



# SIGNIFICANCE OF FINANCIAL RISK MANAGEMENT IN AMAZON AND MICROSOFT

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## ABSTRACT

This research study aims to explore the significance of financial risk management in Amazon and Microsoft, focusing on the various financial risks they face and their impact on financial performance. The study also investigates the strategies employed by these companies to manage these risks and enhance their resilience during economic and financial crises. Additionally, the role of technology, particularly artificial intelligence and machine learning algorithms, in forecasting and managing financial risks is examined. By analysing historical financial statements and calculating financial risk ratios and gross margins, this study aims to determine the relationship between financial risk management and profitability in Amazon and Microsoft. The findings of this research provide valuable insights into the importance of financial risk management in multinational companies and offer practical recommendations for effective risk management and sustainable growth.

Keywords: Artificial Intelligence, Financial Risk Management, Financial Risk Ratios, Forecasting.

## INTRODUCTION

Financial risk management is crucial for multinational companies. They face various risks such as foreign exchange, interest rates, credit, and commodity prices, which can significantly impact their financial performance. Effective risk management is essential to mitigate these risks. This research aims to explore the significance of financial risk management in multinational companies, including the impact of risks on performance, risk management strategies, and the role of technology, like AI and machine learning, in forecasting and managing risks. The findings will provide valuable insights and practical recommendations to enhance resilience and sustainability.

### Industry Profile

Multinational companies (MNCs) are key players in the global economy, operating in multiple countries and contributing to economic growth. They operate in diverse industries, such as manufacturing, technology, finance, and consumer goods. This research aims to provide an overview of the MNC industry, including trends, challenges, and opportunities. MNCs face the complexities of operating in various markets with unique political, economic, and regulatory environments. Despite these challenges, the benefits of multinational operations outweigh them. MNCs can access new markets, achieve cost savings, and improve economies of scale. One significant trend in the MNC industry is the growing emphasis on sustainability and corporate social responsibility. Companies are adopting sustainable practices to reduce their environmental impact and enhance their reputation among consumers. Moreover, technology plays a crucial role in multinational operations. Companies are leveraging technology, including artificial intelligence, blockchain, and the Internet of Things, to streamline operations, increase efficiency, and lower costs. Heavy investments in technology enable MNCs to enhance competitiveness and drive growth. However, the MNC industry faces challenges such as geopolitical risks, currency fluctuations, and protectionism threats. Adapting to changing market conditions and effectively managing these risks is crucial for MNCs to remain competitive. In conclusion, the MNC industry is a significant contributor to the global economy. While it presents challenges, it also offers opportunities for growth and expansion. This research provides an overview of the industry, highlighting its trends, challenges, and opportunities, and offers practical recommendations to help MNCs navigate this complex and dynamic sector.

### Company Profile

#### Amazon

Amazon is one of the world's largest multinational companies, operating in various industries, including e-commerce, cloud computing, digital streaming, and artificial intelligence. This research examines Amazon as a multinational company, focusing on its risk management strategies. Amazon faces financial risks such as foreign exchange, interest rate, and credit risks. To mitigate these risks, Amazon utilizes hedging,

diversification, and insurance. It hedges foreign exchange exposure using financial derivatives and natural hedges. Interest rate risk is managed through interest rate swaps and portfolio diversification. Credit risk is mitigated through credit evaluation and insurance. Amazon also addresses non-financial risks like reputation, legal, and cybersecurity risks through cybersecurity measures, regulatory compliance, and customer-centric approaches. Overall, Amazon's risk management practices have improved its financial performance. This research provides insights into Amazon's risk management and offers practical recommendations for enhancing risk management strategies in multinational companies.

