

# Management of Earnings and Shareholding Structure: Evidence from Jordan

Dr. Nahed Habis Alrawashedh, Amman Arab University - Business faculty

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## Abstract:

The management of accounting data has been the subject of research, discussion and even controversy in several countries, such as the United States, Canada, the United Kingdom, Australia and France. Initially the objective of this article was to conduct a review of the literature leading to a proposal for a conceptual framework for classifying the different forms of accounting data management and ownership structure. This framework is based on the desire to influence the possibilities of wealth transfers between the different stakeholders, which materialise at two levels: earnings per share and the debt-to-equity ratio. The literature on this subject is extremely rich. However, there are several areas that would merit further research. The other objective of this paper is also to study the link between ownership structure and earnings management in Jordan companies. The study is conducted on a sample of companies listed on the Amman Stock Exchange index over the period 2010-2014. Shareholding concentration, measured by the percentage of capital held by the largest shareholder, is negatively associated with earnings management up to a certain level, and then positively above that level (curvilinear relationship). In addition, the share held by the second shareholder is negatively associated with earnings management. As regards to the nature of shareholding, the analyses show that the weight of family and industrial shareholders limits the intensity of earnings management. This result could be explained by the long-term investment horizon of these players, which does not encourage managers to engage in this type of management.

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## Introduction:

The economic theory of the firm, and the agency theory in particular, have highlighted the existence of potential conflicts between shareholders and managers, as well as between different types of shareholders (Jensen and Meckling 1976). These conflicts can be explained in particular by the asymmetry of information between the actors, and their opportunism. Two main agency conflicts have been identified. The first conflict, known as type I, concerns the relationship in which the shareholder delegates the task of managing the company to a manager. The latter may not, however, act in the exclusive interest of the shareholder, but instead favour his own interests, in the form of additional wealth or power (Ronen and Sadan, 1981). The second agency problem, known as Type II, relates to the divergence of interests between controlling and minority shareholders. Such differences may arise

when the controlling shareholder exercises management functions, or in the event of an issue (or exchange) of securities in connection with public offerings, mergers and acquisitions or delisting.

In this agency context, the dissemination of information constitutes a signal sent by the company's manager to his partners. Among the information disclosed, the accounting result, taken from the financial statements, is an indicator that is particularly monitored by investors and financial analysts. Although accounting information is standardised, managers have room for manoeuvre in terms of accounting and valuation options. This practice, called earnings management, is defined by Schipper (1989) as "a motivated intervention in the external financial communication process with the aim of deriving personal benefit".

For example, managers' discretionary choices are particularly exercised in the assessment of depreciation and provisions. This assessment is subjective, since it is based on assumptions about the development of a market, a cost or a risk. In addition, managers may make management decisions that have an impact on earnings, such as reducing research or advertising expenditure, or the early or delayed disposal of assets. Depending on their accounting and management choices, managers are therefore in a position to significantly influence published results.

There are many factors that explain earnings management and may act in an incentive or constraining manner (Lui, 2004). The incentive factors include, for example, pressure from shareholders and creditors, as well as certain specific contexts, such as calls for savings or changes in management. Constraining factors include the accounting rules used (US standards, IFRS or others), the system of legal protection ("common law" versus "code law") and governance mechanisms, such as the quality of the audit, the structure of the shareholder base and the management board.

The objective of our study is to deepen, in the Jordan context, the analysis of the link between earnings management and the ownership structure. Two characteristics of the ownership structure are studied: the concentration and nature of the main shareholders. This question remains largely open, for several reasons: the complexity of the theoretical debate, the diversity of the results obtained in empirical studies, and the scarcity of studies carried out in the specific context of Jordan.

## 1. THEORETICAL FRAMEWORK

Companies have long been engaged in accounting data management, which the literature has described in several ways: earnings management, income smoothing, big bath accounting, window dressing and creative accounting (Lee and al., 2005). The

objective of this article is to conduct a literature review leading to a proposal for a conceptual framework for classifying the different forms of accounting data management. For the purposes of our research, all forms of management have been grouped under a single title: accounting data management. This approach differs from existing literature reviews (Imhoff, 1977; Ronen et al., 1977; Fields and al., 2001), which have generally been limited to only one aspect of accounting data management: results smoothing, results management or accounting choices, which made it difficult to develop a complete description of the phenomenon.

Integrating the findings of positive accounting theory, to which we add the theory of non-rational behaviour developed by Shefrin (2000) and the possibility of influencing investors, we have constructed a model that makes it possible to explain and classify the various forms of earnings management and ownership structure as described in the existing literature.

Indeed, in most cases, it is the desire to influence market players' perception of the wealth transfer risk associated with a firm that drives the need to manage accounting data. With this in mind, our model divides this risk into two components, as perceived by agents.

The first relates to changes in performance, as measured by earnings per share (EPS) (Koh, 2007). The second is related to the risk associated with the financial structure of the firm, as measured by the debt-to-equity ratio. Our framework classifies the different forms of earnings management per type and size of companies listed in stocks exchange in relation to these two aspects of risk (Koh, 2007).

We are currently in a context where the management of accounting data is heavily criticized. For example, in his 28 September 1998 speech entitled "The Numbers Game", Arthur Levitt, a former SEC Chairman, attacked the management practices and earnings smoothing in some listed companies (Loomis, 1999). With the Enron affair, the issue of

accounting data management has taken centre stage in American news.

