

# LEffect of Accounting Information Systems on Corporate Governance in Pharmaceutical Companies in Jordan

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## Abstract:

This study aimed at analyzing the effect of Accounting Information Systems on corporate governance in pharmaceutical companies in Jordan. In the 2000s, the corporate scandals in various countries showcased the loopholes in the financial management of the company where the managers and accountants could infringe the accounting rules to an extent to create financial blunders in the company and affect the economy severely. The loss borne by the economy has made highlighted the need for stringent rules and legislation related to accounting and auditing. As an internal control, auditing, accounting, and financial management is an integral part of a company, it is significant and of utmost importance to assess the association between Accounting Information Systems (AIS) and corporate governance. The study determined the association by conducting a questionnaire survey of 112 financial managers and accountants in the finance department of pharmaceutical companies in Jordan. The results showed a positive impact of accounting information systems on corporate governance.

**Keywords:** Accounting Information System, Corporate Governance, Jordanian Pharmaceutical Company

## 1.1 Introduction

The importance of the Accounting Information Systems (AIS) is embodied as one of the factors of monitoring and keeping pace with the implementation of the operations of plans and policies, working to avoid errors and trying to correct the implementation path by developing the positives in a way that pushes workers to improve and develop performance and achieve cooperation to achieve the desired goals. Corporate governance has become an important topic for all institutions and organizations, after a series of various financial crises, most of which are due to administrative and accounting corruption, and due to the shady information, that is emphasized by auditors and their confirmation of the validity of the financial statements. In addition, among the most important reasons for the collapse of companies is their management's lack of practice in control and supervision, lack of experience, lack of transparency, non-compliance with the application of international accounting and auditing standards that achieve disclosure and transparency (Van Greuning & Bratanovic, 2020).

Two decades ago; the corporate scandals in various countries showcased the loopholes in the financial management of the company where the managers and accountants could infringe the accounting rules to an extent to create financial blunders in the company and affect the economy severely. The loss borne by the economy has made highlighted the need for stringent rules and legislation related to accounting and auditing. As an internal control, auditing, accounting, and financial management is an integral part of a company, it is significant and of utmost importance to assess the association between Accounting Information Systems (AIS) and corporate governance.

AIS is a monetary information system that includes terms related to bookkeeping, instruction manuals of accounting along reports required for the particular needs of the

business. Its fundamental capacity is to procure, measure, and impart data that is vital for the activity of the association. It is a network set up in an association to give directors data that will help them in making decisions related to the business. It assumes an essential part in the accomplishment of the business association. It is an automatic system utilized for gathering and distributing information for the ends of assisting and organizing collective decisions considering the overall objectives of a firm.

Jordan faces difficulties encompassing a decrease in economic development because of territorial instability, more competition in the domestic market, and challenges emerging from declining market shares in the local business sectors. Entering the World Trade Organization has commanded the Jordanian Government to eliminate the protection of its organizations and to open its market to globalization. Jordan's pharmaceutical industry is exceptionally regulated and coordinated through definite laws and guidelines administering public and private sectors. Despite the continuous influx of Syrians fleeing the conflict in their country into Jordan from 2011 to 2018, the pharmaceutical industry in Jordan is severely affected as the heave of Syrian refugees and their pressures on the healthcare sector have created an increase of bio-hazardous and medical waste. The crisis has impacted the functioning and financial management of Jordanian pharmaceutical manufacturing companies and related accounting and auditing practices. Hence, the study attempts to assess the association between AIS and corporate governance in Jordanian pharmaceutical companies.

The adoption of principles of corporate governance and the enactment of guidelines to improve the confidence of investors in the marketplace were hastily established all around the world. Better and effective practices of governance are significant for emerging countries, as they require external funds to finance ventures and investments. Foreign investors are persuaded to choose countries that ensure investment prospects and also a striking investment environment such as transparency, appropriate regulations, and responsibility. To get access to international resources of financing, quality financial information should be provided by Jordan to stakeholders.

### **1.2 Literature Review**

According to Pallisserry (2012), directors are accountable for distributing data that is valid and reliable concerning the monetary situation of the organization to investors as they administer, manage and monitor the reporting of financials of the organization as prepared by their bookkeepers. Nonetheless, concealing the financial situation of the organization because of fraud or genuine error prompts corporate failures. One quality trait of monetary reports is objectivity; it was attested by Abraham et al. (2008) that the subjectivity of monetary reports undermines their usefulness and dependability across all industry areas. The dearth of dependability in monetary reports is inferable from inefficiency in individuals engaged with preparing and checking the reports, for example, board members and bookkeeping staff; unawareness of bookkeeping principles, and inadequacy in the administrative framework.

Seal (2006) stated that notwithstanding the duties of external auditors and controllers, management accounting assumes a significant part in the administration of good corporate governance through inner monitoring and reporting and giving relevant information. Empirical proof of the relationship between corporate governance and management accounting was provided by Wang and Huynh (2014). According to Uyar and Kuzey, (2016), Budgeting is an essential instrument of management accounting, utilized as an arranging and internal controlling device by business associations.

As indicated by Agrawal and Cooper (2017), corporate governance alludes to the arrangement of structures important to control and direct the organization, characterize

and circulate rights and obligations among the fundamental members in the organizations and guarantee the comprehension of investors, members from the governing body and administrators thereof, just as defining rules and techniques for making decisions about the organization's structure.

Alp and Ustundag (2009) stated that the main aim is to converge bookkeeping as well as principles of financial reporting with the goal that capital can flow all the more uninhibitedly in business markets. The convergence of guidelines assists with making the financial reports of firms similar from one country to another; along these lines, permitting the boundaries that confine investors to back out. The significance of bookkeeping standards, which are pointed toward providing high caliber, trustworthy, practically identical, and comprehensible monetary information, is recognized worldwide. Therefore, Ankarath et al. (2010) mentioned that internationally accepted standards of financial reporting are indispensable to different stakeholders like financial analysts, lenders, creditors, and investors that use fiscal reports in decision-making. The benefits of utilizing a typical arrangement of principles of financial reporting and bookkeeping are recorded as improved productivity and viability in auditing and financial reporting (Joshi and Ramadhan, 2002); effective comparability (Epstein and Jermakowicz, 2007; Jeanjean and Stolowy, 2008; Jones and Finley, 2011); and more reliability and transparency (Madawaki, 2012; Uyar and Güngörmüş, 2013; Kılıç et al., 2014). These benefits are intently attached to the mechanism of corporate governance and are relied upon to add to great practices of governance (Ball, 2006; Dumontier and Raffournier, 1998; Neag et al., 2009).

Corporate Governance is defined as the framework by which organizations are monitored and managed (Cong and Freedman (2011). The same was characterized as a bunch of duties practiced by the Executive Management and Board of Directors fully intent on giving (strategic direction, guaranteeing that objectives are accomplished, guaranteeing that risks are appropriately managed, and confirming the responsible utilization of the office) (Caskey and Laux, 2017). This mirrors the definition as a side of execution and a promise to good governance.

The impact of AIS on corporate governance was assessed in the accounting department in the pharmaceutical industry in Jordan during 2019-2020. Accounting governance variables, for example, Commitment to Accounting Standards, Control, Confidence, Performance Evaluation, and Credibility were chosen for the study through a survey of managers of pharmaceutical companies. The outcomes demonstrated a positive impact of the chosen factors on corporate governance (Al-Attar, Kayed (2021).

### **1.3 Study Objectives**

- To assess the impact of accounting information systems on corporate governance in Jordanian pharmaceutical companies.
- To analyze the impact of accounting information systems on financial reporting and decision-making in Jordanian pharmaceutical companies.

