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# The Impact of Voluntary Disclosure on Bank Profitability in The Egyptian Context

## Abstract

**Aim–**The effect of voluntary disclosure on bank profitability is investigated for the banking sector in Egypt.

**Methodology**-Data was gathered from the banks' official websites and annual reports during the period 2013 to 2019. Descriptive analysis was used to describe data. Regression analysis was used to study the relationship between the dependent variables-bank profitability-and the independent variables-voluntary disclosures-. The control variables used in testing the relationship are bank age and bank size.

**Results–**Results showed a significant relationship between voluntary disclosure, represented in corporate governance, forward-looking information, social responsibility, segment reporting, risk management and customer disclosure, and bank profitability (ROA, ROE and NIM) in the Egyptian context using regression analysis. This research sheds the light on the importance of voluntary disclosure index in improving banks profitability, which is one of the important stones for the economic development.

**Keywords:** voluntary disclosure, bank profitability, NIM, ROA and ROE

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# أثر الإفصاح الطوعي على ربحية البنوك في القطاع المصرفي المصري


## ملخص البحث

**الهدف** – يهدف هذا البحث الي دراسة تأثير الإفصاح الطوعي للشركات (المعلومات العامة، إستراتيجية الشركة، حوكمة الشركات، الأداء المالي، المعلومات غير المالية الرئيسية، المعلومات التطلعية، الإفصاح عن الموظفين، المسؤولية الاجتماعية، الإبلاغ القطاعي، إدارة المخاطر، الإفصاح عن العملاء والموردين) على ربحية البنوك (العائد على حقوق الملكية والعائد على الأصول وصافي هامش الفائدة) فى االقطاع المصرفى المصرى.

**منهجية البحث**– تم جمع البيانات من المواقع الرسمية للبنوك والتقارير السنوية خلال الفترة من ٢٠١٣ إلى ٢٠١٩.

واستخدم التحليل الوصفي لوصف البيانات وايضا لدراسة العلاقة بين المتغيرات التابعة– ربحية البنك – والمتغيرات المستقلة – الإفصاح الطوعي ومتغيرات التحكم المستخدمة في هذه الدراسة لاختبار العلاقة هي عمر البنك وحجم البنك.

**النتائج**– أظهرت النتائج علاقة قوية بين الإفصاح الطوعي للشركات وكلا من المتغيرات التالية حوكمة الشركات ، والمعلومات التطلعية، والمسؤولية الاجتماعية، وإعداد التقارير القطاعية، وإدارة المخاطر، والإفصاح عن العملاء، وربحية البنك (العائد على الأصول، والعائد على حقوق الملكية وصافي الفائدة في السياق المصري باستخدام تحليل الانحدار. يلقي هذا البحث الضوء على أهمية مؤشر الإفصاح في تحسين ربحية البنوك، والتي تعد من الركائز المهمة للتنمية الاقتصادية.


**الكلمات المفتاحية:** الإفصاح الطوعي للشركات ، وربحية البنك ، وصافي هامش الفائدة ، والعائد على الأصول ، وعائد حقوق الملكية

# 1. Introduction

Voluntary disclosure-VD is important to stakeholders because it feeds them with the much needed data, reducing doubt and allowing them to make the right economic and financial choices. In addition, the achievement of economic stability and corporate promotion of sustainable high-quality investment are promoted by the openness of voluntary disclosure (Hussein et al., 2015).

Companies may use annual reports to distribute business reports details to their stakeholders or to other interested parties, quantitative and qualitative (Barko et al., 2006). Furthermore, the quality of voluntary disclosure tends to be strongly associated with firm performance (Miller, 2002). Sound governance can thus be accomplished, and when accountability and standard of disclosure are high, the company's efficiency can be improved. On the other hand, if the level of voluntary disclosure is poor, it will be more difficult for the market to forecast firm performance (Chang et al., 2007).

VD and its dimensions were considered as a serious research field, which have attracted analytical and empirical researchers. In addition, corporate voluntary disclosure can also affect the profitability especially for the banking sector (Albassam, 2014). Banks profitability can be defined as the relationship between the profits achieved by the banks and the investments that contributed to the realization of these profits. In addition, profitability is a goal for the banks and a measure to judge their efficiency (Anbar and Alper, 2011).

