

# Volatility in LTGG: A feature, not a bug

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## Annual past performance to September 30 each year (net%)

	2020	2021	2022	2023	2024
LTGG Composite	102.9	25.9	-48.8	19.9	39.1
MSCI ACWI Index	11.0	28.0	-20.3	21.4	32.3

## Annualised returns to 30 September 2024 (net%)

	1 year	5 years	10 years
LTGG Composite	39.1	16.9	15.0
MSCI ACWI Index	32.3	12.7	9.9

Source: Revolution, MSCI. USD. Returns have been calculated by reducing the gross return by the highest annual management fee for the composite.

LTGG composite is more concentrated than MSCI ACWI Index.

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# Introduction

Volatility<sup>1</sup> is often cited as the primary drawback of Long Term Global Growth's investment approach. That is fair. Individual drawdowns can be sharp and painful in the short term – something we and our clients viscerally understand in the wake of the post-Covid volatility that continues to impact LTGG's performance.

But more importantly for our purposes as long-term growth investors, downside volatility also creates a headwind to long-term capital growth. That latter point is overlooked when investors dismiss volatility as irrelevant on the basis that they are 'long term'. There is no serious debate to be had about whether volatility carries a true cost for the long-term growth investor. It does,

and I quantify this cost for LTGG later in this piece. To frame one's tolerance of volatility in terms of time horizon is to confuse the issue entirely.

The proper question is not whether volatility is a short- or long-term headwind but instead whether the volatility of a strategy such as LTGG should be understood as a feature that is integral to our successful investment strategy, or a bug that we should try to eliminate. The distinction matters profoundly: while investors can and should debug in interest of continual improvement, to fiddle with any core features of our investment approach – even if those features represent a cost – is to risk undermining what we do well.



<sup>1</sup>My reference here to volatility as a drawback is specifically focused on volatility to the downside, or drawdowns. We obviously experience upside volatility too, but we face no real objection to that (not unless tracking error is prioritised over outperformance as a key performance indicator (KPI)).

# Volatility and Outlier Capture

What does LTGG do well? We identify outlier stocks – defined as those which deliver at least a 5x return – and we hold them in substantial size for long periods of time to maximise the portfolio impact of their supernormal compounding.

This strategy is motivated by the observation that a tiny number of outlier stocks will matter disproportionately to overall wealth creation in equities. This is no mere academic abstraction. While LTGG has delivered 4% annualised outperformance over the past 20 years, **omission of just six positions** would suffice to eliminate that outperformance entirely. These critical holdings were Amazon, Tesla, NVIDIA, Tencent, Atlas

Copco and Petrobras – representing less than 4% of the total number of stocks LTGG invested in over the period<sup>2</sup>.

We only outperformed for our clients because we held these six stocks in substantial size. Our outperformance is demonstrably sensitive to our success in Outlier Capture. But Outlier Capture and volatility are a package deal. There are two main reasons for this.

**First**, volatility is a characteristic of outlier stocks themselves. The table below illustrates the volatility characteristics of the six holdings to which LTGG owes its outperformance:

## LTGG’s most successful holdings are also among its most volatile

Stock	Largest absolute drawdown during holding period	Holding period volatility (% pa)	Ratio of stock vs MSCI ACWI volatility over the holding period
Amazon	54.2%	35.7%	2.3x
Nvidia	62.8%	49%	3.2x
Tesla	67.7%	64.5%	4.6x
Atlas Copco	61.5%	28.6%	1.9x
Petrobras	70.4%	41.7%	2.4x
Tencent	69.1%	33.2%	2.3x

Source: Baillie Gifford, FactSet. As at 30 September 2024.

<sup>2</sup> LTGG has held 154 stocks since inception. Just three of these stocks (Tesla, Amazon, and NVIDIA) contributed more than 100% of LTGG’s active return over the period. But if LTGG did not hold those three, we would still have outperformed with capital reallocated across the rest of LTGG’s holdings. This would have significantly decreased our non-annualised active performance from 790% to 189% since inception (from 31/05/2004 to 30/09/2024). But eliminating the six holdings in Amazon, Tesla, NVIDIA, Atlas Copco, Petrobras, and Tencent would have been sufficient to neutralise our outperformance altogether. As an aside, 40% of LTGG holdings have contributed positively to our outperformance since inception.

