“Do intangible assets always create value? The conditional effect of profitability and valuation in the Indonesian market”

AUTHORS	Anak Agung Bagus Amlayasa Felizia Arni Rudiawarni Dedhy Sulistiawan Valentin Radu I Made Wianto Putra

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Anak Agung Bagus Amlayasa (Indonesia), **Felizia Arni Rudiawarni** (Indonesia), **Dedhy Sulistiawan** (Indonesia), **Valentin Radu** (Romania), **I Made Wianto Putra** (Indonesia)

DO INTANGIBLE ASSETS ALWAYS CREATE VALUE? THE CONDITIONAL EFFECT OF PROFITABILITY AND VALUATION IN THE INDONESIAN MARKET

Abstract

Intangible assets play a significant role in the New Economy period we currently live in, yet their capitalization remains challenging due to high failure rates in innovation. The purpose of this study is to investigate the circumstances under which businesses have the potential to raise the future value of using their intangible assets. This study used publicly listed firms on the Indonesia Stock Exchange (IDX) from 2019 to 2024. The final sample comprises 1,974 firm-years that satisfy the selection criteria. A multiple regression analysis was carried out for the assessments. The findings show that the sole possession of intangible assets is insufficient to raise the value of the companies and explicitly shows a negative effect (coefficient = –0.1443, t-value = –2.406). However, the interaction tests reveal that to boost future excess returns, businesses possessing intangible assets are required to demonstrate earnings growth (coefficient = 0.0142, t-value = 2.388) and a strong price-to-book ratio (coefficient = 0.0627, t-value = 7.441). Furthermore, a sector-specific analysis reveals that these results diverge for the technology and healthcare sectors, where intangible assets fail to explain future excess returns (F-statistics = 3.912 and 8.299, respectively). This investigation suggests that the impact of intangible assets on firm value is not uniform; rather, it is contingent upon specific corporate financial fundamentals and industry contexts, proving that investors require validation of innovation through profitability and market strength.

Keywords intangible, assets, innovation, returns, earnings, valuation, Indonesia, R&D

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Anak Agung Bagus Amlayasa, Dr., Lecturer, Faculty of Economics and Business, Accounting Department, University of Warmadewa, Indonesia.

Felizia Arni Rudiawarni, Dr., Professor, Faculty of Business and Economics, Accounting Department, University of Surabaya, Indonesia. (Corresponding author)

Dedhy Sulistiawan, Dr., Professor, Faculty of Business and Economics, Accounting Department, University of Surabaya, Indonesia.

Valentin Radu, Dr., Professor, Faculty of Economics, Accounting Department. Valahia University of Targoviste, Romania.

I Made Wianto Putra, Dr., Lecturer, Faculty of Economics and Business, Accounting Department, University of Warmadewa, Indonesia.

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INTRODUCTION

The relationship between intangible assets and shareholder wealth in Indonesian firms has become a critical focal point in modern financial analysis. The recognition of intangible assets signifies the strategic importance that management assigns to intellectual property. Innovation, which is often rooted in these rights and recorded as an intangible asset, is a vital component of corporate strategy. Despite its importance, many companies remain hesitant to implement innovation-focused strategies due to high failure rates and the need for significant organizational adaptation (Nakata, 2020). Consequently, adding intangible assets presents a considerable challenge.

To enhance national competitiveness in the Industry 4.0 era, the Indonesian government has implemented several key initiatives. An example is the "Making Indonesia 4.0" roadmap, launched by the Ministry of Industry in 2020. This strategic plan, prepared to revitalize the industrial sector through the adoption of technology, is supported by fiscal policies aimed at stimulating research and develop-

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ment (R&D). Under this framework, the Ministry of Finance provided tax incentives to encourage the development of intellectual property. These measures include: exemptions from import duties on goods utilized for research purposes; tax deductions for corporate donations to R&D initiatives; and a two-year loss compensation extension for firms that invest in product development or production efficiency (Ministry of Finance of the Republic of Indonesia, 2024). It is expected to influence managerial behavior, leading to greater innovation investment.

Currently, the Indonesian listed firms are predominantly composed of "old economy" firms. These firms, which rely on traditional machinery and manufacturing, dominate a substantial portion of the market capitalization on the Indonesia Stock Exchange (IDX). This composition contrasts sharply with that of leading firms in the United States and other global markets. In financial reporting, intangible assets – such as patents, copyrights, brand value, and goodwill – serve as proxies for a company's success in R&D and innovation. A key issue is that most firms listed on the IDX are classified as having low intellectual capital.

