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Corporate Governance Mechanisms, Privatization Method and the Performance of Privatized Companies in Jordan

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ABSTRACT

The present study analyzes the effect of corporate governance mechanisms on the performance of privatized companies in the Jordanian market. Internal and external corporate governance are mechanisms believed to lead to the success of the privatization program. Internal factors, including ownership structure (ownership concentration and type, board members and size) and external factors (audit quality), seemingly affect performance. Different from extant research, the present study analyzes the unique Jordanian market, where close supervision of the privatization program by the royal family is common. An agency perspective, coupled with political intervention, serves as the background for the present study. Privatization methods (for example, strategic partnership versus direct sale) chosen by the said authority are believed to affect the performance of privatized companies. Two-stage least squares (2SLS) and multivariate econometric methodology are used to examine a pool of data from listed companies in the Amman Stock Exchange from 1992 until 2001. The present study finds that the government's refusal to relinquish control has resulted in the lack of success of the privatization program in Jordan. In contrast, factors demonstrating positive effects on the performance of privatized companies include private ownership concentration; foreign non-Arab ownership; small board size; and audit quality. The strategic partner chosen by the royal family and reduced government intervention positively affects the performance of companies.

Keywords: Privatization; corporate governance; performance; Jordan; ownership structure

INTRODUCTION

The participation of state-owned enterprises (SOEs) in the economy has encountered criticism despite their important role in the past. One of the criticisms is on the performance of these companies due to the lack of a corporate governance (CG) mechanism, that is, a majority of these corporations have substantial government ownership (Wu 2007). Property rights theory suggests that private companies perform more efficiently and profitably than SOEs (Boardman & Vining 1989) due to the need for SOEs to fulfill the profit maximization objective (shareholder theory) and the social welfare objective (stakeholder theory) (Nwanji & Howell 2007). In contrast, private enterprises focus more on the efficient intra-firm allocation of resources to maximize profit (Boubakri et al. 2005a).

Private investors provide managers with a stronger incentive to achieve better performance, unlike in SOEs (Debande & Friebel 2004) where the position and reputation of managers are at stake. Thus, SOEs are privatized in many countries. Megginson and Netter (2001) define "privatization" as the sale of SOE assets to private investors resulting in the transfer of majority ownership to the latter.

Many studies exist concerning privatization. The study by D'souza et al. (2005) on developed countries and that of Boubakri et al. (2005a) on developing countries document a significant increase in the performance of privatized companies. Nevertheless, the extent to which performance is increased in privatized companies may differ. In short, the effectiveness of privatization may differ between developed and developing countries.

Privatization has become a subject of agency theory. An important objective of privatization is to ensure managers (agents) work on behalf of the principals, namely the shareholders in private companies (Jensen & Meckling 1976). Privatization is a distinct event that often leads to drastic changes in internal and external corporate governance mechanisms (Boubakri et al. 2005a; Boubakri et al. 2005b). Consequently, the changes in corporate governance may affect the performance of privatized companies due to improved monitoring and/or less agency conflict (Che Haat et al. 2008). In addition, Gul et al. (2010), find foreign ownership (which may exist after privatization) and auditor quality are associated with less information asymmetry, thereby mitigating the agency problem. Improved corporate governance mechanisms also assure corporate investors receive adequate returns on their investments (Shleifer &Vishny 1997). In the Jordan-specific context, Awamleh (2002) suggests that changes in corporate governance lead to the success of privatization programs. Such finding is consistent with Gentzoglanis (2007) who argues that privatization needs effective corporate governance and policies to ensure sufficient protection for shareholders and foreign investors in the Middle East and North Africa (MENA), including Jordan. Therefore, determining whether these changes have an

effect on the performance of privatized Jordanian SOEs is beneficial.

Privatization became an issue in Jordan when Prime Minister Awn Khasawneh made a promise to the parliament to comprehensively review the privatization processes and to consider 'reacquiring' some assets in December 2011 (Kayyali 2012). The promise was made following tens of suspected cases of unethical business behavior, including mismanagement and corruption, being sent to the Anti-Corruption Committee (ACC). The author also highlights that inefficient business deals were made and a huge burden of debts exists among the privatized companies. One of the most important examples of the privatization problem in Jordan involves corruption cases such as in Khaled Shaheen. This company is a privatized company by the name Jordan Petroleum Refinery Company (JPRC). The four persons involved are Khaled Shaheen; a former JPRC director-general, Ahmad Rifai; the prime minister's economic adviser, Mohammad Rawashdeh and Adel Qudah, a former finance minister and former chairman of JPRC. The case circumstance is selection of a strategic partner for an expansion project at the JPRC that was worth $2.1 billion. The last three names were acquitted with the charge of public office misuse (Maayeh 2010). It is believed that the root of the problem is in the privatization process, in which the government did not give up control over privatized companies (Kayyali 2012).

The aforementioned problems are believed to have originated from the background of the entities involved in the processes and methods of privatization. Jordan is a special case due to its monarchy system. In Jordan, the opposition claims that the royal families, who are politicians, negatively affect the country's economy (Habib 2011). The politicians may also use the proceeds from privatization of state entities (Habib 2011). In contrast, there is also an argument that the king contributes to the country positively through his global connections. It can be expected that the king could contribute positively in the privatization program through the privatization methods chosen by the Jordanian state authority (Economic Planning Unit 2006). The question, therefore, is as follows: Do privatization methods affect corporate governance structure and company performance?

The present study contributes to literature in the field by investigating the role of royal families in the privatization process. The privatization methods determined by the process within the political process are predicted to influence the performance of privatized companies. The investigation in the present study challenges the existing beliefs concerning the factors that determine the success of privatization, particularly in developing countries. An agency perspective, coupled with some political intervention, serves as the background of this study. The involvement of royal families in politics and business is common in the Middle East and some other Asian countries. Results from the present study could shed some light on the effectiveness of royal intervention in privatization processes. Privatization methods, such as strategic partnership and direct sale methods, may expose changes in ownership structure. Therefore, in the context of privatization, control over the privatization process by the royal family in Jordan leads to the determination of ownership structure. Thus, unlike prior studies, the present study investigates the effect of these methods and other governance mechanisms on the performance of privatized companies. Demsetz (1983) and Demsetz and Lehn (1985) argue that, in equilibrium, ownership structure is endogenously determined by a set of firm-level variables in the contracting environment, trading off costs and benefits of ownership concentration. Therefore, with respect to the endogeneity problem of ownership, the present study includes firm-level variables as explanatory variables for ownership concentration; and considers privatization timing and methods that influence the privatization process. The remainder of the present paper is divided into five sections. After the introduction, Section 2 presents background information on privatization in Jordan, upon which the hypotheses development is based. In Section 3, the sample selection; the data collection process; and the empirical model are discussed. Section 4 presents the empirical findings and discussions. Finally, Section 5 concludes the study.

Study Background and Hypotheses Development

SOEs, as companies controlled by the government, have multiple objectives, including profitability, efficiency, and the social welfare of citizens. However, privatized companies usually focus on profit maximization (D'souza et al. 2001), although the current trend is toward economically, environmentally and socially sustainable orientations. Sheshinski and López-Calva (2003) argue that the incentive problem caused by state ownership affects the way managers pursue these objectives. Thus, the difference in the objectives of SOEs and private companies could significantly affect the financial performance of these companies. In fact, efforts in achieving these multiple objectives could become a good excuse for SOEs to fail to achieve their expected financial performance. The appointment of new managers in the companies could improve the SOEs performance (Barberis et al. 1996; Warzynski 2003).

Privatization proceedings are unique in Jordan due to the involvement of the royal family. Such involvement affects the process and results of privatization. Jordan is a constitutional monarchy with the royal family at the top of the power pyramid. There is evidence of physical representative of the royal families in the government. In Jordan, the King appoints the Prime Minister and has, to some extent, the power to control the government formation. Although there are elected leaders, the Prime Minister can only appoint ministers that forms the cabinet upon approval by the King.

To make sure that privatization program achieves its objectives, the Jordanian government created an institutional framework to control the process of

privatization. The framework has three mechanisms: the higher ministerial privatization committee; the executive privatization commission; and the supporting committees and task forces. The three mechanisms are responsible for initiating and implementing the privatization program.

