Guidance on determing financial planning projections

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Introduction

Projecting the likely performance of any investment in a portfolio, to reflect the financial benefits clients are likely to receive, is as much an art as it is a science.

Making effective projections in financial planning uses principles similar to those applied when formulating financial projections for a business. With business projections however, the factors that must be considered include sales, fixed and variable expenses, depreciation, cash flow, and of course, profit or loss. To effectively make projections for a business, the methods used should satisfy three requirements:

- some **historical basis**
- be **realistic**
- be **defendable**.

Otherwise, adopting unrealistically favourable estimates could:

- at best, provide projected outcomes that, on paper, may reflect only healthy business prospects, or
- at worst, misrepresent what the business's future prospects are likely to be.

The reverse may occur if the projections are far too conservative.

The three requirements (i.e. basis, realistic, defendable) must also be applied when planners compile projections for income and/or capital growth for the various different investments that can exist in client portfolios.

Of course, included in this required exercise is the creation of **present and future cash flow and asset statements**. The present, a 'picture window' representation of where the client is now (including their net asset and net cash flow position) and, separately, what the future is likely to look like following the planner's recommendations, represented both in terms of estimated future cash flows (including the frequency of those cash flows), and likely capital values.

Where to start?

Important factors that must be considered when making investment projections include the:

1. time period over which the projections are being made
2. likely inflation (CPI) rate over that period
3. asset class or classes in which the investment is positioned (i.e. shares, fixed interest, cash etc., or a mixture, as in a balanced fund)
4. long-term historical performance of asset classes
5. past performance of the specific investment being recommended or retained. Also, is it a direct investment (e.g. a specific share) or a managed fund? If a managed fund, what have been the past returns (after management fees)?
6. underlying securities in the portfolio (e.g. Australian share fund, diversified balanced fund, growth fund, Cash Management Trust)
7. tax position of the investment vehicle (e.g. insurance bond, superannuation fund) or an investment where no tax is applied at source, such as with a unit trust.

All these factors should be considered in projecting realistic projections for income and/or capital growth.

Each factor is explained in more detail below.

1 Time period

The Financial Planning case study assignment requires students to make projections over periods of time greater than one year. For some clients this approach is needed (e.g. pre-retirement advice for those aged in their 40s, targeting a particular balance expected at retirement).

However, the longer the period used, the more difficult it may be for projections on certain investments to hold true. For example, with investments such as CMTs, the returns may vary considerably to future movements in interest rates.

Conversely, for capital growth investments such as shares and property, projections based on long-term historical returns may more likely eventuate over longer projected time periods. Projections for capital growth investments over short periods such as one year may be difficult to achieve given the potential short-term volatility inherent with growth assets.

Therefore, projections must be conservative and achievable and be reflective of likely outcomes over the period of time being projected.

2 Inflation rate

This is an important factor in determining the real, after inflation, rate of return from an investment. The likely movement in CPI is the usual benchmark used here. The RBA has clearly stated that their current target is to keep Australia's inflation rate between 2% and 3%. A projected figure around these RBA benchmarks is normally acceptable.

Some planners use an inflation rate slightly higher than pure CPI to reflect the reality of price increases in the marketplace for particular investors (e.g. retirees).

3 The investment's exposure to asset classes

This is one of four important factors in determining what likely return could be achieved from the investment. As indicated above, the other three being the long-term historical performance of asset classes (i.e. shares, cash, fixed interest, etc.), the past performance of the particular investment, and the tax position on the fund's earnings.

Determining the assets class for a direct investment (e.g. a listed Australian share) is obviously easier than for a diversified fund, where the exposure could be variable across all recognised asset classes.

With managed funds of all sorts (e.g. a unit trust), reliable research relating to the fund's declared asset allocation must be determined. This could come from either the fund manager or be compiled by a licensee for their representatives, reflected in their approved product list (APL).

Advisers therefore need to understand precisely what asset class or classes an investment is positioned in. This information is important in developing likely future returns.

4 Historical performance of asset classes

As a learnt principle, the higher the risk of an investment the greater expected return. Shares, for example, have outperformed cash over the long term. Acceptable benchmarks that reflect this include well-accepted, published indices, such as the ASX 200 or 300 Accumulation Index for Australian shares and the MSCI World Index. There are acceptable indices that reflect the past returns from just about any asset class or sector.

