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JUST Companies Exhibit Lower Investment Risk

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Key Findings: JUST Companies Have Lower Market and Earnings Volatility

This research note examines the investment risk characteristics of JUST Capital-ranked stocks, segmented by their JUST scores, and represents a continuation of the analysis of the performance of equity indexes constructed using the JUST rankings[1]. The motivation for this study is that the channel for the outperformance of the JUST indexes we found in previous research is not well understood.

Research from the Environmental, Social and Governance (ESG) investment community posits that the stocks of companies with high ESG (in our case, JUST) scores are less exposed to fundamental and market risks that are not typically captured by traditional financial analysis and statistical risk models. For example, AQR[2] shows that globally stocks in the lowest quintile of MSCI ESG scores have significantly higher volatility and betas compared with those in the top quintile.

Applying a similar framework to the Russell 1000 universe of JUST Capital-ranked stocks we find statistically significant evidence that stocks in the top quintile of JUST scores have superior risk attributes compared with lower-ranked companies. For instance, we find significant differences between quintile 5 (Q5) and quintile 1 (Q1) stocks in six out of seven risk metrics. In particular, Q1 stocks have 22-28% higher volatility and 7% higher betas than Q5 stocks, a larger difference than that found by AQR for global stocks. Furthermore, Q1 stocks show 5% deeper average drawdowns, twice the quarterly earnings-per-share volatility, and 4.5% lower ROIC than Q5 companies.

Rapid Growth in Sustainable Investment Mandates

The investment resilience of sustainable and just companies supports the recent rapid growth in professionally-managed sustainable investment assets. For instance, the latest biennial review[3] from the Global Sustainable Investment Alliance (GSIA) indicates that in 2016 there were $23 trillion in assets globally managed under responsible investment guidelines, a 25% increase since 2014. In the United States, the share of sustainable investments relative to total managed assets has grown to 22% from 18% over this period. Accordingly, a better understanding of the relative resilience of stocks selected using the JUST methodology may be of interest to both asset owners and asset managers.

Russell 1000 Coverage Universe and Metrics

We analyzed the risk characteristics of the stocks for which JUST Capital released rankings in November 2016 according to its methodology. These represent the majority of the Russell 1000 index, the full list of which, as well as the methodology, can be found on the JUST Capital website[4].

The market risk metrics we analyzed are:

1. Total volatility (three-year standard deviation of weekly total returns)
2. Beta versus Russell 1000 index (based on regression of three-year weekly total returns)
3. Beta-adjusted volatility, a measure of stock-specific volatility which excludes overall market movements (residual after removing beta-adjusted Russell 1000 return from item 1 above.)
4. Average drawdown (average depth of drawdowns over last three years). Drawdown defined as peak to subsequent trough percent decline, reset from every new peak.

[1] *Outperformance of JUST Investable Indexes.* Hernando Cortina, JUST Capital, March 2017.
[2] *Assessing Risk Through Environmental, Social and Governance Exposures.* Jeff Dunn, Shaun Fitzgibbons, and Lukasz Pomorski, AQR Capital Management, LLC.
[3] *2016 Global Sustainable Investment Review.* Global Sustainable Investment Alliance (GSIA).
[4] Methodology: https://justcapital.com/methodology, and list of ranked companies: https://justcapital.com/ranked-companies/

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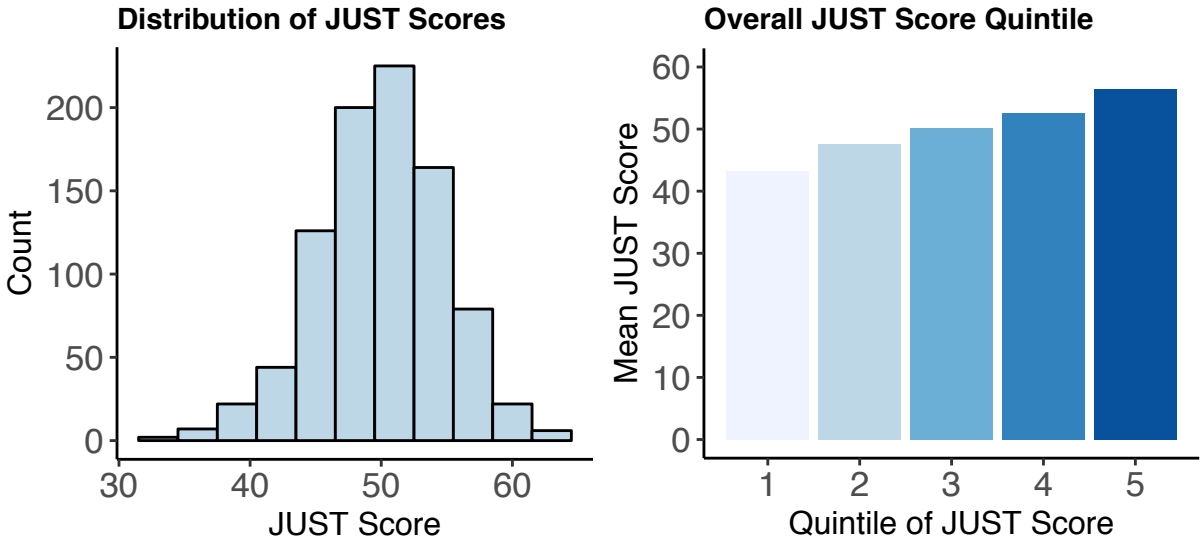
In addition, we included measures of credit risk, earnings volatility, and profitability:

5. The latest Altman Z-score, as reported by Bloomberg as of March 2017 (a measure of the likelihood that a firm will go bankrupt within two years)
6. Earnings-per-share volatility (coefficient of variation in quarterly EPS over last three years)
7. Return-on-Invested Capital (5-year average of annual ROIC)

The general approach to the risk assessment was to divide the JUST universe into equal-sized quintiles based on their overall industry-relative JUST score and compare the within-quintile means of the seven above metrics. In addition, we also divided the coverage universe into two segments, with one encompassing the JUST 100, the top-3 scoring ranked companies in each of the 32 JUST industries (and four highest fourth-places), and compared those with the remaining companies. As would be expected, the vast majority of the JUST 100 companies are in the top quintile of JUST scores (96 out 100), and could be considered representative of 'best in class' performers by industry.

Distribution and Quintiles of JUST Scores

The histogram below left shows the distribution of the overall JUST scores. JUST defines a score of 50 to represent the performance of an average company relative to its industry. Higher scores represent more JUST performance. The bar chart below right shows the mean JUST score by quintile - top performers are assigned to quintile 5 while lowest performers are assigned to quintile 1.



Risk Metrics by JUST Quintile and JUST 100 Membership

Table 1: Mean of JUST Score and Seven Risk Metrics

Quintile	Count	JUST Score	Vol	Beta	Adj Vol	Avg Drawdown	Altman Z	EPS Coef Var	ROIC
1	180	43.2	29.5	1.12	25.8	18.3	4.34	58.0	8.7
2	179	47.6	29.7	1.15	25.8	19.4	4.54	57.0	9.4
3	179	50.1	27.1	1.11	23.1	17.4	5.54	44.4	8.9
4	179	52.6	26.9	1.11	22.8	16.5	5.08	41.1	11.5
5	180	56.5	24.1	1.05	20.1	13.4	4.98	30.0	13.1

Table 2: Mean of JUST Score and Seven Risk Metrics

JUST 100	Count	JUST Score	Vol	Beta	Adj Vol	Avg Drawdown	Altman Z	EPS Coef Var	ROIC
FALSE	797	49.1	27.8	1.11	23.9	17.2	4.92	47.6	9.9
TRUE	100	57.5	24.5	1.09	20.2	14.9	4.74	33.3	13.6

Note: Vol, Adj Vol, Avg Drawdown, EPS Coef Var and ROIC have been multiplied by 100 on Tables 1-4 for clarity.

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Table 1 shows the within-quintile mean values of the seven risk metrics. Overall, the results are consistent with quintile 1 companies showing the lowest historical risk, while quintile 5 companies the highest. Similarly, Table 2 shows JUST 100 exhibit lower risk compared with other ranked companies.