We also know this phenomenon is not a quirk of LTGG's stock-picking because it is evident at the broader market level. A recent study of the top performing 10% of equities over the past decade showed that 95% of these high-returning stocks experienced at least one period of 20% underperformance, and 45% experienced at least one period of 50% underperformance<sup>3</sup>. Likewise, examining the top 5% of performers in the MSCI ACWI over the past two decades shows that 40% experienced a drawdown of 50% or more during the period in which they delivered their supernormal performance. If we optimise for Outlier Capture, we are likely to end up with stocks that experience material downside volatility.

Portfolio concentration is the **second** reason why Outlier Capture and volatility are entwined. If we define our rate of Outlier Capture as outlier stocks ÷ total stocks held, LTGG's rate has been three times greater than that of the MSCI ACWI over the past decade. Crucially, that's despite LTGG owning only 11 outlier stocks over the past ten years, against 135 in the index. We did not achieve our superior rate of Outlier Capture through a larger numerator, we achieved it instead through a smaller denominator. Put differently, we achieved our higher rate of Outlier Capture through portfolio concentration. Even though we found a smaller number of outlier stocks than the index, we diluted them less.

While diluting them less makes LTGG inherently more exposed to the outlier stocks' upside, it also makes LTGG more exposed to their downside volatility. To smooth this would require true diversification which we do not attempt because it would lower our rate of Outlier Capture by increasing the number of stocks we hold, thus undermining a crucial variable in how we outperform. This is why LTGG has exhibited such pronounced volatility at the portfolio level, including several steep drawdowns:

### LTGG's drawdowns

Year	Absolute drawdown
2007-2009	55.6%
2021-2022	53.5%
2011	21.5%
2018	18.21%
2015-16	15.4%

Source: Baillie Gifford, FactSet.

If Outlier Capture and volatility are entangled at both the stock level and the portfolio level, and LTGG's outperformance relies on Outlier Capture, it follows that volatility is a *feature* of our investment approach. Decreasing our volatility would be at odds with increasing our rate of Outlier Capture.

<sup>3</sup> Travis C. McCourt, Leslie Vandegrift, "Top 10% Equity Returners Represent the Majority of Equity Returns Over 10 Years, What Can We Learn From the Last 10 Years Vintage?", Raymond James. 18 January 2024. <https://raymondjames.bluematrix.com/links2/secure/doc/html/21623955-edd5-4712-baa4-f89118fb6d6b>

# But volatility is a cost

To accept volatility as an intrinsic feature of our investment approach does not mean we should pretend that feature is a positive one. I think at times we are guilty of brushing over this. In fact, our strategy’s downside volatility brings a material headwind to the long-term capital growth we aim to deliver for our clients. We can quantify this. Since inception, LTGG’s arithmetic average annual return has been 17.5%, but our geometric average annual return – the compounded capital growth rate (CAGR) which we and our clients really care about – has been 13%<sup>4</sup>. The difference between the two reflects LTGG’s annual volatility of 31.8% which has translated into a volatility drag of 4.5% per annum. By contrast the MSCI ACWI’s volatility was much lower, at 17.2% p.a., translating into an annual volatility drag of just 1.5%.

The upshot of LTGG’s greater volatility drag is that an illustrative 10% arithmetic average annual return would translate into just 5.5% for our clients on a CAGR basis, compared to 8.5% for the index. Effectively this means the index can achieve greater compounding with less growth.

And to debunk the myth that downside volatility should only bother investors who are ‘short term’, note the illustrative cost of volatility drag only intensifies through compounding as timeframes extend:

## Volatility matters

Assuming 10% arithmetic average annual returns	Starting capital	Y5 capital	Y10 capital	Y15 capital
With volatility drag of 4.5% (LTGG)	\$1,000,000	\$1,306,960	\$1,708,144	\$2,232,476
With volatility drag of 1.5% (MSCI ACWI)	\$1,000,000	\$1,503,657	\$2,260,983	\$3,399,743
Illustrative cost of LTGG volatility, as % of starting wealth		<b>20%</b>	<b>55%</b>	<b>117%</b>

The foregone wealth creation highlighted in the table underlines why volatility matters to the long-term growth investor. Downside volatility introduces a cost which compounds over time.

