausen & Watts, 2001). Faithful representation characteristic involves completeness, neutrality, and error in financial information (IASB, 2018). The completeness is measured by mandatory (Bolortsogoo, 2018d; Alfraih; 2016) and voluntary disclosures (Verrechhia, 1983; Gaynor, et al., 2016). Neutrality and error are measured by (un)intentional error in financial reports (Gaynor, et al., 2016) which are tested in Wang & Wu (2011) and Bolortsogoo (2017b) in terms of financial reporting restatement.

Comparability characteristic of financial statements among 29 countries are studied in Cascino & Gassen (2015). They found that comparability is highly related to IFRS compliance. Beest, et al. (2009) apply financial ratios to measure the comparability as which enables the financial statement numbers comparable to industry average, company's past performance. Verifiability is measured by external auditor quality (Gaynor, et al., 2016). Also scholars found that external auditor characteristics effect on financial reporting quality (Bratten, et al., 2015; Lin & Lin, 2015). The key of timeliness characteristic is about availability of financial information at the time of decision making (IFRS Foundation, 2010b). Leventis & Weetman (2004) find differences in between the mandatory disclosure dates. The influential factors of disclosure timeliness is examined in Botosan & Stanford

(1996). Regarding the understandability characteristic, ICAEW (2016) notes that due to the unobservable nature of understandability, it is measured by the informativeness of financial information. The financial information is not limited by the published financial statements, also the annual reports and explanatory notes support the understandability (Beest, et al., 2009).

Collaboration between normative and positive approach in disclosure literature

Tinker, et al. (1982) argue that normative and positive approaches in accounting and disclosure research are not isolated phenomena as the roots of positive theories are based on the normative theories. For instance, the qualitative characteristics of financial accounting form the basis of empirical research. Especially, it comes true when the mandatory disclosure is studied in relation to the determinants and its effect over the market participants decision making (as studied in Bertomeu & Magee, 2015; Alfraih, 2016; Hassan, et al., 2009).

1.3. Summary of financial disclosure literature

Section 1 covers the literature on financial disclosure definition, classification, determinants, cost and benefit, and finally the theoretical roots are reviewed. On the basis of literature, to narrow down the research field and specify the scope of the research following concepts are applied to this thesis.

a) The financial disclosure is defined in line with Gibbins, et al. (1990) as financial information disclosed to the public which can be disseminated through any form of information channel; with mandatory or voluntary motive; either in a form of numerical or qualitative.
b) Among the different classification around the financial disclosure, in line with Holland (2005), Holm & Scholer (2010), Beyer, et al. (2010), Beuselinck, et al. (2013) the financial disclosure is broadly classified into mandatory and voluntary disclosure.
c) Regarding the financial disclosure determinants, two broad categorizations are applied, which are country and firm-level factors (Jaggi & Low, 2000). The thesis focuses on the firm-level determinant of corporate governance. Corporate governance mechanisms' effect on the financial disclosure is further studied for the reason that it

explains the rationale behind the disclosure decisions in relation to management disclosure incentive (Jiang, et al., 2011; Beuselinck, et al., 2013).

d) In parallel to country and firm level determinants, the explicit and implicit cost and benefit of the disclosure also influence management decision to public disclosure. The proprietary cost is one of the main reasons that make the management to be reluctant for disclosure (Low, 1996; Verrecchia, 2001; Cohen, 2003). Additionally, the processing cost of the disclosure is weighted against benefits out of the disclosure. Beyond the potential costs, Verrecchia (2001) and Healy & Palepu (2001) propose that financial disclosure enables to reduce the information asymmetry among the insider shareholders and outsider investors. The reduction of information asymmetry is not only beneficial for the company. Further, it helps to attract more equity and debt finance for the emerging countries, hence the macro economic advantages are received (Rajan & Zingales, 1998). Also, it helps the capital market to function efficiently (Healy & Palepu, 2001; Bushman & Smith, 2003; Bushman, et al., 2004; Singhvi & Desai, 1971). Therefore, it is presumed that appropriate level of financial disclosure is good for the both of company and the capital market. In other words the benefits associated with disclosure are expected to outweigh the costs.

e) The financial disclosure research is one of the strands of accounting research. The positive and normative theories in accounting are equitably applied in disclosure literature. As the financial disclosure is classified into mandatory and voluntary disclosure, the majority of literature focuses on one of the classes. In voluntary disclosure literature, the determinants of disclosure theories were prevailed (Urquiza, et al., 2010). In mandatory disclosure literature, the normative approaches were greatly involved. However, no one of the approach is preferred than other. Therefore, it is presumed that considering the both approaches in disclosure research is applicable.

2. Corporate governance research in financial disclosure

According to Cadbury report (1992, paragraph 2.5) "Corporate governance is the system which the company is directed and controlled". Brown, et al. (2011) note that corporate governance (CG) concept is applied various discipline, hence depending on the discipline the definitions slightly differs. In legal discipline, the CG is described in relation to its role of setting proper system of decision making and implementation by governance bodies and management (Armour, et al., 2009). Within the finance research, Shleifer & Vishny (1997) comprehend that CG is about the ways to ensuring finance providers' investment pays back a return. Brown, et al. (2011) highlight the CG role in relation to financial policies in reducing the agency costs. In accounting research, Bushman & Smith (2003) define CG in relation to information role and emphasize the importance of effective CG in providing equitable information for the shareholders that minority shareholders' right is not expropriated. Armstrong, et al. (2016) define CG in relation to interest alignment mechanism through the formal and informal contracts. In line with the statements made by accounting and finance scholars, in this thesis the CG is referred as the company's direction and control system and that system shall be designed to issue true and fair return for the investors while providing equitable information for the both of majority and minority shareholders.

Brown, et al. (2011) classify the CG structures into internal and external structure based on the firm's ability to take control over the structure. Internal structure refers to board of directors, its committees, ownership structure, incentives for the management, and firm's internal control systems. External structure refers to external auditors, regulations, market for corporate control, financial analysts, and ownership structure as well. The ownership structure involves the both of internal and external CG structure due to its partially controllable as well as uncontrollable nature. The researches in the field of examining the relationship between corporate governance and accounting have proliferated over the last two decades (Carcello, et al., 2011) which generally focus on certain CG structure and accounting stream. This specification is necessary to overcome the problem associated with broadness of the two concepts and endogenous relationship between the research fields (Beuselinck, et al., 2013; Brown, et al., 2010).

The studies examining the intertwined concepts are massive. The role of accounting and disclosure in effective CG is studied in Armstrong, et al. (2016), Lowenstein (1996), Bushman & Smith (2001). The CG mechanisms influence on accounting is studied in Carcello, et al. (2011), Beuselinck, et al. (2013), Bonetti, et al. (2016). Kachouri & Jarboui (2017) and Brown, et al. (2011) investigate the causal relationship between CG and accounting.

<u>The role of accounting in effective corporate governance</u>

Armstrong, et al. (2016) and Armour, et al. (2009) start the discussion by highlighting the importance of identifying agency problem within the firm and the authors focus on classic agency problem between managers and owners within the dispersed ownership structure. The authors discuss the role of accounting in effective board structuring as a mechanism of reducing the information asymmetry between the managers and shareholders. The mostly implied role of financial disclosure in effective governance is comprehended in Lowenstein (1996) as noted as the quality financial disclosure enables the management to execute their role in an efficient and effective way through better informed decisions. Lowenstein (1996) asserts that greater disclosure improves the accountability of management, hence reduce management abuse of their authority. Bushman & Smith (2001) examine the financial accounting information role in management incentive plan and corporate control mechanism. The scholars denote that the essence of governance research in accounting is to investigating the extent of financial accounting information on addressing the agency problem. Later, Samani (2015) study the role of accounting information in management incentive plan and she finds that greater the agency problem caused from high ownership concentration leads to higher performance based CEO compensation in Sweden listed companies' context. Vice versa, the author tests if governance mechanisms influence on financial reporting information ability to effectively perform its contracting role and the findings reveal that mandating the governance and financial disclosures improve the compensation contract. Albeit, Samani (2015) cautions the findings are relevant to the jurisdictions with effective legal system.

The influence of corporate governance on accounting and financial disclosure

From the above considerations, the effectiveness of CG mechanisms are affected by the financial accounting information. Vice versa, the accounting and disclosure decisions are affected by the CG mechanisms. This situation is called as endogenous relationship in accounting and CG research (Armstrong, et al., 2010). The literature in endogenous relationship is scarce. Kachouri & Jarboui (2017) aim to investigate the interaction between financial reporting and CG effectiveness. The authors test voluntary disclosure, earnings timeliness, earnings management, and accounting conservatism aspects under financial reporting; and to measure CG effectiveness self-constructed 12 items index is applied. It has found that accounting conservatism is strongly and positively related to CG index and authors presume that accounting conservatism is an effective method to reducing agency problem within the firm. However, the results did not support the hypotheses on relationship between other three financial reporting aspects which calls further research in the field.

According to Boshkoska (2015), one of the signs of effective corporate governance is the reduction of excessive agency problems. Agency problem is low when the conflicts of interest between agent and principle is low (Jensen & Meckling, 1976; Boshkoska, 2015).The literature in corporate governance mechanisms effect on accounting and disclosure either involve multiple mechanisms or focus on certain mechanism.

Carcello, et al. (2011) focus on the board of directors and audit committee mechanisms interaction with accounting and audit practice using the literature review methodology. Among the various accounting research streams, the authors' work has covered financial statements' restatement, earning's management, misrepresentation of financial reporting, accruals quality and conservatism. The lack of board members' independence is found to be positively related to misrepresentation of financial reporting. Holm & Scholer (2010) examine the influence of board independence on firm disclosure among Danish listed companies and it has found that higher the independence there is higher the disclosure. The finding is consistent with Armstrong, et al. (2016) statement that board structure effects on disclosure policy of the firms.

The findings related to audit committee show mixed results and Carcello, et al. (2011) note that audit committee member's expertise in industry and independence are negatively related to financial statements' restatement, discretionary accruals; greater the financial expertise of audit committee members are found to be associated with higher accounting conservatism.

Alfraih (2016) study multiple CG mechanisms effect on mandatory financial disclosure in Kuwait listed companies. From the results, it shows that number of board members, gender diversity, multiple directorship have positive association with mandatory disclosure index. Albeit, higher the family members in board and CEO duality are negatively related to mandatory disclosure. Ho & Taylor (2010) produce indices of CG and voluntary disclosure and the CG effect on disclosure practice in Malaysian listed companies. The voluntary disclosure index not merely covered financial disclosure as the other corporate and strategy disclosures are included. The CG index involve 13 attributes of CG mechanisms. Hence, it was difficult to differentiate which mechanisms effect on financial disclosure.

The prior literature reveals that there is no best set of CG mechanisms as there are country-level factors impact over the mechanisms effectiveness (Carcello, et al., 2011) which emphasize the need of country-specific investigations. In Mongolian case, Company Law of Mongolia (2011) sets the minimum requirements for the internal structure of public listed companies' CG. The law provisions require: As stated in provision 75.4, the minimum number of board members are required to be 9 and at least one third of them must be independent members; in 81.2, the board is required to have committees of audit, nomination, and remuneration and at least two third of them must consist of independent member; in 83.4, it requires the separation of CEO and chairman of board. As the board and its committee structures are required by the law, the plc's must comply with the law.

The majority of CG and accounting studies focus on the ownership structure related CG mechanisms and their effect on either mandatory or voluntary financial disclosure. The studies include different classes of ownership structure and ownership concentration. The ownership structure mechanism has an effect over the agency problem of the company (Jensen & Meckling, 1976; Ang, et al., 2000; Armour, et al., 2009; Boshkoska, 2015). The more detailed discussion on different classes of agency problems will be held in section 2.1 in this chapter due to the agency problem importance to the both flows of research – accounting and disclosure effect on CG and CG effect on accounting and disclosure.

In line with existing CG literature the agency relationship is starting point for developing effective corporate governance structure or mechanisms (Armstrong et al., 2016; Shleifer & Vishny, 1997), and to tackle the two endogenous as well as intertwined concepts of agency problem and information asymmetry problems (Bartov & Bodnar, 1996; Stiglitz, 2017), this section will at first review various agency relationships in the world and Mongolian capital market. Shleifer & Vishny (1997) take account the classic agency problem caused from separation of ownership and control alike figured in Berle & Means (1932), (Morck & Yeung, 2004)Jensen & Meckling (1976). However, the existence, advantages and drawbacks caused from other types of agency problem – problem between majority insider shareholders and minority shareholders – are mentioned by scholars in certain extent.

2.1. Literature in agency relationship

From the prior literature, the identification of agency relationship is asserted to be crucial for building effective corporate governance mechanisms, finding solutions for mitigating excessive agency costs and determining the effects from the agency problem on disclosure and other policies. Jensen & Meckling (1976) define agency relationship as a contract in which one party (agent) is obliged to perform a service on behalf of others (principle). Agency relationship faces a problem when the agent fails to act on the best interest of principle - called as agency problem. The fundament of this view is considered to be built around 1776 by economist, philosopher, and author Adam Smith who showed the individual's self-interest prevails over the others' interest in mutual collaboration (Hirschey, 2009). Later, the concept on separation of ownership and control caused from ownership diversification is discussed by Berle & Means (1932) in the context of large US corporations. In Jensen & Mackling (1976) an ownership structure contended in Berle & Means (1932) is predominantly applied. But, the scholars allude the agency problem exists in all cooperative efforts even there is no obviously visible principle and agent relationship is observed. Jensen & Meckling (1976) and Watts & Zimmerman (1986) viewed the firm as a nexus of contracts. In line with the view, the contracts functionality is affected by the ownership structure and related agency problems.

In accounting and CG literature, certain type of agency relationship and its problems are justified depending on the context of research. The agency problem between shareholders and management is one of the problems that is studied greatly (Armstrong, et al., 2016). The group of authors (LaPorta et al., 1998 and 1999) questioned if it is true that the ownership diversification exist in large corporations and they have studied 27 wealthy economies' ownership structure among the large corporations. However, the result indicates the ownership diversification is rare in which the main agency problem lies between majority and minority shareholders that the state or a family ownership concentration was dominating. Also Coffee (2005) identifies ownership concentration prevails in Europe and which issues principal-principal agency problem (Samani, 2015).

The authors examine various agency problems and for which identifying ownership structure is critical. Armstrong et al. (2016) emphasize two broadly discussed agency problems in corporate governance literature considering the interaction between shareholders, board of directors, and managers depending on the information asymmetry presence. As it is noted, the former agency problem incurs when the shareholders and board of directors (BOD) interests are aligned, but manager's interest is not. The latter relates to BOD and managers interests are aligned, however shareholders' interest is not. Armstrong et al. (2016) argue these agency problems effect on the management's choice of accounting conservatism, and timeliness of the financial reports.

According to Armour, et al. (2009) there are three generic types of agency problem exists on the basis of participating bodies: i) owner and managers; ii) the majority and minority shareholders; iii) and the firm, more alike its owners, and other contracted parties. The former two problems are also discussed in Morck & Yeung (2004), which are called as other people's money problem and management entrenchment problem. The authors applied the knowledge in analyzing corporate governance issues in emerging countries where the family ownership is dominant.

In line with Morck & Yeung (2004) discussion, other people's money problem arises when the managers of diversely owned firm put self-interest over the investors' interest. The case of agency problem was broadly synthesized in Jensen & Meckling (1976). The management entrenchment agency problem as discussed by Morck & Yeung (2004), (previously in Morck, et al., 1988), occurs when the managers[4]are not ousted and which exacerbated in the dominance of insider shareholders. In addition, the authors explain tunnelling agency problem in emerging countries which the term was previously defined by Johnson, et al. (2000). Johnson, et al. (2000) applied the term to illustrate minority shareholder expropriation by the controlling shareholders through the assets and profit transfer. The authors found weakness in legal regime of the country affects minority shareholder expropriation through tunnelling and improving the effectiveness of protecting the minority shareholders have significant effect on financial and economic development.

From the above considerations, Armour, et al. (2009) concerned about the broader view of agency problems including the inside and outside stakeholders of the firm. Armstrong, et al. (2016) analyzed the direct stakeholders of the firm within the perspective of governance research. Entrenchment and tunnelling agency problems as considered in Morck & Yeung (2004) are more alike the consequences of principal-principal agency problems. Furthermore, appropriateness in determination of agency problem has a crucial role in both accounting and governance research as the problem implications and remedies can be identified[5]. Lambert (2001) study agency theory utilization in accounting issues and he denotes one of the basic potentials of agency theory is that it has the ability to incorporate conflicts of interest into accounting research. Primarily agency theory enables to study how those conflicts of interest affect the information and accounting structure. For his work, Lambert takes account traditional agency model of principal as the shareholders and agent as the management.

The scholars (Ang, et al., 2000; Singh& Davidson III, 2003; Armour, et al., 2009) assert that ownership structure is central to the agency problem identification and determination of effective board structure (Armstrong, et al., 2016).Ang, et al. (2000) investigated that agency problems measured by agency costs are influenced by ownership structure. The authors have considered non-listed firms in the US and it has found that greater the outsiders involvement in management, higher the agency cost; higher the management

[4]The managers who are related to the insider majority shareholders.

[5]The agency problem is tested in relation to accounting and disclosure literature in various ways. Low (1996) investigates agency and proprietary costs influence on accounting disclosure decisions and he finds relationship between agency cost and disclosure was stronger than proprietary cost hypothesis. In majority of disclosure literature, the agency problem is implied in study of relationship between ownership structure and disclosure (e.g. Jiang, et al., 2011; Byun et al., 2011; Jamalinesari & Soheili, 2015; Omari, et al., 2014; Shiri, et al., 2016)

share ownership lower the agency cost. Later, Singh & Davidson III (2003) tested the same hypotheses as Ang, et al. (2000); however the sample was selected among the listed companies. The findings from the study were identical to Ang, et al. (2000), that agency cost is affected by the ownership structure. Also as asserted in Armour, et al. (2009) and Jensen & Meckling (1976), the main driver of agency cost is presumed to be ownership structure.

In line with the other Asian countries where ownership concentration prevails among listed companies (Shleifer & Vishny, 1997; OECD, 2017; Brown, et al., 2011), Mongolian Stock Exchange listed companies have concentrated ownership structure and which is prescribed to be more family ownership based concentration (Iijima, 2011; Tuvshintur, 2012; Sodnomdorj, 2011).The main agency problem is presumed to exist in between majority insider shareholders and minority shareholders. The exacerbation of the problems may lead to minority expropriation and impairment of public trust over the capital market and lack of information disclosure lead to information asymmetry (Healy & Palepu, 2001). In this case, the main information asymmetry lies not in between management and shareholders, moreover in between majority and minority shareholders where the minority shareholders and potential shareholders are holding same level of information.

2.2. Summary of corporate governance in financial disclosure literature

Section 2 covers the literature on corporate governance in financial disclosure research. Based on the prior literature, following concepts are summarized to facilitate hypotheses building.

a) In this thesis, CG is discussed in relation to finance and accounting research. Hence, CG is referred as the company's direction and control system and that system shall be designed to issue true and fair return for the investors while providing equitable information for the both of majority and minority shareholders.
b) The accounting and CG research is endogenously related. According to the literature, the effect of CG mechanisms on accounting phenomena is stronger (Kachouri & Jarboui, 2017). Focusing on the disclosure research of accounting, the ownership structure concords with agency problem of the firm (Jensen & Meckling, 1976;

Shleifer & Vishny, 1997; Armstrong, et al., 2016) and which effects on management disclosure decisions (Brown, et al., 2011).

c) Due to the idiosyncrasy of country settings, Brown, et al. (2011) recommends the corporate governance in accounting researches to be designed for local conditions.

d) There are three main types of agency relationship exist and in relation to three agency problems are incurred which are: 1) principle and agent problem; 2) principle and principle problem; and 3) principle and other stakeholder's problem (Armour, et al., 2009). In Mongolian context family ownership concentration is dominant and the majority owners are involved in management, hence principle-principle agency problem is presumed (Tuvshintur, 2012; Iijima, 2011; Sodnomdorj, 2011) in which the conflicts of interest lies in between majority and minority shareholders.

e) Ownership structure of the company is one of the key factors influencing on CG effectiveness (Jiang, et al., 2011) which also drives the agency relationship (Ang, et al., 2009; Singh & Davidson III, 2003).Therefore, the agency relationship of the company can be captured through ownership structure and which can be the starting point for further studies in CG and accounting.

f) In this sub-section, the key synthesis were: i) CG mechanisms greatly effect on company's disclosure policies (either mandatory disclosure extent and voluntary disclosure policies); ii) Among the CG mechanisms the agency relationship captured in ownership structure of the company is the core mechanism which effects on disclosure decisions; iii) Afterwards the company's disclosure level effect on information asymmetry conditional on ownership structure needs to be studied in relation to the role of financial disclosure. The literature on information asymmetry will be reviewed in next sub-section.

3. Information asymmetry perspective in disclosure research

The studies on the integrated research of financial reporting and corporate governance are applied in agency theory (as studied in Morris, 1987; Low, 1996; Lambert, 2001; Kachouri & Jarboui, 2017), signalling theory (as applied in Morris, 1987; Kachouri & Jarboui, 2017), positive accounting theory (as applied in Kothari, 2001; Samani, 2015), proprietary cost theory (as applied in Low, 1996; Cohen, 2003) depending on the line of research. The agency theory has discussed in the previous sub-sections. In this part the signalling theory based information asymmetry perspective will be discussed in relation to disclosure studies. Morris (1987) shows the agency and signalling theories are complementing theories rather competing ones as the primary axioms applied to each of the theories are based on identical roots (Bolortsogoo, 2018b).

The information asymmetry perspective in accounting is the combination of finance, economics and accounting research (Verrecchia, 2001).Healy & Palepu (2001) and Lambert (2001) suggest that the integrated research in agency and information frameworks raise crucial questions on the ways to reduce information and agency problems through financial reporting regulations and disclosures. Stiglitz (2017, p.2) points “the economics of information has provided new intellectual underpinnings to branches of the subject with seemed devoid of a theoretical framework, such as accounting, finance and corporate governance, and has helped us understand better why work in these sub-field is so important”. The information asymmetry perspective enables to understand the linkage between different flows of disclosure literature; moreover it provides the basis of comprehensive disclosure theory (Verrecchia, 2001). Information asymmetry (IA) perspective in accounting refers to the study of understanding how accounting choices are affected by the unequal information between the key stakeholders.

IA perspective is also greatly linked to capital market research. Lafond & Watts (2008) find that accounting conservatism diminishes the management’s ability to manipulate accounting information which reduces the IA between the inside and outside shareholders. The authors propose that this improves both of company and share values. The capital market research studies the relationship between financial information and capital market (Kothari, 2001). As noted by Kothari (2001), one of the key questions that capital market research attempts to answer is if the ownership structure of the company effects on information asymmetry in the capital market.

IA perspective in accounting has received the least attention by scholars (Bartov & Bodnar, 1996). However, which is the one promising approach to contribute in comprehensive disclosure theory (Verrecchia, 2001). Healy & Palepu (2001) disclosure literature concerns the stock market effects on financial reporting and disclosure decisions which forges positive accounting research. The authors have long been stressing the fruitfulness of taking information perspective in both fields of corporate governance and accounting. Integration of corporate governance, financial reporting, and information asymmetry research bring mutual development (Bolortsogoo, 2018b).

3.1. Theoretical underpinning of information asymmetry

The information asymmetry (IA) problem between the contracting parties has formerly contended by Akerlof (1970) who calls the discussion on information asymmetry problem between car dealer and purchaser in old car dealing transaction. Later, IA concept is applied in labour market signalling in Spence (1973); insurance industry information opacity in Rothschild & Stiglitz (1976) that the cornerstone of signalling theory is based on the IA problem between the contracting parties which may lead to adverse selection in ex-ante contracts and moral hazard in ex-post contracts. Afterwards the IA perspective has been applied to various research fields and the related studies have proliferated in number. In general terms, IA is defined as where the one party possess certain information that the other party does not have the information due to limited or no access and as a consequence the party cannot verify the information (McGuigan, et al., 2014).

Stiglitz (2017) notes that IA is not an exogenous. There are several factors effect on the level of IA. Among the factors, firm-level determinants are well studied alike in financial disclosure determinants. In conjunction to disclosure literature, authors highlight the necessity of IA approach in disclosure (Bodnar & Bartov, 1996; Healy & Palepu, 2001; Alberti-Alhtaybat, et al., 2012). Verrecchia (2001) asserts the IA perspective provides broader understanding in the disclosure theory through bridging the different routes of disclosure researches. He further notes that the perspective enables the visibility of linkage between accounting and economic research. He (2001, p.164) states "The information asymmetry component of the cost of capital is the discount that firms provide as a means of accommodating the adverse selection problem" which terms that lack of information about the firm in the market increases the company's cost of capital. Therefore, reducing the IA brings direct and indirect economic benefits to the firm and one way to solve the problem is providing reliable disclosure (Beuselinck, et al., 2013).The firm's information environment characteristics are shaped through the extent of stewardship and valuation problem (Beyer, et al., 2010).

