

Management Information Systems' Impact on Investment and Financial Decisions in The Banking Sector

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Abstract

The purpose of this study would be whether MIS risks and investment efficiency have an impact on profit persistence in Bangkok, Thailand industrial companies, and if so, whether this varies between different industrial companies in Bangkok, Thailand. The descriptive analytical method is used in this study, and the hypothesis of this paper is investigated using a simple linear regression model. This study employs a sample of 41 companies drawn from a population of 54 companies listed on the Thai Stock Exchange's industrial sector between 2007 and 2021. The findings revealed that financial risks – as measured by liquidity ratios – had no statistically significant impact on profit persistence in the short term. The study also found that financial risks – as measured by debt ratio – had no statistically significant impact on profit persistence. This study also found that asset efficiency – as measured by total asset turnover – had no statistically significant impact on profit persistence. Whereas the study discovered a statistically significant difference in profit persistence between industrial companies at a level of (0.01). The findings of this paper can help industrial companies improve their short-term profit persistence. This paper is regarded as the first to investigate the profitability persistence of Bangkok, Thailand industrial firms. The study produced some recommendations, one of which is that authorities should raise awareness about profit persistence in the long versus short run. Companies should be required to report on profit persistence in their governance reports to assist investors and other stakeholders in determining a company's ability to maintain current profit persistence.

Keywords: MIS, Investment, financing decision application, banking sector

1. Introduction

Finance [1-6] theory assumes for the need of smoothing profits or losses fluctuations [7] in the short run to show up a steadiness of its profit. Generally, financial analysts and accountants [8, 9] try to conduct smoothing revenues and expenses for the hope of improving their financial reporting [10, 11]. Some companies' profitability is witnessing a problem of fluctuating above or below industrial normal average. To put its earning average back on industrial average [12], it may follow one mechanism mainly by raising products prices. Doing so ended by bringing new producers and high production level, lowered prices due to a

new level of competition [13], lowered profit margins down to its normal levels and generated new level of profit persistence. The other expected mechanism [14-17] is mostly adapted when profit average is down. To smoothing it becomes a must to push it higher toward the normal average. Doing so may be accomplished [18] through enhancing the company financial risk [8, 19-23] in order to fund new investments [24-28] or by following a mechanism of better efficiency. High debt ratio may accomplish this issue. Better efficiency allows for generating higher sales against each one dollar invested in total assets. Profits do not seem at a common rate of return all the time. The adjustment of profits

to their firm-specific permanent values is rather at short or long differentials. It may reflect the persistence differentials of both efficiency and financial risks different levels. Empirical evidence [29-34] is built upon the relations between profits persistence, efficiency and financial risk. It is generally modeled as a function of past events. Both of financial risk and efficiency are cumulative values. Profits that persist above or below the norm for prolonged periods of time reveal a lack of different variables such as competition, systematic allocation of resources, financial risks and efficiency [35]. The high persistence reveals how fast the exceptional positive or negative returns are highly adjustable or removed. With profit persistence, companies' cash flows [21, 36-38] are stable and predictable [39]. Enjoy many advantages such as clear or detailed strategies, good working policies [40-42], effective financial plans [43], insured the continuity and durability of the operational profit, better of both the financial risk management [38] and productive resources allocation. At the same time, persistence reflects high self-resistance against rapid market fluctuations [7] and low profit deviations from the industry average. This paper is to examine whether efficiency attempts and financial risk taking can improve earnings persistence, it is to utilize a sample of 41 over the period of 2007–2021 and analyzing it via simple regression.

Companies borrow money from a wide number of lenders, these funds can be used to invest in projects and grow the business [44, 45], simply by selling goods and services for a profit. Those companies exposed themselves into two types of risks. One type is related to the debt. Too much debt can get a company into trouble. The second type is related to the efficiency which is the ability to avoid wasting materials and time in doing something or in producing undesired result, it reflects the ability to do things well, successfully, and without waste, results from the optimization of resource-use to the best serve. The Companies are in need rely upon both of financial sources and improved efficiency when shareholders' contributions alone are not sufficed for covering low profit or financing new investments. Improving efficiency

or increasing financial risk may play one of their options. However, profit persistence is expected to be improved via one of them, hopefully at short term level. The main problem of this paper is to investigate the attempts impact of both financial risks and efficiency on profit persistence.

