

The Illusion that More Conservative Portfolios Address Risk Capacity Issues

Shawn Brayman
President & CEO, PlanPlus Inc.

Presented at:

Academy of Financial Services
Session G1
San Antonio, TX
October 2nd, 2012

Abstract

The current evolution of “suitability assessment” of investment portfolios has differentiated between risk tolerance, a psychological construct; risk required, a financial construct of the return required to achieve specified goals; and risk capacity, the risk that the investor can afford in the event of a downturn. Application is usually for advisors to recommend more conservative portfolios in the event that the risk capacity of the investor is deemed to be less than the risk tolerance and risk required.

The intent of this paper is to demonstrate that this intuitively correct action, the belief that by reducing the volatility of the portfolio to reduce downside exposure will correct problems of insufficient risk capacity, is in reality the wrong course of action for most clients. Dialogue focuses on the downside reduction without accounting for the tradeoff or loss of upside contribution towards achieving the client goals. Clients are not being properly informed of the cost of these decisions.

Overview

The evolution of the assessment of suitability of investment portfolios and the associated risk for a client has evolved over the past few years. Traditional models of “risk tolerance assessment” have changed with the separation single portfolio picking questionnaires into some distinct components:

- Risk Tolerance - a psychological measure of an individual to determine their ability to accept volatility in their portfolio
- Risk Required - a financial measure of the rate of return required by a clients investments to achieve specified goals

- Risk Capacity – a financial construct on the downside outcome or return that a client can live with unacceptable levels of capital contribution towards the goals.

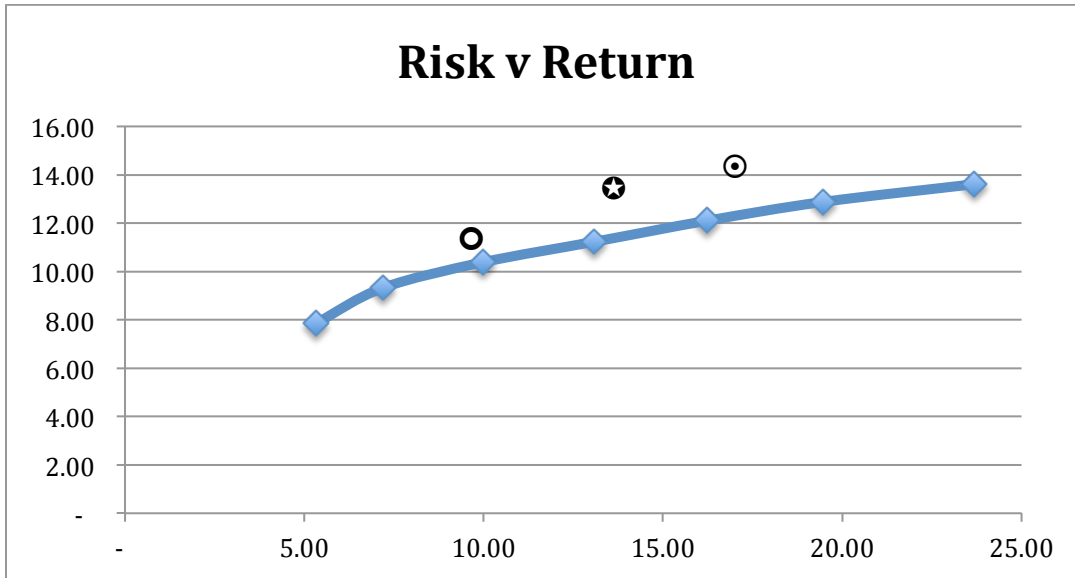


Figure 1: Efficient frontier based on Canadian indices

- ✱ Risk Tolerance
- ⊙ Risk Required
- Risk Capacity

A relative standard scenario would be that a client has goals that require a 10% rate of return to achieve. After completing a risk tolerance test it is concluded that the client would be comfortable with a portfolio that has an 9% rate of return. The risk capacity, what the client can afford to lose is determined to be a portfolio with a 8% return and lower standard deviation.

Although the phraseology might vary, the regulator indicates that advisors must consider both risk tolerance and risk capacity. In some jurisdictions the wording is as strong as “the advisor must select the lessor of risk tolerance and risk capacity”.

The standard processes when the risk capacity is less than risk tolerance is that the advisor then recommends a more conservative portfolio. The intuitive believe is that if we are looking at protecting the client from the downside possibilities of portfolio outcomes, a more conservative portfolio with lower standard deviation will accomplish this objective.

The purpose of this paper is to document the fallacy of this belief. For this concept draft we will use the example of a single marketplace. The finished paper will look at a variety of markets with different capital markets and risk premiums.

Canada Case Study

If we look at the Canadian Marketplace based on data from 1950 until 2010, a series of portfolios are constructed with from 8 to 10 asset classes and risk and returns as shown below and illustrated in Figure 1 above.

| | Risk | Return | Sharpe |
|-----------------|-------------|---------------|---------------|
| All Income | 4.36 | 4.84 | 0.422 |
| Income | 5.53 | 5.99 | 0.541 |
| Income & Growth | 7.08 | 6.74 | 0.528 |
| Balanced | 8.64 | 7.45 | 0.515 |
| Growth & Income | 10.93 | 8.2 | 0.476 |
| Growth | 13.65 | 9.11 | 0.448 |
| All Equity | 17.21 | 10.29 | 0.424 |

Table 1: Seven sample portfolios with risk and return characteristics

If we look at one of these portfolios, the Growth Portfolio as an example, the expected risk and return results in an expected distribution of possible returns as illustrated in Figure 2.

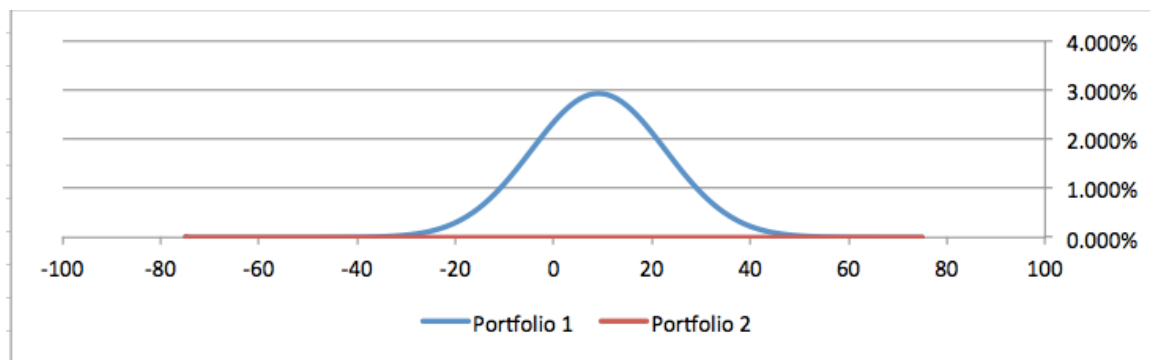


Figure 2: Distribution of returns of Growth Portfolio

If as a result of the lower risk capacity the approach is to recommend a more conservative portfolio, let's say we will recommend the Growth & Income portfolio as an alternative, the client should expect lower volatility as a result of the more conservative portfolio but a lower expected rate of return. There should always be a lower return expectation with lower volatility assuming efficient portfolios.

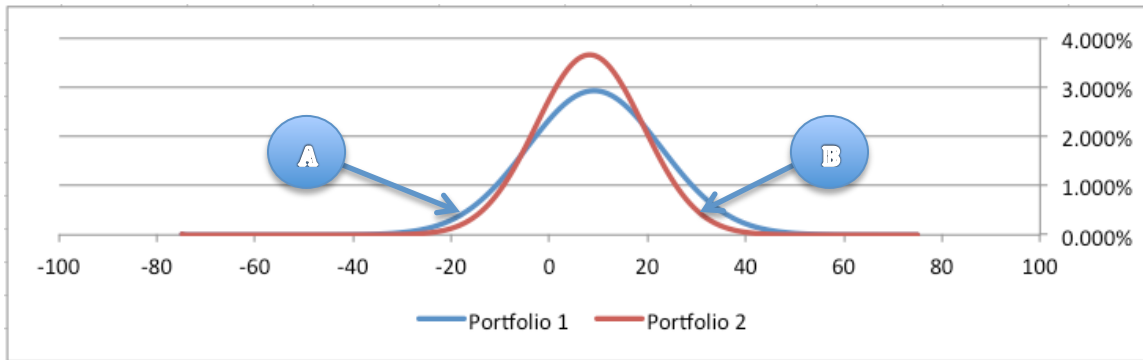


Figure 3: Growth Portfolios (blue) versus Growth & Income Portfolio (red)

As a result of the reduced volatility, as expected the likelihood of poor outcomes is reduced (A), but because of the reduced return expectation the amount of upside that is sacrificed (B) must always be more than the downside that is reduced. The question becomes how much is the tradeoff?