The higher ministerial privatization committee (here in after *Privatization Council*) consists of experts that can draft privatization policies and includes the Prime Minister; the Deputy Prime Minister; the Minister of Finance; the Minister of Industry and Trade; the Minister of Planning; the Minister of Justice; the Governor of the Central Bank; and four other specialized experts. The Chairman appoints one of the Council members as the Vice-Chairman.

According to privatization law, the Privatization Council has several responsibilities and powers (Privatization Law 2000; Economic Planning Unit 1998), including drafting of general privatization policies to achieve its objectives and to ensure its success. The Privatization Council also has the power to decide which public entity is to be privatized; and the method of privatization (i.e., whether to use direct sales, transfer of rights, or through strategic partnerships). Furthermore, the Privatization Council may engage other parties, such as consulting firms and legal advisors, during such processes. Thus, the members of the Privatization Council, in general, lack independence as they are also a part of the ministry.

On the other hand, it is expected that the process of selecting the qualified consulting firms to carry out preliminary studies on the viability of proposed project and the recommendation of strategic partners to the Prime Minister's council and the king could affect the results of privatization. In particular, it can be expected that continuous supervision by strategic partners, as opposed to direct sales, could have a positive effect on company performance. Thus, the king's involvement in the process of approving privatization plans involving strategic partnerships is predicted to have a positive effect on post privatization company performance. For example, in 2000, forty percent of Jordan Telecommunication Company (JTC) was sold to a consortium of investors on the basis of strategic partnership (an international company with vast experience in telecommunication industry). It was expected that the strategic partnership will be capable of improving the performance and strategic value of JTC. In this arrangement, a complete management contract was signed specifying that the management of JTC will technically be the responsibility of the strategic partner. The strategic partner was expected to bring foreign investment into the country (in this case, France Telecom Group had acquired shares in the company and became the majority shareholder). The strategic partner was also expected to bring new technology; financial and management systems; and commercial orientation into the company.

The second mechanism is the executive privatization commission. The executive privatization unit was established at the end of 1996 to facilitate the privatization process. The commission is responsible for ensuring that transactions are executed along with any other responsibilities assigned by the council. According to the Privatization Law (2000), this commission is financially and administratively independent. However, it is noted that the commission is at the same time affiliated with the prime minister's office and the chairman of this commission is appointed by the prime minister. Additionally, the prime minister has the power to determine the salary and bonuses, as well as to terminate the chairman (Al-Kodah 2002). This unique characteristic of the Jordanian privatization program raises issues relating to the political agency theory. The commission has the power and responsibility to follow up the execution of all decisions made regarding the privatization (PL 2000).

The third mechanism consists of the supporting committees and task forces. First, a steering committee is formed for each project to control the privatization transaction (EPU 1998) and to facilitate communication and coordination with other parties. Such committees report to the higher privatization committee. With regards to the task forces, their main task is to form working committees for each project to implement the directives from the experts. Recommended actions are forwarded from one committee to another to ensure proper sharing of knowledge (EPU 1998). Finally, a special tendering committee exists to approve government tenders relating to each privatization project. Thus, the commissions, task forces and committees are related (appointed and make reports) to the ministries, and ultimately the royal families, are supported by relevant law to ensure the success of privatization programs.

Privatization through strategic partnerships and direct sale methods are also predicted to attract more foreign investors, which could lead to improved performance among companies, as stated in the objectives of the Executive Privatization Commission (EPC 1997). According to Cook and Kirkpatrick (1995), company performance should ideally be assessed in terms of the objectives for privatization. Article (3) of the Privatization Law in Jordan specifies the following objective: "Raising the efficiency, productivity, and competitiveness of economic enterprises" (Privatization Law 2000). Extant literature examines whether privatization achieves its objectives, primarily by looking at the outcome (i.e., performance) (D'souza et al. 2001; D'souza & Megginson 1999; La Porta &Lopez-De-Silane 1999; Megginson et al. 1994). However, studies that examine the effect of the privatization process on the performance of privatized companies remain lacking. This issue is important in Jordan, and possibly in other countries with similar a background, because the royal family has substantial involvement in both privatization processes and business.

Against this background, it is interesting to see how the effect of the royal families through privatization process (political economy perspective) and other corporate governance (CG) mechanisms on the performance of privatized companies. CG involves mechanisms (structure and process) that allow shareholders to obtain their required rate of return on their investment and achieve better

performance. Boubakri et al. (2004) study the role of CG in increasing the efficiency of company management. From this perspective, private companies have an advantage because they are more likely to produce high-quality financial reporting by appointing a Big Four auditor (Guedhami et al. 2009). Private companies also have the flexibility to determine the size of the board, which plays an important role in monitoring managers (Jensen 1993; Lipton & Lorsch 1992). Therefore, these mechanisms (audit quality and board size) and their effects on the performance of privatized companies are also investigated. Another important issue argued by corporate governance literature is the endogenous nature of ownership (Boubakri et al. 2005b; Drakos & Bekiris 2010; Elsayed 2011; Getzmann et al. 2010; Grosfeld 2006a 2006b; Grosfeld & Hashi 2003; Gul et al. 2010; Hanousek et al. 2007; Omran et al. 2008; Shakir 2011; Wei et al. 2005). Endogeneity is caused by unobserved heterogeneity, which could lead to misspecification of the models. In the privatization context, some variables that determine ownership concentration can also affect firm performance (Boubakri et al. 2005b; Boubakri et al. 2011; Grosfeld 2006a 2006b; Omran 2009; Omran et al. 2008). The result is a spurious relationship between ownership concentration and company performance.

The problem of endogeneity could also occur in the present study. Privatization methods have the potential to affect the performance of companies (Al Qudah 2010; Dean & Andreyeva 2001; Astami et al. 2010; Boubakri et al. 2009; D'souza et al. 2007; Foreman-Peck & Waterson 1985) and may also affect ownership concentration (Boubakri et al. 2005b; Grosfeld 2006a 2006b; Grosfeld & Hashi 2003; Megginson et al. 1994; Omran 2009). In this context, Guedhami (2003) states that using the ordinary least squares (OLS) regression approach will cause misspecification due to unobserved heterogeneity. Boubakri et al. (2005b) and Hanousek et al. (2007) overcome this problem by using instrument variables (IVs) in a two-stage least squares regression (2SLS) setting. The fitted value of the ownership concentration coefficient is used in the second stage of the system. Thus, unobservable heterogeneity needs careful investigation.

Hypotheses Development

Private Ownership Concentration

According to Hanousek et al. (2007), private ownership concentration, relative to state ownership, tends to be associated with superior performance in the post privatization period. Consistent with this finding, in the context of MENA countries, a study by Ben Naceur et al. (2007) suggests that significant increases in profitability and operating efficiency occur when the government relinquishes control and when there is increases in foreign ownership. Retaining state ownership and control appears to be associated with inefficiency and value destruction in privatized companies (Boubakri et al. 2009; Zeitun 2009; Zeitun & Tian 2007). According to the Executive Privatization Commission of Jordan, the government has the tendency to retain control over privatized companies (PL 2000). It is evident that Jordanian government ownership has remained highly concentrated after privatization (Al-Akra et al. 2009; Al-Akra et al. 2010b), which may negatively affect the success of the privatization project (Al-Kodah 1998).

In the context of agency theory, Shleifer and Vishny (1997) and Demsetz and Lehn (1985) find that ownership concentration has a positive effect on the performance of companies. This effect is due to the fact that ownership concentration usually leads to the convergence of interests between shareholders and management. Many studies likewise support that ownership identity significantly affects the performance of privatized companies (Ben Naceur et al. 2007; Boubakri et al. 2004, 2005a).

Thus,

H_1 A positive relationship exists between private ownership concentration and the performance of privatized companies.

Type of Ownership Concentration It is also believed that changes in the types of ownership and private ownership concentration level contribute to the changes in performance. Claessens et al. (1997)demonstrate that ownership concentration by local investors and ownership by bank-sponsored investment privatization funds increase profitability and Tobin's Q. D'souza et al. (2005, 2007) find that foreign ownership contributes to stronger improvements in efficiency after privatization.