As contended in Beyer, et al. (2010), accounting and financial information has two crucial roles involving the valuation role and stewardship role. Regarding the former role, the effective fulfilment of the valuation role mitigates the risk of under-pricing of high profitable firms and over-pricing of low profitable firms (Beyer, et al., 2010). Healy & Palepu (2001) assert that in the absence of perfect market, this adverse selection problem of IA leads to the market failures. Also, Stiglitz (2017) highlights that the real markets are different from efficient market hypothesis, hence the information disclosure is an essential for market functionality and reduction of IA.

Regarding the latter role, stewardship role arises due to separation of ownership and control which diminishes the shareholders decision making rights (Beyer, et al., 2010). The effectiveness of the role can be fulfilled through the disclosure mechanisms. Disclosure mechanisms enable to reducing the moral hazard problem of IA (Bushman & Smith, 2003; Aksu & Kosedag, 2006), addressing the agency relationship through forging control mechanisms (Samani, 2015) as the transparency invites accountability (Lowenstein, 1996).

3.2. Summary of the information asymmetry perspective in disclosure research

In this sub-section, the literature on information asymmetry in disclosure literature is briefly reviewed with the specific focus on theoretical underpinnings. The detailed discussion will be held in the hypotheses building section. Following points are highlighted from the review:

a) Agency relationship and IA concepts are inseparable as they have an interacting theoretical root (Morris, 1987). There are plenty of works studied the relationship between agency relationship and financial disclosure at certain extent. However, the IA perspective in accounting and disclosure has received the least attention by scholars (Bartov & Bodnar, 1996).

b) IA perspective in accounting refers to the study of understanding how accounting choices are affected by the unequal information between the key stakeholders. IA is defined as where the one party possess certain information that the other party does not have the information due to limited or no access and as a consequence the party cannot verify the information (McGuigan, et al., 2014).

c) The accounting information has two crucial roles of valuation and stewardship role and which are essential for reducing the adverse selection and moral hazard problems of IA, respectively. Vice versa, the extent of the two problems (valuation and stewardship problems) determines the accounting information environment (Beyer, et al., 2010).

d) The IA perspective in disclosure research provides the commencing point for building comprehensive disclosure theory (Verrecchia, 2001). Healy & Palepu (2001) and Lambert (2001) suggest that the integrated research in agency and information frameworks raise crucial questions on the ways to reduce information and agency problems through financial reporting regulations and disclosures.

4. Outline of the thesis theoretical framework

From the review of positive accounting theory, agency theory, signalling theory, and other related studies, the three broad theories are overlapped through the concept of information. The concepts applied in the three research flows are intertwined. The importance of financial disclosure becomes evident in addressing agency relationship caused from agency relationship and IA. Vice versa, IA and agency relationship have impact on shaping corporate financial disclosure (Beyer, et al., 2010). In relation to this fruitful but complex nature, authors mention the endogenous relationship between the constructs – in CG mechanisms (Brown, et al., 2011); in IA determinants (Stiglitz, 2017); in financial disclosure studies (Verrecchia, 2001); between CG and financial disclosure (Kachouri & Jarboui, 2017; Samani, 2015).

Based on the literature discussed in this chapter, the preliminary and general theoretical framework of the thesis is outlined in *Figure 2*where the capital market research entails the background of the framework.

Figure 2. Theoretical framework of the thesis

Source: Own construction

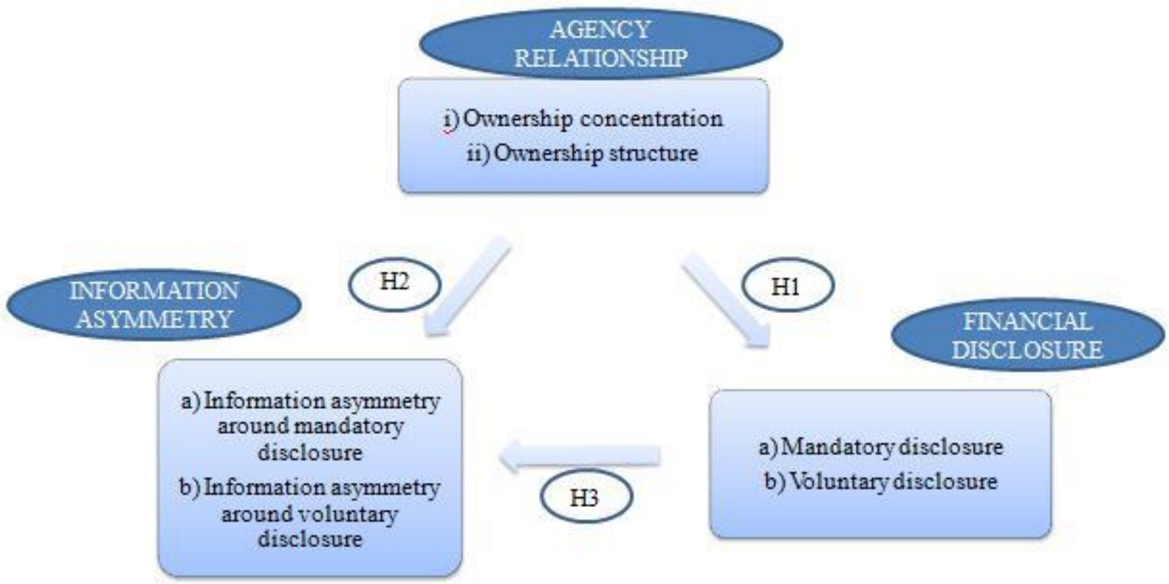
The figure illustrates the intertwined concepts between corporate governance, accounting, and information economics research. In consideration of broadness in the three fields, the specifications have made into agency relationship, financial disclosure, and information asymmetry problem. The key agency relationship within the firm will be determined through the ownership structure. Financial disclosure of the firm will be examined in two separate parts: mandatory disclosure and voluntary disclosure. The IA will be studied in relation to the adverse selection problem. The related hypotheses will be built and discussed in the next section of this chapter.

5. Hypotheses development

In consideration of intertwining between CG, financial disclosure, IA within the agency theory setting, the number of studies covered all of the three constructs are limited. Jiang, et al. (2011) examine listed companies at New Zealand stock exchange in relation to ownership concentration effect on voluntary disclosure and IA. They have found significant positive relationship between ownership concentration and IA and those companies with high concentration show higher bid-ask spread during the annual report release. Additionally, it has found that adverse perception from the investors on the concentrated ownership firms was reduced in line with the increase of voluntary information disclosure. Omari, et al. (2014) and Shiri, et al. (2016) also focus on ownership structure and information disclosure of listed companies and analyze their effect on information asymmetry in the Tehran Stock Exchange context. Omari, et al. (2014) examined the voluntary disclosure and Shiri, et al. (2016) have selected reliability and timeliness constructs for disclosure quality, and ownership concentration and institutional ownership were observed as part of ownership structure. The findings from the study were identical to Jiang et al. that higher the ownership concentration higher the bid ask spread, additionally the highly concentrated ownership firms' disclosure quality was poor and firm size was significantly negatively related to IA.

From the literature it is proposed as: Higher the ownership concentration, higher the IA and lower the financial disclosure. To build richer basis for the thesis hypotheses, other studies which selected any two of the three researches are reviewed further. The chapter continues by discussing three main hypotheses based on the literature review chapter. Section 5.1, 5.2, and 5.3 discuss about the Hypothesis 1, 2 and 3, respectively. Section 5.4 illustrates the summary of research questions and hypotheses in brief. In below *Figure 3*, general picture of the three main hypotheses are drawn which should be read in connection to the sections 5.1, 5.2, and 5.3 for understanding the theoretical roots.

Figure 3. General picture of hypotheses building



Source: Own construction

The above *Figure 3*illustrates that the three intertwined concepts illustrated in ellipses are unravelled and the direction of relationships are guided to build the hypotheses.

5.1. Agency relationship and financial disclosure

The studies focused on the determinants of disclosure is related to 'discretionary based disclosure' research as discussed in Verrecchia (2001). Also, it is a branch of positive accounting theory which studies the firm's choice of financial reporting activity (Demski, 1988). The economic consequences from the discretion in financial disclosure studies are related to 'association based disclosure' research. Information disclosure is integral part of the effective corporate governance which effects on the stock price evaluation by external investors (Chen & Liu, 2013).In regards of the disclosure determinants, the ownership structure study has an unarguable direct as well indirect effect on firms' market valuation research (Morck, et al., 1988).According to the agency theory predictions, differences in ownership structure effects on the management decision making that involves the disclosure decisions (Jensen & Meckling, 1976; Watts & Zimmerman, 1986; Shleifer & Vishny; 1997), the first hypothesis is formulated as:

H1: The agency relationship of the firm effects on the financial disclosure level.

For the purpose of reducing the generalization of the both concepts in ownership structure and financial disclosure, the concepts need to be further specified. In consideration of financial disclosure, Gibbins, et al. (1990) classify the concept on the basis of the factors affecting on the disclosure decisions. The authors note that two-dimensional preferences are developed for disclosure arrangements. In line with the discussion, former dimension relates to unarguable acceptance of disclosure rules and regulations, and the latter relates to firm discretion on disclosure with the incentive to seek firm advantage from disclosure and its interpretation. In this thesis the former dimension discussed in Gibbins, et al. (1990) is identical to mandatory disclosure, and the latter is identical to voluntary disclosure. The two types of financial disclosure are necessary to be examined separately for identifying the relevant magnitudes (Hermalin & Weisbach, 2012). Hence, the hypotheses one is split into H1-a and H1-b with regards the mandatory and voluntary disclosure, respectively.

Agency relationship effect on mandatory financial disclosure

It is expected that disclosure rules and regulations are completely adhered by the companies in every jurisdictions. Albeit, it has found that mandatory disclosure requirements are not always completely adhered by the entities. Wallace & Naser (1995), Alfraih (2016), and Hassan, et al., (2009) reveal that mandatory disclosure in terms of IFRS disclosure is not satisfactory in emerging countries due to weaker enforcement in the countries. Additionally, study results of Ashbaugh & Pincus (2001) and Hodgdon, et al. (2008) also show that the listed companies in developed companies are not fully complying with IFRS disclosure. The literature indicates that it is vital to identify the level of the mandatory disclosure in the given context. Afterwards the mandatory disclosure study is necessitated to identify the factors influencing on the level of disclosure. The findings from the scholars reveal that regardless of the development of countries, there are firm-level factors influencing on the compliance of mandatory disclosure.

In relation to the depth of CG mechanisms, some authors study the influence of single mechanism and others study multiple mechanisms' effect on financial disclosure (Beuselinck , et al., 2013). The components chosen by the scholars include: board and its committee's structure (Ho and Taylor, 2010; Alfraih, 2016; Elbadry, et al., 2015); board independence (Elbadry et al., 2015; Holm & Scholer, 2010); management remuneration (Samani, 2015); CEO duality (Alfraih, 2016); and most of the researchers study ownership structure (Jamalinesari & Soheili, 2015; Byun, et al., 2011; Holm & Scholer, 2010; Jiang, et al., 2011; Omari et al., 2014; Shiri, et al., 2016; Lakhal, 2015; Han, 2004; Alfraih, 2016). The study findings show mixed results depending on the selected component, measurement, and corresponding jurisdiction. The firm-specific determinants' effect on mandatory disclosure is worth to be studied as it enables to identifying companies which are susceptible to avoid the disclosure compliance, or engage in lobbying the regulatory bodies for their rule setting (Leuz & Wysocki, 2008).

Bonetti, et al. (2016) study European listed companies' firm- and country-level CG in relation to financial reporting quality. They reveal financial reporting quality of companies can be enhanced through strong corporate governance mechanisms even within the country context of having weak law enforcement as well as weak oversight over the financial reporting. More specifically, the board level governance mechanisms at has shown significant favourable effect.

Ferrell (2004) asserts that controlling shareholders tend to prefer poor corporate information transparency as they have motive to protect their personal benefit, even if the disclosure is proved to increase competitiveness and potential to decrease agency costs. And he emphasizes the importance of mandating disclosure requirements, especially in countries with dominated ownership concentration. Previously, Kim (1993) shows that shareholders have different level of information access and those better informed shareholders prefer less disclosure and less informed ones seek higher disclosure.

The number of studies covered relationship between ownership structure and mandatory disclosure is limited in comparison to study on relationship between ownership structure and voluntary disclosure. However, the number of studies tends to grow. The study findings show mixed results.

Alfraih (2016) tests the association between board of directors' characteristics and IFRS disclosure level in Kuwait Stock Exchange listed companies for the year 2010. Among the characteristics, the author investigates that ownership structure referred as ruling family members on board negatively impacts on the firm's mandatory financial disclosure level.

Owusu-Ansah (1998) studies ownership structure[6] effect on mandatory disclosure in Zimbabwean listed companies. The ownership structure is found to have positive impact on mandatory disclosure. Conversely, Wallace & Naser (1995) examine the firm level factors effect on mandatory disclosure in Hong Kong context; however they fail to find impact of ownership structure on mandatory disclosure.

As aforementioned, the agency relationship is explained by ownership structure and the Hypothesis 1 is unravelled into hypothesis 1-a (H1-a), which is formulated as follows:

H1-a: The ownership structure of the firm effects on the mandatory disclosure level.

The ownership structure is variously explained and applied by the authors which necessitates clear definition of the construct. For this purpose, the Hypothesis 1 is required to be split further. The mostly studied forms are ownership concentration and ownership type. In this thesis, the both forms' effect on the each type financial disclosure will be studied. On the basis of information economics' assumptions, the information demand is reduced when the share is highly concentrated (Ferrel, 2004). In turn the financial disclosure is reduced when there is high ownership concentration. The statement is connected to mandatory disclosure as the prior studies find that the level of mandatory disclosure is varied among the firms either in developing (Wallace & Naser, 1995; Alfraih, 2016; Hassan, et al., 2009) or developed economies (Ashbaugh & Pincus, 2001; Hodgdon, et al., 2008). Considering the increased complexity in Hypothesis 1, appropriate labelling of the hypothesis is important for clear understanding. Therefore, the ownership concentration is labelled as (i) and when it comes to mandatory and voluntary disclosures, the hypotheses are labelled as H1-a-i and H1-b-i, respectively.

The sub-hypothesis is formed as follows:

H1-a-i: Ownership concentration is negatively associated with mandatory disclosure level.

In other words, the hypothesis predicts that high level of ownership concentration leads to lower level of mandatory disclosure. In connection to ownership type, specific classes of

[6]In Owusu-Ansah (1998) the ownership structure measurement is based on the direct and indirect insider shareholders' ownership.

dominant owners determine the ownership of the company. Studies focus on the ownership type effect on mandatory disclosure is limited in number. Depending on the country features, the ownership types studied in the research differs. In below, some of the examples of ownership type studied in relation to mandatory disclosure are illustrated:

- Family ownership – the studies conducted in relation to mandatory disclosure level are works held by Wallace & Naser (1995) and Alfraih (2016);
- Institutional ownership (studied in Shiri, et al., 2016)
- Managerial ownership (studied in Shiri, et al., 2016).

In Mongolian case, it lacks prior study on determination of specific ownership type. Therefore the sub-hypothesis is formed as follows:

H1-a-ii: Different types of ownership structure have varying impact over the mandatory disclosure level.

Agency relationship effect on voluntary disclosure

There are several studies examine the relationship between agency relationship and voluntary disclosure. The agency relationship is studied in relation to ownership structure variables of ownership concentration and ownership structure type. In addition to the prior discussions on findings from Jiang, et al. (2011); Omari, et al. (2014); Shiri, et al. (2016), some of the other researchers have found identical results.

Lakhal (2015) studies ownership concentration effect on the financial reporting. The author has applied Herfindahl index as a proxy of ownership concentration and considered two aspects of financial reporting which includes voluntary disclosure – measured by self-constructed disclosure index and earnings management – measured by discretionary accruals. The study has covered 170 firms based in France for the year 2008. The results show lower the firm transparency and larger the share concentration tends to increase the likelihood of earnings management.

Ho & Tower (2011) and Ho & Taylor (2013) studied Malaysian listed companies' CG and voluntary disclosure for the years 1996; 2001; 2006, using self constructed 13 and 85 item indexes, respectively. It shows opposite result from other countries, that Malaysian ownership concentration shows positive relation with voluntary disclosure indicating larger concentrated firm provide more disclosure. The critical factor for improvements in CG and financial disclosure are explained as the tightened legislation during the years.

Khlif, et al. (2016) conduct a review study of the relationship between the constructs. They conclude that the general ownership concentration has negative effect on the voluntary disclosure level. However, as unbundling the ownership concentration, the different types of ownership structures variously effect on the disclosure practice. Specifically, the state and foreign ownership and institutional investors show positive influence; conversely the management ownership show negative influence over the voluntary disclosure.

On the basis of prior literature, H1-b is formed as the ownership structure has an influence over the voluntary disclosure. Specifically, H1-b-i sub-hypothesis is formed as follows:

H1-b-i: The ownership concentration is negatively associated with voluntary disclosure level.

Chen & Liu (2013) find that owner-managers have significant negative influence over the firm's financial disclosure and this adversity exacerbates the moral hazard problem. Han (2004) tests the classes of ownership structure effect on financial reporting. In her study, the managerial and institutional ownerships have considered, and the two constructs of financial reporting have examined. The two constructs involve discretionary accruals and disclosure index measured by Standard and Poor's Transparency & Disclosure index. Her findings reveal that financial reporting quality is negatively associated with managerial ownership among USA firms; however the institutional ownership has positive association with the reporting quality.

In Ireland case, Donnelly & Mulcahy (2008) fail to support the agency theory predictions as the author's selected construct of institutional ownership structure does not show effect over the voluntary disclosure. The authors presume the Ireland sociological and other company level factors are dispelling the agency theory based variables' power.

In Hong Kong and Singaporean case, Chau & Gray (2002) identify that the family owned companies have lower voluntary disclosure on the basis of annual reports' information of the listed companies. In Jordanian case, Alhazaimeh, et al. (2014) find foreign ownership and state ownership have positive impact on voluntary disclosure. In contrast, the block ownership has negative impact over the voluntary disclosure.

In consideration of variances among the countries' institutional and organizational features, the type of dominant ownership structure are varied. Therefore in Mongolian field, the ownership structure is expected to be different from prior studies. And the related sub-hypothesis is formulated as follows:

H1-b-ii: The voluntary disclosure varies upon the different types of ownership structure.

5.2. Agency relationship and information asymmetry

Referring to Healy & Palepu (2001), the extent of IA affecting the investors, regulators, and intermediaries are dependent upon the economic and institutional factors including: ability to draft, monitor, and enforce optimal contracts; and perceived proprietary costs which are potential to impede full disclosures or increase the costs of disclosure. Within the scope of the thesis CG mechanisms impact on IA is studied in detail. Corporate governance mechanisms are built to attenuate agency problems, and then those mechanisms also can reduce investors' perception over IA related to agency problems (Elbadry, et al., 2015). The external investors evaluate the firm on the basis of its revealed information, and investors value the firm higher as if the disclosed information convinces the risk of moral hazard is lower.

Referring to Beyer, et al. (2010) ownership concentration is one of the significant reasons for IA between block holders and minority shareholders. Such IA diminishes investors trust over the firm information environment and potentially leads to loss of investment opportunity, mispricing of the shares, and harms the shareholders' right.

Byun, et al. (2011) studied ownership concentration effect on IA for 1067 Korean Stock Exchange listed companies, for the year between 2001 and 2004. Probability of informed trading (PIN) and private information events are used to measure IA. The two proxies show varying results in the tests of relationship. Ownership concentration has found be positively related with IA in the application of PIN proxy and no relation has found for private information events with ownership concentration.

Jamalinesari & Soheili (2015) studied 145 Tehran Stock Exchange listed companies from 22 industries for the years between 2008 and 2013. The authors examined institutional investment, independence of board members, ownership concentration and type of the auditors as part of the corporate governance mechanisms. Bid-ask spread is applied as a measure of IA. Significant negative relationship has found between the IA and institutional investment and board independence. Ownership concentration has found to have significant positive relationship with IA. However, they find no relationship between auditor type and IA. In line with Morris (1987) and Armstrong, et al. (2016), the agency and information asymmetry problems are consistent terms that agency relationship may result to asymmetric information between affected parties. In other words, scholars predict that ownership structure of the companies tend to shape the level of information asymmetry. The second hypothesis is formulated as:

H2: Agency relationship of the company effects on the level of information asymmetry.

Similar to H1, the agency relationship is referred to ownership structure which is further classified into ownership concentration and ownership type. Therefore, the H2 is divided into H2-i and H2-ii, respectively. Referring to Beyer, et al. (2010), higher the ownership concentration leads to higher information asymmetry between block holders and minority shareholders. Also, the differences in ownership types show differences in the level information asymmetry (Jamalinesari & Soheili, 2015). Therefore, the sub-hypotheses are formulated as follows:

H2-i: There is positive relationship exists between ownership concentration and information asymmetry.

H2-ii: Different types of ownership structure effects the information asymmetry in varying degree.

The existence of IA and agency problem between the management and outside investors demands effective financial reporting and disclosure (Healy & Palepu, 2001;

Cormier, 2010). In the next subsection, disclosure literature is specifically reviewed in relation to IA.

5.3. Financial disclosure and information asymmetry

IA perspective in corporate disclosure combines the economic, finance, and accounting literature (Verrecchia, 2001). Information disclosure facilitate in addressing IA (Cormier, 2010). Diamond & Verrecchia (1991) emphasize that management plays vital role in minimizing the IA and providing relevant and reliable disclosure in maximization of market capitalization. Also, Black (2000) asserts strong capital markets forge economic growth and for which good quality information role is significant as it helps to build investors' confidence that insider shareholders and managers will not mislead the minority shareholders.

Healy & Palepu (2001) note that variances in firms' disclosure are likely to be associated with firm governance and economics. IBRD WB (2001) discusses the characteristics (include: access, timeliness, relevance and quality) of transparency are unavoidable to the capital market and financial sector effective functioning. It further notes that reliability of the information cannot be solely guaranteed by information openness as there must be accountability fuelled by enforcement. In the countries with weak law enforcement, including Mongolia as observed by authors Cigna, et al. (2017) and Bolortsogoo (2017a), delay in transparency improvement can have significant problem for the both of macro and micro performances. Bonetti, et al. (2016) find strong governance mechanisms can address the deficiencies in association with weak law enforcement, counting flimsy oversight over financial reporting.

According to Palea (2013), investors' doubt over the insider information is reduced through high quality disclosure and which can be fulfilled through adherence with high quality accounting standards such as IFRS. Holm & Scholer (2010) find that the companies with exposure in international capital markets and shareholdings by foreign investors are expected to have higher demand to adhere IFRS standards.

Considering level of disclosure, there is no comprehensive study on disclosure practice among Mongolian companies. Therefore, it is crucial to examine the both of mandatory and voluntary disclosure practices. According to Stiglitz (2017), improvement in company's information disclosure facilitate to reducing the information asymmetry. Along with Stiglitz (2017)'s statement, referencing to the prior studies held in other countries, the third hypothesis is formed as:

H3: Financial disclosure facilitates to reducing the information asymmetry the third.

To make a clear differentiation on the mandatory and voluntary disclosures' effect on IA, the hypothesis 3 (H3) is split into H3-a and H3-b, respectively.

H3-a: Mandatory disclosure is negatively related to information asymmetry.

Referring to the prior literature, the firm mandatory disclosure compliance has found to be contributing to reducing information asymmetry (Hodgdon, et al., 2008). In other words, the improvement of firm mandatory disclosure compliance facilitate to reducing information asymmetry.

H3-b: Voluntary disclosure is negatively related to information asymmetry.

In other words, the increase in voluntary disclosure reduces information asymmetry (Healy & Palepu, 2001; Verrecchia, 2001).

5.4. Summary of research questions and hypotheses

<u>Summary of research questions</u>

Financial Disclosure related:

-Does ownership structure of the MSE listed firms effect on mandatory disclosure level?

-Does the ownership structure of MSE listed firms effect on voluntary disclosure level?

-How effective is the current regulation on transparency and disclosure in Mongolian capital market?

Capital market consequences of disclosure:

-How does mandatory disclosure effect on reducing information asymmetry between market participants?

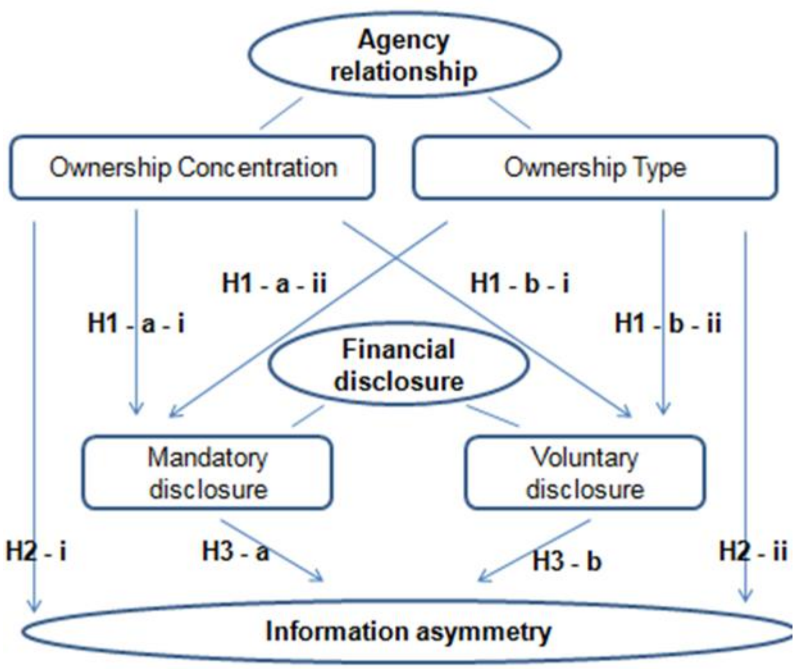
- How does voluntary disclosure effect on reducing information asymmetry between market participants?

