

Intangible Assets and Valuation Premiums: Evidence from Procter & Gamble's Brand (2010–2025)

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Abstract. The emergence of intangible assets has further increased the systematic divergence between the market and book values of firms, especially in industries that are brand intensive. Traditional accounting based on the IAS 38 expensing rules does not consider internally created brands and most R&D, leaving considerable amounts of economic value unaccounted for. This article analyzes Procter & Gamble (P&G) between 2010 and 2025 through a single-firm longitudinal panel in order to determine the relationship between advertising (Ad Intensity) and R&D (RD Intensity) with the valuation measures such as price to book (P/B) and Tobin's Q and how a simple adjustment to capitalizing R&D changes the reported ratios. The average advertising intensity is 10.8 percent, and the average R&D intensity is 2.6 percent with mean P/B = 5.23 and mean Q = 2.44. It is found that Ad Intensity and P/B are moderately negatively correlated ($r = -0.62$), whereas R&D associations are weaker ($r = -0.19$). An increase in R&D investment over a three-year period cuts average P/B by 3.8 and smooths ROA fluctuations. The evidence indicates that accounting conservatism is at least one reason behind the valuation premium of P&G, and the brand equity and other unrecorded intangibles continue to play a key role in the investment decision-making of investors, analysts, and standard setters.

Keywords: Intangible assets, Brand equity, R&D capitalization, Procter & Gamble

1. Introduction

Financial reporting is increasingly inadequate in representing the full value of firms, whose competitiveness depends on intangible resources such as brands, innovation, and organizational know-how. The many R&D expenditures, mostly internally generated brands, are now expensed under IAS 38 instead of capitalized, and much of the economic value is not reflected in the book value of equity. This disparity is particularly pronounced in the case of Procter & Gamble (P&G), a company in which the market valuation has been significantly higher than the reported asset base. This paper focuses on the relationship between advertising and R&D intensity and value measures like the price-to-book ratio (P/B) and Tobin's Q of P&G in 2010-2025 and the book-market gap is reduced by a simple adjustment to the capitalization of R&D. With a single firm longitudinal panel, it develops brand and R&D proxies (Ad Intensity and RD Intensity) and uses a three-year declining balance capitalization to estimate adjusted book equity and profitability. This methodological approach offers a replicable way to approximate the hidden value of internally generated intangibles.

The analysis provides a useful framework for explaining how perceived value is determined by conservative accounting in industries rich in intangibles. The paper shows that the historical valuation trends and correlations indicate that the valuation premium of P&G over the years is not a speculative overvaluation but a form of intangible real capital. These findings underscore the need for both enhanced voluntary disclosure by firms and reconsideration of current accounting standards to better align reported book values with true economic value.

2. Literature review

International accounting standards remain conservative towards internally generated intangible assets. Under IAS 38 Intangible Assets, internally generated brands, customer lists, and other marketing-related intangibles are not recognized as assets; only identifiable intangibles acquired in business combinations or those that meet capitalization requirements (e.g., patents) are recorded. Prior research highlights that this accounting treatment systematically undervalues the book value of innovation- and brand-intensive companies since significant amounts of internally generated intellectual capital are not recognized on the balance sheet [1]. According to scholars, the accounting practice does not change, and IAS 38 revisions do not alter it, as more emphasis is made by the standard setters on disclosure instead of recognition [2]. As a result, the exclusion of internally created R&D and brand-related resources leads to the ongoing disparity between the market and book values of firms [3].

Tobin's Q (market/replacement value of assets) of more than one depicts that the investors will see more than the physical assets - they will see the potential profitability in the future, the technological ability, or the presence of unrecognized intangible capital in the company. The empirical research confirms that the intangible intensity, which is reported by R&D and advertising, is a key determinant of the difference between book and market value [4]. Recent studies also demonstrate that book value and earnings have become less informative for firms with high intangible intensity, as markets are progressively pricing unrecorded intellectual capital [5].