Recognised indices reflect the average returns of particular securities in that asset class and accordingly reflect the likely returns investors have received, and therefore could receive, over a designated period of time.

Accordingly, an investment that projections are being made for require an understanding of its likely return parameters — based on an analysis of its underlying assets and the index or indices that best reflects its likely return characteristics.

5 Past performance of the investment

This element should be connected to the historical performance of the asset class or classes the investment is positioned in, but not always. Certain investments, including investment funds, could outperform, and conversely underperform, the benchmark(s) they are measured against. This could be for a variety of reasons such as the expertise of a fund's investment management team (i.e. outperform) or a cyclical downturn in the asset class or asset class sector the investment is exposed to (i.e. underperform).

With managed funds of all types, accurate published returns (after management fees) are readily available to planners. Within that research, such as unit trusts, the past split between net income returns and capital returns are also published. All projected returns for managed funds and the underlying investments of superannuation funds and insurance bonds etc. must be formulated net of expected management and other known fees.

Depending on whether the advice provided to the client is to reinvest or to have the income paid to them, this should also be taken into account.

However, making projections of an investment's likely future performance solely based on its recent performance could be dangerous and potentially illegal. Therefore, the projected past performance should only be used as an indicator.

Again, licensees would normally produce for their planners the likely return parameters for use in statements of advice, but it would be each representative's responsibility to ensure that any projected returns are realistic and defendable.

6 The underlying securities

Digging a little deeper beyond asset allocation, it is also important to understand the particular securities within the asset class or classes the investment is exposed to (e.g. Australian shares or a share fund — Australian industrial and resource shares, top 50 stocks, indexed fund, property securities).

If it is a labelled 'Income fund', what are the underlying securities delivering the return? Are they bank bills, short-term government debt instruments, international fixed interest or a combination of all three, for example?

Understanding the securities or sectors that an investment is investing provides further information in fine tuning what the likely return characteristics of that investment would be.

7 The tax position of the investment

Certain investment vehicles may be required to pay tax on their earnings, such as superannuation funds and insurance bonds. Where these investment vehicles use managed funds, the underlying unit pricing and published returns should reflect any tax paid on their income.

Many others, such as direct investments (e.g. a listed share) and most unit trusts, produce pre-taxed returns (i.e. income and/or capital growth) with any tax liability being the investor's responsibility.

Accordingly, adjustments need to be made to projected returns if tax on the investment's earnings is applied at source.

Conclusion

This guidance paper commenced with the statement that formulating projections of the likely return from an investment is both an art and a science. There are undoubted 'scientific' tools that a planner or licensee can use to form realistic return outcomes. However, a degree of subjectivity is also required to be applied at times (the 'art') to fine-tune those projected outcomes.

Additionally, the period of time that is required to make projections is an important factor.

In addressing those areas within the case study that require making projections, remember that they should be viewed as indicative only for the exercise. A defendable basis is to replicate what would occur in the 'real world'. Further specific guidance around understanding the calculations in Appendix 2 of the sample SOA is provided below.

Understanding the calculations in Appendix 2 of the sample SOA

How the FV formula works

The values in the appendix have been calculated using the ‘FV’ formula in Excel. The formula can be adapted to suit many examples.

In Excel, the formula is FV(rate, nper, pmt, [pv], [type]). Where:

- rate is the rate of return
- nper is the number of periods that the calculation will be made over
- pmt is the amount of money either being added to (negative), or taken from the investment (positive)
- pv is the present value (negative for money invested, positive for money owed)
- [type] defines when the returns are calculated and is either 0 (or assumed to be 0 if left out) or 1.

Usually [type] is left out, implying that the calculations are made at the end of each period, that is, contributions are made at the end of the month or year, and returns are calculated at the end of the month. This is usually the closest approximation to what would happen in reality. All other values will be dependent on the example being presented. To that end, important considerations are:

1. What rate of return should be used?
2. What period are contributions being made over?
3. Do the contributions vary over the time period?
4. What happens to the income part of the return (i.e. reinvested or distributed)?