### **1.4 Study Hypotheses**

H<sub>1</sub>: There is a positive impact of accounting information systems on corporate governance in Jordanian pharmaceutical companies.

H<sub>2</sub>: There is a positive impact of accounting information systems on financial reporting and decision-making in Jordanian pharmaceutical companies.

### **1.5 Research Methodology**

The study is descriptive and analytical in nature and based on primary data. It aims at studying the effect of AIS on corporate governance in Jordanian pharmaceutical companies. Primary Data was collected through a questionnaire e-mailed to managers

working in the Jordanian pharmaceutical companies. The collected data was analyzed using SPSS. Descriptive statistics such as mean, standard deviation, and percentage were used, and to test the effect of corporate governance in Jordanian pharmaceutical companies, Linear Regression was used.

The organizations registered in the Jordanian Association of Pharmaceutical Manufacturers (JAPM, 2014) were 44 pharmaceutical companies. But out of the 44 companies, 21 companies were selected for the study as sample size based on the profitability and operational capacity over the years. The survey unit of analysis comprised top and middle-level managers (i.e., financial managers and accountants). Similar to the studies of Iskandar (2015) and Susanto (2017), respondents in these functional positions were considered.

Primary data was collected using a structured questionnaire method. 180 questionnaires were distributed to top-level and middle-level managers of pharmaceutical companies out of which only 112 were found suitable for the study. During data entry, some questionnaires were rejected as they were incomplete. Hence, the total number of respondents considered for the study was 112.

### 1.6 Data Analysis

SPSS software was used for editing and analyzing data. Data were subjected to both descriptive and inferential statistics. Descriptive statistics included frequency, percent, mean and standard deviation. Inferential statistics were used to conclude the collected data by testing the hypotheses. Linear Regression was used to test the hypotheses.

### Analysis of Effect of AIS on Corporate Governance

**Table 1: Companies selected for the study**

Sl. No.	Name of the Companies	Number of Respondents	Percentage share
1	Al Hadeed Pharmaceutical Industries	5	4.5
2	Al-Razi Pharmaceutical (M)	8	7.1
3	Amman Pharmaceutical Industries	5	4.5
4	Arab Center for Pharmaceuticals and Chemicals Industries	4	3.6
5	Arab Pharmaceutical Manufacturing Co.	3	2.7
6	Dar Al Dawa	4	3.6
7	Hayat Pharmaceutical Industries	4	3.6
8	Hikma Pharmaceutical	5	4.5
9	Jordan River Pharmaceutical Industries	5	4.5
10	Jordan Sweden Medical & Sterilization	4	3.6
11	Jordanian Pharmaceutical Manufacturing Co.	11	9.8
12	Middle East Pharmaceutical	6	5.3
13	Ms. Pharma Injectables Co.	6	5.3
14	Nairoukh Pharma	5	4.5
15	Pella Pharmaceuticals Co.	6	5.3
16	Pharma International Co.	5	4.5
17	Philadelphia Pharmaceutical Co.	4	3.6
18	Ram Pharmaceutical Industries	4	3.6
19	Retaj Industries Co.	8	7.1
20	Savvy Pharm Co.	3	2.5
21	United Pharmaceutical Manufacturing Co. Ltd.	7	6.3

Total	112	100.0
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*Source: Primary Source, Compiled by the Researcher*

Table 1 shows the companies considered as a sample of the study. 21 companies were chosen for the study and a questionnaire was circulated among the financial managers and accountants of the companies. 112 responses from 21 companies were chosen for the study. The managers working in the companies were chosen as respondents as they possessed the knowledge of compliance of corporate governance of the company and they would provide an optimum insight into the effectiveness of the accounting information systems in respective companies.

