

The Effect of Equity Financing Structure and Asset Utilization Efficiency on Financial Fragility

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Abstract

The current study aimed to test the effect of the equity financing structure and asset utilization efficiency on the financial fragility of a sample of 23 industrial companies listed on the Amman Stock Exchange for the period of 2016–2021 using the random sampling method. The descriptive-analytical method was deployed in this study. Besides, E-views software was used to test the study hypotheses. The study concluded that a negative and statistically significant effect of equity financing structure (common stock financing ratio and retained earnings financing ratio) on financial fragility. Furthermore, a negative and statistically significant effect of asset utilization efficiency, as measured by the (actual growth rate), on financial fragility. Therefore, the study recommends that industrial companies consider the Minsky index to determine the degree of financial fragility and avoid it. In addition, relying on their equity financing while making the appropriate financial decisions for optimal diversification between financing sources.

Keywords: equity financing structure, asset utilization efficiency, financial fragility

1. Introduction

The Jordanian industrial sector contributes to the gross domestic product, job creation, and export. It contributes about 21.5% of the gross domestic product and 15% of the Jordanian labor force. In addition, exports accounted for approximately 93% of the total Jordanian exports, which helps to cover part of the trade balance deficit. However, the Jordanian industrial sector, similar to other sectors at the local and international levels, has received many shocks that have significantly and negatively affected its economic indicators (Association of Banks in Jordan, 2022; Ministry of Industry and Trade, 2021; Department of Statistics, 2017).

Therefore, the critical decisions the industrial sector must consider are equity financing structure, asset utilization efficiency, and financial fragility. Financing structure refers to the outcome of the most important financial management decisions by determining the optimal mix of equity and debt financing and maximizing owners' wealth (Mackay & Philips, 2005; Rocca et al., 2008). Furaiji & Matroud (2018) indicated that the two primary sources of capital structure are debt financing and equity financing. In this regard, Equity financing is achieved through retained earnings and common stock or preferred shares that combine the characteristics of debt and equity financing. Thus, to achieve the study's objective, it relied on the equity financing structure, measured by the common stock financing ratio and retained earnings financing ratio.

On the other hand, asset utilization efficiency is another important responsibility of management in companies because the efficient operation of assets for the company requires proper guidance and planning, which includes current and fixed assets that would increase their contribution to the company's revenues and profitability and increases the value of the company (Shafique et al., 2021; Patin et al., 2021). Furthermore, the efficiency in operating the assets plays a vital role in determining the company's level of development and its cash flows (Nkechi & Sunday, 2020). Because financial fragility results from inefficient operational processes, it is reflected in financial inefficiency in cash flows (Li, 2010). Therefore, the administrative leaders in companies must pay attention to their measures to understand the mechanism of changing the economic practices they adopt for various types of assets (Al-Hiyali & Al-Hamdani, 2021).

Consequently, the problem of the study lies in considering financial fragility as a type of irregular financial risk

that companies are exposed to, which requires them to use assets efficiently to increase their market value while achieving the optimal mix of debt and equity financing sources and thus avoid financial fragility. Accordingly, the study problem stems from trying to answer the following questions:

1. Does the equity financing structure (measured by the common stock financing ratio) affect financial fragility?
2. Does the equity financing structure (measured by the retained earnings financing ratio) influence financial fragility?
3. Does asset utilization efficiency (measured by the actual growth rate) affect financial fragility?

The current study derives its importance from the Jordanian industrial sector, which has many advantages, including stability and continuity, flexibility and resilience, and benefits from new technology (Association of Banks in Jordan, 2022). Based on the above, the study aims to test the effect of equity financing structure and asset utilization efficiency on financial fragility in the Jordanian industrial sector.

2. Literature Review

2.1 Equity Financing Structure

Studies on the capital structure were initiated in 1958 by Modigliani and Miller, who concluded that the choice between equity and debt is not related to the value of companies (Modigliani & Miller, 1958). While Utami et al. (2020) indicated that capital structure is essential to the optimal formation of debt sources and owner's equity. A negative and important relationship between capital structure and financial distress has been observed in the mining sector. AttaUllah et al. (2017) indicated that capital structure refers to how the company is financed from preferred stock, common stock, retained earnings, and long-term debt, in addition to the short-term debt that the company uses to finance its overall operations and growth. Bolarinwa & Adegboye (2020) defined capital structure as a decision combining debt and equity to meet the financing of the company's investments.

The financing structure of companies is highly important and must be determined optimally under the best possible financial conditions (Quiry et al., 2014). Ross et al. (2008) reported that financial structure includes all items of liabilities and equity and represents a combination of total debt and equity. Thus, companies, including industrial companies, finance their investments from funding sources, represented by the source of debt and equity financing. The most important debt financing sources are bonds, long-term debt, and lease financing. Equity financing can be classified as self-financing (internal financing) or common stock (external financing) (Ahmad & Matar, 2011).

