“Determinants of capital structure: evidence from Jordanian service companies”

AUTHORS	Omar K. Gharaibeh https://orcid.org/0000-0002-2020-6597 Saqer AL-Tahat https://orcid.org/0000-0003-3934-0646

ARTICLE INFO	Omar K. Gharaibeh and Saqer AL-Tahat (2020). Determinants of capital structure: evidence from Jordanian service companies. *Investment Management and Financial Innovations*, *17*(2), 364-376. doi:10.21511/imfi.17(2).2020.28
DOI	http://dx.doi.org/10.21511/imfi.17(2).2020.28
RELEASED ON	Friday, 03 July 2020
RECEIVED ON	Sunday, 15 March 2020
ACCEPTED ON	Tuesday, 23 June 2020

LICENSE	This work is licensed under a Creative Commons Attribution 4.0 International License

JOURNAL	"Investment Management and Financial Innovations"
ISSN PRINT	1810-4967
ISSN ONLINE	1812-9358
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
57	0	4

© The author(s) 2026. This publication is an open access article.

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Omar K. Gharaibeh (Jordan), **Saqer S. AL-Tahat** (Jordan)

DETERMINANTS OF CAPITAL STRUCTURE: EVIDENCE FROM JORDANIAN SERVICE COMPANIES

Abstract

This paper examines capital structure determinants for service companies in Jordan between 2014 and 2018. Secondary data from 45 companies were analyzed using the panel regression approach. The results show that the independent variables, suggested as capital structure determinants, have an effect on the debt ratio made by the service companies. Size and non-debt tax shield have a positive significant effect on the debt ratio, while profitability and business risk have a negative significant impact on the debt ratio. In general, the findings support the notion that the trade-off, bankruptcy cost, agency cost and pecking order theories are crucial in explaining the capital structure of Jordanian service companies except for non-debt tax shields and tangibility factors. Jordanian service companies do not use fixed assets as collateral or companies with higher collateral value tend to borrow less debt. Although the coefficient of institutional investors is statistically insignificant, it is still negative and economically significant. This paper concludes that size, profitability, business risk, non-debt tax shields and institutional ownership factors are fundamental in terms of shaping the capital structure in Jordanian service companies.

Keywords capital structure, tangibility, profitability, growth, business risk, Jordan

JEL Classification G23, G32

Received on: 15th of March, 2020
Accepted on: 23rd of June, 2020
Published on: 3rd of July, 2020

© Omar K. Gharaibeh, Saqer S. AL-Tahat, 2020

Omar K. Gharaibeh, Associate Professor, Faculty of Economics and Administrative Sciences, Finance and Banking, Al-alBayt University, Jordan. (Corresponding author)

Saqer AL-Tahat, Assistant Professor, Department of Accounting, Faculty of Economics and Administrative Sciences, Al-alBayt University, Jordan.

This is an Open Access article, distributed under the terms of the Creative Commons Attribution 4.0 International license, which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

The capital structure of a company is considered as one of the main issues of corporate finance, as it reflects most business decisions established by managers, which have an impact on the financial and economic values of the company. In particular, Modigliani and Miller (1958) provided the cornerstone of the capital structure theory. They conclude that market value of a company is not affected by financial leverage. Since then, many researchers have begun to examine the capital structure determinants (Harris & Raviv, 1991; MacKay & Phillips, 2005). In the context of these numerous works, there are many studies that deal with several theories and their relationship with capital structure, such as trade-off and pecking order developed by Fama and French (2002) and Frank and Goyal (2003), agency costs by Jensen (1986), and market timing by Baker and Wurgler (2002) and Hovakimian (2006).

The purpose of this study is to examine the determinants of capital structure in Jordanian service companies listed on the Amman Stock Exchange (ASE) over the period from 2014 to 2018. In addition, to provide evidence to support or contradict some theories, such as trade-off, bankruptcy cost, agency and pecking-order theories, 45 companies from the sector were used. Why does this paper choose to examine the determinants of capital structure in the Jordanian companies in this

http://dx.doi.org/10.21511/imfi.17(2).2020.28

particular sector? Firstly, the service sector includes the companies responsible for the infrastructure in any country, therefore, these companies have a range of characteristics in this sector, that is, fixed capital is huge in these companies, which helps and facilitates access to credit (collateral value). Seasonality is another special characteristic, especially in hotel and education companies. Secondly, Jordan is an emerging market whose economy is considered as a service economy. Based on the ASE site, the number of companies in the Jordanian service sector is 46 out of 191, which means that this sector is of big size and represents 25% of ASE. Therefore, it deepens the knowledge of financing companies in the Jordanian services sector, which although it is an important part of ASE, does not receive due attention compared to other sectors, for example, financial and industrial sectors. Besides, the results of this study can be compared with those of previous studies, either in the same sector or other sectors in developed and developing countries.

Thirdly, according to the annual report of the Central Bank of Jordan (2017), the service sector contributes to the gross domestic product (GDP) for 32% in 2017 in the Jordanian economy. In addition, according to the same report (Central Bank of Jordan, 2017), the service sector is the most active and operating for the Jordanian workforce, especially in transport companies and educational services. These reasons motivate this study to shed light on examining the determinants of capital structure in companies of the Jordanian service sector and to recognize what factors must be taken into consideration when formulating the capital structure in this sector separately.

The current study uses some different variables, such as the percentage of stock owned by institutional investors from the total ownership of board members (PIO). In particular, this paper is the first to use the PIO to capture the ownership structure as a determinant of capital structure in Jordanian service sector companies. Furthermore, unlike previous studies in Jordan, such as Al-Najjar and Taylor (2008), or in developed countries, such as Bhaduri (2002), Titman and Wessels (1988), Welch (2004) and Gharaibeh and Khaled (2020), who calculate business risk based on the standard deviation of the firm's return on assets, and consistent with the Qiu and La's (2010) method, the current study addresses this issue by assuming that shareholders are essentially concerned about the part of the risk they cannot remove through diversification, which indicates the beta of the companies' stock. Therefore, the current study calculates business risk based on levered beta divided by one plus debt to equity ratio that has not yet been employed in empirical research as the determinants of capital structure in Jordan. This paper does not use the standard deviation of the return on assets as the business risk variable. Although this variable varies from one company to another, it is relatively stable during the period of analysis, and this can cause problem in the fixed effect model.