## Microsoft

Microsoft is a multinational technology company headquartered in Redmond, Washington. The company is one of the world's largest software makers, with a diverse range of products and services, including operating systems, productivity software, gaming, and cloud computing. This research examines Microsoft as a multinational company and its risk management strategies. Microsoft faces financial risks like foreign exchange, interest rate, and credit risks, which it manages through hedging, diversification, and financial derivatives. Cybersecurity risk is a significant concern, and Microsoft invests heavily in cybersecurity measures and employee training. Reputational risk is managed through a comprehensive public relations strategy, emphasizing transparency and stakeholder communication. Regulatory and compliance risks are addressed by ensuring adherence to relevant laws and engaging with regulators. Microsoft's risk management strategies enable effective management of financial, cybersecurity, reputational, and regulatory risks. This research sheds light on Microsoft's risk management approach and underscores the importance of robust risk management in multinational companies.

## REVIEW OF LITERATURE

**Carol Alexandar (2003)**, the focus of research in financial risk management applications of econometrics is primarily on accurately assessing individual market and credit risks. However, there has been limited theoretical or applied econometric research on other types of risk, such as aggregation risk, data incompleteness, and optimal risk control. In this regard, we propose that it is important to consider the model risk that arises from crude aggregation rules and inadequate data. This consideration could lead to the development of a new class of reduced-form Bayesian risk assessment models. These models would be situated within a common factor framework, enabling the development of appropriate risk aggregation methods. Importantly, such a framework could establish the necessary connections between risk control, risk assessments, and the optimal allocation of resources.

**Bollerslev, Christoffersen, Diebold, Andersen (2012)**, current market risk measurement practices, such as historical simulation or risk metrics, tend to be restrictive. However, we propose more flexible methods that leverage advancements in financial econometrics for more accurate risk assessments. Our approach addresses both portfolio-level and asset-level analysis, with a particular focus on the challenges of real-time risk tracking

in high-dimensional situations. We advocate for powerful yet easily estimable models that strike a balance between complexity and practicality. Additionally, we emphasize the importance of understanding the connections between market risk and macroeconomic fundamentals, specifically exploring the relationships between equity return volatilities, real growth, and real growth volatilities. By bridging academia and industry, we aim to enhance market risk measurement technologies through collaborative efforts.

**Marieke de Goede (2010)**, this article seeks to restore political significance to contemporary financial risk management by providing a historical analysis of its contested religious and cultural roots. Despite the centrality of identifying, quantifying, and trading risk in modern financial markets, the underlying normative commitments of this practice remain veiled and immune to political scrutiny. The article contends that the commodification of risk in finance should not be seen as a response to objectively existing threats, but rather as a profitable cultural process rooted in gendered perceptions of danger and security. By examining the role of risk in the recent proposals for a new Capital Accord by the Basle Committee for Banking Supervision, the article asserts that the financial industry is hesitant to embrace areas of uncertainty within the proposed accord.

**RAMPINI, VISWANATHAN, VUILLEMEY (2019)**, focuses on risk management in financial institutions, specifically regarding the hedging of interest rate and foreign exchange risks. Through our analysis, we have found compelling evidence indicating that institutions with greater net worth engage in more extensive hedging practices, even after accounting for their risk exposures. This observation holds true when comparing different institutions and when examining changes in hedging behaviour within institutions over time. To establish causality, we examine net worth shocks resulting from loan losses caused by declines in house prices. Our findings reveal that institutions experiencing such shocks significantly reduce their hedging activities compared to similar institutions. This reduction is particularly pronounced among institutions with substantial exposure to real estate. Our findings support the theory that financial constraints hinder both financing and hedging endeavours.

**Rong, Chuangang, Jia (2019)** aims to analyse information asymmetry, mode lag, and high operational risk between banks and enterprises in supply chain finance. It discusses the concept and function of supply chain finance, explores theoretical foundations for risk control, and analyses the application of principal-agent theory and self-compensated trade finance theory. The paper proposes shortcomings in the three basic financing models and examines risk sources and influencing factors, with a focus on operational risks. Finally, a new financing mode using IoT technology and inventory pledge is designed, showing reduced operational risk compared to traditional modes. The findings have practical implications for financial risk management.