## 2. THE JORDANIAN ACCOUNTING SYSTEM

Jordan has a relatively advanced stock market, a liberal economy and a political stability in a very volatile region. Nevertheless, the state ownership is relatively small; the economy of Jordan is oriented towards private sector. In the productive sectors, a series of privatization initiatives, has been implemented recently to reduce public shares (Davidson et al., 2005).

All firms registered in Jordan are exposed to the requirement of publishing their accounts and certification and. The Jordanian Association of Certified Public Accountants (JACPA) has been since 1987 the body is in charge of vetting the accounting information's quality. The control and certification of in Jordanian accounts refer to the references from the JACPA that embrace IAS (Balsam et al., (2003).

In order to certify all annual reports, just certified auditors are authorized. Additionally, there are a several worldwide renowned auditing and accounting businesses in the Jordan kingdom. Usually, government's auditing and accounting principles are considered of being matching the international standards (Chen and Yuan, 2004).

Long before the establishment of the Jordanian Securities Market, shares of public shareholding firms were traded in and were set up. The Jordanian public in the early thirties, already traded and subscribed to shares resulting in 1978 to the creation of The Amman Financial Market (AFM). Nevertheless, the passing bill of Securities Law No. 23 in 1997 was indeed for the Jordanian capital market a turning point and a landmark (Healy and Wahlen, 1999). Three organisations arose: the Securities Depository Centre (SDC), the Amman Stock Exchange (ASE) and the Jordan Securities Commission (JSC), out of what became till 1997 Amman Financial Market. In the region, the ASE is

one of the largest stock markets that allows foreign investment (Market Capitalization to GDP was about 226.3% in year 2008). In ASE, trades are electronically made by securities listed (Amman Stock Exchange, 2009).

As set by the Law 23/1997 of JSC and directives of accounting standards, auditing and disclosures (1/1998), all entities under the supervision of JSC's must apply IFRS. These guidelines identify the required information by public shareholding firms to be filed and disclosed with the commission for the goal of improving transparency. Public shareholding firms are essential to use the International Standards of Accounting and Auditing under the JSC supervision (Buckmaster, 1997).

Within a timeline no longer than three months after the end of their fiscal year, companies doing business in Jordan are obliged to produce a half yearly statement within a period no longer than 30 days after the end of the mid- year to submit annual reports and declare yearly statements (ASE, 2015). Moreover, these procedures include sections on trading insider and how organizations are required to produce to the JSC information material connected to the transactions. A new Securities Law number 76 in 2002 was released, approving the establishment of new stock exchanges and enabling the foundation of an autonomous venture fund protection, stricter professional and ethical codes, but also a tougher compliance of the rule of law (ASE, 2015).

## 3. LITERATURE REVIEW AND HYPOTHESES

We first present the conceptual framework of the research, followed by a review of the literature and the hypotheses put forward on the link between shareholding structure and results management. This relationship has been extensively studied in the accounting literature. American studies are the most numerous, but recently other countries or regions (Canada, Asia, Europe, Australia) have been researched. Some studies focus on shareholder concentration, while the most numerous analyse the

role of one (or more) type(s) of shareholder in managing earnings.

### 3.1 Industrial Shareholding

Siregar and Utama (2008) show that companies owned by industrial groups choose more opportunistic earnings management practices than companies not owned by industrial groups. Indeed, the financial market values earnings management less when it is operated by subsidiaries of industrial groups. This undervaluation of firms' discretionary increases in relation to the share held by industrial shareholders is also observed in Japan by Chung et al. (2004). According to them, this finding can be explained by the entrenchment of the management of companies with industrial shareholders, and the management of results resulting from that entrenchment.

Theoretical and empirical developments relating to this type of shareholder are few and far between. However, like the family shareholder, the industrial shareholder is likely to adopt a long-term perspective that is likely to be favourable to the quality of accounting information, in line with the following hypothesis:

*H1: The share held by the industrial ownership is negatively associated with earnings management.*

### 3.2 State Ownership

The link between state ownership and performance management has been little studied. Using an international sample of privatised firms, Ben-Nasr et al. (2009) find that state ownership is associated with lower quality of accounting results, and in particular with higher discrete accruals. In China, on the other hand, Ding et al. (2007) find that private firms manage accounting results to a greater extent.

They note, however, that the entrenchment effect associated with concentration is stronger among public firms.

Theoretical and empirical work on state ownership is scarce. On the basis of political-contract theory, it

can be assumed that government-owned corporations are subject to higher political costs, such as regulatory costs. They may have an incentive to manage results in order to limit the impact of these costs, based on the following assumption:

*H2: The share of government ownership is positively associated with managing for results.*

### 3.3 Family Shareholding

Family shareholding is among the most widespread in the world (La Porta et al., 1999), and also involves large companies. For example, in the United States, family firms account for more than a third of the 500 largest firms (Shleifer and Vishny, 1986). Research on family firms shows that, compared with non-family firms, they have better financial performance and lower debt costs (Anderson and Reeb, 2003). These results could be explained by the family's involvement in the firm and the long-term horizon of family shareholders.

