

Needs Analysis Capital Required to Solve Cashflow Shortfall

Why are the Shortfall results in Detailed and Splits modes sometimes different and what is “Capital Required to Solve Cashflow Shortfall”?

The Needs Analysis Calculator in Detailed mode answers two questions to determine how much capital I need:

1. Given the amount of assets and cover I have, how much capital do I need to extinguish my liabilities, together with
2. How much capital do I need to provide for future income and expenditure

Whereas in Splits mode, we only solve for the present value capital requirement, the idea in Detailed Mode under future income/expenditure is that you can't use income in, say, years 5 – 10, to offset expenses of years 1 - 5.

Because you can't use this income against the expenses, you need to invest sufficient capital now in order to make up the difference.

The capital you require in addition to (1) to cover (2) is deemed **Capital Required to Solve Cashflow Shortfall**.

The total capital required has always included this amount in the "Detailed" mode of Needs Analysis. However only in recent versions of Xplan have we explicitly allowed for it in the Client Needs Display page.

Example 1: Income is of a longer duration than expenses

20 years of income @ \$25,000 from the current year

The screenshot shows the 'Income' configuration window. It includes a table with the following columns: Type, Owner, Description, Start, Duration (Years), Value (pa), Indexation, Death %, TPD %, Trauma %, and two sets of 'Continue on' options (Client's and Partner's). The values are: Type: Income, Owner: Client, