International Journal of Technology, Management and Humanities Volume 12, Issue 4, 2026

Acquisition Valuation under Market Uncertainty: Comparing Discounted Cash Flow, Comparable Company, and Precedent Transaction Approaches

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Abstract

This study examines how market uncertainty changes the reliability of the three valuation techniques that dominate acquisition practice: discounted cash flow (DCF) analysis, comparable company analysis (trading multiples), and precedent transaction analysis (transaction multiples). The literature reviewed holds that each approach is accurate in a different way. The DCF method anchors value in fundamentals but is sensitive to discount-rate and terminal-value assumptions. Trading multiples are timely but import market mispricing. Precedent transactions embed control premiums but are backward-looking. Building on this literature, the paper develops an analytical framework that decomposes valuation error into an estimation component and a regime component, and derives three testable propositions. The framework is applied to a stylized mid-market acquisition target through a 20,000-iteration Monte Carlo experiment under a calm regime and a stressed regime calibrated to the conditions observed in 2020–2022. Moving from the calm to the stressed regime raises the coefficient of variation of the DCF estimate from 0.117 to 0.319. The comparable company and precedent transaction estimates show smaller increases, to 0.188 and 0.194 respectively. Precedent transaction values decline by only 6.2%, against 29.1% for DCF and 25.2% for trading multiples, which widens the precedent-to-comparables gap from 20% to 50%. The results indicate that no single method dominates under uncertainty. Practitioners should re-weight approaches toward the least-dispersed estimate, re-date precedent samples, and treat the DCF as a scenario instrument rather than a point estimate. The paper contributes a unified error decomposition and a practical re-weighting rule for acquisition valuation in volatile markets.

Keywords: acquisition valuation; discounted cash flow; trading multiples; precedent transactions; market uncertainty; Monte Carlo simulation; mergers and acquisitions

JEL classification: G32, G34, G12, C15

International Journal of Technology, Management and Humanities (2026) DOI: 10.21590/ijtmh.12.04.07

1. Introduction

Acquisition pricing is, at its core, a forecasting problem conducted under incomplete information. The acquirer must estimate the stand-alone value of the target, the value of expected synergies, and the share of that combined value it can retain after paying a control premium. Three valuation approaches have become the conventional toolkit for this task: the DCF model, comparable company analysis, and precedent transaction analysis (Damodaran, 2012; Koller et al., 2020). Survey evidence confirms that practitioners rarely rely on one technique alone. Corporate managers report widespread use of DCF-based capital budgeting (Graham & Harvey, 2001). Acquiring firms combine DCF with market multiples when pricing targets (Mukherjee et al., 2004). Professional analysts move between fundamental and multiple-based models according to context (Demirakos et al., 2004; Pinto et al., 2019).

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How to cite this article: Abiodun, T., & Owoeye, F. (2026). Acquisition valuation under market uncertainty: Comparing discounted cash flow, comparable company, and precedent transaction approaches. *International Journal of Technology, Management and Humanities, 12*(4), 60-68.

Source of support: Nil

Conflict of interest: None

The co-existence of these approaches is usually justified by triangulation: if independent methods converge, the analyst gains confidence in the estimate. That logic assumes, however, that the errors of the three methods are modest and roughly independent. The period from 2020 to 2022 placed this assumption under strain. The onset of COVID-19 produced the largest volatility response in U.S. equity markets on record relative to any previous pandemic (Baker

et al., 2020), with sharp and heterogeneous repricing across industries (Ramelli & Wagner, 2020). This was followed by an unprecedented rebound in deal activity, with global M&A volume surpassing US$5 trillion for the first time in 2021 (Reuters, via Business Standard, 2021). Then came the inflationary and monetary-tightening shock of 2022. Over such a sequence, the inputs to each method move at different speeds. Discount rates and growth expectations reset quickly. Trading multiples reprice daily. Transaction multiples, being observed only when deals close, adjust with a lag of months or years.