**But this cost cannot be assessed in isolation from value creation.** Despite three times the annualised volatility drag, LTGG’s compounded return has still been two times greater than the index since inception because our average return was likewise 1.7 times higher. That superior average return is owed to our portfolio’s higher earnings growth, which is a function of our focus on Outlier Capture. While the table above illustrates what foregone wealth creation from our volatility would hypothetically amount to in a scenario where average annual returns are equal, that equivalence is entirely counterfactual. Our average annual returns have in fact been meaningfully higher than those of the index, allowing LTGG to deliver materially greater compounded wealth for clients despite our higher volatility drag.

This highlights that we can tolerate a higher cost of volatility if *and only* if our portfolio delivers sufficiently superior growth (and hence superior average returns) to compensate for that cost. The volatility cost will erode outperformance if the growth is not there to absorb it.

<sup>4</sup>Data from 31/05/2004 to 30/09/2024. Based on composite performance, gross of fees. LTGG’s arithmetic annual return net of fees in this period is 16.9%. LTGG’s compound annual growth rate net of fees in this period is 12.2%. Source: Revolution, MSCI. US Dollars.







# Understanding the trade-offs

I have acknowledged volatility drag from drawdowns represents a real cost to the long-term investor. I have also established that LTGG has reliably delivered superior growth and therefore superior average annual returns which more than compensate for this cost.

But the natural question is whether we could further boost wealth creation for our clients if we maintained our superior average returns while also reducing our volatility drag. It is mathematically obvious that this should increase our outperformance, and the impact could be material. For illustration, if LTGG held its superior average annual returns constant while reducing volatility drag in line with the index, we would have created 69% more wealth for our clients over the past 20 years<sup>5</sup>. Shouldn't we aim to increase our outperformance like that over the next 20?

This route to increased outperformance through reduced volatility is theoretically compelling, but is it achievable? The fact that Outlier Capture and volatility are a package deal means that LTGG could not deliver this in practice without completely changing our investment philosophy. Let that sink in. We would need to discard our decades-long focus on Outlier Capture and find an entirely different route to superior average returns, while also figuring out how to achieve proper diversification to reduce our excess volatility.

To succeed, we would need to execute well on **two** new challenges, neither of which we've established any existing competency in.

That implies our odds of delivering on each of those novel goals would be a random coin toss at best (and our chance of succeeding at both would therefore be a combined probability of just 25%)<sup>6</sup>. By contrast, if we stick to our longstanding investment approach, then continued outperformance requires us to execute well on just one thing – a superior rate of Outlier Capture – in which LTGG has built competency over 20 years. Indeed, our longstanding investment approach has demonstrated ability to outperform the MSCI ACWI over 98% of rolling 5-year periods<sup>7</sup>. We prefer those odds to a random coin toss, although of course we acknowledge our 20 years is a limited sample within the span of stock market history, and past performance does not predict future returns.

While reduced volatility could theoretically improve our performance, we have multiple different avenues for improving performance and which routes we select should reflect our appraisal of their relative expected value. Although reducing volatility drag in line with the index could have theoretically created 69% more wealth for LTGG clients over the past two decades, the expected value of shifting to this approach still falls materially short of sticking to LTGG's longstanding focus on Outlier Capture when adjusted for the posited strategy's lower probability of success. Indeed, LTGG's probability of outperformance over future five-year periods would need to more than halve relative to history before a pivot to volatility reduction would offer superior expected value for our clients<sup>8</sup>.

<sup>5</sup> If we held our arithmetic average annual returns constant at 17.5% and reduced our volatility drag in line with the index to 1.5%, LTGG's CAGR return would have been 16% against the 13% which the strategy has delivered since inception. Compounded over LTGG's two-decade history, the volatility reduction strategy would have turned \$100 of client capital into \$1,946, compared to the \$1,152 delivered by LTGG.

<sup>6</sup> If  $p(VR) = p(A) * p(B)$ , where A = establishing a new route to superior average returns (to equal what LTGG has delivered through Outlier Capture (OC)) and B = diversifying to eliminate excess volatility drag. Since both A and B are unproven skillsets for LTGG, we can treat each as a random coin toss with 50% probability. Therefore,  $p(VR) = 50% * 50% = 25%$ .

<sup>7</sup> Source: Baillie Gifford & Co and relevant underlying index provider(s), from 29 February 2004 to 30 June 2024.