-How does ownership structure effect on information asymmetry?

Summary of Hypotheses

The summary of the hypotheses are shown in below *Figure 4.*

Figure 4. Summary of hypotheses



Source: Own construction

Agency relationship and disclosure related

H1: Ownership structure effect on financial disclosure level.

H1-a-i: Ownership concentration is negatively associated with mandatory disclosure level.

H1-a-ii: Different types of ownership structure have varying impact over the mandatory disclosure level.

H1-b-i: The ownership concentration is negatively associated with voluntary disclosure level.

H1-b-ii: The financial disclosure varies upon the different classes of ownership

structure.

<u>Agency relationship and information asymmetry related</u>

H2: Agency relationship of the company effects on the level of information asymmetry.

H2-i: There is positive relationship exists between ownership concentration and information asymmetry.

H2-ii: Different types of ownership structure effects the information asymmetry in varying degree.

<u>Disclosure and information asymmetry</u>

H3: Financial disclosure facilitates to reducing information asymmetry.

H3-a: Mandatory disclosure is negatively related to information asymmetry.

H3-b: Voluntary disclosure is negatively related to information asymmetry.

III. RESEARCH METHODOLOGY

The research methodology chapter consists of three main sections which correspond to three hypotheses. The first section covers the sample design and data sources for the research. The second section provides research methodology to measure the variables on the basis of data discussed in section 1. In last section, the methodologies to test the hypotheses are discussed.

1. Sample design and data source

1.1. Sample design

The current thesis is focused on capital market participants, more specifically the listed companies at Mongolian Stock Exchange (MSE) will be taken as the main research field. The purpose of the thesis is to investigating whether the agency relationship and information asymmetry between the inside and outside shareholders are related to the firm's financial disclosure. Inside shareholders refer to the shareholders who possess a management role in the company or those who are closely related with management, so who are deemed to have higher information priority and accessibility. Outside shareholders generally refer to minority shareholders and potential investors who are only dependent on the publicly disclosed information.

Primarily the research is focused on entire companies listed at MSE under I and II tier category for the year end of 2017. Listed companies at the MSE are categorized into three levels: I, II, and III on the basis of the firms' market capitalization, and percentage of free float shares. As at the end of 2017, 10 and 39 companies were classified under Tier I and II, respectively. Out of the entire 49 companies, additional selection is made on the basis of following criteria:

-Operated under listed company status throughout the year 2017*

-Not operating in the industry sector of financial and insurance activities as per ISIC**

- Availability of necessary data

*As at the year end of 2017, there were 218 public companies listed at MSE, out of which 187 companies are privately held. The number of companies includes Itools (ITLS) JSC which was launched its Initial Public Offering in November, 2017 and the company is excluded from the study.

**ISIC is the International Standard Industrial Classification which is adhered by Mongolian National Statistical Office and Mongolian Stock Exchange for the industrial classification. For the study, the sample firms are categorized by its industrial group based on ISIC code announced by MSE. The companies operating in financial and insurance industry are excluded from the sample as there are some discrepancies in accounting practices and disclosure regulations than the other industries. Among the 49 companies, two companies called: BiDiSec (BDS) and MIK Holding (MIK) operate in the financial and insurance industry; hence they are excluded from the study.

On the above basis,46 firms (totalling2056,8billion tugrik market capitalization) have met the selection criteria and included in our sample and those companies form 84 percent of the entire MSE market capitalization as per 31st of December 2017.*Appendix C* shows the detailed information about market capitalization and industry type for those 46 companies. These 46 companies have sold 73,8 million numbers of shares throughout the year2017 which is 80% of the entire MSE secondary market equity shares sales.

In below, *Table 1* shows summary of industries in relation to sampled companies and their relative market capitalization in billion tugrik.

Table 1. Industry related information for the sampled companies

Industry index	**Industry name**	**No.of companies**	**Total market capitalization**	**% in total**
B	Mining and quarrying	9	609,3	30
C	Manufacturing	15	1139,8	55
	Others	22	307,7	15
	Total	**46**	**2056,8**	**100**

(Source: Own construction on own work of Bolortsogoo, 2018c)

As shown in *Table 1*, 9 companies among the sample firms operate in mining and quarrying industry and they consist of 30% of the entire sample in terms of their market capitalization. There are 15 companies operate in the manufacturing industry with the market capitalization of 1139,8 billion tugrik which forms 55% of the entire sample. The other companies are operating in various industries and they are grouped into one industry called 'Others'. Companies in others category forms 15% of the sample where there are 22 companies are related to the category.

1.2. Data source

In the thesis, there are three broad groups of data are required in relation to the three core issues. These issues are agency relationship, financial disclosure, and the information asymmetry. The primary source for all groups of data is the annual report of the listed companies. Because the annual report is expected to cover all the information on financial position, performance and its disclosure, management and governance information, and capital market performance of the company as required under the Regulation on Security Issuers' Transparency of Mongolia (2015).The annual reports' publicity is also regulated by the same regulation which states that annual reports must be disclosed at the MSE website. Therefore, MSE website called as "mse.mn"[7] is reached for annual reports collection.

However, according to Bolortsogoo (2017a) MSE listed companies are not fully compliant with the regulation and still some companies do not submit the annual report for some years. Also among the annual reports, the level of disclosure varies. Therefore to prevent from the missing data on crucial areas, other trustworthy sources will be considered as follows.

<u>Data related to agency relationship</u>

As conferred in literature review chapter, the agency relationship is studied in relation to the ownership concentration and ownership structure which are referred to the main

[7]The website is main source of online communication of information provided by the Mongolian Stock Exchange. It provides all legally required information for public listed companies at MSE. Those information include: financial and annual reports, annual general meeting announcement, information on dividend declared by the plc's, share prices, ownership concentration and material changes in ownership of plc's (www.mse.mn)

variables. Therefore the data is collected specific to the ownership concentration and ownership structure.

The studies about corporate governance environment of Mongolia have long been stressing the lack of information availability in corporate governance (CG) and ownership. In 2017, OECD published a survey report of CG frameworks in Asia. The study covers 14 Asian jurisdiction including Mongolia. The report consists of ownership structure of the public listed companies in all responding countries, albeit only Mongolia has not provided information about the share concentration of the listed companies at capital market and which was mentioned in prior survey by OECD (2016), which was based on the information of earlier 2015). The survey report has specifically pointed that there is no regulation requires Mongolian plc's to disclose the beneficial and controlling shareholders. In addition to it, there is lack of prior study in the field. Fortunately, the problems attached to prior studies are enabled to be overcome by revision of Regulation on Security Issuers Information Transparency (2015) which requires the listed companies to disclose the beneficiary ownership and shareholdings more than 5 percent. Also 'marketinfo.mn' started to provide ownership concentration information based on the financial analysts' data through its subscribed website. To verify the accuracy of the data, we double checked the website data with available official sources. With these sources, the research become able to study the ownership concentration and structure effect on financial disclosure and information asymmetry.

Data related to financial disclosure

Referring to literature review, financial disclosure is broadly classified into mandatory disclosure (MDISC) and voluntary disclosure (VDISC). Therefore, the type of data and degree of available information applicability differ for the two types of disclosure. MDISC is an integral part of financial statements (International Accounting Standard 1 – Presentation of Financial Statements) and which is regulated by International Financial Reporting Standards (IFRS)[8]. In relation to the situation, annual financial statements are main source of data which is collected from MSE website and Mongolian Ministry of Finance website called "e-

[8]IFRS is a principle based global accounting standard which does not insist the entities to mandatorily apply all the components. However, when the standard is required under the rule of law, the adherence to the standard becomes compulsory.

balance.mof.gov.mn" with researcher's login right. On top of it, the annual reports will be also reviewed. Regarding the VDISC, the primary source of information is annual report (Healy & Palepu, 2001).However, in the absence of company's annual report at the MSE website, then data collection from the MSE website is not limited to annual report. Other information officially disclosed at the website as well as the company's own website will be reviewed as well.

<u>Data related to information asymmetry</u>

In information asymmetry (IA) studies, main data components include the bid-ask price, shares' opening and closing prices, market capitalization, and shares trading volume for the specific periods (Cademartori-Rosso,et al., 2017). The study requires daily data on the mentioned information. However, the daily data on bid-ask price and shares trading volume are not publicly available at the MSE website. And the author reached archival office of MSE to get assistance on receiving archived information. However, from the MSE archive, the daily bid-ask price information was incomplete and again the 'marketinfo.mn' is cross referenced.

2. Methodology to measure the variables

In this part of the thesis, the methodology to measure the variables are discussed in detail. The section is divided into three sub-sections regarding the three groups of main variables. In the first sub-section, agency problem proxies including ownership concentration and ownership are conferred in the section. The second sub-section discusses about the measurement of mandatory and voluntary disclosure. And the last sub-section covers the measurement methodology on bid-ask spread variable.

2.1. The agency relationship proxies

The fundamental assumptions of popular theories are generally based on traditional agency relationship between managers and shareholders in the dispersed ownership structure as predicted in Berle & Means (1932) and applied in Jensen & Meckling (1976). Later, LaPorta et al. (1998 and 1999) refuted the proposition that even in the developed countries context, ownership structure is rather concentrated than dispersed. Also the case is evidenced in emerging country setting that authors prove the ownership concentration is dominated among the listed companies (Morck & Yeung, 2004; Byun et al., 2011; Jiang et al., 2011; Lakhal, 2015; OECD, 2016; Shiri et al., 2016) which is also the case in Mongolia (Tuvshintur, 2012; Sodnomdorj, 2011; Iijima, 2011).

Current situation in Mongolia

There is a lack of study related to ownership concentration in the Mongolian case. About the ownership structure some authors have mentioned the family ownership is the dominant structure, but the methods applied to determining the structure was not discussed. With regards 46 firms in the sample, the ownership concentration is illustrated by summing up the shareholders owning more than 5% shares in below *Table 2*considering three years comparative data. In below table the financial years (denoted as FY) of 2017, 2016 and 2015 are illustrated. The detailed information on each individual company's majority and minority shareholding percentage and number of shares is illustrated in *Appendix C*.

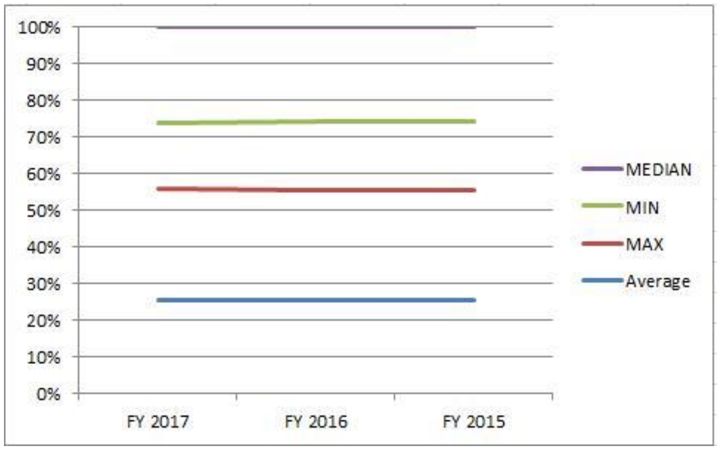
Table 2. Share concentration statistics

	FY 2017			**FY2016**			**FY2015**		
	Majority		**Minority**	**Majority**		**Minority**	**Majority**		**Minority**
	No.	%	No.	No.	%	No.	No.	%	No.
Total	158		186973	162		185494	160		185242
Average	3,4	83,6	4065	3,5	83,5	4032	3,5	83,5	4027
MAX	7,0	99,7	51875	7,0	99,7	51818	7,0	100	51780
MIN	1,0	59,9	94	1,0	61,2	108	1,0	61,2	0
MEDIAN	3,0	85,3	948	3,0	85,2	936	3,0	85,2	946

(Source: Own construction)

The table shows that MSE listed companies' share is highly concentrated. In average, three shareholders own 83,6 percent of entire equity share for each of the company, where 4065 shareholders own 16,4 percent of the company for the financial year 2017. The share concentration and total number of shareholders have been steady during the three years' time except the insignificant changes (less than one percent) in number of minority shareholders. For the purpose of clearly showing the changes in the share concentration among the listed companies during the financial years of 2017, 2016 and 2015, the descriptive statistics in terms of percentage of the majority shareholders are illustrated in below *Figure 5*.

Figure 5. Descriptive statistics for changes in percentage of majority shareholders' shareholding



Source: Own construction

Brown et al. (2011) defines this situation as a 'stickiness' and authors propose to avoid the stickiness problem in CG and disclosure research as which decreases the statistical power of the study.

<u>*Measuring ownership concentration*</u>

Researchers in the field of accounting disclosure and corporate governance use varying methods to measure ownership concentration. Single large shareholding represents the ownership concentration in Byun, et al. (2011). The method is useful when there is lack of data in other shareholders' ownership. But its representative power is low, especially when the second or third large shareholders ownership is close to the highest ownership. The total of shareholders owning more than 5 percent are applied in Shiri, et al. (2016). Overland, et al. (2012) find that different measures of ownership concentration are significantly correlated, however depending on the purpose of study the appropriateness varies. The authors emphasize Herfindahl-Hirschman Index (HHI) is the more suitable method to measuring the ownership concentration as it covers the effect of increase in any shareholders ownership in sacrifice of minor shareholders. Also in line with Overland, et al. (2012), HHI fits for the purpose of the study and it is applied in this research to measure the ownership concentration.

The HHI is applied in many studies (e.g. in Jiang et al., 2011; Omari et al., 2014; Lakhal, 2015). In calculation of HHI, the data on percentage of shares hold by each shareholder are required. However it is still acceptable to focus on large shareholders' information as the result is not statistically effected, which is generally the 5% benchmark (Overland et al., 2012). In Jiang, et al (2011) and Brown & Warren-Boulton (1988), the results from HHI is categorized into low, average and high using the reference point of up to 0,1; between 0,1 and 0,18; and higher than 0,18, respectively.

In application of HHI on the necessary and available data, ownership concentration of 46 sample firms' the average (median) value is 32,6% (25,2%) with the max (min) values of 95,1% (9,9%). It indicates that the MSE listed companies have high ownership concentration.

<u>Measuring ownership structure</u>

Ownership structure is an essential means of agency relationship measurement (LaPorta, et al., 1998). Additional to the ownership concentration analysis, the same data is applied to determine ownership structure of the listed firms at MSE. Jiang, et al., (2011) states that the ownership structure is one core corporate governance concepts that enables the explanation for management power, activeness of shareholders' monitoring, investment and financing decisions made by firm, and even the rationale for disclosure policies. In LaPorta, et al. (1998, 1999) the ownership structure of the 27 developed economies' listed companies are rigorously studied in consideration of beneficial ownership. In Jiang, et al. (2011) the ownership structure is determined by the one largest shareholder. The scholars base their analysis on varying types of ownership structure. Among them managerial ownership (Omari, et al., 2014; Han, 2004), institutional ownership (Jamalenisari & Soheili, 2015; Omari, et al., 2014; Shiri, et al., 2016; Han, 2004) are dominating.

In Mongolian context, it lacks trustworthy and complete information on beneficiary ownership, managerial and family ownership. Therefore at this stage the ownership structure identified by largest shareholder method is applied alike in Jiang, et al. (2011) and Byun, et al., (2011). Byun, et al. (2011) assert that single largest shareholder is able to put greater control over the firm's policy which may include expropriation of other shareholders and more involvement on monitoring the management.

The sample of 46 companies' ownership structure is broadly classified into 3 groups: individuals owned, legal entity owned, and state owned. Among the individuals' ownership group, the family ownership is observed as the dominant ownership form in Mongolia on the basis of media publication and disclosure made by small number of companies' annual reports. However, which cannot provide the scientific and evidence based information in all companies' cases, therefore it is avoided to further classify the ownership form into family or management ownership at this time.

Also according to LaPorta, et al. (1998) the legal entity ownership can be further classified into pyramid structure – where the control of the company is taken place through chain of companies – or financial institution controlled. However, there is limited information to reveal the pyramid structure. Regarding the financial institution ownership, only one company called MIB has found to have highest shareholding by financial institution and due to lack of statistical significance, the structure classification is avoided. But, it is believed that the three broad classification of ownership structure has scientific contribution for future researchers and statistical necessity in this research.

2.2. Measuring the financial disclosure proxies

The works focus on financial disclosure while focusing on either mandatory disclosure(e.g. on Alfraih, 2016; Askary & Jackling, 2005; Abd-Elsalam & Weetman, 2003) or voluntary disclosures itself (Jiang, et al., 2011; Omari, et al., 2014; Ho & Taylor, 2010) or in some cases the authors study the both of financial disclosures (Wallace & Naser, 1995; Hassan et al., 2009). There are vast literature studies the factors influencing on disclosures, economic consequences of disclosure, and the optimality of disclosure extent (Verrecchia, 2001). However, the disclosure is a difficult theoretical concept to be measured (Hassan & Marston, 2010) and the measurement of the concept is vital for research results (Urquiza, et al., 2010).

In this thesis the both of disclosures are studied with regards the extent of disclosure practices among the MSE listed companies. In this sub-section the methodology to measure the financial disclosure is discussed deeply.

Vishwanath & Kaufmann (2001), Healy & Palepu (2001), and Urquiza, et al. (2010) note that individual researcher(s) contracted item based-index is the main disclosure measurement methodology, albeit which has a comparability deficiency with other research results.

Urquiza, et al. (2010) examine the disclosure indices' ability to testing the validity of disclosure theories. From their study, it has found that indices produced by scholars are identical in structure, however the results are contradictory due to the varying information attributes are applied in the disclosure index based studies. The authors broadly classify the information attribute into: quantity, coverage and quality. That quantity indices measure the narrative disclosures through quantifying the sentences with the purpose of measuring the quantity of disclosures. The potential drawback of the quantity index method is linguistic barriers that the differences in sentence structure. Also the quality of disclosure is likely to be sacrificed. The linguistic analysis in disclosure measure is more discussed in (Beattie, et al., 2004).

The coverage index is based on predetermined disclosure items which is used to weight the individual companies' relevant information disclosure while quantifying the disclosure items by scores. Researchers apply different scoring methods for coverage index. Botosan (1997), Standard & Poor's (2002), Askary & Jackling (2005), Alfraih (2016) apply 1 score for disclosure and 0 for non-disclosure. Urquiza, et al. (2010) applies 0 score for non-disclosure, 0,5 for narrative information, and 1 for quantitative disclosure.

As discussed in Urquiza, et al. (2010), the quality index is produced in line with Beretta & Bozzolan (2005) methodology which captures the both of relative quantity and richness of disclosure. The authors measure the disclosure richness by width and depth dimensions. The width dimension includes the coverage and dispersion. The depth dimension covers quantity of disclosures, relevance, and nature of information by analyzing and quantifying the annual report sentences. All together the quality index aims to quantify to information quality. However in relation to the in-exhaustive nature of information quality definitions in disclosure literature, the quality index can be designed differently. Wallace & Naser (1995) classify the disclosure quality characteristics into adequacy for defined purpose, informativeness, timeliness, understandability, and comprehensiveness. Referring to IFRS

Conceptual Framework, the financial reporting quality characteristics include: Relevance, comparability, understandability, verifiability, timeliness, and faithful presentation. The research findings of Urquiza, et al. (2010) show that quality index is hard to be explained by disclosure firm-level determinants as there is a great distraction by management perception about the cost and benefit attached to disclosure.

In parallel to self-constructed item based index methodology, some authors rely on independent agencies' financial disclosure results where there is the information availability in the selected country setting (Peterson & Plenborg 2006). And the agencies alike Center for International Financial Analysis Research – CIFAR provides the methodology and disclosure scores which the result is directly applied in Low (1996) and index methodology is applied in Jaggi & Low (2000) and Hassan, et al. (2009) and Securities Exchange Commission of certain countries announce the financial disclosure scores and results is directly applied to researchers' work (e.g. applied in Shiri, et al., 2014). In Mongolian context, so far there is no independent agency or government organizations as well as no prior academic study has found in comprehensively measuring financial disclosure.

As noted by Bolortsogoo(2017a), there are certain studies held by local and international organizations, academic researchers which mention that information transparency and disclosure practice is unsatisfactory among Mongolian listed companies (Yener, 2008; The World Bank, 2009; Iijima, 2011; Sodnomdorj, 2011; International Financial Corporation, 2013; National Corporate Governance Council, 2015; Cigna, et al., 2016).However, none of the studies specifically focuses on financial disclosure practice, merely the transparency and disclosure is observed in relation to corporate governance in Mongolia. Financial disclosure is one of the strands of accounting research and in relation to accounting there were some studies taken place evaluate accounting practice in Mongolia. The studies include: ROSC (2007; 2009), Mongolian Ministry of Finance state examination on accounting practice(2011; 2017) and the studies reveal unsatisfactory implementation of IFRS, despite the result of IFRS implementation has shown increased performance from 45 to 57 percent in 2011 to 2017. These prior studies cannot provide basis the thesis methodology for two reasons. It signals the IFRS based accounting and its disclosure practice is weak in Mongolia, however due to the study purpose is to examine IFRS implementation broadly, the depth of disclosure study is omitted. Then the state examination is based on the questionnaire technique and the technique has the inherent drawback of self-bias (King, et al. 2004). Therefore, which calls for more rigorous study on financial disclosure.

Based on the prior methodologies applied in global pan, in this thesis the both of voluntary and mandatory disclosures will be measured by item based indices. To mitigate the comparability problem in disclosure index methodology for each of the index following characteristics of the applied methodology will be introduced as recommended in Urquiza et al (2010).

- The scope of information as if it will focus on past performance, forward-looking, or the mixed.
- Clear statement about the information attribute: quantity, coverage, or quality.
- Score allocations for each items that if it will be 0 for non-disclosure, and 1 for disclosure or weighted scores depending on the nature of disclosure.

And the above considerations will be discussed in following sections separately.

2.2.1. Voluntary disclosure measurement

In voluntary disclosure index building, Healy & Palepu (2001) consider three measurements on management forecast, independent agency scores (e.g. CIFAR, AIMR), and self-constructed index. In the research country context, if the former two measures are not available, the self-constructed index methodology is most relevant measure (Hassan & Marston, 2010). Authors prefer to re-design existing index while adapting for country specific features in terms of applicability and omit the mandatory requirements (Jiang, et al., 2011) and which mitigates the comparability problem of self-constructed index (Marston & Shrives, 1991). In this thesis, Botosan (1997) index items are applied as following the identical procedures taken by the Jiang, et al. (2011) for several reasons. Those include:

- At first as mentioned earlier, the comparability problem is mitigated in the application of Botosan index;
- Secondly, disclosure indices are subject to measurement instrument's reliability and validity problems (Hassan & Marston, 2010).The reliability problem refers to

measuring procedure generates the identical outcome on repeated trials. The validity problem refers to if the instrument really measures what it is intended to be. The Botosan index is verified for the measurement reliability using Cronbach's alpha and correlation of components and the index construct validity has tested for theoretical expectations.

- Thirdly, Botosan index covers the both of past performance and forward looking information in terms of 5 groups of information, which includes: i-general information on aim, strategy, competitive environment; ii- outline of historical results; iii-non financial statistics; iv-future oriented information; v-management discussion and analysis. Those are expected to be disclosed in the annual reports of listed companies.

The index measures firm disclosure against the set of applicable criteria which involves to disclosure coverage measurement. Botosan methodology for VDISC is applied by many disclosure researchers afterwards (e.g. in Hassan, et al., 2009; Jiang et al., 2011; Omari et al., 2014, Lakhal, 2015; Ho & Taylor, 2013; Kachouri & Jarboui, 2017) and some partially apply the index (Lakhal, 2015; Hassan, et al., 2010; Cademartori-Rosso, et al., 2017).

Building voluntary disclosure index

The commencing step is to check if the existing Botosan index items include mandatory requirements stated in Mongolian corresponding rules and regulations. The main law and regulations in relation to listed companies' disclosure are: Accounting Law (2015), Audit Law (2015), Company Law (2001), Income Tax Law (2006). And in conjunction to financial T&D, main legislations include: Securities Market Law (2013), FRC Regulation on Security issuers' information transparency (2015), Corporate Governance Code (2014), and MSE Listing rules (2018). The criteria testing and items selection for the VD index is identical to Bolortsogoo & Battuya (2019). However, from Bolortsogoo & Battuya (2019), the item scoring method is improved by weighing the scores as suggested in Jiang, et al. (2011). In below, 31 items are receiving varying scores depending on the narrative or numerical disclosure and past performance or forecasts.

