

Determinants of Agency Costs: Evidence from Jordan

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Abstract

This study examines the impact of firm characteristics, namely size, leverage, profitability, and growth on the asset turnover ratio, which inversely measure the firm's agency costs. Using data about non-financial firms listed on the Amman Stock Exchange, the results of the Generalized Method of Moments (GMM) estimator show that leverage, profitability, and growth are positively related to asset turnover, suggesting that firms with higher leverage ratios, profitable firms, and firms with higher investment opportunities experience lower agency costs compared to their counterparts. However, this study finds no evidence on the impact of firm size on asset turnover. Finally, this study finds that managers of Jordanian firms set a target level of agency costs and attempt to gradually adjust the agency cost level towards that target. Results of this study are of high importance for firms' managers and policy makers as it sheds light on the important factors that affect the agency costs of these firms.

Keywords: Agency Costs, Asset Turnover, Firm Characteristics

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محددات تكاليف الوكالة: دليل من الأردن

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ملخص

تبحث هذه الدراسة في تأثير خصائص الشركة، (الحجم، الرافعة المالية، الربحية، والنمو) على نسبة معدل دوران الأصول، والتي تقيس تكاليف الوكالة في الشركة عكسياً. بالاعتماد على بيانات الشركات غير المالية المدرجة في بورصة عمان. وباستخدام طريقة التحليل (Generalized Method of Moments GMM). وقد أظهرت النتائج أن الرافعة المالية والربحية والنمو تؤثر إيجابياً بدوران الأصول، مما يشير إلى أن الشركات ذات نسب الرافعة المالية الأعلى، الشركات المربحة، والشركات ذات الفرص الاستثمارية الأعلى تواجه تكاليف وكالات أقل مقارنةً بنظرائها. لكن، لا تجد هذه الدراسة أي دليل على تأثير حجم الشركة على دوران الأصول. وأخيراً، وجدت هذه الدراسة أن مديري الشركات الأردنية لديهم مستوى مستهدف لتكاليف الوكالة ويحاولون تعديل مستوى تكلفة الوكالة تدريجياً نحو هذا المستوى. إن نتائج هذه الدراسة مهمة بالنسبة لمديري الشركات وصناع القرار حيث إنها تلقي الضوء على أهم العوامل التي تؤثر على تكاليف الوكالة في هذه الشركات.

الكلمات المفتاحية: تكاليف الوكالة، معدل دوران الأصول، خصائص الشركات.

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Introduction:

Since the seminal work of Jensen and Meckling (1976) and Myers (1977), a considerable amount of literature has been carried out about the agency cost theory. Previous studies investigate this theory in two main streams. In the first stream are studies that examine the role of agency theory in explaining firms' financial policies, such as dividend policy and capital structure policy (See, for example, La Porta et al.2000; Rozeff, 1982; Ozkan, 2001; Holderness, 2018; Tran Q. T., 2020).

The other stream of literature has flipped the coin by investigating the impact of firm characteristics on agency costs (Truong & Heaney, 2013; Florackis & Ozkan, 2009; Jelinek & Stuerke, 2009; Florackis, 2008; Obeng et al., 2021). However, these studies in both streams have two aspects in common. First, they examine the impact of corporate governance factors on agency problems. Second, their results are mainly based on data from developed countries (the USA, the UK, and Australia). Therefore, it is of high interest to investigate the effect of other firm characteristics on agency costs. Most recently, Canarella and Miller (2022) have filled this gap by studying the linear and nonlinear relationships between firm size, debt, and R&D on agency costs. Nonetheless, their study is also based on a small sample of U.S ICT firms.

While several studies have been carried out on this relationship, there is a lack of studies that examine this relationship in an emerging market. Thus, this study expands this stream of literature by providing evidence on the firm characteristics-agency costs relationship from an emerging market perspective. Investigating this relationship in an emerging market is highly important as the agency costs are more pronounced in emerging markets than in developed markets due to the weak regulatory environment and the lower investor protection (Iatridis, 2012). In the case of Jordan, capital markets face high financial frictions, such as agency costs and information asymmetry, which limit the companies' ability to obtain funds at low costs. However, as a result of entering the era of liberalization and financial liberalization, policy makers have made many changes to enhance the business environment that contribute to alleviating the problem of asymmetric information and agency costs (Zuraiqat et al., 2016).

Using data about nonfinancial firms listed on Amman Stock Exchange (ASE) for the period 2001-2019, the results of this study suggest that leverage, profitability, and growth are positively related to asset turnover, suggesting that firms with higher leverage ratios, profitable firms, and firms

with higher investment opportunities experience lower agency costs compared to their counterparts. However, this study finds no evidence of the impact of firm size on asset turnover. Finally, this study finds that managers of Jordanian firms set a target level of agency costs and attempt to adjust the agency cost level gradually to that target. The findings of this study are of high importance for academics and practitioners as it deepens their understanding of the critical factors that explain a firm's agency costs.