<sup>8</sup> Call the proposed approach Volatility Reduction (VR), and LTGG's established investment approach OC:  $P(VR) = p(A) * p(B)$ , where A = establishing a new route to superior average returns (to equal what LTGG has delivered through OC), and B = diversifying to eliminate excess volatility drag. Since both A and B are unproved skillsets for LTGG, we can treat each as a random coin toss with 50% probability. Therefore,  $p(VR) = 50% * 50% = 25%$ . I acknowledged above that VR could have yielded 69% greater wealth creation than LTGG since inception. So, the expected value of VR =  $25% * (1.69) = 0.42$ .

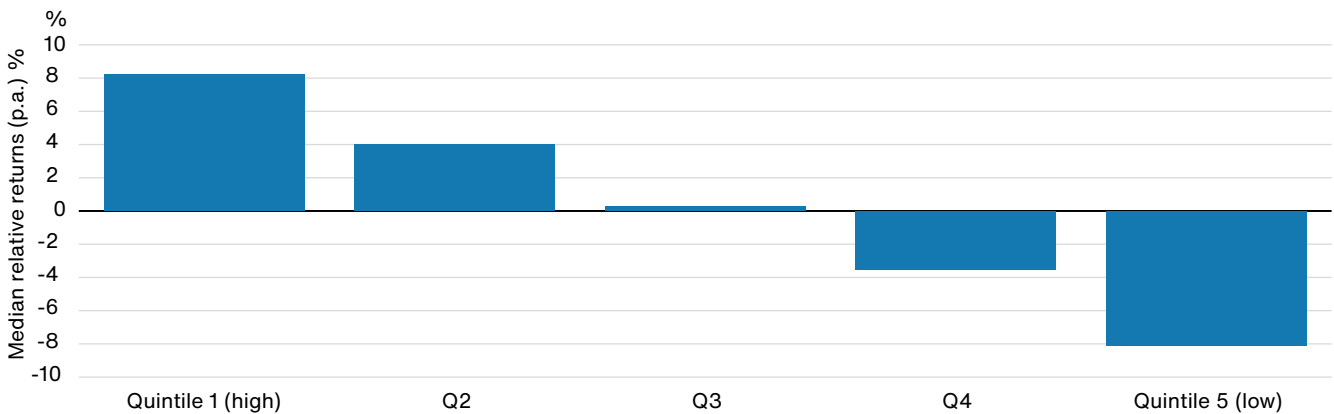
By contrast, we know that LTGG's probability of outperformance over rolling 5-year periods has been 98% since inception. We also know LTGG's established investment approach (OC) has created 69% less wealth than VR hypothetically would have over the period. So, if we continue with our longstanding investment approach, then the expected value of OC =  $p(OC) * 1 = 98% * 1 = 0.98$ .

It follows from this costly trade-off that LTGG has no business optimising for volatility reduction, unless we believe our odds of outperforming through our established focus on Outlier Capture have collapsed. We do not currently have any reason to believe this. LTGG's rate of Outlier Capture has typically clustered in a band between 5-10% over the past decade, except for a temporarily elevated rate of Outlier Capture in the five-year period leading up to the pandemic. The most recent five-year period remains at the high end of the historic range, with a rate of Outlier Capture near 9%. By contrast the index rate of

Outlier Capture has clustered between 1-3% over that same timeframe.

And on a forward-looking basis, more than 80% of the LTGG portfolio is in the top two quintiles of earnings growth<sup>9</sup>. That proportion has increased for LTGG in recent years, and it is twice the index weight. Since top quintile earnings growth is a strong predictor of top quintile share price performance over rolling 5-year periods, we should be well positioned to continue delivering superior average returns to compensate for excess volatility in LTGG.

**Share prices follow earnings**



Source: FactSet, MSCI. US dollars. The universe consists of all stocks listed in the FTSE ACWI and MSCI ACWI indices at each starting point, excluding repetitions. Median total returns by earnings growth quintile. Rolling five-year horizons (1992-2021).

<sup>9</sup>Based on consensus earnings growth estimates for the next three years, as at end September 2024. Our own estimates are generally higher than the consensus forecasts.

# How we manage sequencing risk

There will of course be periods where LTGG's volatility drag is higher or lower than our history. Regardless, I have established that it does not make sense for us to aim at volatility reduction for its own sake. The extent to which we do manage volatility should be confined exclusively to controlling our sequencing risk (that is, the risk that an individual drawdown at the portfolio level will be pronounced enough to wipe out our clients' capital base, precluding recovery). To manage our sequencing risk is to mitigate the possibility that volatility will lead to permanent capital impairment.