The final voluntary disclosure index is constructed with 31 items. The items include:

I. General information

a. Company goals and objectives
b. Competition in the market
c. Main products
d. Main markets
e. Annual report presented in English

Score allocation: 1 point for narrative disclosure, 2 points for numerical disclosure except the ‘annual reports presented in English’ as which receives only 1 score in case of disclosure, 0- for none disclosure.

II. 5 years succinct historical results

a. Information to calculate return on asset
b. Information to calculate net profit margin
c. Information to calculate asset turnover
d. Information to calculate return on equity
e. Sales and net profit

Score allocation: 1 point for current year disclosure, 2 points for more than 5 years’ disclosure

III. Non-financial information

a. Employees in number
b. Average salary per employee
c. Order backlog data
d. Sales percentage of new products launched in last 5 years
e. Number of products sold
f. Unit sales price

Score allocation: 2 points for each disclosure

IV. Forecasts

a. Market share
b. Cash flow
c. Capital expenditure and R&D expenditure

d. Profit
e. Sales

Score allocation: 2 points for disclosure of direction prediction and additional 1 point for numerical prediction

V. Management discussion and analysis

a. Sales change
b. Cost of goods sold change
c. Changes in gross profit
d. Sales and administrative expense change
e. Interest expense/ income change
f. Changes in net profit
g. Inventory change
h. Accounts receivable change
i. Capital expenditure and R&D expenditure change
j. Market share change

Score allocation: 1 point for detailed disclosure, additional 1 point for numerical explanation.

The score allocation is shown in above list of items. The scores are allocated through weighting method referring to the items' relative importance and extent of disclosure (as applied in Jiang, et al., 2011; and similar to Cademartori-Rosso, et al., 2017). The additional points given to numerical disclosures as the numbers oblige the firm into more responsible situation also which increases the reputational cost (Bhorjraj, 1999). The forward looking information disclosure in category IV receives higher scores for narrative and numerical disclosure as the forecasts are mostly expected but least disclosed items (Jiang, et al., 2011). In total the maximum potential score available to each company is 64 points.

2.2.2. Mandatory disclosure measurement

In accounting and finance literature, MDISC is studied equivalently to VDISC studies with the prevailing focus on IFRS disclosure compliance. IFRS is the most widely adhered financial reporting standard around world which aims to bringing high quality, transparent, comparable financial information in capital markets. IFRS is required to be adhered and permitted in 126 and 12 jurisdictions, respectively (IFRS, 2017). It has long been stressed that whether the adoption of IFRS will improve the financial information quality and the recent studies reveal that IFRS will improve the quality as if companies comply with the standards (Palea, 2013; Brown, 2011; Christensen, et al., 2013). The capital market benefits and financial reporting quality improvements from IFRS adoption is becoming overwhelmingly evident (Tarca, 2012).

The IFRS disclosure compliance – hereafter cross equivalently referred as IFRS disclosure or MDISC – study is similar to VDISC study for certain aspects as well as different in number of aspects. The VDISC and MDISC studies are similar in regards of their measurement techniques as the key concept for both studies are financial disclosure; hence the disclosure index methodology is dominantly applied in MDISC (see. Wallace & Naser, 1995; Street & Gray, 2001; Askary & Jackling, 2005; Abd-Elsalam & Weetman, 2003; Hodgdon, et al., 2008; Bolortsogoo, 2017b; Alfraih, 2016). The main difference between MDISC and VDISC is IFRS disclosure requirements are free from researchers' personal bias on disclosure items selection as those requirements are explicitly stated on a standard book. Apparently, in connection to the selected country's macrostructure, the applicability of certain standards are limited and which makes the differences in number of requirements included in the index (Hodgdon, et al., 2008), but still the disclosure index results are comparable to other researchers' work.

Those IFRS disclosure studies are undertook by Jaggi & Low (2005), Abd-Elsalam & Weetman (2003), Bolortsogoo (2017b), Alfraih (2016) show that the compliance of IFRS is varied among the listed companies in emerging countries. Abd-Elsalam & Weetman (2003) investigate Egyptian listed companies' IFRS compliance using IFRS disclosure requirement based index and the differences in compliance level is explained in relation to IFRS familiarity and language barrier among the accounting and financial professionals. Bolortsogoo (2017b) examines Mongolian plc's financial statements' restatement in respect to the informativeness of specific IFRS disclosure and the market response towards the restatement is tested. However, the disclosure on financial restatement was poor, and for a certain extent that poor IFRS disclosure is explaining the poor response from the market. Alfraih (2016) constructs439 items based disclosure index to measure the mandatory disclosure compliance within the IFRS framework in Kuwait Stock Exchange listed companies and it has found that firm-level CG characteristics are related to IFRS disclosure compliance. Askary & Jackling (2005) study 12 Asian countries' IFRSs compliance in relation to the religious setting. The compliance has studied through 306 IFRS requirements based index.

Researches performed by Hodgdon, et al. (2008) and Ashbaugh & Pincus (2001) reveal that even in developed countries, the IFRS disclosure is not fully complied. The both research groups have applied IFRS disclosure index methodology to measure the disclosure compliance of 13 developed and developing countries. Hodgdon, et al. (2008) find that IFRS disclosure compliance reduces information asymmetry through its ability to provide the financial analysts with more reliable information.

Almost all studies related to IFRS disclosure compliance apply index methodology and which are basically related to coverage index. In conjunction to IFRS organization purpose and the published standards' content, the disclosure requirements are related to the both of past performance and forward-looking information (e.g. IFRS 7 and 9, the requirements related market conditions and risk disclosure requirements).

<u>Prior studies in Mongolia</u>

In Mongolian context, it lacks rigorous study on financial reporting quality and disclosure (Gantulga, 2018). Bolormaa (2014) conducted her PhD study to optimizing IFRS implementation in Mongolian accounting practice. The IFRS implementation was evaluated by the questionnaires collected from entities about their implementation level and also based on review materials covering prior studies held by Ministry of Finance (MOF), Mongolia on accounting inspection in 2011. The MOF inspection result shows IFRS implementation is in average of 49 percent and the evaluation was also conducted through questionnaires from sample of accounting professionals. Most recently, Mongolian Accounting Institute (MAINS) evaluated IFRS implementation among Mongolian entities which covered 36 IFRSs relevant to Mongolia and the implementation is also evaluated by questionnaire responses received from accounting professionals. And the result shows the implementation is increased to 56.5 percent. However, the main drawback attached to the prior literature is the researchers have only applied questionnaire method on evaluating the implementation which is prone to hidden information, and also respondents understanding variances will effect on research quality (King, et al., 2004; Libby, 1981 as noted in Wallace & Naser, 1995).

Gantulga (2018) develops the methodology to evaluate financial reporting information quality in Mongolia context. He proposes three broad methods: questionnaire, environmental analysis, and empirical model based on discretionary accruals. The discretionary accruals method is one of potential methods to evaluate the quality of financial reporting (Bolortsogoo, 2018b), however which is incomplete as only captures measurement quality and misses disclosure quality. Therefore to fill this gap and improve the deficiencies lied at the prior methodologies, in this thesis I apply IFRS requirements based index methodology to measure MDISC in Mongolian plc.

IFRS index methodology development

Full IFRS compliance is required for Mongolian public listed companies under Accounting Law of Mongolia (1993; 2001; 2015) and the external auditors' report provide a conclusion that if the financial statements of a client are prepared in line with IFRS requirements (Auditing Law of Mongolia, 2015). Full IFRS disclosure compliance is mandatory for listed companies in Mongolia. Supplementing the IFRS disclosure requirements, Mongolian Ministry of Finance issues "Guidance on financial statements and its disclosure preparation" No.77 (2012). For certain standard – IFRS 6 Exploration and Evaluation of Mineral Assets, there is specific regulation on accounting "Regulation on guidance for exploration and production expenses accounting" No.12 (2011). The both of regulations are revised on 15th December 2016 and which is expected to be applied after the year end 2017 and excluded from the thesis analysis. For this thesis, the mandatory financial disclosure purposefully concentrates on IFRS requirements; however there is no material discrepancy between the local supplementary regulations, guidance and IFRS.

The IFRS index methodology for the thesis is identical to previously mentioned authors' work, however as it is crucial to make market-specific adjustments, the IFRS requirements for the index is prepared through following steps:

i) Analyzing all IFRSs and International Accounting Standards (IASs)[9] issued by IFRS Organization for the applicability to MSE listed companies' context.

And it has found that as per the end of 2017, there were 41 effective IFRSs and out of which 25 IFRSs are applicable to Mongolian capital market context. The remainder 16 standards are omitted from the index for following reasons:

- 2 of them are out of the scope
- 5 of them are not applicable
- for 4 standards there is no transaction occurs,
- 5 standards do not have disclosure requirement

ii) Collecting and preparing requirements for each applicable standard.

In regards the 25 applicable standards, 318 requirements are included in the IFRS index. The number of requirements for each IFRS ranges between53 and 3 requirements. The highest number of requirement is related to IAS 1 and the least number of requirements are related to IAS 18 and IAS 21 that each of them has 3 requirements. The detailed list of IFRSs and its disclosure requirements are shown in *Appendix D*.

iii) Score allocation for each disclosure requirement

In line with prior studies, each of the requirement is included in the index item is scored 1 for disclosure, 0 for non-disclosure, and marked as N/A for non-applicability. The score weighting is not applied for the IFRS index in relation to the disclosure differences in narrative and quantitative forms as the IFRS requirements clearly state the specification on whether the disclosure should be numerical or narrative.

2.3. Measuring the information asymmetry proxies

IA in CG and accounting research generally captures two broad areas: adverse selection which deals with prior the contract information problem (ex-ante) and moral hazard which deals after the contract information problem (ex-post) (Beyer et al., 2010). Focusing on

[9]International Accounting Standards (IASs) are equivalent accounting standards to IFRSs which issuance, amendments and supersedence are under the authority of IFRS organization. The both of IFRS and IAS are referred as IFRS.

the research main theme of adverse selection problem of IA, the adverse selection problem exists when there is information disadvantage for outside shareholders and potential investors which make the investors to set higher risk premium in relation to uncertainty (Beuselinck, et al., 2013).The studies in the field of information asymmetry conditional on corporate governance mechanisms and accounting disclosure have applied different metrics of IA. Among which the IA proxies of probability of informed trading (PIN) modelled by (Easley, et al., 2002), and micro-structure models of bid-ask spread (Glosten & Harris, 1988) are widely used.

Easley, et al. (2002)apply the number difference between sell and buy orders to quantifying the market maker's belief about the informed trade probability, in a contrast bid-ask spread is measured by several varying methods (Cademartori-Rosso, et al., 2017). According to Abdul-Baki (2013) study result on testing the empirical validation of the two methods show the bid-ask spread is higher validation power in common stock portfolios than PIN, where PIN appears higher for broad-based portfolio. Referring to the main topic, the researches in ownership concentration and financial disclosure effect on IA generally apply bid-ask spread as a proxy for IA (Jamalinesari & Soheili, 2015; Elbadry, et al., 2015; Jiang, et al., 2011; Omari, et al., 2013; Shiri, et al., 2016) with differing formulas or measures.

Bolortsogoo (2018c) applies the bid-ask spread formula of dividing the differences of bid-ask price by ask price. The formula is expressed as: (AP-BP)/AP. In the author's work the firm-level variables and mandatory disclosure effect on information asymmetry is tested in Mongolian listed companies' case. The study has found no statistically significant relationship between ownership concentration and bid-ask spread, however it has found that higher the ownership concentration, higher the information asymmetry in terms of bid-ask spread and higher the firm size, lower the information asymmetry also in terms of bid-ask spread. Bolortsogoo (2019) test the ownership concentration and voluntary disclosure effect on information asymmetry. The authors find negative relationship between voluntary disclosure and information asymmetry, but no statistical relationship has found between ownership concentration and information asymmetry.

Cademartori-Rosso, et al. (2017) note that the differences in bid-ask spread measures include variances in absolute or relative measures, modified or unmodified (original) scale, and differences in captured timing. The researchers investigate four measures, including: 1) annual average of original scale of bid-ask price; 2) annual average of modified scale of bid-ask price; 3) average spread weighted by quantity of share traded; 4) differences between bid and ask price annual average is divided by the average of bid-ask price. They find differences in bid-ask spread impacts on the model goodness fit in varying degree where the natural logarithm of difference between bid-ask price show the highest fit in their study. The first measure is applied in Neungwan, et al. (2013). The fourth measure is applied by Jiang, et al. (2011) and Omari, et al. (2014). However, the other authors including Jamalinesari & Soheili (2015), Shiri, et al. (2016) have not mentioned the formula used to calculate bid-ask spread.

Based on the Cademartori-Rosso, et al. method, 4 different measures of bid-ask spread will be tested in addition to the Bolortsogoo (2018c) and Bolortsogoo &Battuya (2019). Cademartori-Rosso, et al. suggested formulas for the measures are: 1) (BP-AP), 2) Ln(BP-AP), 3) (BP-AP)/shares trade quantity, 4) (BP-AP)/(BP+AP)/2. AP stands for mean of ask price. BP stands for the mean of bid price. Depending on the results, one potential measure for each model will be used for main conclusion. In relation to discussion in section 3, that the financial disclosure measurement is split into mandatory and voluntary. Then the timing to measure the spread must be different for the two financial disclosure measures. For voluntary disclosure measure, the yearly average of bid-ask spread will be used as the information is collected from the disclosures made throughout the year. For mandatory disclosure, more specified timing windows is used to measure the changes in bid-ask price and share turnover around the financial reports release dates. In relation to Mongolian capital market liquidity, 14 days windows after the financial reports release date is tested.

2.4. Operationalization of variables

The operationalization of the variables is important for model building. In below *Table 3*, the proxies to measure three core variables, the measurement applied for in each proxy, the type of proxy and the abbreviation used for the proxies are demonstrated.

Table 3. Summary of the variables

Variables	Proxy	Measurement	Type	Abbreviation
Agency relationship proxies	Ownership concentration	Herfindahl-Hirschman Index	Continuous	OC
	Ownership types	3 groups: individual, legal entity and state	Categorical	OWN_type
		Individuals owned	Categorical	OWN_Individual
		Legal entity or company owned	Categorical	OWN_Company
		State owned	Categorical	OWN_State
Financial disclosure proxies	Mandatory disclosure	IFRS disclosure index	Continuous	MDISC
	Voluntary disclosure	Botosan disclosure index	Continuous	VDISC
Information asymmetry proxies	Bid-ask spread around **financial statement** release dates - MDISC	1. (AP-BP)/AP*100	Continuous	BAS1_MD
		2. AP-BP	Continuous	BAS2_MD
		3. Ln(AP-BP)	Continuous	BAS3_MD
		4. (AP-BP)/no. of shares sold	Continuous	BAS4_MD
		5. (AP-BP)/ ((AP+AP)/2)	Continuous	BAS5_MD
	Bid-ask spread **average of the year**– VDISC	1. (AP-BP)/AP*100	Continuous	BAS1_VD
		2. AP-BP	Continuous	BAS2_VD
		3. Ln(AP-BP)	Continuous	BAS3_VD
		4. (AP-BP)/no. of shares sold	Continuous	BAS4_VD
		5. (AP-BP)/ ((AP+BP)/2)	Continuous	BAS5_VD

(Source: Own construction)

Note: *AP stands for Ask Price; BP stands for Bid Price*

As discussed in section 2.1 of this chapter, the ownership structure is measured by two proxies: 1) Ownership concentration measured by Herfindahl-Hirschman Index (HHI), and 2) Three groups of ownership structure – individual, company and state ownership. The financial disclosure as discussed in section 2.2 is measured by two variables: 1) Mandatory disclosure measured by IFRS disclosure index, and 2) Voluntary disclosure measured by Botosan disclosure index. The information asymmetry (IA) as discussed in section 4 is measured by 5 proxies which are mainly differing from each other by different formulas of measuring bid-ask spread. The 5 proxies are abbreviated between BAS1 and BAS5. For the relationship between information asymmetry and financial disclosure, the two different timing windows are required in respect to two different timing involved in mandatory and voluntary disclosure. Therefore, the differences are highlighted by the extension of MD and VD, respectively.

3. Methodology to test the hypotheses

This section corresponds with the hypotheses built in the literature review chapter and the core of this section is to demonstrate the methodology to validate or reject the hypotheses. The three main hypotheses will be mainly tested through linear models of one-way ANOVA and ordinary least square regression analysis depending on the type of variables used in the test. For the analysis, IBM SPSS Statistics software version 21 is applied. One-way ANOVA is conducted to investigate whether different types of categorical variable have significant effect on continuous type of dependent variable (Field, 2013). The regression analysis is performed to test if the continuous type of independent variables effect on continuous type of dependent variable (Burns & Burns, 2008).

The section is structured according to the main hypotheses, hence there will be 3 sub-sections related to the three hypotheses. First sub-section corresponds to Hypothesis 1: the relationship between agency relationship and financial disclosure is examined. Second sub-section deals with methodology to test Hypothesis 2: the financial disclosure facilitates in reducing information asymmetry. The last sub-section confers the methodology to test Hypothesis3: agency relationship effect on the level of information asymmetry. Each of the three hypotheses is sub-divided into two parts, except the H2. Altogether it can be seen as five interrelated hypotheses.

3.1. Methodology to test Hypothesis 1

The Hypothesis 1 (H1) examines if the agency relationship effects on financial disclosure level. H1 consists of two sub-hypotheses as the financial disclosure is further classified to mandatory disclosure (MDISC) and voluntary disclosure (VDISC). Those are abbreviated as H1-a and H1-b, respectively. In H1-a and H1-b, agency relationship is the independent variable. The agency relationship is measured by two proxies: i) Ownership concentration which is a continuous type of variable and measured by Herfindahl-Hirschman Index (OC), and ii) Ownership type which is categorical variable and contains 3 groups: individual, company and state.

As the type of independent variable has varied, two different statistical tools will be applied in the test of H1-a, and H1-b. 'H1-a' involves the examination of relationship between OC and financial disclosure. The simple regression method is applied for the test of H1-a, and the test of relationship is further marked as 'i'. The effect from ownership structure on financial disclosure is tested through one-way ANOVA which is marked as 'ii'. To make the discussion clear, the marks ('i' and 'ii') will be used along with hypotheses for upcoming discussions. As a reference, H1-a-i specifies the relationship between OC and MDISC. H1-a-ii specifies the effect from varying type of ownership structures on MDISC.

3.1.1. Methodology to test Hypothesis 1-a

Simple linear regression analysis for**H1-a-i** [10]

Regression analysis enables to predicting dependent variable value from the value(s) in independent variable(s) through simple (multiple) linear regression (Burns & Burns, 2008).Regression analysis is connected to Pearson correlation as some of the assumptions considered in the tools are the same, e.g. assumption of linearity and test is conducted on continuous variables (Burns & Burns, 2008). Therefore, prior to conducting regression analysis, the 2-talied Pearson correlation will be performed to test the direction and strength of association between the dependent and independent variables. On the basis of statistical significance (at 5% significance level) and level[11]of coefficients, the independent variable is decided if it can be further analysed through regression analysis. If the Pearson correlations show significant relationships, then the simple linear regression model will be conducted.

[10]The hypothesis is related to the author's conference paper called 'Firm level variables' effect on mandatory disclosure and information asymmetry' (Bolortsogoo, 2018c). However, the purpose of the conference paper was focused on to investigating the firm-level variables rather than the pure focus on agency relationship. Therefore the thesis and conference paper differs by its methodology and results.

[11]Level of coefficient is differently stated in different authors' work. In Burns & Burns (2008), over 0.9 is presumed to be high correlation. But in the thesis to reduce the collinearity risk, 0.8 is presumed to be high correlation in line with (Pallant, 2013).

The regression model (R1) is formulated to test the relationship between ownership concentration (measured by Herfindahl-Hirschman Index, denoted by HHI) and mandatory disclosure (denoted as MDISC) as follows:

H1-a-i: $MDISC_{it} = \beta_0 + \beta_1 OC_{it} + error_{it}$

$i=1,2,3 \ldots 46;\ t=1$

Note 1: The same logic will be applied for the regression analysis related to Hypotheses 1-b-i; Hypothesis 2-i. Therefore, to avoid the duplication of discussion of same methodology, the above discussion will be briefed as a simple linear regression for those hypotheses.

ANOVA test for **H1-a-ii**

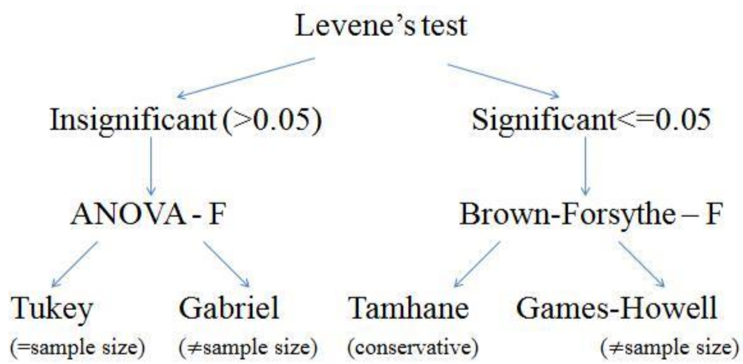
One-way ANOVA test (A1) is conducted to investigate whether different types of categorical variable have significant effect on continuous type of dependent variable (Field, 2013). Regarding the H1-a-ii, as a commencement of one-way ANOVA test[12], the Homogeneity of Variance is examined. Field (2013) describes that the Homogeneity of Variance is the test which investigates if the groups' variances are equal. The author suggests to considering the Levene's test for identifying whether the test outcome is significant at 5% or not. The insignificance (higher than 5%) in Levene's test predicts the variances are equal and ANOVA F test can be further checked for the analysis. However, results can be the opposite as showing the Levene's test is lower than the 5% significance which indicates that the variances are non-equal. Then Brown & Forsythe (1974) proposes a method to conduct F-test with unequal variances. The test is called as Brown-Forsythe F.

After receiving a significant result from F-test either from ANOVA - F or Brown-Forsythe –F, the next crucial step is to identify the mean differences between the groups (Burns & Burns, 2008). Especially in the case of ownership structure variable, there are three groups. Hence, it is important to find which group mean is different from others or if all the means are different. For this purpose the 'Post-hoc' analysis is performed (Field, 2013; Burns & Burns, 2008). As suggested by Field (2013) and Burns & Burns (2008), in cases of the

[12]One-way ANOVA is applied when there is merely one independent variable for the analysis of variance (Burns & Burns, 2008).

equal variances are assumed, and the sample size is equal then Tukey test is advised as the test has good statistical power as well as control over Type I error. Field (2013) further advises to apply Gabriel's test when sample sizes are different. In the situation where the equal variances are not assumed then either Tamhane or Games-Howell test can be performed. Games-Howell provides accurate result when there is unequal sample size. In contrast, Tamhane test is more conservative (Field, 2013). As a summary of potential steps to conduct ANOVA test, the below figure is drawn.

Figure 6. Steps to perform and interpret the ANOVA test



Source: Own construction based on Field (2013) and Burns & Burns (2008)

Note: The same logic will be applied for the ANOVA test related to Hypotheses 1-b-ii, Hypothesis 2-ii. Therefore to avoid the duplication of discussion of same methodology, the above discussion will be briefed as ANOVA test for those hypotheses.

3.1.2. Methodology to test Hypothesis 1-b

The main purpose of H1-b is to test the relationship between agency relationship and the voluntary disclosure. Alike to H1-a, this hypothesis is also further tested by two separate methodologies of simple linear regression and ANOVA in respect to the independent variables of OC and ownership type, respectively.

Simple linear regression analysis for **H1-b-i [13]**

[13] The author has related article called 'Ownership concentration and financial disclosure effect on information asymmetry' (Bolortsogoo & Battuya, 2019). In contrast to the article, the thesis has not included other controlling variables for the purpose of focusing on the main independent variable.

The regression model (R2) for the Hypothesis 2-a-is dedicated to test the relationship between OC Index and voluntary disclosure index score. The model is formed as follows:

H2-b-i: $VDISC_{it} = \beta_0 + \beta_1 OC_{it} + error_{it}$

$\boldsymbol{i}=1,2,3\ldots46;\ \boldsymbol{t}=1$

ANOVA test for **H1-b-ii**

ANOVA test (A2) is conducted to test if the three different groups of ownership structure effect on voluntary disclosure level. The procedures to conduct the ANOVA test will be similar to the steps illustrated in *Figure 6.*

3.2. Methodology to test Hypothesis 2

The Hypothesis 2 (H2) aims to investigate relationship between agency relationship and information asymmetry. The features of agency relationship proxies have been discussed in section 3.1 as part of Hypothesis 1. The information asymmetry (IA) is the dependent variable which is measured by the bid-ask spread. The bid-ask spread (BAS) is measured by 5 different formulas which have varying effect on robustness of the analysis (Cademartori-Rosso, et al., 2017; Bolortsogoo &Battuya, 2019). Therefore to minimize the future confusion, the most appropriate formula in terms of the statistical significance will further represent the bid-ask spread proxy. The bid-ask spread is calculated by the stock's daily bid and ask prices. Therefore the average bid-ask prices of each companies are averaged for the year 2017.