The rest of the paper is organized as follows: the second section reviews the relevant literature about agency costs theory and its main determinants and the development of research hypotheses. The third section presents the research methodology and estimation method. Section four provides the main findings of the research. Finally, section five concludes the paper.

1- Literature review and hypotheses development:

The following sections provide a brief review of the agency costs theory and its main determinants: firm size, debt, profitability, and growth.

2.1 Agency Costs theory

Agency cost theory suggests that due to the separation of ownership and management, a conflict of interest may arise between managers and shareholders (Jensen and Meckling, 1976). According to this theory, managers may attempt to expropriate outside shareholders by exploiting the available free cash flow to achieve their respective goals rather than maximizing shareholder wealth. Furthermore, agency costs can be classified into two main categories, direct and indirect costs (Baker and Powell, 2005). Under the first category, outside shareholders incur these costs through stock options, bonuses and audit fees. However, in the second category, management's inefficient investment decisions will adversely affect shareholders' management. Managers may either adopt an overinvestment strategy (asset substitution) (Jensen and Meckling, 1976) or an underinvestment strategy (debt overhang) (Myers, 1977). Several studies have relied on agency cost theory to explain corporate policies such as dividend policy (La Porta et al., 2000; Rozeff, 1982) and capital structure policy (Ozkan, 2001). Furthermore, Zhang et al. (2020) find that CEO surname ties increase agency costs in the Chinese firms. Using a laboratory experiment, LaRiviere et al. (2018) concluded that dividends are larger in contexts where investor protection is high, indicating that dividends play an important role in mitigating agency costs. Recently, in a study on Chinese firms, Khan et al. (2020) suggest that ownership concentration reduces

agency costs through enhancing the quality of corporate governance. More recently, Muñoz et al. (2021) find a negative relationship between managerial ownership and agency costs in Chinese firms.

2.2 Determinants of agency costs:

This section discusses the main factors affecting agency costs and develops the research hypotheses.

2.2.1 Firm Size:

Previous studies offer mixed findings regarding the impact of firm size on agency costs. On the one hand, agency costs are more pronounced in larger firms (Jensen and Meckling, 1976; Jensen, 1986). Doukas et al. (2000) supported this view and attributed their finding to the complexity of the large firms. Furthermore, managers of large firms may have more incentives to expand the size of the firm to achieve respective goals, such as higher managerial compensation (Jensen & Murphy, 1990), prestigious and reputational goals (Stulz, 1990), or managerial entrenchment (Shleifer & Vishny, 1989). On the other hand, larger firms may benefit from the economies of scale to reduce agency costs (Singh and Davidson, 2003). Moreover, Knyazeva (2007) states that strong governance practices in larger firms may reduce agency costs. Building on the argument of the low investment protection in emerging markets and the manager's incentives and goals in larger firms, this study may support the first argument that larger firms may exhibit higher agency costs. Therefore, the first hypothesis is as follows:

H1: Firm size has a statistical and positive impact on agency costs, ceteris paribus.

2.2.2 Debt:

According to the agency theory, debt holders can play a vital monitoring role over the firm managers. Therefore, debt can be considered a critical governance mechanism (e.g., Shleifer & Vishny, 1997; Jensen, 1986; Hart & Moore, 1994). The primary purpose behind this monitoring is to ensure that these firms will be able to repay the interest and the principal Canarella and Miller, (2022). The monitoring role exerted by debt holders reduces the managers' incentives to conduct self-interest actions such as overinvestment or (empire building) by lowering the free cash flow available for them (Jensen, 1986). Furthermore, the presence of debt leads managers to be more efficient in saving their control over the firm and, more importantly, avoiding the possibility of going bankrupt. Ang et al. (2000)

state that banks may pursue control over managers to enhance the firm's performance. Thus, the second hypothesis is as follows:

H2: Debt has a statistical and negative impact on agency costs, ceteris paribus

2.2.3 Profitability:

Firms with high profitability will have sufficient funds to increase their investment, which will be reflected in an increase in sales, therefore, increasing the asset utilization (Chandler and Jansen, (1992); Cowling, (2004); Rahayu, (2019)). However, profitable firms may induce managers to conduct actions that benefit them rather than maximize shareholder wealth. Actions may include high bonuses or compensation. Moreover, high profits reduce debt holders' monitoring ability over the managers' actions, according to Canarella and Miller (2022). Therefore, shareholders of profitable firms are more likely to be exposed to wealth expropriation by managers. Thus, the third hypothesis is as follows:

H3: Profitability has a statistical and positive impact on agency costs, ceteris paribus

2.2.4 Growth

The presence of high free cash flow and low investment opportunities induces managers to invest unwisely either by asset substitution or by investing in negative net present value projects, which increases agency costs. On the contrary, high investment opportunities reduce the managers' discretions for asset substitution or underinvestment (Jensen, 1986). Moreover, firms with high free cash flow are more likely to finance their growth internally, which decreases the reliance on debt, limiting the monitoring role of debt (Griffin et al., 2010). In addition, Muñoz et al. (2021) concluded that agency costs increase in the presence of managerial discretion in low-growth firms. Based on these ground, the fourth hypothesis is as follows:

H4: growth opportunities have a statistical and negative impact on agency costs, ceteris paribus

2- Methodology

3.1 Estimation Framework

To examine the effect of firm characteristics, namely size, debt, profitability, and growth on agency costs, this study follows Florackis and Ozkan (2009) and Canarella and Miller (2022) by employing the following dynamic model:

$$ATR_{i,t} = \alpha + \beta_1 ATR_{i,t-1} + \beta_2 SIZE_{i,t} + \beta_3 DEBT_{i,t} + \beta_4 ROA_{i,t} + \beta_5 GROWTH_{i,t} + \gamma_i + \gamma_t + \varepsilon_{it}$$

Here the dependent variable (ATR) is the Asset Turnover Ratio, which is a proxy for agency cost, following Canarella and Miller, (2022), Florackis and Ozkan (2009), and Florackis (2008). This ratio is an inverse measure of the agency costs, meaning that a firm with a high (low) asset turnover ratio is assumed to have lower (high) agency costs (Canarella and Miller, 2022). Furthermore, the lagged value of asset turnover ratio (ATR) is included in the model to test the hypothesis that agency costs are dynamic based on Florackis & Ozkan's (2009) conjecture.

Explanatory variables include the firm size (SIZE), computed as the natural logarithm of total assets (Truong & Heaney, 2013; Florackis & Ozkan, 2009). Leverage (LEV) is calculated as the ratio of total debt divided by total assets (Truong & Heaney, 2013). Profitability (ROA) is computed by the ratio of net income to total assets (Canarella and Miller, 2022). Growth opportunities (GROWTH) are computed as growth in total assets (Fama & French, 2002). Finally, the model includes γ_i and γ_t to account for firm unobserved fixed effects and time effects, respectively.

Table 1: Variables' definitions.

Variables	Definition
ATR	Asset turnover ratio is measured as the percentage of sales to the book value of total assets.
SIZE	computed as the natural logarithm of total assets
LEV	computed as the ratio of total debt divided by total assets
ROA	computed by the ratio of net income to total assets
GROWTH	computed as growth in total assets

3.2 Estimation Method:

Previous studies suggest several models estimate dynamic panel data. For instance, Kiviet (1995) developed a biased-corrected dummy variable model (LSDVC). Loudermilk (2007) also introduced the dynamic panel fractional model (DPF). Furthermore, Hahn et al. (2007) developed the long differencing model that is later modified by Huang and Ritter (2009). However, the above-mentioned models have one possible drawback which is the negligence of potential endogeneity of the variables, which is a major issue in corporate finance, according to Roberts & Whited (2012). Fundamentally, employing these models to estimate relationships between endogenous variables may lead to inconsistent and biased estimates of the model parameters.

Therefore, in this research, the Two-step system GMM method is utilized. Applying this method helps to overcome the unobserved heterogeneity and endogeneity problems. Furthermore, the existence of the lagged dependent variable as an independent variable requires a dynamic model to account for the dynamic process of the agency cost. Therefore, the two-step system GMM estimator by Blundell and Bond (1998) combines the equations of the first difference model by Arellano and Bond (1991) and equations in levels and uses the lagged values of levels as instruments. Furthermore, the two-step system GMM estimator uses corrected standard errors derived by Windmeijer (2005) to avoid the downward bias of standard errors. Finally, Hansen test, the first and second-order serial correlation, are employed to ensure the validity of instruments and the presence of serial correlation, respectively.

3.3 Data:

The sample for this study consists of annual data for all nonfinancial firms listed on Amman Stock Exchange (ASE) from 2001-to 2019*. The sample contains 1382 unique firm-year observations. Variables are winsorized at the 1st and 99th percentiles to remove outliers.