The Egyptian banking sector was remarkably expanded in the mid-1970s, it was encouraged by the country and it was named the open door policy, this policy aimed at turning toward growth with the active role for the private sector to increase the promotion of economic performance. Serving the new policy, a banking law was established in 1975 defining the nature and mode of operations for all bank types. Banks operating in Egypt are classified as private and joint venture sector, or foreign banks according to the ownership public sector. Specialized banks are owned by the government and they are given the tasks of providing long term finance for agricultural, industrial and real estate development. (El-Shazly, 2001). The banking sector in Egypt plays a significant role in the financial system. The Egyptian banking system represents one of the major savings cannels of household. It is also a main sources of financing public and private investments (Hashem, 2016).

This study aims to investigate the relationship between VD and profitability in the Egyptian banking sector. This research investigates the relationship between VD and bank profitability for the Egyptian banks. Egypt faced many crises that had a negative and significant impact on the Egyptian economy, including the revolutions that Egypt was subjected to in 2011 and Egyptian pound floating. Moreover, the improvement of Egyptian economy and an economic growth, which is required by the country. Therefore, this research clarifies the relationship between VD and bank profitability in Egypt.

## 2-Literature Review and the Hypothesis

### 2-1Theories of Voluntary Disclosure

Several theories have been used by previous researchers to explain why firms are engaged in disclosing information voluntarily. The ones most commonly used are agency theory, signaling theory, legitimacy theory, and stakeholder theory.

The Agency Theory describes the relationship between managers and shareholders and explains why managers strive to maximize their own benefit. Agency costs are incurred as a result of conflicts of interests and the asymmetry of knowledge between the management and shareholders (Hassan et al., 2009). The main objective of any company is to optimize shareholder returns. In order to accomplish this purpose, managers are typically charged with accountability. However, since individuals are not philanthropic, agents are not actively behaving in the interests of the directors, contributing to competing interests. Since managers can access more information than shareholders can (Barako et al., 2006).

The second theory is signaling theory which suggests that managers need to disclose more details to reduce the asymmetry of information between investors and themselves. Financial reporting users need financial market trust; disclosure of information can improve this confidence. With the increased degree of VD of data, investors would therefore feel safer (Hossain and Hammami, 2009).

The third theory of VD is legitimacy theory according to this theory the Companies should perform their operations in compliance with the perceived objectives of relieving public pressure and legitimizing their activities in society. Disclosing information to the public is one important way for businesses to legitimize their operations. They therefore need further disclosure of information (Belal and Cooper, 2011).

In addition to the above, the fourth theory of VD is stakeholders' theory. The theory of stakeholders can be used to understand why businesses choose to voluntarily share information. Stakeholders are the parties who have a stake in the company and are also involved in the operations of the company. Managers, stockholders, creditors, clients, vendors, government, trade unions, and the general public are stakeholders. The businesses are funded by the stakeholders in order to obtain funding (Uyar and Kılıc, 2012).

## 2-2 Voluntary Disclosure-VD

VD refers to the surplus of information required in mandatory financial reports. In annual financial reporting, voluntary disclosure enhances transparency and accountability, thus attracting prospective investors and encouraging all other external users of these reports to make informed decisions. Companies that voluntarily report details benefit from cheaper capital market funds, which in turn transform managers into better investment evaluations. (Healy and Palepu, 2001). VD of financial information is also as an important measure of the quality of earnings and, thus, good performance. The inadequacy of financial reporting was one of the determinants that contributed to the advent of VD, as viewed by investors and shareholders (Boesso and Kumar, 2007).

## 2-3 Bank Profitability

The firm performance plays a significant role in countries' economic growth. The banking system is regarded as the pillar of the economy and also plays a wonderful role in the various economic activities of the country. Finance, for any economy, is like blood. It is important for the socio-economic growth of a nation (Kimutai, 2014). organizations use Performance measures to manage progress towards achieving preset goals and in the process identify the key indicators of organizational performance and customer satisfaction. Income maximization for shareholders is a significant economic goal to be fulfilled by administrators of companies. This can be achieved through successful resource distribution. In order to accomplish this goal, shareholder wealth is replaced by ratios of benefit or cash flows or financial statements. The information given by financial statements is used by shareholders, management and other stakeholders to forecast performance (Hussein et al., 2015). Greater bank profitability can be beneficial for growth by improving financial stability. More efficient banks will keep their profits and raise their core resources. They also offer shareholders greater returns and can collect capital more quickly on the market (Mark and Rangan, 2008).