Literature

Financial risk

Jinquan, Hongwen [46] determined the main purpose of the profit persistence by how fast and to what extent the exceptional positive or negative returns are re-deuced and uncover their driving forces. Wu, Zhang [13] assured that profit persists above or below the average mean for prolonged periods of time reveals a lack of competition and imply a systematic misallocation of resources. The faster removing its deviation from the average allows to maintain it at normal levels. Hopefully, within a relatively short time period. Being on average, the rate of return will not happen until companies are capable to solve for its efficiency, better resources allocation and financial risk management. The competitive process produces outcomes in which the prices and the variety of products are set in different ways over time, governance mechanisms impact and competitive forces are enabling companies to be more capable in adjusting its profitability. However, different levels of financial risks and efficiency are expected to help companies in keeping its profit on normal average. Differences in profits either above or below averages in time t and $t-1$ may disappear over time due to each company performance. Financial risk [6, 11, 47-49] is a basic necessity in running any business. If a company wants its resources to expand, it will first need to secure the required finances. A business that has the right monetary resources is better protected from the market and operational risk. Higher risks create a series of negative consequences; all of them are derived whenever a company is unable to overcome one of them. Companies' capabilities [50-54] to overcome financial risk negative consequences have its unique impact on its earning profit persistence. Each company owns its unique flexible management, in terms of sufficient financial resources or hiring the right experts to provide

crucial advice and guidance. In order to optimize earnings, they need to achieve many things such as, to ensure a smooth day to day operations and to anticipate future issues along with the regular ups and downs of the business cycle [55-59]. Financial risk is typically tightened in four basic forms: market risk, credit risk, liquidity risk, and operational risk. Credit or financial risk occurs when customers are unwilling or unable to pay on time, disrupting a company's cash flow and profit persistence. It is liable for losses if a client fails to meet contractual obligations. When this risk occurs in this case, it disrupts cash flows or increases collection costs, reducing profit persistence. Li, Ding [21] assured that liquidity risk occurs when cash is locked up in some parts of the business, due to the inability to pay short-term debt obligations. When it happens, a company may enforce to sell its product at a substantial discount resulting in a loss. Accordingly, it hurts if a company has a low cash flow and counted on their clients to cover its short-term debt. It ended by putting the business at risk to solve liquidity. At the same time, the high cash-intensive operation need to be adequately bitterly controlled and a proper strategic cash flow management may have its own impact on profit persistence. Operational risk arises in the course of doing business. It attributes to the potential threats and hazards that are related to processes make the business capable to deliver its product or service. However, companies have different operational risk [32] are depending upon its high rank experts capable in dealing with the type of threat. Schclarek, Xu [23] confirmed that companies' attempts of minimizing their operational risks may affect profit persistence due to their different adapted strategies.

Asset Efficiency

Asset efficiency [36, 60-62] refers to how a company manages or utilizes its assets. Rate of total asset turnover and liquidity ratio are important indicators of a company's effectiveness [10, 63]. It indicates the management exploiting level of its assets to achieve its maximum revenue [64]. Researchers choose the rate of asset turnover [65] as an indicator of asset efficiency. It is an indication of the ability of total investments [66-69] in assets to achieve sales.

Management efforts in achieving assets efficiency may lead to classify, analyze and understand the capability of asset expand its business successfully [70, 71]. At the same time, high management needs to achieve the best balance between liquidity and profitability to ensure the continual presence of current profitability level in the future.

