

# THE IMPACT OF DISCLOSURE OF THE FINANCIAL STATEMENTS AT THE LEVEL OF INFORMATION ASYMMETRY BETWEEN INVESTORS: AN EMPIRICAL STUDY ON THE COMMERCIAL BANKS IN JORDAN

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## ABSTRACT

*The aim of this study is to determine the impact of periodic disclosure of financial statements of commercial banks of Jordan listed in Amman Stock Exchange (ASE) on the level of information asymmetry between investors in the bank's shares during 2016-2017. The study is based on a sample of all (13) Jordanian commercial banks listed on ASE. The study used the daily trading data for these banks for the years 2016 and 2017. The study used three independent variables include periodic disclosure, trading volume and market value per share. While the dependent variable includes asymmetric information calculated by the daily difference between best purchase order and best offer for sale the share divided by the average daily rate. The results of the statistical analysis of the study variables found a negative, with statistically significant, impact of the periodic disclosure of the financial statements of Jordanian commercial banks on the level of information asymmetry between investors in banks' shares. The results also showed a negative and significant effect of the trading volume on the level of information asymmetry, while the market value per share has a positive and significant effect on the information asymmetry. The study emphasizes the importance of periodic disclosures and their direct effects on reducing the level of information asymmetry between investors and in raising the financial market efficiency. It recommends policy makers and financial market authorities in Jordan to introduce more frequent disclosure regime, which help investor to get more timely information, and thus reducing information asymmetry.*

**Keywords:** Commercial Bank, Amman Stock Exchange, Jordan.

## INTRODUCTION

Accounting is defined as the process of identifying, measuring and delivering economic information in such a way that users of this information can make decisions (Weygandt et al., 2005). Accounting information is delivered through the financial statements to the various information users, including stakeholders with the organization, either directly or indirectly, including the company management, current and anticipated shareholders, creditors, government bodies, especially tax services, employees, suppliers, and clients.

Accounting information is one of the most important information that investors rely on in stock markets. Therefore, global financial markets give great importance to the preparation and periodic dissemination of such information to investors. Any defect in this information leads to information asymmetry available to investors, which contributes to low efficiency of the financial market and is directly reflected in stock prices (Al-Shabib & Al-Jabbouri, 2005).

It is supposed that the disclosure of the corporate financial statements should provide similar information to all parties and to reduce or remove any discrepancy of information among the investors. The information asymmetry is defined, in general, as the disparity and divergence in the information available to the owners of different stakeholders in the company, investors, creditors, management and others. It is also defined as the incomplete or inadequate information and the amount of variation in the volume of information available to the various parties involved in the transactions and does not place them on an equal footing in the processing of transactions (Wang et al., 2011). (Brown & Hillegeist, 2007) and (Chang et al., 2008) pointed out that the asymmetry of information occurs when some investors obtain private information, while other investors have only the information available to the public.

The separation between the ownership and management in public shareholding companies has contributed to a conflict of interest between investors and managers. As the management has more information than investors do on the company, this may increase the information asymmetry, either between management and investors, or between Investors themselves (Nel et al., 2018).

In the light of the foregoing, due to the significant importance of accounting disclosure and its expected role in reducing the asymmetry of information between investors. In order to enhance the efficiency of the financial markets, the financial markets worldwide are interested in the periodic and regular disclosure of corporate financial statement. They have developed instructions, rules and regulations govern the accounting disclosure, showing the basic contents of the corporate financial report, and the dates of disclosure. In this regard, Jordan Securities Commission issued the disclosure instructions for exporting companies, accounting standards and auditing standards for the year 2004 and its amendments until 2018. These instructions and amendments included many requirements relating to disclosure of financial information by companies.

### **Study Problem**

The problem study is the blurred role and impact of accounting disclosure on information asymmetry between investors. Although most researchers, such as (Rajgopal & Venkatachalam, 2011) found that there is an inverse relationship between the level of disclosure and the asymmetry of information. Since accounting disclosure contributes to reducing the information asymmetry, but practically, investors' response to the information published in the financial statements vary according to their different trends and investment objectives. It also varies according to their assessment of the impact of that information on the value of the company's share.

Disclosure of the direct impact of an accounting disclosure on information asymmetry may help to assess the overall effectiveness of disclosure, in the assessment of the quality of the published accounting information, and contribute to assessing the ability of investors to read and evaluate that information. Such disclosure will also reflect the level of financial market efficiency and its speed of its response to the disclosed information. In details, this study seeks to answer the following questions:

- a. What is the impact of periodic disclosure of financial statements of Jordanian commercial banks on the level of information asymmetry between investors in banks shares?
- b. What is the impact of trading volume and the market value of the share on the level of information asymmetry between investors in Jordanian commercial banks shares?