Family shareholders have an incentive to have more control over employees, while at the same time favouring long-term relationships with employees. Finally, the desire to preserve their reputation may also discourage them from adopting strategies of expropriating other shareholders. However, to the extent that family shareholders may hold a significant share of the company's capital, they are also likely to take private profits, to the detriment of minority shareholders. This strategy can be achieved by monitoring the company's governance bodies and by withholding information (Wang, 2006).

Nevertheless, the concentration of shareholding in the hands of a family can also lead to family rooting strategies and have a negative effect on the quality of accounting information. Wang (2006) notes that above a certain threshold of family ownership (33% in his study), results management tends to increase. The same result is obtained for internal shares by Sánchez-Ballesta and García-Meca (2007) in Spain and Al-Fayoumi et al. (2010) in Jordan. The



presence of family members in governance bodies can also limit the effectiveness of control over accounting information. This finding is made by Jaggi and Leung (2007) and Jaggi et al. (2009) based on a sample of Hong Kong firms. Furthermore, Prencipe et al. (2008) show that Italian family-owned companies use capitalisation of R&D expenditure to meet debt covenants. According to them, the accounting choices made by the managers of family firms are explained by the desire to maintain control of the firm and preserve their reputation.

Based on the theoretical and empirical literature, we formulate the following hypothesis:

*H3: The share held by family shareholders is negatively associated with earnings management.*

Moreover, there is a particular risk that the family shareholder will become entrenched (Wang 2006). This risk is likely to be found in the French context, where families are the first category of shareholders. We will test a non-linear relationship between family shareholding and earnings management.

### *3.4 Financial Shareholders and Institutional Investors*

Several studies have analysed the role of institutional investors in managing results. Bushee (1998) observes that they tend to limit opportunistic decisions by managers, particularly with respect to reducing research and development spending. Thus, it seems that these investors exercise a particular role of control over managers, as also found by Chung et al. (2002), Velury and Jenkins (2006), Burns et al. (2010) and Hadani et al. (2011).

However, Bushee (1998) and Burns et al. (2010) note that the impact of institutional investors is mitigated when they are transient investors. In the Australian context, Koh (2003) and Hsu and Koh (2005) show that there is a non-linear relationship between earnings management and the share held by institutional investors, their beneficial effect only

appearing after a certain level of holding (around 50%). According to the authors, this finding is consistent with the idea that low institutional holdings reflect a short-term orientation on the part of institutional investors, which may encourage managers to manage earnings.

This leads us to formulate the hypothesis:

*H4: The share held by financial shareholders is positively associated with results management.*

### *3.5 Managerial Shareholding*

Some research provides results that go against the hypothesis of managerial shareholding. For example, Hunt (1985) finds no relationship between shareholding structure and the choice of stock valuation method. In UK, Young (1998) finds no link between the percentage of capital held by managers and earnings management. Similarly, the work of Guenther (1994) and Beneish (1997) does not validate the hypothesis. Furthermore, Beneish (1999) shows that executives of companies reprimanded by the SEC for accounting fraud sold more shares than executives of other companies. Finally, Teshima and Shuto (2008) find that executives are likely to manage earnings at intermediate levels (between 10 per cent and 40 per cent) of ownership. These results show that executives with equity holdings are likely to manage earnings upwards in an opportunistic manner.

As a result, the empirical results for the executive shareholding hypothesis appear mixed. However, it can be assumed that the level of managers' incentives to manage earnings depends on their degree of involvement in the firm, in line with the theory of aligning managers' interests with those of shareholders. This leads us to formulate a hypothesis consistent with that formulated by Dhaliwal et al (1982) in the framework of the political-contractual theory of accounting :

*H5: The share held by managerial shareholders is negatively associated with results management.*

### 3.6 Ownership Concentration and Earnings Management

Considering all the points mentioned above, it can be said that many factors such as the concentration variable chosen, the context of the study and the nature of the accounting choices studied influence the results obtained by previous studies. Thus, the study of the link between concentration and ownership management appears complex and leads to non-convergent conclusions (Liu and Lu (2007)). According to theory, the presence of shareholders holding a significant share of the capital is supposed to guarantee better control over management, and therefore limit the management of earnings (Beneish, 1997). This leads us to formulate the below hypothesis:

*H6: Shareholding concentration is negatively associated with the management of results.*

Nevertheless, the literature also emphasizes the risks associated with the concentration of capital in the hands of a single shareholder, not subject to countervailing power. In this case, the main shareholder, particularly when he is also a manager, may adopt a strategy of private profit allocation and rooting, to the detriment of minority shareholders. In particular, he is likely to implement a results management policy in order to maximize his wealth and strengthen his legitimacy. In Jordan, the share held by the main shareholder is on average high (over 30% among listed companies). This context is conducive to ownership management. This leads us to formulate the following hypothesis:

*H7: Above a certain level, the share held by the main shareholder is positively associated with earnings management.*

## 4. METHODOLOGY

The presentation of the methodology is done in three steps. First, the sample and data selection then the measurement of outcome management and finally the variables used and descriptive statistics are presented.

### 4.1 Sample Selection and Data

The study focuses on Amman Stock Exchange companies whose composition is representative, in terms of sector diversity and ownership, of the major companies listed in Jordan. The sample comprises of 220 out of the 237 Jordanian companies registered and active on Amman Stock Exchange from 2010 to 2014.