The main avenues through which companies develop intangible capital are advertising and R&D activities. Empirical evidence indicates that there is a positive relationship between brand equity (proxied by advertising intensity) and market-to-book ratios, as well as lessened cash flow volatility, which suggests investors are aware of brand-driven pricing power [6]. Similarly, R&D investment generates an innovation premium that shows the market expectation of growth [7]. The empirical studies in different regions, including Europe and Latin America, reveal a steady positive correlation between R&D intensity, Tobin's Q, and profitability indicators [8].

Existing literature indicates that firms with strong brands and continuous R&D investment often experience a divergence between book and market values due to unrecognized intangible capital. Given P&G's characteristics, intangible intensity may have similar effects on its valuation.

3. Data measures

This paper analyses the case of P&G over the period 2010-2025 (N = 16) to investigate the relationship between advertising and R&D intensities of the company and their valuation indicators, as well as to assess how the valuation ratios of the company change under a simple R&D capitalization adjustment. All the data were summarized based on the annual reports of P&G (10-K filings) and public market databases, and fiscal-year alignment was used to maintain consistency across financial and market indicators.

Valuation ratios comprise the price-to-book ratio (P/B), price-to-earnings ratio (P/E), as well as an approximate measure of Tobin's Q, calculated as

$$Q = \frac{MarketCapitalization + TotalDebt}{TotalAssets} \quad (1)$$

These indicators represent market-based valuations in comparison to accounting book value and asset base, which gives an impression of the continuous valuation premium at P&G.

Two ratios are built to proxy brand and innovation intensity:

Ad Intensity = Advertising Cost/ Revenue, which represents the effort invested in a brand.

RD Intensity = R&D Expense/ Revenue, which is the cost of innovation compared with sales.

As an example of capitalization of R&D in accounting, a three-year declining-balance stock is estimated as follows.

$$RDCap_t = RD_t + (1 - \delta)RD_{t-1} + (1 - \delta)^2RD_{t-2} \quad (2)$$

The amortization parameter is set to $\delta = 0.33$, which represents the annual amortization rate. The capitalization adjustment is incorporated into adjusted book equity and asset measures (PBadj, ROAadj), which give recalculated measures of the metric.

Table 1 reports the descriptive statistics. Average P/B = 5.23 and Q = 2.44, which is in line with a long-term valuation premium over book equity. Advertising intensity averages 10.8% of revenue (1st quartile = 10.6%; 3rd quartile = 11.2%), while R&D intensity has a mean of 2.6 percent (1st quartile = 2.5%; 3rd quartile = 2.7%). Applying capitalization adjustment causes a slight decrease in mean P/B ratio from 5.23 to 5.03, and the adjusted ROA averages 9.6%, slightly lower than the reported ROA, as expected given the reduction in expensing bias.

Table 1. Summary of key descriptive statistics

metric	Mean	SD	25% quartile	50% quartile	75% quartile
Ad Intensity	0.108	0.006	0.106	0.109	0.112
RD Intensity	0.026	0.002	0.025	0.025	0.027
PB	5.231	2.123	3.374	4.338	7.376
PE	25.36	15.27	19.15	22.02	24.73
Qapprox	2.438	0.771	1.788	2.137	3.088
RDcapt	4090.26	119.44	3978.93	4073.94	4166.58
ROAadj	0.096	0.030	0.080	0.091	0.121
PBadj	5.025	2.017	3.263	4.174	7.050

Source: Yahoo Finance

4. Results

Figure 1 depicts how the Advertising (Ad Intensity) and R&D intensities (RD Intensity) of P&G will change between fiscal years 2010 and 2025. Advertising expenditure consistently constitutes approximately 10-11 percent of sales, whereas R&D expenditure is substantially lower at around 2.5 percent. The comparative consistency of these ratios supports P&G's long-term brand-driven approach, which emphasizes marketing and customer equity rather than research-based innovation.

Ad Intensity exhibits mild cyclic fluctuation, with slight decreases between 2014 and 2019, which coincided with portfolio streamlining and divestiture. Ad Intensity subsequently returned to near pre-pandemic levels around 2022 as post-pandemic marketing spending increased. In contrast, R&D intensity reflects less variability, peaking modestly in 2016 before gradually declining in subsequent years.