## Hypotheses

This study tests three basic hypotheses as follows:

*H01: There is no statically statistically significant impact at significance level (5%) for the periodical disclosure of the financial statements of Jordanian commercial banks on the level of information asymmetry among investors in banks' shares.*

*H02: There is no statistically significant impact at significance level (5%) for the volume of trading of the Jordanian commercial banks' shares on the level of information asymmetry among investors in the banks' shares.*

*H03: There is no statistically significant impact at significance level (5%) for the market value of the Jordanian commercial banks' shares on the level of information asymmetry among the investors in the banks' shares.*

## LITERATURE REVIEW

Many previous studies have examined the relationship between the accounting disclosure and information asymmetry. These studies reached to different and uneven results. Perhaps the most important reasons for such difference in results are related to different metrics used for disclosure and information asymmetry, as well as the different methodology used in each study in terms of state, sample and sector.

Many of these studies have focused on the relationship between the quality of accounting disclosure and the information asymmetry, while some studies have focused on electronic disclosure and its role in reducing asymmetry of information. Other studies have addressed some aspects related to information asymmetry, such as governance, and the financial market efficiency.

Based on reviewing the previous related literatures, we can divide them into three sub categories:

### Literatures on Information Asymmetry

Previous studies on information asymmetry investigated many aspects regarding this phenomenon. For example they examined the factors that affect the level of informational asymmetry (Decourt et al., 2019), the reasons behind information asymmetry (Farhoud, 2016), the effect of information asymmetry on financial markets efficiency and capital structure (Abd, 2016; Bharath et al., 2009; Ali, 2009).

Decourt et al. (2019) aimed to build an index of informational asymmetry with market and firm proxies that reflect the analysts' perception of the level of informational asymmetry of companies. Their proposed method consisted of the construction of an algorithm based on the Elo rating and captured the perception of the analyst that choose, between two firms, the one they considered to have better information. After building the informational asymmetry index, they ran a regression model to measure the factors that affect the level of informational asymmetry of a company. They found four significant variables: coverage, volatility, Tobin q, and size.

While Farhoud (2016) examined the reasons behind information asymmetry between the management of the Economic Unit and the Parties that use accounting information, such as shareholders, to reach solutions that help to reduce this problem. The study divided the factors

that leading to information asymmetry into two types; Internal factors, which are the contradiction between the management desire to maximize its own interests and investors ones to obtain the greatest dividends of equities and external factors, which are the defects in laws and regulations. Moreover, the accountants failed to follow the standards of professional conduct. Using a questionnaire distributed to a sample of (75) accountants and professionals working in the economic units, the study found that the gaps in the accounting system affect credibility and objectivity of the accounting information of the financial statements, in addition to the existence of deficiencies in the accounting system to meet the needs of accounting information users.

Abd (2016) examined the implications of the problem of information asymmetry at the level of the financial markets, by researching the impact of information associated with investment decision-making asymmetrically distributed on the efficiency of the financial markets work. The study concluded that the information asymmetry available to investors is often reflected in the asymmetry of sellers and investors' expectations of the financial assets.

Bharath et al. (2009) tested the impact of information asymmetry on capital structure decisions in the industrial companies listed in the U.S. financial market (AMEX) during the period 1973-2002. The results of the study showed that asymmetry of information affected the funding structure of corporates, as it was found that the ratio of debt financing to organizations characterized by a high degree of information asymmetry was higher than those with a low degree of information asymmetry.

Ali (2009) examined the impact of information asymmetry on the rate of market return per share in light of the accounting reservation, based on a sample of (28) Jordanian industrial companies listed on the Amman Stock Exchange during the period 2002-2007. The study concluded that there is an important relationship between the earning per share (EPS) of the previous day, the share risk ratio and the daily trading volume on the rate of market return per share. When the information asymmetry variable was entered, the explanatory power of the model containing the four variables increases, which means that there is an important effect of information asymmetry on the market return rate per share.

Despite the importance of those studies in highlighting many aspects of information asymmetry, they did not investigate its relationship with accounting disclosure.

### **Literatures on Accounting Disclosure**

Some previous literatures on accounting disclosure focused on voluntary disclosure and its effect on some indicators such as asset pricing, cost of capital and the confidence in financial reports (Dye & Hughes, 2018; Dahdouh & Hamada, 2014). Other researchers examined the quantity of information disclosures and its effect on the efficiency (Chung et al., 2018). Some researchers examined the effect of accounting disclosure system on the quality of accounting information and thus, on information asymmetry (Mohammad, 2017).

Dye & Hughes (2018) studied a firm's manager voluntary disclosure decisions and those disclosure decisions' asset pricing, cost of capital, and information transfer effects in a model where investors trade multiple securities. They developed new asset pricing formulas when the manager makes no disclosure that imposes testable cross-equation restrictions on firms' market values. They also developed a wide array of comparative statics and obtained findings about nondisclosure's effects on investors' perceptions of uncertainty about firms' future cash flows. In addition, Dye and Hughes developed simple, interpretable expressions for firms' cost of capital and show how no disclosure by one firm generates informational externalities on other firms.