This paper is organized as follows. Literature review is presented in the first section, while section 2 describes data and methodology. Section 3 discusses the results, and the last section concludes the paper.

1. LITERATURE REVIEW

In an efficient capital market, companies should be indifferent selecting between debt and equity (Modigliani & Miller, 1958). Modigliani and Miller (1963) and Miller (1977, 1988) reveal that high debt financing leads to higher corporate value when interest costs of debt are tax-free and equity costs are not. The tax benefit for debt financing constitutes 9.7 percent of the total market values of companies in the USA (Graham, 2000). In contrast, a relatively high level of leverage increases the risk of bankruptcy. Stiglitz (1974, 1988) points out that there is a positive relationship between the potential tax-saving benefits and potential bankruptcy costs arising from the use of leverage. Warner (1977) shows that big and profitable companies with essentially tangible assets tend to use more debt to minimize their tax commitments, as these companies have somewhat lower bankruptcy costs that each share incurs.

In the Jordanian stock market, Maghyereh (2005) investigates the determinants of the capital struc-

ture of Jordanian manufacturing firms using a dynamic model. He shows that size, profitability, growth opportunity, earning volatility and tangibility have a significant impact on the capital structure of Jordanian firms. Using data for 86 Jordanian non-financial companies, Al-Najjar and Taylor (2008) explore the relationship between capital structure and ownership structure for the period 1994–2003. Pooled and panel regression analyses were used to examine this relationship. The results show that firm size, asset tangibility, business risk and growth opportunity are common factors in determining capital structure and ownership. Khrawish and Khraiwesh (2010) re-investigate the determinants of the capital structure of the industrial companies listed on the ASE over the period 2001–2005. They support the results of previous studies and show that size, tangibility, short-term debt and long-term debt are positively related to leverage, while profitability is negatively related to leverage.

Using 76 Jordanian non-financial companies for the period 2001–2006, Soumadi and Hayajneh (2012) show that there is a negative relationship between profitability and debt. Shubita and Alsawalhah (2012) confirm that profitability is negatively related to debt applied to 39 industrial companies listed on the ASE. In a more recent study, using a sample of 41 Jordanian industrial firms listed on the ASE for ten years (2007 to 2016), Al-Nsour and Jresat (2018) find that the profitability represented by return on assets (ROA) and return on equity (ROE) is negatively and significantly associated with the debt to equity ratio. Recently, in the context of industrial companies in Jordan, Al Abbadi (2019) has examined the capital structure determinants, using 15 companies listed on the Amman Stock Exchange for 2014–2016. The results show that profitability, interest rates, tangible assets, size and growth have significantly affect debt.

At the level of Jordanian service companies, Gharaibeh and Khaled (2020) examined the impact of capital structure and financial characteristics on the profitability of services companies for the period 2014–2018. The current study is similar to the latest one in terms of sector, that is, Jordanian service companies, but differs in terms of purpose, since the current study examines the determinants of capital structure at the level of Jordanian service companies. Gharaibeh and Khaled (2020) have measured the business risk using standard deviation of a company's return on assets, while the current study measures the business risk using company's equity beta because shareholders are essentially concerned about the part of the risk they cannot remove through diversification, which indicates the beta of stock.

The motivation of the current study is that although the service sector is an important part of the ASE, it has not received due attention compared to the industrial sector. Therefore, a lack of extensive research on the capital structure determinants, especially at the service sector level, is the main motivation behind this study. The other motivation is to examine various corporate financial characteristics provided as capital structure determinants in previous studies, such as size, tangibility, profitability, growth, business risk, non-debt tax shields and percentage of institutional investors. Some of these determinants were not used in studies in Jordan, such as business risk measured by levered beta divided by one plus debt to the equity ratio rather than volatility of ROA, as well as non-debt tax shields. Therefore, the purpose of this study is to fill this gap by examining the determinants of capital structure at the level of Jordanian service companies listed on the ASE.

1.1. Size

Many previous studies document that the size of a company has a positive relationship with leverage (Albayrak, 2019; Ang, 1992; Bhaduri, 2002; Cole, 2013; Doan, 2019; Iqbal, Ahmad, & Ali, 2019; Titman & Wessels, 1988). Bigger companies have more capacity, they are more diversified, can meet creditor commitments and are less prone to bankruptcy. Scott (1976) points out that a big company tends to have high asset values, offers the best debt guarantee. Big companies attract institutional investors because they believe that big companies have a low risk of bankruptcy. O'Brien and Bhushan (1990) and Tang and Jang (2007) show that big companies are less subject to bankruptcy cost risk and have the required resources. Recently, at the level of the Gulf Cooperation Council (GCC) and UK real estate companies, Yousef (2019) has confirmed that company size has a significant ef-

http://dx.doi.org/10.21511/imfi.17(2).2020.28

fect on debt, and this result supports the trade-off theory. The study uses the natural logarithm of total assets as an indicator of the company size (SIZE).

H1: Company size has a positive effect on debt.

1.2. Tangibility

The trade-off, agency cost and pecking-order theories suggest a positive relationship between tangibility and debt. Based on the agency cost theory, the stockholders of a leverage company tend to have a motivation to invest sub-optimally (Titman & Wessels, 1988). According to the trade-off and pecking-order theroies, the type of assets owned by companies determines their choices in capital strucute, since tangible firm's assets can be used as a collateral (Myers, 1984; Scott, 1976). However, Dakua (2019) contradicts previous results and finds that debt is negatively related to tangibility in the Indian steel industry. This means that the majority of leverage is not raised against fixed assets (Dakua, 2019). Doan (2019) confirms this result and finds that tangibility is negatively correlated with capital structure. Yousef (2019) has found that tangibility has a significant positive effect on debt in the GCC, while it has a significant negative effect in the UK. To determine the effect of tangiblitliy, the fixed assets divided by total assets ratio is used as a proxy for company tangibility in this study (TANG).

H2: Tangibility assets have a positive effect on debt.