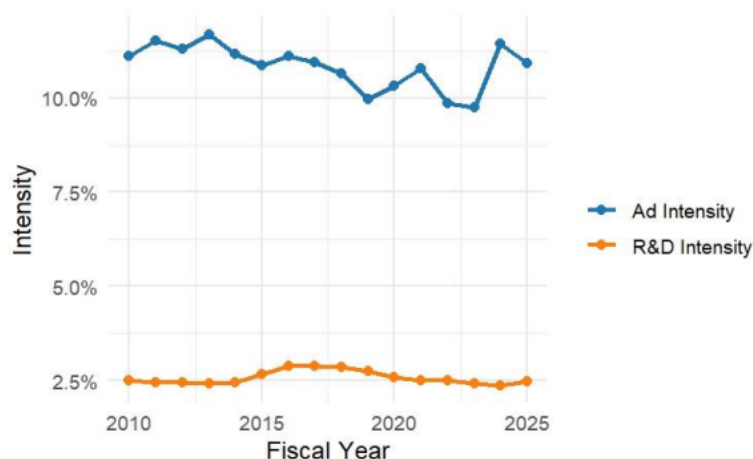


Figure 1. Advertising (Ad Intensity) and R&D Intensities (RD Intensity), 2010-2025

Source: Yahoo Finance

These strategic changes are reflected in the valuation measures. P/B and Tobin's Q trended upward through 2025 (5 years post-pandemic), reaching 8.0 and 3.1, due to increased demand of household goods in the pandemic and low discount rates. Although both ratios moderated after 2022, they remained above 1, indicating continued intangible-based valuation premiums, as shown in Figure 2. Overall, these descriptive trends tend to imply that annual changes in brand intensity or R&D intensity can translate into observable changes in valuation, which is consistent with the view that markets respond to intangible investment.

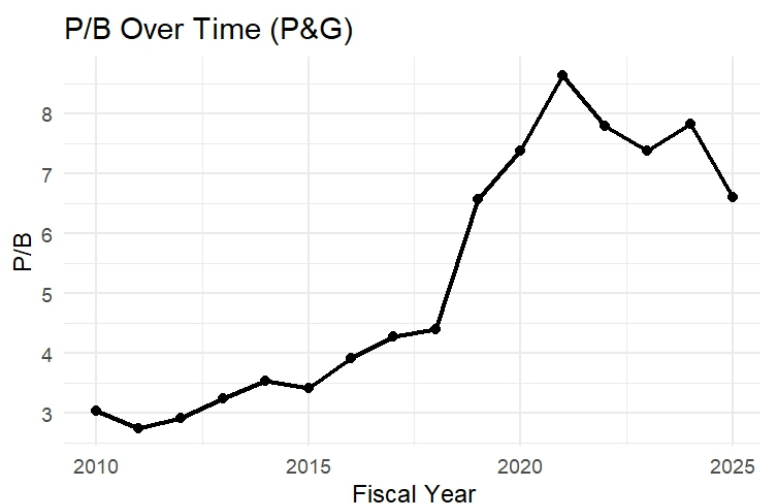


Figure 2. P/B and Tobin's Q relationship (2010-2025)

Source: Yahoo Finance

4.1. Brand intensity and valuation

Figure 3 summarizes the relationship between Advertising Intensity and market valuation. Interestingly, the simple cross-year correlation between Ad Intensity and P/B for P&G is negative, contrary to the expected positive branding premium ($r = -0.62$). The fitted regression line indicates that a one-percentage-point increase in advertising intensity is associated with a decrease in P/B of roughly 1.5-2.0 points. This relationship is descriptive rather than casual and should not be interpreted as a structural effect.