The literature on economic uncertainty shows that uncertainty shocks depress investment and hiring because firms value the option to wait (Bloom, 2009; Dixit & Pindyck, 1994). Applied to M&A, elevated policy uncertainty reduces deal frequency and alters deal terms (Bonaime et al., 2018). What remains less developed is a systematic account of how uncertainty affects the *relative* accuracy of the valuation methods that acquirers use to set prices. Studies of valuation accuracy have tended to compare methods within a single market state (Gilson et al., 2000; Kaplan & Ruback, 1995; Liu et al., 2002). The question of how their error properties diverge as uncertainty rises has received little direct treatment. Forecasting research in adjacent management fields reaches a similar conclusion: metrics calibrated on stable baselines lose predictive power when underlying conditions shift (Adesuyi et al., 2022; Feboh, Izuchukwu, & Ajirotutu, 2022).

This paper addresses that gap by examining three related questions. The first concerns how the sources of valuation error differ across the DCF, comparable company, and precedent transaction approaches. The second asks how a transition from a calm to a stressed market regime changes both the level and the dispersion of the value estimates that each approach produces. The third considers what adjustments to method selection and weighting are warranted when acquisitions must be priced under elevated uncertainty.

The study makes three contributions. First, it synthesizes the empirical valuation literature into a unified error decomposition that separates estimation error from regime error. Second, it derives testable propositions about method behavior under uncertainty and illustrates them with a transparent Monte Carlo experiment on a stylized target. Third, it proposes an uncertainty-adjusted triangulation rule that practitioners and boards can apply when fairness opinions and investment committee papers must be prepared in volatile markets.

The remainder of the paper proceeds as follows. Section 2 sets out the theoretical foundations of each method. Section 3 reviews the evidence on valuation accuracy and uncertainty and develops the propositions. Section 4 describes the analytical framework and simulation design. Section 5 reports and discusses the results. Section 6 concludes.

2. Theoretical Foundations of the Three Approaches

2.1 Discounted Cash Flow Analysis

The DCF approach values the target as the present value of expected free cash flows to the firm (FCFF), discounted at the weighted average cost of capital (WACC). Over an explicit forecast horizon of *T* years followed by a perpetuity-growth terminal value, enterprise value is:

$$EV_0 = \sum_{t=1}^{T} \frac{FCFF_t}{(1+WACC)^t} + \frac{1}{(1+WACC)^T} \cdot \frac{FCFF_{T+1}}{WACC - g}$$

where FCFF equals net operating profit after tax (NOPAT) less net reinvestment, and *g* is the long-run growth rate. In the value-driver form popularized by Koller et al. (2020), the terminal cash flow equals NOPAT × (1 − g / RONIC), where RONIC is the return on new invested capital. The formulation makes explicit that growth only creates value when RONIC exceeds WACC.

The theoretical appeal of DCF lies in its direct link to the cash flows the acquirer will own. Its weakness is that value is highly sensitive to a small number of inputs. Fernandez (2007) shows that the many DCF variants in use give the same answer only when their assumptions are internally consistent, which is often not the case in practice. The estimation of the discount rate is a persistent source of error. Fama and French (1997) document that industry cost-of-equity estimates are imprecise, with standard errors that commonly exceed three percentage points per year. The terminal value typically accounts for the majority of enterprise value, so errors in *g* and WACC are magnified. For cash flows generated across currencies and legal entities, translation and consolidation choices add further error, a problem documented in treasury and cross-border finance practice (Dada et al., 2021a; Isiekwu et al., 2021).

For acquisition purposes, the stand-alone DCF value is augmented by the present value of synergies net of integration costs. The maximum price a rational acquirer can pay is:

$$P_{max} = EV_{standalone} + PV(Synergies) - PV(Integration\ costs)$$

2.2 Comparable Company Analysis

Comparable company analysis values the target by applying a multiple observed for publicly traded peers to the target's corresponding value driver:

$$\widehat{EV}_{target} = \tilde{m}_{peers} \times X_{target}, \qquad m_j = \frac{EV_j}{X_j}$$

where *X* is a value driver such as EBITDA, EBIT, or sales, and the tilde denotes a central-tendency statistic, usually the median or harmonic mean. The method rests on the law of one price: firms with similar risk, growth, and profitability

should trade at similar multiples. Its accuracy depends on how well the peer set matches those fundamentals. Alford (1992) shows that selecting peers on industry and earnings growth materially reduces valuation error. Bhojraj and Lee (2002) improve accuracy further by choosing peers on predicted "warranted" multiples. Liu et al. (2002) find that forward earnings multiples outperform cash flow, book value, and sales multiples. Lie and Lie (2002) report that asset-based and forward-looking multiples are more accurate than sales-based ones. Plenborg and Pimentel (2016) consolidate these findings into best-practice guidance on peer selection, multiple choice, and treatment of outliers.