Faced with problems of reliability of existing databases relating to the identification of the shareholders of these companies, we chose to refer to the annual reports and registration documents of the companies. In most cases, two reference documents are required per company because the composition of the shareholder base is reported with changes over three years.

Sometimes, however, the breakdown of capital requires each year or is not clearly explained. In order to carry out a study on a homogeneous sample, the percentage of capital ownership, which is more frequently disclosed, has been used to the detriment of voting rights. Labelle and Schatt (2005) also show that the differences are small. These differences should not significantly affect the results of our research.

Each shareholder included in the annual report was classified in one of the following categories, often identified in the literature, but in a fragmented way:

- Family shareholding: includes the assets of the manager and his family, sometimes through family holdings;
- Managerial shareholders;
- Financial institutions: banks, insurance companies, mutual and pension funds, usually called institutional investors;
- Industrial companies: non-financial companies with manufacturing or trading activities;
- State ownership;
- Self-management: auto-control of the company.

The data collected thus make it possible not to study one or two of these categories, which is what most

research studies do, but all types of shareholders jointly. In collecting the data, we sought to restate indirect ownership percentages. For example, the ownership percentages of a holding company that is itself wholly owned by the family were counted as family ownership. As the threshold disclosure requirement only applies above 5%, we are aware that there is a risk of non-exhaustiveness for shareholders holding less than 5% of the capital. However, in order to take into account as many significant shareholders as possible, we have chosen to maintain the accuracy of the data provided in the annual reports.

When the shareholding of all companies was reported, we calculated for each of them the total percentage held for each type of shareholder, as well as the percentage corresponding to each of the first three shareholders identified. In addition, the ASE database provided us with the accounting and financial data for the calculation of earnings management and the operationalisation of the control variables.

**Table 1: Sample description**

2010 - 2014	Companies	Data over 5 years
	237	1,185
Minus certain types of banks and insurance companies	9	45
Minus ownership data missing	7	35
Minus missing accounting data	1	5
Number of potential observations	220	1,100
Minus missing data	0	34
Minus aberrant data	0	21
<b>Total sample</b>	<b>220</b>	<b>1045</b>

Table 1 provides a description of the sample and the selected observations. Of the 1,100 observations, 34 could not be processed due to a lack of accounting or

ownership data over one or more years. 21 observations were isolated as aberrant because the absolute value of their total accruals is greater than 0,3. Therefore, the number of observations used for the analysis is 1,045.

#### 4.2 Measuring Earnings Management

Discretionary accruals were used as a measure of earnings management.

They were calculated in two ways, based on the estimation models of (1) Jones (1991) and (2) Kothari et al. (2005). The interest of the model of Kothari et al. (2005) is to take into account the impact of performance on earnings management. Insofar as the profitability of  $t-1$  is introduced into the model, the latter also makes it possible to control in part the mechanical reversibility of accruals. The coefficients were estimated for each of the seven business segments. The two models used are hence:

$$1) ACC_t = \alpha + \beta_1 \Delta REV_{t,t-1} + \beta_2 PPE_t + \varepsilon_t$$

$$2) ACC_t = \alpha + \beta_1 \Delta REV_{t,t-1} + \beta_2 PPE_t + \beta_3 ROA_{t-1} + \varepsilon_t$$

With:

- $ACC_t$ : amount of total accruals in  $t$ , calculated as the difference between net income in  $t$  and cash flows in  $t$
- $\Delta REV_{t,t-1}$ : fluctuation of the consolidated net sales between  $t-1$  and  $t$
- $PPE_t$ : the amount of gross property, plant and equipment in  $t$
- $ROA_{t-1}$ : the rate of return on assets in  $t-1$
- Variables  $ACC_t$ ,  $\Delta REV_{t,t-1}$  and  $PPE_t$  are standardized by total assets in  $t-1$
- $\varepsilon_t$ , the error term, is an estimate of discretionary accruals.

The analysis focuses on the absolute value of discretionary accruals, which measures the intensity of earnings management. This measure is widely used in the literature (Wang 2006; Ali et al. 2007). However, it is not without critics, particularly when accruals are highly volatile (Hribar and Nichols, 2007). For this reason, in addition to the analysis of accruals in absolute values, we studied discretionary accruals in algebraic values. Moreover, the accrual volatility problem discussed by Hribar and Nichols

(2007) is partly controlled by variables such as the logarithm of assets and operating cash flows.

#### 4.3 Descriptive Statistics and Variables

Descriptive statistics are shown in Table 2. The results obtained by both methods provide comparable measures of accruals, both algebraically and in absolute terms. On average, they represent about -1% of assets in algebraic terms and 4% in absolute terms. Table 3 shows a high correlation between the two performance management measures (almost 0.90).

##### 4.3.1 Ownership Variables

The percentage of shares held was used as a holding variable since voting rights were not always available. Three concentration variables were created. SHR1 corresponds to the percentage of shares held by the main shareholder, as in most studies (Haw et al. 2004; Ding et al. 2007; Bozec 2008). In addition, we used two other concentration measures, SHR12 and SHR123, which represent the percentage of shares held by the first two and three shareholders, respectively, while the percentage of shares held by subsequent shareholders is relatively small. On average, the first shareholder holds 38.3% of the company's shares, the first two 47.9% and the first three 52.7%. In other words, the second and third shareholders hold on average 9.6% and 4.8% of the capital of the companies in the sample, respectively. This result shows the high concentration of shareholding among the major Jordan listed companies. The top three shareholders hold 52.7% of the capital and thus control the company.

