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Multidimensional perspective of Corporate Capital Efficiency and Financial Risk policies lead on Capital misallocation: The case of Pakistan

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ABSTRACT

This work uses innovative and traditional analyses and explores innovative financial frameworks to increase capital efficacy, decrease financial risks, and address capital mismanagement issues. The analysis is carried out on Pakistan's listed non-financial companies' data, obtained from the Pakistan stock exchange (PSX). Pooled OLS and the robust, truncated, random-effect regression model were used for the analysis. According to the findings, capital mismanagement was quantified through the asset returns' dispersion and return on capital employed. Capital mismanagement was higher in the traditional analysis and lower in the innovative analysis. Traditional financial analysis shows a significant and positive relationship between capital efficiency and capital mismanagement, while innovative financial analysis shows a negative relationship. In contrast, according to innovative financial analysis, financial risk and capital mismanagement have a negative relationship. Capital mismanagement was a major impediment to firms moving towards greater capital efficiency. Policy evaluation should contrast changes in two financial analytic approaches for measuring capital and resource mismanagement.

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1. Introduction

Efficient resource management maximizes output, and therefore, capital efficiency is maximized by allocating resources across firms due to the fluctuations in the economic environment causing productivity shocks. Hence, capital reallocation is carried out by markets, whereas in an emerging economy, markets fail to function appropriately, which is explained as the mismatch of resources in an emerging country compared to the developed countries by(Choi, 2020; Midrigan & Xu, 2014). The real outcomes of the sectoral statistical averages and one-dimensional discriminatory analysis are evident through the initial stage of this approach (Choi, 2020; Fuchs, Green, & Papanikolaou, 2016). Firstly, financial analysis channel funds from savers to investors. Financial and non-financial intermediaries such as fund managers and insurance firms bundle savings and allocate them to investment projects. Secondly, Financial channel allows them to finance investment developments that would be too large to grip for any distinct investor (Ullah et al., 2021; Wu, Wang, Xu, & Chen, 2019; Zhang, Ulllah, Diao, & Abbas, 2022). Thirdly, financial development and predictors monitor these investments and exert corporate governance. Finally yet importantly, they proposal payment and liquidity services, which eases the exchange of goods and services and mitigates the transfer problem that arises from imperfectly, timed incoming and outgoing payments (Holod, 2012).

Misallocation of capital in companies with trading returns, such as state-owned enterprises and firms with higher market shares, is more serious. In contrast, researchers suggest innovative financial analysis through traditional analysis, and Zhuquan (2021) discuss the big misunderstanding between assets and capital. Therefore the adjustment balance between capital and assets through an innovative method of financial analysis is provided by (Kurtzman & Zeke, 2020). On the other hand, a negative empirical impact of little leverage on short-term solvency and long-term solvency is created by the overestimated traditional systematical research (Gilchrist, Sim, & Zakrajšek, 2013; Meeks & Swann, 2009; Wang, Wang, & Su, 2020).

1.1. Problem Statement

One of the main problems faced is the inefficient distribution of traditional corporate capital, referred to as capital misallocation. Capital mismanagement is considered a big problem for Pakistan's industry because these industries just follow the traditional approach to measuring corporate capital and financial risk analysis. There is a large misbalance, misunderstanding and instability in traditional financial analysis; hence, all industries face financial risk misestimating and capital misallocation. Traditional corporate capital efficiency misleads capital misallocation, which is considered a huge problem in Pakistan.

1.2. Objective Statement

The main objective of this research is to focus on addressing capital misallocation issues from the perspective of innovative and traditional analysis and developing an innovative financial framework for improving factors, such as capital efficiency and mitigating financial risks; and to focus on non-financial firms in Pakistan to achieve the objectives given above and to carry out secondary data analysis for further examination.

1.3. Contributions of the Study

This study contributes through: revising capital efficiency indicators through innovative financial analysis and traditional financial analysis, measuring physical enterprises through the corrected capital structure leverage ratio to revise traditional financial risk (leverage ratios) indicators. The innovative financial analysis provides accurate information about financial risk. The study also follows the traditional financial analysis for the non-financial companies to reduce financial liabilities and non-financial liabilities, revising the non-financial companies in Pakistan. Hence, traditional financial analysis is revised into innovative financial analysis. Fourthly, the study measures the traditional and innovative financial analysis to revise capital misallocation and lastly, this study proposes a method to reinvent capital misallocation, considering traditional financial analysis and innovative financial analysis, contributing to the economic development of different regions in Pakistan, establishing a capital efficiency and leverage ratio. Research Questions are listed below:

RQ1: Do traditional corporate capital efficiency and financial risk analysis mislead capital misallocation?
RQ2: Do innovative corporate capital efficiency and innovative financial risk analysis significantly measure the correct value of capital misallocation?