The equity financing structure refers to the internal funds that companies can obtain from their resources. And It is considered one of the important axes for company financing decisions because it is related to the company's market value. Furthermore, it is defined as the money provided by the company's owners, which enhances the confidence of those who deal with it. Among the sources of equity financing that will be used to achieve the study's objective are the following (Qaboosah, 2008; Al-Maidani, 2006; Mohammed & Hantoush, 2017):

1. Common stock, which is securities with a nominal value and does not promise dividends. also, they give the holder the right of ownership in the company. The holder of the common stock has the right to vote, sell, and access the company's books and records.
2. Retained earnings that companies gain from their business and retain to reinvest and increase the company's growth as a self-financing source. Financing with retained earnings is less expensive than issuing common stock, and the aim is to reinvest these profits in other projects (Al-Amri, 2010; Abdallah & Youssef, 2019). These sources can be measured according to the following:

$$\text{Common stock financing ratio} = (\text{Paid-in Capital} / \text{Total Assets}) * 100\% \quad (1)$$

$$\text{Retained earnings financing ratio} = (\text{Retained Earnings} / \text{Total Assets}) * 100\% \quad (2)$$

Companies often prefer to use internal funding sources first, then debts, followed by equity, because the capital structure affects future funding sources, risks, liquidity, return and the value of the company, making it necessary to determine the optimal components of the financing structure (Bajaj et al., 2020; Mishra & Dasgupta, 2019; Myers & Majluf, 1984).

2.2 Asset Utilization Efficiency

Asset utilization efficiency refers to the management's ability to increase the income generated from investing in income-generating assets (Altameemi & Issa, 2020). The definition accepted by most companies as to the efficiency of the use of assets refers to the ratio of the actual production to the output achieved by the company in the case where the company operates at maximum capacity for 365 days, with the production of a commodity with

a quality of 100% (Ellis, 1998). Luftig (1999) reported that the total use of assets is a measure of the degree of use of an asset, such as a particular production line or one of the equipment in profitable activity.

Iskandar et al. (2012) determined that a company's value will increase with the efficient use of assets, while the inefficient use of assets will reduce the company's value. The level of asset utilization also plays an important role in determining a company's economic and financial viability (Rasmussen, 2010). Thus, the company must be strategic in improving the use of assets and be more competitive to maximize shareholder wealth (Patin et al., 2021).

Several studies, including Altameemi & Issa (2020) and Al-Atwi (2018) relied on the actual (internal) growth rate in measuring the efficiency of operating assets because of its direct effect on the continuity of the company and ensuring the sustainability of growth, where the actual growth rate refers to the highest percentage of the company's growth during the year without relying on external financing. The percentage can be measured through the following equation:

$$\text{AGR (Actual Growth Rate)} = (\text{ROA} * b) / 1 - (\text{ROA} * b) \quad (3)$$

Where:

ROA (Return on Assets) = Net income/Total Assets

b (Retained Earnings Ratio).

2.3 Financial Fragility

Financial fragility was first discussed in 1972 by Hyman P. Minsky who developed of a model of financial instability that depicted the degree of financial fragility of economic units through three categories, namely, hedge finance, speculative finance, and Ponzi finance. (Minsky, 1972).

Foley, (2001) and Hussein et al., (2020) pointed out that financial fragility arises from the increased practice of debt contracts by companies to finance production and that items on both sides of the assets and liabilities in the balance sheet are susceptible to changes in the interest rate, income, and depreciation rate. Thus, financial fragility can be attributed to financial instability characterized by a high probability of default and low profitability (Schroeder, 2009). Moreover, financial fragility is considered one of the types of irregular financial risks that negatively affect companies once they are exposed to financial shocks (Al-Hiyali & Al-Hamdani, 2021).

In the contrast, a range of determinants affects financial fragility, including determinants at the level of the banking sector, such as financial reform, total assets, bank ownership, and loan growth. Other determinants at the macroeconomic level include GDP growth, real wages, interest rates, inflation, and unemployment (Iftikhar, 2015).