Point 1: What rate of return should be used?

The rate of return should always be the ‘net rate of return’ which is the rate of return after fees and after inflation.

The rates of return in case studies from Kaplan are usually the gross rate of return after fees. This is because the vast majority of fund managers will report returns net of fees, and rating agencies also report rates of returns after fees. If there is a rate of return before fees, subtract the fees from the return before applying the value to the formula. For example if the return before fees is 8.0% and the fees are 1.5%, use the rate 6.5% before taking inflation into account.

The net rate of return also requires that the inflation component be removed. This is to ensure that calculations are in today’s dollars. If the calculations are not in today’s dollars, they have less relevance to a client as they have no real concept of the purchasing power of that money.

Example: Net rate of return

Fund A has had a gross rate of return of 5.6% p.a. over the previous 5 years, net of fees. Of this, 1.0% was income, and 4.6% was growth and inflation over the same period was 2.5%. Hence, the annual net income return is 1.0%, and the 'real rate of growth' is 4.6% – 2.5% = 2.1%

The total 'real rate of return' is 3.1%. This is the value to be used in calculations.

Note that in this example the income received does not have an inflation component. This of course would not be the case if the nature of the investment was that only income was received, such as with, say, a bank term deposit.

Note: MoneySmart calculators use a more complicated method for dealing with inflation as they also take into account increases in the cost of living above the CPI figure. However, they take a more simplified approach to calculating growth than the FV formula and work on average account balances. For this reason the two calculators will not produce the same results.

Secondly, it is essential that the rate of return being used in the formula matches with the frequency of contributions and the time period. In other words, an annual rate of return can only be used when the 'nper' refers to the number of years that the formula is being applied.

Example: Rate of return per month

Assume it is known that Fund A above, calculates the return on the investment each month and uses that return to adjust the account balance monthly.

To calculate the value in the fund at the end of one year in the best way, change the rate of return to a monthly return and then use the 'nper' as months, not years.

Hence, total real rate of return of 3.1% p.a. must be calculated per month. Then, either take the 3.1% and divide it by 12 = 0.258333% and enter that value as the 'rate' or simply enter '3.1%/12' as the rate in the formula.

So, in the FV(rate, nper, pmt, [pv], [type]) formula, the rate = 3.1%/12 and nper = 12.

Point 2: What period are contributions being made over?

If one is making contributions to a fund on a regular basis, then ensure that the way the formula is applied matches as closely as possible to the reality of the situation. The limitation of the FV formula is that the contribution frequency and the rate of return must match. So, if a fund only pays distributions quarterly, but contributions are being made monthly, use the monthly rate of return to get the best estimate of the overall returns. This is because although the fund may only distribute quarterly, most funds unit price daily. Therefore with growth daily, the returns will be significantly underestimated if quarterly returns are used, and then assumed contributions occur only once a quarter. Of course, monthly calculations will also result in a slight underestimate of the actual growth, but when only estimating returns based on long-term averages, it is reasonable to use monthly growth rates.

Example: Monthly contributions

Assume that one is going to contribute $1000 per month to Fund A. There is no money in the fund so far. The FV formula that used to calculate the fund value at the end of one year is:

FV(rate, nper, pmt, [pv], [type]

= FV(3.1%/12,12,-1000,0,0) (copy and paste this into Excel to check)

= $12,171.98

Note that in the Excel formula using a '$' amount with a 'comma' will cause errors in the formula. If the outcome is an odd result, it needs to be checked.

Also remember that adding money to the fund means that the negative value for the pmt is to be used; if one was withdrawing money from the fund, the positive is to be used.

Note that the more frequent the returns are calculated over the time that the FV formula is being applied, the larger the final value will be, because the effect of compounding returns comes into effect.

Hence, the result of the FV formula will be different if $1000 per month is used and the returns are calculated monthly, than it is if $12,000 is used annually, with an annual rate of return. For example, if one assumed the $12,000 was deposited once at the end of the year, the formula would be = FV(3.1%,1,–12000,0,0) = $12,000 because there is no growth applied. If the type is changed to '1', $12,372 is not the result, because this assumes that all $12,000 was invested at the beginning of the year, and hence had the whole year to grow.