2. Theoretical Foundation and Hypothesis Development

In the context of Pakistan, this theoretical framework never develops to measure corporate capital efficiency, financial risk and capital misallocation under innovative financial analysis. This theoretical analysis is adopted based on the research objective. How is this theoretical framework more effective and consistent? Do theoretical frameworks support research objectives and empirical analysis? The main objective of this study is to investigate the impact of corporate capital efficiency and financial risk misvalue on capital misallocation under innovative and traditional financial analysis. However, theoretical analysis is adopted from famous theories that are consistent and reliable.

This study determines resource misallocation, capital efficiency, and financial risk with the help of resource-based theory, Internal Capital Markets (ICMs) theory, and pecking order theory, which direct resources misallocation, capital efficiency, and financial risk for individuals or companies due to the capital efficiency and financial risk misleading capital misallocation. Similarly, the effective management of a business is guaranteed through the resource-based theory employed to incorporate the psychological features of each manager (Gradstein, 2019; Jorgenson, 2017; Karabarbounis & Macnamara, 2021; Kaymak & Schott, 2019; Kong, Peng, Ruijia, & Wong, 2021). Choi (2020) is included in the work which investigates and quantifies the effects of resource misallocation, whereas several economic forces leading to misallocation are also discussed by many studies, such as Asker et al. (2014) for role of capital adjustment costs Buera, Kaboski, and Shin (2011); Midrigan and Xu (2014); Moll (2014) for financial frictions Dollar and Wei (2007); Hottenrott and Peters (2012) information frictions.

3.1. Capital Misallocation

According to the resource allocation efficiency theory, Pareto optimal capital allocation is achieved by an efficient flow of capital Ronen (2006) whereas enterprise capital allocation is linked with Income distribution. The two aspects involved in the higher capital allocation efficiency include the largest share of capital investment received by the efficient business activities before the capital investment, which is less efficient. Hence, business activities with the largest share of capital are the most efficient. Therefore, the first point is the capital allocation between business activities, whereas business activities and capital utilization efficiency are explained by the second point (Dai & Cheng, 2019; Fuchs et al., 2016).

The stable capital to output ratio of China from 1994 to 2000 declined later on, as seen in the empirical analysis by Yu, Wu, Lee, and Zhao (2021), which reflects an improved incremental reform for allocation efficiency of the Chinese economy, whereas economic growth triggers the increase of this indicator (Ai, Li, & Yang, 2020). Dollar and Wei (2007) proposed some empirical studies in Chinese manufacturing studies from the period 2000-2018 on capital misallocation from the perspective of innovative financial analysis (Chen & Chen, 2011; Hao, Gai, & Wu, 2020; W. Zhuquan, Zhuo, Y. W., & Ling, L., 2017). Capital misallocation is measured through innovative and traditional analysis, which starts by using traditional financial analysis to determine traditional proportional total capital of all the firms followed by traditional proportional of capital shown by individual capital to total capital of the firms (Yuanzhuo). Finally, capital misallocation is equal to traditional capital (TPOC), multiplied by maximum innovative return on capital-employed and subtracted with the minimum return on the employed capital (Duan, 2014; Yang, Shao, Li, & Yang, 2020; W. Zhuquan, Binglei, D., Yuanzhuo, W., & Guanlin, C. , 2017).

3.2. Capital Efficiency in the Perspective of Innovative Financial Analysis

The negative association between capital efficiency and resource misallocation is recommended by previous studies, whereas the misconception stopping investors from investing in emerging countries is discussed in this study, which argues the misconception between capital and assets as a misunderstanding. The capital return loss caused by enterprise capital mismatch is measured through the capital misallocation (CMs) designed in this study. The negative relationship between capital efficiency and capital misallocation in perspective innovative financial analysis is discussed (Zhuquan, 2021). The proportion of traditional capital from the traditional approach with higher capital efficiency is multiplied by proposing innovative analysis, considering the difference between the lower innovative ROCE capital efficiency and higher capital efficiency of innovative ROCE. Hence, the average capital employed on the employed capital for equal earnings before interest and taxes is represented by innovative capital efficiency. In contrast, the innovative analysis, such as total firm assets add financial liability and subtract non-financial liability from total liabilities, explains the capital employed (W. Zhuquan, Zhuo, Y. W., & Ling, L., 2017).

Hypothesis 1: There is a negative and significant association between the innovative financial analysis indicators and capital misallocation.

3.3. Financial risk in the Perspective of Innovative Financial Analysis

Debt is preferred over equity, which means 'bringing external ownership' into the company in external financing. In contrast, long-term borrowing and short-term borrowing are referred to as financial liabilities (FL) and accounts payable, note payable, bill payable supplier payable, and wages payable as non-financial liabilities (NFL). Hence, the innovative approach calculates non-financial liabilities and financial liabilities, unlike the traditional approach that considers financial liabilities (FL) and non-financial liabilities (NFL) in calculating financial risk, followed by calculating innovative financial risk by deducting non-financial liabilities from total liabilities (Zhuquan, 2021; W. Zhuquan, Zhuo, Y. W., & Ling, L., 2017).