Trading multiples have two structural limitations in acquisitions. They reflect minority, marketable interests and so exclude a control premium. They also inherit whatever mispricing prevails in the market. If the market as a whole is over- or under-valued, comparable company analysis will reproduce that error faithfully (Rhodes-Kropf et al., 2005; Shleifer & Vishny, 2003).

2.3 Precedent Transaction Analysis

Precedent transaction analysis applies multiples paid in completed acquisitions of similar targets. Because those prices were negotiated for control, they embed a control premium and, in many cases, a share of anticipated synergies. Schwert (1996) shows that pre-bid run-ups and subsequent markups jointly determine the premiums paid. Bargeron et al. (2008) document that public acquirers pay significantly higher premiums than private-equity acquirers, so the buyer mix in a precedent sample directly affects the multiples it produces. Officer (2007) finds that unlisted targets are acquired at discounts of roughly 15% to 30% relative to listed comparables, which reflects the price of liquidity. Koeplin et al. (2000) document a private company discount in transaction multiples.

The central weakness of precedent analysis is temporal. A precedent multiple records market conditions, financing terms, and strategic rationales prevailing at the date of the earlier deal. When conditions shift, the sample becomes stale. Merger waves cluster in periods of high valuations and abundant liquidity (Harford, 2005), so precedent samples are disproportionately drawn from buoyant markets. The method also tends to rely on small samples with incomplete disclosure, particularly for private targets.

2.4 Synthesis

Table 1 summarizes the theoretical properties of the three approaches.

Table 1: Theoretical Properties of the Three Valuation Approaches

Property	*DCF*	*Comparable companies*	*Precedent transactions*
Value basis	Intrinsic, cash-flow based	Relative, minority marketable	Relative, control basis
Control premium included	No (added separately)	No	Yes
Primary error source	Discount rate, terminal value, forecasts	Peer selection, market mispricing	Sample staleness, deal-specific terms
Speed of response to new information	Immediate (analyst-driven)	Immediate (market-driven)	Lagged (closing-driven)
Key references	Kaplan & Ruback (1995); Koller et al. (2020)	Alford (1992); Liu et al. (2002)	Schwert (1996); Officer (2007)

3. Market Uncertainty and Valuation Error: Literature and Propositions

3.1 Empirical Evidence on Relative Accuracy

The most direct tests of valuation accuracy use completed transactions as the benchmark. Kaplan and Ruback (1995) compare the DCF values implied by management forecasts in 51 highly leveraged transactions with the prices subsequently paid. They find that DCF estimates fall within 10% of transaction values on average and perform at least as well as comparable-company and comparable-transaction methods. This result is consistent with treating the approaches as complements whose errors are not perfectly correlated. Gilson et al. (2000) apply the same logic to firms emerging from Chapter 11 and find much wider errors: the ratio of estimated to market value ranges from less than 20% to more than 250%. They attribute the dispersion partly to incentives of the parties that produce the forecasts. Kim and Ritter (1999) find that multiples based on historical accounting numbers value initial public offerings imprecisely, and that forecast-based multiples perform substantially better.

Analyst-practice research confirms that model choice is contingent. Demirakos et al. (2004) find that analysts favor price–earnings multiples in stable industries but turn to DCF where growth or volatility is high. Gompers et al. (2016) report that private equity investors rely primarily on internal rates of return and exit multiples, and rarely on formal DCF models with a WACC. DeAngelo (1990) shows that investment bankers in management buyouts combine several methods and treat valuation as a negotiation range rather than a point estimate. Pinto et al. (2019) find that market

multiples are the most widely used approach among CFA charterholders, followed by DCF.