Chung et al. (2018) analyzed how the quantity of information in corporate disclosures affects the efficiency with which investors incorporate newly acquired information into stock prices. They investigated both numerical and textual levels of detail provided in 10-K disclosures. They indicated that disaggregation (numerical) quantity capturing the fineness of accounting line items, while textual quantity capturing the amount of soft or narrative information. They provided empirical support for the benefits of detailed numerical and textual corporate disclosure, as they found that both disaggregation quantity and textual quantity are associated with an overall improvement in the efficiency of information price discovery.

The study of Mohammad (2017) examined the impact of the development of the accounting disclosure system in the companies listed in the Iraq Stock Exchange by adopting modern communication systems on the enhancement of the qualitative characteristics of accounting information that would reduce the asymmetry of information. The study used a questionnaire distributed to a sample of investors and financial analysts focusing on the effectiveness of electronic disclosure. The study found that electronic disclosure has a significant role in reducing the information asymmetry because the electronic disclosure provides information in fair and equality to the investors at the lowest possible efforts and cost.

The Study of Dahdouh & Hamada (2014) aimed to test the role of voluntary disclosure in enhancing confidence in the financial reports of listed companies on the Damascus Securities Exchange. The study used the questionnaire method for collecting information, which was distributed to a sample of (76) respondents from external auditors accredited by the Syrian Commission on Financial Markets and Securities and the internal auditors of companies listed on the Damascus Stock Exchange. The study concluded that voluntary disclosure effectively contributes to enhancing confidence in the financial reports of companies on Damascus Stock Exchange, due to its effect in reducing information asymmetry among investors.

### **Literatures on the Relationship between Information Asymmetry and Accounting Disclosure**

Within the context of the current paper, many previous researches investigated the relationship between information asymmetry and accounting disclosure. However, many of those studies did not analyze the direct interaction between the two variables, rather than they examined the relation through moderators or indirect proxies or measures, or they used specific form of disclosure to measure its impacts on certain characteristics and features of information asymmetry.

Gong (2019) analyzed the voluntary disclosure and fair disclosure in a persuasion game in which there are incentive misalignment and information asymmetry between the manager and investors. He concluded that when the incentive misalignment and information asymmetry are both sufficiently small (great), the manager and investor both prefer the fair disclosure (voluntary disclosure) regime. He also indicated that if the information asymmetry and incentive misalignment are intermediate, the manager prefers the voluntary disclosure regime and the investor prefers the fair disclosure regime. While if the market size of large investors is sufficiently large, the small investors prefer the fair disclosure regime.

Cheyne & Levine (2019) modelled an information mosaic in which multiple signals gathered by an informed trader and the other publicly disclosed by the manager of the firm, are combined to estimate firm value. They indicated that under testable conditions, voluntary disclosures lead to higher ex-ante information asymmetry and expected profits for the informed trader by allowing him to refine his trading strategy and complete his information mosaic. They

found that the informed trader's ability to combine information and enhance his advantage is more prevalent when there is more uncertainty about whether the news is favorable or unfavourable, the manager is more likely to be informed, and the manager's information is precise (i.e., disclosure quality is high).

The study of Campbell et al. (2018) examined the effect of the additional disclosure of information asymmetry. The study indicated that one of the reasons that push the companies to enter into new companies is the increase of company's value by limiting the information asymmetry among the shareholders according to information hypothesis. The study also discussed the additional disclosure presented by the companies prior to entering into new companies that may reduce information asymmetry and increase the company's value. This is not the sole and basic reason for the additional disclosure by the companies, which reflects the weakness of information hypothesis to explain the relationship.

The study of Rashwan (2018) tested the impact of the electronic disclosure of financial information on the efficiency of the Palestinian capital market, relying on the questionnaire tool, which was distributed to a sample of (172) respondents from financial managers and chiefs of departments working for the companies listed on the Palestine stock exchange. The study found that the use of e-disclosure by companies contributed to increasing investors' understanding of the financial reports and increased the volume of investment on the Palestine Exchange Stock.

The study of Al-Dawi & Ghareeb (2017) aimed to test the relationship of the stock market efficiency with accounting information under corporate governance. The study indicated that the information is the mainstay of the efficiency of the financial market, which is achieved by disclosing all information about companies in a timely manner. The study also indicated that the information asymmetry leads to reduction of trading volume, increased liquidity costs and a widening of the margin between buying and selling prices. The study concluded that the application of corporate governance principles leads to the timely provision of all corporate information and disclose such information, which increases the efficiency of the market and reduces information asymmetry.

