Analysis Report

This report is structured as follows.

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Descriptive Statistics

The table below presents descriptive statistics of the differences (errors) of estimations across the four methods analyzed.

Method	Difference	Mean	SEM	SD
DCF	Diff: Lower Limit to Offer Price	-22.596	4.982	32.288
	Diff: Median to Offer Price	-12.317	3.862	25.027
	Diff: Higher Limit to Offer Price	0.414	3.595	23.301
LTM	Diff: Lower Limit to Offer Price	-51.541	13.985	74.002
	Diff: Median to Offer Price	-27.636	9.275	56.417
	Diff: Higher Limit to Offer Price	-12.901	10.614	56.163
NTM	Diff: Lower Limit to Offer Price	-44.892	17.272	99.222
	Diff: Median to Offer Price	-30.713	12.979	81.051
	Diff: Higher Limit to Offer Price	-14.027	13.496	77.530
Analyst	Diff: Lower Limit to Offer Price	-58.415	18.733	70.093
	Diff: Median to Offer Price	-37.465	13.856	53.665
	Diff: Higher Limit to Offer Price	-12.194	9.294	34.776

The DCF method shows the least deviation at the higher limit, with a mean difference of approximately 0.41, suggesting a close match to the offer price at this percentile. Conversely, at the lower limit, DCF predictions are considerably underestimated, with a mean difference of -22.60. The median predictions are moderately off with a mean difference of -12.32.

The LTM method exhibits a pronounced underestimation across all ranges, with the most substantial deviation at the lower limit (M = -51.54), followed by the median (M = -27.64) and the higher limit (M = -12.90). This pattern suggests a consistent underestimation of offer prices by the LTM method.

NTM predictions are similarly conservative, with all three estimation points showing notable underestimations—most severe at the lower limit (M = -44.89). The median and higher limit predictions are also less accurate but show slightly better proximity to the actual offer prices than the LTM method.

The Analyst method results in the largest underestimations at the lower limit (M = -58.42), implying significant caution or pessimism in their predictions. However, like DCF, the higher limit predictions are much closer to the actual offer prices, with a mean difference of -12.19.

The bar graph below highlights the mean differences with 95% confidence intervals, further emphasizing the consistent underestimation by each method.

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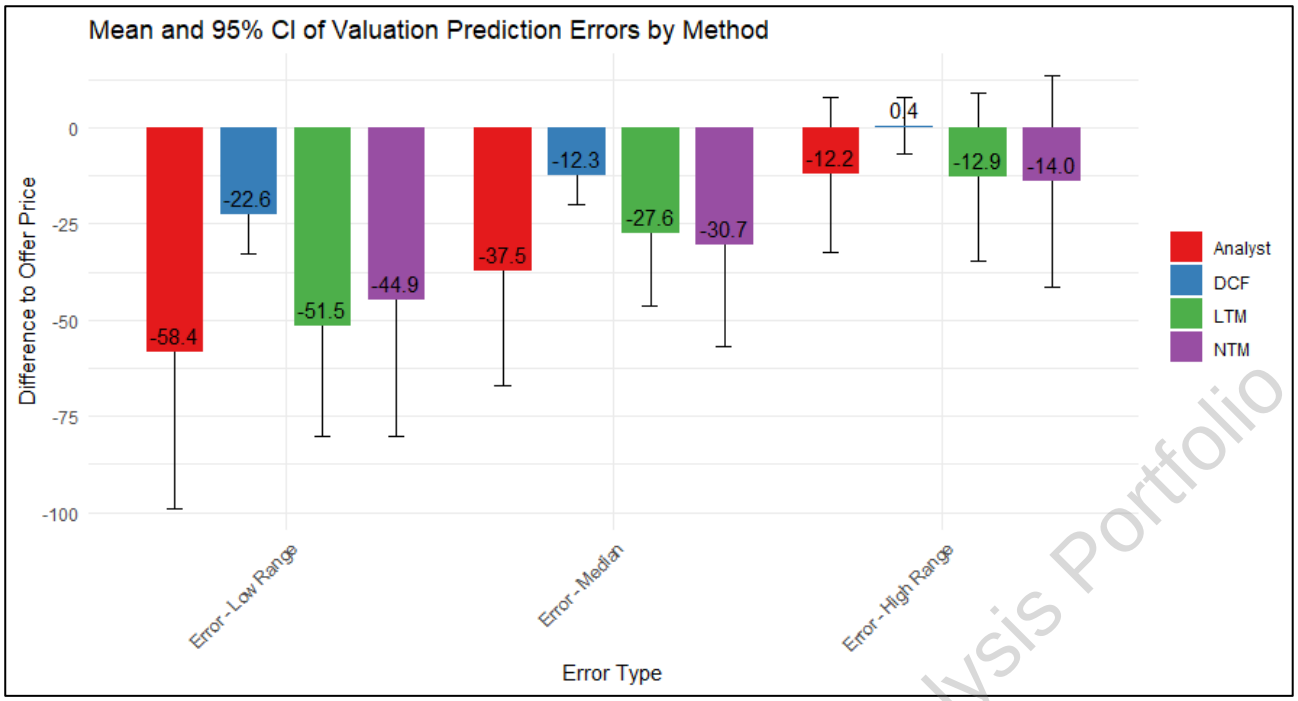