1.3. Profitability

The trade-off theory suggests a positive relationship between profitability, since achieving more profits increases the company's ability to borrow and pay financial liabilities. Thus, bankruptcy costs will be minimized. In addition, debt plays a corrective role in the relationship between owners and managers, so it helps reduce agency costs among those stakeholders (Doan, 2019). Conversely, according to the pecking-order theory, past profitability is negatively related to debt because company will prefer using internal funds more than other sources, but can resort to debt if internal sources are not enough. Profitable companies prefer to have more retained earnings. Therefore, past profitability is negatively related to debt (Devesa & Esteban, 2011; Donaldson, 1961; Serrasqueiro & Caetano, 2015; Titman & Wessels, 1988). Recently, at the level of the GCC and UK real estate companies, Yousef (2019) has confirmed the previous result and finds that profitability has a significant negative effect on debt, and this result is in line with the pecking order theory. The current study uses earnings before interest and tax divided by the total assets ratio as an indicator of company profitability (PROFIT).

H3: Profitability has a negative effect on debt.

1.4. Growth

The trade-off theory assumes that there is a negative relationship between growth opportunities and debt. In particular, agency costs increase for growing companies, and this will lead to increased bankruptcy costs and increased obstacles to have external credit, thus reducing indebtedness. Serrasqueiro and Nunes (2014) find a negative relationship between growth opportunities and the level of company indebtedness in the hotel industry. They justify their result based on the fact that these companies are afraid of the risk of default associated with financing investment opportunities using debt. Yousef (2019) has found that growth has a significant positive effect on debt in the GCC, while it has a significant negative effect in the UK. Market-to-book ratio is used as a proxy for the growth opportunities of a company (GROW).

H4: Growth opportunities have a negative effect on debt.

1.5. Business risk

According to the bankruptcy theory, business risk is negatively related to debt. Bhaduri (2002), Titman and Wessels (1988) and Welch (2004) and others show that companies with high volatility incomes tend to have less leverage because debt includes a commitment of periodic payment, and increased debt ratio will expose a company to financial distress cost. On the other hand, Qiu and La's (2010) use the beta of stock as a measure for a company's business risk. They are based on the fact that stockholders have a great ability to diversify in the finan-

cial markets, so their primary focus should be on systematic and non-diversifiable risks of their stock holding. To maintain the effect that financial leverage has on the stock beta, Qiu and La (2010) employ Hamadeh's equation to get the unlevered beta of stock as a measure of a company's risk. Following Qiu and La's (2010) approach, the current study calculates business risk based on levered beta divided by one plus debt to equity ratio (BR).

H5: Business risk has a negative effect on debt.

1.6. Non-debt tax shields

The trade-off theory assumes that non-debt tax shields are negatively related to debt. DeAngelo and Masulis (1980) debate that the presence of non-debt tax shields, such as fixed asset depreciation and amortization, lower a company's capacity of debt tax benefit. They claim that the companies with greater non-debt tax shields tend to have relatively lower debt in their capital structure. This result is confirmed by several previous studies such as Barton, Hill, and Sundaram (1989) and Prowse (1990). Bowen, Daley, and Huber (1982) show that the capital structure at the industry level is significantly affected by non-debt tax shields. Titman and Wessels (1988) find no signficant relationship between non-debt tax shields and the debt ratio, while Grier and Zychowicz (1994) and Chang, Lee, and Lee (2009) show a positive relationship. MacKie-Mason (1990) significantly contributes to this issue and suggests that there are two parts related to non-debt tax shields used in this study: the first part of NDTS (non-debt tax shield) is investment tax credits that are positively related to the debt level, while the second part is tax loss carry-forwards that are negatively related to debt level. A proxy of non-debt tax shields used in this study is depreciation divided by total assets (NDTS).

H6: Non-debt tax shields have a negative effect on debt.

1.7. Institutional ownership

The agency theory suggests that agency costs can be minimized by an optimal ownership structure and capital structure (Jensen, 1986; Jensen & Meckling, 1976). The results related to the ownership structure and leverage are mixed. Some previous studies find a negative relationship between ownership structure and leverage (Al-Najjar & Taylor, 2008; Chaganti & Damanpour, 1991; Grier & Zychowicz, 1994), while others find a positive relationship between ownership structure and leverage (Chen & Steiner, 1999; Leland & Pyle, 1977). Tong and Ning (2004) find that managerial ownership is negatively related to leverage when company faces a future of financial difficulties. This paper uses PIO as an indicator of company profitability.

H7: Institutional investors have a negative effect on debt.

2. METHODOLOGY

2.1. Sample selection and data

This study examines the capital structure determinants of all Jordanian service companies. The yearly data are collected from the Amman Stock Exchange (ASE). The study is based on the financial 2014–2018 data, which include 225 year observations from a final sample of 45 Jordanian service companies. One company was excluded due to the lack of related information on the shares. The study period begins from 2014 to avoid the global 2009 financial crisis and its effects, and extends until 2013. Therefore, the study period was selected to have more stable results related to the capital structure determinants of Jordanian service companies. Two companies were removed from the sample due to insufficient data availability. Panel data regression is employed to investigate the effect of the six company characteristics on the debt ratio using a balanced panel data. This paper chooses the fixed effect model based on the Hausman test result.

2.2. Research methodology

The study examines the capital structure determinants of Jordanian service companies, using a panel regression analysis:

$$\begin{aligned} LEV = {} & \alpha_i + \beta_1 SIZE_{it} + \beta_2 TANG_{it} + \\ & + \beta_3 PROFIT_{it} + \beta_4 GROW_{it} + \beta_5 BR_{it} + \\ & + \beta_6 TAX_{it} + \beta_7 PIO_{it} + \varepsilon_{it}, \end{aligned} \quad (1)$$

http://dx.doi.org/10.21511/imfi.17(2).2020.28

where LEV represents the leverage measure calculated by total debt divided by total assets of company i in year t; $SIZE$ is the natural logarithm of total assets; $TANG$ is the tangibility calculated by fixed assets divided by total assets; $PROFIT$ denotes profits calculated by earnings before interest and tax divided by total assets; $GROW$ refers to growth calculated by value per share divided by book value per share; and BR represents business risk calculated by levered beta divided by one plus debt to equity ratio. Unlike most previous studies, this paper adopts Qiu and La (2010)'s method to calculate business risk. The market model is used to have a raw estimate for a company's equity beta in a specific year based on the daily MSCI Jordanian index and the index data for the stock observed during that year. This extracted result indicates that the levered beta of equity β_L reflects both business risk and financial risk resulting from the use of debt that stockholders tolerate. The business risk is extracted as a proxy for risk gauge in equation (1).

$$\beta_U = \frac{\beta_L}{1 + D/E}, \quad (2)$$

where β_L is the levered beta of equity, while β_U is the unlevered beta of equity; NDTS refers to the non-debt tax shields calculated by depreciation divided by total assets; PIO is the percentage of stock owned by institutional investors from the total ownership of board members; ε_{it} is a residual error of company i in year t. The names of Jordanian service companies are detailed in Appendix A.

