KBA Insights
December 2017

Who is Winning the LTI Lottery?

How big is the problem with Ranked Relative TSR? Who wins and who loses?

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The last two editions of KBA Insights used Monte Carlo Simulation to demonstrate the lottery-like nature of LTI Plans that vest based on ranked relative TSR. This month, we provide a deeper understanding of the results of the simulation. In doing so, we reveal who wins and who loses in 'the ranked elative TSR lottery', and one particularly surprising result.

Some Background

The lottery-like nature of LTI plans that use *ranked elative TSR* as a vesting metric has been evident for years. Many have commented on this in the past, including *BlackRock*, *Macquarie Equities* and leading proxy advisor *CGI Glass Lewis*. However its use has remained widespread. And these days it is generally augmented with an accounting metric like *EPS*, *ROC* or *ROE* in a well-intentioned effort to mitigate its lottery-like impact on vesting outcomes. (Unfortunately this 'solution' created another problem – the risk of encouraging *short-termism* – which we discussed in October.)

Having again highlighted the shortcomings of *ranked elative TSR* over the past few months, we were asked if we could provide a meaningful indication of the magnitude of the problem. We know that the majority of ASX and LSE listed companies use this metric as one of their LTI vesting criteria. But there is a feeling among some that the fact so many companies use it might serve to offset its deleterious effects. The findings we present this month suggest that is definitely not the case.

Our findings are summarised in this edition of *KBA Insights.* They are presented in more detail in a paper entitled The Misunderstanding Behind all the Angst Around Executive Reward.

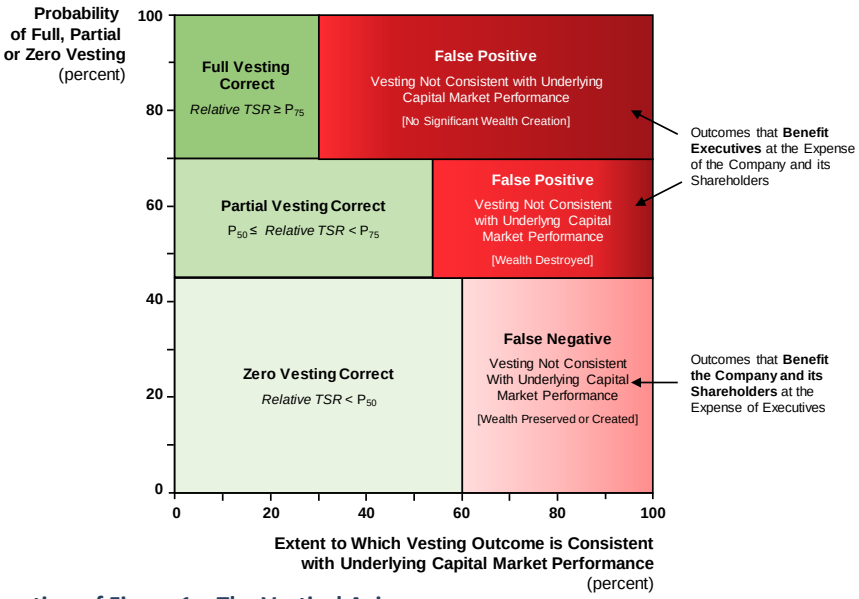
Getting a Handle on the Size of the Problem

We can get a good sense of both the magnitude and the extent of the problem with LTI vesting based on *ranked elative TSR* from the graphic in Figure 1. It shows that vesting based on *ranked relative TSR* produces an incorrect outcome in the form of a 'false positive' where executives benefit at the expense of their company and its shareholders, or a 'false negative' where the company and its shareholders benefit at the expense of executives, a little over half the time. There are slightly more 'false positives' than 'false negatives'.

Figure 1 captures two crucial aspects of the outcome of the *Monte Carlo Simulation* we conducted a few months back. On the vertical axis, it shows the probability of a full, a partial or a zero vesting outcome when a company and its twenty comparators all deliver performance broadly consistent with market expectations, or the expectations embedded in their respective share prices at the beginning of a three-year measurement period. On the horizontal axis, it shows the extent to which vesting outcomes were consistent with underlying capital market performance. In other words, "when the *ranked relative TSR* performance was below P_{50} and the vesting outcome was zero, how

often did the underlying capital market performance imply a positive contribution to shareholder wealth creation attributable largely to the efforts of management?" Alternatively, "when the *ranked relative TSR* performance was P_{50} or above and some vesting was warranted under the LTI Plan, how often did the underlying capital market performance imply a negative contribution to shareholder wealth creation on the part of management?"

