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The Role of Intangible Assets in Predicting NYSE Stock Prices

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A B S T R A C T	I N F O A R T I K E L
This study investigates the relationship between intangible assets and closing stock prices of companies listed on the New York Stock Exchange (NYSE) across multiple sectors. Utilizing secondary data from 2023, the research employs a quantitative approach to analyze the correlation between firm size, represented by intangible assets, and their market valuation, reflected in closing stock prices. The analysis reveals sectoral differences in this relationship, with industries such as technology and financial services showing stronger correlations. These findings highlight the varying impact of asset size on market performance depending on the sector. Additionally, the Data Analysis underscore the role of intangible factors such as investor sentiment and sector-specific dynamics. Theoretical implications contribute to firm valuation models by integrating asset size as a key determinant. Practically, the study provides insights for investors and policymakers assessing the financial health and market potential of NYSE-listed firms. This cross-sectoral approach advances understanding of asset-market interactions. 	

1. INTRODUCTION

The dynamic relationship between a firm's tangible and intangible resources is pivotal to understanding its market valuation and financial performance. Intangible assets, encompassing both tangible and intangible components, often serve as a foundational metric for assessing a company's economic stability and market potential. On the New York Stock Exchange (NYSE), one of the most prominent global markets, the interplay between intangible assets and closing stock prices has garnered considerable attention due to its implications for investor decision-making and corporate valuation models. Recent trends indicate a growing reliance on intangible assets such as intellectual property and brand equity, which may not be fully reflected in traditional asset valuations (Peters & Taylor, 2017) (Chabrak & Craig, 2013; Cyan et al., 2016).

Despite the extensive literature on asset valuation and stock price dynamics, there remains a significant gap in understanding the sectoral variations within the NYSE. Prior studies have predominantly focused on specific industries or generalized market trends, often overlooking the nuanced differences across economic sectors (Banz, 1981; Titman S, Wei KCJ, 2004). This research aims to address this gap by analyzing the correlation between intangible assets and closing prices across various NYSE sectors. The study leverages quantitative methods and sector-specific data to provide a comprehensive analysis of these relationships, thus contributing to a more granular understanding of firm valuation practices (Kothari, Mizik, & Roychowdhury, 2019).

The relationship between a firm's assets and its stock performance has long been explored through various theoretical lenses, notably the efficient market hypothesis and the resource-based view. The efficient market hypothesis holds (Francis et al., 2004) that stock prices reflect all publicly available information, including asset values (Fama, 1970), while the resource-based view considers intangible assets as key sources of competitive advantage and firm valuation (Barney, 1991). However, empirical findings have been mixed. Chabrak and Craig (2013) observed stronger correlations between intangible assets and stock prices in asset-heavy industries like manufacturing, whereas Cyan et al. (2016) highlighted the growing role of intangible assets in technology sectors, where investor perception may outweigh traditional metrics (Ciftci, Kraft, & Weiss, 2016). Sector-specific studies further reveal heterogeneity in how intangible resources are valued. For example, R&D investments and intellectual property (Cormier, Ledoux, & Magnan, 2011) significantly influence stock prices in the technology sector (Morck et al., 2000), while in financial services, tangible assets and regulatory capital requirements play a more dominant role (Andres & Vallelado, 2008) (Fama, 1970) (Francis, LaFond, Olsson, & Schipper, 2004).

The novelty of this study lies in its cross-sectoral approach which integrates both macroeconomic and microeconomic perspectives to explore the determinants of stock price behavior. Unlike previous research, this study explicitly focuses on intangible assets as a primary variable, highlighting its role in shaping market dynamics across diverse industries. By identifying sector-specific trends, the research offers valuable insights for investors and policymakers, emphasizing the importance of tailoring valuation models to reflect the unique characteristics of each sector. (Andres & Vallelado, 2008).

The primary objective of this study is to evaluate the relationship between intangible assets and closing stock prices of NYSE-listed companies. Through this analysis, the research seeks to provide actionable insights into the financial determinants (Peters & Taylor, 2017) of market performance, thereby enhancing the strategic decision-making capabilities (Kothari et al., 2019) of investors and corporate managers.

2. METHODOLOGY

This research employs a quantitative analysis method based on relevant data for the year 2023. The study is cross-sectional in nature, focusing on companies listed on the New York Stock Exchange (NYSE)—one of the largest stock exchanges in the world. The population consists of all companies listed on the NYSE, while the sample includes 7,887 companies from 10 major economic sectors that had complete data available for both intangible assets and closing stock prices.