**Table 2: Age of Company**

Age of Company	Number of companies	Percent
< 5 years	2	9.5
5-10 years	2	9.5
10-15 years	3	14.3
More than 15 years	14	66.7
Total	21	100.0

*Source: Primary Source, Compiled by the Researcher*

Table 2 shows the age of 21 companies chosen for the study. It was found that 2 companies were established for less than 5 years. 2 companies were found to be aged between 5-10 years and 3 companies aged between 10-15 years. 14 companies under the study were found to be established for more than 15 years. The age of the company is an important factor in determining the performance of the company as older firms outperform younger firms as they have more performance in the industry. Hence, it was found that about 66.7% of the Jordanian pharmaceutical companies were established in the market for more than 15 years.

**Table 3: Number of employees in the company**

Number of Employees	Number of companies	Percent
<50	1	4.8
50-100	2	9.5
100-200	8	38.1
200-300	2	9.5
>300	8	38.1
Total	21	100.0

*Source: Primary Source, Compiled by the Researcher*

Table 3 shows the number of employees in the company under study. In one company, there are less than 50 employees. Two companies have employees between 50 and 100 and 8 companies have employees between 100 and 200. There were 200-300 employees in two companies and 8 companies have more than 300 employees.

### **1.6.1 Impact of AIS on Corporate Governance**

**Table 4(a): AIS and Corporate Governance**

Factors	Total	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The application of AIS aids the company by	112	-	-	-	69 (61.6%)	43 (38.4%)

providing true and fair information						
The financial data presented to the companies are accurate and precise	112	-	-	11 (9.8%)	52 (46.4%)	49 (43.8%)
The company recognizes the need for AIS for best governance	112	-	-	34 (30.4%)	52 (46.4%)	26 (23.2%)
According to the company, AIS can avoid financial and non-financial risks and adversaries	112	-	-	9 (8.0%)	57 (50.9%)	46 (41.1%)
AIS supports absolute sharing of information related to the company	112	-	-	5 (4.5%)	65 (58.0%)	42 (37.5%)
The governance compels the company to disclose financially accurate reports and statements	112	-	-	9 (8.0%)	57 (50.9%)	46 (41.1%)
Through governance, the company can keep productivity, profit, and performance in check	112	-	-	37 (33.0%)	57 (50.9%)	18 (16.1%)

*Source: Primary Source, Compiled by the Researcher*

Table 4(a) shows the factors linking the effect of AIS on corporate governance. 69 respondents (61.6%) agreed that the application of AIS aids the company by providing true and fair information. 49 respondents (43.8%) strongly agreed that the financial data presented to the companies are accurate and precise. 52 respondents (46.4%) agreed that the company recognizes the need for AIS for best governance. 57 respondents (50.9%) agreed that according to the company, AIS can avoid financial and non-financial risks and adversaries. 65 respondents (58.0%) agreed that AIS supports absolute sharing of information related to the company. 57 respondents (50.9%) agreed that the government compels the company to disclose financially accurate reports and statements and the company can keep productivity, profit, and performance in check through governance respectively.

**Table 4(b): Mean and Standard Deviation of Impact of AIS on Corporate Governance**

Sl. No.	Factors	Mean	Standard Deviation
1	The application of AIS aids the company by providing true and fair information	4.38	0.489
2	The financial data presented to the companies are accurate and precise	4.34	0.651

3	The company recognizes the need for AIS for best governance	3.82	0.674
4	According to the company, AIS can avoid financial and non-financial risks and adversaries	3.93	0.732
5	AIS supports absolute sharing of information related to the company	4.33	0.621
6	The governance compels the company to disclose financially accurate reports and statements	4.33	0.56
7	Through governance, the company can keep productivity, profit, and performance in check	4.33	0.621

Source: Primary Source, Compiled by the Researcher

Table 4(b) shows the mean and standard deviation of the impact of AIS on Corporate Governance. The mean and standard deviation of application of AIS aids the company by providing true and fair information was 4.38 and 0.489 which was the highest among all factors having an impact of AIS on Corporate Governance. The mean and standard deviation of the financial data presented to the companies are accurate and precise was 4.34 and 0.651. The mean and standard deviation of the company that recognizes the need for AIS for best governance was 3.82 and 0.674. The mean and standard deviation of AIS can avoid financial and non-financial risks and adversaries were 3.93 and 0.732. The mean and standard deviation of the factor, AIS supports absolute sharing of information related to the company was 4.33 and 0.621. The mean and standard deviation of the factor governance compels the company to disclose financially accurate reports and statements was 4.33 and 0.560. The mean and standard deviation of the factor governance compels the company to disclose financially accurate reports and statements and the company can keep productivity, profit, and performance in check through governance was 4.33 and 0.621.