Accuracy also depends on the quality of the inputs that firms report. Studies of financial reporting infrastructure show that transparent accounting systems and data-driven tax and reporting controls reduce the noise in disclosed earnings and cash flows on which both DCF and multiples depend (Bola-Sadipe et al., 2019; Bola-Sadipe et al., 2022). Comparative work on data verification and risk screening in financial systems makes the same point for due diligence: the reliability of any valuation is bounded by the reliability of the data that enter it (Peteranaba et al., 2022).

3.2 Uncertainty as a Distinct Source of Error

Uncertainty enters valuation through at least three channels. The first is the *cash flow channel*. When demand conditions become volatile, forecast errors in revenue and margin widen. Research on predictive budgeting and demand forecasting shows that models estimated on stable historical relationships degrade sharply when operational and market signals become noisy (Adesuyi et al., 2022; Aifuwa et al., 2020). Studies of supply-chain disruption report the same pattern for lead times and inventory, which feed directly into working-capital forecasts (Feboh, Ijagbemi, et al., 2022). Forecasting performance indices calibrated on baselines lose reliability when scope and conditions change mid-project (Feboh, Izuchukwu, & Ajirotutu, 2022). Risk-modeling research adds that legal and regulatory uncertainty creates cost exposures that are poorly captured by point forecasts (Ajirotutu et al., 2022).

The second is the *discount-rate channel*. Uncertainty shocks raise risk premia and the dispersion of expected returns. Baker et al. (2016) show that their economic policy uncertainty index is associated with greater stock price volatility and reduced investment. The equity risk premium implied by market prices rose sharply in March 2020 before retracing (Damodaran, 2020). Because terminal value is a convex function of (WACC − g), a symmetric increase in the uncertainty of WACC produces an asymmetric, right-skewed distribution of DCF values.

The third is the *market-pricing channel*. Under the misvaluation hypothesis, acquisitions cluster when market valuations deviate from fundamentals (Rhodes-Kropf et al., 2005; Shleifer & Vishny, 2003). Harford (2005) shows that merger waves require sufficient capital liquidity in addition to economic shocks. Uncertainty therefore affects not only the level of multiples but also the composition of the transaction sample from which precedent multiples are drawn. Bonaime et al. (2018) document that higher policy uncertainty reduces M&A activity through a real-options channel, and that deal premiums, termination fees, and material-adverse-change clauses indicate a stronger bargaining position for targets during uncertain periods. Bloom (2009) shows how uncertainty raises the option value of waiting, so deals that do close during uncertain periods may be systematically different from those that are postponed.

3.3 Propositions

Synthesizing these strands, the study advances three propositions.

- **Proposition 1 (Dispersion).** An increase in market uncertainty raises the dispersion of value estimates for all three approaches. The increase is largest for DCF, because DCF combines forecast uncertainty with the convexity of terminal value in the discount rate.
- **Proposition 2 (Staleness).** Under a regime shift, precedent transaction values adjust more slowly than DCF and trading-multiple values. The gap between precedent and comparable-company estimates therefore widens beyond the level explained by the control premium.
- **Proposition 3 (Re-weighting).** When estimate dispersion differs across methods, a triangulation weighted by the inverse of each method's variance, with precedent estimates adjusted for staleness, produces a less error-prone negotiating anchor than equal weighting.

4. Analytical Framework and Research Design

4.1 Error Decomposition

Let V^* denote the unobservable fair value of the target and $\hat{V}_k$ the estimate produced by method $k \in$ {DCF, CCA, PTA}. The log valuation error can be decomposed as:

$$\ln\left(\frac{\hat{V}_k}{V^*}\right) = \underbrace{b_k(s)}_{\text{regime bias}} + \underbrace{\varepsilon_k}_{\text{estimation error}},$$

$$\varepsilon_k \sim \left(0,\ \sigma_k^2(s)\right)$$

where s indexes the market regime. The regime bias $b_k(s)$ captures systematic over- or under-valuation that arises because a method's inputs reflect a different market state from the one in which the acquisition will be consummated. For precedent transactions this bias stems from sample staleness. For trading multiples it stems from market-wide mispricing. The estimation error captures input uncertainty that is unbiased but noisy, and its variance $\sigma_k^2(s)$ is allowed to differ by regime. Propositions 1 and 2 correspond to statements about $\sigma_k^2(s)$ and $b_k(s)$ respectively.