For the purposes of this research, and in line with previous literature, we have chosen the following main categories of shareholders. FAM is the percentage of ownership by families and individuals identified. MAN is the share held by employees, managers and directors. SFI is the percentage held by financial institutions, banks, insurance companies and pension funds. GOV is the share held by the State, SELF the self-management and SIND the percentage held by industrial companies. In Jordan,

over the period 2010-2014, the 11 family shareholders represent the largest share, with an average of 23.2% of the capital.

Nevertheless, there are wide disparities as shown by the standard deviation. The second and third types of shareholder are financial institutions and industrial firms, which hold 15.8% and 14.3% of the capital of ASEGX companies respectively.

**Table 2: Descriptive statistics over the period 2010-2014 (N = 1,045)**

	Average	Mean	Maximum	Minimum	Standard Deviation
DJABSA	0,042	0,031	0,296	0,000	0,043
DKABS A	0,040	0,029	0,297	0,000	0,039
SHR1	0,383	0,355	0,990	0,020	0,226
SHR12	0,479	0,509	1,000	0,033	0,223
SHR123	0,527	0,547	1,000	0,033	0,221
FAM	0,232	0,079	0,873	0,000	0,268
MED	0,013	0,000	0,280	0,000	0,037
SFI	0,158	0,082	0,990	0,000	0,196
GOV	0,025	0,000	0,990	0,000	0,127
SELF	0,009	0,000	0,100	0,000	0,019
SIND	0,143	0,000	1,000	0,000	0,235
SLAT	13,956	13,662	19,042	8,770	1,930
DTA	0,250	0,229	2,284	0,000	0,190
OCF	0,090	0,085	0,779	-0,767	0,087
LOSS	0,090	0,000	1,000	0,000	0,286
ASEGX	0,144	0,000	1,000	0,000	0,351

With DJABSA as the absolute value of discretionary accruals calculated according to the Jones (1991)



model, DKABSA is the absolute value of discretionary accruals calculated according to the Kothari et al. model. (2005), SHR1 is the percentage held by the largest shareholder, SHR12 is the percentage held by the two largest shareholders, SHR123 is the percentage held by the three largest shareholders, FAM is the percentage held by family shareholders, MED is the percentage held by management, SFI is the percentage held by financial shareholders, GOV is the percentage held by the government, and SELF is the percentage held by auto-management, SIND the percentage held by the industrial shareholders, SLAT the logarithm of the amount of assets in thousands of Jordanian Dinar, DTA the Debt/Total Assets ratio, OCF the operating cash flow normalised by total assets, LOSS is equal to 1 if the result is negative, 0 otherwise, ASEGX is equal to 1 if the company's share is included in the Amman Stock Exchange General Index, 0 otherwise.

The correlation table (Table 3) confirms the presence of three main poles of shareholders who tend to exclude each other, resulting in negative correlations between the capital held by family, industrial and financial shareholders. Furthermore, family and industrial shareholders are closely linked with measures of shareholder concentration, whether it is the first, second or third largest shareholder. This weight in the capital as the company's main shareholder is not apparent for financial shareholders. The latter are less likely to hold controlling blocks of the company and represent a more disparate category (banks, insurance companies, pension and investment funds, mutual societies, etc.). Measures of absolute earnings management are positively associated with the share of capital held by financial shareholders.

#### *1.1.1 Controlling Variables*

The control variables used in this study are those identified in the literature as having an impact on results management. The size of the firm, its industrial sector, its debt ratio and the impact of years of education are noted by Ball and Shimakuvar

(2005) in the case of English firms, or Teshima and Shuto (2008) on manager shareholding in Japan.

Size, SLAT, is measured by the logarithm of the amount of assets in thousands of Jordanian Dinar, DTA by the debt/total assets ratio and industrial sectors follow the classification.

As this is data over several years, we have produced a fixed-effect panel by introducing the binary variables. On the other hand, Wang (2006) shows the impact of the amount of operating cash flow (OCF) as well as the fact of recording a loss (binary variable LOSS isolating companies incurring losses) on the absolute value of accruals. Finally, to take into account differences in control, we have included a variable that includes companies in the ASE General Index. These companies are particularly monitored by financial analysts, and auditors are supposed to be especially vigilant in monitoring them. Consequently, this variable makes it possible to control the effect of monitoring by auditors and financial analysts.

Debt and cash flows represent on average 25.0% and 9.0% of assets respectively. Over the period, the percentage of observation of companies recording losses amounts to 9.0%. Return on assets for all companies over the period was 4.6% on average.

A study of correlations (Table 3) shows that size is negatively associated with the absolute amount of discretionary accruals, while the debt ratio does not appear to be correlated. These results are consistent with those obtained by Teshima and Shuto (2008), who note, following Jambalvo et al. (2002), that executives of large companies have less discretion in managing earnings because they are more closely monitored by financial analysts. The amount of operating cash flow (OCF) is positively associated with the absolute value of discretionary increases. For the LOSS variable, losses are associated with higher absolute accruals, suggesting stronger earnings management among loss-making companies, as Wang (2006) found.