## RESEARCH DESIGN

### Problem Statement

Amazon and Microsoft operate in different countries with diverse regulatory and economic environments, exposing them to various financial risks such as currency exchange rate fluctuations, interest rate risks, and credit risks. Understanding the significance of financial risk management in multinational companies is important as it can help to identify best practices and strategies for managing financial risks in a global business environment. The research problem can be approached by investigating the following questions:

1. Do Multinational Companies take into account financial risk ratios for determining the gross profit of the business?
2. Do Multinational Companies consider financial risk and profitability ratios an important factor while operation of the business?

### Objectives of the Study

The research objectives of this approach may include the following:

1. To measure the ratio which is having the highest impact against gross margin.
2. To determine the relationship between financial risk ratios and gross margin in Amazon and Microsoft.
3. To investigate the relationship between financial risk management practices and other financial performance metrics, such as return on equity and earnings per share.
4. To evaluate the impact of economic and political factors on the financial risk ratios and gross margins of Amazon and Microsoft.

### Scope of the Study

Using financial risk ratios against gross margin can be a useful approach to examine the significance of financial risk management in Amazon and Microsoft. This approach can provide insights into the relationship between financial risk management and the profitability of Amazon and Microsoft. The scope of the research study can be to investigate the following:

1. Analyse the historical financial statements of selected multinational companies (Amazon and Microsoft) and calculate their financial risk ratios and gross margins.

2. Compare the financial risk ratios and gross margins of multinational companies across different industries and regions.

3. Examine the correlation between the financial risk ratios and gross margins of Amazon and Microsoft to determine the impact of financial risk management on profitability.

The scope of the research study can be limited by the availability and quality of financial data of multinational companies. Therefore, careful consideration should be given to the selection of companies and the methodology used to calculate financial risk ratios and gross margins.

## Research Methodology

The use of financial risk ratios against gross margin is a potential research methodology for investigating the significance of financial risk management in Amazon and Microsoft. Financial risk ratios, such as the debt-to-equity ratio, asset turnover ratio, and current ratio, can provide valuable insights into a company's financial risk exposure and its ability to manage financial risks. The research methodology could involve collecting financial data from Amazon and Microsoft operating in different countries and regions and calculating financial risk ratios and gross margins for each company. Statistical analysis techniques, such as regression analysis, could be used to examine the relationship between financial risk ratios and gross margin and assess the impact of financial risk management on a company's profitability. The use of multiple regression analysis could help to control for these factors and isolate the impact of financial risk management on profitability.

## Data Collection

Data has been collected from secondary sources. The present data is dependent on the secondary data only. The risk ratios of Amazon and Microsoft along with the gross profit margin has been taken from online sources.

## Tools and Techniques

- Correlation (Pearson correlation)
- Stationarity Test: Augmented Dickey-Fuller Test

## Sampling Design

The period of study has been taken for twelve years (from 2010 to 2022) using quarterly data of risk ratios and gross margin.

## Limitations of the Study

Using financial risk ratios against gross margin as a measure of financial risk management in multinational companies has limitations. Financial ratios may not fully capture the complexities of multinational operations, particularly in measuring currency exchange rate risk accurately. Additionally, using gross margin alone may overlook other expenses that affect profitability, such as marketing, research and development, and administrative costs. Furthermore, financial risk ratios and gross margin are just one aspect of financial risk management, and other factors like regulatory compliance, political risk, and supply chain risk must be considered. To obtain a comprehensive assessment of a company's financial health and risk exposure, these measures should be used in conjunction with other risk management indicators.

## ANALYSIS AND INTERPRETATION

### Amazon (Karl Pearson Correlation)

Ratios	Gross profit margin	Asset Turnover Ratio	Current Ratio	Return on equity	Return on Asset	Total Debt to equity
Gross profit margin	1.00	-0.957	-0.808	0.735	0.518	-0.927
Asset Turnover Ratio	-0.957	1.00	0.7824	-0.728	-0.516	-0.937
Current Ratio	-8.08	0.782	1.00	-0.309	-0.010	-0.790
Return on equity	0.735	-0.728	-0.309	1.00	0.940	0.645
Return on Asset	0.518	-0.516	-0.010	0.940	1.00	0.3932
Total Debt to equity	0.927	-0.937	-0.790	0.645	0.393	1.00