3.4 Summary of statistics

Table 2 below shows summary of statistics of the main variables included in the model. The mean value of ATR is 0.517, implying that, on average, firms generate JD0.517 in sales for every JD1 investment in assets. This ratio is half of the ATR found in the U.S, according to Canarella and Miller (2022). The average debt ratio (LEV) is 0.077, indicating that firms

* The years 2020 and 2021 were excluded to avoid the impact of COVID-19.

finance around .08 of their assets using debt. The low leverage ratio reflects that Jordanian firms are constrained in using debt as these firms rely merely on bank loans due to the weak bond market in Jordan. Regarding ROA and GROWTH, Table 2 shows the low profitability of firms (0.018) and relatively weak growth of 0.119.

Table (2) Summary Statistics

	Mean	25th percentile	Median	75th Percentile	Standard Deviation
ATR	0.517	0.231	0.459	0.687	0.440
SIZE	16.944	16.083	16.894	17.752	1.454
LEV	0.077	0	0.015	0.104	0.231
ROA	0.018	-0.013	0.027	0.067	0.113
GROWTH	0.119	-0.126	0.020	0.187	0.727

3.5 Correlation Matrix

Table 3 shows the correlation matrix for the main variables included in the model. The table shows positive correlations between the dependent variable (ATR) and all independent variables. Furthermore, correlations between independent variables are lower than 0.80, indicating no multicollinearity among variables, according to Gujarati and Porter (2009). In addition, Variance Inflation Factor (VIF) test is used, and the results show VIF factors of less than 2, implying no multicollinearity threat, according to Gujarati and

Porter (2009).

Table (3) Correlation matrix

	ATR	SIZE	LEV	ROA	GROWTH
ATR	1				
SIZE	0.199	1			
LEV	0.001	-0.067	1		
ROA	0.182	0.227	-0.095	1	
GROWTH	0.054	0.021	0.124	0.089	1

3- Two-Step GMM Results:

Table 4 below presents the results of the main regression model. The findings in Table 4 suggest that the lagged value of the dependent variable is positive and statistically significant, implying that managers have target agency costs towards which they attempt to adjust the level of agency costs in the firm. This result is consistent with Canarella and Miller (2022) and Florackis and Ozkan (2009). Turning to the firm size, although the sign of the firm size is consistent with the notion that larger firms have a lower asset turnover ratio and thus higher agency costs, the coefficient is not statistically significant. In line with Ang et al. (2000) and Fleming et al. (2005), Leverage (LEV) is found to have a positive and significant impact on asset turnover, implying that debt reduces agency costs. In addition, they indicated that debtholders play an influential monitoring role in managerial conduct.

Moreover, there is a significant positive impact for profitability (ROA) on asset turnover, telling that profitable firms experience lower agency costs. This is inconsistent with Canarella and Miller, who found that high profitability is associated with higher agency costs. However, this difference is attributed to the differences between developed and developing countries, where banks, besides being the primary source of debt financing, have seats on boards, especially in the case of Jordan. Finally, growth opportunities (GROWTH) have a positive and significant effect on asset turnover, which is consistent with the free cash flow argument that high growth opportunities reduce the need for free cash flow monitoring, according to Jensen (1986).

Together these findings provide important insights into the differences between developed and developing countries regarding the determinants of agency costs.

Table (4) Two-Step GMM Results

	ATR
ATR_{t-1}	0.728*** (0.171)
SIZE	-0.00454 (0.0287)
LEV	0.160*** (0.0229)

ROA	0.315*
	(0.167)
GROWTH	0.0781***
	(0.0183)
Constant	0.190
	(0.519)
Industry Effects	Yes
Year Effects	Yes
Observations	1382
Number of firms	92
Hansen test P-value	0.432
AR1	0.005
AR2	0.103

This table reports the results of the System GMM estimator by Blundell & Bond (1998). For variable definitions, please refer to Table 1. Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4- Conclusion

This study extends the stream of literature on the factors that affect agency costs. Specifically, it addresses the impact of firm characteristics (size, leverage, profitability, and growth) on the asset turnover ratio, which inversely measures the firm's agency costs. This study utilized annual data on nonfinancial firms listed on the Amman Stock Exchange for the period from 2001 to 2019. Findings of the GMM estimator suggest that growth, leverage, and profitability have a positive and significant relationship with the Asset Turnover Ratio (ATR), indicating that highly levered firms, firms with high profitability, and firms with higher investment opportunities have lower agency costs than their counterparts. Regarding firm size, the results show insignificant impact for firm size on asset turnover. Finally, this study finds that managers of Jordanian firms set a target level of agency costs and attempt to adjust the agency cost level towards that target gradually. This study recommends firm managers should pay more attention to the factors that affect the efficiency of investment (ATR) in order to enhance this efficiency and decrease agency costs. Furthermore, this study encourages scholars to investigate the impact of other factors on the agency costs such as cash holdings.

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