Hypothesis 2: There is a negative and significant association between the innovative financial risk indicators and capital misallocation.

3.3.1. Capital Efficiency in the Perspective of Traditional Financial Analysis

Financial capital is considered an important indicator in the external capital market and internal capital market for investors to make decisions impacting capital allocation in the capital market (Iqbal, Ullah, Zhuquan, & Shah, 2017; Kurtzman & Zeke, 2020). Nevertheless, the information on capital efficiency and the financial risks in the real economy is distorted due to a series of shortcomings in the traditional financial analysis system Iqbal et al. (2017), which not only affects the decisive role of the correct performance of the capital market but also affects the accurate judgment of the government on the significant development of the real economy, misleading the macroeconomic control of the government (Kaymak & Schott, 2019; Mogge et al., 2023).

Moreover, the enterprise's internal capital market is misguided in using funds from operating activities (Entity management) flowing to investment activities (capital management) with a 50% overestimation of investment activities. Hence, a positive association between CMs and capital efficiency is discussed by researchers Wang et al. (2020), which proposes indicators, such as traditional return on assets, equal earnings before interest, and taxes by the average of total assets, considering a traditional financial analysis of Capital efficiency (Bandyopadhyay, King, & Tang, 2019).

Hypothesis 3: There is a positive and significant association between traditional financial capital indicators and capital misallocation

3.4. Financial risk in the Perspective of Traditional Financial Analysis

Several factors cause market movements, causing financial risk, which is classified as traditional financial risk and innovative financial risk, respectively. A risk-averse, tax-smoothing government chooses innovative financial risk due to the present financial crisis and therefore, ever since the financial crises of the 1990s, more literature is available on this, suggesting significant real economic effects. Moreover, companies manage risk, such as foreign exchange risk and interest rate risk, which is evident in many theories, and the increased volatility in the foreign exchange market in recent years shows the importance of coping with risk as a managerial function. Financial risk management possesses a number of opinions from different financial analysts and experts, and many researches help in financial risk management in multinational companies through various strategies (Gao, Liu, & Shi, 2020; Kraśnicka, Głód, & Wronka-Pośpiech, 2018).

Hypothesis 4: There is a positive and significant association between traditional financial risk indicators and capital misallocation

4. Research Methodology

4.1. Sample Selection and Data Source

This study is based on quantitative research approaches using descriptive and explanatory research design and uses the 1697 samples of listed non-financial companies with a 368-target population to achieve the goals of this study, analyzing data for a total of 5 years. Hence, a hypothesis is developed through the empirical (traditional and innovative) analysis, whereas the study takes data from the Pakistan stock, deleting observation with financial statement, presenting insufficient data. Thus, all the continuous variables are winsorized at 1% and 99% levels, and the relevant data is retrieved from the Pakistan stock exchange (PSX) databases.

$$
\begin{aligned}
CMS = \beta_0 + \beta_1\ IROCE + \beta_2 IAE + \beta_3 IDA + \beta_4 ICR + \beta_5 Volatility + \beta_6 Age \\
+ \beta_7 Growth + \beta_8 SIZE + \beta_9 Tangibility + \beta_{10}\ Cap_{ex} + \beta_{11}\ SD_{FR} + \beta_{12}\ ASTG \\
+ \beta_{13} Pay + \beta_{14} \sum_{i=1}^{7} Year + \beta_{15} \sum_{j=1}^{14} Industry + \varepsilon
\end{aligned}
$$

4.2. Model Specifications

Figure 1

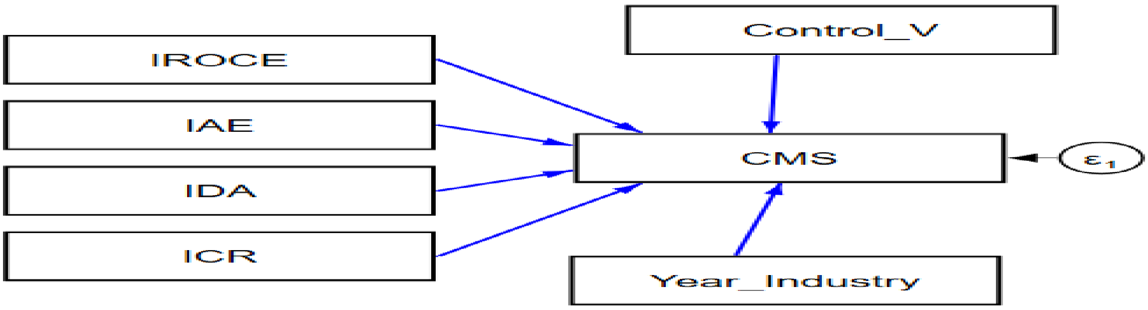

Figure 1 shows a combined regression model to predict the impact of innovative corporate capital efficiency and innovative financial risk on capital misallocation (Hypothesis 1 and 2.