Omran (2009) concludes that ownership concentration and ownership type, particularly in the case of foreign investors, have a positive impact on company performance. Another argument is that not all foreign investments positively affect the performance of privatized companies (Kang & Stulz 1997; Anderson et al. 2001; Wei et al. 2002), possibly owing to familiarity with local markets. The present study makes a similar argument with respect to foreign investors. Foreign Arab investors have less experience and could negatively affect investments in Jordan (Naser & Al-Khatib 2000; Naser et al. 2002; Al-Akra et al. 2010a). The argument is consistent with the resource dependence perspective (when competency comes into the picture) within agency theory (regarding monitoring of the managers or agents). These types of foreign ownership may have different effects on the performance of privatized companies.

The discussion above leads to the following hypothesis:

H_2 Ownership types affect the performance of privatized companies.

BOARD OF DIRECTORS

The board of directors is an important CG mechanism for companies (Mcafee & McMillan 1987). In SOEs, political managers have social welfare-oriented objectives, such as increasing employment by expanding their operations (Sheshinski & López-Calva 2003), that could lead to poor performance. Morck et al. (1989) argue that when companies are performing poorly, changing the board of directors may improve company performance. In the context of privatization, Barberis et al. (1996) and Frydman et al. (1999) argue that changing the board of directors is an efficient mechanism to discipline incumbent managers.

In addition, Mak and Li (2001) argue that changing the board of directors makes the directors more accountable to the companies and affects company performance. This is supported by several studies in the privatization field (Megginson et al. 1994; Denis & Denis 1995; Barberis et al. 1996; Lopez-De-Silanes, 1997; Claessens & Djankov 1999; Gibson 2003; Peng et al. 2003; Warzynski 2003; Fidrmuc & Fidrmuc 2007; Kang & Kim 2012). The strategy is also consistent with the studies of Awamleh (2002), Dawley and Haidar (2008) and Al-Fayoumi et al. (2010), which suggest that the application of good CG mechanisms can efficiently monitor managers in Jordan. Nevertheless, the effect of specific CG mechanisms on the performance of privatized SOEs in the Jordanian context requires further investigation.

The above discussion leads to the following hypothesis:

H_3 Changes in the composition of the board of directors positively affects the performance of privatized companies.

Changes in the board of directors lead to the formation of larger or smaller boards. Two theories are related to board size: resource independence theory and agency theory. The resource independence theory argues that a large board is better than a small board (Zahra & Pearce 1989), while agency theory argues otherwise (Jensen 1993; Lipton & Lorsch 1992).

Agency theory argues that having a large board has negative effects. Jensen (1993) and Lipton and Lorsch (1992) argue that a large board may impose higher costs, such as communication problems (Eisenberg et al. 1998); increased dissension among board members (Jensen 1993); and free-riding problems (Eisenberg et al. 1998). Therefore, a large board size may increase agency problems (Ning et al. 2010), which could, in turn, negatively affect company performance. Empirical studies largely support the claim that large boards negatively affect company performance (Barnhart & Rosenstein 1998; Cheng 2008; Coles et al. 2008; De Andres et al. 2005; Di Pietra et al. 2008; Eisenberg et al. 1998; Loderer & Peyer 2002; Mak & Kusnadi 2005; Postma et al. 2003; Yermack 1996).

Agency theory also argues that having a small board could positively affect company performance (Belkhir 2009; Kiel & Nicholson 2003; Larmou & Vafeas 2010; Mak & Li 2001;Vafeas 2000). In the context of diversified board members that consists of representatives from state, types of foreign investors and the level of concentration, it is expected the coordination and communication effects would dominate. Hence, larger board could results in more coordination and communication problems in the board and lead to ineffective board monitoring.

The above discussion leads to the following hypothesis:

H_4 Board size negatively affects the performance of privatized companies.

EXTERNAL AUDIT

Audit is an important tool for CG that enhances the credibility and transparency of financial reporting (Francis et al. 2003). In addition, Shleifer and Vishny (1994) argue that the credibility of financial reporting makes managers more accountable to shareholders; causes less risk taking by managers; and mitigates their improper behavior. Mitton (2002) argues that a good audit constitutes one aspect of CG that reduces the agency problem. In the context of privatization, Boycko et al. (1996) argue that a quality audit of firms provide shareholders with detailed information about managers that lead to better allocation of resources (Francis et al. 2003).

DeAngelo (1981) and Francis and Wilson (1988) argue that audit quality can be represented by auditor size (the independence of the accounting firms) and brand name (as more wealth is at stake in large audit firms). In addition, extant research points to an opposite relationship between audit quality and the size of audit firms (Chaney et al. 2000; Francis & Simon 1987). In this respect, Francis (2004) argues that the Big Four audit firms could become a proxy for audit quality. These audit firms promote greater transparency and acceptable levels of audit quality through their systems. In this respect, large audit firms are more concerned with minimizing audit errors (DeAngelo 1981) and are inclined to provide higher quality disclosure (Dye 1993). In addition, large audit firms allay investor fears and benefit minority shareholders by increasing transparency (Francis 2004) due to the highly cautious approach taken by these firms in preserving their reputation and prominent name. Evidence supports the contention that large audit firms may risk greater losses through reputation damage if their audit services do not meet expected standards (DeFond et al. 2000; Vander Bauwhede et al. 2003; Che Haat et al. 2008).

Large audit firms spend more hours and have higher billing rates, which result in better expertise and a higher quality audit (Ferguson et al. 2003; Francis & Krishnan 1999; Francis & Wilson 1988). Big Four audit firms possess less threshold for issuing modified audit reports and greater reporting conservatism (Francis & Krishnan 1999). DeAngelo (1981) and Dye (1993) support the theoretical claim that large audit firms have more incentives

to issue accurate reports than small audit firms. Francis and Krishnan (1999), Lennox (1999), and Weber and Willenborg (2003) agree that Big Four audit firms issue more accurate reports and more informative signals of financial distress than small firms. In the context of privatization, audit quality leads investors to trust company information (Marianne 2009), subsequently increasing the share price (Gul et al. 2010). Hence, developing countries with weak CG can utilize audit quality as a substitute mechanism for CG to ensure investor protection (Lin & Liu 2010; Marianne 2009). This argument is supported by several studies demonstrating that the appointment of Big Four audit firms by privatized companies improves the CG of these companies (Guedhami et al. 2009; Lin & Liu 2009, 2010; Wang et al. 2008).

The above discussion leads to the following hypothesis:

H_5 Audit quality positively affects the performance of privatized companies.

Data Set and Empirical Models

Data Set

The privatization program was first launched in Jordan in 1996, at which point the government proposed privatizing 64 companies (Amman Stock Exchange 2010; Economic Planning Unit 2006). The data set in the present study is obtained from several sources, including the Amman Stock Exchange (ASE); the Executive Privatization Commission in Jordan; and the annual reports of the companies.

In the present paper, SOEs are considered to be companies previously owned (with more than 40% ownership) by the government through shareholding, but that were eventually privatized. The minimum observation for each company is eight years, covering three years prior to (t=-3) privatization and three years after (t=+3) privatization (La Porta & Lopez-De-Silane 1999; Megginson et al. 1994). The present study uses an annual data set covering the period of 1992 until 2001. Although the government passed the CG law of practices in 2002, compliance by companies is not compulsory. In addition, information on CG mechanisms is not available in the annual reports after 2001 (Al-Akra et al. 2010a; Al-Akra et al. 2009), thereby limiting the data set. This fact was confirmed by the capital market authority in Jordan. Since the present study focuses on a special event that occurred in the 1990s and in the early millennium, it is believed to be sufficient to draw conclusions from this dataset. However, the conclusion may not be applicable for privatization processes that were organized later. Table 1 below shows the data set for the two groups under study.

Table 1 presents the distribution of data according to industry affiliation and years. The sample consists of 18 privatized companies, where transfers of ownership were accomplished either through direct sale to private investors or technical strategic partnerships. Thus, the present study sample consists of 18 privatized companies and covers a 10-year period, resulting in 180 observations. However, the final data analyses are still unbalanced due to missing data.

Empirical Models

Applying standard OLS regression may lead to a misspecification problem in which unobserved determinants of company performance may also explain ownership concentration factor. This issue is also known as the endogeneity problem. Thus, to deal with this problem, the 2SLS method is utilized. In the first stage of the method, an OLS regression of the determinant variables (a set of unobservable heterogeneity variables obtained from previous literature) that affect ownership concentration is performed (Boubakri et al. 2005b; Drakos & Bekiris 2010; Elsayed 2011; Getzmann et al. 2010; Grosfeld 2006a, 2006b; Grosfeld & Hashi 2003; Gul et al. 2010; Hanousek et al. 2007; Omran et al. 2008; Shakir 2011; Wei et al. 2005).