Panel data is a dataset in which the capital structure of service companies is observed across time. Therefore, this study adopts panel data analysis because it combines two dimensions, namely, cross-sectional and time-series dimensions (Torres-Reyna, 2007). The panel data analysis can be used when Lagrange multiplier LM test is statistically significant, which suggests the presence of a time-specific effect. In this case, panel data are recommended rather than pooled OLS analysis, since the late test will not be efficient. Therefore, this study uses a panel data model to solve the presence of a time-specific effect. In addition, Gujarati (2012) points out that the Hausman test can help in identifying an appropriate model between fixed and random effects ones. If the Hausman test result is statistically significant, then the fixed effects model is recommended rather than the random effects model and vice versa. Therefore, this study adopts the fixed effects model, as the result of the Hausman test is statistically significant.

3. RESULTS

The characteristics of Jordanian service companies are listed in Table 1. On average, the Jordanian service companies use only the 34 percent debt ratio in their capital structure. This is considered a low debt ratio, and one explanation is that these companies prefer reducing the probability of bankruptcy by minimizing debt financing. Given the profitability of Jordanian service companies, they achieve an average of 5 percent from operating activities. The percentage of institutional investors is relatively high, 68 percent on average. This means that the institutional investors play an important role in governing and managing these companies.

To determine the degree of variable integration, the LLC unit root tests with intercept and with intercept and trend are used to check whether the variables include a unit root or not. The results of the LLC test are detailed in Table 2, for

Table 1. Characteristics of Jordanian service companies

Statistics	Leverage %	LN (SIZE)	TANG %	PROFIT %	GROW %	BR %	NDTS %	PIO %
Mean	0.34	7.59	0.44	0.05	1.59	0.17	0.04	0.68
S.D.	0.24	0.65	0.31	0.09	1.76	0.36	0.03	0.39
Max.	100	9.25	0.97	0.39	15.03	1.47	0.25	100
Min.	0.10	5.92	0.00	–0.61	0.17	–1.83	0.00	0.00
Obs.	225	225	225	225	225	225	225	225

Note: The first row reports the name of each variable addressed in this study, while the second row details the average value of each variable for the Jordanian service companies. The number of observations for each variable is in the last row.

both the level and the first difference of each variable in Panel A and B, respectively. Panel A of Table 2 shows that the series include a unit root, especially SIZE, TANG and NDTS. Therefore, the variables are non-stationary in their levels. On the other hand, Panel B of Table 2 reveals that the variables are stationary in the first difference. This indicates that the series should be investigated at the level of the first difference.

Table 2. LLC test results

Series	With intercept	With intercept and trend
	LLC	LLC
Panel A: Levels		
SIZE	–1.58756	1.75496
	(0.0562)	(0.9604)
TANG	–3309.18	0.00045
	(0.0000)	(0.5002)
PROFIT	–14.7065	–4.14583
	(0.0000)	(0.0000)
GROW	–6.93474	–45.6862
	(0.0000)	(0.0000)
BR	–14.8793	–20.8296
	(0.0000)	(0.0000)
NDTS	–3309.18	0.00045
	(0.0000)	(0.5002)
PIO	–17.7731	–18.4511
	(0.0000)	(0.0000)
Panel B: First difference		
SIZE	–3.674	–13.3735
	(0.0000)	(0.0000)
TANG	–326.476	–2.55427
	(0.0000)	(0.0053)
PROFIT	–6.38147	–16.5200
	(0.0000)	(0.0000)
GROW	–53.9081	–3.87031
	(0.0000)	(0.0001)
BR	–28.3148	–29.7256
	(0.0000)	(0.0000)
NDTS	–326.476	–2.55427
	(0.0000)	(0.0053)
PIO	–10.7246	–15.4246
	(0.0000)	(0.0000)

This section presents and discusses the empirical analysis of the capital structure determinants. Table 3 shows the correlation matrix for all explanatory variables used in this study. Table 2 shows that all correlation coefficients are not high. As a result, there are no multicollinearity problems among explanatory variables.

Table 3. Correlation coefficients between independent variables

Variables	SIZE	TANG	PROFIT	GROW	BR	NDTS
TANG	0.64					
PROFIT	25.09***	–4.70				
GROW	31.30***	–3.79	11.38*			
BR	–6.52	13.85**	–2.03	–12.11*		
NDTS	0.04	49.07***	14.61**	5.48	14.09**	
PIO	14.19***	–7.63	–0.25	8.36	–4.57	7.80

Note: ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 4 details the results of the capital structure equation. Seven variables are used to reflect the capital structure determinants. To determine the preferable set of results statistically, the Lagrange multiplier and Hausman test result is presented. Given the Lagrange multiplier test, it is statistically significant. Therefore, the panel model is recommended rather than the pooled model. Next, if the Hausman test provides a significant result, then the fixed effect result is recommended rather than the random effect result. The Hausman test is statistically significant for the capital structure model. This means that the fixed effects model is preferred over the random effects model for capital structure. This indicates that firm-specific characteristics that determine differences between the leverage of Jordanian companies are not randomly determined. Table 4 shows that the value of the R-squared adjusted in the model is 0.93, which means that explanatory variables explain 93% of the variation in the debt ratio, while 7% of the variation in the debt ratio cannot be explained by the explanatory variables used in this study.