Beshkooch et al. (2015) aimed to test the impact of the quality of corporate disclosures on the level of information asymmetry, relying on a sample of (70) public shareholding companies listed on Tehran Stock Exchange. The study also analyzed the quality of the disclosures of these companies and classified them into ranks or grades according to the quantitative characteristics of the financial reports and comparing them with the ranks issued by the Tehran Stock Exchange. The study concluded that there is an important relationship between the rank of quality of disclosures issued by the Tehran Stock Exchange and the information asymmetry, which reflects the fact that the quality of the disclosures is deemed an important and influential factor in the asymmetry of information.

Russell (2015) aimed to test if the companies that have a significant information asymmetry disclose more information continuously and to know if continuous disclosures reduce the asymmetry of information. The study found that companies, which suffer from information asymmetry, seek to disclose more information, but disclosure in the existence of a high level of information asymmetry would increase the asymmetry rather than reduce it. The study also found that the disclosure of good and bad news for the company reduces information asymmetry. Khaled (2015) tested the role of periodic financial reports of Egyptian companies in reducing the information asymmetry in the Stock Exchange, and tested the extent of investors' reliance on periodic reports on investment decision-making. He used the questionnaire to collect data of his study and hypothesis testing. The study found that the periodic financial reports are important,

especially in providing timely and regular accounting information. The study reached several manners to reduce the information asymmetry; the most important manners are the expansion of accounting disclosures, periodic financial reports, and activating the role of regulators and professionals.

The study of Gohnim (2013) aimed to test the impact of electronic disclosure and its role in reducing information asymmetries, based on the survey of financial analysts, brokers and users of financial statements in the Egyptian Financial Market. The study concluded that electronic disclosure has an important impact in increasing transparency, reducing information asymmetries, and providing information in a timely manner. This contributes to the efficiency of the financial market as a whole.

Ajward & Takehara (2012) tested the relationship between profit quality and the degree of information asymmetry based on a sample of 1450 companies listed on the Nikkei Stock Exchange in Japan during the period 1997-2008. The results of the study showed that the correlation between the quality of profits and the level of information asymmetry might be negative or positive as it depends on the profit quality measure used.

Al-Shawawreh & Al-Dehyat (2010) tested the role of published financial statements of Jordanian public shareholding companies in increasing the degree of information symmetry and parity between agents and clients. The study used two measurements of information asymmetry; the first was the variation of stock prices before and after the publication of the financial statements, and the extent of the difference between the highest price and the lowest price per share during a day divided by the opening price of the share. The study concluded that the items contained in the Jordanian Companies Law and the Securities Exchange law are not sufficient to reduce the phenomenon of leaking internal information, with the increasing likelihood of leaking part of private information to certain investors only on the Stock Exchange. The publication of financial statements of Jordanian companies and the accounting information contained therein does not decrease the information asymmetry on the ASE after publication compared to what was the case prior to publication.

Based on the above, the current paper adds to the vast growing literatures by introducing a developed methodology to test the direct effect of accounting disclosure on information asymmetry. It depends on the disclosure of the annual, semi-annual and quarterly financial statements of Jordanian commercial banks listed on the ASE on information asymmetry among investors. It also uses a set on explanatory variables that may affect information asymmetry.

## **THEORETICAL ASPECT OF THE STUDY**

### **Information Asymmetry**

The information asymmetry emerged in 1970s, especially after the economist Akerlof had won the Noble Prize in 1970 on his famous research “The Market for Lemon: Quality Uncertainty and Market Mechanism”. He presented in his research the concept of information asymmetry between buyers and sellers of used cars market and the role of low quality used cars in removing the high quality used cars from the market (Obeid, 2008).

Akerlof explained the framework of information asymmetry concept between the seller and buyer as a situation in which a person or group possesses information on a particular subject that was more or less than the information possessed by another person or group on the same subject. Thus, the concept of information asymmetry means the quantity and quality of

information available to a particular party on specific subject may differ from the information available to the other party (Huany & Chang, 2006).

The previous literature (Brown & Hillegeist, 2007; Drobetz et al., 2010; Maskara & Mullineaux, 2011) contains various definitions of asymmetry of information. A study (Aboody & Lev, 2000) indicated that the asymmetry of information occurred in the event that a party exploited the existence of some gaps in the conventions or contracts, while others could not. (Paprocki, 2004) defined information asymmetry as the acquisition of information by the management or the internal parties about the current and future economic performance of the company more than external parties such as investors, creditors, analysts and others. (Ali, 2009) defined information asymmetry as a situation in which an investor or more has private information about the value of the company or the share, while other investors have public possessed information about the company. (Lu et al., 2010) defined asymmetry of information as the phenomenon of inconsistency and uneven information in the market. Certain party may possess certain information not available to another party who needs the same information. Such situation will result to limiting the ability of the parties who do not possess the information to perceive the economic position of the organization in the market.