## 2-4 Voluntary disclosure and bank profitability

The impact of VD on profitability of banks (ROE, ROA and NIM) was tested through several studies and different results were observed. Some of these studies reached positive significant effect of VD on bank's profitability, while others found insignificant effect.

In 2012, a study applied in Amman for the period from 1996 to 2004 from 243 firms privatized public financial listed firms on the Stock Exchange of Amman. It was found that VD had positive significant influence on profitability of privatized public financial firms listed on the Amman Stock Exchange (Al-Akra and Ali, 2012).

On the other hand, another study evaluated the relationship between profitability measured by ROA and ROE with the disclosure of social responsibility of corporates (CSRD). Data was collected from 8 Islamic banks of various Asian countries from annual reports in 2009 and 2010, and empirical analysis was conducted. A corporate social responsibility disclosure index (CRSDI) was constructed and the analysis revealed that there is no statistically significant connect between profitability indices (ROA, ROE) and (CSRDI) (El Mousaid and Boutti, 2012).

In 2015, Empirical study applied in banking sector to illustrate the influence of VD on profitability. The collected data was cross section data about 90 Islamic banks in 13 countries (Bahrain, Bangladesh, Indonesia, Jordan, Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia, Sudan, Syria, United Arab Emirates (UAE), and United Kingdom (UK)) from many sources including Bank scope, the Banker database, Perfect Information Navigator, and Companies House10, the annual reports and websites in 2010 to 2011. The valid data was analyzed using OLS Regression. The results found that VD had positive influence on profitability (Farag, 2015).

in Sri Lanka other researchers study the relationship between VD and profitability from banking and finance companies in Sri Lanka. Collecting data from 62 companies are recorded under the insurance, finance and banking sector in Colombo Stock Exchange (CSE) during 2012 to 2015. The valid data was 200 observations and analyzed using panel data analysis. The analysis explained that there were positive associations between VD and profitability from Banking and Finance Companies in Sri Lanka (Abeywardana and Panditharathna, 2016).

In addition, a research conducted in the Gulf Cooperation Council (GCC) Islamic Banks to investigate the associations between VD and profitability Secondary data was collected from 24 Islamic banks in five Gulf Cooperation Council (GCC) countries (the United Arab Emirates (UAE), Kuwait, Bahrain, Qatar and Saudi Arabia) during the period from 2000 to 2014 from annual reports that related to these banks and analyzed the valid data using Panel regression analysis. The conclusion found that there were significant positive associations between VD and profitability for Islamic Banks in the Gulf Cooperation Council (GCC) (Platonova et al., 2018).

In the same way, another study discussed the relationship between VD on Islamic bank profitability. A sample of 47 banks listed in the Bank scope database was analyzed in different regions during the 2005–2010 period. The database provided standardized figures such most of the items were comparable across time and banks, Bank scope was used as a reliable source for data of Islamic bank. The result indicated a positive and significant link between VD and profitability (Nawaz, 2019).

Additionally, a study conducted in Nepal showed that the impact of VD on profitability of Nepal Stock Exchange (NEPSE) listed banks. Secondary data was collected from annual reports and websites about 29 banks (26 commercial banks and 3 development banks) in Nepal during the period from 2012 to 2017 and analyzed the valid data using regression analysis, descriptive analysis and correlation analysis. The findings showed that VD had significant positive impacts on profitability of banks (Gupta, 2019).

The same results were obtained by another study that examined the effect of VD on profitability in the sub- Saharan banking sector. Secondary data from 22 banks (the central bank of RSA) and 18 banks (the central bank of Mozambique) during the period from 2012 to 2016 was analyzed using regression analysis model. The findings reached that there was positive significant relationship between VD and profitability in the sub- Saharan banking sector (Wang et al., 2019).

Conversely, a research applied in the Gulf Cooperation Council, the association between online disclosure forms (OFD) and Islamic banking performance has been studied (GCC) to measure the level of OFD for the Islamic banks that are listed on the GCC stock exchanges. The study used three indicators to measure profitability, namely, return on equity, return on assets and earnings per share. The findings show that the total OFD of Islamic banks in the GCC is 72.5 billion and a negative and insignificant OFD-profit link (Al-sartawi and Reyad, 2019).