The box plots below distinctly illustrate the spread of prediction errors for each method across the three evaluated ranges (low, median, high). Notably, all methods generally underestimate the offer price, with median values consistently below zero, indicating a bias towards lower valuations. The interquartile ranges and the presence of outliers indicate substantial variability in the accuracy of these methods.

Lastly, a scatterplot was constructed to evaluate the accuracy of predictions.

Each point on the scatter plot represents a pair of observations—specifically, the predicted median price from a valuation method (on the y-axis) against the actual offer price (on the x-axis) for a particular company. Different symbols or colors are used to distinguish between different valuation

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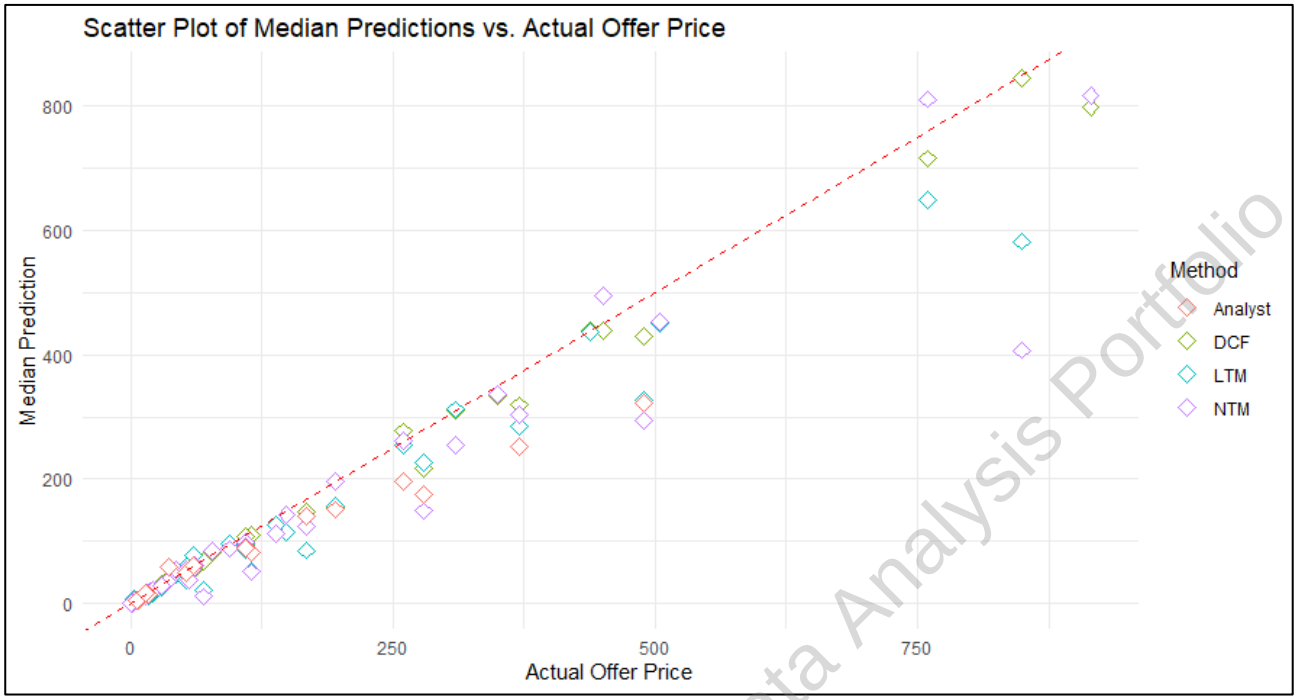
methods (such as DCF, LTM, NTM, Analyst). The line was drawn where the predicted value equals the actual value (i.e., y = x). This line represents the ideal scenario where the median predictions perfectly match the actual prices.