The problem being studied in this article relates to the ability of Indonesian companies to manage their intangible assets to increase their value. This issue is crucial considering that most companies in Indonesia are still considered old economy firms, while businesses are now moving towards a new economy era that emphasizes the importance of intangible assets for achieving competitive advantage.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The global economic landscape has undergone a fundamental shift in the last few decades. Traditional manufacturing bases are increasingly giving way to knowledge-based enterprises. In this context, the role of assets has evolved significantly, from previously relying on tangible assets to now focusing more on intangible assets. To explain the relationship between intangible assets, firm characteristics, and shareholder value, this study integrates the Resource-Based View (RBV) and signaling theory. These theories provide the foundation for understanding why intangible assets are critical in the "new economy" yet require specific financial conditions to generate value.

The Resource-Based View posits that a firm's sustainable competitive advantage is derived from resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991). In the context of the modern economy, physical assets are often easily acquired and replicated. In contrast, intangible assets – such as proprietary technology, brand equity, and human capital – represent the strategic resources that differentiate firms from their competitors (Hall, 1992). As noted in prior studies, innovation and R&D activities are the engines that create these intangible resources, thereby supporting firm competitiveness. Consequently, under the RBV perspective, firms with substantial intangible assets are expected to generate superior economic performance and, by extension, higher stock returns compared to firms relying solely on tangible assets (Lev & Sougiannis, 1996).

While RBV explains the potential value of intangibles, signaling theory addresses the challenge of communicating this value to the market. Innovation activities are inherently risky and characterized by high failure rates. Furthermore, current accounting standards (e.g., IAS 38) often restrict the capitalization of R&D, leading to significant information asymmetry between managers and external investors regarding the true quality of a firm's innovation (Aboody & Lev, 2000).

Prior studies presented the concept of "new economy" firms, which are characterized by a strategic focus on innovation to create value and enhance competitive advantage. These firms, usually operating in the technology, computer, and telecommunications sectors (Chen, 2008), now dominate the market capitalization of major indices like the S&P 500 (Murphy et al., 2021). The macroeconomic significance of this trend is also reported by the

Global Financial Stability Report (International Monetary Fund, 2020), which implies that innovation is a critical factor for the new economy firms.

A direct consequence of innovation is the heightened importance of intangible assets and R&D activities. Scholarly work confirms that R&D has been shown to support firm competitiveness (McClure & Thomas, 2019), while intangible assets are recognized as substantial drivers of both economic growth and stock returns (Kramer et al., 2011; Hirshleifer et al., 2013).

Despite the strategic importance attributed to R&D activities, such efforts produce innovations that are prone to a high rate of failure (March, 1991; Jia, 2018). The execution of innovation-driven strategies is frequently complicated by elevated failure risks and the imperative for substantial organizational restructuring (Nakata, 2020). In response to the uncertainty, international accounting standards through IAS 38 (IASB, 2014) provide strict criteria for capitalizing R&D expenditures as intangible assets. As a result, a significant portion of the value generated through innovation is not formally recognized on a company's financial statements.

The relationship between intangible assets and shareholder value remains a subject of debate, where proponents of the Resource-Based View argue for a positive association between innovation investments and future stock returns. Previous studies demonstrate that due to conservative accounting standards that require firms to expense R&D immediately, firms often appear undervalued, subsequently generating abnormal returns when the economic benefits of these investments materialize (Lev & Sougiannis, 1996; Chan et al., 2001).

On the other hand, opposing arguments suggest that intangible assets do not guarantee superior returns, as they generate greater uncertainty regarding future benefits compared to tangible assets (Kothari et al., 2002). Additionally, in markets characterized by lower efficiency, "myopic" investors tend to prioritize short-term earnings over long-term innovation potential (Bushee, 1998), creating a theoretical tension that necessitates empirical testing.

Nonetheless, innovation and intangible assets are essential elements that propel competitive advantage (Lev & Daum, 2004; Salamudin et al., 2010). A study by Eisfeldt and Papanikolaou (2014) revealed that firms with substantial intangible investments exhibited accelerated asset growth and increased sales growth. Consequently, intangible assets are a crucial variable for firm growth, thereby enhancing the value. Investment in intangible assets has evolved from being a poor predictor of stock returns between 1963 and 1992 to a powerful one in recent decades (Li, 2025). However, between 1993 and 2022, it became an extremely powerful predictor, and for firms that relied heavily on intangible assets, it even became the main predictor of stock returns.

Due to the high uncertainty and information asymmetry associated with innovation, the mere possession of intangible assets does not guarantee value creation (Aboody & Lev, 2000). In this context, earnings growth serves as a critical "confirmation signal", providing reliable evidence under conservative accounting that unrecorded intangible assets are generating economic returns rather than merely consuming cash (Penman & Zhang, 2002).

Without this confirmation, the market may view high intangible intensity as a sign of agency problems or over-investment (Titman et al., 2004). However, when accompanied by robust earnings growth, the uncertainty diminishes, suggesting that the positive valuation effect of intangible assets is significantly amplified when validated by tangible financial performance.

Moreover, the integration of intangible assets into financial models has been demonstrated to outperform traditional factors in predicting stock returns. Furthermore, capitalizing intangible assets rather than expensing them can reduce earnings volatility, which suggests a stabilizing effect on future corporate earnings. This stabilization effect is particularly pronounced in high-tech industries, where investments in intangible assets are most prevalent (Elkemali, 2024).