In the same way, a study to examine relationship between VD and profitability was applied in the Middle East and North Africa (MENA) region commercial banks. Secondary data was collected from 1060 banks in 17 MENA countries during 2006 to 2015 and was analyzed using ordinary least squares (OLS) regression model. The results found that there is a significant positive relationship between VF and profitability (Alqatamin et al., 2020).

The same result was obtained by another research to study the relationship between VD and profitability of Yemeni Islamic banks. Secondary data was obtained from annul reports of Yemeni Islamic banks during the period 2005 to 2014 and was analyzed using (OLS) the Multivariate Ordinary Least Square regression model. The conclusion reached that there was significant positive relationship between VD and profitability for the sample under study (Tabash et al., 2020).

Moreover, another study discussed the relation between VD and profitability of Pakistan's banking sector. Secondary data was collected for 20 banks from the state Bank of Pakistan (SBP), Pakistan Stock Exchange (PSE), annual reports and financial websites during 2008 till 2018 and analyzed using content analysis and panel data technique. The results found that corporate voluntary disclosure helped in improving profitability, which indicated that there were positive significant associations between voluntary disclosure of corporates and Pakistan's banking sector profitability (Szegedi et al., 2020).

Regarding the controversies in the previous studies that were illustrated, the research can assume the hypothesis of this research, which is that there is a statistically significant relationship between VD and bank profitability (ROE, ROA and NIM).

**$H_1$: There is a significant relationship between voluntary disclosure and bank Profitability**

## 3- Research methodology

This research explains the link between VD and banks profitability. This research is built upon the quantitative approach by collecting panel data (secondary data) for 38 banks in Egypt form database in the banks' official websites and annual reports during the period from 2013-2019 as for 2019, it was the last data available at the time of data collection. In addition, the start year was 2013 as Egypt has been exposed to many economic crises due to revolutions and political events such as the revolutions in 2011 and 2013, which led to a negative effect on the economic situation of Egypt, which led to the necessity to progress this situation. The banking sector was chosen as the study sample because banks are among the most important institutions that work on the growth and improvement of the country's economic situation through its profitability.

In this study, the dependent variable is Banks Profitability (ROA, ROE, NIM) (Anbar and Alper, 2011), while the independent variable is presented in voluntary disclosure -VD. The 76-item check list is categorized under 11 subtitles, namely (General Information -GI, Corporate Strategy -CS, Corporate Governance -CG, Financial Performance -FP, Key non-financial information -KNFI, Forward-looking information -FLI, Employee disclosure -ED, Social Responsibility -SOCR, Segment Reporting -SR, Risk Management -RM, Customer disclosure -CD). The control variables used in testing the relationship are bank age -BA and Bank size -BS. The bank's size is calculated as the log of total assets. Similarly, the age of a bank can be determined by adding the years since it was founded or registered (Rehman et al., 2020).

The size and the age of the bank have frequently been used as control variables when examining the relationship between VD and profitability. In a study examining the relationship between mentioned variables in Kenyan banks. the BS has shown a positive and significant association with VD. On the other hand, the BA has no effect on VD (Rashid and Aikaeli, 2015). Another study was conducted in Yemen to examine the relationship between the VD level and profitability of Yemeni Islamic banks. The results showed that BS and BA have a negative and significant relationship with ROA. More over the BS has a negative and significant effect with ROE, the BA has a positive association on it (Al-Homaidi et al., 2020).

The checklist is stated in the following table (Bayyurt et al., 2013). Previous studies have mostly utilized disclosure check lists to collect VD data. The selection of voluntary disclosure items is a subjective judgment depending on the nature and context of the industry and country context (Hossain and Hammami, 2009). This study adopted unweighted index. Unweighted index assumes that each item of disclosure is considered equally important (Cooke, 1989). This index was generated by using the content analysis method (Szegedi et al., 2020).

The Main Research Hypothesis could be developed as follows:

**$H_1$: There is a significant relationship between voluntary disclosure and Banks Profitability**.

This hypothesis could be divided into three sub-hypotheses, as follows:

$H_{1-1}$: There is a significant Relationship between VD and ROE.

$H_{2-1}$: There is a significant Relationship between VD and ROA.

$H_{3-1}$: There is a significant Relationship between VD and NIM.