Under this decomposition, a triangulated estimate with weights w_k has variance $\sum w_k^2 \sigma_k^2$ when errors are independent. The variance is minimized by inverse-variance weights:

$$w_k^* = \frac{1/\sigma_k^2}{\sum_j 1/\sigma_j^2}$$

Inverse-variance weighting addresses only the estimation component. The regime component must be corrected separately, for example by re-dating the precedent sample or by adjusting precedent multiples for the observed change in trading multiples since each deal closed.

4.2 Simulation Design

Because V^* is unobservable in real transactions, the propositions are illustrated through a controlled numerical experiment. A stylized mid-market industrial target is specified with base-year revenue of US$500 million, an EBIT margin of 15%, depreciation and amortization of 4% of revenue, a 25% tax rate, and a reinvestment rate of 40% of NOPAT. The DCF uses a five-year explicit horizon and a value-driver terminal value with RONIC of 12%. Each method is simulated for 20,000 iterations under two regimes.

The *calm* regime reflects conditions typical of the 2017–2019 period. The *stressed* regime is calibrated to the qualitative features of 2020–2022: lower and more uncertain growth, compressed and more uncertain margins, a higher and more volatile cost of capital, compressed and more dispersed trading multiples, and precedent multiples that remain anchored to transactions closed before the shock. In each iteration, the comparable company estimate applies the median of eight peer multiples drawn from a lognormal distribution to the target's simulated forward EBITDA. The precedent estimate applies the median of ten transaction multiples drawn in the same way. Table 2 reports the parameters. The simulation was implemented in Python (NumPy) with a fixed random seed for replicability.

Table 2: Simulation Parameters by Regime

Parameter	*Calm regime*	*Stressed regime*
Revenue growth, years 1–5	Normal (5.0%, 1.0%)	Normal (3.0%, 3.0%)
EBIT margin	Normal (15.0%, 1.0%)	Normal (14.0%, 2.5%)
WACC	Normal (9.0%, 0.5%)	Normal (10.5%, 1.5%)
Terminal growth	Uniform (2.0%, 3.0%)	Uniform (1.5%, 3.0%)
Peer EV/EBITDA (median; log-s.d.)	7.5×; 0.15	6.0×; 0.30
Precedent EV/EBITDA (median; log-s.d.)	9.0×; 0.20	9.0×; 0.35
Peers / precedents per draw	8 / 10	8 / 10

Note. The calm-regime precedent multiple embeds a 20% control premium over trading multiples, within the range reported by Schwert (1996) and Bargeron et al. (2008). The stressed-regime precedent median is held at its calm level to represent sample staleness; its dispersion rises because the sample mixes pre- and post-shock deals. WACC is floored at terminal growth plus three percentage points to preserve model stability.

4.3 Scope of Inference

The experiment is illustrative rather than empirical. It does not estimate the magnitude of valuation errors in any population of real deals. Its purpose is to show that the propositions follow from plausible parameter choices and to quantify the mechanisms under transparent assumptions. A similar use of scenario-based analytics to make forecasting assumptions explicit is recommended in the performance-monitoring and business-intelligence literature (Agwuna et al., 2022; Ogbole et al., 2021).

5. Results and Discussion

5.1 Distribution of Value Estimates

Table 3 reports summary statistics for each method under both regimes. In the calm regime, the three approaches behave as conventional triangulation assumes. Mean DCF and comparable-company values lie within 1.4% of each other (US$740 million and US$750 million). The DCF implies an EV/EBITDA multiple of about 7.4×, close to the 7.5× peer median. The precedent estimate exceeds both by roughly 20%, which matches the control premium built into the calibration.

5.2 Proposition 1: Dispersion

The results support Proposition 1. Every method becomes less precise under stress, but DCF deteriorates most. Its coefficient of variation rises by a factor of 2.7, against 2.3 for comparable companies and 2.1 for precedents. The stressed DCF distribution is also right-skewed, with a mean of US$525 million against a median of US$499 million. The skew follows from the convexity of terminal value in (WACC − g): low-WACC draws inflate value more than high-WACC draws deflate it.