**Table 3: Correlation between variables (N = 1,045)**

Variables	JABSA	KABSA	SHR1	SHR12	HR123	FAM	MED	SFI	GOV	SELF	SIND	SLAT	DTA	OCF
JABSA	1													
KABSA	0,871**	1												
SHR1	-0,003	0,005	1											
SHR12	-0,008	0,008	0,945**	1										
HR123	0,003	0,000	0,891**	0,981**	1									
FAM	-0,004	0,001	0,345**	0,368**	0,383**	1								
MED	-0,059	0,059	-0,216***	-0,177**	-0,148***	-0,113***	1							
SFI	0,113**	0,066**	-0,118***	-0,033	0,027	-0,343***	0,044	1						
GOV	-0,047	0,044	0,248**	0,214**	0,197**	-0,167***	0,002	-0,101***	1					
SELF	-0,033	0,043	-0,128***	-0,134**	-0,119***	0,021	0,106**	0,026	0,072**	1				
SIND	-0,027	0,009	0,315**	0,331**	0,316**	-0,417***	-0,116***	-0,224***	0,091**	-0,14**	1			
SLAT	-0,168***	-0,186***	-0,252***	-0,314**	-0,344***	-0,435***	0,098**	0,025	0,276**	0,198**	0,016	1		
DTA	0,016	0,005	-0,062**	-0,064**	0,058	-0,137***	0,044	0,14***	0,053	0,031	0,033	0,196**	1	
OCF	0,074**	0,152**	0,073**	0,088**	0,084**	0,001	0,009	0,035	0,034	0,005	0,081**	-0,05	-0,024	1

The signs \*,\*\*,\*\*\* indicate a significance at the respective levels of 10%, 5% and 1%.

## FINDINGS AND DISCUSSION

We first present the results of regression models relating earnings management to shareholding concentration and then those of models relating earnings management to the nature of shareholding

### 1.1 Earnings Management and Concentration of Ownership

The link between shareholder concentration and performance management has been the subject of various studies such as those by Gunthrie and Sokolowsky (2010), Zhong et al (2007), Bozec (2008), Liu and Lu (2007) and Smith (1976). However, to our knowledge, none of them have studied the shareholding structure of Jordanian companies. We use as concentration variables SHR1, SHR12 and SHR123, which represent respectively the share held by the first, the first two and the first three shareholders. The control variables used are those identified in the literature, such as Ball and Shivakumar (2005) and Wang (2006).

Four regressions were conducted to test the relationship between earnings management and shareholder concentration. The first two regressions use the share held by the largest shareholder (the SHR1 variable) as a measure of concentration. This measure is the most widely used in the literature (Ding et al. 2007). The first model tests a linear relationship between earnings management and the percentage of shares held by the largest shareholder (pattern 1). The second model tests a non-linear relationship between earnings management and shareholder concentration. This non-linear relationship, observed by several authors (Bozec, 2008) in different contexts, reflects in particular the two antagonistic effects of concentration on results management (alignment versus rootedness). In order to highlight a possible non-linear relationship between the percentage held by the main shareholder and the results management, the variables SHR1 and

SHR12 are introduced into the regression model (pattern 2).

However, in addition to the role played by the main shareholder, we thought it would be interesting to analyse the influence of the other main shareholders (in this case the second and third) on the management of accounting results. Two new regressions were conducted by introducing the share held respectively by the first two shareholders (variable SHR12) and the first three shareholders (variable SHR123). These two regressions form patterns 3 and 4 and complete the analysis.

#### Pattern 1

$$DJABSA \text{ (or DKABSA)} = \alpha_1 + \alpha_2 \cdot SHR1 + \alpha_3 \cdot SLAT + \alpha_4 \cdot DTA + \alpha_5 \cdot OCF + \alpha_6 \cdot LOSS + \alpha_7 \cdot ASEGX + \sum \alpha_{(4+i)} \cdot AN_i + \sum \alpha_{(11+i)} \cdot BSC_i$$

#### Pattern 2

$$DJABSA \text{ (or DKABSA)} = \alpha_1 + \alpha_{2,1} \cdot SHR1 + \alpha_{2,2} \cdot SHR12 + \alpha_3 \cdot SLAT + \alpha_4 \cdot DTA + \alpha_5 \cdot OCF + \alpha_6 \cdot LOSS + \alpha_7 \cdot ASEGX + \sum \alpha_{(4+i)} \cdot YR_i + \sum \alpha_{(11+i)} \cdot BSC_i$$

#### Pattern 3

$$DJABSA \text{ (or DKABSA)} = \alpha_1 + \alpha_2 \cdot SHR12 + \alpha_3 \cdot SLAT + \alpha_4 \cdot DTA + \alpha_5 \cdot OCF + \alpha_6 \cdot LOSS + \alpha_7 \cdot ASEGX + \sum \alpha_{(4+i)} \cdot AN_i + \sum \alpha_{(11+i)} \cdot BSC_i$$

#### Pattern 4

$$DJABSA \text{ (or DKABSA)} = \alpha_1 + \alpha_2 \cdot SHR123 + \alpha_3 \cdot SLAT + \alpha_4 \cdot DTA + \alpha_5 \cdot OCF + \alpha_6 \cdot LOSS + \alpha_7 \cdot ASEGX + \sum \alpha_{(4+i)} \cdot YR_i + \sum \alpha_{(11+i)} \cdot BSC_i$$