### 1.6.2 Impact of AIS on financial reporting and decision making

**Table 5(a): AIS, financial reporting, and decision making**

Factors	Total	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
The company has an effective AIS system for financial reporting	112	-	-	49 (43.8%)	60 (53.6%)	3 (2.7%)
The decision-making capability of the company is enhanced through AIS	112	-	-	44 (39.3%)	61 (54.5%)	7 (6.3%)
Financial disclosure enhances the strategic competence of a company through effective governance	112	-	-	-	62 (55.4%)	55 (44.6%)

The company's accounting and auditing practices under environmental uncertainties get affected by the introduction or amendment of the legislation by the government	112	-	-	-	70 (62.5%)	42 (37.5%)
The AIS avoids fraud and financial manipulation in the company	112	-	-	-	54 (48.2%)	58 (51.8%)
The implementation of AIS ensures effective financial reporting by accountants and managers	112	-	-	-	75 (67.0%)	37 (33.0%)
The information quality sharing such as timeliness, accuracy, credibility, and adequacy of exchanged information impacts the decision making in the company	112	-	-	34 (30.4%)	52 (46.4%)	26 (23.2%)
The integration of activities improved across the company after implementing AIS	112	-	-	-	69 (61.6%)	43 (38.4%)

*Source: Primary Source, Compiled by the Researcher*

Table 5(a) shows the factors that have an impact on AIS on financial reporting and decision making. 60 respondents (53.6%) agreed that the company has an effective AIS system for financial reporting, 61 respondents (54.5%) agreed that the decision-making capability of the company is enhanced through AIS and 62 respondents (55.4%) agreed that the financial disclosure enhances strategic competence of company through effective governance. 70 respondents (62.5%) opined that the company's accounting and auditing practices under environmental uncertainties get affected by the introduction or amendment of the legislation by the government. 54 respondents (48.2%) stated that the AIS avoids frauds and financial manipulation in the company and 75 respondents (67.0%) agreed that the implementation of AIS ensures effective financial reporting by accountants and managers. 52 respondents (46.4%) stated that information quality sharing such as timeliness, accuracy, credibility, and adequacy of exchanged information

impacts the decision-making in the company. 69 respondents (61.6%) mentioned that integration of activities improved across the company after implementing AIS.

**Table 5(b): Mean and Standard Deviation of Factors affecting AIS, financial reporting, and decision making**

Sl. No.	Factors	Mean	Standard Deviation
1	The company has an effective AIS system for financial reporting	3.59	0.546
2	The decision-making capability of the company is enhanced through AIS	3.67	0.591
3	Financial disclosure enhances the strategic competence of a company through effective governance	4.45	0.499
4	The company's accounting and auditing practices under environmental uncertainties get affected by the introduction or amendment of the legislation by the government	4.38	0.486
5	The AIS avoids fraud and financial manipulation in the company	4.52	0.502
6	The implementation of AIS ensures effective financial reporting by accountants and managers	4.33	0.472
7	The information quality sharing such as timeliness, accuracy, credibility, and adequacy of exchanged information impacts the decision making in the company	4.42	0.496
8	The integration of activities improved across the company after implementing AIS	4.38	0.489