Table 3: Simulated Enterprise Value by Method and Regime (US$ millions, 20,000 iterations)

Statistic	*DCF (calm)*	*CCA (calm)*	*PTA (calm)*	*DCF (stressed)*	*CCA (stressed)*	*PTA (stressed)*
Mean	740	750	900	525	561	844
Median	734	748	897	499	556	832
Standard deviation	87	61	83	168	106	164
Coefficient of variation	0.117	0.081	0.092	0.319	0.188	0.194
5th percentile	608	653	770	304	397	595
95th percentile	891	853	1,042	825	744	1,131
Change in mean vs. calm	—	—	—	−29.1%	−25.2%	−6.2%

Note. CCA = comparable company analysis; PTA = precedent transaction analysis. Terminal value accounts for 79.4% of mean DCF value in the calm regime and 74.4% in the stressed regime.

Table 4 isolates this mechanism. Holding growth and margin at their calm means, a one-point change in WACC moves value by 11% to 16%, and the effect is largest when WACC is low. Terminal growth matters much less under the value-driver formula, because higher growth requires more reinvestment when RONIC is fixed. This finding is consistent with Koller et al. (2020), who stress that growth adds value only when returns exceed the cost of capital.

Table 4: DCF Sensitivity to WACC and Terminal Growth (US$ millions; growth 5%, EBIT margin 15%)

WACC	*g = 1.5%*	*g = 2.0%*	*g = 2.5%*	*g = 3.0%*
8.0%	823	847	876	910
9.0%	704	718	734	752
10.0%	613	621	629	639
11.0%	542	546	550	555
12.0%	484	486	488	489

The practical implication is that, in a stressed market, the DCF range at the 5th to 95th percentile (US$304 million to US$825 million) is too wide to anchor a negotiation on its own. The DCF remains indispensable for understanding *why* value changes, but it should be presented as a set of scenarios rather than a single figure. This interpretation agrees with Kaplan and Ruback (1995), whose DCF accuracy depended on forecasts prepared for specific transactions, and with Gilson et al. (2000), who found far wider DCF errors where cash flow forecasts were less reliable.

5.3 Proposition 2: Staleness

The results also support Proposition 2. Mean precedent values fall by only 6.2% between regimes, while DCF and comparable-company values fall by 29.1% and 25.2%. As a result, the ratio of precedent to comparable-company value rises from 1.20 to 1.50. Only the first 20 percentage points of that gap reflect a control premium. The remaining 30 points reflect the regime bias $b_k(s)$ of a sample drawn from pre-shock deals.

This mechanism has direct consequences for the acquirer. A buyer that relied on a precedent-only analysis in a stressed market would anchor its offer to multiples of about 9.1× EBITDA when the target's peers trade at about 6.1× on the same forward EBITDA. That would overpay unless synergies are large enough to close the difference. The finding is consistent with evidence that merger waves cluster in high-valuation periods (Harford, 2005; Rhodes-Kropf et al., 2005), so that precedent samples are skewed toward buoyant markets. It also reinforces Bonaime et al. (2018): when uncertainty strengthens the target's bargaining position, sellers have an incentive to cite pre-shock precedents.

5.4 Proposition 3: Re-weighting

Table 5 compares three triangulation rules. Under equal weighting, the stressed-regime anchor is US$643 million. Inverse-variance weighting shifts weight toward the comparable-company estimate, the least dispersed, and lowers the anchor to US$618 million. If precedent multiples are also re-dated by scaling them by the 20% compression in trading multiples (from 7.5× to 6.0×), the adjusted precedent value falls to US$675 million. Its weight rises to 31.8% because its dispersion also falls, and the triangulated anchor becomes US$590 million.

Table 5: Triangulated Value under Alternative Weighting Rules (US$ millions)

Weighting rule	*DCF weight*	*CCA weight*	*PTA weight*	*Calm regime*	*Stressed regime*
Equal weights	33.3%	33.3%	33.3%	797	643
Inverse-variance	24.2% / 21.9%	49.2% / 55.1%	26.6% / 23.0%	787	618
Inverse-variance with re-dated PTA	— / 19.4%	— / 48.8%	— / 31.8%	—	590

Note. Where two weights are given, the first applies to the calm regime and the second to the stressed regime. Re-dating multiplies precedent values and their standard deviation by 0.8.