Profits Persistence

Profit that remains above or below its average for an extended period of time. Persistence focused on the rate of adjustment. It is the ability to maintain current profits in the future while maintaining a high level of quality. Profit persistence determines whether or not differences in profit levels between one company and its bear companies will disappear over time. Profits [71] that persist above or below the norm for prolonged periods of time reveal a lack of different variables impact such as competition, systematic misallocation of resources, financial risks and efficiency. The profit persistence on its normal average reflects a high quality [21] and encompasses a strong indicator of predicting profits in the future. [72-74]

It is a matter of company's choice to maintain profit stability within a specific time period. Profit persistence reflects a company's ability to survive in a competitive market [71] due to its ability in achieving a steady return. Theories claim that fluctuations in profit rate might occur due to a consistent competitive edge, market strength performance and investors evaluations of stock prices. By long-run, all companies, workers and consumers become able to adjust their output to all changes in technology or demand. With no barriers to entry or exit, capital is expected to flow from low profit companies to high profit ones. Output will increase in companies were capable in attracting new capital [4] and at the same time output will decrease in companies with fleeing capital. Prices in both type of companies will adjust until the profit rates become in the same range. Such adjustments depend upon existing barriers to entry and exit [75].

Taking in consideration [76] the previous theoretical assumptions, this study aims to enrich literature on how creating financial risks or improving efficiency may affect profit

persistence. It helps management in making correct decisions [77] in this regard. Gavrilu Gavrilu and de Lucas Ancillo [78] assured that market risk comes from the overall local business competitors due to their ability in affording low prices and more advanced products. Chouaibi, Festa [79] focused upon the market risk impact on assets valuations and fund allocating decisions. Companies attempts of smoothing affected by their agency theory and ended by different management own efforts to affect profit persistence.

Methodology

The methodology [80] allows for the profit persistence parameter to vary over one year. This approach is to measure the short-term parameter λ_i by applying the following regression model,

$$\pi_i, t = \alpha_i + \lambda_i \pi_i, t-1 + \varepsilon_i, t.$$

Barnes, Prescott [81] assured that the short-term profit persistence can be measured by the parameter λ_i . The data sample of 41 over the period of 2007–2021 was regressed based upon the previous equation to measure yearly profit persistence.

Where:

π_i, t : Return on assets, measured by dividing net profit by the total assets of the company (i) in the year (t).

α_i : Rate constant.

λ_i : The Measurement of short-term profit persistence between year (t) and year (t-1) return on asset.

$\lambda_i \pi_i, t-1$: Net profit divided by the total assets of the company (i) in the year (t-1).

Griffiths, Terluin [82] assured that it is mandatory for the value of λ_i to range from 1 to -1, if $\lambda_i = 1$ then profit persistence is very high, the closer to zero is the lower the persistence for the short-term level.

Study hypothesis:

H₀₁: There are no statistically significant

Data presentation

Table 1: Study 41 company sampling data

41 company	Asset Turn-over	Debt Risk %	Liquidity Risk	Persistence of Profits (λ)
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differences in the profit persistence between industrial companies.

H₀₂: There is no statistically significant impact for financial risks as measured by liquidity ratio on profit persistence.

H₀₃: there is no statistically significant impact for financial risks as measured by debt ratio on profit persistence.

H₀₄: there is no statistically significant impact for asset efficiency as measured by total assets turnover on profit persistence.

The Study Model:

The study model can be formulated using the following formula:

$$\pi_i, t = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Each one independent variable (X_1, X_2, X_3) was regressed solely on the dependent variable (π_i, t) in order to avoid any possibility of multicollinearity. The simple linear regression method [83] through the (SPSS) program was used.

Where π_i, t is the dependant variable of profits persistence, measured through the parameter λ_i at a company level on yearly basis.

a: Constant variable.

X₁: Liquidity risk, measured by the current ratio, dividing current assets over current liabilities.

X₂: Debt risks, measured by comparing the ratio of total debt on total assets.

X₃: Efficiency, measured by using the asset turnover ratio, equals net sales over total assets.

e: Percent error.

The study population is composed of 54 industrial companies listed in The Stock Exchange of Thailand. For the sample, 41 companies were randomly selected included as the study sample. The duration of this study was lasted from 2007 – 2021.