The Relationship among VD and banks profitability was investigated by the following regression model.

$$ROA_{it} = \alpha_{it} + \beta_1 GI_{it} + \beta_2 CS_{it} + \beta_3 CG_{it} + \beta_4 FP_{it} + \beta_5 KNFI_{it} + \beta_6 FLI_{it} + \beta_7 ED_{it} + \beta_8 SOCR_{it} + \beta_9 SR_{it} + \beta_{10} RM_{it} + \beta_{11} CD_{it} + \beta_{12} BS_{it} + \beta_{13} BA_{it} + \varepsilon_{it} \quad (1)$$

$$ROE_{it} = \alpha_{it} + \beta_1 GI_{it} + \beta_2 CS_{it} + \beta_3 CG_{it} + \beta_4 FP_{it} + \beta_5 KNFI_{it} + \beta_6 FLI_{it} + \beta_7 ED_{it} + \beta_8 SOCR_{it} + \beta_9 SR_{it} + \beta_{10} RM_{it} + \beta_{11} CD_{it} + \beta_{12} BS_{it} + \beta_{13} BA_{it} + \varepsilon_{it} \quad (2)$$

$$MIN_{it} = \alpha_{it} + \beta_1 GI_{it} + \beta_2 CS_{it} + \beta_3 CG_{it} + \beta_4 FP_{it} + \beta_5 KNFI_{it} + \beta_6 FLI_{it} + \beta_7 ED_{it} + \beta_8 SOCR_{it} + \beta_9 SR_{it} + \beta_{10} RM_{it} + \beta_{11} CD_{it} + \beta_{12} BS_{it} + \beta_{13} BA_{it} + \varepsilon_{it} \quad (3)$$

**Table 1: Variables used in this study**

| Variables | Measurement | References |
|---|---|---|
| **Dependent variables**<br>ROA<br>ROE<br>NIM | Net profit / Total Assets<br>Net profit / Total Equity<br>Net Interest Income / Total Assets | Anbar and Alper, (2011) |
| **Independent Variables**<br>Voluntary Disclosure (VD) | | Bayyurt et al., (2013) |
| GI | Brief history of the company<br>Ownership structure<br>Ethical rules<br>Values<br>Principal products<br>Principal markets<br>Main corporate events<br>Official address/registered address/address for correspondence<br>Web address of the company/email address<br>English summary of the annual report or translation of the complete annual report | |
| CS | Strategic information (Mission &Vision)<br>Statement of strategy and objectives-general<br>Statement of strategy and objectives-financial<br>Statement of strategy and objectives-marketing<br>Statement of strategy and objectives-social | |
| CG | Detail about the chairman<br>List of board members<br>Detail or bibliographies of the board members<br>List of senior managers/senior management structure<br>Background of senior managers<br>Comprehensive information on independent directors<br>Message of the Chairman | |

| | | |
|---|---|---|
| | Picture of all directors/board of directors<br>Picture of chairperson only | |
| FP | Brief discussion and analysis of a financial position<br>R&D expenditures<br>Operating costs/Income<br>Sales growth<br>Earnings growth<br>Profitability Ratios<br>Activity Ratios<br>Leverage Ratios<br>Liquidity ratios<br>Share Price Information | |
| KNFI | Market share<br>Competitor analysis<br>Units sold<br>Growth in units sold<br>Quality certificates<br>Awards<br>Dividend policy | |
| FLI | Forecastedprofits/profitability (quantitative & qualitative)<br>Market share forecasts (quantitative & qualitative)<br>Sales forecast (quantitative & qualitative)<br>Capital expenditure forecast (quantitative & qualitative)<br>New investments (quantitative & qualitative) | |
| ED | Number of employees<br>Gender of employees<br>Functional categorization of employees<br>Training and developing investments described<br>Several activities about employees and their families<br>Employee compensation | |

| | | |
|---|---|---|
| | Safety policy<br>Cost of safety measures | |
| SOCR | Sponsoring public health<br>Sponsoring sport activities<br>Sponsoring cultural recreations<br>Sponsoring education<br>Charitable donations | |
| SR | Geographical Segment reporting (sales, assets)<br>Geographical capital expenditure<br>Line-of-business production | |
| RM | General risk policy<br>Information on risk management committee<br>Information on risk management structure<br>Disclosure of interest rate risk<br>Disclosure of foreign currency risk | |
| CD | Main customers, contractual relationships, prices, bargaining power<br>Geographic diversification and characteristic of retail net Customer satisfaction,retention, loyalty work | |
| **Control Variables**<br><br>BS<br>BA | Log Total Assets The Age of the bank | Al-Homaidi et al.,(2020) |

## 3-1 Data Analysis and Findings

This section introduces the empirical study with the main findings and results after running the data analysis.