Previous studies (Can & Can  z, 2020; Hussein et al., 2020; Tymoigne, 2012; Al-Hiyali & Al-Hamdani, 2022; Nishi, 2018; Schroeder, 2009) have defined hedge financing means that a company is expected to have the ability to pay off obligations with the net cash flow that it achieves from its routine economic operations (i.e., the company's profit is greater than investment and debt). Speculative financing refers to a case where the sources of net cash flows and routine cash reserves are expected to be very low to pay the capital component of liabilities (that is, the company's profit is greater than debt service but not enough to cover debt service and investment). As for Ponzi financing, it refers to the economic unit not being expected to generate sufficient net cash flow from its economic operations and not having sufficient cash assets to meet capital services (i.e., the company's profit is less than the debt service). Thus, Minsky links financial fragility with indebtedness and the ability to service debt (Tuzcuoğlu, 2020). Companies can be classified according to the financial fragility scale through the Minsky Index according to the following equation (Filho et al., 2018; Hussein et al., 2020; Al-Hiyali & Al-Hamdani, 2022):

$$M = (\text{Opex} + \text{NP}) / \text{IE} \quad (4)$$

Where:

M: Interest Coverage

Opex: Operating Expenses.

NP: Net Profit.

IE: Interest Expense.

If the value of M is greater or equal to 4, the company employs hedge financing. If M is between (0–4), the company uses speculative financing. If the value of M is less than zero, then it uses Ponzi financing.

3. Previous Studies and Hypothesis Development

A study by Mohammed & Hantoush (2017) aimed to identify the effect of an increase in Equity funding by issuing

new common shares on the financial indicators. The study population consists of the banking sector in Iraq for 2009-2014, while the study sample was chosen intentionally. The study used linear regression analysis to test the study hypotheses. The study concluded that there is a significant effect of increasing equity financing through the issuance of common stocks on the financial indicators of the study sample. Another study conducted by Albanaa & Aziz (2021) intended to determine the role of the financing structure variables in reducing the financial fragility of private commercial banks for two of the banks listed in the Iraqi Stock Exchange for the period between 2005 - 2019. Multiple regression test was used to test the study hypotheses. The study found there is a statistically negative effect between equity financing and financial fragility. Al Qurashi (2012) conducted a study that aimed to measure the impact of the retained earnings ratio on the profitability of companies in the Dubai and Abu Dhabi stock exchanges from 2003-2010. The researcher used regression analysis to test the study's hypotheses and concluded that the retained earnings ratio impacted the profitability of companies. Nkechi & Sunday (2020) conducted a study intended to study the impact of asset utilization on the net worth of big-cap companies listed in the Nigeria Stock Exchange Market between the 2012 and 2016 financial years. The study used the panel ordinary least square regression analysis. The study showed that both current assets and tangible non-current assets positively and significantly influence the net worth of companies with a big market capitalization. Shafique et al. (2021) did a study that aimed to test the impact of asset utilization and corporate growth on financial performance in 30 textile companies listed on the Pakistan Stock Exchange from 2015 to 2019. The study relied on descriptive statistics and panel regression techniques. The study concluded that asset utilization and corporate growth affect financial performance.

Sarangarajan & Lourthuraj (2013) conducted a study to reveal the Asset Management efficiency from 1996-1997 to 2005-2006. The study used KonSI DEA Analysis for Benchmarking Software of the cement industry in Tamil Nadu. The study reached that the cement industry in Tamil Nadu has efficiently utilized its fixed assets like land, building, plants, furniture, and vehicle. Furthermore, current assets like debtors, stock, and cash maximize the return on shareholders' wealth through increasing sales except during the year 1997- 1998, 1998-1999, and 2002-2003. Aydin & Kulali (2018) this study aims to identify the impact of ownership structure on the efficient use of company assets. The results of this study support the perspective that ownership structure has a determinant role in the efficient use of company assets. Nastiti et al. (2020) tested the ability of working capital management to increase sustainable growth through asset utilization. The study used panel data regression on manufacturing firms registered in the Indonesian Stock Exchange for the years 2010-2017. The study concluded that working capital management negatively impacted firms' asset utilization.

Voulgaris et al. (2002) determined the effect of asset utilization, total profit, and total asset growth in the capital structure of large-sized companies in Greek manufacturing. The study relied on dynamic panel data techniques. The study found that there is a significant effect of asset utilization, gross and net profitability, and total assets growth on the capital structure. Bruno et al. (2017) studied the role of determinants of banks' balance sheet and leverage ratio dynamics in increasing financial fragility. The study's findings showed that a presence of a value of bank leverage reduces financial fragility. Tuzcuoğlu (2002) measured the effect of financial fragility on firm performance in Turkey. The study used panel data regression models. 4,193 observations of 492 diverse listed companies on Borsa Istanbul with coverage from 2005 to 2017. The result showed that the change in the BIST 100 index could be concluded as the most influential indicator for firm performance.