Mean	0.641	33.682	2.658	0.446
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S.D.	0.382	19.476	1.864	0.254
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Table (1) shows the study data for annual short-term profit persistence (λ), financial risks (debt and liquidity risks), and total asset turnover ratio efficiency. Profit persistence and other variables vary significantly across companies, as is well known. These variations can be attributed to random events, economic developments, or managerial ability. Its values range from 0.003 to 0.925, and the overall persistence of profits of 41

companies was 0.446, with a standard deviation of 0.254. Profit persistence is defined as the difference between companies that are less than average and those that are strong enough to eliminate profit differences within one year. The researchers believe that such companies may be capable to eliminate differences at short term level via taking more financial risks and capable to use efficiency for enhancing profit persistence in Bangkok, Thailand industrial sector.

Table 2: Descriptive Analysis of the Study Variables

Variable	Type	Mean	Standard Deviation	Lowest Value	Highest Value
Profits Persistency (λ)	Dependent	0.449	0.256	0.003	0.925
Liquidity Risks	Independent	2.655	1.842	0.141	8.859
Debt Risks %	Independent	34.049	19.180	0.873	93.426
Asset Turnover Rate	Independent	0.616	0.389	0.008	1.942

The descriptive analysis of short-term profit persistency (λ) and financial risks is shown in Table (2). The highest profit persistence value was 0.925, and the lowest was 0.003, resulting in an overall mean of 0.449 and a standard deviation of 0.256. The highest value of liquidity risks was 8.859 ratio, which means that current assets are 8.8 times current liabilities, and the lowest ratio was 0.141, with a standard deviation of 1.842 percent reflecting company variations. The overall mean of liquidity risks was 2.655, indicating that the majority of the sample companies can meet their short-term obligations. The highest value of debt risks was 93.426 percent, calculated by dividing total debt over total assets, and the lowest was 0.873 percent, indicating that the companies rely on their equity to operate and achieve their goals. The overall mean of debt risks was 34.049 percent, with a standard deviation of 1.842 percent between companies, indicating that companies are similar in this regard. The highest value for asset

turnover is 1.942 times, indicating a high level of efficiency in using assets to generate sales; this is an acceptable rate in industrial companies. It has a mean of 0.616 and a standard deviation of 0.389. The highest and lowest levels are markedly different.

Data validity

Before beginning our one sample (t) test and simple regression test, we should ensure that the data is suitable for statistical analysis and statistical parametric tests (Field, 2013), so the sample data was assumed to be normal distribution using the (Kolmogorov – Smirnov) test, as shown in the table below. Before starting our one sample (t) test and the simple regression test, we should make sure that the data is suitable for statistical analysis and statistical parametric tests so it was assumed the sample data through the normal distribution test using the (Kolmogorov – Smirnov) test as depicted in the following table.

Table 3: Normal distribution test for study variables

Variable	Type	(Sig)
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Persistency of Profits (λ)	Dependent	0.063
Liquidity Risks	Independent	0.052
Debt Risks %	Independent	0.068
Asset turnover rate	Independent	0.059

Table (3) displays the results of the normal distribution test for the sample data, as well as the decision rule, which states that sample variables are normally distributed if the value of (Sig 0.05) and that any other results indicate that the data is not normally distributed. The table results show that the value of (Sig) is greater than 0.05, indicating that all variables meet the requirements of normal distribution and

that this data can be used to analyze and test the study hypothesis.

Correlation Matrix

The researchers utilized Pearson's correlation matrix to determine the relations between independent variables, as well as their relation to the dependent variable as follows:

Table 4: Pearson's Correlation Matrix

Variables	Profits Persistency(λ)	Liquidity Risks	Debt Risks	Asset Turnover Rate
Profits Persistency (λ)	1			
Liquidity Risks	0.168	1		
Debt Risks	-0.038	-0.656**	1	
Asset Turnover Rate	0.143	0.007	-0.025	1

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

Table 4 presents statistical results of Pearson's Correlation Matrix for the study variables showing that: 1. There is no statistically significant relations across variables of Asset Turnover and both of liquidity ratio and debt risks. 2. There is no statistically significant relations –using correlation coefficient- between profits persistence and financial risks measured by debt ratio, liquidity risks and the total assets efficiency measured by asset turnover rate.