## 4- Descriptive Analysis

The descriptive statistics is a tool in which it explains and gives a distinct understanding of the features of certain data set, by giving short summaries about samples and how to measure the data.

Table 1 illustrates the descriptive analysis for the research variables using the Mean, Minimum, Maximum and Standard Deviation for the research variables. The mean value of CG is found to be 2.18 with a standard deviation of 3.086 with minimum and maximum equal 0 and 9 respectively. Concerning the mean value of CS, it is found to be 1.99 with a standard deviation of 1.441 with minimum and maximum equal 0 and 4 respectively. In addition, the mean value of GI is found to be 4.42 with a standard deviation of 2.856 with minimum and maximum equal 0 and 8 respectively. Furthermore, the mean value of FP is found to be 5.79 with a standard deviation of 2.863 with minimum and maximum equal 0 and 911 respectively. According to the mean value of KNFI is found to be 0.03 with a standard deviation of 0.170 with minimum and maximum equal 0 and 1 respectively. Moreover, the mean value of CD is found to be 0.74 with a standard deviation of 0.643 with minimum and maximum equal 0 and 2 respectively. In addition, the mean value of FLI is found to be 0.033 with a standard deviation of 0.155 with minimum and maximum equal -0.011 and 1.64 respectively. In addition, the mean value of SOCR is 0.54 found to be with a standard deviation of 1.003 with minimum and maximum equal 0 and 4 respectively. Moreover, the mean value of SR is found to be 1.02 with a standard deviation of 0.655 with minimum and maximum equal 0 and 3 respectively. Furthermore, the mean value of RM is found to be 6.31 with a standard deviation of 2.938 with minimum and maximum equal 0 and 8 respectively. Moreover, the mean value of ED is found to be 3.24 with a standard deviation of 2.539 with minimum and maximum equal 0 and 7 respectively. Besides, the mean value of NIM is found to be .3122 with a standard deviation of .433 with minimum and maximum equal -.146 and 3.174 respectively. In addition, the mean value of ROA is found to be .03353 with a standard deviation of .1553 with minimum and maximum equal -.011 and 1.640 respectively. Finally, the mean value of ROE is found to be 12.357 with a standard deviation of 12.357 with minimum and maximum equal 1263.26 and 12.357 respectively.

## 5- Normality Testing for the Research Variables

Normality is one of the assumptions that have to be verified to determine if a data set is normal. In order to check the normality for the data. According to table1, the test of normality, where it could be shown that some of the Skewness and kurtosis values are not in the acceptance level of ±1, which means that the data under study are not approximately normal. Consequently, Pooled Regression used to describe the relationships between the research variables by using GLS Technique.

**Table 1: Descriptive Analysis and Normality Test of Research Variables**

| | Minimum | Maximum | Mean | Std. Deviation | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| GI | 0 | 8 | 4.42 | 2.856 | -.432 | -1.537 |
| CS | 0 | 4 | 1.99 | 1.441 | -.398 | -1.534 |
| CG | 0 | 9 | 2.18 | 3.086 | 1.337 | .341 |
| FP | 0 | 11 | 5.79 | 2.863 | -.777 | .431 |
| KNFI | 0 | 7 | 2.72 | 1.426 | -.243 | 1.721 |
| FLI | 0 | 1 | .03 | .170 | 5.580 | 29.389 |
| ED | 0 | 7 | 3.24 | 2.539 | .135 | -1.565 |
| SOCR | 0 | 4 | .54 | 1.003 | 1.858 | 2.436 |
| SR | 0 | 3 | 1.02 | .655 | .619 | 1.255 |
| RM | 0 | 8 | 6.31 | 2.938 | -1.639 | .838 |
| CD | 0 | 2 | .74 | .643 | .298 | -.691 |
| BS | 1.169 | 13.533 | 10.758 | 1.161 | -5.069 | 44.123 |
| BA | 6 | 207 | 56.18 | 40.393 | 2.227 | 5.066 |
| ROA | -.011 | 1.640 | .03353 | .1553 | 9.804 | 96.287 |
| ROE | -.1475 | 1263.26 | 12.357 | 120.270 | 9.938 | 98.029 |
| NIM | -.146 | 3.174 | .3122 | .433 | 4.137 | 19.456 |

## 6- Testing Regressions Assumptions

Before running pooled regression, it is necessary to check regression assumptions that the model has no multicollinearity or autocorrelation. If any exists, the problem should be solved first before performing regression analyses for accurate and reliable conclusions.