Table 4 shows that the leverage in Jordanian service sector companies is positively and significantly affected by size. This means that big Jordanian service companies are more diversified and less possible to be subject to financial distress, and larger firms tend to borrow more. This finding is in line with the trade-off and bankruptcy theories of capital structure, since big companies can meet creditor commitments and have lower bankruptcy costs, and this result is consistent with most previous results, such as Rajan and Zingales (1995), Bhaduri (2002), Cole (2013), Albayrak (2019), Doan (2019), Iqbal et al. (2019) and Yousef (2019). The asset tangibility is not a significant determinant of leverage for Jordanian service companies.

http://dx.doi.org/10.21511/imfi.17(2).2020.28

However, the asset tangibility is negatively affected by debt ratio. In terms of sign, this finding is consistent with Dakua (2019), who finds a negative significant relationship between tangibility and debt in the Indian steel industry, as well as with Doan (2019), who shows that tangibility is negatively correlated to capital structure in Vietnam between 2008 and 2018. This indicates that companies do not use fixed assets as a collateral or companies with higher collateral value tend to borrow less debt. The result contradicts the expected positive sign predicted by the trade-off, pecking-order and agency theories of capital structure.

Table 4. The effect of service company characteristics on the capital structure

Dependent variable	Leverage	
Independent variable	**Coefficient**	***t*-statistics**
Constant	–1.767037	–2.062391
SIZE	0.381655	7.574679***
TANG	–0.015720	–0.220517
PROFIT	–0.227287	–2.620052***
GROW	0.001743	0.309305
BR	–0.043918	–2.484901***
NDTS	0.641270	2.476510***
PIO	–1.191244	–1.013770
Adjusted R^2	93%	
Period included	5	
Lagrange multiplier test	196.01***(0.00)	
Hausman test	39.58***(0.000)	
Cross-section included	45	

Note: The sample includes all Jordanian service companies. A fixed effect panel OLS regression is based on equation (1). Debt ratio is the dependent variable calculated by total liabilities divided by total assets. *** indicate statistical significance at 1%.

Profitability has a negative significant effect on the debt ratio in Jordanian service companies. The profitability coefficient is –0.2272, which means that an increase in Jordanian service companies' profitability by 1 percent leads to decreased debt ratio with 22.72 percent, concluding that companies prefer internal financing rather than debt financing. This result supports the pecking order theory of capital structure. Many previous studies find a negative relationship between profitability and leverage, such as Myers (1984) who concludes that companies prefer internal financing when making new projects. Titman and Wessels (1988), Devesa and Esteban (2011), Serrasqueiro and Caetano (2015), Albayrak (2019), Doan (2019), Iqbal, et al. (2019) and Yousef (2019) show that profitability and leverage are negatively correlated. The effect of the growth variable, as referred by the market to book rate, is not significant for the leverage model. This implies that Jordanian service companies with high-growth opportunities do not rely heavily on debt to finance their investment opportunities. The lack of statistical significance of the growth effect can also be somewhat explained by its significant correlation with most other independent variables (see Table 3). However, the negative sign of the growth coefficient is in line with Al-Najjar and Taylor (2008), who show that the potential growth rate is positively and significantly related to debt ratio in Jordanian non-financial firms, suggesting that the agency cost theory and pecking-order theory are more relevant than the trade-off theory in the context of service companies in Jordan

Referring to Table 4, in accordance with the results of the existing literature, this study shows that business risk has a negative significant impact on debt ratio of Jordanian service companies. This finding is in line with the bankruptcy cost theory of capital structure, as risky companies with a high debt ratio are more likely to suffer from high financial distress costs and underinvestment problems. Therefore, companies with high business risk tend to be less leveraged. Furthermore, a negative relationship between business risk and debt ratio is in line with the trade-off theory, where a risky company will find debt less attractive (Wald, 1999). According to the trade-off theory, companies are unable to repay their debt due to higher bankruptcy and financial distress costs. This finding is in line with previous results such as Albayrak (2019).

Table 4 shows a significant positive effect of non-debt tax shields on debt ratio. This contrasts the expected negative sign predicted by the trade-off theory. This means that Jordanian service companies with lager non-debt tax shields tend to include more debt in their capital structure. The finding is consistent with Chang, A. C. Lee, and C. F. Lee (2009). PIO is statistically insignificant, but the coefficient of PIO is still negative and economically large –1.1914. This indicates that increased percentage of stock owned by institutional investors from the total ownership of board members in Jordanian service companies with 1 percent

leads to largely reduced debt ratio with 119 percent. The evidence suggests that institutional investors do not prefer using debt to finance their investments. This result confirms the finding of Al-Najjar and Taylor (2008), who show that PIO is negatively and significantly related to debt ratio in Jordanian firms.

4. DISCUSSION

The results find that the trade-off, bankruptcy cost, agency cost and pecking-order theories are not mutually exclusive, and these theories are essential in explaining the capital structure existence in Jordanian service sector. A panel regression analysis shows that debt ratio decreases with profitability and business risk gauged by unlevered beta of stock, but increases with size and non-debt tax shields. This paper finds profitability is negatively affected by capital structure, and this means that companies prefer internal financing when making new projects. This finding is consistent with most previous results, such as Titman and Wessels (1988), Devesa and Esteban (2011), Serrasqueiro and Caetano (2015), Albayrak (2019), Doan (2019), Iqbal et al. (2019) and Yousef (2019). Business risk is also negatively affected by capital structure, and this means that companies with high business risk tend to have less leverage; this finding is in line with Albayrak (2019). Size is negatively affected by capital structure in Jordanian service companies. This means that larger firms in Jordan tend to borrow more, and this finding is in line with Rajan and Zingales (1995), Bhaduri (2002), Cole (2013), Albayrak (2019), Doan (2019), Iqbal, et al. (2019) and Yousef (2019). As for the growth factor, this paper finds that growth of a company has no statistically significant effect on a company's choice of a debt ratio. This means that companies may prefer to use debt to increase equity when internal funds are exhausted.

Although the findings support the theories related to capital structure, two variables, namely, tangibility and non-debt tax shields, contradict these theories. For example, tangibility result contradicts the agency theory of capital structure in the sense that Jordanian service companies with more fixed assets cannot employ fixed assets as a collateral. In particular, if a company offers high tangible assets, this will lead to reduced agency costs of the debt, since tangible assets are easy to collateralize; therefore, decreased agency cost will provide more productivity in the company value (Rajan & Zingales, 1995). This indicates that companies do not use fixed assets as a collateral or companies with higher collateral value tend to borrow less debt. This finding is in line with Dakua (2019) and Doan (2019). However, this finding contradicts most of the previous studies, such as Jensen and Meckling (1976), Myers (1984), Titman and Wessels (1988), Harris and Raviv (1991), Rajan and Zingales (1995), Sayılgan, Karabacak, and Küçükkocaoğlu (2006), Tang and Jang (2007), and Al-Najjar and Taylor (2008).