Hussein et al. (2020) examined the influence of adopting international financial reporting standards on the relationship between financial efficiency and financial fragility in the Iraqi banking sector. The study suggests that high financial efficiency impacted reducing financial fragility levels. Al-Atwi (2018) did a study to identify the role of sustainable growth indicators in reducing the financial fragility of the Iraqi and UAE insurance companies. The study adopted a program (SPSS.V20). The study showed that the actual growth rates of the Iraqi insurance companies are higher than the actual growth rates of the UAE insurance companies. Iftikhar (2015) study aims to identify the relationship between financial reforms, financial liberalization, and the quality of banking regulation and supervision for financial fragility by using a dynamic two-step system generalized method of the moment's panel estimator method. The result found that financial reforms and financial liberalization enhance the possibility of financial fragility, while strong banking supervision has an inverse relationship with financial fragility, and that the delay in loan growth and unemployment contribute to strengthening financial fragility.

Accordingly, the following hypotheses were developed:

H₁: Equity financing structure measured by (the common stock financing ratio and the retained earnings financing ratio) has a negative effect on financial fragility.

H₂: Asset utilization efficiency measured by (the actual growth rate) has a negative effect on financial fragility.

3.1 Expected Research Contribution

The current research contributes to the existing literature in several ways:

1. The prior studies were conducted in different environments, while the current study applied in the Jordanian context.
2. The current research came up to fill the gap in knowledge regarding the research variables by providing a solid theoretical framework that will give future practitioners to get benefit from this research.
3. The current research results will benefit the decision-maker intake of the best decision regarding reducing financial fragility.

4. Research Methods

The current study used the descriptive and analytical approach to measure the effects of equity financing structure and asset utilization efficiency on financial fragility in industrial companies listed on the Amman Stock Exchange for 2016–2021. Furthermore, E-views were used to test study hypotheses.

4.1 Population and Study Sample

The study population comprises all industrial companies listed on the Amman Stock Exchange in 2021. The study sample was limited to 23 industrial companies from various sub-sectors constituting the industrial sector.

4.2 Variables Measurement

After reviewing previous studies, the variables were measured according to the following:

Independent Variables:

- A. The equity financing structure was measured by the following:

$$\text{Common stock financing ratio} = (\text{Paid-in Capital} / \text{Total Assets}) * 100\%$$

$$\text{Retained earnings financing ratio} = (\text{Retained Earnings} / \text{Total Assets}) * 100\%$$
- B. The actual growth rate measured the asset utilization efficiency according to the following equation:

$$\text{AGR (Actual Growth Rate)} = (\text{ROA} * b) / 1 - (\text{ROA} * b)$$

Dependent variable: Financial fragility, which is measured using the Minsky model and according to the following equation:

$$M = (\text{Opex} + \text{NP}) / \text{IE}$$

4.3 Model of the Study

The study model was developed, as shown in Figure (1).

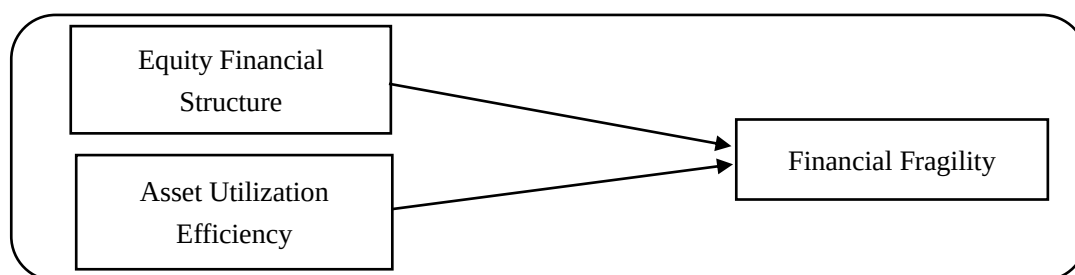


Figure 1. The research model

4.4. Data Collection Procedures

The annual reports published for industrial companies in the companies' guide issued by the Amman Stock Exchange 2021 were used to collect time series data for the companies included in the study sample. Books, periodicals, and published scientific research were also used.

5. Data Analysis and Hypothesis Testing

5.1 Descriptive Analysis

Table 1 shows the descriptive analysis of the independent study variables and the dependent variable. The first independent variable, represented by the equity financing structure, was measured through the common stock

financing ratio, with a mean of 0.639 and a standard deviation of 0.39. The result can be attributed to the difference in the size of the paid-up capital, the size of the assets of the study sample, and the extent of its need to issue common stock. The retained earnings financing ratio has an arithmetic average of -0.230 due to the loss of some companies in the study sample and the negative revolving earnings balance in some years, with a standard deviation of 0.383. The second independent variable is asset utilization efficiency, which was measured using the actual growth rate in companies with an arithmetic average of 0.614 and a standard deviation of 0.476. This value is due to the difference in the return on assets and negative net profits for some of the study sample partnerships. Finally, the dependent variable represented by financial fragility was measured through the Minsky index with an arithmetic mean of 4.676 and a standard deviation of 77.357. This value is due to the difference in operating expenses and interest expenses in the companies in the study sample, in addition to the large differences in the values of the Minsky index for companies under examination and analysis.