## Interpretation-

Correlation is the determination of a linear relationship between two distinct variables. Gross profit margin will rise when asset turnover ratio falls and vice versa since they have a weak negative correlation. Gross profit margin will rise when current ratio falls and vice versa since they have a strong negative correlation. Gross profit margin will rise when return on equity rises and vice versa since they have a strong positive correlation. Gross profit margin will rise when return on assets rises and vice versa since they have a moderate positive correlation. Gross profit margin rises when total debt to equity rises and vice versa since they have a strong positive correlation.

## Stationarity Test: Augmented Dickey-Fuller Test

### Asset Turnover

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	<b>-3.912254</b>	<b>0.0001</b>
Test critical values:		
1% level	-2.589020	
5% level	-1.944175	
10% level	-1.614554	

### Current Ratio

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	<b>-2.208363</b>	<b>0.0269</b>
Test critical values:		
1% level	-2.588530	
5% level	-1.944105	
10% level	-1.614596	

### Return on Equity

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	<b>0.055853</b>	<b>0.6982</b>
Test critical values:		
1% level	-2.589020	
5% level	-1.944175	
10% level	-1.614554	

\*MacKinnon (1996) one-sided p-values.

At first difference

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	<b>-6.491759</b>	<b>0.0000</b>
Test critical values:		
1% level	-2.589020	
5% level	-1.944175	
10% level	-1.614554	



**Return on Asset**

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-0.716390	0.4039
Test critical values:		
1% level	-2.589020	
5% level	-1.944175	
10% level	-1.614554	

At first difference

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-5.903924	0.0000
Test critical values:		
1% level	-2.589020	
5% level	-1.944175	
10% level	-1.614554	

**Debt to equity ratio**

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	0.159890	0.7305
Test critical values:		
1% level	-2.587831	
5% level	-1.944006	
10% level	-1.614656	

At first difference

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-12.12027	0.0000
Test critical values:		
1% level	-2.588059	
5% level	-1.944039	
10% level	-1.614637	

**Interpretation**

Asset turnover and current ratios are stationary at levels since the probability value is less Than 0.05. The Return on Equity, Return on Assets and debt to equity ratio are non-stationary data since probability value is greater than 0.05 at levels and is thus converted into first difference to make it stationery is converted to first difference and is stationary at first difference since the probability value is 0.00 which is less than 0.05.

## Microsoft (Karl Pearson Correlation)

Ratios	Gross profit margin	Asset Turnover Ratio	Current Ratio	Return on equity	Return on Asset	Total Debt to equity
Gross profit margin	1.00	0.919	0.224	-2.69	0.66	-0.860
Asset Turnover Ratio	0.919	1.00	0.143	-0.003	0.7238	-0.950
Current Ratio	0.224	0.143	1.00	-0.539	-0.268	-0.985
Return on equity	-2.69	-0.003	-0.539	1.00	0.669	0.831
Return on Asset	0.660	-0.723	-0.268	0.669	1.00	-0.0652
Total Debt to equity	-0.860	-0.950	-0.098	0.083	-0.652	1.00

## Interpretation-

Correlation is the determination of linear relationship between two distinct variables. Gross profit margin will rise when asset turnover ratio rises and vice versa since they have a strong positive correlation. Gross profit margin will rise when current ratio rises and vice versa since they have a weak positive correlation. Gross profit margin will rise when return on equity falls and vice versa since they have a strong negative correlation. Gross profit margin will rise when return on assets rises and vice versa since they have a moderate positive correlation. Gross profit margin rises when total debt to equity falls and vice versa since they have a strong negative correlation.