This paper finds a significant positive effect of non-debt tax shields on the debt ratio. This contrasts with the expected negative sign predicted by the trade-off theory. This implies that Jordanian service companies with lager non-debt tax shields tend to include more debt in their capital structure. The result is consistent with Chang, A. C. Lee, and C. F. Lee (2009). Although PIO is statistically insignificant, the coefficient of PIO is still negative and economically large. This finding confirms the results of the Al-Najjar and Taylor's (2008) study that shows there is a negative relationship between PIO and the debt ratio in Jordanian non-financial firms. In general, it is concluded that size, profitability, business risk, non-debt tax shields and PIO are important factors in terms of shaping capital structure in Jordanian service companies.

CONCLUSION

This study examines the capital structure determinants of companies in the Jordanian service sector for 2014–2018, using data from a sample of 45 companies. The service sector is considered unique due to its huge tangibility and seasonality. Therefore, the results relatively differ from those documented in the empirical studies in other sectors. For example, tangibility has no significant impact on debt decisions.

http://dx.doi.org/10.21511/imfi.17(2).2020.28

This paper shows that size and non-debt tax shield have a positive significant effect on the debt in the Jordanian service companies, while profitability and business risk have a negative significant impact on the debt ratio. In spite of the coefficient of institutional investors is statistically insignificant, it is still negative and economically significant.

This paper contributes to the capital structure literature in various ways. First, it expands knowledge of the financing of the Jordanian service sector, which, although an important component of the ASE, has not received due attention compared to other sectors. Second, the results of the analysis confirm that most researchers use similar variables when studying the capital structure determinants. After reviewing the literature, this paper attempts to build a new model combining the strongest variables, which plays an important role in the capital structure determinants. In this study, for example, unlevered beta is used, rather than volatility of ROA, to measure business risk; this indicates that stockholders mainly worry about systematic risk of stocks they cannot evade by diversification. Furthermore, this study is the first to use the PIO variable, which is the percentage of stock owned by institutional investors from the total ownership of board members to capture the ownership structure as a determinant of capital structure in Jordanian service sector companies.

AUTHOR CONTRIBUTIONS

Conceptualization: Omar K. Gharaibeh.
Data curation: Omar K. Gharaibeh.
Formal analysis: Omar K. Gharaibeh.
Funding acquisition: Omar K. Gharaibeh.
Investigation: Omar K. Gharaibeh, Saqer S. AL-Tahat.
Methodology: Omar K. Gharaibeh.
Project administration: Omar K. Gharaibeh.
Resources: Omar K. Gharaibeh.
Software: Omar K. Gharaibeh.
Supervision: Omar K. Gharaibeh, Saqer S. AL-Tahat.
Validation: Omar K. Gharaibeh, Saqer S. AL-Tahat.
Visualization: Omar K. Gharaibeh, Saqer S. AL-Tahat.
Writing – original draft: Omar K. Gharaibeh.
Writing – review & editing: Omar K. Gharaibeh.

REFERENCES

1. Al-Najjar, B., & Taylor, P. (2008). The relationship between capital structure and ownership structure: New evidence from Jordanian panel data. *Managerial Finance, 34*(12), 919-933. https://doi.org/10.1108/03074350810915851
2. Al-Nsour, O. J., & Jresat, S. S. (2018). Capital Structure and Performance: Applied Study on Jordanian Industrial Public Shareholding Companies Listed in Amman Stock Exchange (ASE). *Journal of Economic & Financial Research, 5*(2), 601-618. Retrieved from https://www.asjp.cerist.dz/en/article/75822
3. Al Abbadi, A. (2019). Determinants of Capital Structure in Industrial Companies: Conservative Policy – Applied Study on Jordanian Industrial for the Period (2014–2016). *International Journal of Business and Management, 14*(2). Retrieved from https://www.researchgate.net/publication/330671130_Determinants_of_Capital_Structure_in_Industrial_Companies_Conservative_Policy-Applied_Study_on_Jordanian_Industrial_for_the_Period_2014-2016
4. Albayrak, A. S. (2019). The Firm Specific Capital Structure Determinants of Turkish Firms Listed in Istanbul Stock Exchange: A Structural Equation Approach. *IBAD Sosyal Bilimler Dergisi,* 466-495. Retrieved from https://www.semanticscholar.org/paper/The-Firm-Specific-Capital-Structure-Determinants-of-Albayrak/d17599657ec60c4e6f2d945be15324b149af9db0
5. Ang, J. S. (1992). On the theory of finance for privately held firms. *The Journal of Entrepreneurial Finance, 1*(3), 185-203. Retrieved from https://digitalcommons.pepperdine.edu/cgi/viewcontent.cgi?article=1121&context=jef

6. Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance, 57*(1), 1-32. Retrieved from http://people.stern.nyu.edu/jwurgler/papers/capstruct.pdf

7. Barton, S. L., Hill, N. C., & Sundaram, S. (1989). An empirical test of stakeholder theory predictions of capital structure. *Financial Management,* 36-44. Retrieved from https://www.jstor.org/stable/pdf/3665696.pdf?seq=1

8. Bhaduri, S. N. (2002). Determinants of corporate borrowing: some evidence from the Indian corporate structure. *Journal of Economics and Finance, 26*(2), 200-215. Retrieved from https://link.springer.com/article/10.1007/BF02755986

9. Bowen, R. M., Daley, L. A., & Huber Jr, C. C. (1982). Evidence on the existence and determinants of inter-industry differences in leverage. *Financial Management,* 10-20. Retrieved from https://www.jstor.org/stable/3665227?seq=1

10. Chaganti, R., & Damanpour, F. (1991). Institutional ownership, capital structure, and firm performance. *Strategic Management Journal, 12*(7), 479-491. Retrieved from https://www.jstor.org/stable/2486521?seq=1