## 6-1 Multicollinearity

Multicollinearity is one of OLS assumptions. It refers to high correlation between independent variables in multiple regression. If the value of VIF is more than 5 it means that there is multicollinearity problem.

In this model, the dependent variables are ROA, ROE and NIM. According to table 2, it was found that the VIF of GI, CS, FP, ED and KNFI is more than 5. Therefore, these variables must be dropped to solve multicollinearity problem.

**Table 2: VIF Values for the Independent Variables**

| Model | | Collinearity Statistics | |
|---|---|---|---|
| | | **Tolerance** | **VIF** |
| 1 | (Constant) | | |
| | GI | .031 | 32.642 |
| | CS | .046 | 21.646 |
| | CG | .573 | 1.746 |
| | FP | .123 | 8.137 |
| | KNFI | .062 | 16.170 |
| | FLI | .649 | 1.540 |
| | ED | .193 | 5.195 |
| | SOCR | .274 | 3.656 |
| | SR | .266 | 3.755 |
| | RM | .319 | 3.130 |
| | CD | .290 | 3.447 |

In this research, there are three dependent variables that are ROA, ROE and NIM. Therefore, there are three models for autocorrelation using Durbin-Waston in using OLS estimation in SPSS. In addition, if the value of Durbin-Waston is closer to 2, it means that there is no autocorrelation problem.

**Model one**: In this model, the dependent variable is ROA. According to table 3, Durbin-Waston is equal 1.060, which is not closed to 2 so, there is an autocorrelation problem.

**Table 3: The Auto-correlation Test of ROA**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .153[a] | .023 | -.007 | .155844982757573 | 1.060 |

**Model Two**: In this model, the dependent variable is ROE. According to table 4, Durbin-Waston is equal 1.032, which is not closed to 2 so, there is auto-correlation.

**Table 4: The Auto-correlation Test of ROE**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .183[a] | .033 | .003 | 120.074817097374630 | 1.032 |

**Model three**: In this model, the dependent variable is NIM. According to table 5, Durbin-Waston is equal 1.209, which is not closed to 2 so, there is no auto-correlation.

**Table 5: The Auto-correlation Test of NIM**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .272[a] | .074 | .045 | .423507830569980 | 1.209 |

An unaccepted autocorrelation problem exists. To mitigate autocorrelation and heteroscedasticity HAC Estimator is used to solve the problem.

## 7- Testing the First Research Sub Hypothesis

Table 6 shows the regression model for ROA, it is found that there is no significant relationship between CG, FLI, CD and SOCR as p-value equals 0.167, 0.331, 0.410 and 0.914 respectively, which is more than 0.05. However, there is a significant relationship between SR, RM, BS and BA as p-value equals 0.022, 0.021, 0.00 and 0.00 respectively, which is less than 0.05.

**Table 6: Regression Model of ROA**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 1.321 | .058 | | 22.711 | .000 |
| CG | -.003 | .002 | -.053 | -1.386 | .167 |
| FLI | .031 | .032 | .037 | .975 | .331 |
| SR | .030 | .013 | .118 | 2.318 | .022 |
| RM | -.007 | .003 | -.106 | -2.321 | .021 |
| CD | -.010 | .012 | -.040 | -.826 | .410 |
| BS | -.123 | .005 | -.928 | -23.880 | .000 |
| BA | .001 | .000 | .262 | 6.510 | .000 |
| SOCR | .001 | .006 | .004 | .108 | .914 |

Table 7 shows that the model is significant as p-value is less than 0.05 (P-value=0.000)

**Table 7: ANOVA for ROA**

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 3.630 | 8 | .454 | 73.721 | 0.000 |

Therefore, the first sub hypothesis stating that there is a significant relationship between corporate voluntary disclosure and ROA is partially supported.