Methodology to select BAS metric

To select the most appropriate metric[14] out of the five potential metrics, the agency relationship proxies are tested against each of the metric and highest statistically significant result showing metric will be selected. Therefore the regression analysis for the relationship between BAS and OC will be conducted with application of selected BAS metric. Similarly, the test of ANOVA will be conducted applying the previously selected BAS metric.

The five metrics have differing magnitude as shown in below descriptive statistics *Table 4.*

[14]'metrics' replaces the wording of 'formulas', because the 5 formulas are measuring the same variable.

Table 4. Descriptive statistics for BAS metrics

Metrics	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
BAS1	2,45	22,73	9,96	5,12	0,58	-0,36
BAS2	2,11	7400,59	804,51	1411,12	2,89	10,21
BAS3	0,52	8,44	4,56	2,16	-0,03	-1,05
BAS4	0,01	2383,03	163,99	389,70	4,45	23,80
BAS5	0,03	0,26	0,11	0,06	0,68	-0,21

(Source: SPSS V.21 Output file)

Regression analysis

The regression model (3) for the examination can be shown as follows:

H2: $BAS_{jit} = \beta_0 + \beta_1 OC_{it} + error_{it}$

$\boldsymbol{j}$= BAS1; BAS2 … BAS5; $\boldsymbol{i}$ =1,2…46; $\boldsymbol{t}$= 1

BAS1 – represents the bid-ask spread calculation formula of (AP-BP)/AP; BAS2- represents (BP-AP); BAS3 – represents Ln(BP-AP); BAS4 – represents (BP-AP)/shares trade quantity; and the BAS5 – refers to the formula of (BP-AP)/(BP+AP)/2.

ANOVA test

For the ANOVA test (A3), the logic has shown in *Figure 6* which will be followed up to test if the 3 groups of ownership structure variable has effect on the bid-ask spread metrics.

3.3. Methodology to test Hypothesis 3

Hypothesis 3 aims to test the relationship between financial disclosure and information asymmetry. As it has been discussed in the Hypothesis 1, financial disclosure is split into mandatory (MDISC) and voluntary disclosure (VDISC) and which were the dependent variable in H1. In hypothesis 3 (H3), MDISC and VDISC are now the independent variables for this reason the hypothesis is further classified into H3-a and H3-b. According to Verrecchia (2001), this type of study involves the association based disclosure research in which the individual’s reaction towards the disclosure practice is examined. Variables applied in H3 are mostly similar to the parts of H1 and H2. However, in H3 the dependent variable of IA differs from H2 for the reason that timing windows considered in H3 is further divided into two timing windows around MDISC and VDISC release dates. In H2 bid-ask spread was calculated by the yearly average price and this bid-ask spread calculation remains the same for testing the relationship with VDISC release dates. Because, the information collected for VDISC involves whole year information.

In contrast, MDISC information is collected from the two particular sources of annual financial statements and annual reports. Then 14 days windows after reports release dates are applied in calculation of average bid-ask spread. In relation to it, the bid-ask spread around MDISC will be calculated in average of 28 days price information. However, it is expected that some of the companies in the sample have published annual reports, and some are not (Bolortsogoo, 2017a). In that case, the MDISC related bid-ask spread timing windows will only cover the price information around the financial statements release dates.

In below *Table 5*, the descriptive statistics for BAS_MD is shown. For the descriptive statistics of BAS for voluntary disclosure, please refer to *Table 4*.

Table 5. Descriptive statistics for BAS_MD metrics

	Minimum	**Maximum**	**Mean**	**Std. Deviation**	**Skewness**	**Kurtosis**
BAS 1_MD	1,649	68,571	13,296	12,326	2,460	8,206
BAS 2_MD	2,838	18528,000	1071,842	2837,934	5,463	33,263
BAS3_MD	0,773	9,814	4,868	2,263	0,056	-0,954
BAS4_MD	0,001	10032,533	441,092	1571,821	5,462	32,392
BAS5_MD	0,017	1,043	0,155	0,174	3,337	14,685

(Source: SPSS V.21 Output file)

Now, let's look at how the two sub-categories of H3 will be tested.

3.3.1. Methodology to test Hypothesis 3-a

Hypothesis 3-a examines if the mandatory disclosure (MDISC) effects the information asymmetry (IA). The sub-hypothesis has some similarities with Bolortsogoo (2018c) in which the relationship between MDISC and IA is also tested. In the thesis MDISC data is exactly the same as indicated in the paper. Because, the IFRS disclosure requirements are not subject to change for a given country setting, especially when the same sample of firms are tested. The improvement to the paper (Bolortsogoo, 2018c) is made on the IA proxy. In this thesis, the IA proxy is tested by several other theoretically applied metrics. The difference between the paper and thesis is that the thesis purely focuses on the relationship between main independent and dependent variables, but in the paper the relationship was tested in conditional to the other firm-level influential factors.

Referring back to the test of H3-a, both of the variables in the test are continuous type of variables. The relationship can be tested through simple linear regression method. To differentiate the bid-ask spread (BAS) metrics from the one which applied in H2, the MD abbreviation is attached to the BAS. Hence BAS_MD refers that bid-ask spread around the mandatory disclosure release dates. However, as the bid-ask spread metric has not yet selected at this stage, then the same procedures as applied in H2 will be conducted to find the most appropriate metric in specific to the H3-a. The regression model (R4) is formed as follows:

H3-a: $BAS\_MD_{jit} = \beta_0 + \beta_1 MDISC_{it} + error_{it}$

$\boldsymbol{j}$= BAS1; BAS2 … BAS5; $\boldsymbol{i}$ =1,2…46; $\boldsymbol{t}$= 1

3.3.2. Methodology to test Hypothesis 3-b

Hypothesis 3-btests if the voluntary disclosure (VDISC) has some influence over the information asymmetry. The sub-hypothesis test is similar to tests conducted in author's (Bolortsogoo &Battuya, 2019) work called "Ownership concentration and financial disclosure effect on information asymmetry". The test of information asymmetry proxy of the article is improved in the thesis that the 4 another competitive metrics are examined to find the best-fit metric. The difference from the article is in this thesis, to avoid the bias in statistical analysis from other variables which are out of the scope of thesis, the other controlling variables are excluded. Returning back to the main discussion, IA in the hypothesis 3-b is measured by the same metrics, along with the same data as applied in H2.

The simple linear regression model (R5) is designed as follows:

H3-b: $BAS_{jit} = \beta_0 + \beta_1 VDISC_{it} + error_{it}$

$\boldsymbol{j}$= BAS1; BAS2 … BAS5; $\boldsymbol{i}$ =1,2…46; $\boldsymbol{t}$= 1

3.4.Summary of the methodology

It is a summary section to collect and illustrate the methodologies discussed in previous sections of the chapter. Generally there are 5 regression models have built which relate to entire three core hypotheses. Along with the regression models, three ANOVA tests are designed for hypotheses 1 and 2. The below table illustrates the summary of the techniques and their association with hypotheses and variables.

Table 6. Summary of the techniques applied

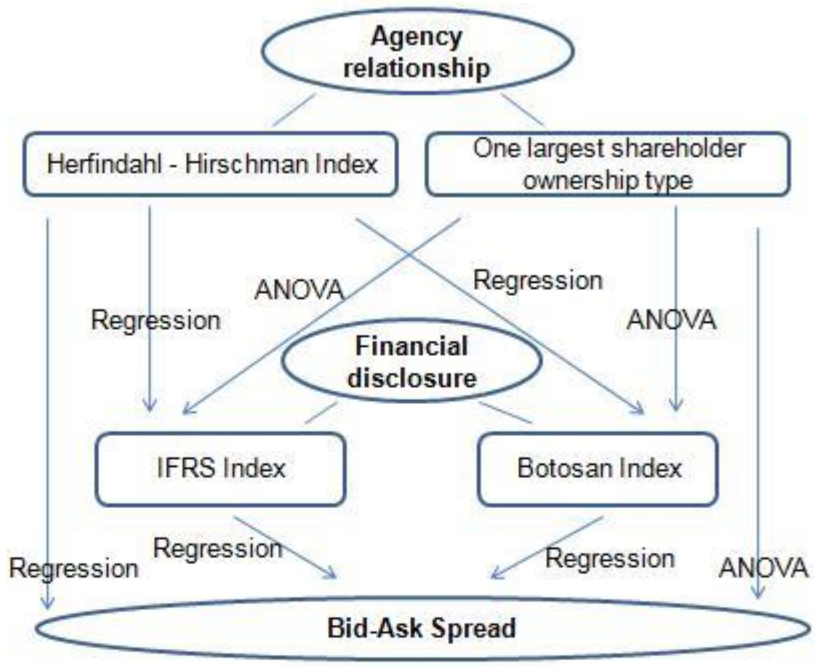
Hypotheses		DV	IV		Model ref.	Technique applied
H1	H1-a	MDISC	Agency relationship	i) OC	R1	Regression
				ii) OWN _type	A1	ANOVA
	H1-b	VDISC		i) OC	R2	Regression
				ii) OWN _type	A2	ANOVA
H2		BAS**	Agency relationship	i) OC	R3	Regression
				ii) OWN _type	A3	ANOVA
H3	H3-a	BAS_MD*	MDISC		R4	Regression
	H3-b	BAS**	VDISC		R5	Regression

(Source: Own construction)

Note: *DV refers 'Dependent variables'; IV refers 'Independent variable'; BAS_MD* refers that one of the 5 BAS_MD (Bid-ask spread around mandatory disclosure) proxies will be selected for further analysis on the basis of statistical significance; BAS** refers that one of the 5 BAS_VD (Bid-ask spread average for the year) proxies will be selected for further analysis on the basis of statistical significance. 'Model ref' denotes the reference of the model.*

The summary of the variables, techniques applied and their association with hypotheses are depicted in a *Figure7* format in below.

Figure 7. Summary of variables and techniques applied



Source: Own construction

Three main constructs of the hypotheses are illustrated in circle shapes; lines which connect the circles into the squares express the connection between the main construct and related variables; the measurements of the variables for each of the constructs are illustrated in squares; the arrows indicate the measurement methodologies.

Next chapter will discuss the results obtained from the analysis. However, prior to conducting the main analysis through ANOVA and regression, the variables need to be tested as if they qualify for next stage of analysis. This preparation involves the discussion on descriptive statistics for theoretically investigated variables and Pearson correlation for continuous type of variables.

IV. EMPIRICAL RESULTS AND DISCUSSION

This chapter analyses the empirical results processed from the statistical investigations for each of the hypotheses designed. The structure of the chapter follows the methodology discussed in Chapter III. As the same procedures are applied for the three hypotheses tests, the results are summarized in one table for each type of technique applied. Referring to *Figure7*, five regression analysis and three ANOVA tests will be conducted for examining the hypotheses. Therefore, there will be two separate statistical analysis summary tables. Based on the information illustrated in the tables, the chapter further analyses the main outcomes in specific to each sub-hypotheses through separate sections. The first section discusses the results in association with Hypothesis 1 (H1) which contains four separate operations to prove two sub-hypotheses. Second section covers the statistical findings for two sub-hypotheses involving two statistical techniques for Hypothesis 2 (H2). Third section relates to the discussion on statistical results for Hypothesis 3 (H3), also which contains two sub-sections. And the chapter ends with the summary of the main results.

To make the statistical process clear and systematic, the Pearson correlation for the continuous variables will be calculated. Also the descriptive statistics for the variables will be discussed as follows.

<u>Pearson correlation results</u>

Pearson correlation is performed for the all continuous type of variables considered in this thesis. Those variables include: Herfindahl-Hirschman Index (OC), mandatory disclosure (MDISC), voluntary disclosure (VDISC), bid-ask spread metrics for mandatory disclosure (the metrics differ as they use different formulas of bid-ask spread and abbreviated as BAS1_MD, BAS2_MD, … BAS5_MD), and annual average of the bid-ask spread metrics (BAS1, BAS2, … BAS5).The results from the Pearson correlation are shown in below *Table7*.

As it is shown in the table, the both of mandatory disclosure (BAS_MD) and annual average (BAS) bid-ask spread metrics do not show statistically significant correlation with the Herfindahl-Hirschman Index, mandatory disclosure and voluntary disclosure. Regarding the BAS_MD, the metrics of the first and last numbered metrics show statistical significance. BAS1_MD is positively correlated with OC at 10% statistical significance. BAS5_MD is positively correlated with OC at 5% significance. Regarding the annual average BAS, again the first and last numbered metrics show statistical significance with VDISC. BAS1 is negatively correlated with VDISC at 5% significance. BAS5 is also negatively correlated with VDISC at 5% significance. On the basis of these results, the BAS1_MD, BAS5_MD, BAS1, and BAS5are considered for further analysis. Regarding the OC, it does not show any statistically significant correlation with MDISC and VDISC, vice versa. VDISC and MDISC variables appear to be positively and strongly related at 1% significance.

For the upcoming analysis, BAS5_MD is selected for the key bid-ask spread metric around the mandatory disclosure release dates as it shows statistical significance at 5%. The other metrics are not statistically significant except BAS1_MD which shows 10% level significance. Hereafter the BAS_MD refers to BAS5_MD.

In regards to the annual average of bid-ask spread metrics, BAS1 and BAS5 show almost the same results on Pearson correlation. Therefore, the both of metrics will be examined in the upcoming analysis.BAS5 is applied by number of researchers in prior literature (e.g. in Jiang, et al., 2011; Omari, et al., 2015). And the BAS 1 is applied in Bolortsogoo & Battuya (2019).

Table 7. Pearson correlation results

	BAS1 _MD	BAS2 _MD	BAS3 _MD	BAS4_ MD	BAS5 _MD	BAS 1	BAS 2	BAS 3	BAS 4	BAS 5	OC	MDISC	VDISC
BAS1_MD	1	,087	,178	,051	.990***	.650***	-,004	-,002	,062	.665***	,285*	-,074	-,214
BAS2_MD		1	.579***	.966***	,056	,141	.862***	.490***	.960***	,134	,082	-,063	-,139
BAS3_MD			1	.492***	,152	.326*	.720***	.918***	.616***	.330**	,048	-,083	-,258
BAS4_MD				1	,028	,060	.788***	.364**	.919***	,053	,076	-,061	-,159
BAS5_MD					1	.597***	-,030	-,030	,030	.618***	.319**	-,069	-,190
BAS 1						1	,239	.332**	,207	.998***	,099	-,195	-.366**
BAS 2							1	.693***	.940***	,239	,032	-,095	-,207
BAS 3								1	.557***	.331**	,006	-,061	-,240
BAS 4									1	,201	,119	-,088	-,171
BAS 5										1	,106	-,197	-.358**
OC											1	-,144	-,073
MDISC												1	.578***
VDISC													1

(Source: SPSS V.21 Output file)

Note: ****, **, and * denote statistical significance at 1%, 5%, and 10% level.*

Descriptive statistics for main variables

In below table descriptive statistics for the main variables are illustrated. The main categorical and independent variable (H1 and H2) here is the three groups of ownership structure variables. Therefore each variable's result is demonstrating the related statistics of the groups. The three groups involve: individual, company, and state ownership. For the bid-ask spread proxy, the variables deliberately illustrated again for the purpose of looking at the differences in the ownership structure groups.

As shown in below table, the group sizes are slightly different from each other. The information is important for ANOVA test for selecting the appropriate methods in reference to *Figure 6*. Regarding maximum and minimum values, standard deviation and standard error of the variables, the results differ among the groups.

Table 8. Descriptive statistics for main variables

DV&IV	**OWN_type**	**N**	**Mean**	**SD**	**Std. Error**	**Minimum**	**Maximum**
BAS	Individual	23	0,114	0,061	0,013	0,025	0,239
	Company	16	0,105	0,053	0,013	0,028	0,225
	State	7	0,105	0,078	0,030	0,031	0,260
	Total	46	0,109	0,060	0,009	0,025	0,260
OC	Individual	23	0,280	0,135	0,028	0,125	0,653
	Company	16	0,311	0,248	0,062	0,099	0,951
	State	7	0,511	0,173	0,065	0,309	0,810
	Total	46	0,326	0,200	0,029	0,099	0,951
MDISC	Individual	23	0,207	0,040	0,008	0,144	0,268
	Company	16	0,315	0,182	0,046	0,182	0,838
	state	7	0,194	0,029	0,011	0,141	0,224
	Total	46	0,242	0,122	0,018	0,141	0,838
VDISC	individual	23	0,355	0,129	0,027	0,172	0,563
	company	16	0,457	0,170	0,043	0,172	0,797
	state	7	0,426	0,135	0,051	0,234	0,609
	Total	46	0,401	0,150	0,022	0,172	0,797

(Source: SPSS V.21 Output file)

Note: *'DV & IV' refers to dependent and independent variables; 'OWN_type' refers to the main independent variable of ownership types; 'N' refers to number of companies within the group; 'S.D' refers to standard deviation; MDISC refers to Mandatory disclosure; VDISC* *refers to Voluntary disclosure; BAS_MD refers to Bid-Ask Spread proxy around the Mandatory Disclosure; BAS refers to Bid-Ask Spread average for the year.*

It is demonstrated that ownership concentration variable shows minimum (maximum) value of 0,099 (0,951) with standard deviation of 0,2. The mandatory disclosure variable shows minimum (maximum) value of 0,141 (0,838) with standard deviation of 0,122. And the voluntary disclosure variables shows minimum (maximum) value of 0,172 (0,797) with standard deviation of 0,15.

4.1. Analysis on the test of Hypothesis 1

The test of Hypothesis 1 (H1) is split into H1-a and H1-b in relation to the different measures of financial disclosure. The two regression models (referred as R1 and R2 in the research methodology chapter) have designed to test the ownership concentration effect on MDISC and VDISC. From the preliminary test results collected from the Pearson correlation, it has found there is no statistically significant correlation exist between ownership concentration (OC) and MDISC; and OC and VDISC. However, the Pearson correlation is a weak measure of relationship. Hence, the two relationships are further tested through regression analysis (referred as R1 and R2).

Alternatively, in the test of H1, agency relationship variable is measured by the ownership structure proxy. The effects from the ownership structure on two dependent variables (MDISC and VDISC) are examined through ANOVA test (referred as A1 and A1 in the research methodology chapter). The discussions related to the two sub-hypotheses' are conferred separately in sub-sections of 4.1.1 and 4.1.2.

4.1.1. Test of Hypothesis 1-a

Hypothesis 1-a aims to test the effect of agency relationship on mandatory disclosure. Firstly, the regression analysis on the relationship between ownership concentration measured by HHI and mandatory disclosure (H1-a-i) is conducted. Secondly, the ANOVA test on ownership structure effect on mandatory disclosure is performed (H1-a-ii).

<u>Relationship between ownership concentration and mandatory disclosure – H1-a-i</u>

The outputs from the regression analysis are shown in below *Table9*. Referring to the columns for H1-a-i, the regression analysis results do not show any statistically significant (p-value = 0,341; t-test = -0,962) relationship between ownership concentration (OC) and mandatory disclosure (MDISC).

Table 9. Regression analysis results for H1

	H1-a-i: DV –MDISC			**H1-b-i**: DV - VDISC		
	Coefficient	**t-test**	**p-value**	**Coefficient**	**t-test**	**p-value**
Constant	0,271	7,820	0,000	0,419	9,714	0,000
Independent variable						
Ownership concentration	-0,088	-0,962	0,341	-0,055	-0,482	0,632
R square	0,021			0,005		
F-statistics	0,926			0,233		
p-value	0,341[b]			0,632[b]		

(Source: SPSS V.21 Output file)

On the basis of the results produced, the H1-a-i is rejected.

<u>Relationship between ownership structure and mandatory disclosure – H1-a-ii</u>

The relationship between ownership type and mandatory disclosure (H1-a-ii) is tested through one-way ANOVA test. The results from the ANOVA test are illustrated in below *Table10*. The table contains the results for H1-b-ii and H2-ii, which will be analyzed in the upcoming sections.

Table 10. ANOVA results

	H1-a-ii	**H1-b-ii**
Dependent variable	MDISC	VDISC
Independent variable	OWN_type	OWN_type
Levene's test F	9,542	0,251
Levene's Statistic p-value	0,000	0,779
ANOVA - F / *Brown-Forsythe F*	*5,611*	2,461
p-value	*0,013*	0,097

(Source: SPSS V.21 Output file)

The analysis follows the ANOVA methodology depicted in *Figure 6 – Summary of techniques applied*. From the ANOVA results, the first number to look at is Levene's statistic.

Focusing on the column for H1-a-ii, the Levene's test p-value shows significant F-value of 9,542 at 1% significance level. The result indicates the group variances are equal, hence to rectify the situation Brown-Forsythe F test is conducted instead of relying on normal ANOVA F test. The figures highlighted in italic format refer to the outcomes processed from Brown-Forsythe F test. The result shows that different groups of ownership structure effects on mandatory disclosure level as the Brown-Forsythe F value of 5,611 is statistically significant at 5% level. To find more specified information about which group effects the more on the mandatory disclosure, *post-hoc* analysis is performed. According to *Figure 6*, one of the post-hoc tests of Tamhane or Games-Howell should be examined. In this situation, the sample size is not equal among the groups, hence Games-Howell test is conducted. The sample size can be found from the *Table 8 - Descriptive statistics for main variables.* The findings from the post-hoc test are demonstrated in below *Table 11.*

Table 11. Post-hoc test results

	Ownership types		Mean Difference	Std. Error	Sig. (p-value)
H1-a-ii Games-Howell	Individual	Company	-,108	,0463	,079
		State	,013	,0138	,620
	Company	Individual	,108	,0463	,079
		State	,121	,0468	,048
	State	Company	,121	,0468	,048
		Individual	,013	,0138	,620
H1-b-ii Gabriel	Individual	Company	-,102	,0474	,100
		State	-,072	,0629	,558
	Company	Individual	,102	,0474	,100
		State	,031	,0660	,950
	State	Company	,031	,0660	,950
		Individual	-,072	,0629	,558

(Source: SPSS V.21 Output file)

Referring to the H1-a-ii rows, Games-Howell test results show the following:

a) Individuals owned companies have higher mandatory disclosure than state owned companies as the group effect shows, however, this difference is not statistically significant at 5%.

b) Legal entities (company) owned companies have higher mandatory disclosure than state and individual owned companies as the group effect shows, where the company-individual relationship is significant at 10%, the company-state relationship is significant at 5% level.

4.1.2. Test of Hypothesis 1-b

Hypothesis 1-b is split into H1-b-i and H1-b-ii. The findings from the statistical analysis are discussed as follows.

<u>Relationship between ownership concentration and voluntary disclosure – H1-b-i</u>

The relationship between ownership concentration (measured by HHI) and voluntary disclosure (VDISC) is tested through simple linear regression. The results from the regression analysis is shown in *Table 8*, referring to the columns H1-b-i the relationship is not proved as the p-value is insignificant at 0,632 (F-statistics = 0,233). Therefore H1-b-i is rejected.

<u>Relationship between ownership structure and voluntary disclosure – H1-b-ii</u>

The relationship between ownership structure and voluntary disclosure (H1-b-ii) is tested through one-way ANOVA test. The results from the ANOVA test are illustrated in *Table 8*. Considering the Levene's test, F-value of 0,251 with p-value of 0,779 indicates that equal variances are assumed among the groups. The ANOVA-F value shows 2,461 at 10% significance. Therefore, it is presumed that differences in groups of ownership structure have some effect on the voluntary disclosure.

To determine the specific differences among the groups, Gabriel test was conducted. The sample size was not equal among the groups, hence Gabriel's test is favored against the Tukey test. From the Gabriel's test, the company (legal entity) ownership shows higher voluntary disclosure than the individual's ownership at 10% significance. However, there is no statistical significance has found in relation to the state ownership. Therefore, H1-b-ii is accepted in terms of differences in ownership structure groups have varying effect over the voluntary disclosure.

4.1.3. Summary of H1 results

The H1 consists of two sub-hypotheses: H1-a, and H1-b. The main purpose of the H1 is to test the relationship between agency relationship and financial disclosure. The both variables' are measured by two proxies. Therefore, both of sub-hypotheses have two models of regression analysis for H1-a-i; H1-a-ii; and ANOVA tests forH1-b-i; H1-b-ii. As a summary of the test results discussed in sections 4.1.1. and 4.1.2., the H1-a-i and H1-b-i are rejected as there is no statistically significant relationship has found between mandatory disclosure and ownership concentration (H1-a-i); and no relationship has found between voluntary disclosure and ownership concentration (H1-b-i).

Regarding H1-a-ii and H1-b-ii, the sub-hypotheses also tested the agency relationship effect on mandatory and voluntary disclosure, respectively. Here, the agency relationship proxy is the ownership structure with three groups and ANOVA tests were conducted. H1-a-ii results show there is an effect from differences in ownership structure on mandatory disclosure. More specifically, the legal entities (company) owned public listed companies show higher mandatory disclosure than individuals and state owned listed companies. On the basis of this finding, H1-a-ii is validated. About the H1-b-ii, the legal entities owned public listed companies show higher voluntary disclosure than individuals owned companies, thus the H1-b-ii is accepted.