The analysis involved the following steps:

Data Collection: Data were collected from official financial statements of NYSE-listed companies, covering ten major economic sectors. The dataset was cleaned and filtered to include only firms with complete data for the selected variables.

Research Design: A correlational analysis was conducted to evaluate the relationship between intangible assets and closing prices. The study adopts a cross-sectional approach, examining sector-specific patterns within the same time frame.

Data Analysis: Descriptive statistics were calculated to summarize the dataset, followed by Pearson correlation analysis to identify the strength and direction of relationships between intangible assets and closing stock prices. Further, sector-specific regression models were developed to assess variations in the relationship across industries.

Software Tools: The analysis was performed using statistical software such as Microsoft Excel to ensure accurate computation and visualization of Data Analysis.

By applying this methodology, the study aims to provide a robust analysis of how intangible assets influence stock price behavior, offering valuable insights into sectoral variations within the NYSE.

3. RESULT AND DISCUSSION

The analysis revealed a very weak overall correlation between intangible assets and stock prices (r = 0.121), indicating no strong direct relationship. Furthermore, the overall regression model showed a very low explanatory power (R^2 = 0.0146), meaning intangible assets alone contribute very little to explaining stock price movements.

However, when analyzed by sector, significant differences emerged: The Consumer Non-Cyclicals sector showed a strong relationship (R^2 = 0.8817), indicating that in this sector, intangible assets play a significant role in determining stock prices. In contrast, the Technology and Financial Services sectors exhibited almost no correlation (R^2 = 0.0003 and 0.0015 respectively). The Industrial and Utilities sectors demonstrated moderate correlation levels.

The analysis reveals significant variability in the relationship between intangible assets and closing prices across different sectors listed on the NYSE. The descriptive statistics demonstrate a high degree of variation in both intangible assets and closing prices, with average intangible assets at $9.19 billion and closing prices at $124.35. However, the high standard deviations of $98.89 billion for intangible assets and $6,139.64 for closing prices suggest a wide spread of values, further corroborated by skewness values of 30.99 and 87.53, respectively. These figures

indicate the presence of extreme outliers and asymmetry in the data, reflecting the diversity of company sizes, sectoral characteristics, and stock market performance. For instance, the range for intangible assets spans from $0 to $4.33 trillion, and closing prices vary from $0.000001 to $542,625.03, highlighting the stark contrast between small-cap and large-cap companies. This variability underscores the need for sector-specific analysis, as aggregated data fails to capture the nuanced dynamics that influence stock valuation across industries. Additionally, the kurtosis values of 1,118.28 for intangible assets and 7,732.85 for closing prices emphasize the concentration of values around the mean and the heavy tails, which are indicative of extreme deviations in certain cases. These findings point to the heterogeneity within the NYSE, necessitating a deeper exploration of sector-specific trends to understand the interplay between firm size and market performance comprehensively.

Table 1: Descriptive Statistics

Intangible assets (0FY, FY0, USD)		Price Close (0CY, USD)	
Mean	9185294332	Mean	124,3468218
Standard Error	1113528109	Standard Error	69,13326864
Median	185933275	Median	6,39
Mode	0	Mode	0,000001
Standard Deviation	98891076564	Standard Deviation	6139,641477
Sample Variance	9,77945E+21	Sample Variance	37695197,47
Kurtosis	1118,282848	Kurtosis	7732,847724
Skewness	30,99124996	Skewness	87,53190662
Range	4,32544E+12	Range	542625,03
Minimum	0	Minimum	0,000001
Maximum	4,32544E+12	Maximum	542625,03
Sum	7,24444E+13	Sum	980723,3835
Count	7887	Count	7887
Confidence Level(95,0%)	2182810012	Confidence Level(95,0%)	135,5195165

Source: Data were collected from official financial statements of NYSE-listed companies (2023)

The correlation analysis shows a weak positive relationship between intangible assets and closing prices, with a correlation coefficient of 0.121. This suggests that while larger companies might generally have higher closing prices, the relationship is not strong enough to provide a reliable predictive measure. This finding underscores the potential influence of intangible assets, sectoral characteristics, and external market factors that mediate this relationship.

Table 2: Correlation Analysis

	Intangible assets (0FY, FY0, USD)	Price Close (0CY, USD)
Intangible assets (0FY, FY0, USD)	1	0,120985296
Price Close (0CY, USD)	0,120985296	1

Source: Data were collected from official financial statements of NYSE-listed companies (2023)

The regression analysis across all sectors confirms the limited predictive power of intangible assets on stock prices, with an overall R-squared value of 0.0146. The coefficients indicate a minimal impact of intangible assets on closing prices, and the high p-values suggest that this

relationship is statistically insignificant when analyzed in aggregate. These Data Analysis further highlight the importance of sector-specific dynamics in financial performance.