Based on the above, the concept of information asymmetry can be summarized as a phenomenon that occurs when certain party possesses information that is not available to the other parties in the market. Such situation creates a state of divergence about the value of the security, contributes to reducing the volume of trading on the security and cause reduction in its liquidity. Thus, it contributes to weakening or reducing the efficiency of the financial market as a whole.

Asymmetric information involves many effects and negative repercussions that their effects would be reflected on the corporates and financial market as a whole (Al-Shawawreh & Al-Dehyat, 2012). At the company level, the information asymmetry leads to a high cost of funding the company due to insufficient information and high uncertainty among investors, which increases the rate of return required on investment in the company's shares (Hughes & liu, 2007). The high level of information asymmetry may also contribute to the greater use of the available information possessed by the management at the expense of shareholders (Knill et al., 2007). At the level of the financial market as a whole, the information asymmetry leads to lowering the financial market liquidity, reduction its efficiency, weakening pricing efficiency, reducing the volume of trading resulting from the reluctance of investors who do not possess trading information (Matoussi et al., 2004).

Many researchers mentioned a range of implications of information asymmetry, including the fact that the information asymmetry increases the transactions cost, which leads to higher rate of return required (Cataldo, 2003). It also leads to the generation of extraordinary dividend by the some investors who have private information, and negatively affects all dealers with securities market (Duarte, 2008). The information asymmetry also increases the funding cost on the company and contributes to the reduction of market liquidity due to the decrease in the number of transactions occur in the financial market (Obeid, 2008).

On the other hand, financial and accounting literature has included many metrics that can be used to measure the level of information asymmetry in the financial markets. The study of (Ping, 2003) has divided the information asymmetry metrics into three main classifications. Market metrics, which are based on the calculation of the difference between the best-selling offer and the best purchase, order (Bid-Ask Spread). The company metrics related to the asymmetry of information about the value of the share, such as fluctuation of prices, trading



volume, company size, liability ratio etc. or information related to the existence of private information with some traders. Finally, metrics based on analysts' forecasts of profits. (Ping, 2003).

The study of (Yusuf & Summaya, 2017) listed a set of metrics to measure the asymmetry of the variables, including the following:

- a. Trading Volume: the volume of the trade can express the degree of information asymmetry because the desire to trade is related to the availability of appropriate information to all dealers. According to (Chi and Wang, 2011), the lack of access to information by all dealers in the stock market may lead to the reduction of dealers who do not have information, which means a low volume of trading.
- b. Internal investors' profits: the higher the profits of the internal investors indicate that they have information that is unavailable to the rest of the investors. This reflects a situation of high level of information asymmetry (Frankel & Li, 2004).
- c. Price range (Bid-Ask Spread): the higher the difference between the higher purchase order and lowest sale offer, the higher the information asymmetry. In case the same information is available to the investors in the market, the difference between the highest and lowest price will be reduced.
- d. Financial analyst forecasts: There is an inverse correlation between the accuracy and consistency of financial analyst forecasts and the asymmetry of information. The higher profits achieved at the end of the year are close to the forecasts of financial analysts indicates a low level of asymmetry of information.

### **Agency Theory and Information Asymmetry**

The problem of information asymmetry is closely correlated to the nature of public shareholding companies based on the idea of the agency. The public shareholding company is a system of integrated and conflicting contractual relationships between a group of parties, including shareholders and management of the company (Al-Shawawreh & Al-Dehyat, 2012).

The Agency's theory expresses a range of contractual relationships through which a relationship is established between two parties, so that one them (the agent) represents the other (the principal) in certain matters, in whole or in part, as the first party gives the second party specific authorities (Schroeder et al., 2011).

The agency's relationship has led to a multiplicity of parties involved in the company, giving the room for the conflict of interest to exist between these parties, which are called Agency Conflict. Agency Conflict causes the possession of certain information about the company by some parties more than other parties that cause's information asymmetry between the parties. According the study of (Saltaji, 2013), the information asymmetry is one of the most important reasons of conflict of interest between the shareholders and the management, because the shareholders do not have the complete information available to the management, causing to information asymmetry between shareholders and the management. Moreover, it gives the management the opportunity to exploit such information to achieve their personal interests at the expense of the shareholders.

The information asymmetry between the parties of the Agency Contract (the principal and agent) is one of the most important reasons that generate two problems, which impede maximization of benefits to both parties. The moral hazard issue that was occurs at the completion of the transaction and adverse selection that occurs prior to the completion of a transaction (Stiglitz, 1981). The moral hazard issue is a state that encourages the agent to maximize its own benefits at the expense of the other party (Kotovitz, 1987). The adverse selection issue is the company's shares that are traded by investors who have private information according to information possessed, which enables them to achieve abnormal profits and higher than profits achieved by other investors (Brown & Hillegeist, 2006).