If the client's risk required was in fact lower than the risk tolerance, the sacrifice of the "upside" may not come at the cost of reducing the ability to achieve the goals. If on the other hand, as the case will more often be, the risk required exceeds the risk tolerance, what the client sacrifices on the upside "guarantees" inability to achieve the goal in return for a less likely much poorer downside.

If we look at the tradeoff decision between the Growth Portfolio and the Growth & Income Portfolios in figure 3 above, there is a 3.7% reduced chance of a poor outcome but at the cost of 7.3% less chance of the higher returns, a 2 to 1 ratio. In other words the client must sacrifice twice the upside for each dollar of downside protection from the decision.

| | G | GI | B | IG | I | AI |
|-----------------|------|------|------|------|------|------|
| All Income | | | | | | |
| Income | | | | | | 7.69 |
| Income & Growth | | | | | 2.61 | 4.12 |
| Balanced | | | | 2.5 | 2.57 | 3.41 |
| Growth & Income | | | 1.93 | 2.12 | 2.25 | 2.74 |
| Growth | | 1.95 | 1.93 | 2.05 | 2.11 | 2.41 |
| All Equity | 1.94 | 1.94 | 1.92 | 1.98 | 2.02 | 2.23 |

Table 2: Tradeoff ratio between different portfolios

Interestingly, if we look at each of the more conservative portfolio options (see Table 2) – trading the Growth for a Balanced Portfolio or an Income & Growth portfolio the tradeoff of 2:1 remains relatively stable. As we move towards more conservative portfolios being traded off the relative cost become less evident. As an example moving from an Income & Growth Portfolio to the All Income has a 4.12 to 1 tradeoff.

USA Case Study

If we repeat the process looking at the US Marketplace with data from 1979 we find that the Sharpe Ratios are in generally lower than Canada indicating a lower risk premium or more risk required for increased return.

| | Risk | Return | Sharpe |
|-----------------|-------|--------|--------|
| All Income | 2.25 | 6.84 | 0.000 |
| Income | 2.45 | 7.03 | 0.078 |
| Income & Growth | 3.02 | 7.70 | 0.285 |
| Balanced | 7.40 | 8.68 | 0.249 |
| Growth & Income | 11.07 | 9.58 | 0.248 |
| Growth | 17.69 | 11.18 | 0.245 |
| All Equity | 20.61 | 11.59 | 0.230 |

Table 3: US portfolio risk and returns

All of the same results as we saw in Canada continue to hold in the USA although the magnitude of the tradeoffs is reduced.

| | G | GI | B | IG | I | AI |
|-----------------|-----|------|------|------|-------|-------|
| All Income | | | | | | |
| Income | | | | | | 7.42 |
| Income & Growth | | | | | 11.61 | 10.82 |
| Balanced | | | | 1.55 | 1.92 | 2.01 |
| Growth & Income | | | 1.63 | 1.56 | 1.74 | 1.78 |
| Growth | | 1.61 | 1.61 | 1.54 | 1.62 | 1.65 |
| All Equity | 1.3 | 1.51 | 1.52 | 1.49 | 1.55 | 1.58 |

Table 4: Tradeoff Ratio US Portfolios

United Kingdom Case Study

| | Risk | Return | Sharpe |
|-----------------|-------|--------|--------|
| All Income | 5.32 | 7.85 | 0.000 |
| Income | 7.19 | 9.32 | 0.204 |
| Income & Growth | 9.98 | 10.38 | 0.254 |
| Balanced | 13.09 | 11.23 | 0.258 |
| Growth & Income | 16.23 | 12.10 | 0.262 |
| Growth | 19.48 | 12.88 | 0.258 |
| All Equity | 23.68 | 13.61 | 0.243 |

Table 5: United Kingdom Model Portfolios

| | G | GI | B | IG | I | AI |
|-----------------|------|------|------|------|------|------|
| All Income | | | | | | |
| Income | | | | | | 4.97 |
| Income & Growth | | | | | 2.14 | 2.95 |
| Balanced | | | | 1.72 | 1.89 | 2.33 |
| Growth & Income | | | 1.74 | 1.73 | 1.83 | 2.12 |
| Growth | | 1.6 | 1.67 | 1.67 | 1.74 | 1.96 |
| All Equity | 1.32 | 1.44 | 1.52 | 1.55 | 1.62 | 1.78 |

Table 6: Tradeoff in United Kingdom

We would look at additional countries and portfolios but the relationship seems clear that the critical consideration in a country is the risk-return premium in a country. Not surprisingly the steeper the efficient frontier curve, the more return for level a risk, the larger the tradeoff for the client with greater upside sacrifice for reduced downside threat.