$$CMS = \beta_0 + \beta_1\, TROA + \beta_2\, TAE + \beta_3 TDA + \beta_4 TCR + \beta_5 Volatility + \beta_6 Age + \beta_7 Growth$$
$$+ \beta_8 SIZE + \beta_9 Tangibility + \beta_{10}\, Cap_{ex} + \beta_{11}\, SD_{FR} + \beta_{12}\, ASTG$$
$$+ \beta_{13} Pay + \beta_{14} \sum_{i=1}^{7} Year + \beta_{15} \sum_{j=1}^{14} Industry + \varepsilon$$

Figure 2

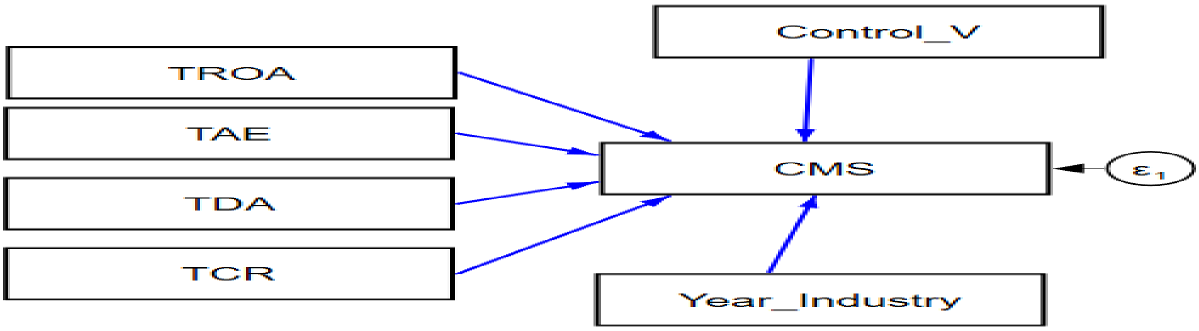

Figure 2 Show a combined regression model to predict the impact of traditional corporate capital efficiency and traditional financial risk on capital misallocation (Hypothesis 3 and 4)

Table 1: Measurement of Variables

Variables	Core indicators	Index measurements	Source
Dependent Variables			
Capital misallocation	Capital misallocation	CMS=∑ TPOC*(Max IROCE-Min IROCE) TPOC=Traditional proportional of capital = Individual proportional of Capital/Total aggregate capital IROCE =Innovative Return on Capital Employed = EBIT/ average Innovative CE (Total Equity+ financial current liabilities and financial Noncurrent - liability or Total Assets – Non-financial current liabilities and non-financial non-current liability).	(Zhuquan, Zhuo, et al., 2017) (Yu et al., 2021)
Independent Variables			
Innovative Financial analysis	Capital efficiency (CE)	Innovative Return on Capital Employed = EBIT/ average Innovative CE CE= (Total Equity+ Financial current liabilities + Financial non-current - liability or (Total Assets – Non-financial current liabilities - Non-financial non-current liability). Or Innovative ROCE= EBIT/CE	Wang et al. (2016); (Z. Wang et al., 2020)
	Financial risk	Innovative Financial liability /total equity or(Total liabilities –Non-financial	

		current liabilities – non-financial non-current liabilities)/Total equity or Innovative Debt/Equity	
	Financial risk	Total Assets - Non-financial current liabilities – non-financial non-current liabilities)/Equity or Innovative A/E	
	Short Financial risk	(Total current assets- Non - current financial liabilities)/ (Total current liabilities – Non-financial current liabilities) or Innovative CA/CL	
Traditional financial analysis	Capital efficiency (CE.)	Traditional Return on Assets = EBIT/ Average Total Assets	
	financial risk	Debt/Equity (D/E) and Debt/ Assets (D/A)	Wang et al. (2020) ; (Q. Zhang et al., 2021)
	Current Ratio	Traditional Total current assets/Total current liabilities	
Control variables (CV)			
Volatility	Traditional analysis	Traditional Risk = SD (TROA)	
Growth	Capital Expenditure	Capex= Fixed Assets $_{t}$ – Assets $_{t-1}$/Total fixed Assets	(Shahzad, Luo, et al., 2021); Umeair et al. (2020); Wang et al. (2020); (Z. Wang et al., 2020)
	Assets Growth	ASTG= Total Assets $_{t}$ – Total Assets $_{t-1}$/ Total Assets $_{t-1}$	
	Age	Current year - listing year	
Size	SIZE	Natural logarithm of total assets	
	Tangibility	Fixed Assets/ Total Assets (Change in Fixed Assets= Fixed assets t- Fixed assets t-1)	
Year		Control	
Non-financial companies		Total 368- non-financial companies in Listed Pakistan stock exchange (PSX)	

5. Empirical Results and Findings

5.1. Measurements and Discussions

The uncertainty in specifying empirical models gives rise to robustness tests from social scientists, which issues a fundamental change in how researchers interpret observational data analysis. The estimated properties are statistically significant in all robustness test models, resulting in an imperfect inferential logic suggested by the dominant conception of robustness (Wang et al., 2020; Yu et al., 2021). Our approach of modeling CMs is supported by the innovative and traditional capital efficiency in Model (1) and Model (4), measuring the truncated and robust regression results. The following table considers the innovative financial analysis to show a negative relationship between CMs and IROCE. Hence, capital misallocation decreases by -4.213 (4%) in the robust regression and significant and negative relationship in the truncated regression with one unit increases in IROCE.