We have two main avenues for controlling this sequencing risk.

The first is situational awareness. We are situationally aware if we notice anomalies in the market environment that materially raise the risk of permanent capital destruction for LTGG. The magnitude of drawdown LTGG clients experienced in 2022 suggests the extreme valuations of 2021 were likely one such market anomaly. That period's abnormality was corroborated by the unusually high number of stocks delivering greater than five-times returns during the pandemic, a phenomenon that is empirically very rare and plainly consequential for an investment strategy predicated on running winners in interest of Outlier Capture.

LTGG had a deficit of situational awareness in 2021. We have subsequently enhanced our situational awareness through our collaboration with the risk team, to be better placed to notice relevant anomalies in the market environment.

But it is crucial that we don't exaggerate what this awareness can help us achieve. The steps we've taken categorically do not immunise LTGG against similar sharp drawdowns from happening again, just as the lessons from the drawdown during the Global Financial Crisis did not prevent a recurrence in 2022. And it is even more crucial that we do not confuse what this situational awareness is for: we are not interested in responding to market anomalies to manage volatility for its own sake, since we have no business optimising for volatility reduction. Instead, we expect our improved situational awareness to only aid us in the rare scenario where it may help us mitigate the risk of permanent capital destruction, which would preclude our pursuit of Outlier Capture.

Our second – and most important – way of managing sequencing risk is to construct a portfolio which is well positioned to recover from drawdowns, thus avoiding permanent impairment. Doing so requires us to tilt the LTGG portfolio toward companies with intact prospects for superior earnings growth, because strong earnings growth is the single best predictor of whether companies bounce back from sharp drawdowns within five years<sup>10</sup>. Tilting the portfolio toward superior earnings growth therefore helps mitigate risk of permanent capital destruction while being consistent with our overarching optimisation for Outlier Capture. Indeed, this highlights how damaging it would be if we followed our industry's habit of responding to severe downdrafts with defensive shifts away from growth.

<sup>10</sup> Considering all the stocks in the MSCI ACWI that drew down 50% or more since 1999, two thirds did not recover back to peak within five years but one-third did, and earnings growth was the clear difference between the two. Those that recovered saw median earnings growth of mid-single digits while those that didn't recover saw earnings shrink.

# Conclusion

If we appreciate that our tolerance of excess volatility has been inextricable from how we have outperformed, that is precisely why we must seriously acknowledge that volatility carries a cost. If you only do something when you're ignorant of its disadvantages, your ability to do it will be unsustainable.

It would be naïve to think LTGG's methods of outperformance come with no trade-offs. We don't fixate on the single variable of Outlier Capture because we think it carries no downside. Instead, we obsess over that single variable because we know it is difficult to optimise for multiple goals with world class execution across all of them. And what is difficult becomes impossible when the goals directly conflict with each other, as in the case of Outlier Capture and volatility reduction. We must choose between them, and we have chosen the one that offers greater leverage for outperformance: volatility drag can only reduce to zero, whereas excess

return is uncapped. It is therefore rational for LTGG to focus our attempts at constant investment improvement on increasing the latter. This continued focus on excess return through Outlier Capture also offers higher expected value for LTGG because we have built this as our core competency over two decades.

But the fact that our volatile path genuinely carries more cost than a smooth one also gets at the crux of our competitive advantage. It is why we should be hugely sceptical of fund managers who jump on the bandwagon created by Professor Hendrik Bessembinder's research<sup>11</sup>, and parrot Outlier Capture as a route to outperformance, if these investors lack tangible experience of the costs involved. There will be periods where that cost is so onerous as to be untenable without Baillie Gifford's distinctive ownership structure and LTGG's institutional memory from 20 years of successfully navigating the more difficult path.

<sup>11</sup> Hendrik Bessembinder, "Do stocks outperform Treasury bills?", W. P. Carey School of Business, Arizona State University. 13 February 2020. <https://wpcarey.asu.edu/departments-finance/faculty-research/do-stocks-outperform-treasury-bills>

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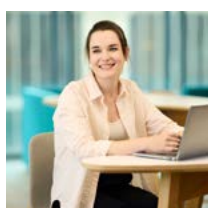
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