Intangible assets demonstrate a positive association with future earnings, thereby serving as a foundation for higher future stock valuations

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(Ritter & Wells, 2006). The impact of intangible assets has been shown to be contingent upon specific firm characteristics (Dancaková et al., 2022). An important issue is the significant uncertainty inherent in innovation (Jia, 2018), the process from which many intangible assets are derived. It is argued that this uncertainty is mitigated when firms holding such assets also demonstrate strong earnings growth. In such cases, the signal of profitability lends credibility to the value of intangible innovations, thereby enhancing the earnings relevance.

Market power is an important variable often attributed to a firm's intangible assets. However, the relationship between intangible assets and firm value can be complex. Firms with higher recorded intangibles may exhibit lower market values under certain conditions (Park, 2019). The findings propose that investors assign a premium to firms that not only possess significant intangible assets but also simultaneously command high market valuations.

Firms with high price to book value (PTBV) are typically valued above their book equity because the market anticipates superior future cash flows derived from unrecorded assets, particularly intangibles, whereas low PTBV often reflects investor skepticism regarding a firm's growth prospects (Fama & French, 1993).

In the context of this study, a high PTBV implies that the market has already "priced in" the potential success of the firm's innovation efforts. We argue that intangible assets are more likely to generate positive excess returns when the firm is already perceived as a high-growth entity, as this valuation premium signals market confidence that the intangibles are valuable economic resources rather than inefficient expenditures.

In summary, while the literature acknowledges the critical role of intangible assets in the new economy, empirical evidence regarding their impact on firm value remains mixed due to inherent risks and uncertainties. Previous research suggests that this relationship is likely not direct but contingent upon other financial fundamentals. However, the specific conditions that validate the value of intangible assets require further empirical clarification.

Motivated by the need for such specific evidence, we established that the main purpose of this study is to investigate the particular conditions that facilitate organizations in enhancing the potential value of their intangible assets.

Therefore, this study proposes the following hypotheses:

H_1: *Intangible assets increase future excess returns.*

H_2: *Earnings growth in firms having intangible assets leads to increased future stock returns.*

H_3: *For firms with intangible assets, the higher the valuation, the higher the future stock return.*

2. METHOD

This study examines companies listed on the Indonesia Stock Exchange (IDX) for the period spanning 2019 to 2024. The database used is sourced from Financial Modeling Prep (FMP) and is available upon request to the authors. To investigate the value relevance of financial statement information and intangible assets, the final sample was constructed using several screening criteria. The firms should present positive earnings, positive earnings per share (EPS) growth, and positive total equity value. This selection is intended to build a sample of firms operating under financially stable conditions, thereby enhancing the relevance of the findings for investor analysis and decision-making.

Table 1. Sample selection

Description	Firm-year
Company-year data from 2019 to 2024	3,713
Incomplete data	–550
Company-year data that does not meet the sample characteristics: 1) profitable company, 2) positive EPS growth, and 3) positive total equity value	–1,189
Total sample	1,974

Table 1 provides the sample selection process, illustrating the dataset and subsequently filtering it to a specific group of companies for the analysis. This study also began with a dataset of 3,713 firm-year observations covering all available data on the stock exchange from 2019 to 2024. It was the initial, unfiltered pool of information.

A two-step filtering process was then applied to refine the data:

1. Data Cleaning: First, we removed 550 observations because the data were incomplete.

2. Applying Specific Criteria: Next, we removed another 1,189 observations that didn't meet their strict sample characteristics. We only use firms that were simultaneously profitable, had positive EPS growth, and maintained positive total equity.

After removing all unsuitable data, the final dataset used for the study consists of 1,974 firm-year observations.

To test the hypotheses, the following equation is used:

$$\begin{aligned} ER_{i,t+1} &= \beta_0 + \beta_1 D\_IA_{i,t} + \beta_2 Delta\_OCF_{i,t} \\ &+ \beta_3 EPS\_GRW_{i,t} + \beta_4 CAPEX\_REV_{i,t} \\ &+ \beta_5 PTBV_{i,t} + \beta_6 MARKTCAP_{i,t} \\ &+ \beta_7 D_{IA} \cdot EPS\_GRW + \beta_8 D_{IA} \cdot PTBV + \varepsilon_{i,t}. \end{aligned} \quad (1)$$

The model specifies the Excess Returns (*ER*), representing the return earned by the firm's stock over a given period, less the market return of a benchmark. Intangible Assets Dummy (*D_IA*) is a crucial binary indicator that captures the presence of reported Intangible Assets on the firm's balance sheet. It takes a value of 1 if the firm possesses intangible assets and 0 otherwise, allowing for the isolation of the effect of non-physical assets on future returns.