4.2. Analysis on the test of Hypothesis 2

The Hypothesis 2 (H2) aims to test the agency relationship effect on the information asymmetry. The measurements of agency relationship are same as applied in H1. The information asymmetry is measured by bid-ask spread using 5 different formulas. As per the preliminary examination of Pearson correlation, two metrics show similar statistical significance and the both of metrics are decided to be tested with the related notation. Depending on the methodology to test the hypothesis, there are two separate tests are conducted. H2-i involves the regression analysis. H2-ii involves the ANOVA test.

<u>Regression analysis to test H2-i</u>

First test is regression analysis (H2-i). The test involves relationship between ownership concentration (OC) and bid-ask spread. As per the preliminary examination of Pearson correlation on ownership concentration and bid-ask spread using different 5 formulas, two formulas show similar statistical significance and the both of metrics are decided to be tested further. The results from the simple linear regression analysis are shown in below *Table 12.*

Table 12. Regression analysis results

	H2-i: DV – BAS1			**H2-i**: DV – BAS5		
	Coefficient	**t-test**	**p-value**	**Coefficient**	**t-test**	**p-value**
Constant	9,137	6,239	0,000	0,099	5,799	0,000
IV						
OC	2,536	0,660	0,513	0,032	0,709	0,482
R square	0,010			0,011		
F-statistics	0,435			0,503		
p-value	0,513[b]			0,482[b]		

(Source: SPSS V.21 Output file)

Note: *'DV' refers to dependent variable; 'IV' refers to independent variable.*

The columns for 'H2-i: DV – BAS 1' refers to bid-ask spread metric 1. The relationship between BAS 1 and OC is not proved (F-statistics = 0,435; p-value = 0,513). The columns for 'H2-i: DV – BAS 5' refers to bid-ask spread metric 5. The relationship between BAS 5 and HHI is not validated (F-statistics = 0,503; p-value = 0,482).

In general, H2-i is not explained through the regression analysis. There is no statistically significant relationship is found between the Herfindahl-Hirschman Index and Bid-Ask Spread.

ANOVA test for the H2-ii

The second proxy to measure the agency relationship is ownership structure, and for the analysis ANOVA test is conducted. The results from the ANOVA tests are illustrated in below table. The two potential BAS metrics are separately tested, which are referred as BAS 1 and BAS 5.

Table 13. ANOVA test for H2

	H2-ii	**H2-ii**
Dependent variable	BAS 1	BAS 5
Independent variable	OWN_type	OWN_type
Levene's test F	0,827	0,790
Levene Statistic p-value	0,444	0,460
ANOVA - F / *Brown-Forsythe F*	0,167	0,123
p-value	0,847	0,885

(Source: SPSS V.21 Output file)

Referring to the table, result columns for 'H2-ii-BAS 1' show Levene's F value of 0,827 (p-value = 0,444) indicates there is no problem with homogeneity of variance assumption.

However, the ANOVA – F value shows 0,167 (p-value = 0,847) indicates there is no effect from ownership structure on information asymmetry measured by BAS 1.

Referring to the results for BAS 5 columns, Levene's statistic show insignificant result of p-value at 0,460 which means the Homogeneity of Variance assumption is not violated. However the main result regarding the ANOVA - F value shows 0,123 with p-value of 0,885. Therefore the effect from the ownership structure on bid-ask spread is not proved.

Summary of the H2 tests

H2 is tested through regression and ANOVA tests to examine if the agency relationship proxies have effect over the information asymmetry. Each of the tests relate to two metrics of bid-ask spread proxy. There are four tests are examined altogether. However, none of the tests prove the relationship through statistical tests. Therefore, H2 is rejected.

4.3. Analysis on the test of Hypothesis 3

The hypothesis 3 (H3) predicts that there is a relationship between financial disclosure level and information asymmetry. For each of the financial disclosure proxy, the information asymmetry timing windows is set specifically to the financial disclosure release dates. The relationship between mandatory disclosure and information asymmetry (H3-a) is tested through regression analysis. The information asymmetry in the sub-hypothesis is measured by the bid-ask spread proxy. The bid-ask spread proxy has taken account mandatory disclosure release dates, hence it is abbreviated as BAS_MD. H3-a is discussed in section 4.3.1. Regarding the H3-b, it tests the relationship between voluntary disclosure and bid-ask spread average for the year. Here the methodology and timing windows of measuring bid-ask spread is same as conferred in H2. The related discussion will be held in section 4.3.2.

4.3.1. Relationship between mandatory disclosure and information asymmetry

The examination of relationship between the mandatory disclosure and bid-ask spread (H3-a) is conducted through regression analysis. In below table, the results are illustrated.

Table 14. Regression results for H3

	H3-a: DV – BAS_MD			**H3-b**: DV – BAS 1			**H3-b**: DV – BAS 5		
	Coef.	**t-test**	**p-value**	**Coef.**	**t-test**	**p-value**	**Coef.**	**t-test**	**p-value**
Constant	0,179	3,068	0,004	0,167	6,957	0,000	14,965	7,328	0,000
IV									
MDISC	-0,098	-0,457	0,650						
VDISC				-0,142	-2,542	0,015	-12,468	-2,612	0,012
R square	0,005			0,128			0,134		
F-statistics	0,209			6,461			6,823		
p-value	0,650[b]			0,015[b]			0,012 [b]		

(Source: SPSS V.21 Output file)

Referring to the columns for 'H3-a: DV-BAS_MD', the relationship is not proved due to statistical insignificance. The R square for the test is less than 1%. And the F-value is 0,209 at p-value of 0,650. And the relationship is not explained by the regression analysis.

4.3.2. Relationship between voluntary disclosure and information asymmetry

H3-b tests if the voluntary disclosure level is related to the information asymmetry. Annual average of the bid-ask spread is applied to measure the information asymmetry in the test. With regards the two metrics of bid-ask spread (BAS 1 and BAS 5), *Table 13* shows two regression results for the sub-hypothesis.

Referring to 'H3-b: DV - BAS 1', the relationship is proved at 5% statistical significance (F statistics = 6,461; R square = 0,128). Similarly regarding the BAS 5, 'H3-b: DV – BAS 5' columns show that there is a statistically significant relationship exists in between voluntary disclosure and bid-ask spread. The results show R-square of 12,8%, F-value 0,503 at 5% significance level. The both tests have negative coefficients indicate that higher the voluntary disclosure, lower the information asymmetry. According to the results referring to both of the metrics, it is proved that the H3-b is validated through the regression analysis.

4.3.3. Summary of the H3 tests

H3 consists of two sub-hypotheses H3-a and H3-b. H3-a is rejected as there is no statistically significant relationship has found between mandatory disclosure and information asymmetry. Regarding the H3-b, two separate tests are conducted due to two potential bid-ask spread metrics. The both of the tests have proved that there is a negative relationship between bid-ask spread and voluntary disclosure. In other words, at first the results indicate that the BAS 1 and BAS 5 are not significantly differing in its ability to measuring information asymmetry. At second, results indicate that the level of voluntary disclosure effects on information asymmetry. And the H3 is partially validated.

4.4. Discussion of the results

This section summarizes the results obtained from the analysis conducted in previous sections 4.1., 4.2., and 4.3. The summary of the analysis is depicted in below table.

Table 15. Summary of the hypotheses' test

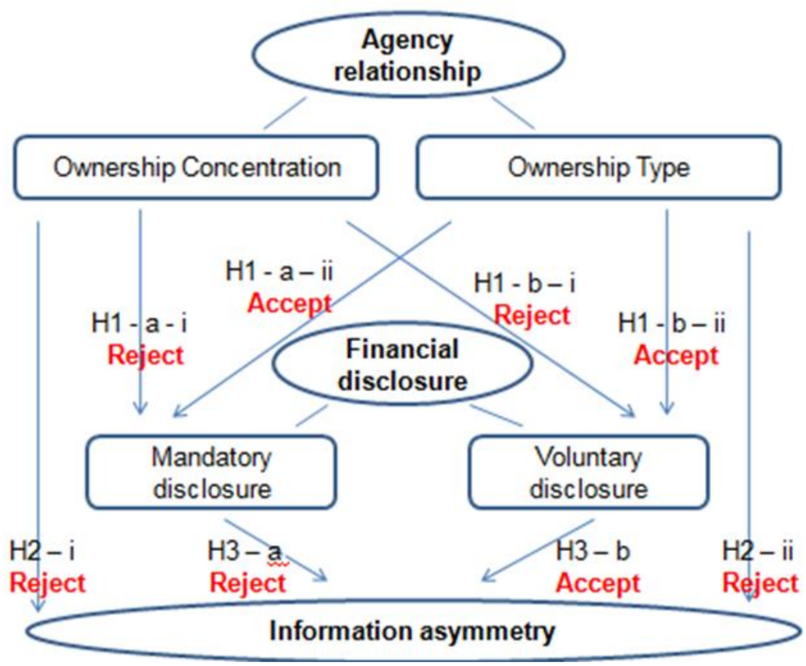
Hypotheses	Dependent Variables	Independent Variables		Findings from ANOVA/ Regression
H1-a	MDISC	Agency relationship	i) OC	Reject
			ii) OWN _type	**Accept**
H1-b	VDISC		i) OC	Reject
			ii) OWN _type	**Accept**
H2	BAS		i) OC	Reject
			ii) OWN _type	Reject
H3-a	BAS_MD	MDISC		Reject
H3-b	BAS	VDISC		**Accept**

(Source: SPSS V.21 Output file)

There are three main hypotheses (H1, H2, H3) which are further split into 5 sub-hypotheses (H1-a, H1-b, H2, H3-a, H3-b). The financial disclosure is classified into mandatory and voluntary disclosure in line with Holland (2005), Holm & Scholer (2010), Beyer, et al. (2010), Beuselinck, et al. (2013). Based on the different classification, Hypotheses 1 and 3 are sub-divided into 'a' and 'b' parts. The agency relationship is measured by the ownership concentration and ownership structure based on the largest shareholding. Depending on the different measures, Hypotheses 1 and 2 are further divided into 'i' and 'ii'.

The summary of the hypotheses test results are shown in figure format in below. The *Figure 8* is connected to *Figure 2 - Theoretical framework of the thesis, Figure 4 - Summary of hypotheses,* and *Figure 7 - Summary of variables and techniques applied* which are drawn in previous chapters.

Figure 8. Summary of results



Source: Own construction

The above Figure should be read in connection to below discussion sections for detailed information.

Discussion on H1 findings

H1-a-i - From the findings of H1-a-i, the ownership concentration referred as OC fails to show an effect over the mandatory disclosure. Considering the situation that mandatory disclosure level is poor and the compliance degree is varied among the MSE listed companies, the determinants of mandatory disclosure are attempted to be explained through the agency relationship in the company. According to the positive accounting theory and agency theory, the ownership diversification improves the level of corporate disclosure (Jensen & Meckling, 1976; Watts & Zimmerman, 1986). Vice versa, the ownership concentration is expected to reduce the disclosure level due to lower demand of public disclosure (Jiang, et al., 2011; Shleifer & Vishny, 1997).

There is limited number of prior studies which test the relationship between ownership concentration and mandatory disclosure. And the findings show mixed result. Owusu-Ansah (1998) finds the ownership concentration effect positively on mandatory disclosure in Zimbabwe listed companies. However, Wallace & Naser (1995) find no effect from ownership concentration on mandatory disclosure in Hong Kong capital market. The finding from Wallace & Naser (1995) is consistent with this study outcome. The reason for the irrelevance between the ownership concentration and mandatory disclosure can be connected to generally accepted public perception about poor level of mandatory disclosure among MSE listed companies and low level of mandatory disclosure among MSE listed companies and low sanction of the law and regulations breach. In this case, the large owners might not take the mandatory disclosure seriously. Previously, Cigna, et al. (2016) mention that in Mongolia the sanction against breach of law and regulations is very small and that can be one of the reason for lack of transparency.

H1-a-ii - To test the H1-a-ii, ownership type is measured by the type of one largest controlling shareholder. The study shows legal entity owned listed companies have higher mandatory disclosure than the individuals and state owned listed companies. The finding is consistent with results prepared by Alfraih (2016) in terms of group of individual owners reduce the mandatory disclosure level.

Previously in 2011 and 2016 according to the request of Mongolian Ministry of Finance (MOF), mandatory financial reporting compliance is examined among the various legal entities. These two series of examinations also focused on the compliance of IFRS. There are several issues which limit the use of these study results for the thesis. First, MOF examination aims to determine the IFRS implementation in terms of the both of measurement and disclosure requirements, and the study result was not able to differentiate disclosure level results. Second, the examinations cover various entities including public listed companies, limited liability companies, small medium enterprises etc. which means the result is flawed by various type of entities performance and unable to differentiate the result among variously motivated entities.

Bolortsogoo (2017b) examine the value relevance of financial restatement based on the IAS 8 disclosure requirement. The outcomes from the study show Mongolian capital market does not react towards the restatement information. The finding is explained by the weak information disclosure as the IAS 8 disclosure compliance shows 27% among the Mongolian listed companies. Bolortsogoo (2017b) finding is identical to this study finding that mandatory IFRS disclosure is not satisfactory and poor disclosure does not attract the market participants' use of the information.

The studies conducted by the international and domestic organizations - Yener, 2008;The World Bank, 2009; Iijima, 2011; Sodnomdorj, 2011; International Financial Corporation, 2013; National Corporate Governance Council, 2015; Cigna, Kobel and Sigheartau, 2016- have identified there is lack of transparency and disclosure in Mongolian market (Bolortsogoo, 2017a). In consideration of specialized study on mandatory disclosure, except the MOF and Bolortsogoo (2017b) so far there is no comprehensive disclosure study has taken place in Mongolian field. And this study is the first study which identifies the comprehensive mandatory financial disclosure level in terms of IFRS disclosure requirements. The level of mandatory disclosure is attempted to be explained through the ownership structure proxies.

Hypothesis 1-b, the interaction between agency relationship and voluntary disclosure is partially proved through the relationship between ownership structure groups effect on voluntary disclosure.

Referring to H1-b-i- In this study the relationship between general ownership concentration and voluntary disclosure is not statistically proved. At my best of knowledge, there is no prior study either on the voluntary disclosure or the entire relationship conducted in Mongolian context. Therefore it is the first study which examines the voluntary disclosure and its determinant in Mongolia. In the global pan, prior literature shows mixed results on the relationship.

In Malaysian capital market, Ho & Taylor (2013) and Ho & Tower (2011) find ownership concentration positively effects on voluntary disclosure level. Lakhal (2015) studies ownership concentration on the basis of multiple large shareholders effect on financial reporting quality in French listed companies. He finds that there is a negative relationship between the two constructs. Also Khlif, et al. (2016) conclude that ownership concentration has negative impact on voluntary disclosure. Despite the contradictory findings, previous scholars have shown that at least the ownership concentration has some effect over the voluntary disclosure. But in this study, the relationship is not proved. The reason for the variety may depend on the country level factors, such as capital market development and information demand in capital market.

Referring to H1-b-ii- The result shows legal entities owned listed companies have higher voluntary disclosure than the individuals owned listed companies. This finding is consistent with the outcomes from Han (2004) in terms of disclosure as a component of financial reporting; and Khlif, et al. (2016). However, the findings from Chau & Gray (2002), Alhazaimeh, et al. (2014) are able to be supported in this study. In Chau & Gray (2002), Alhazaimeh, et al. (2014) the individuals ownership type is further detailed into family ownership and foreign ownership which is not the classifications applied in this study. Therefore, in the future researches focusing on the legal entities and individual's ownership type need to be further classified in line with the improvement of data availability.

Summary of H1 discussion - The both of mandatory and voluntary disclosure levels were unsatisfactory among the top MSE listed companies and the results from the effect of ownership concentration and ownership structure type variables show the same effect for both disclosures. The hypothesis 1 findings indicate that the one largest shareholder type tend to effect on the disclosure decisions rather than the interaction between largest shareholders in terms of more than 5% shareholdings in Mongolian capital market. It can be caused from largest owners are more involved in management. Therefore in the future, it is important to determine if the owner-managers are dominant in the governance of MSE listed companies. The power inequality between the large shareholders is becoming evident from the real life cases. Among the sample companies, the second and third largest shareholders of ATR Joint Stock Company (ATR plc), who owns 19,93% and 19,93% respectively, sued the board of directors of the company for their misconduct in relation to the taking a side of one largest shareholder's interest (Mongolian Stock Exchange, 2018).

Discussion on H2 findings

H2 is rejected as none of the agency relationship proxies show effect on the information asymmetry.

Regarding H2-i, there is no statistically significant relationship has identified between ownership concentration and information asymmetry. In Mongolian context, it is the first study which investigates the relationship. In the global research, the relationship is tested by many scholars (Jiang, et al., 2011; Byun, et al., 2011; Omari, et al., 2014; Jamalinesari & Soheili, 2015; Shiri, et al., 2016). The scholars' findings agree that the ownership concentration exacerbates information asymmetry. The reason for mismatch with prior findings may relate to the lack of capital market liquidity of Mongolia.

H2-ii, the second agency relationship proxy is the type of one largest shareholder referred as ownership type. However, all the three types of ownership including individuals, legal entities, and state fail to show effect on the information asymmetry. In prior literature, majority of studies find that different types of ownership structure impact on the information asymmetry with a different extent. In Jiang, et al. (2011) and Omari, et al. (2014) managerial ownership positive effect on reducing information asymmetry in the context of New Zealand and Iran. In Jamalinesari & Soheili (2015) and Shiri, et al. (2016), institutional ownership is negatively related to information asymmetry. In contrast, Byun, et al. (2011) find no relationship between institutional ownership and information asymmetry in Korean capital market which is identical to this study results.

These findings indicate that the selection of ownership type as a measure of agency relationship is crucial. The inability to identify the relationship in this study may relate to the proxy measurement. Therefore, in future researches it is recommended to unravel the ownership types further and bid-ask spread timing windows should be selected carefully in consideration of the context features.

Discussion on H3 findings

H3 consists of two sub-hypotheses and on the basis these two examinations, H3 is partially supported as the H3-a is rejected and H3-b is validated. In Mongolian field it is the first study which examines the relationship between financial disclosure and information asymmetry.

Regarding H3-a, the test of regression fails to prove the relationship between mandatory disclosure and information asymmetry. The hypothesis tests the relationship on the basis of signalling theory that information disclosure may effect on the information asymmetry. The study result may relate to the very low level of current mandatory disclosure among the MSE listed companies and in this case the market may opt not to use the information as it does not satisfy the information need. The finding is at certain extent consistent with Bolortsogoo (2017b), who identifies restatement disclosure is weak in Mongolian capital market and the stock prices do not reflect the restatement news.

In H3-b, the relationship between voluntary disclosure and information asymmetry is validated through the statistical analysis. The results indicate that there is a negative relationship between voluntary disclosure and information asymmetry and it is synthesized that increase in voluntary disclosure reduces the information asymmetry. The result matches with the prior results reported in (Jamalenisari & Soheili, 2015; Jiang, et al., 2011; Omari, et al., 2015; Shiri, et al., 2016).The successful validation of the hypothesis may relate to several factors, among which the information source that market participants use in their decision making can have significant impact. In the measurement of voluntary disclosure, various sources of data was used. The primary data was the annual reports. In addition to it, the information disclosed in the MSE and individual company websites are used as those are the main communication channels as required in the regulation. It means that information sources applied in voluntary disclosure potentially match with the information sources used by the market participants. In contrast, the mandatory disclosure only used the annual financial statements and annual reports and those may not satisfy the market participants' information need.

In other words, the finding partially explains that the market participants appear more to use the voluntary disclosure in their investment decision making rather than the mandatory disclosure information. And the voluntary disclosure has more power on influencing the information asymmetry among the market participants rather than the mandatory disclosure.

V. CONCLUSION

In this study, the interaction between the agency relationship, financial disclosure and information asymmetry are examined. One of the main roles of accounting and financial disclosure is to reducing the information asymmetry between the company and investors (Healy & Palepu, 2001; Kothari, 2001; Verrecchia, 2001; Stiglitz, 2017). The financial disclosure ability to effectively executing its information asymmetry reduction role is influenced by the relevant magnitude of controlling shareholders' power (Bartov & Bodnar, 1996; Shleifer & Vishny, 1997; Armstrong, et al., 2016). The number of studies covered these three folded relationship between ownership structure, financial disclosure and information asymmetry is limited (Jiang, et al., 2011; Omari, et al., 2014; Shiri, et al., 2016). Certain studies have focused on one of these three relationships: ownership structure effect on financial disclosure (Holm & Scholer, 2010; Ho & Taylor, 2010; Alfraih, 2016); financial disclosure effect on information asymmetry (Neungwan, et al., 2013); ownership structure effect on information asymmetry (Byun, et al., 2011; Jamalinesari & Soheili, 2015; Elbadry, et al., 2015). The research findings on the relationship between ownership concentration and effect on financial disclosure show mixed results. Also, the majority of these studies focus on the voluntary disclosure of the company and there is a research gap in mandatory disclosure studies. The mandatory disclosure level is varied among the developing (Wallace & Naser, 1995; Hassan, et al., 2009) as well as developed countries (Ashbaugh & Pincus, 2001; Hodgdon, et al., 2008), which calls the necessity of examining the determinants of mandatory disclosure and its effect on the information asymmetry.

This study primarily aims to investigate the financial disclosure measurements and evaluating the level of financial disclosure in Mongolian context. From the studies (Holland, 2005; Holm & Scholer, 2010; Beyer, et al., 2010; Beuselinck, et al., 2013), it has decided to evaluate the financial disclosure on the basis of two broad classifications of mandatory and financial disclosures. Based on this classification, mandatory and voluntary disclosures are separately evaluated. In relation to the nature of financial disclosure, the both disclosures are measured by the index methodology. The mandatory disclosure is measured by the self-constructed 318 items index which is purely referred to the IFRS disclosure requirements. These methodology has been applied by many scholars previously (e.g. in Wallace & Naser, 1995; Street & Gray, 2001; Askary & Jackling, 2005; Abd-Elsalam & Weetman, 2003; Hodgdon, et al., 2008; Bolortsogoo, 2017b; Alfraih, 2016). Applying the IFRS based index methodology, it has found that the level of mandatory disclosure among MSE listed companies is in average of only 24,2% which is a very weak performance. The voluntary disclosure is measured by self-constructed 64 points index based on the Botosan (1997) disclosure index. The Botosan Index is one of the popular methodologies in measuring the voluntary index (applied in e.g. Hassan, et al., 2009; Jiang et al., 2011; Omari et al., 2014, Lakhal, 2015; Ho & Taylor, 2013; Kachouri & Jarboui, 2017; Lakhal, 2015; Hassan, et al., 2010; Cademartori-Rosso, et al., 2017). Applying the Botosan based index, it has found that the level of voluntary disclosure among MSE listed companies is in average of 40,1%, which is higher than the mandatory disclosure level, but still unsatisfactory level of disclosure.

At the second, the study examined the methodologies to measure agency relationship and determined the nature of agency relationship in Mongolian capital market. Based on the prior literature, the agency relationship is measured by ownership structure of the company. And the ownership structure is measured by two proxies of ownership concentration and ownership type. Regarding the ownership concentration Herfindahl-Hirschman Index has applied in line with Overland, et al. (2012), Jiang, et al., (2011), Omari, et al. (2014). It is presumed that over the 18% HHI outcome indicates high share concentration (Jiang, et al; 2011; Brown & Warren-Boulton, 1988). In Mongolian case, it has found that the ownership concentration is 32,6% which proves there is high ownership concentration. After this measurement, the ownership effect on financial disclosures are tested. However, for the both of mandatory and voluntary disclosure, there is no effect from the ownership concentration has found. Regarding the ownership type, one largest shareholder type determines the variable (Byun, et al., 2011; Jiang, et al., 2011). Considering the special case of Mongolia and data availability, sample of firms 'ownership type is classified into three groups of individuals owned, legal entity owned and state owned. The association between ownership type and financial disclosures shows same results for the both of mandatory and voluntary disclosure. The legal entities owned companies tend to have higher mandatory and voluntary disclosure than the individuals and state owned companies which proves that different types of ownership structure effect on financial disclosure in differing ways. Overall, in Mongolia as a developing country case, the agency relationship impact on financial disclosure is supported in the situation where the agency relationship is measured by the ownership type. The finding supports Jensen & Meckling (1976), Watts & Zimmerman (1986), Shleifer & Vishny (1997), Armstrong, et al. (2010), Armstrong, et al. (2016) that the ownership structure of the company is presumed to effect on management's decision of information disclosure.