11. Chang, C., Lee, A. C., & Lee, C. F. (2009). Determinants of capital structure choice: A structural equation modeling approach. *The Quarterly Review of Economics and Finance, 49*(2), 197-213. https://doi.org/10.1016/j.qref.2008.03.004

12. Chen, C. R., & Steiner, T. L. (1999). Managerial ownership and agency conflicts: A nonlinear simultaneous equation analysis of managerial ownership, risk taking, debt policy, and dividend policy. *Financial Review, 34*(1), 119-136. https://doi.org/10.1111/j.1540-6288.1999.tb00448.x

13. Cole, R. A. (2013). What do we know about the capital structure of privately held US firms? Evidence from the surveys of small business finance. *Financial Management, 42*(4), 777-813. https://doi.org/10.1111/fima.12015

14. Dakua, S. (2019). Effect of determinants on financial leverage in I ndian steel industry: A study on capital structure. *International Journal of Finance & Economics, 24*(1), 427-436. https://doi.org/10.1002/ijfe.1671

15. DeAngelo, H., & Masulis, R. W. (1980). Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics, 8*(1), 3-29. https://doi.org/10.1016/0304-405X(80)90019-7

16. Devesa, M. J. S., & Esteban, L. P. (2011). Spanish hotel industry: indebtedness determinants. *Applied Economics, 43*(28), 4227-4238. Retrieved from https://www.researchgate.net/publication/227606606_Spanish_hotel_industry_Indebtedness_determinants

17. Doan, T.-T. T. (2019). Firm-specific factors as determinants of capital structure: Evidence from an emerging country. *International Journal of Economics and Management Systems, 4*. Retrieved from https://www.researchgate.net/publication/254458785_Firm-Specific_Factors_as_Determinants_of_Capital_Structure_Evidence_From_Indonesia

18. Donaldson, G. (1961). *Corporate Debt Capacity. A study of corporate debt policy and the determination of corporate debt capacity.(Second printing.)*: Division of Research, Graduate School of Business Administration, Harvard Univ.

19. Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *The Review of Financial Studies, 15*(1), 1-33. Retrieved from https://www.jstor.org/stable/2696797?seq=1

20. Frank, M. Z., & Goyal, V. K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics, 67*(2), 217-248. https://doi.org/10.1016/S0304-405X(02)00252-0

21. Gharaibeh, O., & Khaled, M. H. B. (2020). Determinants of Profitability in Jordanian Services Companies. *Investment Management and Financial Innovations, 17*(1), 277-290. Retrieved from https://businessperspectives.org/investment-management-and-financial-innovations/issue-341/determinants-of-profitability-in-jordanian-services-companies

22. Graham, J. R. (2000). How big are the tax benefits of debt? *The Journal of Finance, 55*(5), 1901-1941. Retrieved from https://faculty.fuqua.duke.edu/~jgraham/HowBigFinalJF.pdf

23. Grier, P., & Zychowicz, E. J. (1994). Institutional investors, corporate discipline, and the role of debt. *Journal of Economics and Business, 46*(1), 1-11. https://doi.org/10.1016/0148-6195(94)90017-5

24. Harris, M., & Raviv, A. (1991). The theory of capital structure. *The Journal of Finance, 46*(1), 297-355.b https://doi.org/10.1111/j.1540-6261.1991.tb03753.x

25. Hovakimian, A. (2006). Are observed capital structures determined by equity market timing? *Journal of Financial and Quantitative Analysis, 41*(1), 221-243. Retrieved from https://www.jstor.org/stable/27647242?seq=1

26. Iqbal, F., Ahmad, M. B., & Ali, H. F. (2019). Determinants of capital structure: an empirical study of KSE listed MNCs in Pakistan. *Journal of Accounting, Finance and Auditing Studies, 5*(1), 173-196. Retrieved from https://www.researchgate.net/publication/330337605_Determinants_of_Capital_Structure_An_Empirical_Study_of_KSE_Listed_MNCs_in_Pakistan

27. Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(2), 323-329. Retrieved from https://www.jstor.org/stable/1818789?seq=1

28. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-

http://dx.doi.org/10.21511/imfi.17(2).2020.28

360. https://doi.org/10.1016/0304-405X(76)90026-X

29. Khrawish, H. A., & Khraiwesh, A. H. A. (2010). The determinants of the capital structure: evidence from Jordanian industrial companies. *Journal of King Abdulaziz University: Economics and Administration, 105*(3055), 1-48. Retrieved from https://www.researchgate.net/publication/228738400_The_Determinants_of_the_Capital_Structure_Evidence_from_Jordanian_Industrial_Companies

30. Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The Journal of Finance, 32*(2), 371-387. Retrieved from https://www.jstor.org/stable/2326770?seq=1

31. MacKay, P., & Phillips, G. M. (2005). How does industry affect firm financial structure? *The review of Financial Studies, 18*(4), 1433-1466. https://doi.org/10.1093/rfs/hhi032

32. MacKie-Mason, J. K. (1990). Do taxes affect corporate financing decisions? *The Journal of Finance, 45*(5), 1471-1493. Retrieved from https://www.jstor.org/stable/2328746?seq=1

33. Maghyereh, A. (2005). Dynamic capital structure: Evidence from the small developing country of Jordan. *International Journal of Economics, Management and Accounting, 13*(1). Retrieved from https://journals.iium.edu.my/enmjournal/index.php/enmj/article/view/105

34. Miller, M. H. (1977). Debt and taxes. *The Journal of Finance, 32*(2), 261-275.

35. Miller, M. H. (1988). The Modigliani-Miller propositions after thirty years. *Journal of Economic Perspectives, 2*(4), 99-120. Retrieved from https://www.jstor.org/stable/1942779?seq=1

36. Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review, 1,* 3.

37. Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: a correction. *The American Economic Review, 53*(3), 433-443. Retrieved from https://www.jstor.org/stable/1809167?seq=1

38. Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance, 39*(3), 574-592. https://doi.org/10.1111/j.1540-6261.1984.tb03646.x

39. O'Brien, P. C., & Bhushan, R. (1990). Analyst following and institutional ownership. *Journal of Accounting Research, 28*, 55-76. Retrieved from https://www.jstor.org/stable/2491247?seq=1

40. Prowse, S. D. (1990). Institutional investment patterns and corporate financial behavior in the United States and Japan. *Journal of Financial Economics, 27*(1), 43-66. https://doi.org/10.1016/0304-405X(90)90020-Z

41. Qiu, M., & La, B. (2010). Firm characteristics as determinants of capital structures in Australia. *International journal of the Economics of Business, 17*(3), 277-287. https://doi.org/10.1080/13571516.2010.513810

42. Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance, 50*(5), 1421-1460. https://doi.org/10.1111/j.1540-6261.1995.tb05184.x

43. Sayılgan, G., Karabacak, H., & Küçükkocaoğlu, G. (2006). The firm-specific determinants of corporate capital structure: Evidence from Turkish panel data. *Investment Management and Financial Innovations, 3*(3), 125-139. Retrieved from https://www.researchgate.net/publication/242099579_The_Firm-Specific_Determinants_of_Corporate_Capital_Structure_Evidence_from_Turkish_Panel_Data

44. Scott, J. H. (1976). A theory of optimal capital structure. *The Bell Journal of Economics,* 33-54. Retrieved from https://www.jstor.org/stable/pdf/3003189.pdf?seq=1

45. Serrasqueiro, Z., & Caetano, A. (2015). Trade-Off Theory versus Pecking Order Theory: capital structure decisions in a peripheral region of Portugal. *Journal of Business Economics and Management, 16*(2), 445-466. https://doi.org/10.3846/16111699.2012.744344

46. Serrasqueiro, Z., & Nunes, P. M. (2014). Financing behaviour of Portuguese SMEs in hotel industry. *International Journal of Hospitality Management, 43,* 98-107. https://doi.org/10.1016/j.ijhm.2014.09.001

47. Shubita, M. F., & Alsawalhah, J. M. (2012). The relationship between capital structure and profitability. *International Journal of Business and Social Science, 3*(16). Retrieved from https://www.researchgate.net/publication/311311417_The_Relationship_between_Capital_Structure_and_Profitability_of_the_Limited_Liability_Companies

48. Soumadi, M. M., & Hayajneh, O. S. (2012). Capital structure and corporate performance empirical study on the public Jordanian shareholdings firms listed in the Amman stock market. *European Scientific Journal, ESJ, 8*(22). Retrieved from https://eujournal.org/index.php/esj/article/view/426

49. Stiglitz, J. E. (1974). On the irrelevance of corporate financial policy. *The American Economic Review,* 851-866. Retrieved from https://www.jstor.org/stable/pdf/1815238.pdf?seq=1

50. Stiglitz, J. E. (1988). Why financial structure matters. *Journal of Economic Perspectives, 2*(4), 121-126. Retrieved from https://ideas.repec.org/a/aea/jecper/v2y1988i4p121-26.html

51. Tang, C.-H. H., & Jang, S. S. (2007). Revisit to the determinants of capital structure: A comparison between lodging firms and software firms. *International Journal of Hospitality Management, 26*(1), 175-187. https://doi.org/10.1016/j.ijhm.2005.08.002

52. Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of Finance, 43*(1), 1-19. Retrieved from https://www.jstor.org/stable/2328319?seq=1

53. Tong, S., & Ning, Y. (2004). Does capital structure affect institutional investor choices? *The Journal of Investing, 13*(4), 53-66. Retrieved from https://www.researchgate.net/publication/240315782_Does_Capital_Structure_Affect_Institutional_Investor_Choices

54. Wald, J. K. (1999). How firm characteristics affect capital structure: an international comparison. *Journal of Financial Research, 22*(2), 161-187. https://doi.org/10.1111/j.1475-6803.1999.tb00721.x

55. Warner, J. B. (1977). Bankruptcy costs: Some evidence. *The Journal of Finance, 32*(2), 337-347. https://doi.org/10.1111/j.1540-6261.1977.tb03274.x

56. Welch, I. (2004). Capital structure and stock returns. *Journal of Political Economy, 112*(1), 106-131. Retrieved from https://www.jstor.org/stable/10.1086/379933?seq=1

57. Yousef, I. (2019). The Determinants of Capital Structure: Evidence from GCC and UK Real Estate Sectors. *Real Estate Management and Valuation, 27*(2), 108-125. Retrieved from https://www.researchgate.net/publication/334443534_The_Determinants_of_Capital_Structure_Evidence_from_GCC_and_UK_Real_Estate_Sectors

APPENDIX A

Number	Sub-service sector	Service company's short name
1	Health Care Services	Al-Bilad Medical Services
2		The Consultant & Investment Group
3		Ibn Alhaytham Hospital
4		International For Medical Investment
5	Education Services	Al-Zarqa Educational & Investment
6		The Arab International For Education & Investment
7		Ittihad Schools
8		Al-Isra For Education And Investment
9		Petra Education
10		Philadelphia International Educational Investment
11	Hotels and Tourism	Jordan Hotels & Tourism
12		Arab International Hotels
13		Mediterranean Tourism Investment
14		Zara Investment Holding
15		Al- Sharq Investments Projects (Holding)
16		Al-Dawliyah For Hotels & Malls
17		Jordan Projects For Tourism Development
18		Al-Rakaez Investment
19		Sura Development & Investment
20	Transportation	Jordan National Shipping Lines
21		Salam International Transport & Trading
22		Jordan Express Tourist Transport
23		Jordan Investment & Tourism Transport (Alfa)
24		Transport& Investment Barter
25		Alia - The Royal Jordanian Airlines
26		Masafat For Specialized Transport
27		Rum Group For Transportation & Tourism Investment
28		Ubour Logistic Services Plc
29	Technology and Communications	Jordan Telecom
30		Al-Faris National For Investment & Export
31	Media	Jordan Press Foundation / Al-Ra'i
32	Utilities and Energy	Jordan Electric Power
33		Irbid District Electricity
34		Afaq For Energy
35		Jordan Petroleum Refinery
36	Commercial Services	Jordanian Duty Free Shops
37		Jordan International Trading Center
38		Jordan Trade Facilities
39		Specialized Trading & Investment
40		Bindar Trading & Investment
41		Offtec Holding Group
42		South Electronics
43		Nopar For Trading And Investment
44		Afaq For Energy
45		Enjaz For Development & Multi Projects

http://dx.doi.org/10.21511/imfi.17(2).2020.28