Change in Operating Cash Flow (*Delta_OCF*) measures the period-over-period change in cash flow generated from business operations deflated by total assets at the beginning of the period. Earnings Per Share Growth Rate (*EPS_GRW*), a key calculation of profitability and growth, is the rate of change in the firm's earnings per share over a period. Capital Expenditures to Revenue Ratio (*CAPEX_REV*) reflects the firm's investment intensity. It is composed as the total capital expenditures divided by total revenue, indicating the proportion of sales revenue being reinvested into long-term assets for future growth. Price-to-Book Value (*PTBV*), used as valuation multiple, is the ratio of the firm's market price per share to its book value per share. *TBV* is a fundamental factor used to capture the value effect, where lower PTBV firms are often considered "value" stocks. Market Capitalization (*MARKTCAP*) represents the total market value of the firm's outstanding shares, to control for firm size. The model is further refined by including two interaction terms that examine the conditioning effect of intangible assets on other factors, Intangible Assets Dummy times EPS Growth Rate $\left(D_{IA} \cdot EPS\_GRW\right)$ and Intangible Assets Dummy times Price-to-Book Value $\left(D_{IA} \cdot PTBV\right)$. For all variables in the equation, *i*, *t* represent data for firm *i* in period *t*.

3. RESULTS

Table 2 shows a description of the 1,974 firm-year observations used in the study. The mean of ERi,t+1 is 0.174, while the median is –0.031. The presentation indicates that the data are skewed. A few firms with positive returns are pulling the average way up. The median gives a more common picture of the typical firm, which saw a slightly negative return. D_IAi,t is a dummy variable (1 if a firm has intangible assets, zero if otherwise). Its mean of 0.554 means that 55.4% of the observations in the sample are from firms with recog-

Table 2. Descriptive statistics

(*n* = 1,974)	Mean	Median	Mode	Max	Min	Std
$ER_{i,t+1}$	0.174	–0.031	<0.001	28.429	–1.017	1.276
$MRKTCAP_{i,t}$	27.329	28.148	26.065	34.686	4.345	3.747
$D\_IA_{i,t}$	0.554	1	1	1	0	0.497
$Delta\_OCF_{i,t}$	0.024	0.011	–0.001	31.993	–23.043	1.075
$CAPEX\_REV_{i,t}$	0.868	0.037	<0.001	837.500	<0.001	21.802
$PTBV_{i,t}$	2.602	1.201	–1.606	147.750	–1.606	6.711
D_IA · EPSGRW	0.525	<0.001	0	124.346	–1	4.594
D_IA · PTBV	1.562	0.441	0	147.750	0	5.531

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Table 3. Correlation matrix

(*n* = 1.974)	ER_{t+1}	$MRKTCAP_{i,t}$	$D\_IA_{i,t}$	$Delta\_OCF_{i,t}$	EPS_GRWi,t	$CAPEX\_REV_{i,t}$	$PTBV_{i,t}$	D_IA · EPSGRW	D_IA · PTBV
ER_{t+1}	1.00	0.03	0.02	0.02	−0.01	−0.01	0.27***	0.05**	0.31***
$MRKTCAP_{i,t}$	0.08***	1.00	0.18***	−0.10***	−0.16***	−0.03	0.17***	0.00	0.17***
$D\_IA_{i,t}$	−0.02	0.23***	1.00	−0.01	−0.03	−0.03	0.03	0.10***	0.25***
$Delta\_OCF_{i,t}$	0.12***	−0.03	0.00	1.00	0.00	0.00	−0.01	0.00	0.00
$EPS\_GRW_{i,t}$	0.27***	0.05**	0.00	0.18***	1.00	0.00	−0.01	0.00	−0.01
$CAPEX\_REV_{i,t}$	−0.03	0.13***	0.04	0.03	−0.01	1.00	−0.01	0.00	−0.01
$PTBV_{i,t}$	0.22***	0.40***	0.04*	0.06**	0.08***	0.0941***	1.00	0.00	0.78***
D_IA · EPSGRW	0.20***	0.07***	0.10***	0.10***	0.69***	0.01	0.06**	1.00	0.03
D_IA · PTBV	0.06***	0.34***	0.90***	0.03	0.03	0.07***	0.36***	0.12***	1.00

Note: *, **, and *** are significant at α = 10%, 5%, and 1%, two-tailed test. Above the diagonal is the Pearson correlation, below the diagonal is the Spearman correlation.

nized intangible assets. It is a key feature of the dataset. PTBVi,t also shows a mean (2.602) that is more than double the median (1.201). This indicates the presence of high-growth firms with very high valuations that skew the average.