Demsetz and Lehn (1985) argue that the type of industry may lead to a different concentration of ownership. As such, because the Jordanian government focuses on privatizing service or manufacturing companies, different effects on the concentration of private ownership may have ensued. In addition, the said authors argue that diversification risk, or having a small percentage of shares in large firms by investors, negatively affects ownership concentration (Boubakri et al. 2005b; Omran 2009). To control for the unobservable heterogeneity, Bortolottia et al. (2002), Megginson et al. (2004) and Boubakri et al. (2005b) argue that different methods of privatization could affect the sale of privatized company shares over the years. Therefore, in the Jordanian case, strategic partnerships and direct sales are the more common methods used by the government to gradually sell shares of companies that

TABLE 1. Sample Distribution

Sample	Time (1992–2001)	Privatized Years	Number	Industry affiliation	Number
Privatized Sample	10 years	1996	3	Services	9
		1997	5	Manufacturing	9
		1998	10		
Total sub sample			18		18

could affect the level of private ownership concentration over the years. Thus, the present study must control for the effect of these unobservable variables on the concentration of ownership by setting the following equations, where *i* is a company at time *t*, γ_t is fixed year effect (to control for year-specific effects), and ε_t is the error term.

$$CONC_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 INF_{it} + \beta_3 METH_{it} + \beta_4 YEAR_{it} + \beta_5 MED_{it} + \gamma_t + \varepsilon_{it}. \quad (1)$$

$$CONC_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 INF_{it} + \beta_3 YEAR_{it} + \beta_4 MED_{it} + \beta_5 (MAJ_{it} X METH_{it}) + \gamma_t + \varepsilon_{it}. \quad (2)$$

Where *INF* is a dummy variable, equal to 1 if a service company and 0 if otherwise (Demsetz & Lehn 1985; Boubakri et al. 2005); *SIZE* is company size that is the natural logarithm of the total assets (Demsetz & Lehn 1985; Himmelberg et al. 1999); *METH* is privatization method measured by a dummy variable, equal to 1 if a strategic partnership and 0 if a direct sale method is used (Bortolottia et al. 2002; Boubakri et al. 2005b; Grosfeld 2006a 2006b; Megginson et al. 2004; Omran 2009); *YEAR* is post-privatization year represented by a dummy variable, equal to 1 after or at privatization year and 0 if before privatization year (Boubakri et al. 2005b; Omran 2009); *MED* is the initial post privatization year measured by a dummy variable, equal to one after or at privatization median year and zero before the privatization median year (Andreyeva & James 2000); and *MAJ* is government control measured by a dummy variable, equal to one if government ownership is equal or less than 50% and zero if more than 50% of total ownership (Omran 2009). These variables are summarized in the following table:

In the second stage, the fitted estimated values obtained from the first stage, (i.e., Model 1) are used in next models as $\widehat{CONC}$, where the term γ_t is a firm dummy introduced for company-specific effect; and ε_{1t} and ε_{2t} are the error terms. In addition, several dummy variables of board size are examined to identify the point of statistical significance of the effect of board size on performance in order to test H_4.

$$PERF_{it} = \alpha_1 + \beta_1 \widehat{CONC}_{it} + \beta_2 AUQ_{it} + \beta_3 BOCH_{it} + \beta_4 BOZ_{it} + (\beta_5 BOZ_{it} \, x \, D_{n,it}) + \gamma_t + \varepsilon_{it}. \quad (3)$$

where D_n

$$D_{1,it} = \begin{cases} 1 \equiv \text{if less than 9} \\ 0 \equiv \text{otherwise} \end{cases}$$

$$D_{2,it} = \begin{cases} 1 \equiv \text{if less than 10} \\ 0 \equiv \text{otherwise} \end{cases}$$

$$D_{3,it} = \begin{cases} 1 \equiv \text{if less than 11} \\ 0 \equiv \text{otherwise} \end{cases}$$

$$D_{4,it} = \begin{cases} 1 \equiv \text{if less than 12} \\ 0 \equiv \text{otherwise} \end{cases}$$

The same models are used to obtain fitted values for each type of ownership concentration $CONC_{it}$ with respect to the unobservable heterogeneity of model (1), where $CONC_{it}$ is the sum of shares held by the three largest owners according to type; and *j* refers to the foreign ownership of non-Arab, foreign Arab, and government ownership of the companies *i* at time *t*.

$$PERF_{it} = \alpha_1 + \sum_{j=0}^{n} \theta_{ijt} CONC_{ijt} + \beta_2 AUQ_{it} + \beta_3 BOCH_{it} + \beta_4 BOZ_{it} + (\beta_5 BOZ_{it} \, x \, D_{n,it}) + \gamma_t + \varepsilon_{it}. \quad (4)$$

Where $\widehat{CONC}$ is the coefficient of fitted value of the first stage (Boubakri et al. 2005b; Omran 2009; Omran et al. 2008); *AUQ* is audit quality measured bya dummy variable, equal to 1 if the audit firms are Big Four firms and 0 if otherwise (Francis 2004); *BOCH* is board change measured by a dummy variable, equal to 1 if there is a change in the board members and 0 if otherwise (Cragg & Dyck 1999); *BOZ* is board size – (.e., the number of

TABLE 2. The Measurement of First Stage Variables

Variables	Definition
Panel-A: Independent	
INF	A dummy variable equal to one if a service company and zero otherwise.
SIZE	The natural logarithm of the total assets.
METH	A dummy variable equal to one if strategic partnership and zero direct sale.
YEAR	A dummy variable equal to one after or at privatization year and zero before the privatization year.
MED	A dummy variable equal to one after or at privatization median year and zero before privatization median year.
MAJ	A dummy variable equal to one if government ownership is equal or less than 50% and zero if more than 50% of total ownership.
Panel-B: Dependent	
CONC	Measured by the sum of the shares held by the largest three private shareholders.

Note: This table describes the variables used in the first stage of 2SLS regression to investigate the determinants of the private ownership concentration.

board members) (Shakir 2011); and *PERF is* company performance (Boubakri et al. 2004; Boubakri et al. 2005b; Omran 2007; Omran et al. 2008) represented by return on equity (*ROE*), price earnings ratio (*PER*) or price-to-book-value ratio (*PBV*). Estimation of each measure of performance as dependent variable will be done separately. Thus, these variables summarized in Table 2:

Statistical Analysis and Empirical Results

Statistical Analysis

Several econometric issues are highlighted in the present study to obtain an efficient estimator of the model. The present model is developed by following the assumptions of the classical linear regression model (CLMR), which is seemingly unrelated regression in the pooled data set. These assumptions include the intercept term, $E(u_t)=0;$ homoscedasticity, var$(u_t) = \sigma 2<\infty$; no auto-correlation cov, $(u_i, u_j) = 0$; non-stochastic of independent variables cov, $(u_i, x_t) = 0$; and disturbances that are normally distributed, $u_t \sim N(0, \sigma^2)$ (Asteriou & Hall 2007; Baltagi 2005; Brooks 2008; Gujarati & Porter 2009). In addition, the instrument variables (IVs) must satisfy two conditions. First, the IVs must be highly correlated to the ownership concentration (Gujarati 2003). Second, the IVs must also satisfy the condition of $E[\varepsilon_{1it} Z_{it}]=0$, where Z_{it} is the *CONC* (Gujarati 2003).

Empirical Results

Determinants of CONC The results obtained from Models 1 and 2 are reported in Table 4. The results generally confirm the expectations noted in the section dealing with Hypotheses Development. Estimation results precisely show that *SIZE* negatively affects *CONC* (significant at the 1% level for both models). These findings are consistent with the results of previous studies, such as those by Boubakri et al. (2005b) and Omran (2009).

Furthermore, the findings show that industry type (services or manufacturing) has a positive relationship with *CONC* at the 1% level for both models. This result implies that the government has the propensity to privatize service companies more than manufacturing companies, resulting in higher *CONC*. This result confirms the findings of Boubakri et al. (2005b) and Omran (2009) that the government is slightly reluctant to relinquish control over companies that play an important role in the country's economy. However, the government may prefer to privatize service companies that cater to the social objectives and infrastructures of the country.