Therefore, it is important to match the formula as closely as possible to the situation that is being modelled.

Point 3: Do the contributions vary over the time period?

If the contributions to an investment are the same every year or every month, then use the FV formula to simply calculate the returns over a number of years. However, if there are different contribution amounts each year or month (e.g. looking at retirement savings and the difference in the amount of superannuation guarantee in different years), then the best way to calculate the long term value of the fund is to calculate the value at the end of each year, and apply the appropriate contributions amount each year. If there were really significantly different contribution amounts each month, then formula should be applied on a month-by-month basis. This is sometimes the case when modelling retirement income and looking at drawing down a fixed percentage of the account balance each year, rather than a fixed dollar amount. However this type of modelling is beyond the scope of Financial Planning.

Example: Monthly contributions that differ each year

Assume that one is going to contribute $1000 per month to Fund A in Year 1 and $2000 a month to the fund in Year 2. There is no money in the fund so far. The FV formula used to calculate the fund value at the end of one year is:

FV(rate, nper, pmt, [pv], [type]

= FV(3.1%/12,12,-1000,0,0) (copy and paste this into Excel to check)

= $12,171.98

And for the next year the PV = -$12,171.98 (i.e. the value of the fund at the end of Year 1); then apply the formula again for a year, with the new contribution rate of $2000 per month.

So, Year 2 = FV(3.1%/12,12,–2000,–12171.98,0)

= $36,898.67

Compare this with the result that would have been obtained using an average of $1500 per month contributions over the 2 years:

= FV(3.1%/12,24,–1500,0,0) (copy and paste this into Excel to check)

= $37,090.04

Again, this is because growth is seen on funds that were not actually in the account.

Point 4: What happens to the income part of the return (reinvested or distributed)?

When calculating the FV of a fund it is important to consider if the income distributions are paid to the investor, or reinvested within the fund. If they are reinvested within the fund, then the rate of return should include the income rate. If the income is distributed to the investor, then the rate used in the calculation should be just the net growth rate of return to reflect this fact.

So far in this analysis it is assumed that all returns were reinvested into the funds in all the examples above. Although income distributions may be made by a fund on a quarterly basis, as an approximation, assume that reinvested income occurs at the same frequency as returns are calculated, or in the case of the approximations used in this analysis, at the same rate as any contributions are made. This is an approximation but it enables the calculations to be made more easily.

The main thing is to be consistent between analysis of a current situation and a recommended situation. In other words, use the same frequency of returns in both scenarios, unless the advantage of contributing more frequently to a fund is trying to be demonstrated.

Example: Distribution of income

Assume that one is going to contribute $1000 per month to Fund A. There is no money in the fund so far. However, the income is going to be taken this time, instead of leaving it within the fund to be reinvested. The total real rate of return is 3.1%, of which the annual net income return is 1.0%, and the real rate of growth is 4.6% – 2.5% = 2.1%.

The FV formula used to calculate the fund value at the end of one year is:

FV(rate, nper, pmt, [pv], [type]

= FV(2.1%/12,12,–1000,0,0) (copy and paste this into Excel to check)

= $12,116.18

The income that has been generated over the 12 months can be estimated by taking the average income over the 12 months and multiplying by the annual interest rate. In this case, the interest would be estimated to be 1.0% x average (0.12116.18) = $60.58.

This is an approximation only, and if this value is added to the fund value shown above, it will not get the same value as when calculating the fund value after 12 months where the income was reinvested, because it will not get the growth on the interest in this calculation and the income payment is smaller as it is an average over the 12 months.

To calculate the income distribution more accurately, use the FV formula to calculate the fund balance at the end of each quarter, then calculate the interest for that quarter and add these together to get the annual interest paid. This works as follows:

Quarter	Formula (copy and paste in Excel to check)	Fund value at end of quarter	Interest in quarter
1	= FV(2.1%/12,3,–1000,0,0)	$3,005.25	$7.51
2	= FV(2.1%/12,3,–1000,–3005.25,0)	$6,026.31	$15.07
3	= FV(2.1%/12,3,–1000,–6026.31,0)	$9,063.26	$22.66
4	= FV(2.1%/12,3,–1000,–9063.26,0)	$12,116.18	$30.29
Total			**$75.53**

Note that this is not a calculation that is needed for the assignment, but it is the closest to the real value that would be received if income distributions are made quarterly and growth is calculated monthly.
The important thing to check is that the same fund value at the end of quarter 4 is achieved, as with the original one year calculation, with income distributed.