(Akerlof, 1970) addressed the problem of adverse selection in his study on the used car market. It pointed out that buyers could not differentiate between good used cars and bad used cars. Furthermore, buyers know the ability of sellers to deceive them and sell low quality cars at the same price as high quality, so buyers will be enforced to follow adverse behavior; that is a price offer below the fair value of good used cars (because they anticipate that they would be deceived). Therefore, the negotiable value of good used cars will decrease from their fair value, the high quality cars owners will reject to sell at such price, while the owners of low quality cars will accept it. Thus, the market of used cars will be transformed into a market for the trading low quality cars (Akerlof, 1970).

According to (Cohen & Dean, 2005), the management of the organization may exploit the private information they possessed to achieve personal interests at the expense of shareholders; e.g. the management's use of its internal information in the company's securities trading operations and realizing extraordinary returns at the expense of investors in the market. The information asymmetry in the market is the essential motivation for the organization management to manage profits in order to increase profits, and thus increasing their bonuses or to influence the prices of the company's shares in the market, especially in periods when the performance of those shares is weak, or if the organization issues new shares in the market.

### **Disclosure and Information Asymmetry**

Many previous studies confirmed that the increasing disclosure of the financial statements through periodic, voluntary and electronic disclosures contribute to enhancing the information available to investors and reduces the level information asymmetry.

The study of (Campbell et al, 2018) concluded that the additional disclosures provided by the companies reduce information asymmetry. The study of (Mohammad, 2017) found that the e-disclosure plays a significant role in mitigation of information asymmetry as the electronic disclosure provides information equally to the investors, at low efforts and cost as possible. The study of (Russell, 2015) concluded that the disclosure of good and news of the company reduces information asymmetry. The study of (Khalid, 2015) concluded that it is important that the periodic financial reports, in particular in provision of accounting information, should be provided periodically, timely, regular and in modern manner. The study of (Dahdouh & Hamada, 2014) confirmed that voluntary disclosure contributes effectively in enhancing the trust in the financial reports of the companies, as well as in reducing information asymmetry among the investors. The study of (Gohnim, 2013) confirmed that the electronic disclosure has a significant impact in increasing transparency and reducing information asymmetry and providing the information on timely manner, which will contribute to increase the efficiency of the financial market as a whole.

## **DATA AND METHODOLOGY OF THE STUDY**

### **Study Community and Sample**

The study community consists of all the Jordanian commercial banks listed in Amman Stock Exchange, which were (13) banks at the end of 2017. The study sample includes all the Jordanian commercial banks that form the study community. The data of this study consists of the daily data of the Study Sample during the period 2016-2017.

## Study Model

By reviewing the methodologies used in previous studies, which examined the impact of disclosure and the published financial statements, on the information asymmetry, such as the studies of (Al-Shawawreh & Al-Dehyat, 2010; Ajward & Takehara, 2012; Beshkooh et al., 2015 and Nel et al., 2018) and in light of the objectives that the study seeks to achieve, a standard model has been developed for this study. The model tests the impact of the accounting disclosure of Jordanian commercial banks listed on the ASE, on information asymmetry among the investors in banks shares. This Model can be formulated as follows:

$$INF\_ASY_{i,t} = \beta_1 + \beta_2 DISC_{i,t} + \beta_3 TV_{i,t} + \beta_4 MV_{i,t} + \varepsilon_t$$

Whereas the  $INF\_ASY_{i,t}$  represents the information asymmetry metric in the bank (i) during the period (t).  $DISC_{i,t}$  is a dummy variable reflects the accounting disclosure of the bank (i) during the period (t). The rest of independent variables are controls, where  $TV_{i,t}$  is the daily trading volume divided on the number of bank (i) shares during the period (t).  $MV_{i,t}$  is the market value of the bank (i) share during the period (t).

## Definitions of the Study Variables

The study includes the following dependent and independent variables:

1. The dependent variable: Information Asymmetry -  $INF\_ASY$ : One of the most common measures of information asymmetry is the calculation of the difference between selling and purchase offers per share (Bid-Ask Spread). The higher the difference between the prices of selling orders and the price of purchase orders per share indicates the lack of agreement between sellers and buyers on price. It is due to the disparity or asymmetry of information between them (Nel et al., 2018). Information Asymmetry in this study will be measured by dividing the daily difference between the best purchase order and the best-selling offer divided on the daily rate per share. The daily price per share is calculated by dividing the opening price plus the closing price by 2.

$$INF\_ASY = (\text{Ask Price} - \text{Bid Price}) / ((\text{Open price} + \text{Close Price}) / 2)$$