Table 3 provides the correlation between variables. The strongest predictors of higher future returns are a high $PTBV_{i,t}$ and high $EPS\_GRW_{i,t}$. Both have a strong, positive, and statistically significant correlation (coeff = 0.27, significant at 1% level) with future returns. The most significant relationship is with the interaction term $D\_IA \cdot PTBV$ (coeff = 0.31, significant at 1% level). This suggests that the combination of having intangible assets and a high valuation is an even better predictor of future success than either factor alone. Larger $MRKTCAP_{i,t}$ and $Delta\_OCF_{i,t}$ are also positively linked to future returns, but their effects are not as strong. Furthermore, it appears that intangible assets are owned by large companies, as seen from the positive correlation between $MRKTCAP_{i,t}$ and $D\_IA_{i,t}$ (coeff = 0.23, significant at 1% level).

Innovation is fundamentally driven by R&D activities, which are inherently resource-intensive and characterized by a high rate of failure (Nakata, 2020). In accordance with accounting principles, only the expenditures from successful R&D projects can be capitalized as intangible assets.

This high degree of uncertainty and the selective recognition of R&D outcomes on financial statements present significant challenges for investors, who require returns on their invested capital. To empirically test investor reactions in this context, this study utilizes ER_{t+1} as the primary performance metric. The results of this analysis are presented in Table 4.

Table 4. Testing results – full sample

Variables	Dependent variable: ER_{t+1}
	Coeff. *t*-stat
Constant	0.250
	1.274
$D\_IA_{i,t}$	−0.1443***
	−2.406
$Delta\_OCF_{i,t}$	0.0178
	0.682
$EPS\_GRW_{i,t}$	<0.000
	−0.322
$CAPEX\_REV_{i,t}$	−0.0004
	-0.305
$PTBV_{i,t}$	0.0125**
	1.849
$MRKTCAP_{i,t}$	−0.0049
	−0.671
D_IA · EPSGRW	0.0142***
	2.388
D_IA · PTBV	0.0627***
	7.441
F-stats	28.14***
Adj R^2	0.099
DW	2.061
N.Obs	1,974

Note: *, **, and *** are significant at α = 10%, 5%, and 1%, one-tailed test.

The regression test results in Table 4 indicate that the goodness-of-fit model or *F*-test is significant at α =

1% in both models, with F-test values of 28.14 and 5.067, respectively. The Adj R^2 for the $ER_{i,t+1}$ model is 9.9%, meaning that the change in $ER_{i,t+1}$ that can be explained by the independent variable is 9.9% (16%), while the rest is explained by other variables outside the model. According to the test results in Table 4, firms with intangible assets ($D\_IA_{i,t}$) exhibit a reduction in the future excess return ($ER_{i,t+1}$).

The control variables, $Delta\_OCF_{i,t}$, $EPS\_GRW_{i,t}$, and $CAPEX\_REV_{i,t}$, are unable to explain either $ER_{i,t+1}$. Meanwhile, the moderating variables $D\_IA \cdot EPSGRW$ and $D\_IA \cdot PTBV$ have a positive effect on $ER_{i,t+1}$. Our tests indicate that for firms with intangible assets, the higher the *EPS* growth and market strength, the higher the excess return.

To deepen the analysis, this study divided the tests by sector. The impact of innovation on each sector can be different (Dancaková et al., 2022). This study conducted tests on the following sectors: 1) non-financial, 2) financial sector, 3) technology, and 4) healthcare sector.

Table 5 (Columns A and B) shows results for two groups: non-financial and financial sectors. Based on the number of observations, the non-financial sector consists of 1,622 firm-years (or 82.17%), while the financial sector consists of 352 firm-years (17.83%).

Table 5 demonstrates results that are almost the same as Table 4, with an F-stat value for the non-financial sector (Column A) of 16.720, while for the financial sector (Column B) is 57.46, and both are significant at α = 1%. The adjusted R^2 for the non-financial sector (financial sector) is 7.2% (56.3%). The test results in Table 5 show that $D\_IA_{i,t}$ has a negative effect on $ER_{i,t+1}$ for both groups. The test results for the control and moderating variables are also the same as those presented in Table 4. This demonstrates the consistency of the results regarding the influence of intangible asset ownership on excess returns, as well as the influence of its moderating variables.

Table 6 Column A shows the test results for $ER_{i,t+1}$ in the technology sector. The goodness of fit model is significant at α=1% with F-statistics = 3.912 and

Table 5. Testing results – non-financial and financial sectors

Variables	Column A Non-financial sector	Column B Financial sector
	Dependent variable: ER_{t+1}	Dependent variable: ER_{t+1}
	Coeff. t-stat	Coeff. t-stat
Constant	−0.314**	1.038*
	1.645	1.465
$D\_IA_{i,t}$	−0.128**	−0.346**
	−2.113	−1.864
$Delta\_OCF_{i,t}$	0.024	−0.035
	0.933	−0.431
$EPS\_GRW_{i,t}$	0.000	0.008
	−0.409	0.698
$CAPEX\_REV_{i,t}$	−0.001	0.001
	−0.468	0.392
$PTBV_{i,t}$	0.011**	0.204***
	1.773	3.041
$MRKTCAP_{i,t}$	−0.007	−0.045**
	−0.993	−1.810
D_IA · EPSGRW	0.011**	0.089**
	1.920	2.079
D_IA · PTBV	0.044***	0.214***
	5.569	3.076
F- stats	16.720***	57.460***
Adj R^2	0.072	0.563
DW	2.070	1.673
n	1,622	352

Note: *, **, and *** are significant at α = 10%, 5%, and 1%, one-tailed test.