How the values in the sample SOA Appendix 2 are calculated

The calculations are based on the assumptions provided in the example (and shown below) and the use of the FV formula.

For the current situation, there is $65,000 in the fund at the beginning, and each year $1000 is added per month. All the income is distributed and the funds are invested into a cash account so there is no growth at all.

This is how the formulas would look to create a spreadsheet to calculate the annual fund value for the present situation. Remember that contributions to a fund are represented by negative values, as are account balances.

Time period	In Excel paste the formulas into column B cells 1 to 8, and the time period into column A cells 1 to 8)	Current situation: Savings account
		Portfolio value
Start	= 65000	$65,000.00
Year 1	= FV(0,12,–1000,–B2)	$77,000.00
Year 2	= FV(0,12,–1000,–B3)	$89,000.00
Year 3	= FV(0,12,–1000,–B4)	$101,000.00
Year 4	= FV(0,12,–1000,–B5)	$113,000.00
Year 5	= FV(0,12,–1000,–B6)	$125,000.00
Year 6	= FV(0,12,–1000,–B7)	$137,000.00
Year 7	= FV(0,12,–1000,–B8)	$149,000.00

The first recommendation shows how the formulas would look assuming that the funds were invested into a fund with 4% growth after inflation and a monthly contribution of $1000. This is how the formulas would look when creating a spreadsheet to calculate the annual fund value for the first recommendation. Remember that contributions to a fund are represented by negative values, as are account balances.

Time period	In excel paste the formulas into column B cells 1 to 8, and the time period into column A cells 1 to 8)	Proposed investment (CMI Fund)
		Portfolio value
Start	= 65000	$65,000.00
Year 1	= FV(4%/12,12,–1000,–B1)	$79,870.66
Year 2	= FV(4%/12,12,–1000,–B2)	$95,347.18
Year 3	= FV(4%/12,12,–1000,–B3)	$111,454.23
Year 4	= FV(4%/12,12,–1000,–B4)	$128,217.51
Year 5	= FV(4%/12,12,–1000,–B5)	$145,663.76
Year 6	= FV(4%/12,12,–1000,–B6)	$163,820.79
Year 7	= FV(4%/12,12,–1000,–B7)	$182,717.56

The second recommendation shows how the formulas would look assuming that the funds were invested into a fund with 4% growth after inflation and a monthly contribution of $1000 for the first year only, as the client quits work. This is how the formulas would look when creating a spreadsheet to calculate the annual fund value for the first recommendation. Remember that contributions to a fund are represented by negative values, as are account balances.

Time period	**In excel paste the formulas into column B cells 1 to 8, and the time period into column A cells 1 to 8)**	**Proposed investment: Helen stops work (CMI Fund)**
Start	= 65000	$65,000.00
Year 1	= FV(4%/12,12,–1000,–B1)	$79,870.66
Year 2	= FV(4%/12,12,0,–B2)	$83,124.72
Year 3	= FV(4%/12,12,0,–B3)	$86,511.35
Year 4	= FV(4%/12,12,0,–B4)	$90,035.95
Year 5	= FV(4%/12,12,0,–B5)	$93,704.16
Year 6	= FV(4%/12,12,0,–B6)	$97,521.81
Year 7	= FV(4%/12,12,0,–B7)	$101,495.00

Assumptions:

Value	**Current situation**	**Proposed strategy**	**Proposed client stops work**
Return period (monthly or annual):	Monthly	Monthly	Monthly
Gross total return (CPI of 3.5% assumed)	4.5%	8.5%	8.5%
Real rate of return: Capital growth	0%	4.0%	4.0%
Real rate of return: Income	1.0%	1.0%	1.0%
Income distributed or reinvested?	Distributed	Distributed	Distributed
Other: Monthly contribution	$1000 every year	$1000 every year	$1000 Year 1 only