# HOW TO GIVE

## The choice of distribution mechanism has serious implications for intergenerational equity

Topix

March 2017

One of the key responsibilities of community trusts, iwi, and similar organisations, is to balance the benefits of the invested funds equitably between current and future generations. This concept of *intergenerational equity* is crucial and hinges on the way the trustees release investment funds for distribution each year. Release too much, too quickly, and the trustees potentially eat into the real value of capital, favouring the current generation of beneficiaries. Release too little, too slowly, and the trustees will be open to criticism for not sufficiently supporting the current generation of beneficiaries (whose voices are the loudest).

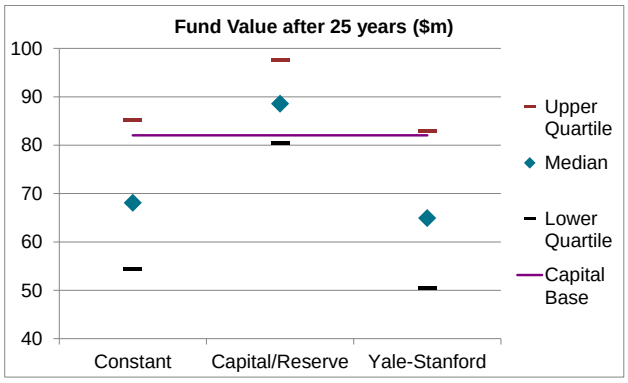
The choice of distribution mechanism is therefore one of the most important decisions a charitable organisation must make. It is desirable to have a clear set of rules so that trustees' distribution decisions are transparent and not open to criticism. However, if the mechanism is not calibrated correctly, an extreme negative investment event may lead to overdistributing when the trustees should be preserving funds for future generations. This could permanently impair the real value of capital.

To this end, we have examined three different distribution mechanisms to see how an extreme market shock might impact them. They are:

- Constant distribution rate
- Capital and Reserve Account system
- Yale/Stanford model

In each case, we simulate returns over a 25 year time horizon for a diversified investment portfolio starting at $50 million and with 60% in growth assets. We insert a large negative shock in year five. We present summarised results on this page and delve into each system in detail throughout the remainder of this document.

First, we show the fund value after 25 years.

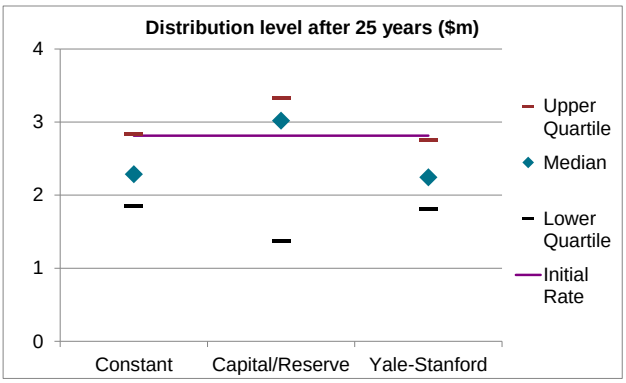



We show the median result of our scenarios as well as the upper and lower quartiles. This is compared to the original capital base in real terms (i.e. increased for inflation).

For the first and third mechanisms, the large investment shock severely derails the real value of capital. However, there is still a reasonable probability of recouping value through good investment results – shown by the upper quartile being above the capital base line.

By contrast, the Capital/Reserve Account system preserves the real value of capital in most scenarios and has a narrower spread of results.

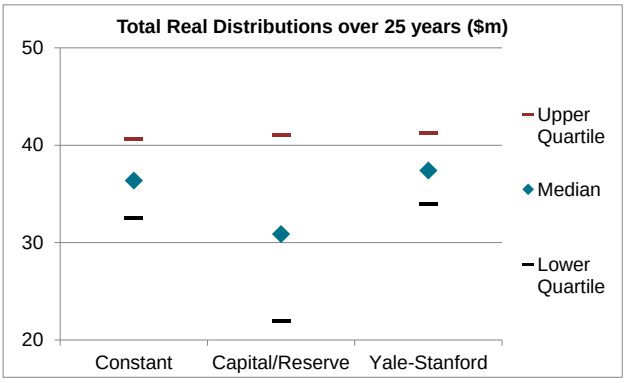
We next examine the level of distributions at year 25.