Hypothesis Testing

H₀₁: there is no statistically significant differences in the persistence of profits between industrial companies.

In order to accept or reject this hypothesis, it was utilized the One-Sample t-test in table 5 Variation is judged by the presence of differences in the mean from the lowest value of profit persistence ($\mu = .003$) and the highest level 0.925. The value (λ) varies from .003 up to reach .925 and t tested value of the mean (0.446), Statistical analysis assures the statistical significance differences at the (Sig \leq 0.05) t-test. Calculated t value 11.159 was higher than the t-table value 2.021. Based on these results, it is possible to reject the initial hypothesis and present an alternative one: There is a statistically significant difference in profit persistence between industrial companies.

Table 5: Results of testing the first hypothesis

Sig (p-value)	Calculated (T) Value	t-value	S.D.	Mean
0.000**	11.159	2.021	0.254	0.446

**Significant at 0.01 level

Table 6: Model Summary

Model	R	R Square	Adjusted R	Std. Error of
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			Square	the Estimate
1	.170 ^a	.029	.004	.253968
a. Predictors: (Constant), Asset turnover risk				

Table 7: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.374	.078		4.784	.000**
	Asset turnover risk	.113	.105	.170	1.076	.288
a. Dependent Variable: Profits Persistence						

**Significant at 0.01 level

H₀₂: there is no statistically significant impact for financial risks –as measured by ratio of liquidity, on the persistence of profits in industrial companies.

Table 8 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.136 ^a	.018	-.007	.255319
a. Predictors: (Constant), Liquidity risk				

Table 9 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.397	.070		5.671	.000**
	Liquidity risk	.019	.022	.136	.857	.397
a. Dependent Variable: Profits Persistence						

**Significant at 0.01 level

Table 10: Results of testing the second hypothesis

T-value (T- statistics)	Effects Coefficient of Determination (Beta)	Coefficient of Determination (R ²)	Adjusted Coefficient of Determination (Adjusted R ²)
0.857	0.136	0.018	0.007-
			0.734 = Calculated F-Value
			0.397 = (Sig)

The impact of liquidity risks on profit persistence as determined by a simple regression analysis. The results show that the absolute value of the coefficient of determination was 0.136, and the value of (Sig) was 0.397, which is greater than 0.05. We accept the initial hypothesis and reject the alternative, indicating that there is no statistical significance of liquidity risks on the persistence of profits in industrial firms. Based

Table 11: Model Summary

on the above findings and the Adjusted Coefficient of Determination of (-0.007), it was not possible to explain changes in profit persistence using changes in liquidity risks.

H₀₃: There is no statistically significant impact for financial risks –as measured by debt ratio- on the persistence of profits in industrial companies.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.019 ^a	.000	-.025	.257664

a. Predictors: (Constant), Debt risk

Table 12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.465	.083		5.707	.000
	Debt risk	.000	.002	-.019	-.120	.905

a. Dependent Variable: Profits Persistence

Table 13: Results of testing the third hypothesis

T-value (T- statistics)	Effects Coefficient of Determination (Beta)	Coefficient of Determination (R ²)	Adjusted Coefficient of Determination (Adjusted R ²)
-0.120	-0.019	0.000	-0.025
Calculated F-Value = 0.014 (= 0.905 (Sig)			

The results of a simple regression analysis of debt risks and their impact on profit persistence are shown in the table above. It is assumed to explain how much variability in one factor can be attributed to its relationship to another. These results show that the absolute value represented by the coefficient of determination was 0.019, which is the proportion of the variance in the dependent variable that is predictable from the independent variable. The degree of change in the outcome variable for every unit change in the predictor variable resulted in a (0.019) increase in the beta coefficient value, confirming the value of (Sig) which is larger than 0.05, at a value of 0.905. Based on the rule of judgment, it was not

possible to reject the initial hypothesis, meaning that there is no statistical significance for financial risks on the persistence of profits in industrial companies. Based on the results above, taking the value of the determination coefficient (-0.025) into consideration, which means that the changes in profit persistency is unexplainable through the changes in debt risks since this value is miniscule and cannot be used for the explanation.