2. Independent Variables:
  - a. Accounting Disclosure (Disclosure – DISC): many previous studies, such as (Khalid, 2015; Beshkooh et al., 2015; Mohammad, 2017; Rashwan, 2018; and Campbell et al., 2018) confirmed that the increasing disclosure of data and financial statements during the periodic, voluntary and electronic disclosures contributes to enhancing the information available to investors and reduces the level of information asymmetry. The accounting disclosure will be measured by using a dummy variable that takes zero value in the days preceding any disclosure of the bank's financial statements, and the value of (1) in the 10 days following the disclosure of the bank's financial statements. A 10-day period has been chosen based on the assumption that the market will absorb the disclosed information within a period not exceeding ten working days, so that the impact of this information will disappear after this period. This study will adopt the disclosure of the bank's annual financial statements, as well as the semi-annual and quarterly financial statements disclosed by the banks. It anticipated that this variable will adversely affect the information asymmetry.
  - b. Trading Volume (Trading Volume-TV): Trading volume is one of the important variables that affect the asymmetry of information. A study conducted by (Boujelbene & Besbes, 2012) and the study of (Bharath et al., 2009) indicated adverse relation between the trading volume and information asymmetry, so that the higher the trading volume the lower level of information asymmetry. This study will calculate the trading volume by using the natural logarithm of the daily trading volume of the

bank's share. It is anticipated that the effect of this variable will be adversely on the information asymmetry.

- c. The Market Value of the Share (Market Value-MV): Many studies have shown that the share price explains an important part of the asymmetry of information. The study of (Comerton-forde & Rydge, 2006) showed that the share price is positively correlated with the information asymmetry. The study of (Attig et al., 2006) found that the price of the stock itself summarizes the information available about the stock, and thus negatively correlated with information asymmetry. This study will use the daily closing price of the bank's share as a measure of the market value of the share.

## RESULTS OF STATISTICAL ANALYSIS

This section discusses the descriptive statistics of the study variables, and the results of the regression analysis to know the impact of periodic disclosure of Jordanian commercial banks on the information asymmetry among the investors in banks shares.

### The Descriptive Statistics

Table 1 shows the descriptive statistics of the study variables. Through the previous table, it can be noted that the daily average of the information asymmetry among investors in Jordanian commercial banks shares (INF\_ASY) was around (1.17%) during the study period. This reflects the low-level information asymmetry among investors in banks shares in general. This rate ranged from (0.0% to 13.79%), with a standard deviation of (1.14%), reflecting significant differences in the level of information asymmetry from one bank to another and from one day to another.

With regard to the daily trading volume (TV), the daily average was (4.156) logarithms or equivalent to approximately (14322) JDs. This average ranges from (1.2) JD to (10.4) million JDs, with a standard deviation of (0.924) logarithms. It is noted that there was low or weak trading volume (Thin trading), while other days marked with apparent activity in stock trading. The average daily price of Jordanian commercial banks (MV) shares was about (2.71) JDs, ranging from (0.78) dinars to (10.73) JDs, with a standard deviation of about approximately (2.31) JDs, which reflects the apparent disparity between the market prices of shares of Jordanian commercial banks and reflects the day-to-day price fluctuations of stock prices.

With regard to the periodic disclosure of Jordanian commercial Banks (DISC), which is measured by an dummy variable that takes the value of (1) in the ten days following the disclosure, and the value is (zero) in other days. The average for this variable is (0.19), which reflects that the days of disclosure formed about one fifth of the total trading period of shares. This value is a good indicator of the availability of continuous periodical disclosures of the Jordanian commercial banks.

	<b>INF_ASY</b>	<b>TV</b>	<b>MV</b>	<b>DISC</b>
Mean	0.01166	4.15599	2.71249	0.19869
Median	0.00847	4.20573	1.62000	0.00000
Maximum	0.13793	7.01812	10.73000	1.00000
Minimum	0.00094	0.06819	0.78000	0.00000
Range	0.13699	6.94994	9.95000	1.00000
Standard Deviation	0.01141	0.92442	2.31154	0.39909
Skewness	0.45374	-0.39000	1.75418	1.51123

Kurtosis	3.16492	3.48407	2.33478	0.28405
Jarque-Bera	4.4247	1.8624	9.4506	10.8425
Probability	0.10638	0.39409	0.00887	0.00442
Observations	4786	4786	4786	4786
Cross sections	13	13	13	13

## The Results of Regression Analysis

This section aims to test the impact of periodic disclosure of the Jordanian commercial banks' financial statements and other control variables on the level of information asymmetry among investors in the bank's shares. The Pooled Data Regression method will be used because it is appropriate for the nature of the data used in the study. This method is used if the data contains a time series and cross-sectoral.