The investigation of the effect of *METH* on the performance of companies is an important contribution of the present study. The value of *METH* is 1 if strategic partnership is used, whereas its value is 0 if direct selling is used for privatization. The results indicate a moderately positive and significant relationship at the 10% level between *METH* and *CONC*. The second model includes the variable *MAJ* to test whether the government sells the majority of its holdings over the companies and gives up control to private owners. The results indicate a significant and positive relationship between *METH* and *CONC* at the 1% level. This finding suggests that a strategic partnership program is more likely to result in higher *CONC*.

The results also reveal that *CONC* is higher in post privatization *YEAR*. In addition, the period of *MED* is found to have a negative and significant relationship at the 10% level with *CONC*. This result suggests that the government does not give up control in *MED*. Control is only transferred when the companies show an improvement in performance.

Ownership concentration (CONC) and firm performance In this section, we examine the theoretical argument by Shleifer and Vishny (1997), which states that *CONC* can be a substitute mechanism for other CG mechanisms in developing countries. The reason for this phenomenon is that ownership concentration can mitigate agency problems due to the convergence of ownership and control, which, in turn, results in superior company performance.

TABLE 3. The Measurement of Second Stage Variables

Variables	Definition
Panel-A: Independent	
CONC	The coefficient of fitted value of the first stage
AUQ	A dummy variable equal to one if the audit firms are four big firms and zero if otherwise.
BOCH	A dummy variable equal to one if change in the board and zero if otherwise
BOZ	Board size is equal to the number of board members
D1	A dummy variable equal to one if less than 9 and zero if otherwise
D2	A dummy variable equal to one if less than 10 and zero if otherwise
D3	A dummy variable equal to one if less than 11and zero if otherwise
Panel-B: Dependent (PERF)	
ROE	Return on equity
PER	Price earnings ratio
PBVR	Price to book value ratio

Note: This table describes the variables used in the second stage of 2SLS regression to investigate the CG affect on performance of the companies.

TABLE 4. Determinants of *CONC*

$$CONC_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 INF_{it} + \beta_3 METH_{it} + \beta_4 YEAR_{it} + \beta_5 MED_{it} + \gamma_t + \varepsilon_{it} \ldots (1)$$

$$CONC_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 INF_{it} + \beta_4 YEAR_{it} + \beta_5 MED_{it} + \beta_6 (MAJ_{it} X METH_{it}) + \gamma_t + \varepsilon_{it} \ldots (2)$$

Dependent *CONC*		
Independent	Model 1	Model 2
INF	7.581*** (2.952)	10.575*** (5.347)
MED	-8.033* (-1.705)	-8.415* (-1.775)
YEAR	27.719*** (3.441)	26.147*** (3.279)
SIZE	-2.973*** (-6.827)	-1.324*** (-1.986)
METH	5.306* (1.873)	-11.080*** (-2.650)
MAJ		23.431*** (1.887)
N	178	178
Adjusted R^2	0.087	0.107
F-statistic	2.201***	2.416***

Note: CONC is the private ownership concentration measured by the sum of the shareholdings of the three largest private shareholders; *SIZE* is the firm size measured by the log of the total asset; *INF* is the dummy variable, equal to 1 if a firm is from the service sector and 0 if from the industrial sector; *METH* is the privatization method represented by a dummy variable, equal to 1 if strategic partnership is used and 0 if direct selling is used; *MAJ* is a dummy variable, equal to 1 if government ownership is less than 50% and 0 if otherwise; *YEAR* is a dummy variable, equal to 1 if the observation is after or in the privatization year and 0 if otherwise; *MED* is a dummy variable, equal to 1 if the observation is after or during the privatization median year and 0 if otherwise; γ is fixed-year effects; and ε is the error term. Heteroskedasticity robust *p*-values are reported in parentheses. A constant term is included in each regression. Here, N refers to the number of observations. Significance at the 10%, 5%, and 1% levels are denoted by *, ** and ***, respectively.

Himmelberg et al. (1999) and Palia (2001) suggest using IVs to address the endogeneity nature of ownership structure. This suggestion is supported by several other researchers who use 2SLS dynamic modeling to deal with the problem, such as Boubakri et al. (2005b), Grosfeld (2006a), Omran (2009) and Omran et al. (2008). In the first stage, the model estimates *CONC* to obtain the fitted value of the estimation and uses these values as IVs in the second stage. Thus, the process shows the impact of *CONC* on the performance of privatized companies.

Another argument is that one or more IVs used might directly affect the performance of the company (dependent variable), which leads to a strong relationship (Palia 2001). Others researchers argue that endogeneity problem arises from unobserved heterogeneity (Boubakri et al. 2005b; Grosfeld 2006a 2006b; Omranet al. 2008 2009; and Boubakri et al. 2011). Examples of unobserved heterogeneity include privatization methods, which some researchers argue could affect the performance of privatized companies (Foreman-Peck & Waterson, 1985; Andreyeva & James 2000; D'souza et al. 2007; Boubakri et al. 2009; Al Qudah 2010; Astami et al. 2010). In contrast, other researchers argue that privatized methods could determine private ownership concentration (Boubakri et al. 2005; Grosfeld 2006a 2006b; Omran 2009).

Thus, the method employed checks for the possibility that endogeneity arises from unobserved heterogeneity i.e privatization method (*METH*), by regressing company performance on the (Z_{it}) IVs. The results show that *METH* is statistically significant at the 1% level, as shown in Appendix A. This result suggests dropping *METH* from the first stage of regression because it has an impact on both *CONC* and the performance of companies. The results show that the adjusted R^2 of 0.03 is very low compared with the 0.107 obtained in the 2SLS system. This finding is similar to the findings of Boubakri et al. (2005b), Grosfeld (2006a), Omran (2009) and Omran et al. (2008).

This statistical result supports the argument that privatization methods chosen by the royal family may positively affect the performance of privatized firms. Thus, we decided that privatization methods should be in the first stage of (2SLS).

Furthermore, IVs must satisfy the requirement that the endogenous variable should be uncorrelated with the error term $E[\varepsilon_{1it} Z_{it}]$. The Hausman test is conducted, following Boubakri et al. (2005b), to determine the endogeneity of *CONC*. The *t*-statistic result for the coefficient on the residuals from the first step regression is 2.06. The *p*-value of this test is statistically significant at the 5% level. Thus, the result rejects the null hypothesis of no correlation between *CONC* and the error term *e,* which indicates that

an endogenous problem exists if the model is retained without specifying the model correctly.

Different results are obtained from the Hausman test of endogeneity after specifying the model system using *METH* in the second stage. The results show that the IVs are uncorrelated with the error term, which satisfies the $E\ [\varepsilon_{1it} Z_{it}]$ assumption. Thus, the *t*-statistic for the coefficient on the residuals from the first step regression is (0.514). The *p*-value of this test is clearly not significant at any level. Thus, this test cannot reject the null hypothesis of no correlation between ownership concentration and the error term. The finding indicates that the system of equations utilized in the present study are properly identified. Moreover, the requirement for good IVs is that they be correlated with the left-hand side (ownership concentration), which is in turn correlated with the error term. The present study conducts the first stage equation (reduce form), then uses the Wald test to test for joint instrument coefficients. Then, the present study performs the *F*-test for the joint insignificant of the IVs as follows: $C(2) = 0$, $C(3) = 0$, $C(4) = 0$, and $C(5) = 0$, corresponding to β_1, β_2, β_3, and β_4, respectively, in the reduced form,[1] which are the instrument coefficients for the *SIZE*, *INF*, *YEAR*, and *MED*, respectively. The null hypothesis of the *F*-test joint is that the coefficients of the IVs are 0. The alternative hypotheses are that at least one of the IV parameters in the reduced form is not 0, which is exactly what is needed. The role of the *F*-statistic value is greater than 10 [F>10]. Thus, a strong rejection at the 1% level for *CONC* regression is found (F-statistic=178.27, *p*-value=0.000). This finding is consistent with that of Boubakri et al. (2005) where *p*-value=0.0001. Therefore, at least one of the parameters is not 0. However, the hypotheses that the instruments are jointly 0 for the performance regression (*F*-statistic=1.39, *P*-value=0.23) cannot be rejected when regressing "performance" on the instrument. Furthermore, several studies argue and have proven that non-linear relationships exist between ownership and company performance (Himmelberg et al. 1999; McConnell & Servaes 1990; Morck et al. 1989). Following Boubakri et al. (2005b), *CONC* and its squared $CONC^2$ are used to check the non-linear relationships. The results show that *CONC* ($CONC_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 INF_{it} + \beta_3 YEAR_{it} + \beta_4 MED_{it} + \gamma_t + \varepsilon_{it}$) has a positive and highly significant impact at the 5% level, which is consistent with the finding of Boubakri et al. (2005).