- Total volatility: the volatility of Q1 companies is 5.4 percentage-points, or 22%, higher compared with Q5 stocks. This difference is larger than the 10-15% increase found by AQR. The rise in volatility moving through the five quintiles is nearly monotonic, with the exception of close values in Q1 and Q2.
- Beta: the regression beta of Q1 companies is 0.07, or 7%, higher compared with Q5 stocks. This difference is again somewhat larger than the 3% gap found by AQR. The progression through the quintiles is similar to the total volatility's.
- Beta-adjusted volatility: This measure is meaningful because it represents the risk that can not be hedged via overall market hedges. Q1 adjusted vol is 5.7 percentage-points, or 28% higher, than Q5's, a slightly more pronounced difference that for total volatility.
- Average drawdown: The average drawdown of Q5 stocks is 4.9 percentage points smaller than than of Q1 stocks, a significant reduction in downside exposure. The progression across quintiles is similar to above.
- Altman Z-score: The Z-scores is designed to capture the 2-year bankruptcy probability, with companies likely to face distress within two years expected to score below zero, and healthy companies above four. All quintiles in the coverage universe score above four but the progression across quintiles is not monotonic and the JUST score does not appear to capture meaningful risk of financial distress. This might be the result of the companies being drawn from the Russell 1000, a set of companies where financial distress is relatively rare given the index constituents and construction methodology.
- EPS volatility: We measure EPS volatility with the coefficient of variation (standard deviation divided by mean) of last 12 quarters. This metric shows a clear distinction and monotonic progress across the JUST score quintiles. Companies in Q1 exhibit approximately twice the EPS volatility of companies in Q5 (CVs of 58 in Q1 versus 30 in Q5).
- ROIC: While ROIC is a measure of financial performance and not typically viewed as a risk metric, it provides a measure of financial health. Q5 companies have an average ROIC of 13.1%, 4.4% higher than Q1 companies. Progression across quintiles is fairly uniform.

Significance Testing: 6 of 7 Risk Metrics Show Significant Differences

To assess the statistical significance of the differences in risk metrics between quadrant 5 and quadrant 1, we conduct t-tests for each of the seven metrics. Table 3 shows that 6 of the 7 risk measures show significant differences between Q5 stocks and Q1 stocks: total and adjusted volatility, average drawdown, EPS volatility, and ROIC, at the 1% significance level, and beta at the 10% level. The Altman Z-score did not show a significant Q5-Q1 difference. In addition, Table 4 shows t-tests for the JUST 100 group versus other stocks, which shows significant differences in 4 of the 7 measures. It isn't surprising that the JUST 100 shows less differentiation, as the contrast between Q1 and Q5 extremes would be sharper than between a large subset of approximately 800 stocks and a small subset.

To rule out the possibility of spurious results related to the three-year market data timeframe we also tested using 5-year and 1-year weekly prices. We found the same metrics to be significantly different using both JUST quintiles and the JUST 100.

Table 3: quintile 5 - quintile 1 t-tests

	Vol	Beta	Adj Vol	Avg Drawdown	Altman Z	EPS Coef Var	ROIC
Q5 mean - Q1 mean	-5.4	-0.07	-5.69	-4.85	0.64	-27.94	4.38
t-stat	-5.05	-1.76	-5.47	-2.79	1.5	-3.96	3.25
p-value	0	0.079	0	0.006	0.133	0	0.001
Significance	***	*	***	***		***	***

Table 4: JUST 100 - Others t-tests

	Vol	Beta	Adj Vol	Avg Drawdown	Altman Z	EPS Coef Var	ROIC
JUST 100 mean - Others mean	-3.35	-0.02	-3.7	-2.3	-0.18	-14.31	3.65
t-stat	-3.38	-0.39	-3.94	-1.28	-0.41	-2.43	2.27
p-value	0.001	0.698	0	0.202	0.683	0.016	0.025
Significance	***		***			**	**

Note: Welch Two Sample t-test. Significance: $p < 0.01$: *** ; $p < 0.05$: ** ; $p < 0.1$: *