In contrast, the traditional financial analysis shows a positive and significant association between CMs and TROA in robust regression. The truncated regression shows a significant and positive association between CMs and truncated regression. Therefore, CMs increase by 4.077 (5%) with a one-unit increase in TROA. The financial risk indicators show how capital misallocation (CMs) is supported by traditional financial analysis and not supported by innovative financial risk as shown in table 2 Model (2) and Model (5), and therefore, innovative financial risk is preferred. Similarly, truncated regression and robust regression are negatively affected by the innovative Assets' equity (IAE). In contrast, the coefficient shows a positive and significant impact in both truncated regression and robust regression for the traditional Assets to equity. Moreover, truncated regression and robust regression are significantly and positively affected by the coefficient for traditional debt to assets (TDA), whereas insignificantly and negatively affected by the coefficient for traditional debt to assets (TDA). Truncated regression and robust regression are significantly and negatively affected by the short-term innovative current ratio (ICR) coefficient, the same as the traditional short-term current ratio (TCR) coefficient. Hence, Capital misallocation (CMs) reduces -0.0593 % in the truncated regression due to a one-unit increase in innovative Assets to equity (IAE).

Table 1: Truncated and Robust Regression Analysis for Testing Hypotheses

Variables CMS	Model 1 Truncated	Model 2 Truncated	Model 3 Truncated	Model 4 Robust	Model 5 Robust	Model 6 Robust
IROCE	-1.370**	2.348***	-0.781	-4.213***	-3.218**	-2.286**
	-0.66	-0.859	-0.612	-0.977	-1.281	-1.165
TROA	8.116***	4.504***	1.934**	4.077***	2.566	-0.506
	-0.938	-1.072	-0.821	-1.346	-1.636	-1.101
IAE		-0.0593***	-0.0627***		-0.0243	-0.0278
		-0.0157	-0.0103		-0.0153	-0.0173
TAE		0.00654**	0.00364**		0.00251***	0.00274***
		-0.00302	-0.00165		-0.00031	-0.000242
IDA		0.585***	-0.025		0.0714	-0.0707
		-0.103	-0.0725		-0.138	-0.127
TDA		-0.305	1.819***		-0.539	1.440***
		-0.367	-0.256		-0.738	-0.362
TCR		-0.699***	0.0596		-0.947***	-0.0443
		-0.219	-0.137		-0.319	-0.236
ICR		-0.100***	-0.0261*		-0.0812***	-0.0255*
		-0.024	-0.0155		-0.025	-0.0155
CV	No	No	Yes	No	Yes	Yes
Constant	283	237.2	-46.24	80.5	67.26	-129.9
	-193.6	-184.8	-144.8	-166.1	-163.4	-137.4
Observations	1697	1697	1697	1697	1697	1697
Industry effect	YES	YES	YES	YES	YES	YES
year	Control	Control	Control	Control	Control	Control
R2				0.0829	0.1734	0.3023
Log likelihood	-2792.33	-2729.62	-2072.77			

Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0

Table 2: Overall Sample Analysis

Estimation Technique	Robust regression			Truncated Regression			Fixed Effect		
	Overall sample	**low CMS**	**High CMS**	**Overall sample**	**low CMS**	**High CMS**	**Overall sample**	**low CMS**	**High CMS**
IROCE	-0.763	-1.435**	0.442	-0.781	-1.385**	-0.342	-2.286***	-1.975*	-1.192
	-0.55	-0.655	-0.614	-0.612	-0.677	-0.834	-0.622	-1.15	-1.318
TROA	2.407***	0.625	1.171	1.934**	-0.773	0.989	-0.506	-2.529	-0.129
	-0.738	-1.452	-0.718	-0.821	-1.491	-0.974	-0.86	-2.282	-1.246
IAE	-0.0685***	-0.0502***	-0.0379***	-0.0627***	-0.0370***	-0.0786***	-0.0278**	-0.0300**	-0.0264
	-0.00928	-0.00992	-0.012	-0.0103	-0.0103	-0.0162	-0.0115	-0.0143	-0.0205
TAE	0.00326**	-0.148***	-0.413***	0.00364**	0.00407***	-0.0914	0.00274**	0.00290**	0.0535
	-0.00148	-0.0193	-0.0503	-0.00165	-0.00134	-0.0682	-0.00137	-0.00122	-0.0905
IDA	0.0971	-0.0527	0.413***	-0.025	-0.063	0.0915	-0.0707	-0.112	0.0679
	-0.0652	-0.0845	-0.0693	-0.0725	-0.0874	-0.0941	-0.0718	-0.105	-0.133
TDA	1.661***	0.970***	-0.433	1.819***	1.019***	1.508***	1.440***	0.549	1.211*
	-0.233	-0.284	-0.408	-0.256	-0.293	-0.554	-0.323	-0.569	-0.725
TCR	0.15	0.302**	0.00423	0.0596	0.444***	-0.127	-0.0443	0.121	-0.462
	-0.123	-0.152	-0.15	-0.137	-0.157	-0.203	-0.164	-0.202	-0.291
ICR	-0.0293**	0.00544	-0.0171	-0.0261*	-0.0256	-0.0125	-0.0255*	0.00224	-0.0321*
	-0.0139	-0.0442	-0.0105	-0.0155	-0.0455	-0.0143	-0.0148	-0.0463	-0.0165
Control Variables effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
YEAR effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-2.825	-146.4	47.03	-46.24	-194	-75.06	-131.7	-154.7	-139.7
	-130.4	-161.3	-132.2	-144.8	-165.9	-179.4	-111.3	-152.6	-162.2
Observations	1679	900	779	1679	900	779	1679	900	779
R-squared	0.807	0.536	0.793				0.655	0.428	0.631
Number of industry	368	368	368	368	368	368	368	368	368
Log-likelihood				-1635.7437	-750.86446	-749.93994	290	186	174
Wald chi2(16)				2405.44	378.41	477.4			
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0

In contrast, the CMs ratio reduces by 0.025 % in the truncated regression due to a one-unit increase in Innovative Debt to Assets (IDA), showing a negative and insignificant association between CMs and innovative financial risk analysis. Conversely, Capital misallocation (CMs) increases by -0.00654 % with a one-unit increase in traditional Assets to equity, and CMs increase 0.819 % with a one-unit increase in Traditional Debt to Assets (TDA). The impact of CMs on capital efficiency and financial risk through traditional and innovative financial analysis is examined in Tab. 5, showing a significantly negative association between the coefficient of IROCE and CMs in the overall samples of column 1, column 4 and column 7, respectively. Hence, companies with higher "IROCE" possess a reduced capital misallocation, whereas CMs are significantly and positively associated with the coefficient of TROA. Hence, Capital misallocation increases by 2.407% with a one-unit increase in capital efficiency, according to the traditional approach supporting innovative approach over the traditional approach. Similarly, capital misallocation reduces by 2.286 % with a one-unit increase in capital efficiency, considering the innovative financial approach, which proves an innovative financial approach as an effective method to increase capital efficiency.

Figure 3

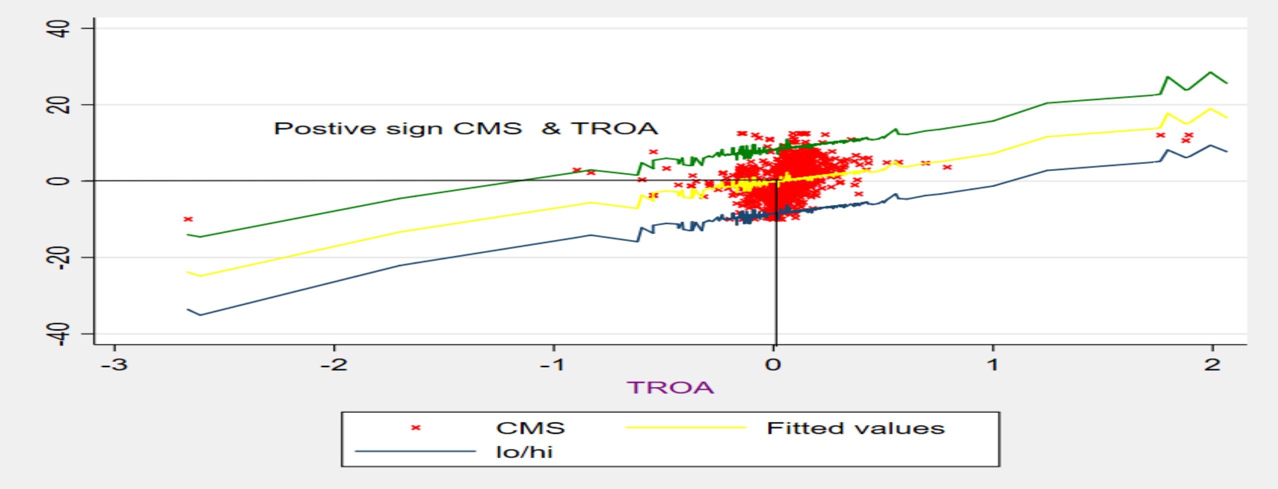

Figure 3 Relationship between Capital efficiency and Capital misallocation in the aspects of traditional analysis. It can be seen in figure 3 that there is positive association between CMs and Capital misallocation. The Red Cross line shows CMs and green line shows the Traditional capital efficiency (TROA).