This shows the Constant and Yale/Stanford systems below their long term (real) value of distributions at year 25. This is a function of the hit to capital which means that the distribution rate is being applied to a smaller dollar value of assets.

The Capital/Reserve Account system again stands out, on average meeting the desired level of distributions (in real terms) by year 25. However, there is a much larger spread and a high probability that the level of distributions will be significantly lower.

While the position at year 25 is good for the Capital/Reserve Account system, this is due to a very volatile ride that distributions take over the 25 years. When we look at the total amount of distributions made over the 25 year period, a different picture emerges.




The Capital/Reserve Account system has, in fact, made much lower distributions in aggregate compared to the other two systems. As we show in the later analysis, this is due to distributions ceasing when the Reserve Account "buffer" is eroded by the poor investment results.

### MJW view

While there are many possible calibrations, our simplified modelling shows the Capital/Reserve Account system generally places most importance on the preservation of capital over the long-term and will cease distributions if necessary to protect the real value of capital.


Simpl House 40 Mercer Street
PO Box 11330 Wellington 6142 New Zealand
T: 64 4 499 0277
wgtn@mjw.co.nz

www.mjw.co.nz

MELVILLE JESSUP WEAVER LIMITED

57 Fort Street
PO Box 4014 Auckland 1140 New Zealand
T: 64 9 300 7155
akld@mjw.co.nz

By contrast, the Constant Rate and Yale/Stanford models favour continuing distributions (albeit at a lower level) in the shorter-term even when there is a large negative investment shock. This can come at the expense of the long-term real capital value.

Therefore, trustees should ask themselves what their priorities are. While the desire to maintain the long-term real value of capital may push trustees towards a Capital/Reserve Account system, the potential to greatly decrease (or even cease) distributions in the short-term may not be acceptable. This may lead the trustees to choose a different approach, such as the Yale/Stanford system, which maintains a level of predictability in the year-to-year distributions.

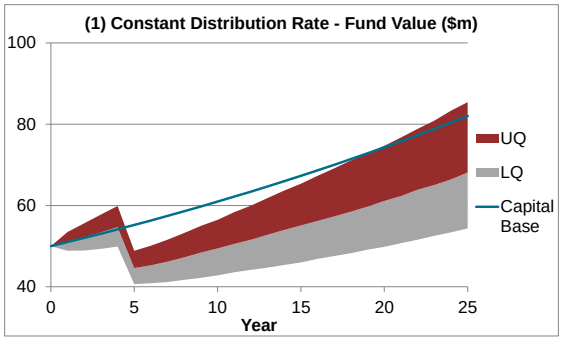
## Appendix A – Constant distribution rate system

This is the most straightforward approach and simply releases a certain proportion of the investment funds each year. This model is commonly used where the investor's assets produce a known income stream. An example is Entrust and its distribution of Vector's dividend annually.

While straightforward when there is an explicit dividend or earnings stream, this is harder to apply when part of the investment return relates to capital growth. For example, with a diversified global share portfolio, generally only a small fraction of the overall return relates to dividends (which are often reinvested anyway). In this case, a long-term distribution rate might be established to guide how much of the return is released each year.

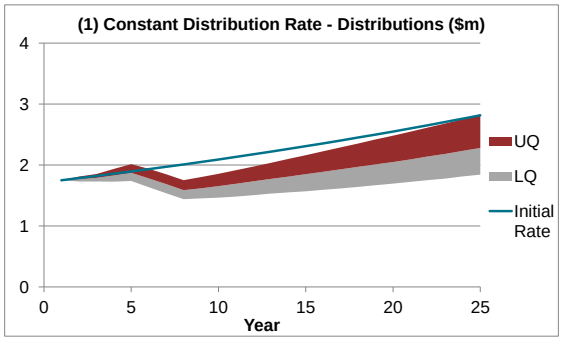
We have created a simple system where a long-term distribution rate is applied to the average asset base over the previous three years. This moving average smooths the level of distributions.