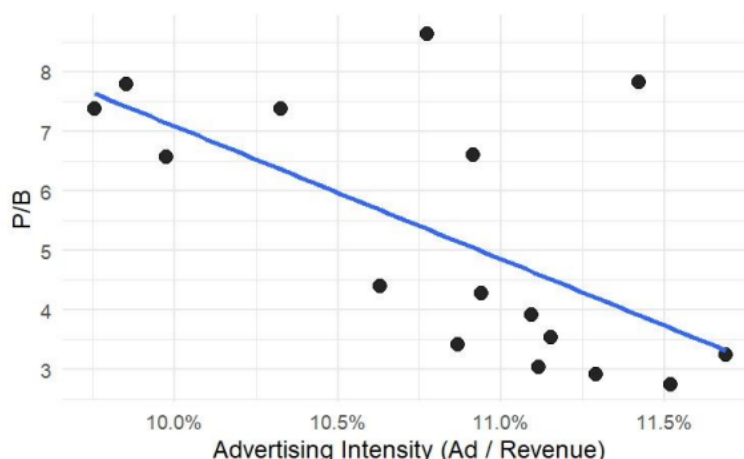


Figure 3. Advertising Intensity vs market valuation

Source: Yahoo Finance

This negative slope is likely driven by timing differences between the recognition of advertising expenditure in accounting statements and the timing at which markets realize its value. In years with advertising spending booms (e.g., 2013, 2022), current earnings are reduced due to expensing requirements, temporarily suppressing book equity and valuation multiples, while the long-term economic benefits of brand investment are not reflected under accounting regulations. Conversely, years with lower Ad Intensity (i.e., 2018, 2019) are associated with margin recovery and a more optimistic investor outlook, temporarily supporting higher P/B ratios.

From an economic perspective, these patterns point to an asymmetric valuation response: it seems that the market will reward sustained brand strength more than a momentary advertising spurt. The observed negative outlier behavior may therefore reflect expensing bias rather than a genuine economic trade-off. The same result has been seen in previous studies, which established that accounting conservatism reduces the contemporaneous relation between marketing investment and firm value (Lev, 2005; Hall, 2000).

Overall, although the slope of the scatterplot is negative, timing and measurement must be taken into consideration. The broader picture remains that branding investment is fundamental to the valuation premium of P&G, even if its economic value is concealed by accounting conventions.

4.2. R&D Intensity and valuation

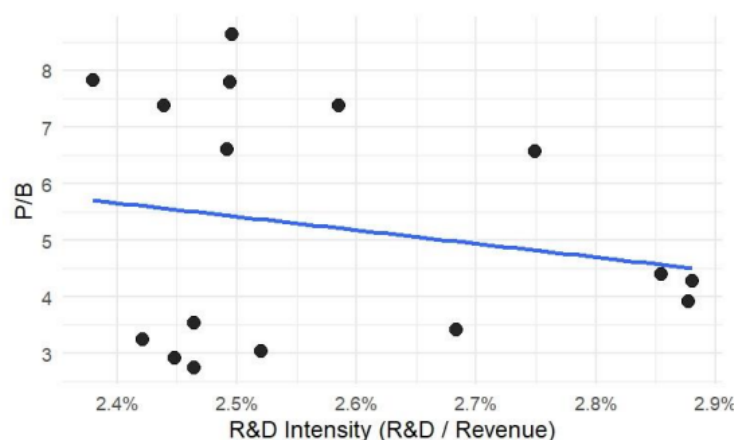


Figure 4. R&D Intensity vs market valuation

Source: Yahoo Finance

Figure 4 illustrates the relationship between R&D Intensity and P/B, showing a weak association ($r = -0.19$). Likewise, the correlation with Tobin's Q is small and negative ($r \approx -0.21$). The fitted regression line is almost flat, indicating that annual variations in R&D intensity has little explanatory power for year-to-year changes in valuation multiples.

This weak correlation is consistent with the profile of P&G as a consumer-staples company, where R&D activities are largely incremental and directed toward formulation, packaging, and process enhancements as opposed to a disruptive technological innovation. Therefore, markets tend to view R&D as a required maintenance instead of a significant source of value.