# 8- Testing the Second Research Sub Hypothesis

Table 8 shows the regression model for ROE. It is found that there is significant relationship between RM, BA and ROE as p-value equals 0.049 and 0.00 respectively which is less than 0.05. ROE can be explained by RM and BA. However, there is no significant relationship between CG, FLI, SR, CD, SOCR and BS as p-value equals 0.850, 0.773, 0.388, 0.682 and 0.163 respectively, which is more than 0.05.

**Table 8: Regression Model of ROE**

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| | (Constant) | -204.510 | 82.601 | | -2.476 | .014 |
| | CG | -.513 | 2.714 | -.013 | -.189 | .850 |
| | FLI | -13.199 | 45.707 | -.020 | -.289 | .773 |
| | SR | 15.752 | 18.219 | .080 | .865 | .388 |
| 1 | RM | 8.119 | 4.092 | .165 | 1.984 | .049 |
| | CD | -29.151 | 16.748 | -.153 | -1.741 | .083 |
| | BS | 10.197 | 7.283 | .100 | 1.400 | .163 |
| | BA | 1.121 | .221 | .372 | 5.065 | .000 |
| | SOCR | -3.349 | 8.154 | -.030 | -.411 | .682 |

Table 9 shows that the model is significant as p-value is less than 0.05 (P-value=0.000).

**Table 9: ANOVA for ROE**

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 522459.819 | 8 | 65307.477 | 5.272 | .000 |

Therefore, the second hypothesis stating that there is a significant relationship between corporate voluntary disclosure and ROE is partially supported.

# 9-Testing the Third Research Sub Hypothesis

Table 10 shows the regression model for NIM. It is found that there is significant relationship between SOCR, CD and NIM as p-value equals .049 and .036 respectively, which is less than 0.05. NIM can be explained by SOCR and CD.

**Table 10: Regression Model of NIM**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.052 | .614 | | -.085 | .932 |
| | CG | -.010 | .010 | -.072 | -.954 | .341 |
| | FLI | .333 | .175 | .143 | 1.905 | .058 |
| | SR | .092 | .071 | .132 | 1.304 | .194 |
| | RM | -.004 | .016 | -.021 | -.224 | .823 |
| | CD | .135 | .064 | .198 | 2.107 | .036 |
| | BS | .017 | .057 | .027 | .305 | .761 |
| | BA | .001 | .001 | .071 | .800 | .424 |
| | SOCR | -.062 | .031 | -.153 | -1.978 | .049 |

Table 11 shows that the model is significant as p-value is less than 0.05 (P-value=0.050).

**Table11: ANOVA for NIM**

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 2.880 | 8 | 0.360 | 1.990 | .050 |

Therefore, the third hypothesis stating that there is a significant relationship between VD and NIM is partially supported.

## 10- Discussion and Conclusion

The data is analyzed empirically to test the research hypotheses by measuring the variables concluded from the literature review through a descriptive and regression analysis using SPSS. Testing the first research sub-hypothesis for the relationship between VD and ROA, it was found that there is no significant relationship between CG, FLI, SOCR and CD on ROA.

Testing the second research sub-hypothesis for the relationship between VD and ROE, it was found that there is a significant effect of RM and BA on ROE.

Testing the third sub-hypothesis for the relationship between VD and NIM, it was found that there is a significant effect of SOCR and CD on NIM. Table 12 showed a summary for the conducted analysis.

**Table12: Summary of Research Hypotheses**

| Hypothesis | Description | Results |
|---|---|---|
| **$H_{1-1}$** | There is a significant relationship between CVD and ROA | Not Supported |
| **$H_{1-2}$** | There is a significant relationship between CVD and ROE | Partially Supported |
| **$H_{1-3}$** | There is a significant relationship between CVD and NIM | Partially Supported |

## 11- Research Limitations and Recommendations

As all researches, this research has several limitations through the study handled. First, despite the fact that the researcher collected the data from one country Egypt, but the research was limited to take into consideration more countries rather than one country. Moreover, the study covered only the banking sector, which means that the results can't be generalised.in addition to that, this study used only ROA, ROE and NIM as measures for bank profitability

This research has several recommendations that could be useful for future research. First, a cross countries research could be conducted. In addition, the same study could be performed in other sectors in Egypt in order to be able to collect larger sample as well as following a random sampling technique. Moreover, additional profitability measures could be included in future researches in order to give a better explanation for the relationship between variables.

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