We first show the evolution of the fund value.




The big hit in year five is a clear feature. The funnel created by the upper and lower quartiles shows that there is some chance of catching back up to the base capital (in real terms) by year 25.

We next show the evolution of distributions.




The smoothing effect of using a moving average means that distributions fall relatively slowly. The lower fund levels in subsequent years make it less likely that distributions will catch up to their previous level in real terms.

Examples of entities that use a version of a constant distribution rate, or distribute a dividend or cash profit (the approaches vary widely) are:

- Entrust
- Foundation North
- Ngāti Whātua Ōrākei
- Tauranga Energy Consumer Trust
- Trust Waikato
- Waikato-Tainui

## Appendix B – Capital and Reserve Account system

A common model amongst community trusts in New Zealand is to split the asset base into a "Capital Account" and a "Reserve Account" (or similarly named apportionments).

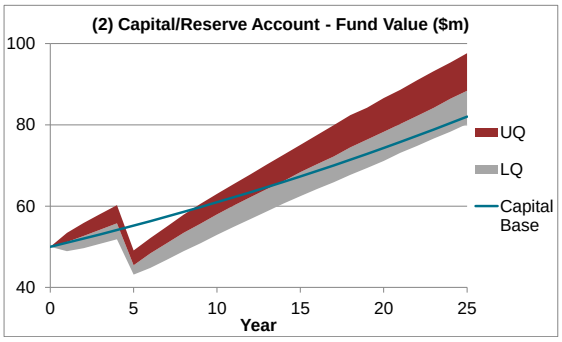
The Capital Account represents the original investment and increases with inflation each year. There may also be other factors that increase the Capital Account. For example, in areas where there is high population growth, the Capital Account may also be set to increase with the population (i.e. maintaining real value per capita).

The Reserve Account is defined as the difference between the Capital Account and the total investment assets. It acts as a buffer over the real value of capital to smooth out fluctuations that result from volatile investment markets. The Reserve Account can become negative.

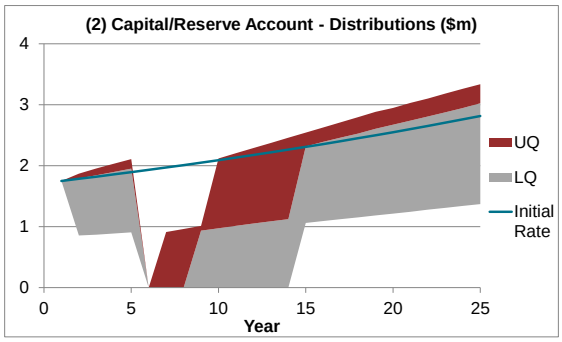
We have modelled a distribution system based on the size of the Reserve Account. When the Reserve Account is large, distributions increase but when it is significantly negative, distributions cease. The rules are given in the following table.

| When the Reserve Account is… | Distributions are… |
|---|---|
| > 20% | Twice long-term rate |
| > 0%, but < 20% | Long-term rate |
| < 0%, but > -5% | Half long-term rate |
| < -5% | Zero |

We again show the results for the fund value first.




This shows a much narrower band of results and, as was illustrated previously, the fund value at year 25 catches back up (and indeed surpasses) the real value of original capital. However, as we see in the next chart, this comes with the need to cease distributions for several years following the financial crisis.




This somewhat strange pattern shows that it is very likely that distributions cease for several years after the financial crisis in year five.

It is also worth pointing out that this model results in a large downward skew in the range of distributions, regardless of investment markets (the larger area of grey shading). That is, the rule that ceases distributions in the wake of poor investment returns greatly impacts the actual distributions paid.