With DJABSA as the absolute value of discretionary accruals calculated according to the Jones (1991) model, DKABSA the absolute value of discretionary accruals calculated according to the Kothari et al.

model. (2005), SHR1 is the percentage held by the first shareholder, SHR1 is the square percentage held by the first shareholder, SHR12 is the percentage held by the first two shareholders, SHR123 is the percentage held by the first three shareholders, SLAT is the logarithm of the amount of assets in t-1, DTA is the debt ratio, OCF the operating cash flow normalised by total assets, LOSS is equal to 1 if the result is negative, 0 otherwise, ASEGX is equal to 1 if the company belongs to the ASE Global Index, 0 otherwise, YR<sub>i</sub> is equal to 1 if the year is 200i (for i = 4 to 7), 0 otherwise, BSC<sub>i</sub> is equal to 1 if the field of activity is in classification i (for i = 1 to 6), 0 otherwise.

### *Earnings Management and Nature of Shareholding*

The link between the nature of shareholding and performance management has rarely been studied in a way that takes into account the great diversity in the nature of shareholders. Most of the literature focuses on one particular form, whether family or institutional shareholding. We seek to understand the role of each of the types of shareholders identified in managing for results. As a first step, the weight of each type of shareholding is tested (pattern 5). Then, taking into account the non-linear relation obtained previously, we introduce the square of the variables for each of the types of shareholdings studied (pattern 6).

#### **Pattern 5**

$$\text{DJABSA (or DKABSA)} = \alpha_1 + \alpha_2 \cdot \text{FAM} + \alpha_3 \cdot \text{MED} + \alpha_4 \cdot \text{SFI} + \alpha_5 \cdot \text{GOV} + \alpha_6 \cdot \text{SELF} + \alpha_7 \cdot \text{SIND} + \alpha_8 \cdot \text{SLAT} + \alpha_9 \cdot \text{DTA} + \alpha_{10} \cdot \text{OCF} + \alpha_{11} \cdot \text{LOSS} + \alpha_{12} \cdot \text{ASEGX} + \sum_{(9+i)} \alpha_{(9+i)} \cdot \text{YR}_i + \sum_{(16+i)} \alpha_{(16+i)} \cdot \text{BSC}_i$$

#### **Pattern 6**

$$\text{DJABSA (or DKABSA)} = \alpha_1 + \alpha_2 \cdot \text{FAM} + \alpha_3 \cdot \text{MED} + \alpha_4 \cdot \text{SFI} + \alpha_5 \cdot \text{GOV} + \alpha_6 \cdot \text{SELF} + \alpha_7 \cdot \text{SIND} + \alpha_8 \cdot \text{FAM}^2 + \alpha_9 \cdot \text{MED}^2 + \alpha_{10} \cdot \text{SFI}^2 + \alpha_{11} \cdot \text{GOV}^2 + \alpha_{12} \cdot \text{SELF}^2 + \alpha_{13} \cdot \text{SIND}^2 + \alpha_{14} \cdot \text{SLAT}$$

$$+ \alpha_{15} \cdot \text{DTA} + \alpha_{16} \cdot \text{OCF} + \alpha_{17} \cdot \text{LOSS} + \alpha_{18} \cdot \text{ASEGX} + \alpha_{(15+1)} \cdot \text{YR}_i + \alpha_{(22+1)} \cdot \text{BSC}_i$$

The results of the regressions conducted using the nature of ownership are presented in Table 4. The first two regressions (pattern 5) analyse the relationship between the share held by each type of shareholding and the amount of discretionary increases in absolute value. Management of results is not significantly associated with the share of capital held by managerial, financial and state shareholdings. Consequently, assumptions 3, 5 and 7 cannot be validated.

On the other hand, the percentage held by family and industrial shareholdings is negatively associated with the intensity of earnings management. These results are in line with assumptions 4 and 6. This finding is in line with work carried out on family shareholdings in different contexts, in the United States (Wang 2006; Ali et al. 2007) and in Europe (Sánchez-Ballesta and García-Meca 2007; Prencipe et al. 2008). Like family shareholdings, industrial investors, which are present in 48% of the firms in the sample, are likely to adopt a long-term horizon that does not encourage managers to manage accounting information in the short term.

The other two regressions test for the possible existence of a non-linear relationship between shareholding type and earnings management (pattern 6). The results appear to be consistent with this for family shareholdings. The intensity of earnings management decreases first as family ownership increases and then increases at a certain level of ownership. This observation of a non-linear relationship between family shareholding and performance management was carried out by Wang (2006) in the United States. In the Jordanian context, the similarity of the results observed from the share held by the largest shareholding and that held by family shareholdings can certainly be explained by the privileged place occupied by families in the Jordanian shareholding structure.



A study of accruals in algebraic value allows us to refine the analysis. The limitation of the intensity of results management thus appears to differ according to the nature of the shareholding. For example, the shareholding of a family shareholding is associated with both a limitation of positive accruals and an increase in negative accruals. Conversely, the percentage held by an industrial shareholding seems to be asymmetrically associated with an increase in negative discretionary accruals but not with a decrease in positive accruals.