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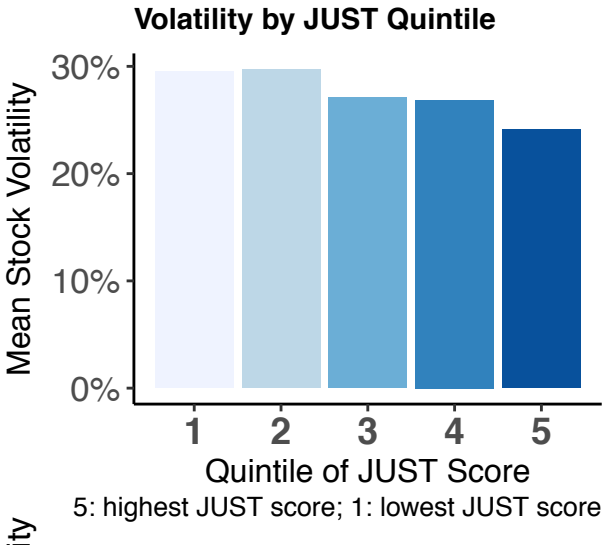
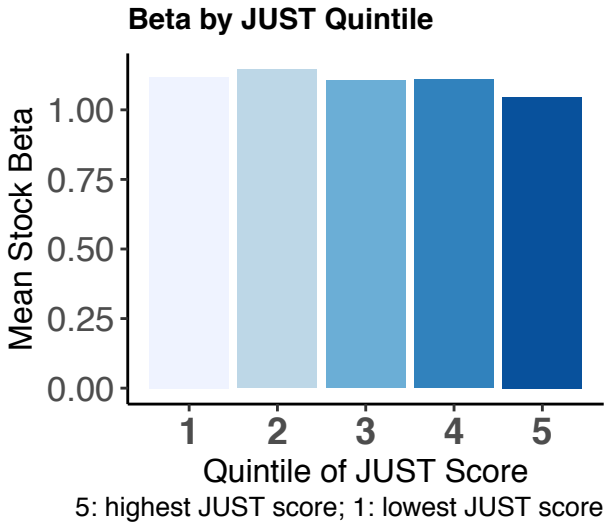
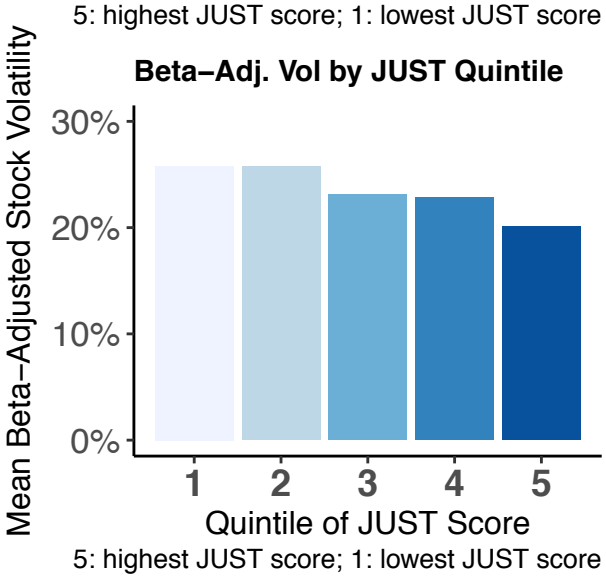
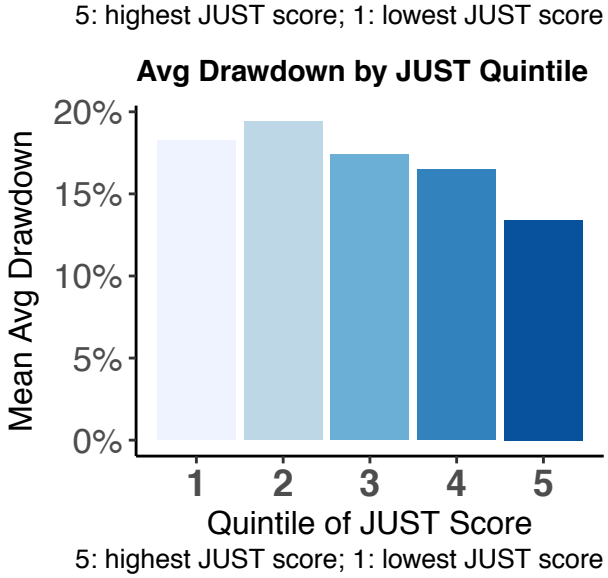
Visualizing Risk Metrics by JUST Quintiles

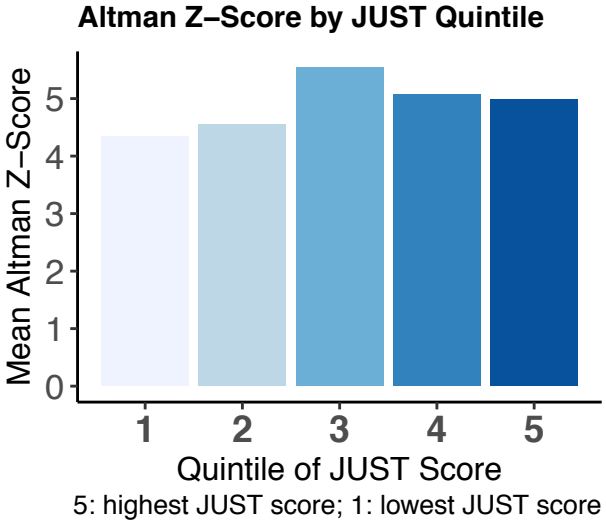
The bar charts below illustrate the variation in the seven risk metrics across the quintiles of JUST scores. The last chart combines the two volatility metrics and average drawdown in one chart to show the difference in these market risk metrics.