Impact of Time

The underlying assumption in the results above is a simple analysis of the portfolio based on a 1-year time horizon. In the real world clients are not expected to make these portfolio decisions based on a 1 year time horizon but as a multi-year investment strategy as the related goals and use of funds may occur over many years.

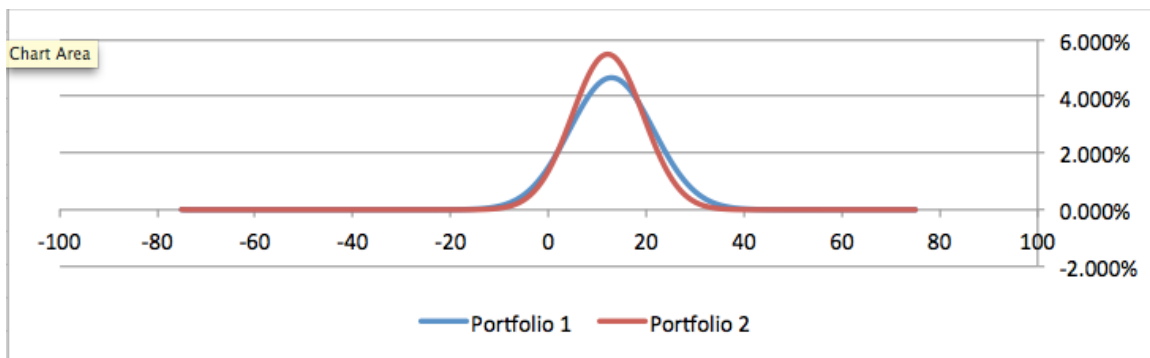


Figure 4: Growth Portfolio versus Growth and Income Portfolio over 4 years

If we look at the Growth versus the Growth & Income Portfolios (United Kingdom) with a 4-year time horizon then the standard deviation of the portfolios (annualized) is reduced and as a result the differential between the two portfolios is further reduced. The expected returns of the portfolios remain stable.

As a result, the probable downside that is reduced is 2.0% while the upside that is sacrificed is now 6.6%, so the client is being asked to give up 3.5 times the level of

upside return for each dollar of downside protection. Again when we look at other more conservative portfolios the Tradeoff Ratio remains about 3.5:1 with a four-year time horizon.

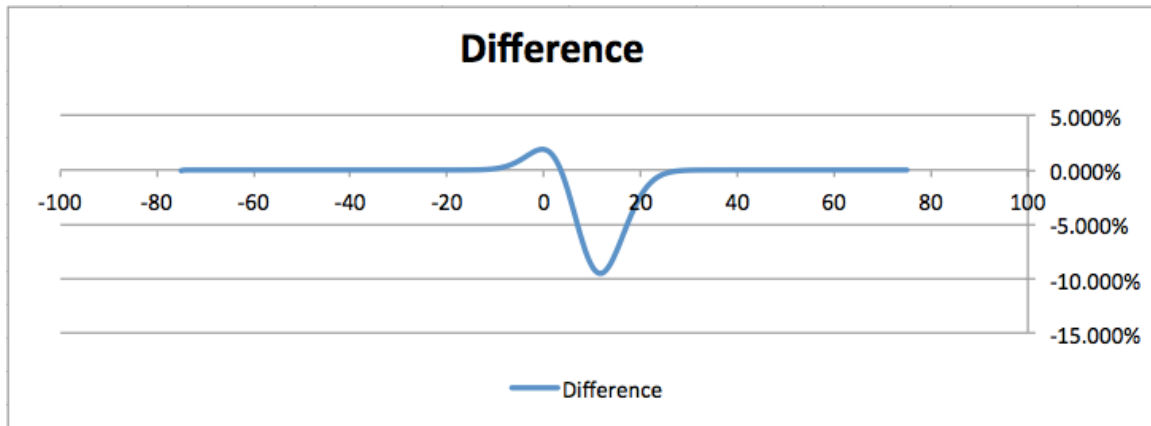


Figure 5: Difference in Likelihood of Outcomes of 2 Portfolios

We can see in the Figure 5 above the positive improvement from the reduced downside versus the sacrificed upside.