Table 2 shows the outputs of the regression analysis of the study Model. Based on this table, it is noted that there is a negative and statistically significant effect of the periodic disclosure about the financial statements of the Jordanian commercial banks (DISC) on the information asymmetry among the investors in the banks' shares (INF\_ASY). This means that the periodic disclosures of the banks contribute to reducing the information asymmetry due to the additional information provided by the financial statement declared to the investors in banks shares. This result consists with what is expected and with the findings of many previous studies. For example, Campbell et al. (2018) indicated that additional disclosure might reduce information asymmetry. Rashwan (2018) indicated those e-disclosure increase investors' understanding and confidence and reduce information asymmetry. Beshkooh et al. (2015) concluded an important relationship between the quality of disclosures and the information asymmetry. Khaled (2015) found that the expansion of accounting disclosures reduces the information asymmetry. In addition to many other studies, this confirmed that disclosure reduces the asymmetry of information among investors.

The results also showed that there is a negative and statistically significant impact of the Trading Volume on the level of information asymmetry. This means that the high trading volume of the stock reduces information asymmetry. This result is consistent with what has been expected because the shares that experience active trading provide price information to the investors. Any new information will be reflected on the shares price immediately due to the high trading volume, and thus this contributes to provide symmetric information to all parties in the financial market. In contrast, shares with thin trading volume respond very slowly to any new information, thus witnessed high level of information asymmetry. This finding is also consistent with the results of previous studies, such as Boujelbene & Besbes (2012) and Bharath et al., (2009) who indicated that the inverse of the average daily trading volume positively influences the asymmetry of information. Chae (2005) pointed out that the trading volume is closely linked with various measures of asymmetric information and this volume decreases when the earnings are announced.

For the market value per share (MV), the results indicate that MV has positive and statistically significant impact on the information asymmetry. This means that the high price of share increases the information asymmetry. Although this result contradicts to expectations and to the previous studies have found, such as the study (Attig et al., 2006), which found that the price of the share is negatively correlated to information asymmetry. This result may reflect that high bid ask spread is closely related to shares with high market value rather than to shares with low market value, which is consistent with the findings of Comerton-forde & Rydge (2006).

<b>Variables</b>	<b>Coefficient</b>	<b>t-Statistic</b>	<b>Prob.</b>
<b>Constant</b>	0.02737	26.82851	0.00000
<b>DISC</b>	-0.00142	-2.60075	0.00936
<b>TV</b>	-0.00343	-14.22818	0.00000
<b>MV</b>	0.00064	6.70119	0.00000
<b>R-squared</b>	0.6135		
<b>Adjusted R-squared</b>	0.5727		
<b>Durbin-Watson stat</b>	1.9289		
<b>F-statistic</b>	102.5224		
<b>Prob (F-statistic)</b>	0.00000		
Dependent Variable: INF_ASY			
White diagonal standard errors & covariance (d.f. corrected)			
(*) Method: Pooled EGLS (Cross-section weights)			

## SUMMARY AND CONCLUSIONS

The purpose of this study was to know the impact of the periodic disclosure of the financial statements of Jordanian commercial banks listed on the ASE on the level of information asymmetry among the investors in the bank's shares during the period 2016-2017.

The results indicate that the level of asymmetry of information is relatively low among investors in Jordan's commercial banks, as reached about (1.17%) of the average daily price, despite that there is a clear discrepancy in the level of information asymmetry among investors and its fluctuation from one day to another. The results also showed a significant fluctuation in the volume of daily trading on the shares of Jordanian commercial banks, different trading from one bank to another, in addition to the fluctuation of the prices of banks shares during the study period. The results also showed continuous periodical disclosures of Jordanian commercial banks.

The results of the statistical analysis of the study variables found a negative and statistically significant effect of the periodic disclosure of the financial statements of Jordanian commercial banks on the level of asymmetry of information among investors in banks shares. This is consistent with the findings of Campbell et al. (2018); Rashwan (2018); Beshkooh et al. (2015) and Khaled (2015) who found that the expansion of accounting disclosures reduces the information asymmetry.

The results also showed a negative and statistically significant impact of trading volume on the level of information asymmetry, indicating that shares with high trading volume provide timely and symmetric information to all parties in the financial market. This finding is consistent with the results of previous studies, such as Boujelbene & Besbes (2012); Bharath et al. (2009); & Chae (2005) who indicated that trading volume is closely linked with asymmetric information.

The market value per share has a positive and statistically significant impact on the information asymmetry. This means that the high price of share increases the information asymmetry. This result suggesting high bid-ask spread are related to shares with high market value rather than to shares with low market value, which is consistent with the findings of Comerton-forde & Rydger (2006).

Based on the above, the study emphasizes the importance of the periodic disclosures and its direct impact on the level of information asymmetry among the investors and in raising the efficiency of the financial market.

The study recommends policy makers and financial market authorities in Jordan to introduce more frequent disclosure regime, such as monthly disclosure, which help investor to get more timely information about the listed companies, and thus reducing information asymmetry.

Moreover, it is highly recommended for the exchange to stimulate trading volume by taking all possible measures, especially for the shares with high market value, in order to activate price discovery mechanisms and enhance information asymmetry, which in turn lead to market that is more efficient.

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