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Table 6. Testing results – technology and healthcare sectors

Variables	Column A Technology sector	Column B Healthcare sector
	Dependent variable: ER_{t+1}	Dependent variable: ER_{t+1}
	Coeff. t-stat	Coeff. t-stat
Constant	−0.896	−0.416
	−0.771	−0.417
$D\_IA_{i,t}$	0.171	0.132
	0.570	0.709
$Delta\_OCF_{i,t}$	−0.368	1.336***
	−0.763	3.305
$EPS\_GRW_{i,t}$	0.037	−0.010
	0.160	−0.318
$CAPEX\_REV_{i,t}$	−0.768*	−0.514
	−1.329	−1.254
$PTBV_{i,t}$	0.004	0.114***
	0.228	2.812
$MRKTCAP_{i,t}$	0.030	0.005
	0.697	0.149
D_IA · EPSGRW	−0.009	−0.005
	−0.038	−0.137
D_IA · PTBV	0.025	−0.031
	1.282	−0.725
F- stats	3.912***	8.299***
Adj R^2	0.280	0.391
DW	1.758	2.069
N	61	92

Note: *, **, and *** are significant at α = 10%, 5%, and 1%, one-tailed test.

Adj R^2 = 28%. It is presented that $ER_{i,t+1}$ in the technology sector is more driven by *CAPEC_REV*; the coefficient is −0.768, which is significant at α=10% (moderately significant at one-tailed test). It implies that the higher the proportion of capital expenditure, the lower the excess return.

Testing in the healthcare sector, as shown in Table 6, Column B, revealed that the F-test for the $ER_{i,t+1}$ is 8.299 and significant at α = 1% with an adjusted *R*-squared value of 39.1%. In the healthcare sector, firms with intangible assets cannot explain $ER_{i,t+1}$. The increase in $ER_{i,t+1}$ is better explained by $Delta\_OCF_{i,t}$ and $PTBV_{i,t}$ than by the existence of intangible assets. In the technology sector and the healthcare sector, the moderating variables of $D\_IA \cdot EPSGRW$ and $D\_IA \cdot PTBV$ also cannot explain $ER_{i,t+1}$. This indicates that in these two sectors, companies with intangible assets are unable to provide added value to investors.

This research also investigates the model with different measurements for incremental net income ($Delta\_NI_{i,t}$), the proportion of capital expenditure to total assets ($CAPEX\_ASSET_{i,t}$), and the moderating effect of dummy intangible assets on the proportion of capital expenditure to total assets $\left(D\_IA \cdot CAPEX\_ASSET\right)$ as depicted in Table 7.

Despite the growth in investment in intangible assets, the predominant portion of expenditure is typically associated with tangible assets (Salamudin et al., 2010). Consequently, firms with intangible assets and capital expenditures will likely realize substantial excess returns in the future, as investors assign higher valuations to these types of firms.

4. DISCUSSION

According to Table 4, the empirical results do not support H_1. The negative reaction to IA information in financial statements indicates that they consider innovation as a risky activity due to its high level of uncertainty (Jia, 2018). According to

Table 7. Testing results – full sample, technology, and healthcare sectors using delta net income

Variables	Column A Full sample	Column B Technology sector	Column C Healthcare sector
	Dependent variable: ER_{t+1}	Dependent variable: ER_{t+1}	Dependent variable: ER_{t+1}
	Coeff. t-stat	Coeff. t-stat	Coeff. t-stat
Constant	0,230	–0,4126	–0,844
	1,177	–0,348	–0,853
$D\_IA_{i,t}$	–0,064	0,4076	0,1711
	0,979	1,154	0,864
$Delta\_OCF_{i,t}$	–0,002	–0,9785*	1,1381***
	0,077	–1,306	2,674
$Delta\_NI_{i,t}$	0,563***	11,8488*	1,2387
	2,645	1,429	1,088
$CAPEX\_ASSET_{i,t}$	0,013	1,2984	2,1762
	0,662	0,415	1,23
$PTBV_{i,t}$	0,013**	0,0071	0,1188***
	1,922	0,381	2,644
$MRKTCAP_{i,t}$	–0,005**	0,0075	0,0218
	0,624	0,17	0,634
D_IA · Delta_NI	0,782	–11,3599*	–1,2382
	1,973	–1,383	–1,017
D_IA · CAPEX_ASSET	1,822***	1,1248	1,4503
	2,510	0,313	0,656
D_IA · PTBV	0,063***	0,023	–0,0282
	7,484	1,184	–0,599
F- stats	28,000***	3,854***	8,236***
Adj R^2	0,114	0,3	0,417
DW	2,06	1,788	1,997
N	1974	61	92

Note: *, **, and *** are significant at α = 10%, 5%, and 1%, one-tailed test.