H₀₄: there is no statistically significant impact for asset efficiency –as measured by rate of asset turnover- on the profits persistence in industrial companies.

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.170 ^a	.029	.004	.253968

a. Predictors: (Constant), Asset turnover risk

Table 15: Results of testing the fourth hypothesis: Coefficients ^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.374	.078		4.784	.000**
	Asset turnover risk	.113	.105	.170	1.076	.288

a. Dependent Variable: Profits Persistence
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**Significant at 0.01 level

The above table shows a simple regression analysis impact of one variable asset efficiency on another the profit persistence. The coefficient absolute determination value was 0.170, R-squared (R^2), assesses how strong the linear relationship is between both variables confirming a significant (Sig) impact with larger than 0.01, at a value of 0.905. Based on the decision rule, it was not possible to reject the initial hypothesis and accept the alternative, meaning that there is no statistically significance for asset efficiency –measured by rate of asset turnover- on the persistency of profits in industrial companies. Based on the above results above and taking the value of the determination coefficient 0.004 into consideration, the changes in profit persistency is unexplainable through the changes in the asset turnover rate since this value is miniscule and cannot be used for the explanation. Therefore, no impact of financial risks (Debt risks, Liquidity risks) on the short-term persistency of profits in industrial companies.

Conclusions:

It is to summaries the results as the followings:

1. A statistically significant difference in profit persistency was discovered in Bangkok, Thailand industrial companies at a level of (0.01), and these companies are divided into several categories that differ in activity, operations, and the seasonality of their products and operations. This causes profit fluctuations and persistence to differ between companies.

2. There was no statistical significance at the level of 0.01 for financial risks – as measured by the liquidity ratio – on the persistence of profit in industrial firms. This is because liquidity risks are based on the availability of cash and other current assets to fulfill a company's current obligations in the hope of affecting profits indirectly. Given that net profit and total costs to profit ratio have the greatest impact on profit persistence, the unproductive explains why liquidity risks have no significant impact on profit persistence. It is the case where the profitability of liquidity is insufficiently persistent due to its financing costs.

3. There was no statistically significant effect of financial risks measured by debt ratio on profit persistence at the level of 0.01. It is well understood that the dynamics of a company's capital structure influence its profitability. The debt ratio is sometimes thought to be capable of either creating or destroying wealth. This is because debt risks primarily affect liquidity and operations; therefore, if a company maintains a sufficient level of cash and current assets to meet its financial obligations but is unable to maintain the effect of debt risks on profits due to the profitability of current assets.

4. There was no statistical significance at the 0.01 level for asset efficiency as measured by asset turnover rate on profit persistence. This is due to the abysmal relationship between asset efficiency and profitability. Companies stay efficient and competitive by keeping inventory levels productive, accelerating receivables collection, and utilizing fixed assets. Efficiency ratios determine how productively a business is managed. The broad nature of operations explains why asset turnover rate has no significant impact on profit persistence.

Recommendations:

Based on the findings of this study, we have made the following recommendations:

1. Appropriate authorities should educate company management on the importance of short- and long-term profit stability, and companies should be required to include it in their governance reports. This will assist investors and decision makers in determining a company's ability to sustain its current level of profits and earnings quality.

2. Instill the concept of profit persistence in industrial company owners and managers, and encourage them to set higher standards.

3. Compel executives in industrial firms to improve asset management efficiency, asset effectiveness, and management motivation.

4. Conduct additional studies using different models to assess profit persistence.

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