The re-weighted, re-dated anchor is about 8% below the equal-weighted figure. For a transaction of this size, the difference is roughly US$53 million of enterprise value. That amount is large relative to typical synergy estimates for a mid-market target. Proposition 3 is therefore supported in the illustrative setting: correcting both the estimation and the regime components of error gives a materially different negotiating anchor from mechanical averaging.

5.5 Discussion

Three broader implications follow. First, the relative merits of the methods are not fixed. In calm markets, comparable-company analysis is the most precise estimator, and the three methods agree. In stressed markets, precision falls across the board and agreement breaks down, so the analyst's task shifts from averaging to diagnosing which estimates are biased.

Second, the speed at which each method's inputs update should be treated as an explicit valuation parameter. Precedent transactions should be filtered by date and adjusted for subsequent movements in sector trading multiples. Analysts should report the time-weighted age of the precedent sample alongside the multiples, a practice that would make staleness visible to boards and fairness-opinion committees.

Third, the DCF's value under uncertainty lies in structure rather than precision. Scenario-based DCF analysis, combined with monitoring dashboards that track the key value drivers after signing, allows acquirers to see which assumptions are moving (Agwuna et al., 2022; Ogbole et al., 2021). Linking revenue assumptions to customer and pipeline analytics (Dada et al., 2021b; Sakyi, Nnabueze, et al., 2022), and post-close targets to a KPI framework (Sakyi, Filani, et al., 2022), helps to translate valuation assumptions into accountable integration milestones. Cross-border acquisitions also require valuation teams to coordinate FX and treasury assumptions with the CFO function from the outset (Dada et al., 2021a; Isiekwu et al., 2021). In financial-services targets, product-innovation cycles add a further source of forecast uncertainty that the DCF must model explicitly (Oluwo et al., 2022).

6. Conclusion

This study set out to determine how market uncertainty alters the reliability of the three principal acquisition valuation approaches. Regarding the sources of valuation error, the review showed that the methods fail for different reasons. The DCF is driven by discount-rate and terminal-value assumptions. Comparable-company analysis inherits market-wide mispricing. Precedent transaction analysis inherits the conditions of past deals. Regarding the effect of a regime shift, the numerical illustration showed that a calm-to-stressed transition increases dispersion for all methods, most for the DCF. It also showed that precedent values adjust far more slowly than the other two, widening the precedent-to-comparables gap from 20% to 50%. Regarding method selection and weighting, the paper proposed an uncertainty-adjusted triangulation rule that weights methods by inverse variance and re-dates precedent multiples. In the illustration, that rule produced an anchor about 8% below simple averaging.

For practitioners, the findings suggest four guidelines for acquisitions priced in volatile markets:

1. Present DCF results as explicit scenarios with probability weights, and disclose terminal-value share and WACC sensitivity.
2. Report the age profile of precedent samples, exclude or adjust transactions closed before a regime shift, and reconcile precedent multiples to current trading multiples.
3. Weight methods according to their measured dispersion rather than by convention, and document the weights in investment committee and fairness-opinion materials.
4. Protect against residual valuation risk through deal structure, such as earn-outs, deferred consideration, or price-adjustment mechanisms, rather than through a higher headline price.

6.1 Limitations

The study has three main limitations. First, the Monte Carlo experiment uses a stylized target and assumed parameter distributions. The magnitudes reported illustrate mechanisms and should not be read as estimates of real-world error rates. Second, the framework treats method errors as independent. In practice, analysts often calibrate

DCF assumptions to observed multiples, which induces correlation and reduces the diversification benefit of triangulation. Third, the analysis does not model synergies, financing structure, or the strategic interaction between bidders, each of which affects the final price.

6.2 Directions for Future Research

Future work should test the propositions on transaction data. A natural design would compare DCF values disclosed in fairness opinions and merger proxy statements with comparable-company and precedent analyses in the same documents, across periods of high and low measured uncertainty such as the Baker et al. (2016) policy uncertainty index or option-implied volatility. A second line of research could estimate how quickly precedent multiples converge to current trading multiples after a shock, which would allow a data-driven re-dating adjustment. A third could examine whether acquirers that disclose wider valuation ranges achieve better post-merger returns, linking valuation discipline to the long-run performance literature (Moeller et al., 2004).

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