***Figure 1**. Vesting Outcome Based on Ranked Relative TSR vs Underlying Capital Market Performance*



Construction of Figure 1 – The Vertical Axis

The implications of the picture shown in Figure 1 are potentially significant. So it is important to understand how it was constructed. Focusing initially on the vertical axis, the probability of full, partial or zero vesting is a direct output of the *Monte Carlo Simulation*, where the company studied and its comparators all produced outcomes broadly consistent with meeting market expectations.

This means the vesting outcomes on the vertical axis are a direct consequence of the probabilistic nature of *ranked relative TSR*, and the way that target performance and vesting thresholds are expressed in statistical terms – as percentile levels in a comparator group. So, when the company performs consistent with the prospect that it will deliver the expectations embedded in its share price and preserves shareholder wealth, executives can expect zero vesting 45 percent of the time. They can expect full vesting 30 percent of the time and partial vesting 25 percent of the time. It is unlikely these outcomes are what the Board would have intended or executives would have expected.

There are many factors that contribute to this situation. They include the fact that companies in the comparator group with higher risk profiles require higher *TSR* outcomes to preserve shareholder wealth, and tend to 'win' in terms of *ranked relative TSR* performance in a rising market but lose in a falling one (and *vice versa*), irrespective of management performance. But the main problem is the probabilistic nature of the *ranked elative TSR* metric, and the way target performance and vesting thresholds are expressed in statistical terms.

To begin with, it can be difficult to identify a meaningful comparator group for a listed company. Even if one can be found, in calculating *ranked elative TSR,* the performance of each comparator is just as important as that of the company itself. And to make matters worse, the statistically defined

P_{50} and P_{75} vesting thresholds within the comparator group, are poor indicators of true capital market performance. They have no discernible relationship at all to the wealth created for shareholders over any given measurement period, or to that component of the wealth created that might be attributable to the actions of management. Contrary to what some might believe, a P_{50} *ranked relative TSR* outcome does not signify that expectations have been met or shareholder wealth has been preserved.

The vesting outcome produced by these statistically defined thresholds is likely to be some way from the intent of the Board when the plan was designed, and from the expectations of executives when they signed up to it. Such plans are unlikely to encourage desired behaviours.

Construction of Figure 1 – The Horizontal Axis

The next step in constructing Figure 1 was to overlay an assessment of whether or not simulated vesting outcomes were consistent with underlying capital market performance.

Wealth is preserved over a measurement period when a company delivers the *economic profit (EP)* expectations embedded in its share price at the beginning of that period, and the capital market is convinced it will continue to do so. When these expectations are met, it follows from the *Capital Asset Pricing Model (CAPM)* that its annualised *TSR* outcome will be equal to its *cost of equity capital (Ke).* In other words, *TSR-Ke* will be zero over the long term.

If *TSR* exceeds *Ke* over the long term, wealth is created. If it fails to meet *Ke*, wealth is destroyed. If *TSR* matches *Ke* over the long term, wealth is preserved. However the relationship between *TSR* and *Ke* can be distorted by market movements over the short-to-medium term, making it relatively easy to achieve a *TSR* greater than *Ke* in a rising market, and more difficult in a falling one. We can deal with this easily using a concept called *TSR Alpha*.

TSR-Ke is the economic return on market value over the long term. *TSR Alpha* is the economic return on market value over the short-to-medium term, after stripping out the impact of short-term market movements that have nothing to do with the efforts of management. They are linked by the following relationship: ***TSR-Ke = Risk Adjusted Impact of Market Movements + TSR Alpha***

Over any given measurement period, shareholders experience the value consequences of market movements that have nothing to do with the efforts of management, plus the value consequences of *TSR Alpha* that arise largely as a result of the efforts of management. Once we have stripped out the impact of market movements, a *TSR Alpha* of zero signifies that management's contribution was consistent with wealth preservation. A *TSR Alpha* greater than zero means there was a positive contribution to wealth creation largely attributable to management. And a *TSR Alpha* less than zero indicates a contribution from management that was wealth destroying.