Results prove that the system of equations is properly identified after the system is tested by 2SLS. In addition, Larmou and Vafeas (2010) argue that the statistical positive significant point can be considered as the optimal point of board size. Therefore, the present study tests several dummy variables, which are explained in the methodology section, of the board size to determine the significant positive point of the optimal board size. D_1 in equation Eq. 3 is found to be significant at the 5% level, whereas D_2, D_3, and D_4 are not significant at the conventional level. The results obtained from Eq. 3 are reported in Table 5 using three measures of company performance: *ROE, PER* and *PBVR*.

The results indicate that *CONC* is significantly related to accounting performance in two specifications (Model 1 and Model 2) at the 10% level. This finding supports Shleifer and Vishny's (1997) contention that ownership concentration can mitigate agency problems and improve privatized company performance. Conversely, diffused ownership may negatively affect company performance. Meanwhile, different results are obtained for the market measures of performance (*PER*, *PBVR*). The *CONC* coefficient is not significantly related to the company's market performance at the conventional level. The results are similar to those of previous studies, such as Omran (2009) and Omran et al. (2008).

Furthermore, the *METH* dummy coefficients are positively significant in nearly all models. This result suggests that strategic partnerships have a positive impact on accounting and market-based performance.

Audit quality is also observed to have a positive and highly significant association with company performance (except in Models 2 and 3, where *PER* is used as performance indicator). The results confirm the expectation that private investors are more likely to employ professional audit firms, which will lead to better company performance.

The change in board members that occurs during the privatization process shows a positive and highly significant effect on the company's accounting performance. A change in the composition of the board of director shows a positive and significant ($p<10\%$) association with company value only in Model 3, which uses *PER* as the performance indicator. However, a change in the composition of the board of directors is not significant when *PBVR* is used as the indicator. Thus, *BOCH* will not be able to change the performance of privatized companies, particularly when market measure is used as the performance indicator.

The *BOZ* coefficient shows a negative and significant association at the 1% level with company performance. However, after controlling for aboard size of less than nine members, the coefficient shows a positive and highly significant association at the 1% level with company performance. Interesting results emerge in Model 3 when *ROE*, *PER*, and *PBVR* exhibit that *BOCH* and *BOZ* of less than 9 have significant effects on the performance of companies. However, having *BOCH* alone has no effect on the performance of companies. This result indicates that a change in the composition of the board of directors (probably political directors) is a key factor in the effect of board composition on a company's performance as well as its growth in the future.

Different results are obtained on the effect of independent variables on the company performance proxies. The proxies are measuring accounting (*ROA*) and market (*PER*, *PBVR*) performance. Omran (2009) states that accounting-based measures indicate past and current performances. The level of company growth affects the market measures more than the accounting measures of

TABLE 5. Second-stage regression results

$$PERF_{it} = \alpha_1 + \beta_1 \widehat{CONC}_{it} + \beta_3 BOCH_{it} + METH + \beta_2 AUQ_{it} + \beta_4 BOZ_{it} + (\beta_5 BOZ_{it} \, x \, D_{n,it}) + \gamma_t + \varepsilon_{it} \ldots\ldots (3)$$

	Dependant								
	ROE			PER			PBVR		
Independent	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
CONC	0.074*	0.085*	0.071	-0.095	-0.120	-0.096	-0.001	-0.006	-0.005
	(1.885)	(2.270)	(1.498)	(-0.908)	(-1.257)	(-1.010)	(-0.320)	(-1.029)	(-1.039)
BOCH	2.864**	2.707***	3.107***	-4.958	3.599	4.068*	0.029	0.002	0.001
	(2.131)	(1.989)	(2.334)	(-1.395)	(1.481)	(1.732)	(0.411)	(0.026)	(0.009)
METH	1.431***	0.248	0.786	8.207***	8.093***	9.356***	0.475***	0.590***	0.590***
	(1.915)	(0.425)	(1.178)	(3.259)	(3.040)	(3.491)	(3.263)	(4.408)	(4.460)
AUQ	2.866***	2.940***	3.104***	4.230*	-1.809	-2.039	0.286***	0.314***	0.312***
	(2.171)	(1.979)	(1.938)	(1.836)	(-0.795)	(-0.866)	(2.884)	(3.555)	(3.437)
BOZ		-0.547***			-0.366*			-0.071***	
		(-2.637)			(-1.888)			(-2.913)	
LESS THAN 9			0.807***			-2.774***			-0.067
			(1.790)			(-6.592)			(-1.929)
N	146	146	146	146	146	146	146	146	146
Adjusted R^2	0.082	0.086	0.112	0.062	0.0579	0.071	0.243	0.273	0.267
F- statistic	2.085***	2.041***	2.295***	1.797***	1.6759*	1.783***	5.205***	5.501***	5.060***

Note: The table shows the regression results of the 2SLS of the relationship between private ownership concentration and firm performance, where *PERF* is the performance of the firm represented by return on equity (*ROE*), price to book value ratio (*PBVR*), and price earnings ratio (*PER*); *CONC* is the private ownership concentration measured by the sum of the shareholdings of the three largest private shareholders; *AUQ* is the audit quality measured by a dummy variable, equal to 1 if the firm appoints Big Four audit firms and 0 if otherwise; *BOCH* is a dummy variable, equal to 1 if the firm change its board of directors and 0 if otherwise; *METH* is the privatization method measured by a dummy variable, equal to 1 if strategic partnership is used and 0 if direct selling is used; *BOZ* is the board size that measures the number of members of the board of directors; *LESS THAN 9* is equal to 1 if the board members is less than 9 and 0 if otherwise; the term γ is a firm dummy introduced for firm-specific effect; and ε is the error term. All regressions include year fixed-effect (coefficient estimates not reported). Heteroskedasticity robust *p*-values are reported in parentheses. A constant term is included in each regression. Here, N refers to the number of observations. Figures between parentheses are *t*-statistics. Significance at the 10%, 5%, and 1% levels is denoted by *, ** and ***, respectively.

performance. Furthermore, Omran (2009) argues that market measure captures business potentials and growth in the future. Those substantial differences between the two measures explain the variation of the two results. Moreover, the Jordanian stock market, similar to those in other Arab countries, is less efficient compared with the capital markets of developed countries (Omran et al. 2008). Thus, the Jordanian stock market needs to be more transparent and disseminate information that an outside investor can expect to be reflected in the company value. Furthermore, the descriptive analysis of ownership shows that the government still has control over the firms (Omran et al. 2008; Omran 2009).

The conclusion of this analysis is that CG mechanisms help in mitigating agency problems and contribute to the success of the privatization program in Jordan. CG mechanisms generally show positive and significant effects on the performance of companies. The results provide motivation for the present study to further investigate the types of ownership concentration affecting company performance.

The next section of the present study discusses the effects of foreign ownership concentration on company performance. The types of foreign ownership include Arab ownership; non-Arab ownership; and government ownership.

Ownership type Extant studies argue that ownership type might have a relevant relationship with the performance of privatized firms (Boycko et al. 1994; Boycko et al. 1996; Dyck 2001; Shleifer & Vishny 1997). Privatization theory suggests that different owners have different incentives to monitor managers, which, in the end, determine company performance.