Figure 4

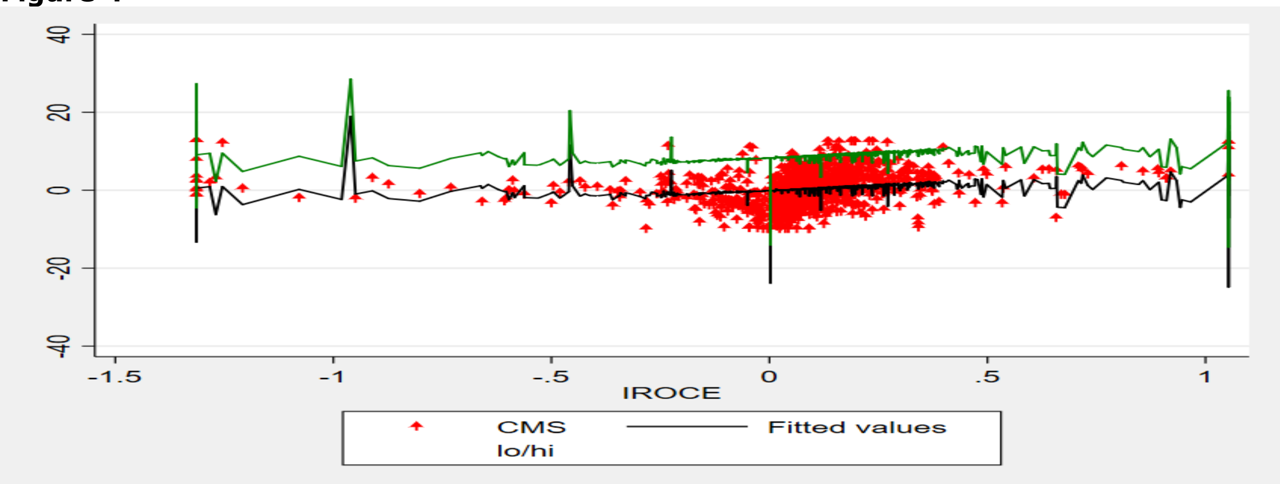

Figure 4 IROCE has a negative relationship with CMs in the perspective of innovative financial analysis. We propose that innovative financial analysis is more valid and reliable to reduce misallocation.

5.2. Comparative Analysis for Innovative and Traditional Financial Analysis

We propose innovative and traditional corporate capital efficiency for further investigation that measures the truncated and robust regression results, supporting and investigating. Table 6 shows a negative relationship between IROCE and CMS under innovative financial analysis. If IROCE increases one unit, then capital misallocation reduces by -1.591 (2%) in the robust regression and significant and negative relationship in the truncated regression. Hence, in the truncated regression due to a one-unit increase in innovative Assets to equity (IAE reduces by -0.0593 %), Capital misallocation (CMs). Similarly, if IDA increases by one unit, then CMS reduces by 6%. Conversely, traditional Assets to equity increase a one-unit increase then increases by -0.00654 % Capital misallocation (CMs). Traditional Debt to Assets (TDA) with a one-unit increase then increased 0.819 % by CMS. However, growth is negatively associated with CMs, whereas both models consider size significant. Similarly, the coefficient of capital expenditure (Cap. exp) for both models is negative and insignificant, whereas tangibility is positive and significant in the robust regression and insignificant in truncated regression. Moreover, both models consider the traditional and innovative coefficient insignificant, whereas the coefficient of risk is considered significant and positive in both models. In this study, both regression analyses proposed that innovative financial analysis effectively reduces misallocation and increases efficiency (Cao, Wang, & Li, 2021).

Table 3: Innovative vs Traditional Financial Analysis

Variables	Robust Model	Truncated Model
IROCE	-1.591**	-1.372**
	-0.682	-0.669
IAE	-0.0125**	-0.0117**
	-0.0052	-0.0052
IDA	-0.0693*	-0.0138***
	-0.0899	-0.0054
ICR	-0.0175	-0.0199
	-0.0218	-0.0214
Volatility	4.938***	4.811***
	-0.808	-0.79
Age	-0.00608	-0.0085
	-0.00729	-0.00686
Growth	0.0224**	0.0217**
	-0.00957	-0.0094
SIZE	1.391***	1.410***
	-0.1	-0.097
Tang	-0.158**	-0.145**
	-0.0666	-0.063
Cap_exp	0.00599	0.0109
	-0.015	-0.0148
IND_CON	-21.48***	-6.546
	-7.112	-4.072
RD_ln	-0.428***	-0.411***
	-0.0603	-0.0588
Pay	0.00929	0.0476
	-0.0641	-0.061
Constant	-23.52***	216.2
	-2.634	-193.4
Observations	2576	2576
Adj.R2	0.812	
Log-likelihood		-685.6407

Note: this table indicates that innovative capital efficiency, innovative financial risk (H1), and IDA dropped from regression analysis due to inconsistency. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All continuous variables are winsorized at a 1-99% level to remove the outliner effects.