Organisations that use the Capital/Reserve Account system, or similar, include;

- BayTrust
- Central Lakes Trust
- Community Trust Mid & South Canterbury
- Community Trust of Southland
- Eastern & Central Community Trust
- Otago Community Trust
- Rātā Foundation
- TSB Community Trust
- WEL Energy Trust
- Wellington Community Trust
- West Coast Community Trust
- Whanganui Community Foundation

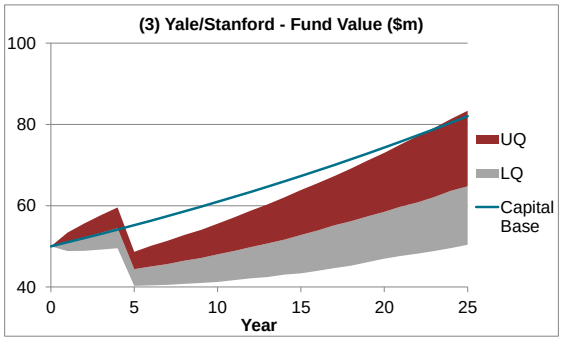
Some of these use a hybrid system; for example, a mix of the Capital/Reserve Account and Yale/Stanford methods.

## Appendix C – Yale/Stanford system

In the Yale/Stanford model the distribution rate is determined by a weighted average of (1) the previous year's distribution (adjusted for inflation) and (2) the long-term distribution rate applied to the current fund value. The former links the distribution to the previous year to ensure stability, while the latter links the distribution to the long-term target rate and the fund value.

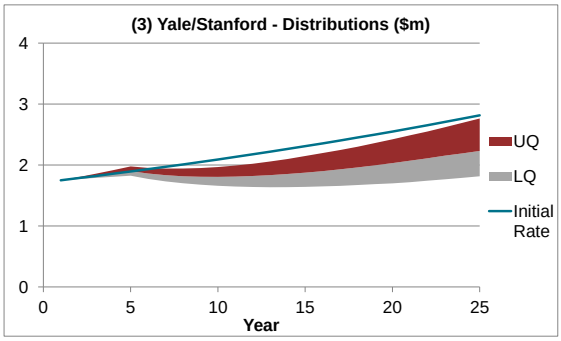
We place an 80% weight on part (1) of the equation – the previous year's distribution, and a 20% weight on part (2) – the long-term distribution rate. This means that the distribution amounts are strongly linked to the previous year's distributions.

Again, we first show the evolution of the fund value.




This shows a steep drop in the fund value but, after that, a reasonable recovery. The chance of getting back to the real capital value by year 25 is approximately 25%.

Next, examining the distributions we see that this mechanism comes with much greater certainty of year-to-year releases.




While distributions are unlikely to get back to their initial level (in real terms), there is a very smooth pathway and narrow range over most years.

Entities that use a version of the Yale/Stanford formula include;

- New Plymouth District Council
- Te Rūnanga o Ngāi Tahu

## Appendix D – Key assumptions

| Assumptions | |
|---|---|
| Opening Fund Value | $50 million |
| Long-term distribution rate | 3.50% pa |
| Portfolio arithmetic return | 5.84% pa |
| Portfolio volatility | 6.75% pa |
| Inflation | 2.00% pa |

Our investment shock is a -15% drawdown of the portfolio value – similar to what a 60% growth asset portfolio might have experienced in the global financial crisis.

## Appendix E – Further reading

BNZ has produced an excellent paper titled "Distribution & Spending Policies - Considerations for Iwi" (December 2012) that presents a very good discussion about distribution models as they apply to iwi. It is highly recommended reading and can be found here.

ABOUT MELVILLE JESSUP WEAVER

Melville Jessup Weaver is a New Zealand firm of consulting actuaries providing advice on investment consulting, superannuation, and insurance. The firm, established in 1992, has offices in Auckland and Wellington and is an alliance partner of Willis Towers Watson, a leading global services company that is located on the web at willistowerswatson.com.

*For further information please contact:*
*Ben Trollip 09 300 7315*
*ben.trollip@mjw.co.nz*