Studies suggest different types of *CONC*, such as individual investor, domestic institutional investors, and employment (Boubakri et al. 2005b; Omran 2009; Omran et al. 2008). Several privatization studies find that foreign ownership has a positive effect on the performance of privatized companies (Ben Naceur et al. 2007; Boubakri et al. 2005; Hanousek et al. 2007; Okten & Arin 2006). The present study presents the unique opportunity to examine two types of foreign ownership available in Jordan, which are foreign Arab ownership and non-Arab ownership; and government ownership. The data set relating to ownership according to type is depicted in Table 6. A multivariate regression of the same system of Eqs. 3 and 4 is estimated to investigate the relationship of these types of ownership with company performance. In the first stage, regression analysis is performed using the same instrument variables for each type of owner because, according to Boubakri et al. (2005), the percentage held by certain types of owners can be endogenously

TABLE 6. Ownership Structure of Privatized Companies

Ownership Share Years Before Privatization					Ownership Share Years After Privatization					
Year	-5	-4	-3	-2	-1	0	1	2	3	4
Type owners	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
					JOWNC					
Mean	43.54	43.54	43.54	43.71	40.42	40.5	39.7	36.06	35.51	34.02
Median	41.8	41.8	41.8	41.54	34.86	29.87	37.8	28.86	28.86	21.82
obs.	180	180	180	180	180	180	180	180	180	180
					CONC					
Mean	56.46	56.46	56.46	56.29	59.58	59.5	60.3	63.94	64.49	65.98
Median	58.2	58.2	58.2	58.46	65.14	62.2	62.2	71.14	71.14	78.18
obs.	180	180	180	180	180	180	180	180	180	180
Total-%	%100	%100	%100	%100	%100	%100	%100	%100	%100	%100
					FOWNC					
Mean	0.24	0.24	0.24	0.36	0.44	0.7	0.66	2.81	3.3	3.11
Median	0.04	0.04	0.04	0.05	0.06	0.06	0.05	0.07	0.06	0.05
obs.	180	180	180	180	180	180	180	180	180	180
					A-FOWNC					
Mean	7.41	7.41	7.41	6.98	6.82	7.65	7.65	7.63	7.34	7.31
Median	1.84	1.84	1.84	1.68	1.69	2.6	2.6	3.05	2.34	2.46
obs.	180	180	180	180	180	180	180	180	180	180

Note: JOWNC is the Jordanian government ownership. *CONC* is the measured by the sum of the shares held by the largest three private shareholders. FOWNC is the foreign Non-Arabic ownership. A-FOWNC is the foreign Arabic ownership. Obs is the number of observation.

determined by other factors. The results of this system are reported in Table 7.

Table 7shows that after controlling *BOCH* and *BOZ*, *METH*, and *AU*, foreign non-Arab ownership concentration has a marginally positive impact (at the 10% level) on the accounting performance of companies. This result supports the contentions of Boycko et al. (1996) and Dyck (2001) that foreign investors play an important role in bringing in a system of efficient CG mechanisms that can lead to higher company performance. However, foreign non-Arab ownership concentration does not show any significant effect on company performance based on market measures. This result is consistent with that of Boubakri et al. (2005b), who finds no significant relationship between foreign investors and the performance of privatized firms. In addition, Omran et al. (2008) find that *CONC*, including foreign ownership concentration, does not have any significant level of impact on firm performance in Arab countries. The reason is that foreign owners need more time to understand the environment (Cull et al. 2002).

The results find that government ownership also has a positive and significant impact at the 5% level on company performance. However, after controlling for the effect of *BOZ*, the result becomes insignificant. This result is consistent with Omran et al. (2008), who find that government ownership has a positive and significant impact on company performance in Arab countries. The reason for this finding is the involvement of politicians in the board of directors of privatized companies. As stated in Jordanian Privatization Law 2000, Article (14), the government has a special voting right, referred to as the 'Golden Share', which gives the government the right to veto the resolutions of the board of directors.

However, a contrasting result emerges when the market measure of performance is used. Government ownership concentration appears to have a negative and significant impact at the 10% level on company performance. Thus, government ownership concentration is not recommended to improve the market performance of privatized companies. This result can explain the role of the state and the political nature of Arab countries (Omran et al. 2008). The 'Golden Share' negatively affects the company's growth (Boycko et al. 1996). The reason for this effect is the higher agency problem. The government can increase the soft-budget constraint, which results in the government providing subsidies to unwise investments that can lead to less constraints and monitoring mechanisms on managers (Kornai et al. 2003).

The results presented in Table 7 are consistent with previous findings concerning the impact of *METH* on company performance. Privatization methods show a positive and significant relationship at the 1% level with company performance. Furthermore, *AU* also shows a positive and significant effect on performance at the 1% level. These results support the finding of other studies, such as Guedhami et al. (2009) and Lin and Liu (2010), that foreign owners are more interested in employing professional audit firms in privatized companies. The results also suggest that the change in board members significantly affects the performance of privatized companies, whereas *BOZ* does not have any significant

TABLE 7. Effects of private ownership type

$$PERF_{it} = \alpha_1 + \sum_{j=0}^{n} \theta_{ijt} CONC_{ijt} + \beta_3 BOCH_{it} + \beta_2 AUQ_{it} + \beta_4 BOZ_{it} + (\beta_5 BOZ_{it} \, x \, D_{n,it}) + \gamma_t + \varepsilon_{it} \ldots\ldots (4)$$

	Dependent								
	ROE			PER			PBVR		
Independent	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
FOWNC	3.676	3.712*	2.588	-0.295	-2.425	0.300	-0.221	-0.070	-0.083
	(1.437)	(1.695)	(0.998)	(-0.045)	(-0.419)	(0.053)	(-0.882)	(-0.280)	(-0.300)
A-FOWNC	0.115	0.090	0.017	-0.468	-0.414	-0.230	-0.007	-0.009	-0.009
	(1.234)	(0.631)	(0.128)	(-1.394)	(-1.310)	(-0.673)	(-0.578)	(-0.775)	(-0.835)
JOWNC	0.325**	0.242	0.213	-0.216	-0.440*	-0.257	-0.012	-0.020***	-0.020***
	(1.965)	(0.777)	(0.722)	(-0.718)	(-1.738)	(-1.047)	(-0.831)	(-2.713)	(-2.587)
BOCH	2.490*	2.320*	2.674***	-5.153	-3.206	-3.598	-0.011	0.025	-0.027***
	(1.890)	(1.876)	(2.173)	(-1.337)	(-1.235)	(-1.539)	(-0.138)	(0.337)	(-0.356)
METH	2.311***	1.703	2.383*	7.945***	7.866***	9.163***	0.478***	0.623***	0.624***
	(4.314)	(1.281)	(1.829)	(2.954)	(3.776)	(4.355)	(3.290)	(4.532)	(4.619)
AUQ	3.782***	3.357***	3.714***	-3.413	-1.573	-1.956	0.315***	0.291***	-0.289
	(3.299)	(2.705)	(2.899)	(-1.563)	(-0.765)	(-0.953)	(2.845)	(2.912)	(-2.900)
BOZ		-0.320			-0.146			-0.077***	
		(-0.575)			(-0.188)			(-3.135)	
LESS THAN 9			1.190***			-2.742***			-0.073
			(2.707)			(-5.795)			(-1.848)
N	146	146	146	146	146	146	146	146	146
Adjusted R^2	0.072	0.064	0.090	0.049	0.043	0.050	0.237	0.262	0.256
F-Statistic	1.808***	1.655*	1.887***	1.535	1.431	1.469	4.491***	4.686***	4.356***

Note: The table shows the regression results of the 2SLS of the relationship between private ownership concentration and firm performance, where *PERF* is the performance for the firm represented by return on equity (*ROE*), price to book value ratio (*PBVR*) and price earnings ratio (*PER*); *CONC* is the private ownership concentration measured by the sum of the shareholdings of the three largest private shareholders (i.e., its type *j,* which refers to the foreign ownership of non-Arab, foreign Arab, and government ownership); *AUQ* is the audit quality measured by the dummy variable, equal to 1 if the firm appoints a Big Four audit firms and 0 if otherwise; *BOCH* is a dummy variable, equal to 1 if the firm changes its board of directors and 0 if otherwise; *METH* is the privatization method measured by a dummy variable, equal to 1 if strategic partnership is used and 0 if direct selling is used; *BOZ* is the board size that measures the number of members of the board of directors, equal to *LESS THAN 9* is 1 if the board members is less than 9 and 0 if otherwise; the term γ is a firm dummy introduced for firm specific effect; and ε is the error term. All regressions include year fixed-effect (coefficient estimates not reported). Heteroskedasticity robust *p*-values are reported in parentheses. A constant term is included in each regression. Here, N refers to the number of observations. Figures between parentheses are *t*-statistics. Significance at the 10%, 5%, and 1% levels is denoted by *, ** and ***, respectively.

effect on company performance after *BOZ* is controlled for in boards of directors with less than nine members.