Table 3: Regression Output

Element	Value	Brief Description
R-squared (R²)	0.01463	Very low predictive power.
Coefficient (Intangible Assets)	194,870	Small impact on stock prices.
p-value (Intangible Assets)	7.53E-5	Statistically significant, but economically negligible.

Source: Data were collected from official financial statements of NYSE-listed companies (2023)

The sectoral regression analysis provides more granular insights, revealing stark differences in how intangible assets influence stock prices across industries. Sectors such as Consumer Non-Cyclicals exhibit a strong relationship, with an R-squared value of 0.8817, indicating that asset size plays a significant role in market valuation for this sector. In contrast, sectors like Technology and Financials show negligible R-squared values, emphasizing the dominance of intangible assets and market dynamics in these industries. Asset-intensive sectors, including Industrial and Utilities, demonstrate Moderate relationships, aligning with traditional valuation models that prioritize tangible assets.

Table 4: Sectoral Regression Analysis

Sector	R-squared	Intercept	Slope (Intangible assets)	P-value (Intercept)	P-value (Intangible assets)
Basic Materials	0.000355	65.824585	$1.759865e{-}09$	0.144833	0.706617
Consumer Cyclicals	0.002843	53.084439	$7.253213e{-}10$	0.000002	0.106040
Consumer Non-Cyclicals	0.881714	-2427.073972	$4.495176e{-}07$	0.000003	0.000000
Energy	0.000074	129.731547	$-4.467225e{-}10$	0.036373	0.854731
Financial	0.000003	77.797876	$7.388715e{-}12$	0.001551	0.945755
Health Care	0.005989	29.131293	$1.680826e{-}09$	0.001384	0.002929
Industrial	0.131667	32.515163	$2.316383e{-}09$	0.000000	0.000000
Other	0.428771	-4.198227	$3.983018e{-}08$	0.701897	0.000000
Real Estate	0.078443	21.580427	$1.293873e{-}09$	0.000000	0.000000
Technology	0.001158	47.440997	$5.675222e{-}10$	0.000631	0.202632

| Utilities | 0.169991 | 27.247453 | 4.009229e-10 | 0.000000 | 0.000001 |

Source: Data were collected from official financial statements of NYSE-listed companies (2023)

These findings collectively underscore the necessity of incorporating additional variables beyond intangible assets to effectively predict stock prices. Sectoral variations highlight the importance of tailored financial models that account for industry-specific characteristics, intangible factors, and external influences. This study provides a foundational understanding of these dynamics, paving the way for future research to integrate broader financial and qualitative metrics for a more comprehensive analysis of stock market performance.

4. CONCLUSSION

This study examined the relationship between intangible assets and closing stock prices among NYSE-listed companies across various sectors. The findings reveal significant variability in the strength and nature of this relationship, emphasizing the critical role of sectoral characteristics and market-specific factors in shaping stock price dynamics.

The descriptive analysis highlights the wide variation in intangible assets and closing prices, reflecting the diverse composition of firms within the NYSE. Correlation and regression analyses show that intangible assets have limited overall explanatory power for stock prices, with an R-squared value of 0.0146 when analyzed across all sectors. However, sectoral regression Data Analysis underscore that this relationship is not uniform. For instance, Consumer Non-Cyclicals exhibit a strong relationship, while Technology and Financial sectors demonstrate negligible associations. These findings suggest that asset-intensive sectors rely more on tangible resources for valuation, whereas innovation-driven and service-oriented sectors are influenced by intangible factors and market perception.

The study underscores the importance of adopting a sector-specific approach to financial analysis, as the influence of intangible assets on stock prices varies widely across industries. For policymakers and investors, these Data Analysis emphasize the need to incorporate additional financial and qualitative variables, such as profitability, brand equity, and market trends, to develop more accurate valuation models.

While the study offers valuable insights, its reliance on a single financial metric and one-year cross-sectional data limits its generalizability. Future research should explore longitudinal datasets and include variables like earnings, cash flow, and intangible assets to provide a more comprehensive understanding of stock price determinants. This study contributes to the literature by highlighting the nuanced interplay between financial metrics and sectoral dynamics, offering a foundation for more tailored and robust financial modeling in the future.

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