Table 1. The descriptive analysis

Variables	CS	RE	AGR	M
Mean	0.639	-0.230	0.614	4.676
Std. Dev.	0.399	0.383	0.476	77.357
Observations	138	138	138	138

Sources: SPSS output.

Whereas: CS: Common stock financing ratio; RE: Retained earnings financing ratio; AGR: Actual growth rate M: Financial fragility.

5.2 Pearson Correlation

Table No. 2 shows the results of Pearson's correlation matrix analysis between study variables, and clearly shows that all correlations between study variables are within acceptable limits. Therefore, no autocorrelation exists between these variables. Furthermore, all the correlations are negative with the financial fragility index, indicating the importance of each equity financing structure and asset utilization efficiency in alleviating financial fragility in the companies in the study sample.

Table 2. The matrix of correlation for the study variables

Variables	CS	RE	AGR	M
AGR	0.597340	0.259711	1	-0.55866
CS	1	0.348011	0.597340	-0.619537
RE	0.348011	1	0.259711	-0.540031
M	-0.619537	-0.540031	-0.558664	1

Sources: SPSS output.

Whereas: CS: Common stock financing ratio; RE: Retained earnings financing ratio; AGR: Actual growth rate M: Financial fragility.

5.3 Hypotheses testing

H1: Equity financing structure measured by (the common stock financing ratio and the retained earnings financing ratio) has a negative effect on financial fragility.

Tables 3 and 4 show the first hypothesis's simple linear regression test results. Table 3 shows the effects of the equity financing structure on financial fragility as measured by the common stock financing ratio. Hence, the value of (DW) amounted to 2.36, which is within the acceptable limits for this test and indicates the absence of the autocorrelation problem between the errors included in the regression equation. The interpretation coefficient of the common stock financing ratio of the change in financial fragility was $R^2 = 49.5\%$. The t-statistic value of -9.015845, which is at a significant level of less than 0.05, indicates a negative effect of equity financing structure on financial fragility as measured by the common stock financing ratio.

Table 4 indicates the effect of the equity financing structure on financial fragility as measured by the retained earnings financing ratio. The value of (DW) reached 2.62, indicating the absence of an autocorrelation problem between the errors involved in the regression equation. The interpretation coefficient for the retained earnings financing ratio R^2 was 48.5% of the change in financial fragility. The t-statistic value of -8.796372 indicates a negative effect of the equity financing structure, measured through the retained earnings financing ratio, on financial fragility.

Accordingly, the hypothesis of the first study that equity financing structure has a negative effect on financial

fragility as measured by the common stock financing ratio and the retained earnings financing ratio is supported.

Table 3. First Hypotheses Testing Result

Dependent Variable	Independent Variables (equity financing structure)							
Financial Fragility				Coefficient	Std. Error	t-Statistic	Sig	Result
	Common Ratio	Stock	Financing	-151.3726	16.78962	-9.015845	0.000	Accepted
	R ²		0.495					
	R ² Adjusted		0.366					
	Durbin-Watson stat		2.36					

Sources: SPSS output.

Table 4. First Hypotheses Testing Result

Dependent Variable	Independent Variables (equity financing structure)							
Financial Fragility				Coefficient	Std. Error	t-Statistic	Sig	Result
	Retained Ratio	Earnings	Financing	-165.0314	18.76131	-8.796372	0.000	Accepted
	R ²		0.485					
	R ² Adjusted		0.353					
	Durbin-Watson stat		2.62					

Sources: SPSS output.

H2: Asset utilization efficiency measured by (the actual growth rate) has a negative effect on financial fragility.

Table 5 refers to the simple linear regression test results based on the second hypothesis. The value of the interpretation coefficient R² for the asset utilization efficiency amounted to 40.6% of the change in financial fragility, and the value of (DW) reached 2.82, which is within the acceptable limits for this test and indicates no autocorrelation problem between the errors included in the regression equation. The t-statistic value of -7.261355 at a significant level less than 0.05 indicates a negative effect of the asset utilization efficiency, measured by the actual growth rate on the financial fragility of the companies in the study sample.

Table 5. Second Hypotheses Testing Result

Dependent Variable	Independent Variables (asset utilization efficiency)					
Financial Fragility	Actual Growth Rate	Coefficient	Std. Error	t-Statistic	Sig	Result
		-108.5925	14.95485	-7.261355	0.000	Accepted
	R ²		0.406			
	R ² Adjusted		0.254			
	Durbin-Watson stat		2.82			

Sources: SPSS output.