The variables *METH*, *AUQ*, and *BOCH* have a marginally positive and significant impact at the 10% level on company market performance. In contrast, *BOZ* exhibits a negative effect on performance even after being controlled for in boards of directors with less than nine board members. In addition, this result is in line with the previous argument that the 'Golden Share' gives considerable power to the government.

The results presented in Table 4 are consistent with previous findings concerning the impact of *METH* on company performance. Privatization methods show a positive and significant relationship at the 1% level with company performance. Furthermore, *AUQ* also shows a positive and significant effect on performance at the 1% level. These results support the finding of other studies, such as Guedhami et al. (2009) and Lin and Liu (2010), that foreign owners are more interested in employing professional audit firms in privatized companies. The results also suggest that the change in the composition of the board of directors significantly affects the performance of privatized companies, whereas *BOZ* does not have any significant effect on company performance after *BOZ* is controlled for in boards of directors with less than nine members.

The variables *METH*, *AUQ*, and *BOCH* have a marginally positive and significant impact at the 10% level on company market performance. In contrast, *BOZ* exhibits a negative effect on performance even after being

TABLE 8. Correlation Coefficients between Variables in the Test Models of Privatized Group

VARIABLES	INF	MAJ	METH	MED	YEAR	CONC	AUQ	BOCH	BOZ	SIZE
INF	1									
MAJ	0.101593	1								
	(1.350941)									
METH	-0.076295	0.080624	1							
	(-1.012238)	(1.070036)								
MED	-0.033989	0.219519***	0.154722**	1						
	(-0.449894)	(2.976572)	(2.071722)							
YEAR	0.00995	-0.115368	-0.045291	-0.094021	1					
	(0.131627)	(-1.536428)	(-0.599763)	(-1.249312)						
CONC	0.08611	-0.839109***	0.00956	-0.170882**	0.180986***	1				
	(1.14338)	(-20.40646)	(0.126468)	(-2.294308)	(2.434427)					
AUQ	-0.017206	-0.113846	0.059279	0.053555	-0.029459	-0.082315	1			
	(-0.227641)	(-1.515892)	(0.785565)	(0.709485)	(-0.389879)	(-1.092629)				
BOCH	0.028238	0.029096	0.05391	-0.053075	0.410332***	0.006762	-0.048598	1		
	(0.373701)	(0.385069)	(0.714194)	(-0.703106)	(5.952378)	(0.089452)	(-0.643648)			
BOZ	0.127022*	0.058173	0.33725***	0.077569	-0.021549	-0.017062	-0.175074***	0.019788	1	
	(1.694062)	(0.770861)	(4.739033)	(1.029236)	(-0.285131)	(-0.225745)	(-2.352342)	(0.26182)		
SIZE	0.129229*	0.324479***	-0.046054	0.006384	0.078867	-0.17772***	-0.471199***	0.108875	0.529165***	1
	(1.723994)	(4.537986)	(-0.609887)	(0.08446)	-1.046567	(-2.389051)	(-7.067104)	(1.448892)	(-8.249905)	

Note: This table reports the correlation between the variables. INF refers to the companies type; MAJ refers to whether the government owned less than 50% or more than 50% of ownership; METH refers to the privatization methods; YEAR refers to privatization years; MED refers to the whether the companies privatized after the median year of privatization or not; CONC refers to the private ownership concentration; AUQ refers to the audit quality; BOCH refers to the change in the board of directors; BOZ refers to the total number of the board of directors; and SIZE refers to the total assets of the companies. *, ** and *** denote a significance level of 10%, 5% and 1%, respectively.

TABLE 9. Descriptive Statistics of Variables

	Descriptive Statistics-Privatized				
	PBVR	PER	ROE	BOZ	Log(SIZE)
Minimum	0.22	0.27	0.46	6	16.05
Maximum	5.54	157	83.7	15	17.99
Mean	1.61	19.63	12.68	10.37	16.88
Std. Deviation	0.89	18.69	9.85	1.96	0.58
Skewness	1.44	3.47	2.78	0.26	0.39
Kurtosis	2.84	19.14	15.92	0.1	1.68
Obs.	175	161	162	179	178

Note: PBVR is the price to book value ratio;*PER* is the price earnings ratio*; ROE* is the return on equity;*BOZ* is the board size; and*Log(SIZE)* is the log of total assets of the firms.

controlled for in boards of directors with less than nine board members. In addition, this result is in line with the previous argument that the 'Golden Share' gives considerable power to the government.

In general, the multivariate analyses suggest that the concentration of ownership types is important in explaining the performance of privatized companies. Consistent results are also found regarding the positive effect of *METH* and *BOCH* on company performance.

CONCLUSION

The present study investigates the success of the privatization program in Jordan, as well as the relationship between CG and privatized company performance. Unique case data relating to the Jordanian privatization program under the close supervision of the royal family is examined in the present study. Using pooled data, the present study examines variables predicted to have effects on ownership concentration. The results show that company size; firm type; privatization method; and the years effect significantly determine ownership concentration. The study uses the 2SLS method to control for the endogeneity of company ownership. The results are in line with the expectations of the present study. The results from the system of models support the idea that privatization methods have a positive effect on the performance of privatized companies. These results show that the role of the royal family in monitoring the privatization process subsequently reduces political gain through the reduction in government ownership.

The royal family's involvement is a good mechanism in mitigating agency problems in the privatization of SOEs. In addition, private ownership concentration has a positive effect on company performance. Similarly, audit quality and board of director change demonstrate a positive and significant effect on company performance. However, having more than nine members on the board is not advisable for these companies. The study also shows that government ownership concentration negatively affects company performance. At the same time, the concentration of foreign non-Arab ownership positively affects company performance. The present study adds some evidence concerning the factors that determine the success of privatization, particularly in developing countries in the Middle East and some other Asian countries, where the involvement of royal families in politics and business is common. An agency perspective alone is proven to be insufficient to explain the phenomena. Some political interventions, which serve as the background of the present study, significantly affect the success of privatization in Jordan.

The implication of the results generated from the present study can be categorized into two perspectives: theoretical and practical. Theoretically, the royal family's involvement, quality audit, and change in board members (possibly political managers) are good mechanisms in reducing the agency problem through political influence and in helping privatization programs to be successful. In addition, strategic partnership privatization methods and foreign non-Arab investors enhance the performance of privatized companies in the Jordanian context. Thus, selecting the right investors is important for privatization. Practically, good CG practices are needed in Jordan. These practices will lead to higher accountability, which can improve the performance of privatized companies. Therefore, reducing government ownership and intervention can help companies to improve their performance in the future.

One major limitation in the present study is the sample time period. A more recent data set is unavailable. Thus, whether or not the results will hold under the current market and economic conditions cannot be ascertained. More CG mechanisms and macroeconomic reform information are needed in the models to investigate the effects more deeply. Further research is needed to investigate the specific characteristics of the strategic partners chosen by the royal family to determine how these characteristics affect the performance of privatized companies.

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APPENDIX A

OLS Estimation of The instrument with the other variables on company performance

	Dependant PBVR	
Independent	Coefficient	T-statistic
AUQ	-0.938328	(-0.515158)
BOCH	2.604040	(0.808102)
BOZ	0.033993	(0.048443)
INF	-2.624573	(-0.843356)
MAJ	2.168422	(0.898564)
METH	7.049688***	(3.602573)
MED	-5.802942	(-1.622008)
YEAR	-7.658776	(-1.207053)
SIZE	-0.369199	(-0.363018(
C	35.05496***	(2.577649)
N	160	160
Adjusted R^2	0.037256	0.037256

Note: This table reports regression analysis of the instrument with the other variables on company performance. AUQ refers to the audit quality; BOCH refers to the change in the board of directors; BOZ refers to the total number of the board of directors; INF refers to the company type; MAJ refers to whether the government owned less than 50% or more than 50% of ownership; METH refers to the privatization methods; MED refers to the whether the companies privatized after the median year of privatization or not; YEAR refers to privatization years; and SIZE is refers to the total assets of the companies. *, ** and *** denote a significance level of 10%, 5% and 1%, respectively.