Table 4: Hypotheses assessment summary

CMs		Expected Sign	Coef.	p-value	Decision	Analysis	Hypotheses
Capital Efficiency -> CMs	IROCE	Negative	-0.855	0.000***	Accepted	Innovative	H1
	IAE	Negative	0.003	0.008***	Accepted	Innovative	H2
Financial risk -> CMs	IDA	Negative	-0.028	0.129	Unsupported	Innovative	
	ICR	Negative	-0.027	0.000***	Accepted	Innovative	
Capital Efficiency -> CMs	TROA	Positive	2.167	0.000***	Accepted	Traditional	H3
	TAE	Positive	-0.068	0.000***	Accepted	Traditional	H4
Financial risk -> CMs	TDA	Positive	1.785	0.129	Unsupported	Traditional	
	TCR	Positive	0.111	0.000***	Accepted	Traditional	

Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0

6. Conclusion

This work uses innovative and traditional analyses and explores the innovative financial framework to increase capital efficacy, decrease financial risks, and address capital mismanagement issues. The analysis is carried out on Pakistan's listed non-financial companies' data, obtained from the Pakistan stock exchange (PSX) in 2016-2020. Pooled, OLS, Quantile regression, and the robust, truncated, random-effect regression model, GMM, balance test and mechanism test were used for the analysis. This dissertation applied quantitative research methods and a descriptive and explanatory research methodology. It can be concluded that capital mismatch, particularly resource allocation, is an important component in boosting the creative financial analysis that has already been changed in Chinese non-financial enterprises. In addition, there was a strong link between CMs, capital efficiency, and financial risk. Based on robust and other comparable data, the study discovered that capital efficiency and capital misallocation (CMs) negatively impacted innovative financial analysis. Traditional financial analysis shows a large and positive relationship between capital efficiency and CMs. Financial risk and CMs, on the other hand, have a positive and considerable influence from the standpoint of traditional financial analysis. In terms of creative financial analysis, financial risk and CMs have a negative relationship. In the context of classical financial analysis, Pooled OLS and the independent variables Capital efficiency and financial risk have a substantial and positive link with CMs under the random effect model (RE).

Independent variables such as capital efficiency and financial risk have a detrimental impact on creative financial analysis. Furthermore, in the context of both analyses, fixed effect models, random effect models, and pooled OLS presented control variables in which growth, age, SIZE, capital expenditure (Cap exp), TANG, and risk had a positive and substantial negative impact. Furthermore, the coefficient of determination (R^2) explains 0.655% of the variability of the response data around its mean in the Fixed Effects model, indicating the proper fitting of the model predictors with the data. For all of the estimated equations, the overall test of significance (F-test) under a fixed effect is statistically significant at the one percent level. The model equations are efficient and fit the data according to the overall test of significance (F-test).

6.1. Suggestion and Policy implications

Capital misallocation can indeed be a significant concern for any economy especially in Pakistan. Here are a few suggestions for the government of Pakistan and policymakers to manage misallocation issue, particularly in stock exchange-listed firms in Pakistan: firstly, strengthen Regulatory Framework: Enhance and enforce regulations to ensure transparency, accountability, and fair practices in the stock exchange. Implement stricter reporting requirements and penalties for non-compliance to discourage misallocation. Secondly, Promote Investor Education: Increase investor awareness through educational campaigns and workshops. Educated investors are more likely to make informed decisions, reducing the risk of capital misallocation.

Thirdly, Encourage Corporate Governance: Encourage listed firms to adopt robust corporate governance practices. Promote the independence of boards, ensure shareholder representation, and enforce compliance with governance codes.

Fourth, Enhance Risk Management: Encourage listed firms to develop comprehensive risk management frameworks. This will help identify and mitigate potential risks, ensuring capital is allocated prudently. Facilitate Access to Information: Create platforms where investors can easily access comprehensive and reliable information about listed firms. This will allow for better-informed investment decisions.

Fifth, strengthen Auditing and Accounting Standards: Enforce stricter auditing and accounting standards to reduce the likelihood of financial manipulation or misleading information.

Finally, Foster Collaboration: Encourage collaboration between the government, regulators, and industry stakeholders to collectively address capital misallocation challenges. This can be achieved through regular dialogues, workshops, and conferences.

Remember, addressing capital misallocation requires a multi-faceted approach involving various stakeholders. By implementing these suggestions, the government and policymakers in Pakistan can help promote a more efficient and transparent stock exchange, reducing the risk of capital misallocation.

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