6. Discussion and Conclusion

The study concluded that a negative and statistically significant effect of equity financing structure on financial fragility. Furthermore, asset utilization efficiency has a negative and statistically significant effect on financial fragility. More specifically, Equity financing structure, as measured by the common stock financing ratio and the retained earnings financing ratio has been a negative effect on the financial fragility of Jordanian industrial companies, indicating that the higher the equity financing structure using common stock or retained earnings, the lower the financial fragility of companies. This result agrees with the study (Albanaa & Aziz, 2021; Mohammed & Hantoush, 2017). Accordingly, the researcher observed that the companies in the study sample differed in the percentage of retained earnings, return on assets, paid-in capital, and total assets. Therefore, a significant difference can be observed in the study sample concerning the optimal structure for equity and debt financing, which indicates the difference between administrative leaders in the methodologies and policies used in their financial decisions. on the other hand, asset utilization efficiency, measured by the actual growth rate, has a negative effect on the financial fragility of Jordanian industrial companies. Thus, the more efficient companies are

in operating their assets, the higher their actual growth rate and the lower their financial fragility. This result partially agrees with the study (Al-Atwi, 2018).

Additionally, a large discrepancy in operating and interest expenses among the companies under study was observed as shown in the varying values of the Minsky index. Based on the above, the study recommends that investment and financing decisions be taken optimally to achieve the company's goal of maximizing shareholder wealth and balancing profits and risks. Furthermore, because the equity financing structure is represented by the issuance of common stock and retained earnings, it helps provide the necessary funds for companies to finance the efficient operation of their assets and increase their ability to withstand unexpected financial shocks, to reduce of financial fragility if they arise.

7. Recommendations

Based on the study's findings, the study recommends that Jordanian industrial companies consider the Minsky index to determine the value of companies in terms of financial fragility to avoid it and develop appropriate strategies for optimal diversification of funding sources to reduce costs.

The study also recommends industrial companies rely on equity financing and retained earnings, considering the availability and cost of these sources because the results indicated an inverse effect of the equity financing structure and retained earnings on financial fragility. The study recommends that shareholders should have enough liquidity to face unexpected events in the future, such as financial fragility by setting flexible strategies to exploit the financial resources efficiently and effectively. Finally, future studies should be conducted using other indicators, such as the Altman or Kida index, for example, or running a survey of other sectors because the issue of financial fragility still needs more studies.

8. Limitations

The results of this study are related to a sample of Jordanian industrial companies, and thus, the results should be generalized within narrow limits. Another limitation is the lack of more data for the Minsky index and the short duration of the study.

References

- Abdallah, R. R., & Youssef, R. A. (2019). The Impact of Internal Finance on the Market Value for Companies Applied Study on the Sample of Companies Which Are Listed on the Amman Stock Exchange for the period (2010-2016). *Tikrit Journal of Administration and Economics Sciences*, 15(48), 164-176.
- Ahmad, I. F., & Matar, M. (2011). *The Impact of the Financial Structure of Jordanian Public Shareholding Companies on its Profitability and Dividends Policies (An Empirical Study)*. Master thesis, Middle east University.
- Al Qurashi, F. M. (2012). Internal Funding Retained earnings and Corporate Profitability in Empirical Study in Dubai and Abu Dhabi Securities Market. *Journal of Kirkuk University for Administrative and Economic Sciences*, 2(2), 1-24.
- Al-Amri, M. A. I. (2010). *Advanced Financial Management* (1st ed.). Ithraa Publishing and Distribution, Jordan.
- Al-Atwi, M. H. Y. (2018). Employing sustainable growth indicators to reduce financial fragility: A comparative study between Iraqi and UAE insurance companies. *Muthanna Journal of Administrative and Economic Sciences*, 8(2), 167-182.
- Albanna, Z. M., & Aziz, A. Q. (2021). Employing the financing structure to reduce financial fragility by using the Altman model: An applied study in a sample of private commercial banks listed in the Iraq Stock Exchange. *Entrepreneurship Journal for Finance and Business*, 2(4), 232-245.
- Al-Hiyali, Z. T., & Al-Hamdani, R. I. (2021). Measuring financial fragility using the (Z-Score) model for a sample of Jordanian industrial companies for the period (2005-2019). *Tikrit Journal of Administration and Economics Sciences*, 17(55), 154-173.
- Al-Hiyali, Z., & Al-Hamdani, R. (2022). Measuring financial fragility using the (MINSKY) model for a sample of Jordanian industrial companies for the period (2005-2019). *Journal of TANMIYAT ALRAFIDAIN*, 14(133), 109-133. <https://doi.org/10.33899/tanra.2020.165650>
- Al-Maidani, M. (2006). *Corporate finance management* (5 ed.). Obeikan for publishing, Riyadh.
- Altameemi, A. F., & Issa, J. S. (2020). Asset Utilization Efficiency and its effect on the sustainable Stockholder's Wealth Apply Study of Iraqi Companies listed on the Iraqi Stock Exchange. *Journal of Accounting and financial Studies*, 15(50), 103-117.