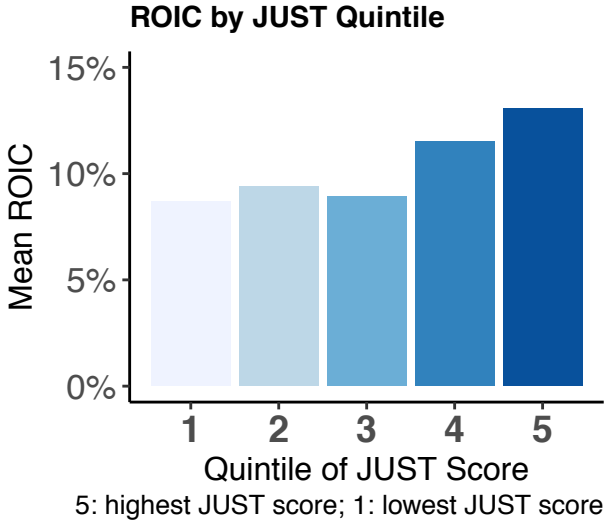












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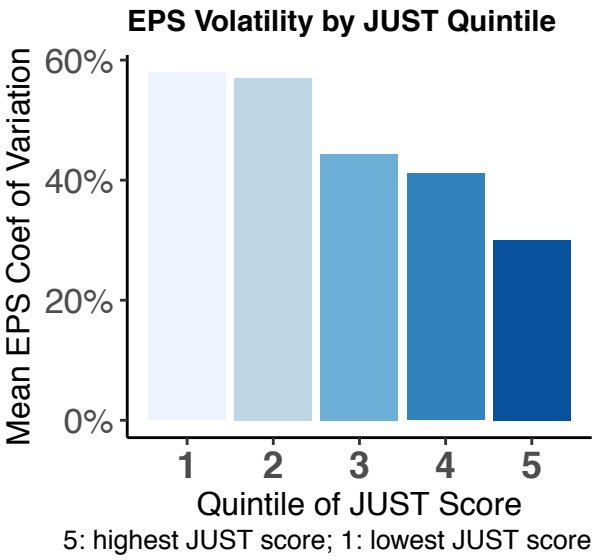

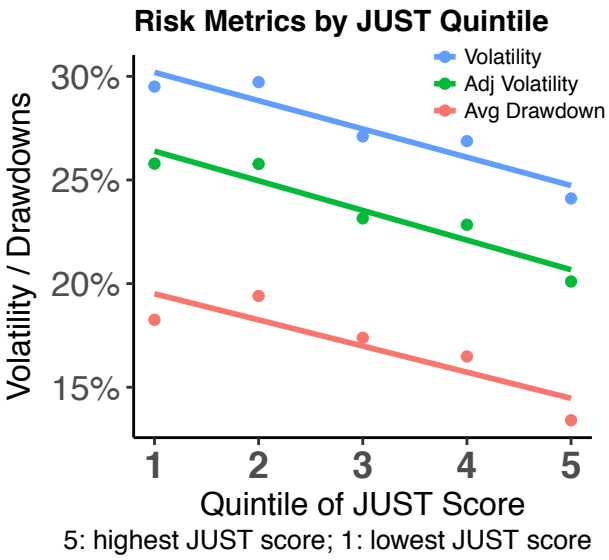

Conclusion: Higher JUST Scores Help Protect Investors From Downside Risk

Supported by nationwide polling, JUST Capital's methodology scores companies on the issues that matter most to the American public. Not surprisingly, this holistic approach encompasses a wider breadth of issues and places a greater importance on worker pay and benefits, worker treatment, leadership and ethics, and customer treatment, than most other data providers. The analysis of risk measures finds significant evidence that stocks in the top-quintile of JUST scores have superior risk attributes compared with lower-ranked companies. In addition, the magnitude or the reduction in risk for more just companies is greater than that found by other studies using traditional ESG metrics. Top-quintile ranked JUST companies have 18%-22% lower volatility, 6% lower beta, 5% shallower drawdowns, near-half the quarterly earnings-per-share volatility, and 4.5% higher ROIC than Q5 companies. We also found that the JUST 100 exhibit great resilience to downside risk than lower-ranked companies. These results hold when using 1-, 3-, and 5-year market data. One limitation of this study is the absence of a historical series of JUST scores, which precludes analysis using a time-varying risk model.