

Financial engineering:

[The Tyranny of Small Numbers and Sequenced Payouts](#)

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Neither of these topics would normally be of interest to many of the readers of this publication or the underlying clients, but given the 'interesting times' in which we live, they may prove critical to many.

[The Tyranny of Small Numbers](#)

Regardless of currency, banks are paying savers a fraction of 1% annually, at best. Bonds or bond funds, depending on the quality and the length to maturity, are earning 1 to 4%. Good general investment funds, although much more volatile may average returns of 9% or higher.

The problem is inflation, taxes, service costs and the inherent risk of failure.

Service costs. The bank, bond manager, or general fund manager, all have the same basic costs for doing business whether the return is high or low. They can't very easily change their overhead, while still providing the same levels of protection and service in an environment where their costs for doing business are greater than the income the underlying investments can produce. This is why several advanced countries have savings plans, and even government bonds, that are providing negative returns. Small numbers easily create negative results; there just is not enough meat left over to pass onto the private investor who is at the end of the feeding chain. The ravages of inflation and the need to pay taxes compound the decreasing returns.

Here are some possible antidotes. Use dividends that are very dependable. There are companies that have a 20 year or longer history of steadily increasing (generally modestly) dividends or similar payouts. Unfortunately, this positive characteristic almost never happens if you own a bond or a savings plan. A variation on this is to buy 'toll-paying' securities, such as airports, pipelines, highways, income producing Real Estate Investment Trusts (REITs), etc. All these could pay steady income in good and bad times. Also, buy historically reliable funds and indices that, on average, have withstood the test of time. Change your Mission Statement from 'safe savings'; to creating a 'perpetuating pension fund' for your family, using the simple basic principles of any major pension fund.

Inherent Risk. Here is a statement that most would consider heretical, then let's test its possible veracity. 'Buying a major index ETF is inherently safer than keeping your money in a bank or in a mixed bond fund!' Lets look at the economy from the point of view of the vocal minority that say Armageddon is just around the corner because of irresponsible governments and paper currencies (Greece, Cyprus, Ireland, Iceland, Argentina, Ukraine, the Euro, etc.). If this happens only slightly, and only a tiny percentage of the bonds or savings certificates in a well diversified portfolio fails, the chances of making up for the loss via the returns produced from the rest of the portfolio are nil in today's interest environment. On the other hand, an index like the FTSE is virtually immune to an indefinite collapse. Even if the entire UK/Sterling monetary system would go into bankruptcy, many of the leading businesses would survive, and some would actually prosper from such a calamity. A rules based index will regularly reevaluate who should be included and the

corresponding ETF automatically has to do the same. Thus, at least a partial equity investment strategy needs to be considered when interest rates are near zero.

The Simple Mathematics of Sequenced Payouts

This is a topic much discussed among pension managers, in particular, but requires awareness by every responsible adult. Let's say for arguments sake, the portfolio manager is promising a 5,000 per month payout, to last for the rest of the client's life. This is called a sequenced payout.

In order to provide you with this payment, the manager needs to average (again for argument's sake) a 10% return on their investment portfolio per year, which includes a span of returns, volatility, between -10% to +20% per year returns –i.e. a normal range of annual results.

But what happens if the plan experiences a 'Black Swan' year with a 20 to 45% loss? It creates a negative domino effect that might not be recoverable. A major problem occurs when there is, for example, a 25% loss (1million goes down to 750,000). This is a 25% loss, plus a loss from the 4% payouts = 29%. In order to recover the 29% loss, the remaining **71%** of the original capital has to increase by nearly **41%** to get back to where it started -- without taking into account the continuing drag from sequenced payouts during the recovery period!

This is one of several reasons most retirement plans are in actuarial trouble today. The other two major factors are the rapid rise of life expectancy of pensioners, and the tyranny of low returns discussed above. This is one of the major reasons personal wealth enhancement is a continuing even for the rich. Most of us need to increase forced savings, to invest wisely and relatively aggressively, in order to have as much capital in retirement as possible.

Here is the moral of the lesson learnt two paragraphs ago. Sequenced Payouts are a potential retirement plan killer. Unless we are wealthy -- not worried about what we will have for biblical levels of old age, and not expecting to help family members beyond our lifetimes -- we need to do flexible payouts. When the whole economy is hurting we have to allow ourselves to hurt as well.

Here is a simple rule that we suggest to those seeking help on this important matter. Implement a portfolio management approach whereby you allow yourself to take out all dividend type income but never more than ½ of share appreciation. Thus, in a bad year, there are greatly reduced payouts, but still steady basic income (see the suggestions at the end of the first part of this article for the types of investing that helps accomplish this outcome). In years when markets are down, one does not substantially add to the contraction of capital because of payouts. To go back to our example above, a 25% loss creates a need to re-grow the capital by 33.33% as opposed to a 29% loss which needs nearly a 41% increase to get back to the starting point. Plus, with this solution there is minimal drag from the regular payouts, and a built in inflation factor.

Unfortunately asset/investment managers do not properly understand the personal economics that needs to be taken into account to help their investors be successful long-term. These kinds of considerations need to be more widely understood and explained when initiating an investment program. It's easy to get excited about an investment's historical returns but these two factors, among others, can severely impact what happens in reality.



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