At the third, the study explores the methodologies to measure the information asymmetry. The bid-ask spread proxy has applied as a measure of information asymmetry in relation to its higher validation power in common stock portfolios (Abdul-Baki, 2013; Cademartoti-Rosso, et al., 2017). There are 5 formulas found to measure bid-ask spread which are applied in (Neungwan, et al., 2013; Jiang, et al., 2011; Omari, et al., 2014; Cademartoti-Rosso, et al., 2017; Bolortsogoo, 2017c).Various formulas have differing effect on the model goodness. The best fit measure is selected on the basis of its explanatory power in relation to the selected independent variable. Information asymmetry construct is relevant to H2 and H3. In test of H2, agency relationship proxies' effect on the information asymmetry is tested. However, there is no statistical significance has found between the ownership concentration and any of the bid-ask spread measures; also there is no effect has found between the ownership types and any of the bid-ask spread measures. Therefore, the hypothesis on the interaction between agency relationship and information asymmetry is not validated. In test of H3, financial disclosures effect on information asymmetry is examined. The information asymmetry is expected to be reduced with increasing in financial disclosure (Verrechhia, 2001; Healy & Palepu, 2001).And the financial disclosure impact on information asymmetry is supported that the voluntary disclosure has found to be influential on information asymmetry between the capital market participants. However, the mandatory disclosure shows no effect over the information asymmetry. The findings indicates voluntary disclosure made by the MSE listed companies have higher role on reducing information asymmetry than the mandatory disclosure. Referring to voluntary disclosure, the finding supports the signalling theory predictions.

1. **Theoretical and practical contributions**

It is the first study which investigates the interaction between agency relationship, financial disclosure and information asymmetry in the context of Mongolia. The majority of the studies in the field focus on the developed and advanced emerging countries of Korea, France, New Zealand, Iran, and Hong Kong. This study extends the literature by providing evidence from developing country from Asia.

The study has revealed that ownership type of the company effects on the mandatory and voluntary disclosure level. The finding supports the research on determinants of financial disclosure and agency theory predictions. In terms of ownership concentration, the study could not find its impact over the financial disclosure. The finding indicates that the necessity of testing various proxies of agency relationship to determine the key relationship. The failure to catching appropriate proxy may distract the process of theory building.

At the early stage of the study, it has found that the mandatory disclosure level measured by IFRS disclosure index among the first and second tier MSE listed companies are very poor. It is the first comprehensive disclosure study held in Mongolian context which proves the poor level of mandatory disclosure. In connection to the nature of mandatory disclosure which is bound by the law and regulations, the weak compliance calls for improving the regulatory enforcement and supervising function in Mongolian capital market and the finding is important for rule makers, enforcement and supervisory bodies. The improvement in regulatory enforcement and supervision will contribute not only investors' decision making, as well as for financial analysts, regulators, and other market participants.

Voluntary disclosure hypothesis of the study supports the signalling theory predictions that greater the information in the market reduces the information asymmetry among the market participants. Voluntary disclosure level is found to have a positive impact on reducing the information asymmetry. Combining the disclosure theory assumptions, higher the disclosure lower the information asymmetry and the lower asymmetry motivates potential investors (Verrecchia, 2001; Healy & Palepu, 2001), the finding signals that the MSE listed companies to disclose more financial information voluntarily and which can differentiate the company from the other low quality and poor disclosure companies for raising finance from the capital market.

2. Limitations and future research

The study attempts to determine the most appropriate measures of ownership concentration, ownership type, mandatory disclosure, voluntary disclosure and information asymmetry in consideration of the research country features. The data availability was one of the main constraints on the empirical analysis. Due to inability to find detailed information on family ownership, managerial ownership, and foreign ownership the classification of ownership types of this research were based on general classifications. In the future researches, the ownership type is recommended to be more specifically classified to precisely differentiate governing bodies and executive management within the corporate governance structure.

With regards the voluntary disclosure index, some items which are generally included in international researches are excluded from the study due to the lack of information availability and inapplicability of the items on the entire sample of MSE listed companies. Therefore, other potential items recommended in Botosan (1997) Index should be re-checked for its applicability for the given country setting. Also the determinants of voluntary disclosure among MSE listed companies should be broadly considered. Potentially, the voluntary disclosure motives of opportunism and rituals as defined by Gibbins, et al. (1990) can provide valuable insights.

In this study financial disclosures are only measured by the coverage dimension. Referring to Urquiza, et al. (2010) the quality and quantity dimensions are not considered. It is recommended to consider these other two measurement dimensions for future disclosure researches.

In relation to the illiquidity of the majority of sample firms, comparably wider timing windows has selected for measuring bid-ask spread around the mandatory disclosure. Along with the increase in capital market liquidity, the timing windows applied for this research should be re-examined and authors are advised to consider shorter timing windows. The study covers 46 listed companies which form 85% of entire MSE market capitalization. However, the sample size is comparably small and which potentially limit the explanatory power of statistical analysis.

The study combines the corporate governance, financial accounting and disclosure, and information economics research. For this reason, the determinants of financial disclosure and information asymmetry were precisely selected within the firm-level variables. Therefore, other significant institutional factors which may have significant effect over research constructs are not tested in this research.

As a final remark on the disclosure related research, it will be a great idea to study the impact of ownership structure on the Corporate Social Responsibility reporting level. However, the data availability on the related information is one of the main burden for the developing countries context. Despite the limitation on the data availability, the research initiation and following preliminary results have valuable effect on contributing to the society not only from the aspect of providing scientific results, but it can also wide spread the importance of transparency on Corporate Social Responsibility.

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APPENDICES

Appendix A. Summary of related literature

Authors	Focus	Sample	Disclosure measure	CG measure	IA measure	Result		Control variables
						IA	FD	
Jamalinesari and Soheili (2015)	CG and IA	145 listed companies from 22 industries at **Tehran SE**. Year: 2008-2013	N/A	institutional investment	bid ask spread	sig (-)		Company size, leverage, opportunities for biz growth; market value to book value ratio
				independence of board members		sig (-)		
				ownership concentration		sig (+)		
				type of auditor		None		
Byun et al. (2011)	CG and IA	1067 **Korean SE** firms. Year:2001-2004	N/A	ownership concentration	probability of informed trading	(+)		Institutional ownership, firm size
					private information events	(None)		
Elbadry et al (2015)	CG and IA	324 non-financial UK companies. Year: 2004-2010	N/A	independence of board members; board activeness; debt financing	bid-ask spread	(-)		firm size and unusual events
					volatility of share returns	(-)		
					normalized share trade volume	(+)		
					market value of shares traded	(+)		
Holm and Scholer 2010	CG and IA	100 **Danish** listed companies. Year: 2004	Transparency	board independence	N/A		(+)	performance, risk and firm size
				dispersed ownership			(+)	

Jiang et al. (2011)	CG, IA, FD	103 **New Zealand companies** from 10 industries. Year:2001-2005		ownership concentration	bid ask spread	sig (+)		Firm size, share price
			voluntary disclosure			sig (-)		
Omari et al. (2014)	CG, IA, FD	104 listed companies from **Tehran SE**. Year: 2011		ownership concentration	bid ask spread - Jiang model - ((AP-BP)/(AP+BP)/2)	sig (+)		Firm size, share price
				managerial ownership		(-)		
				institutional ownership		(+)		
			voluntary disclosure			(-)		
Shiri et al. (2016)	CG, IA, FD	102 listed companies at **Tehran SE**. Year: 2007-2014		ownership concentration	bid ask spread	(+)		Firm size, trading volume, stock price
				institutional ownership		(+)		
			Disclosure quality: reliability and timeliness			(-)		
Lakhal (2015)	CG and FD	170 **French** listed firms at SBF. Year: 2008	Discretionary accruals	ownership concentration	N/A		(-)	firm size, performance, leverage,audit, growth opportunities
				Corporate disclosure index			(-)	
Ho and Taylor (2010)	CG and FD	100 **Malaysian** listed firms. Year: 1996; 2001; 2006	voluntary disclosure	CG score on 13 items	N/A		(+)	firm size, leverage, industry type
Han (2004)	CG and FD	1997-2001 **USA** firms	Discretionary accruals ; T&D index	managerial ownership	N/A		(-)	industry
				institutional ownership			(+)	regulation, firm size, leverage,

Alfraih (2016)	CG and FD	2010, Kuwait SE 134 firms excluding financial firms	Mandatory disclosure compliance	Effectiveness of BOD: number of members, gender, diversity, multiple directorship,	N/A		(+)	Firm size, profitability, leverage, liquidity, firm age, industry category
				proportion of family members, CEO duality,			(-)	
Owusu-Ansah (1998)	CG and FD	Zimbabwe listed companies	Mandatory disclosure compliance	Ownership concentration	N/A		(+)	
Khlif, et al.(2016)	CG and FD	69 empirical studies	Voluntary disclosure	State ownership	N/A		(+)	
				Foreign ownership			(+)	
				Institutional ownership			(+)	
				Managerial ownership			(-)	
				Ownership concentration			(-)	
Chau & Gray (2002)	CG & FD	Hong Kong and Singapore	Voluntary disclosure	Ownership concentration	N/A		(+)	Family ownership
Alhazaimeh, et al. (2014)	CG & FD	72 Listed Jordanian companies. Year: 2002-2011	Voluntary disclosure	Ownership concentration	N/A		(+)	Foreign ownership, block holder ownership
Ho & Tower (2011)	CG & FD	Malaysian capital market	Voluntary disclosure	Ownership concentration	N/A		(+)	firm size, leverage, industry type

Appendix B. Company information

No.	Symbol	ISIC	Tier	Established year	Listed year	Mar.cap (in billion MNT)
1	ADL	B	II	1954	1995	9,8
2	APU	I	I	1924	1992	762,7
3	ATR	C	II	1941	1991	9,9
4	BAN	B	II	1978	1994	48,2
5	BDL	B	II	1970	1994	9,5
6	BEU	B	II	1954	2002	15,2
7	BNG	I	II	1964	1992	14,5
8	BTG	B	II	1961	1994	2,8
9	BUK	F	II	1996	1998	59,2
10	DHU	C	II	1971	1993	3,4
11	DZG	I	II	1982	1993	0,9
12	EER	F	II	1991	1991	13,7
13	ETR	H	II	2010	2012	3,9
14	GHC	F	II	1986	1993	3,2
15	GOV	C	I	1981	1993	181,5
16	GTL	L	II	1934	1992	30,7
17	HBO	C	II	2000	2007	2,9
18	HGN	C	II	2007	2008	7,1
19	HRM	N	II	2003	2008	11,2
20	HSR	N	II	2013	2013	1,2
21	JTB	N	II	1997	2006	6,1
22	MCH	J	II	1921	1996	14,3
23	MDR	L	II	2006	2007	4,3
24	MIB	F	II	1956	1992	2,4
25	MIE	G	II	1957	1993	14,9
26	MMX	C	I	1946	1992	10,9
27	MNH	C	II	1934	1992	3,3
28	MNP	H	I	1921	2015	55,0
29	MRX	F	II	2012	2014	2,0
30	MSH	I	II	2003	2005	4,4
31	NEH	C	I	1972	1992	24,2
32	NKT	C	II	2007	2008	1,5
33	OLL	J	II	2003	2007	0,6
34	RMC	F	II	2008	2008	2,9
35	SHG	B	II	1965	1994	23,4
36	SHV	B	II	1990	1995	29,5
37	SUL	C	II	2002	2002	6,1
38	SUU	C	I	1958	1992	87,7

39	TAH	L	II	1992	1992	22,0
40	TCK	C	I	1984	1999	30,6
41	TEX	S	II	1958	1992	21,7
42	TTL	B	I	1966	1995	469,2
43	TUS	B	II	1995	1995	1,6
44	UBH	C	II	1971	1992	6,0
45	UID	G	II	1924	1998	18,7
46	UYN	C	II	1941	1992	2,0
	Total					**2056,8**

Appendix C. List of sample firms and share ownership information

№	MSE Sym-bol	2017				2016				2015			
		Total no.of shares	Majority		Minority no.of shares	Total no.of shares	Majority		Minority no.of shares	Total no.of shares	Majority		Minority no.of shares
			No.	Concen-tration			No.	Concen-tration			No.	Concen-tration	
1	ADL	3 151 304	3	87,25%	1142	3 151 304	3	87,27%	1177	3 151 304	3	87,54%	1182
2	APU	1 064 181 553	5	93,67%	4819	742 877 000	3	91,71%	3676	74 287 700	3	91,69%	3468
3	ATR	174 136	3	79,87%	346	174 136	4	75,45%	352	174 136	4	75,45%	362
4	BAN	20 974 360	2	96,06%	4700	20 974 360	2	96,06%	4745	20 974 360	2	96,06%	4774
5	BDL	829 622	3	82,33%	941	829 622	3	82,33%	942	829 622	3	82,33%	949
6	BEU	19 062 080	4	99,66%	94	19 062 080	4	99,66%	108	19 062 080	4	99,66%	102
7	BNG	423 065	5	77,31%	1055	423 065	5	77,31%	1039	423 065	5	77,31%	1058
8	BTG	252 608	2	93,54%	239	252 608	2	93,54%	243	252 608	2	93,54%	245
9	BUK	131 547 500	1	97,54%	827	131 547 500	1	97,54%	827	1 315 475	1	97,54%	832
10	DHU	617 718	5	86,76%	811	617 718	5	86,69%	821	617 718	5	86,69%	832
11	DZG	8 946 230	2	94,16%	229	89 453	2	93,98%	224	89 453	2	93,98%	222
12	EER	3 479 320	4	78,25%	7420	3 479 320	4	78,25%	7477	3 479 320	4	78,94%	7549
13	ETR	46 200 000	3	85,21%	317	46 200 000	3	84,72%	330	46 200 000	3	84,42%	331
14	GHC	242 464	2	89,43%	120	242 464	2	89,43%	120	242 464	2	89,43%	120
15	GOV	7 801 125	3	84,10%	16170	7 801 125	4	84,10%	16206	7 801 125	4	84,10%	16328
16	GTL	1 618 684	6	91,26%	955	1 618 684	6	87,53%	1023	1 618 684	6	86,51%	1066
17	HBO	52 118 954	5	82,52%	360	52 118 954	5	80,09%	322	52 118 954	5	80,09%	318
18	HGN	101 317 557	3	85,35%	914	101 317 557	4	85,47%	930	101 317 557	4	85,21%	943
19	HRM	78 543 001	2	84,02%	920	78 543 001	2	84,02%	926	78 543 001	2	84,02%	928
20	HSR	311 856	2	66,06%	1127	311 856	2	66,06%	1139	311 856	2	66,06%	1148
21	JTB	100 000 000	6	69,12%	51875	100 000 000	6	65,07%	51818	100 000 000	6	65,07%	51780
22	MCH	25 870 276	2	94,67%	3989	25 870 276	2	94,67%	3962	25 870 276	2	94,67%	3967
23	MDR	13 750 000	7	91,60%	265	13 750 000	7	91,61%	272	13 750 000	7	91,61%	279

24	MIB	15 869 233	4	72,05%	282	15 869 233	4	72,05%	290	15 869 233	4	72,05%	297
25	MIE	1 368 206	4	85,29%	1513	1 368 206	4	85,19%	1573	1 368 206	4	85,19%	1599
26	MMX	3 800 721	4	68,49%	9562	3 800 721	4	68,49%	9562	3 800 721	4	69,24%	9557
27	MNH	474 164	3	82,05%	2739	474 164	3	81,97%	2781	474 164	3	81,70%	2799
28	MNP	99 586 363	2	94,34%	707	99 586 363	3	93,58	450	99 586 363	2	100,0%	0
29	MRX	65 005 000	5	92,43%	356	5	5	93,27%	320	65 005 000	4	91,59%	307
30	MSH	10 000 000	5	94,69%	269	10 000 000	5	94,69%	270	10 000 000	5	94,69%	271
31	NEH	1 105 479	3	71,73%	3544	1 105 479	3	71,73%	3639	1 105 479	3	71,73%	3710
32	NKT	12 615 721	1	92,93%	115	12 615 721	1	92,93%	124	12 615 721	1	92,93%	125
33	OLL	9 700 497	4	70,65%	410	9 700 497	4	70,65%	418	9 700 497	4	70,76%	424
34	RMC	78 679 464	4	67,23%	1450	78 679 464	4	65,28%	1356	78 679 464	4	65,28%	1368
35	SHG	10 170 242	6	90,93%	1034	10 170 242	6	90,93%	1043	10 170 242	6	90,93%	1049
36	SHV	13 419 101	1	90,00%	1607	13 419 101	1	90,00%	1606	13 419 101	1	90,00%	1602
37	SUL	65 362	1	70,92%	307	65 362	1	70,92%	326	65 362	1	66,42%	348
38	SUU	344 000 000	3	93,81%	1137	344 000 000	3	93,81%	644	344 000	3	93,81%	278
39	TAH	1 189 983	3	83,97%	628	1 189 983	3	83,94%	620	1 189 983	3	83,94%	620
40	TCK	1 023 703	3	71,26%	3780	1 023 703	3	71,26%	3827	1 023 703	3	71,26%	3876
41	TEX	1 446 755	3	97,54%	454	1 446 755	3	97,54%	451	1 446 755	3	97,54%	449
42	TTL	52 665 200	3	87,69%	1568	52 665 200	3	86,11%	1315	52 665 200	3	85,53%	1185
43	TUS	4 345 770	5	84,96%	1050	4 345 770	5	84,96%	1051	4 345 770	5	84,96%	1065
44	UBH	404 829	6	91,87%	909	404 829	6	91,87%	927	404 829	6	91,87%	930
45	UID	36 807 850	3	61,19%	44596	36 807 850	3	61,18%	44845	36 807 850	3	61,15%	45203
46	UYN	2 475 343	2	63,07%	9321	2 475 343	4	63,07%	9377	2 475 343	4	63,07%	9397

Appendix D. IFRS Index question

Reference	INDEX questions	
	Acquirer must disclosure	
IFRS 3:B64(a)	Acquiree name and detail	1
IFRS 3:B64(b)	Date of acquisition	1
IFRS 3:B64(c)	Purchased voting equity shares %	1
IFRS 3:B64(d)	Reason for business combination	1
IFRS 3:B64(e)	Qualitative consideration for goodwill recognition	1
IFRS 3:B64(f)	Fair values of total consideration at the acquisition date	1
IFRS 3:B64(g)	Contingent consideration arrangements and indemnification asset description, amount, date	1
IFRS 3:40	Acquired receivables fair value amount, contractual amount, estimate on non-collectable amount	1
IFRS 3:B64(i)	Amount of recognised Asset and liabilities as at acquisition date	1
IFRS 3:B64(j)	Detailed information about contingent liabilities acquired as per IAS 37	1
IFRS 3:B64(j)	If fair value of contingent liability cannot be measured reliably state the reason	1
IFRS 3:B64(k)	Amount of goodwill deductible for tax purpose	1
IFRS 3:B64(l)	Description, method of accounting, recognized amounts, settlement amount for the transaction held separately from business combination asset and liabilities	1
IFRS 3:B64(m)	In relation to B64(l), for those transactions, amount of costs incurred, and expenses recognized and not-recognized in financial statements	1
IFRS 3:B64(n)	In bargain purchases, related gains recognized and description on reasons of gain	1
IFRS 3:B64(o)	If the acquirer's acquisition does not entitle 100%, description on non controlling interest and method of valuation techniques	1
IFRS 3:B64(p)	Prior the acquisition, acquirer's stake at acquiree, gain/ loss resulted from Re-measuring such elements fair value	1
IFRS 3:B64(q)	Revenue, profit and loss accounted for the acquiree since the combination	1
IFRS 3:B67(a)	If accounting for business combination is incomplete, disclose the reasons and nature	1
IFRS 3:B67(b)	Changes in contingent considerations for each reporting period after acquisition date	1
IFRS 3:B67(e)	Gain or loss recognized in relation to business combination asset and liabilities	1
IFRS 3:B67(d)	In relation to goodwill, the gross amount and accumulated impairment loss b/f	1
IFRS 3:B67(d)	Amount of additional goodwill recognized	1
IFRS 3:B67(d)	Adjustments related to deferred tax assets resulting from business combination	1
IFRS 3:B67(d)	Goodwill included in disposal group and de-recognitions	1
IFRS 3:B67(d)	In relation to goodwill, any exchange rate difference incurred	1
IFRS 3:B67(d)	Any changes in goodwill carrying amount for the reporting period	1

	Total	**27**
IFRS 6:23	Amounts recognized at financial statements in relation to exploration and evaluation of mineral resources	1
IFRS 6:24(a)	Accounting policies for E&E assets and expenditure recognition	1
IFRS 6:24(b)	Amounts of assets, liabilities, income and expense and operating and investing cash flows arising from E&E mineral resources	1
IFRS 6:25	Treat E&E assets separately and disclosure must be made in accordance with IAS 16	1
	Total	4
IFRS 7:8(a-f)	Carrying amount of financial instruments classified as per IAS 39: FA and FLs FVTPL, held-to-maturity, loans and receivables, AFS, financial liabilities measured at amortised cost	1
	If entity has any loan or receivable at FVTPL and financial liability as at FVTPL following must be disclosed	
IFRS 7:9,10(a)	a) Maximum exposure to credit risk of that loan and receivable as at the end of reporting period	1
IFRS 7:9,10(b)	b) Amount of credit risk mitigated through related credit derivatives and similar instruments	1
IFRS 7:9,10(c)	c) The amount of change in FV and method	1
IFRS 7:9 IFRS	Changes in market conditions that effect on market risk	1
7:11(a)	The methods used to comply with loan and receivable at FVTPL; FL at FVTPL disclosure requirement in paragraph 9c and 10a	1
IFRS 7:11(b)	If the requirements in paragraph 9c and 10a are not applied, disclose the reason	1
IFRS 7:12(a, b)	If any financial assets reclassified, the amount and category shall be disclosed	1
IFRS 7:13B IFRS 7:13C	If any netting arrangement has made for FA and FL: gross amounts of FA and FL, amounts presented at financial statements shall be disclosed	1
IFRS 7:14(a, b)	Collateral provided for liabilities or contingent liabilities related carrying amount, terms and condition shall be disclosed	1
IFRS 7:15	Collateral held for financial or non-financial assets related fair value, terms and conditions shall be disclosed	1
IFRS 7:16	If financial assets are impaired by credit losses, impairment shall be accounted separately, and disclose the reconciliation in changes	1
IFRS 7:17	If entity has any compound financial instruments, disclose the existence	1
IFRS 7:18(a-c)	In case of entity defaults or breaches on loan payable, disclose the detail, carrying amount of loan payables, situation if default has remedied	1
IFRS 7:20(a)	Net gains/losses on FA and FL	1
IFRS 7:20(b)	Total Interest income/expense related to FA and FL	1
IFRS 7:20(c)	Fee income/expense related to FA and FL	1
IFRS 7:20(d)	Interest income on impaired FA accrued	1
IFRS 7:20(e)	Amount of impairment loss for each class of FA	1
IFRS 7:21	Accounting policies on financial instruments measurement policies	1

IFRS 7:22(a-c)	In case of applying hedge accounting, description of each type of hedge, nature of risk being hedged.	1
IFRS 7:28	If the fair value of FA and FL are not evidenced neither by quoted price nor valuation technique, entity shall disclose: Accounting policy and description that transaction price was not the best evidence of fair value	1
IFRS 7:33(a-c)	For each type of risk related to financial instruments, qualitative disclosure shall be made for: nature of the risk, methods to measure the risk, any changes.	1
IFRS 7:34(a)	For each type of risk related to financial instruments, quantitative disclosure shall be made for: description of management calculation	1
IFRS 7:36(a-c)	Credit risk for financial instruments shall be disclosed for: amount, information about credit quality	1
IFRS 7:39(a-c)	Regarding liquidity risk, entity shall disclose: Maturity analysis for FLs, description on how it manages the risk	1
IFRS 7:40(a-c)	Regarding market risk, entity shall disclose: Sensitivity analysis for each type of market risk, methods and assumptions, any changes	1
IFRS 7:42D	If any transferred FA that are not derecognized, the nature and description of the situation	1
	Total	**28**
IFRS 12.2(a)	Judgment and assumption made in determining the nature of interest in another entity or arrangement	1
IFRS 12.2(b)	Information about the subsidiaries, joint arrangements, associates, and structured entities	1
IFRS 12.10	If entity has interest in subsidiary, disclose: composition of group, non-controlling interest, and nature of its ability to access, settle liabilities.	1
IFRS 12.12 (a-g)	If there is non-controlling interest in its subsidiary, disclose: name of subsidiary, principal place of business, P/L allocated to NCI, accumulated NCI, summarized financial information about the subsidiary	1
IFRS 12.B10a,b)	Dividend paid to NCI, other information that financial statement users able to understand that NCI have in group activities	1
IFRS 12.13(a-c)	If any restrictions set for group ability to involve in asset and liabilities, it shall disclose the nature, amount of carrying amounts related to restricted asset and liabilities	1
IFRS 12.14	If the parent or its subsidiaries have contractual arrangement on providing support a consolidated structured entity, disclose the term	1
IFRS 12.15	If any financial or other support provided without contractual arrangement, disclose the reason, type and amount of support	1
	If any control over subsidiary has lost during the reporting period, entity shall disclose related gain/loss	1
IFRS 12.19A	If the unconsolidated investment entities accounted at FVTPL, it shall disclose: Subsidiary name, principal place of business, proportion of ownership interest.	1