The scatter plot of median predictions versus actual offer prices shows that while some predictions by Analyst and DCF methods closely follow the line of perfect prediction (red dashed line), numerous predictions deviate significantly, particularly for higher offer prices.

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T-tests

In analyzing the statistical comparisons between different valuation methods using paired t-tests and Cohen's d for effect size, the results vary across the comparisons and thresholds. For instance, when comparing DCF versus LTM, the lower limit difference is statistically significant with a t-value of 2.502 and a p-value of 0.019, paired with a medium effect size (Cohen's d = 0.460). This suggests a moderate practical significance in their predictive differences at this valuation range. However, as we move to the median predictions, the significance weakens slightly with a t-value of 2.025 and a p-value of 0.050, indicating a borderline statistical significance and a small-to-medium effect size of 0.388.

Comparison		t	p	Cohen's D	N
DCF vs LTM	Diff: Lower Limit to Offer Price	2.502	0.019	0.460	28
	Diff: Median to Offer Price	2.025	0.050	0.388	37
	Diff: Higher Limit to Offer Price	1.231	0.229	0.317	28
DCF vs NTM	Diff: Lower Limit to Offer Price	1.520	0.138	0.318	33
	Diff: Median to Offer Price	1.403	0.169	0.288	39
	Diff: Higher Limit to Offer Price	1.136	0.264	0.272	33
DCF vs Analyst	Diff: Lower Limit to Offer Price	2.723	0.017	0.538	14
	Diff: Median to Offer Price	2.342	0.034	0.516	15
	Diff: Higher Limit to Offer Price	1.006	0.333	0.306	14
LTM vs NTM	Diff: Lower Limit to Offer Price	0.083	0.934	0.010	28
	Diff: Median to Offer Price	0.284	0.778	0.030	36
	Diff: Higher Limit to Offer Price	0.791	0.436	0.073	28
Analyst vs NTM	Diff: Lower Limit to Offer Price	-0.982	0.349	0.120	11
	Diff: Median to Offer Price	-0.550	0.593	0.082	13
	Diff: Higher Limit to Offer Price	0.155	0.880	0.038	11
LTM vs Analyst	Diff: Lower Limit to Offer Price	0.676	0.514	0.085	11
	Diff: Median to Offer Price	0.633	0.539	0.104	13
	Diff: Higher Limit to Offer Price	-0.256	0.803	0.076	11

When comparing DCF against NTM, the differences are less pronounced, yielding no significant results across the board and only small effect sizes, suggesting minimal practical differences in the valuation outcomes. Specifically, the highest t-value is 1.520 for the lower limit difference, with a p-value of 0.138 and an effect size of 0.318, indicating a lack of significant disparity between the two methods at this range.

A more substantial discrepancy emerges in the comparison between DCF and Analyst predictions at the lower limit, where the t-test produces a value of 2.723 and a p-value of 0.017, accompanied by a medium-to-large effect size of 0.538. This points to a more pronounced divergence in valuation at the lower spectrum, suggesting that DCF tends to provide a more conservative estimate compared to Analyst predictions.

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Conversely, comparisons involving LTM versus NTM and Analyst versus NTM show minimal to no significant differences, with most p-values well above the 0.05 threshold and negligible effect sizes. For example, the t-test comparing LTM and NTM at the median price difference gives a t-value of 0.284 and a p-value of 0.778, with a Cohen's d of merely 0.030, underlining a lack of meaningful practical difference.

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