*Source: Primary Source, Compiled by the Researcher*

Table 5(b) shows the mean and standard deviation of factors that affect AIS, financial reporting, and decision-making. The mean and standard deviation of the factoring company has an effective AIS system for financial reporting was 3.59 and 0.546. The decision-making capability of the company is enhanced through AIS had a mean and standard deviation of 3.67 and 0.591. The financial disclosure enhances the strategic competence of the company through effective governance had a mean and standard deviation of 4.45 and 0.499. The company's accounting and auditing practices under environmental uncertainties get affected by the introduction or amendment of the legislation by the government had a mean and standard deviation of 4.38 and 0.486. The AIS avoids frauds and financial manipulation in the company had a mean and standard deviation of 4.52 and 0.502. The implementation of AIS ensures effective financial reporting by accountants and managers had a mean and standard deviation of 4.33 and 0.472. The information quality sharing such as timeliness, accuracy, credibility, and adequacy of exchanged information impacts the decision making in the company had a mean and standard deviation of 4.42 and 0.496. The integration of activities improved across the company after implementing AIS had a mean and standard deviation of 4.38 and 0.486.

## **1.7 Testing the Study Hypotheses**

### **1.7.1 Hypothesis 1**

H<sub>1</sub>: There is a positive impact of accounting information systems on corporate governance in Jordanian pharmaceutical companies.

**Table 6: Regression Results between Accounting Information Systems and Corporate Governance. Dependent Variable: Corporate Governance**

Variable	Coefficient	Standard Error	t-value	Sig.
Constant	-2.550	4.248	-.600	.581
AIS	6.646	1.170	5.680	.005

Value of R<sup>2</sup> = .890; F value = 32.257

*Source: Computed by the Researcher*

Table 6 shows the results of regression between the dependent variable, AIS, and the independent variable, Corporate Governance. The value of R square is 0.890 indicating the variation in AIS is explained by the Corporate Governance to the extent of 89%. The regression coefficient of the AIS is 6.646 indicating a positive effect of AIS on Corporate Governance which is statistically significant as the significance value is lesser than 0.05 (5%). There is a positive relationship between the AIS and Corporate Governance.

### 1.7.2 Hypothesis 2

H<sub>2</sub>: There is a positive impact of accounting information systems on financial reporting and decision-making in Jordanian pharmaceutical companies.

**Table 7: Regression Results between Accounting Information Systems, Financial Reporting, and Decision Making. Dependent Variable: Financial Reporting and Decision Making**

Variable	Coefficient	Standard Error	t-value	Sig.
Constant	-10.257	7.793	-1.316	.258
AIS	5.157	1.274	4.047	.016

Value of R<sup>2</sup> = .804; F value = 16.377

*Source: Computed by the Researcher*

Table 7 shows the results of regression between the dependent variable, AIS, and the independent variable, Financial Reporting, and Decision Making. The value of R square is 0.804 indicating the variation in AIS is explained by the Financial Reporting and Decision Making to the extent of 80.4%. The regression coefficient of AIS is 5.157 indicating a positive effect of AIS on Financial Reporting and Decision Making which is statistically significant as the significance value is lesser than 0.05 (5%). There is a positive relationship between AIS, Financial Reporting, and Decision Making.

### 1.8 Conclusion

From the study, it is found that the importance of AIS is understood by the companies as it enhances governance. Also, the companies believe that the performance can be enhanced through effective governance practices. Governance compels the company to disclose financially accurate reports and statements in Jordanian pharmaceutical firms. Identifying and developing these areas of implementation and improvement for AIS in companies is key to better governance. The implementation of sound AIS in the companies in Jordan was found to enhance decision-making and financial reporting. This also helped the company avoid corporate scandals and fraud. This shows that the companies pursued the best governance practices as the companies effectively managed financial reporting, accounting, auditing which helped in strong strategic and operational

decisions for the pharmaceutical companies in Jordan. Hence, pharmaceutical companies in Jordan should present fair and accurate financial information attributed to the quality of accounting information and make sure that all information given is based on the standards of accounting.

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