- Association of Banks in Jordan, (2022). *Analytical study of the performance and trends of the industrial sector. Jordan*.
- AttaUllah., Kashif, M., & SaifUllah. (2017). Impact of Capital Structure on Financial Performance of Textile Sector in Pakistan. *KASBIT Business Journal*, 10(1-20), 1-20.
- Aydin, N., & Kulali, G. (2018). Asset Utilization Efficiency and Ownership Structure: Evidence from Emerging and Developing Eastern Europe. *Journal of Eastern European and Central Asian Research*, 5(1), 1-18. <https://doi.org/10.15549/jeecar.v5i1.186>
- Bajaj, Y., Kashiramka, S., & Singh, S. (2020). Application of capital structure theories: a systematic review. *Journal of Advances in Management Research*, 1, 1-27. <https://doi.org/10.1108/JAMR-01-2020-0017>
- Bolarinwa, S. T., & Adegboye, A. A. (2020). Re-examining the determinants of capital structure in Nigeria. *Journal of Economic and Administrative Sciences*, 1, 1-35. <https://doi.org/10.1108/jeas-06-2019-0057>
- Bruno, O., Cartapanis, A., & Nasica, E. (2017). Modelling bank leverage and financial fragility under the new minimum leverage ratio of Basel III regulation. *Finance*, 38(3), 45-84. <https://doi.org/10.3917/fina.383.0045>
- Can, C. K., & Canöz, I. (2020). Testing Minsky's Financial Fragility Hypothesis for Turkey's Public Finances, Economic/financial risks and sustainability. *Public Finance Quarterly* 2020/4. https://doi.org/10.35551/PFQ_2020_4_4
- Department of Statistics, (2017). *Industry survey for extractive and manufacturing industries, production and distribution of electricity, Jordan*.
- Ellis, R. (1998). *Asset Utilization: A Metric for Focusing Reliability Efforts, Seventh International Conference on Process Plant Reliability, Gulf Publishing Company and Hydrocarbon Processing*. Houston, Texas.
- Filho, E. T. T., Martins, N. M., & Miaguti, C. Y. (2018). Minsky's Financial Fragility: An Empirical Analysis of Electricity Distribution Companies in Brazil (2007–15). *Journal of Post Keynesian Economics*.
- Foley, D. K. (2001). *Financial Fragility in Developing Economies*. New School University, Avenue, New York.
- Furajji, H. N., & Matroud, L. M. (2018). Measuring the cost of equity financing by using the Gordan models and their impact on the financial, CAPM decision an Empirical Study in a sample of companies listed in (S & P) index. *The Journal of Administration & Economics*, Issue 116, 40-58.
- Hussein, A., AlSaqa, Z. H., & Mahmood, S. M. (2020). Enhancing Financial Efficiency Under IFRS Standards to Reduce Financial Fragility an Experimental Study of the Reality of Crises in Iraq Using Data Envelope Analysis. *Tikrit Journal of Administrative and Economic Sciences*, 16 (Special Issue part 1), 17-48.
- Iftikhar, S. F. (2015). Financial Reforms and Financial Fragility: A Panel Data Analysis. *International Journal of Financial Studies*, 3, 84-101. <https://doi.org/10.3390/ijfs3020084>
- Iskandar, T. M., Bukit, R. B., & Sanusi, Z. M. (2012). The Moderating Effect of Ownership Structure on The Relationship Between Free Cash Flow and Asset Utilisation. *Asian Academy of Management Journal of Accounting and Finance*, 8(1), 69-89.
- Li, S. (2010). Financial fragility and securitization: the discussions with Australian regulators and bank risk managers. *International Finance Review*, 11. Emerald, Bingley, 255-269. [https://doi.org/10.1108/S1569-3767\(2010\)0000011012](https://doi.org/10.1108/S1569-3767(2010)0000011012)
- Luftig, J. (1999). Total Asset Utilization (TAU): An Overview of a Productivity Metric for Profitability Enhancement and Focused Cost Reduction. Article in *Measuring Business Excellence* January 1999. <https://doi.org/10.1108/eb025561>
- Mackay, P., & Philips, 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>
- Ministry of Industry and Trade, (2021). industrial policy (2017-2021). Jordan.
- Minsky, H. P. (1972). *Financial Instability Revisited: The Economics of Disaster. Prepared for the Steering Committee for the Fundamental Reappraisal of the Discount Mechanism Appointed by the Board of Governors of the Federal Reserve System*.
- Mishra, S., & Dasgupta, R. (2019). Cross-impact of leverage and firm performance: developed vs frontier bank-based economies. *Managerial Finance*, 45(8), 982-1000. <https://doi.org/10.1108/MF-09-2018-0435>
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporate finance and the theory of investment.