Nakata (2020), between 50% and 90% of innovations fail to be accepted by consumers, and many are even withdrawn from the market. The failure of intangible assets to trigger positive excess returns provides empirical evidence for Bushee's (1998) premise regarding investors who overlook the strategic value of innovation in favor of short-term earnings targets. This condition reflects the high-risk perception of intangible assets compared to tangible assets, which, according to Kothari et al. (2002), leads investors to demand a higher risk premium or even discount firm valuation.

This behavior is particularly pronounced in this study's setting because the landscape differs significantly in emerging markets like Indonesia. Unlike developed markets, emerging economies are often characterized by higher information asymmetry, weaker legal protection for intellectual property rights, and less sophisticated market intermediaries (Khanna & Palepu, 2010). In such contexts, investors often exhibit skepticism toward intangible assets due to the uncertainty of their realization. This skepticism leads to a market preference for "tangible" metrics – such as current earnings and book value of physical assets – over the abstract promise of future innovation. Prior research in emerging markets suggests that without strong institutional support or immediate financial validation, intangible assets may not immediately translate into higher firm value (Ji & Lu, 2014). This finding shows that Indonesian investors require additional financial signals to justify a premium valuation for intangible assets.

However, based on Table 4, our test results corroborate H_2, which posits that firms possessing intangible assets alongside positive earnings growth will experience future excess returns. This finding aligns with signaling theory, where robust earnings growth serves as a credible mechanism to reduce information asymmetry regarding the quality of intangible investments. As articulated by Penman and Zhang (2002), in an accounting

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environment where R&D is largely expensed, sustainable earnings growth acts as a "confirmation signal" that unrecorded intangible assets are generating actual economic rents rather than merely consuming cash resources.

In the context of the Indonesian market, this tangible performance provides the necessary validation for investors to price in the future benefits of innovation. Consequently, this result strongly supports Jia's (2018) assertion that minimizing uncertainty from innovation is a prerequisite for value creation. When a firm demonstrates robust earnings growth alongside high intangible assets, it signals to the market that its innovation strategy is commercially viable and successfully transitioning from development to monetization. By delivering positive earnings growth, firms effectively transform the "uncertainty" of intangibles into "credibility," leading to higher future excess returns.

The findings in Table 4 support H_3, but differ from those of Park (2019), who found that a higher book value of intangible assets actually reduces their market value. Unlike Park (2019), who found a negative association in the US market, our study in Indonesia documents a positive interaction. Based on the results of our study, we conclude that investors place greater weight on companies with high valuations and intangible assets. The positive interaction suggests that investors place greater weight on companies with high valuations when assessing intangible assets. This aligns with the classification of 'Growth Stocks' by Fama and French (1993), where a high Price-to-Book Value (PTBV) ratio acts as a proxy for a rich investment opportunity set.

For firms with significant intangible assets, a high valuation serves as a crucial external validation. It signals that the market has collectively assessed the firm's unrecorded assets – such as brand equity and technology – as sources of future growth rather than mere expenses. Therefore, unlike traditional manufacturing firms where low valuation might be attractive, for innovation-driven firms in Indonesia, a high PTBV confirms market confidence in the realization of intangible benefits, thereby driving future excess returns.

When we look at the variable controls in Table 4, our test indicates that innovation alone is not enough for investors; companies must also have strong financial performance, as indicated by EPS growth, and market strength, as indicated by price-to-book value. This aligns with the findings of França et al. (2017), who emphasized that a successful business innovation model must incorporate the sustainability dimension.

Overall, these findings support RBV and signaling theory. In this new economy era of the economy, the mere presence of intangible assets may not be sufficient to convince investors. Investors look for credible "signals" that validate the economic potential of these assets. Strong earnings growth serves as a validation signal, indicating that the firm's innovative efforts are successfully translating into commercial success and reducing the uncertainty associated with R&D. Similarly, a high valuation (Price-to-Book Value) signals market confidence in the firm's future growth opportunities rooted in its intangible capital (Fama & French, 1992). Therefore, Signaling Theory suggests that intangible assets create maximum shareholder value only when accompanied by robust financial performance that signals quality and reduces risk.

We also perform additional analysis by grouping our sample based on their sectors. We analyze financial vs non-financial sectors. The results are depicted in Table 5. As detailed in Table 5, the test results confirm that the presence of intangible assets negatively influences excess returns in the subsequent period across both groups. These findings, along with the outcomes for the control and moderating variables, are consistent with those reported in Table 4. Such consistency demonstrates the robustness of the results concerning the relationship between intangible asset ownership, its moderators, and excess returns.