IFRS 12.19D	Nature and extent of any significant restrictions, commitment or intention to provide financial or other support to unconsolidated subsidiary shall be disclosed	1
IFRS 12.19E	If any financial or other support provided without contractual arrangement by other group subsidiaries, disclose the reason, type and amount of support	1
IFRS 12.20(a,b)	If entity has Interests in joint arrangements and associates, it shall disclose nature, extent, financial effects and any changes in interest	1
IFRS 12.21(a)	Also the name of joint arrangement arrangement or associate, nature of entity's relationship, principal place, proportion of ownership interest shall be disclosed	1
IFRS 12.21(b)	Disclose the method for measuring, summarized information about the joint venture or associate, and if FV used indicate if there is quoted market	1
IFRS 12.B12(a,b)	Entity shall disclose each material joint venture and associate's: Dividend received and summarized financial information	1
IFRS 12.B13 (a-g)	In addition to the summarized financial information, following shall be disclosed: cash and cash equivalents, current financial and non-financial liabilities, depreciation and amortization, interest income/expense, income tax expense/income	1
IFRS 12.21(c)	Immaterial joint venture and associates information shall be aggregated and disclosed, which includes: profit/loss from continuing operations, post-tax profit/loss from discontinued operations, other/total comprehensive income	1
IFRS 12.22(a,b)	However following information shall be disclosed separately: Nature and extent of any significant restrictions, if those entities apply equity method that is different from entity, disclose reason for difference, and date of the end of reporting period	1
IFRS 12.23(a,b)	Disclosure on risks associated with entity's interest in joint venture and associates, includes: commitment, and apply IAS 37 disclosure requirement	1
IFRS 12.24(a,b)	If entity has any unconsolidated structured entities, disclose: nature and extent of interest, evaluation on changes in nature of associated risk	1
IFRS 12.27(a-c)	If the entity has sponsored unconsolidated entity, but the information was not provided, then disclose: the method to determine structured entity, related income, carrying amount of all assets transferred to those entities	1
IFRS 12.29 (a-d)	The entity shall disclose following information related to unconsolidated structure entity in a tabular form: carrying amounts of asset and liabilities recognized in FSs, line items of those items recognized in statement of financial position, amount that best represent entity's maximum risk of loss from those its interests	1
		23
IAS 1:16	Explicit statement that entity's FSs comply with IFRS	1
IAS 1:25	Disclose any uncertainties over going concern	1
IAS 1:25	If FS are not prepared under going concern, disclose the fact, basis of FSs prepared, and reason	1

IAS 1:36(a,b)	IF the entities' reporting period has changed disclose: FSs period covered, reason for using longer/shorter period than 1 year, the fact that FS amounts are not comparable	1
IAS 1:36(a)	In relation to the period change, if comparative amount been reclassified, then disclose: nature of reclassification, amount of each reclassified items, and reason for reclassification	1
IAS 1:36(b)	If reclassification is impracticable, disclose the reason and nature	1
IAS 1:41(a-c)	Entity shall persistently disclose following information for each reporting period:	A
IAS 1:41(b)	Name of reporting entity, any change from the prior period	1
IAS 1:41(c)	Whether FSs are individual entity or group entities	1
IAS 1:42 IAS	The date of reporting period end	1
1:42(a,b) IAS	Presentation currency	1
1:51 IAS	Level of rounding used	1
1:51(a)	Separately present current and non-current classification for each line of asset/ liabilities on the basis of more than and no more than 12 months. And disclose the amount to be recovered/settled after 12 months	1
IAS 1:51(b)	In respect of current liabilities, if following events incur after the end of reporting period, disclose those events as non-adjusting event: refinancing on a long term basis, rectification of breach of long term loan agreement, lender grants a period of grace to rectify the breach	1
IAS 1:51(c)	Entity shall disclose further sub-classifications of line items presented, in a manner appropriate to entity's operation	1
IAS 1:51(d)	Shall disclose following either in SFP/SOCE/or notes	A
IAS 1:51(e)	Number of shares authorized	1
IAS 1:61	Number of shares issued and fully paid, and issued but not fully paid;	1
IAS 1:76	Par values per share or disclose if no par value	1
IAS 1:77	Reconciliation of number of shares at b/f and c/f	1
IAS 1:79(a)	Rights, preferences, and restrictions attached to each class of share	1
IAS 1:79(b)	Shares in the entity held by the entity itself or its subsidiaries/associates	1
IAS 1:80A	Shares reserved for issue	1
IAS 1:87	Description of nature and purpose of each reserve within equity	1
IAS 1:90	If entity has any puttable financial instrument and related reclassification has made, disclose: amount, timing and reason	1
IAS 1:92	Entity shall not present any income/expense as extraordinary items neither in FSs nor in notes	1
IAS 1:97	Disclose the amount of income tax relating to each item of other comprehensive income	1
IAS 1:104	Disclose reclassification adjustments relating to components of OCI	1
IAS 1:106A	Material items of income/expense's nature and amount shall be disclosed separately	1
IAS 1:107	Nature of expenses classified by its function shall be disclosed	1

IAS 1:112(a)	Each component of equity, disclose the analysis of OCI by item	1
IAS 1:112(b)	The amount of dividends recognized to owners and dividend per shares shall be disclosed	1
IAS 1:112(c)	The basis of FSs preparation and specific accounting policies	1
IAS 1:113	Information required by IFRS but not presented in FSs	1
IAS 1:117	Additional information necessary for FS users understanding	1
IAS 1:117(a)	Present the notes in a systematic form	1
IAS 1:121	Accounting policies' disclosure shall include	A
IAS 1:122	Measurement basis and Other accounting policies relevant to understanding on FSs	1
IAS 1:125(a,b)	Disclose accounting policies which are even not required by IFRS	1
IAS 1:131	Beyond the accounting policies and estimations, the significant judgements shall be disclosed	1
IAS 1:135(a)	In relation to assets and liabilities, the detailed information on their nature and carrying amount	1
IAS 1:135(b)	Disclose the key assumptions that effects on specific asset and liability	1
IAS 1:135(c)	Qualitative information about entity's objectives, policies, and processes for managing capital	A
IAS 1:135(d)	The description on capital	1
IAS 1:135(e)	If there is externally imposed capital, disclose the requirement and its effect	1
IAS 1:136	How entity is meeting the capital management objectives	1
IAS 1:136A	Quantitative data on managed capital	1
IAS 1:137(a)	Any changes in capital	1
IAS 1:137(b)	Statement if the entity has complied with externally imposed capital requirement	1
IAS 1:138(a)	If not complied with the requirement, state the consequence from non-compliance	1
IAS 1:138(b)	If the capital requirement disclosure succinct is not enough for understanding of capital resources, entity shall disclose separate information for each items	1
IAS 1:138(c)	Equity class puttable financial instruments shall be disclosed for: summary of quantitative data, objective, policy processes for managing, expected cashflow on redemption/repurchase, and the method of calculating the cash flow.	1
IAS 1:137(a)	Entity's dividend declared before the FSs were authorized for issue, but not recognized as distribution	1
IAS 1:137(b)	Cumulative amount of preference dividend not recognized	1
IAS 1:138(a)	Domicile, legal form of the entity, country of incorporation, registered office address,	1
IAS 1:138(b)	Nature of business operations	1
IAS 1:138(c)	Principal activities, name of parent company	1
	Total	**53**
IAS 2:36(a)	Accounting policies on inventories measurement, inc. cost formula	1

IAS 2:36(b)	Inventories' total carrying amount	1
IAS 2:36(b)	Carrying amount of each class inventories	1
IAS 2:36(c)	Carrying amount of inventories carried at FV less costs to sell	1
IAS 2:36(d)	Amount of expensed inventories	1
IAS 2:36(e)	Amount of written down inventories	1
IAS 2:36(f)	Amount of any write down reversals	1
IAS 2:36(g)	Reasons for write reversals	1
IAS 2:36(h)	Pledged inventories' amount for liabilities	1
	Total	**9**
IAS 7:40	With regards changes in ownership interests in subsidiaries	A
IAS 7:40(a)	Total consideration paid or received	1
IAS 7:40(b)	Cash and cash equivalent consideration	1
IAS 7:40(c)	The amount of cash and cash equivalent in subsidiaries	1
IAS 7:40(d)	The amount of assets and liabilities in subsidiaries, in a summary	1
IAS 7:44B	In case of changes in liabilities in relation to financing activities, disclose: changes arising from financing cash flows, changes made in relation to control on subsidiaries; effect of changes in forex rate, changes in FV	1
IAS 7:45	Components of cash and cash equivalent	1
IAS 7:46	Policy on determining cash and cash equivalent composition	1
IAS 7:48		1
	Total	**8**
	Regarding the initial application of a standard	A
IAS 8:28(a)	Title of IFRS	1
IAS 8:28(b)	Changes in accounting policies with regards new application	1
IAS 8:28(c)	Reason for change in accounting policy	1
IAS 8:28(d)	Description of transitional provisions	1
IAS 8:28(e)	Description that transitional provision potential to effect future periods	1
IAS 8:28(f)	Current and prior period adjustments for each FS line item; and basic and diluted earnings per share	1
IAS 8:28(h)	If prior period adjustment is impracticable, state the reason	1
IAS 8:29(a-e)	In case of voluntary change in accounting policy, disclose: Nature of change, reason for change, FS line items affected and EPS, adjustment relating to prior periods, if adjustment is impracticable state the reason	1
IAS 8:30(a,b)	In case of newly issued but not yet effective IFRS is not applied by entity, disclose: the fact, possible impact of new IFRS in entity's FSs	1
IAS 8:39	In case of change accounting estimate, disclose the nature and amount of change in current and future periods	1
IAS 8:40	If the amount on future effect is impracticable, disclose the fact	1
	In case of correcting prior period errors, following shall be disclosed	A
IAS 8:49(a)	Nature of prior period error	1
IAS 8:49(b)	FS line items effected, basic and diluted EPS	1
IAS 8:49(c)	The amount of correction at the b/f of earliest period presented	1

IAS 8:49(d)	In case of retrospective restatement is impracticable, disclose the reason	1
	Total	**15**
IAS 10:13	Dividend declared after the reporting period but before the FSs issuance	1
IAS 10:17	Disclose the date of FSs are authorised and responsible bodies who have authorized	1
IAS 10:17	Disclose the bodies who has a power to amend FSs after the issuance	1
IAS 10:21	In case of non-adjusting events after reporting:	A
IAS 10:21(a)	Disclose the nature of event	1
IAS 10:21(b)	Financial effect estimate or reason for impracticability of estimate	1
	Total	**5**
	In case if company has any construction contract:	A
IAS 11:39(a)	Disclose the amount of contract revenue recognized at FSs	1
IAS 11:39(b)	Contract revenue determining method	1
IAS 11:39(c)	Stage of completion of un finished contracts calculation method	1
IAS 11:40(a)	Accumulation of costs incurred and recognized profits to date	1
IAS 11:40(b)	Amount of prepayments received	1
IAS 11:40(c)	Amount of retentions	1
IAS 11:42(a)	Amount due from customers under asset	1
IAS 11:42(b)	Amount due to customer under liability	1
IAS 11:45	Disclose contingent liabilities and assets as per IAS 37	1
	Total	**9**
IAS 12:79	Disclose key components of tax expense/income separately	1
IAS 12:81(a)	Equity items related current and deferred tax aggregations	1
IAS 12:81(ab)	Amount of income tax for each component of OCI	1
IAS 12:81(c)	With regards profit tax adjustments: applicable tax rates computed, basis of applicable tax rate calculated	1
IAS 12:81(d)	Changes in tax rate	1
IAS 12:81(e)	Amount and expiration of deductible temporary differences and unused tax loss/credit	1
IAS 12:81(f)	Aggregate amount of temporary differences in invested entities: subsidiaries, joint ventures/associates	1
IAS 12:81(g)	Regarding unused tax losses/credits and temporary difference: the amount of deferred tax assets	1
IAS 12:81(h)	Regarding discontinued operations, disclose tax expense relate to: gain/loss of discontinuance, profit/loss from ordinary activities from the discontinued operation	1
IAS 12:81(i)	Regarding dividend declared between after the financial y/e and FS issuance, disclose the amount of income tax consequence	1
IAS 12:81(j)	Regarding business combination, if deferred tax benefit of acquired entity is not recognized at the inception, disclose the reason for subsequent recognition	1
IAS 12:81(k)	Disclose the amount of deferred tax asset, and nature of evidence for recognition	1
IAS 12:82(a)	Disclose if any current/prior period loss happened in relation to deferred tax asset in respect of tax jurisdiction	1
IAS 12:82(b)	Disclose tax related contingent liabilities/asset as per IAS 37	1

IAS 12:88	Disclose any changes in tax rates or laws which effect on current/ and deferred tax assets/liabilities	1
	Total	**16**
	Regarding each class of PPE	A
IAS 16:73(a)	Carrying amount determination basis	1
IAS 16:73(b)	Method used for depreciation	1
IAS 16:73(c)	Useful lives and depreciation rates	1
IAS 16:73(d)	B/f and c/f of carrying amount, accumulated depreciation	1
IAS 16:73(e)	Breakdown of carrying amounts: additions, assets held for sale/ classified into disposal group, acquisitions through business combination, increase/decrease in revaluation, exchange differences	1
IAS 16:74(a)	Description on pledged assets as a security for liabilities	1
IAS 16:74(b)	Expenditures recognized in carrying amount of PPE in relation to construction	1
IAS 16:74(c)	Contractual commitment amount for acquiring PPE	1
IAS 16:74(d)	Amount of compensation from third parties in relation to impairment, loss for PPE	1
IAS 16:76	Separately disclose the effect on PPE from changes related to IAS 8	1
IAS 16:77	Regarding revalued asset, disclose following:	A
IAS 16:77(a)	Revaluation date	1
IAS 16:77(b)	If the revaluation was undertaken by independent valuer	1
IAS 16:77(e)	For revalued assets, disclose the carrying value as if cost model was applied	1
IAS 16:77(f)	Regarding revaluation surplus, disclose if any restriction of balance distribution to shareholders	1
IAS 16:78	Description on impaired PPE	1
IFRIC 1:6(d)	Disclose any change incurred in relation to revaluation surplus	1
	Total	**16**
	Regarding lessee under finance lease arrangement	A
IAS 17:31(a)	Carrying amount of each class of asset	1
IAS 17:31(b)	Reconciliations in calculating lease payments	1
IAS 17:31(b)	Lease payments related to: within 1 year, between 1 and 5 years, and more than 5 years	1
IAS 17:31(c)	Contingent rents expensed for the period	1
IAS 17:31(d)	Expected sub-lease payments in relation to non-cancellable contracts	1
IAS 17:31(e)	Lessee's material arrangement including: basis of contingent payables determined, if the contract will be renewed, if any restrictions imposed	1
	Regarding lessee under operating leases:	A
IAS 17:35(a)	Non-cancellable operating lease related future minimum lease payments to be disclosed for: within 1 year, between 1 and 5 years, and after 5 years	1
IAS 17:35(b)	Expected sub-lease payments in relation to non-cancellable contracts	1
IAS 17:35(c)	Payments recognized as an expense for the period	1
IAS 17:35(d)	Description of leasing arrangement: basis of determining contingent rent, if the contract will be renewed, if any restrictions imposed	1
IAS 17:36	Regarding lessor under finance lease arrangement	A

IAS 17:47(a)	Reconciliations in calculating lease payments	1
IAS 17:47(a)	Lease payments related to: within 1 year, between 1 and 5 years, and more than 5 years	1
IAS 17:47(b)	Un-received finance income	1
IAS 17:47(c)	Unguaranteed residual values relevant lessor's benefit	1
IAS 17:47(d)	Lessee's material arrangement including: basis of contingent payables determined, if the contract will be renewed, if any restrictions imposed	1
IAS 17:47(e)	Contingent rents income for the period	1
IAS 17:47(f)	Description of leasing arrangement	1
	Regarding lessor under operating leases:	A
IAS 17:56(a)	Non-cancellable operating lease related future minimum lease payments in total	1
IAS 17:56(a)	Non-cancellable operating lease related future minimum lease payments to be disclosed for: within 1 year, between 1 and 5 years, and after 5 years	1
IAS 17:56(b)	Contingent rents income for the period	1
IAS 17:56(c)	Description of leasing arrangement: basis of determining contingent rent, if the contract will be renewed, if any restrictions imposed	1
SIC-27:10(a)	Regarding sale and leaseback transaction	A
SIC-27:10(b)	Description of such arrangement	1
	Accounting method applied	1
	Total	**23**
IAS 18:35(a)	Accounting policy on revenue recognition	1
IAS 18:35(b)	Amount of revenue for each significant category: Revenue from sale of goods, service, interest, royalties, dividends	1
IAS 18:35(c)	Amount of revenue recognized in relation to barter	1
	arrangement **Total**	**3**
IAS 19:43	Regarding the post-employment benefit provided by state plan	A
IAS 19:151(a)	Related party transaction with post-employment benefit providers	1
IAS 19:151(b)	Post-employment benefits planned for key management personnel	1
	Total	**2**
IAS 21:52(a)	Amount of recognized forex differences in P/L	1
IAS 21:52(b)	Amount of forex differences recognized in OCI, and reconciliation amount at b/f and c/f	1
IAS 21:53	In case of presentation currency differs from functional currency, disclose: the fact, functional currency, reason for the difference	1
	Total	**3**
IAS 23:26(a)	Amount of capitalized borrowing cost	1
IAS 23:26(b)	Method on determining amount of borrowing cost	1
	Total	**2**
IAS 24:13	In case of parent and ultimate controlling party are not preparing consolidated FSs, disclose the name of next senior parent that does so	1
IAS 24:14	Regardless of transaction happened or not, disclose the related party relationship when control exists	1
IAS 24:17	Total compensation provided to key management	1

IAS 24:17A		
	The disclosure shall include	A
IAS 24:17(a)	Short term benefits	1
IAS 24:17(b)	Benefits for post-employment	1
IAS 24:17(c)	Benefits for other long term benefits	1
IAS 24:17(d)	Benefits on contract termination	1
IAS 24:18	In case of related party transaction occurred, disclose:	A
IAS 24:18(a)	Nature of relationship	1
IAS 24:18(b)	Description of transaction and outstanding balances	1
	With regards, outstanding balances on related party transaction	A
IAS 24:18(a)	Transaction amount	1
IAS 24:18(b)	Terms and conditions, and if any guarantee agreed	1
IAS 24:18(c)	Provisions for doubtful debt on outstanding balance	1
IAS 24:18(d)	Any bad or doubtful debt recognized	1
IAS 24:18A	Amounts paid for key management personnel services provided by different management entity	1
IAS 24:19	Related disclosure shall indicate the involved party	1
	Total	**15**
IAS 27:16(a)	Disclose the fact that FSs are separate FSs and exempted from consolidation	1
IAS 27:16(b)	Description of significant subsidiaries, joint ventures/associates, including: Name of investee, domicile, and proportion of ownership	1
IAS 27:16(c.)	Accounting method used for investment	1
IAS 27:16A	The fact that separate FSs are only FS of the parent	1
	Total	**4**
IAS 33:64	With regards the changes in number of ordinary shares, disclose the fact that EPS calculation reflect the change	1
IAS 33:69	Disclose the basic and diluted EPS Amounts	1
IAS 33:70(a)	to calculate basic and diluted EPS	1
IAS 33:70(b)	Weighted average number of share used for calculation	1
IAS 33:70(c)	Potential arrangements that could dilute basic EPS	1
IAS 33:70(d)	Ordinary share transaction incurred after reporting period, which could have significantly affect the number of outstanding shares	1
	Total	**6**
	For each class of provision:	A
IAS 37:84(a)	Carrying amounts at b/f and c/f	1
IAS 37:84(b)	Additions made on provision	1
IAS 37:84(c)	Amounts used	1
IAS 37:84(d)	Reversal on unused amounts	1
IAS 37:84(e)	Effect of change in discount rate and change in discounted amount	1
IAS 37:85(a)	Summarized description of obligation nature, expected timing of outflows	1
IAS 37:85(b)	Uncertainties attached to amount and timing of outflow	1
IAS 37:85(b)	Major assumptions made about future	1
IAS 37:85(c)	events Expected reimbursement amount	1

	Regarding each class of contingent liability unless insignificant	A
IAS 37:86	Summarized description on nature	1
IAS 37:86(a)	Estimate of financial effect	1
IAS 37:86(b)	Uncertainties attached to amount and timing of outflow	1
IAS 37:89	Regarding contingent assets, where the economic benefit inflow is probable	A
IAS 37:89(a)	Summarized description on nature	1
IAS 37:89(b)	Estimate of financial effect	1
	Total	**14**
a	For each class of intangible assets:	A
IAS 38:118(a)	Disclose if useful lives are indefinite or finite	1
IAS 38:118(a)	Useful lives and amortisation rates	1
IAS 38:118(b)	Amortisation method	1
IAS 38:118(c)	Carrying amount and accumulated amortisation b/f and c/f	1
IAS 38:118(d)	Line items where amortisation included	1
IAS 38:118(e)	Breakdown of carrying amounts: additions, assets held for sale/ classified into disposal group, acquisitions through business combination, increase/decrease in revaluation, exchange differences	1
A	Regarding intangible assets with indefinite life	A
IAS 38:122(a)	Carrying amount	1
IAS 38:122(a)	Reasons for indefinite useful life assessment	1
IAS 38:122(b)	For each material intangible assets, disclose the carrying amount separately	1
IAS 38:122(d)	Any pledged intangible assets, disclose the carrying amount	1
IAS 38:122(e)	Contractual commitment to purchasing intangible assets	1
A	Regarding intangible assets revalued	A
IAS 38:124(a)	For each class, disclose effective date of revaluation, carrying amount and also if cost method applied, the carrying amount	1
IAS 38:124(b)	Revaluation surplus b/f and c/f, changes, restrictions attached	1
IAS 38:126	Total amount of expensed research and development expenditure costs	1
	Total	**14**
IAS 41:40	Total gain/loss related to initial recognition of biological assets and agricultural produce and the change in FV less costs to sell	1
IAS 41:41	Description of each biological asset group	1
IAS 41:43	Basis for differentiate between consumable/bearer biological assets or mature/immature	1
IAS 41:46(a)	Nature of each biological assets involved activities	1
IAS 41:46(b)	Physical quantity estimate and non-financial indicators	1
IAS 41:49(a)	Carrying amount of pledged biological assets	1
IAS 41:49(b)	Regarding development or purchase of biological asset, disclose the amount of any commitment	1

IAS 41:50(a-g)	Breakdown of changes: gain/loss related to FV less cost to sell, increases through purchase and business combination, decrease due to sale or held for sale classification and harvest, and exchange difference in relation to forex translation	1
IAS 41:54 (a-f)	Regarding biological assets with impracticable to calculate FV: description of asset, reasons, depreciation method, useful lives, carrying amount	1
IAS 41:55	Regarding biological assets measured at cost less accumulated depreciation/impairment losses, disclose: gain/loss recognized on sale, any reconciliations made-impairment, reversal, and depreciation	1
IAS 41:56	Regarding biological assets which measurement basis has changed: description of asset, reasons for measurement change, effect of change	1
	Total	**11**
	Grand Total	**31 8**

Appendix E. List of publications

Journal articles

Bolortsogoo, N., 2017. Review on listed companies' transparency at Mongolian Stock exchange. Journal of economics and working capital. [online] Available at: http://eworkcapital.com/review-on-listed-companies-transparency-at-mongolian-stock-exchange/

Bolortsogoo, N., 2017. Examination of financial reporting quality and informativeness from the perspective of accounting restatement: Evidence of Mongolian Stock Exchange listed companies. Journal of the accounting theory and practice, Vol.1, No.3, pp.59-71. The paper is also published on SSRN. Available at:<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3164846>.

Bolortsogoo, N., 2018. The role of financial reporting in reducing information asymmetry. Tax & Business, Vol.III, No.1, pp.19-27. ISSN2519-1918.

Bolortsogoo, N., 2018. The role of financial reporting in reducing information asymmetry. In: Accounting department of Business School, National University of Mongolia, *International conference on accounting, auditing, and valuation (ICAAV)*. Ulaanbaatar, Mongolia 11 May 2018.

Bolortsogoo, N., 2018. Financial reporting quality: Review on factors and measurements. In: University of Pecs, *Ferenc Farkas International Scientific Conference (FFISC)*. Pecs, Hungary 7-8 June 2018.

Bolortsogoo, N., 2018. Firm-level variables and mandatory disclosure on information asymmetry. In: Bandirma Onyedi Eylul University, II International Symposium on Economics, Finance and Econometrics *(ISEFE)*. Istanbul, Turkey 6-7 December, 2018.

Bolortsogoo, N., and Battuya.D., (2019). Financial reporting quality measurements: A review paper. Journal of accounting theory and practice, June, Vol.3, No.1, pp.1-9.

Bolortsogoo, N., and Battuya.D., (in press). Firm-level variables' impact on voluntary disclosure: Mongolian stock exchange case. Asia-Pacific Journal of Business & Commerce.

Conferences presentations

Bolortsogoo, N., 2018. Financial reporting quality: Review on factors and measurements. In: University of Pecs, *Ferenc Farkas International Scientific Conference (FFISC)*. Pecs, Hungary 7-8 June 2018.

Bolortsogoo, N., 2018. Firm-level variables and mandatory disclosure on information asymmetry. In: Bandirma Onyedi Eylul University, II International Symposium on Economics, Finance and Econometrics *(ISEFE)*. Istanbul, Turkey 6-7 December, 2018.