So in Figure 1, we want to be able to use the results of the simulation to answer three questions.

1. When *relative TSR* performance was below P_{50} and the vesting outcome was zero, how often did the efforts of management fail to make a positive contribution to wealth creation?
2. When *relative TSR* was above P_{50} and partial vesting was warranted under the LTI Plan, how often did management's efforts make a positive contribution to wealth creation?
3. When *relative TSR* was P_{75} or above, and full vesting was warranted under the LTI Plan, how often did management's efforts make a significant contribution to wealth creation?

The test as to whether or not wealth was preserved in the simulation summarised in Figure 1 is an expected *TSR Alpha* equal to zero. What we observe is:

1. Of the 45 percent of occasions when the *relative TSR* outcome was less than P_{50} and a zero vesting outcome ensued, two out of five were 'false negatives'. In other words, *relative TSR* was below P_{50} but *TSR Alpha* was positive.

2. Of the 25 percent of occasions when the *relative TSR* outcome was at least P_{50} but less than P_{75} and a partial vesting outcome ensued, just under half were 'false positives'. In other words, *relative TSR* was between P_{50} and P_{75} , but *TSR Alpha* was negative.
3. Of the 30 percent of occasions when the *relative TSR* outcome was P_{75} or above and a full vesting outcome ensued, three quarters were 'false positives'. In other words, *relative TSR* was P_{75} or above, but *TSR Alpha was* below a performance threshold of 2.5%.

Synthesis

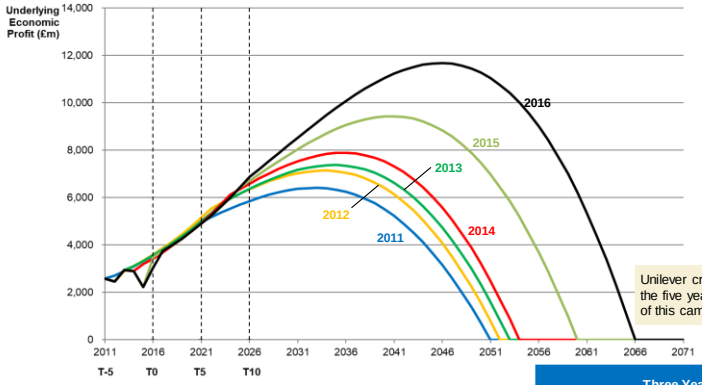
It is clear from this analysis centred around a *Monte Carlo Simulation* that despite its ubiquity, *ranked relative TSR* is not a good metric for use in LTI design. Figure 2 provides a particularly interesting real life example of the misleading signals it produces – in this case a 'false negative'. It shows a progression of *EP Bow Waves* for Unilever Plc over the five years to 31 December 2016, plus the *TSR Alpha* outcome for each of the rolling three-year periods contained within that five-year period.

Unilever created £18.8b in shareholder wealth over the five years to 31 December 2016. 75 percent of this wealth creation came from making its business more sustainable with a longer *EP Bow Wave*. Unilever also delivered a positive *TSR Alpha* outcome over each three-year period.

Yet the component of the Unilever LTI plan that vested based on *ranked relative TSR,* delivered a zero vesting outcome to executives over the three years to 31 December 2016.

Clearly listed companies need a better approach to LTI Plan design. But the recent move to do this by replacing LTIs with much larger STIs in the UK and Australia should be approached with some caution. Such an approach runs a real risk of once again encouraging short-termism, as this article illustrates.

***Figure 2**. Progression of EP Bow Waves and TSR Alpha Outcome for Unilever Plc*



	Three Years Ended			Five Years Ended
	31 Dec 2014	31 Dec 2015	31 Dec 2016	31 Dec 2016
Total Shareholder Return (**TSR**)	11.3%	11.7%	13.9%	12.8%
Cost of Equity Capital (**Ke**)	8.7%	8.7%	8.7%	8.7%
Long-Term Economic Return on Market Value (**TSR-Ke**)	2.6%	3.0%	5.2%	4.1%
Risk-Adjusted Impact of Market Movements	(0.1%)	(3.2%)	(5.6%)	(4.4%)
TSR Alpha	2.7%	6.2%	10.8%	8.5%