Furthermore, acknowledging the distinct economic characteristics of specific industries, we recognize that the technology and healthcare sectors are particularly distinguished by their substantial reliance on intangible assets. These assets frequently constitute the primary drivers of their competitive advantage, innovation capacity, and overall market valuation. Consequently, to provide a more granular and nuanced perspective, the present study extends its empirical scope to incorporate a dedicated, in-depth analysis focused

explicitly on these two critical, intangible-intensive industries. The results are presented in Table 6.

Our empirical investigations suggest that investors are reluctant to invest in capital expenditures. An increase in the proportion of capital expenditures to revenue ($CAPEX\_REV_{i,t}$) will erode the profit remaining for shareholders. Previous findings by Chung et al. (1998) suggest that capital expenditure can negatively impact company valuation if investors perceive that future investment opportunities are limited. Within the distinct contexts of the technology and healthcare industries, neither the interaction between the existence of intangible assets and earnings growth $\left(D\_IA \cdot EPSGRW\right)$ nor the interaction of intangible assets and the price-to-book ratio $\left(D\_IA \cdot PTBV\right)$ demonstrates a capacity to explain future excess returns. The evidence implies that, pertaining to the technology and healthcare sectors, companies that report intangible assets are nonetheless failing to create or demonstrate a clear, positive impact on shareholder value, suggesting these assets do not provide the expected economic benefits to investors in these contexts. These results align with research by Dancaková et al. (2022). In their study, they found that intangible assets had no significant impact on increasing firms' market value in a sample of 250 companies from France, Germany, and Switzerland. Consistent with their results, this study also shows that, in addition to intangible assets, companies must be able to generate profit growth and maintain a strong market position.

Based on the results of the additional analysis, we conclude that: 1) along with the increasing era of the new economy, items in financial reports increasingly provide value relevance for its users, not only profits, but innovation activities and capabilities also have value relevance, according to research (Barth et al., 2023); 2) each industry has different characteristics, including how an innovation is able to influence investor reactions (Dancaková et al., 2022) which are measured using excess returns; 3) not all innovation-related activities provide added value for investors due to the high risk of failure (Nakata, 2020); and 4) innovations that are valuable to investors are those that support fundamental sustainability (França et al., 2017) and in terms of market strength.

CONCLUSION

The purpose of this study is to identify the specific financial conditions required for intangible assets to translate into tangible shareholder value. The empirical results demonstrate that holding intangible assets does not automatically guarantee higher returns, suggesting that the market views unverified innovation as a risk factor rather than a value driver. Instead, the market only rewards such assets when the firm simultaneously exhibits robust earnings growth and strong valuation multiples, as shown by price-to-book value. Additionally, sector-specific analysis shows that these value creation mechanisms have different valuation dynamics observed in the technology and healthcare sectors compared to the broader market. These findings lead to the conclusion that investors in Indonesia exhibit skepticism toward the uncertainty surrounding innovation. The apparent conditional relationship suggests that investors respond favorably to intangible assets only when those are validated by robust fundamental performance and a strong market position.

This study contributes to the literature on innovation and intangible assets, a central theme of the modern economy. The main impact is the provision of a framework explaining the conditions under which a firm's intangible assets can generate future value. The tests also hold practical implications for investors. It suggests that investment strategies may be enhanced by screening for firms with intangible assets combined with strong fundamental performance.

This paper possesses limitations and also presents opportunities for further investigation. First, this analysis did not differentiate among various types of intangible assets. Future studies could classify these assets by category – such as brand value, patents, or goodwill – to examine their distinct impacts on firm value. Second, the study's focus on a single emerging market invites comparative analysis.

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Further research could also explore whether these findings hold in developed markets, potentially revealing important institutional and economic differences.

AUTHOR CONTRIBUTIONS

Conceptualization: Anak Agung Bagus Amlayasa, Felizia Arni Rudiawarni, Dedhy Sulistiawan, Valentin Radu, I Made Wianto Putra.
Data curation: Felizia Arni Rudiawarni, Dedhy Sulistiawan.
Formal analysis: Felizia Arni Rudiawarni, Dedhy Sulistiawan.
Funding acquisition: Anak Agung Bagus Amlayasa, Dedhy Sulistiawan, I Made Wianto Putra.
Investigation: Felizia Arni Rudiawarni.
Methodology: Felizia Arni Rudiawarni, Dedhy Sulistiawan.
Project administration: Anak Agung Bagus Amlayasa, Felizia Arni Rudiawarni, I Made Wianto Putra.
Supervision: Dedhy Sulistiawan, Valentin Radu.
Validation: Anak Agung Bagus Amlayasa, Dedhy Sulistiawan, Valentin Radu.
Visualization: Dedhy Sulistiawan.
Writing – original draft: Felizia Arni Rudiawarni.
Writing – review & editing: Anak Agung Bagus Amlayasa, Felizia Arni Rudiawarni, Dedhy Sulistiawan, Valentin Radu, I Made Wianto Putra.

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