**Stationarity Test: Augmented Dickey-Fuller Test****Asset Turnover Ratio**

At levels

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.764914	0.0061
Test critical values: 1% level	-2.587831	
5% level	-1.944006	
10% level	-1.614656	

At first difference

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-9.580707	0.0000
Test critical values: 1% level	-2.588059	
5% level	-1.944039	
10% level	-1.614637	

**Current Ratio**

At levels

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.271155	0.5860
Test critical values: 1% level	-2.588292	
5% level	-1.944072	
10% level	-1.614616	

At first difference

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-11.15087	0.0000
Test critical values: 1% level	-2.588292	
5% level	-1.944072	
10% level	-1.614616	

**Gross Margin Adjusted**

At levels

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.957258	0.0485
Test critical values: 1% level	-2.588530	
5% level	-1.944105	
10% level	-1.614596	

**Return on equity**

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-0.520446	0.4889
Test critical values:		
1% level	-2.587831	
5% level	-1.944006	
10% level	-1.614656	

At first difference

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-9.290076	0.0000
Test critical values:		
1% level	-2.588059	
5% level	-1.944039	
10% level	-1.614637	

**Return on Asset**

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-1.412556	0.1462
Test critical values:		
1% level	-2.587831	
5% level	-1.944006	
10% level	-1.614656	

At first difference

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-9.157586	0.0000
Test critical values:		
1% level	-2.588059	
5% level	-1.944039	
10% level	-1.614637	

**Debt to equity**

At levels

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	1.007045	0.9165
Test critical values:		
1% level	-2.587831	
5% level	-1.944006	
10% level	-1.614656	

At first difference

	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-9.169660	0.0000
Test critical values:		
1% level	-2.588059	
5% level	-1.944039	
10% level	-1.614637	

## Interpretation

Gross margin is stationary at levels since the probability value is less than 0.05 at levels and return on equity, assets turnover ratio, current ratio, return on asset ratio and debt to equity ratio is non-stationary at levels since the probability value is greater than 0.05. The data is converted to first difference and is stationary at first difference since the probability value is 0.00 which is less than 0.05.

## FINDINGS

The study suggests that financial risk management is an important measure in Multinational companies for their survival and profitability. This can be done by comparing financial risk ratios against gross profit margin of the company to ascertain the amount of risk in company and its management. Here, risk ratios and profitability ratios taken were-gross profit margin, debt to equity ratio, current ratio, return on equity, return on assets and asset turnover ratio. By using correlation, financial data of 2 MNCs, impact of financial risk ratios on gross profit margin of the respective companies were determined. The research reflected how different independent financial ratios had how much influence on the profit of the company and which ratios were a significant variable to determine the profit of the company.

The data examined was stationary and those data which were not stationary at levels was converted into stationary at first difference using stationarity test. Through correlation test it was determined that gross margin is affected differently for each Multinational company from different financial risk ratios. In Amazon, it was noticed that gross margin is directly proportional to return on equity, return on asset and total debt to equity and inversely proportional to current ratio and asset turnover ratio. In Microsoft, it was found out that return on asset, current ratio and asset turnover is directly proportional to gross margin and gross margin is inversely proportional to return on equity and total debt to equity. In Amazon, it was observed that return on equity, return on asset and debt to equity ratio are significant independent variables which determine gross margin in a good way. In Microsoft, it was observed that asset turnover ratio and current ratios are significant independent variables to determine gross margin in a good way.

## CONCLUSION

The use of financial risk ratios against gross profit margin is an effective method for managing financial risk in multinational companies (Amazon and Microsoft). By setting financial risk management targets, monitoring financial risk ratios regularly, analysing the impact of risk exposure on gross profit margin, prioritizing risk management actions, diversifying risk, and investing in risk management infrastructure, MNCs can manage their risk exposure effectively and protect their financial performance. Financial risk management is crucial for MNCs as they operate in complex and dynamic environments. By using financial risk ratios against gross profit margin, MNCs can gain a better understanding of their risk exposure and take appropriate measures to manage their risk effectively. This can help them to maintain their financial stability and resilience in the face



of market fluctuations and other external risks. Overall, this research highlights the importance of financial risk management for MNCs and provides practical recommendations for managing financial risk using financial risk ratios against gross profit margin. By implementing these recommendations, MNCs can improve their risk management capabilities and protect their financial performance in the long term.

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