The longer the time horizon the greater the “tradeoff” ratio.

- 1 Year 2:1
- 4 Years 5:1
- 9 Years 16:1
- 16 Years 90:1

By the time we are looking at a portfolio that will have a time horizon of 16 years, there is no effective difference on the downside protection. When looking at the Growth versus Growth & Income Portfolios there is a 0.2% downside improvement at the expense of 16.2% of upside sacrificed. By the time we have a 22-year timeframe there is no downside difference.

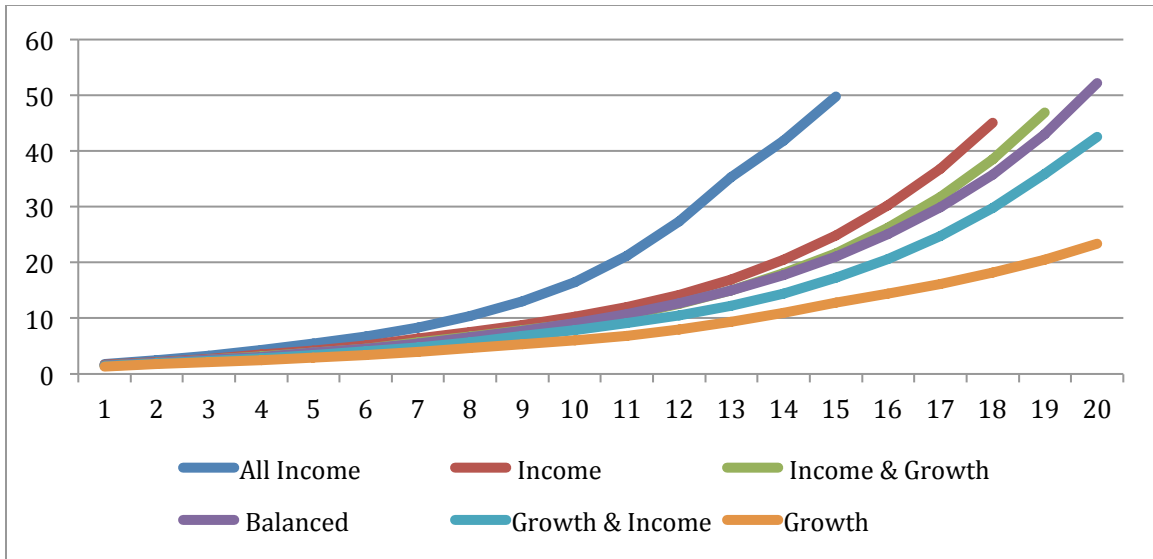


Figure 6: Tradeoff Ratio versus Time

If we look at Figure 6 we can see that as the time horizon (x axis) is increased the Tradeoff Ratio continues to increase. This figure shows the ratio if you held the All Equity portfolio and traded down to one of the more conservative portfolio.

The Problem

The problem is obvious, in that the industry has used a generalized set of expectations that do not look at the explicit client circumstance, but rather arrive at “rules of thumb” that we are improving the client’s downside by recommending the more conservative portfolios. We have focused on the reduced possibility of negative outcomes without fully explaining to the client the trade off. This approach has appeal to compliance departments who feel there is less exposure to litigation based on this action.

As a financial planner with a fiduciary responsibility to the client, we are not always informing them of this “trade off”. Do we feel that if a 50 year old client with a time horizon of a decade until retirement and 2 or 3 decades of retirement will feel that they are willing to sacrifice \$50 of upside for each \$1 of downside loss they reduce? This is to address a perceived lack of “risk capacity”? Unlikely.

The discussion is not occurring and the client is not being presented with the choice. Litigation wary firms are creating a form of behavior in the industry that is leading to a paternalistic “this is in your best interest” decision that is not supported by the client situation. For most firms this entire discussion does not occur in the context of actually understanding the client goals and timeframes as that “is too complex”.

It would appear that the entire conversation of “risk capacity” may in fact be a red herring and in fact the key determinants of the portfolio decision should be the risk required, the risk tolerance and to some extent time horizon. It is important to

understand risk capacity but the intuitive action of moving clients to more conservative portfolios rather than maintaining the most aggressive portfolio based on their tolerance is flawed. We need to explain the tradeoff to the client and likely maintain the riskier portfolio to achieve their goals.