Nonetheless, the small negative correlation is again in line with accounting treatment, as expensing of R&D reduces current earnings and book equity, lowering P/B even when there are long-term payoffs of innovation. Similar results are established by prior literature, that is, investors perceive the option-like value of R&D (which leads to growth expectations) rather than its immediate effect on valuation multiples.

Compared with the advertising-valuation strength, the R&D-valuation strength is weaker, which highlights the centrality of brand capital in P&G's valuation story. The stability of R&D intensity, together with persistently high Q values ($Q > 1$), suggests that P&G's overall stock of intangible assets remains an important contributor to its valuation premium, even though individual accounting proxies show weak year-to-year correlations with valuation multiples.

4.3. R&D capitalization demonstration

Figures 5 and 6 show the mechanical impact of capitalizing R&D rather than expensing it. Applying a three-year declining-balance amortization ($\delta = 0.33$) generates a simulated R&D capital stock that boosts book equity and total assets, thereby reducing the computed P/B ratio.

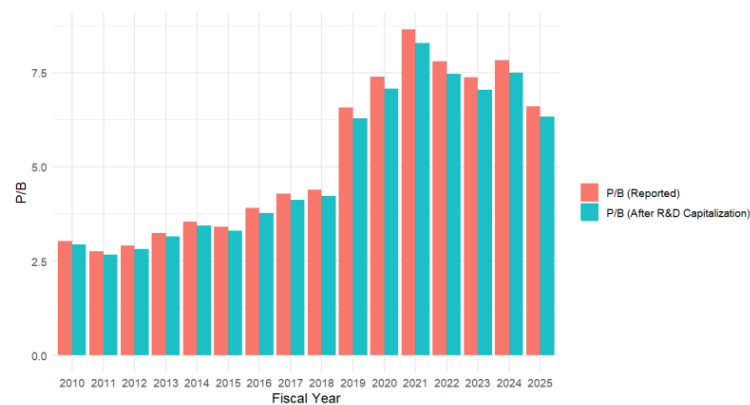


Figure 5. P/B before and after R&D capitalization (2010-2025)

Source: Yahoo Finance

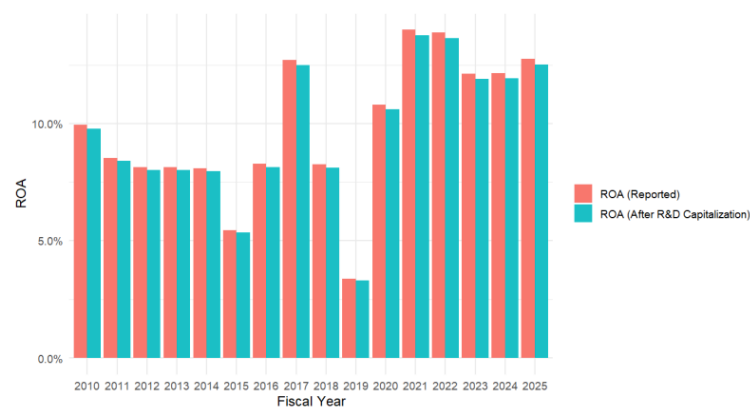


Figure 6. ROA before and after capitalization (2010-2025)

Source: Yahoo Finance

From the dataset, the average P/B of 5.23 is recorded across 2010-2025, while the adjusted P/B (P/B adj) after capitalization is slightly lower at 5.03. The difference is greatest in years with higher R&D investments (e.g., 2015–2016), in which capitalization contributes the most to book value.

Similarly, capitalization has an impact on profitability ratios. The mean ROA decreases by a minor margin to 9.6% from 9.788%, and during years of poor performance (e.g. 2018 and 2020), the adjustment smooths volatility by spreading R&D expenditures among multiple periods, resulting in less bumpy performance metrics.

Overall, the exercise shows that accounting treatment is a minor but systematic contributor to P&G's valuation premium. The outcome of capitalizing R&D is a reduction of the book-market gap, yet $P/B_{adj} > 1$ in all years. This is evidence of the influence from other unrecorded intangibles like brand recognition, relationship with customers, and expertise in operations.