In addition to these tests, we studied the influence of the share held by the second and third shareholdings according to the nature of the first shareholding. This analysis highlights, when the first shareholding is

financial, a negative association between results management and the share held by the second shareholder. Furthermore, no association is found when the first shareholder is a family or industrial shareholder.

These results are consistent with the previous analyses, showing that family and industrial shareholdings seem to offer a certain guarantee as regards the quality of the results. This makes it less necessary to implement countervailing powers. On the other hand, financial shareholding does not seem to be associated with the quality of results. In the case where the main shareholder is financial, the results of our study suggest that the second shareholder may play a favourable role in the quality of disclosed results.

**Table 4: Regressions using shareholding variables**

Pattern 5			Pattern 6	
Variable	Jones (1991)	Kothari <i>et al.</i> (2005)	Jones (1991)	Kothari <i>et al.</i> (2005)
C	0,126***	0,12***	0,128***	0,118***
FAM	– 0,019**	– 0,02***	– 0,052**	– 0,053***
MED	– 0,043	– 0,048	0,002	0,031
SFI	– 0,007	– 0,004	0,003	0,02
GOV	– 0,002	– 0,003	– 0,014	– 0,018
SELF	– 0,038	– 0,029	– 0,141	– 0,316*
SIND	– 0,021***	– 0,017**	– 0,021	– 0,011
FAM <sup>2</sup>	–	–	0,048*	0,053**
MED <sup>2</sup>	–	–	– 0,211	– 0,378
SFI <sup>2</sup>	–	–	– 0,015	– 0,033
GOV <sup>2</sup>	–	–	0,015	0,018
SELF <sup>2</sup>	–	–	1,81	4,574*
SIND <sup>2</sup>	–	–	– 0,003	– 0,009
SLAT	– 0,006***	– 0,006***	– 0,006***	– 0,006***
DTA	0,002	0,006	0,002	0,006
OCF	0,085***	0,093***	0,084***	0,093***
LOSS	0,036***	0,024***	0,036***	0,024***
ASEGX	0,001	0,001	0,000	0,001
Fixed notes per year included (variables YRi)				
Fixed notes per fields of activity included (variables BSCi)				
Adjusted R <sup>2</sup>	0,1340	0,1181	0,1323	0,1215
P	< 0,001	< 0,001	< 0,001	< 0,001
N	1,045	1,045	1,045	1,045

The signs \*, \*\*, \*\*\* indicate significance at the respective levels of 10%, 5% and 1%.

DJABSA is the absolute value of the discretionary accruals calculated according to the Jones (1991) model, DKABSA is the absolute value of the discretionary accruals calculated according to the Kothari et al. model. (2005), FAM is the percentage held by family shareholders, MED is the percentage held by management, SFI is the percentage held by financial shareholders, GOV is the percentage held by the government, SELF is the percentage held by the company's own shares, SIND is the percentage held by industrial shareholders, SLAT is the logarithm of the amount of assets, DTA the debt ratio, OCF the operating cash flow normalised by total assets, LOSS is equal to 1 if the result is negative, 0 otherwise, ASEGX is equal to 1 if the company belongs to the ASEGX index, 0 otherwise, YR<sub>i</sub> is equal to 1 if the year is 200<sub>i</sub>, 0 otherwise, BSC<sub>i</sub> is equal to 1 if the business sector is in classification *i*, 0 otherwise.

## CONCLUSION

The objective of our research is to study the link between ownership structure and earnings management in Jordan listed companies. We find this study interesting for several reasons. First, because the work conducted on this subject does not reveal a consensus on the association between shareholding structure and earnings management. Second, our study focuses on both the concentration and the nature of ownership, whereas most of the work focuses on only one of these two facets. Finally, to our knowledge, the Jordan context has not been the subject of any study on the relationship between performance management and shareholding structure (Koh, 2003).

The analyses are conducted on a sample of listed companies in the Amman Stock Exchange index over the period 2010-2014. Several results emerge from the study of discretionary accruals measured on the basis of sector versions of the models of Jones (1991) and Kothari et al. (2005). With regard to

shareholding concentration, the relationship between earnings management and the percentage held by the main shareholder is not significant when a linear model is used. On the other hand, the use of a non-linear model reveals a U-shaped relationship (Wang, 2006).

Concentration of capital thus limits earnings management, which then increases again when the largest shareholder holds more than half of the capital. This result is original compared with studies conducted in other contexts (Liu and Lu, 2007) and is not unlike those obtained by Wang (2006) in the United States on a sample of family firms. However, the Jordan context is characterised by a strong presence of families in corporate ownership.

When the first two or three shareholders are used as a measure of concentration, it seems to limit earnings management. This observation shows the impact of the second and third shareholders on the company's accounting policy. Specifically, it would appear that the second shareholder exercises a controlling role and limits the intensity of earnings management (Bozec, 2008).

As regards the nature of ownership, the analyses reveal the influence of two categories of shareholders. The weight of family and industrial shareholders limits the intensity of results management. One explanation could lie in the long-term investment horizon of these players, which does not encourage managers to manage results (Ding et al. 2007). Moreover, this finding confirms the conclusions of previous studies that highlight the moderating role of family ownership. With regard to industrial ownership, however, few studies have been conducted. The role played by this type of ownership in accounting policies could therefore be the subject of further research.

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