- American Economic Review*, 48, 261-297.
- Mohammed, E. T., & Hantoush, M. A. (2017). A reflection of increased financing common shares on financial indicators. *AL-Anbar University journal of Economic and Administration Sciences*, 9 (19), 295-323.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, 13(2), 187-221. [https://doi.org/10.1016/0304-405X\(84\)90023-0](https://doi.org/10.1016/0304-405X(84)90023-0)
- Nastiti, P. K.Y., Atahau, A. D. R., & Supramono, S. (2020). Is working capital management able to increase sustainable growth through asset utilization? *The European Journal of Applied Economics*, 17(2), 136-146. <https://doi.org/10.5937/EJAE17-26056>
- Nishi, H. (2018). An empirical contribution to Minsky's financial fragility: evidence from non-financial sectors in Japan. *Cambridge Journal of Economics* 2018, 1-38.
- Nkechi, O. T., & Sunday, F. A. (2020). Effect of Assets Utilization on Net Worth of Big Cap Companies Quoted in Nigeria. *Journal of Accounting, Business and Social Sciences*, 3(1), 111-127.
- Patin, J., Rahman, M., & Mustafa, M. (2021). Impacts of Asset Utilization, Market Competition and Market Distance on Stock Returns. *Journal of Accounting, Business and Management*, 28(1), 52-62. <https://doi.org/10.31966/jabminternational.v28i1.825>
- Qaboosah, A. (2008). The effect of the financing structure on the earnings per share and the growth rates of economic units, *The Journal of Economic and Financial Studies*, 1, 126-142.
- Quiry, P., Dallochio, M., Fur, Y. L., & Salvi, A. (2014). Corporate Finance Theory and Practice, 4 edition. John Wiley and Sons, Ltd.
- Rasmussen, R. L. (2010). *Asset Utilization Efficiency and Energy Asset Turns: A New Approach for Evaluating and Comparing Renewable Energy Projects*. unpublished Master Thesis, University of Illinois at Urbana-Champaign.
- Rocca, M. L., Rocca, T. L., & Gerace, D. (2008). A survey of the relation between capital structure and corporate strategy. *Australasian Accounting Business and Finance journal*, 2(1), 1-18. <https://doi.org/10.14453/aabfj.v2i2.1>
- Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2009). *Fundamentals of Corporate Finance* (9th ed.). McGraw-Hill/Irwin, New Delhi.
- Sarangarajan, V., & Lourthuraj, S. A. (2013). Asset Management Efficiency of Selected Cement Companies in Tamil Nadu. *International Journal of Management*, 4(1), 175-182.
- Schroeder, S. (2009). Defining and detecting financial fragility: New Zealand's experience. *International Journal of Social Economics*, 36(3), 287-307. <https://doi.org/10.1108/03068290910932765>
- Shafique, A., Kashif, A., Haider, A., Zaheer, N., & Khan, S. (2021). Effect of Asset Utilisation and Corporate Growth on Financial Performance. *International Journal of Innovation, Creativity and Change*, 15(5), 1104-1118.
- Tuzcuoğlu, T. (2020). The impact of financial fragility on firm performance: an analysis of BIST companies. *Quantitative finance and Economics*, 4(2), 310-342. <https://doi.org/10.3934/QFE.2020015>
- Tymoigne, E. (2012). *Measuring Macprudential Risk through Financial Fragility: A Minskyan Approach*. Working Paper No. 716, Levy Economics Institute of Bard College. <https://doi.org/10.2139/ssrn.2049331>
- Utami, D. W., Hirawati, H., & Giovanni, A. (2020). Capital Structure and Financial Distress: Empirical Study of Companies in the Mining Sector and the Infrastructure, Utilities & Transportation Sector. *Journal of Research in Business, Economics, and Education*, 2(6), 1370-1380.
- Voulgaris, F., Asteriou, D., & Agiomirgianakis, G. (2002). Capital structure, asset utilization, profitability and growth in the Greek manufacturing sector. *Applied Economics*, 34, 1379-1388. <https://doi.org/10.1080/00036840110096822>

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