These findings are consistent with earlier research that intangible capitalization enhances the consistency of accounting and market values but cannot bridge the gap completely. In P&G's case, capitalization accounts for only part of the long-run valuation premium, which supports the interpretation that markets capture a wider range of intangibles than accounting standards permit.

5. Discussion

The findings corroborate the hypothesis that the valuation premium within P&G, reflected in its continuously high P/B and Q ratios, can be partially explained by its intangible intensity, even though such contributions are concealed by standard accounting practice. Brand and innovation-related investments in advertising and R&D show long-term regularities at the same time, but in modern statistics, they are loosely correlated with the valuation multiples. This deviation reflects a timing mismatch between intangible investment and financial reporting: whereas financial markets price the expected future returns of brand and R&D capital, IFRS-based book equity excludes such investments, artificially inflating valuation ratios. Theoretically, the results correspond to the view of Tobin that $Q > 1$ represents under-capitalized intangible capital as opposed to speculative mispricing. These excess valuations are supported by brand reputation and scale economies as well as the enduring customer base, which can be seen as the continuation of previous results that brand-based companies enjoy sustained premiums. The weak R&D-valuation relationship, instead, supports the view that in consumer staples, investments in innovation are used to preserve the existing brands, not to provide innovations in new technologies, which aligns with industry-level studies based on the intangible asymmetry [9]. This interpretation is supported by the capitalization exercise. Capitalizing R&D over a three-year horizon lowers P/B (by a small margin of 3.8 percent) and levels ROA, which shows that accounting conservatism inflates valuation multiples. However, post-capitalization, P_{Adj} is still significantly above one, which suggests a high residual unrecognized value probably due to brand equity, distributional relationship, and organizational capital.

This one-firm study limits extrapolation, since the P&G brand-centric model is unlikely to be applicable to the dynamics in an R&D-driven industry like technology or pharmaceuticals. Simple proxies of advertising and R&D intensities cannot capture qualitative factors (brand strength, quality of patents, or organizational capital). Similarly, specific Tobin's Q calculations and unadjusted market data do not consider broader macroeconomic and risk factors in general [10].

This framework could be extended in future work to include external brand valuation data (e.g., Interbrand or Brand Finance rankings) and indicators of innovation quality (e.g., citation-weighted patents). The effect on brand as opposed to the effect on distribution would be better distinguished by cross-firm comparisons among consumer-goods peers (e.g., Unilever, Colgate-Palmolive). For more robust analysis, analysts should consider more sophisticated econometric models that estimate the contribution of intangible capital to valuation through margins, leverage, and interest-rate controls.

6. Conclusion

Procter and Gamble has been shown to have a long-run valuation premium in this paper in terms of its P/B and Q ratios that are significantly above unity, which can be attributed only partially to its intangible intensity in advertising and R&D. This persistent gap highlights a fundamental disconnect between accounting book values and the market's assessment of a firm's true worth. Although internally generated intangibles are treated conservatively under IAS 38, which mandates the expensing of most self-created intangible assets, market investors seem to value these unrecognized assets implicitly as equity values. The mere adjustment in R&D capitalization reduces but does not eliminate the book-market gap, reminding us that much of the economic value of P&G brand equity, customer relationships, and organizational capital remains absent from the balance

sheet. These elements, built over decades through strategic execution and innovation, constitute a formidable economic moat that financial statements fail to capture adequately.

The policy implication is obvious: investors and preparers should explicitly highlight intangible value drivers through supplemental disclosure, and accounting standards should evolve to reflect their ongoing impact on firm value. A more inclusive recognition of internally generated intangibles would provide a fairer representation of a company's invested capital and resource allocation efficiency. The case of P&G is therefore a representation of the contemporary valuation dilemma, which is that intangible-heavy firms have long been disadvantaged by the limitations of balance-sheet reporting. In today's knowledge economy, where intangible assets are the primary source of competitive advantage, this accounting mismatch has never been more pronounced or more consequential for investment analysis and corporate reporting.

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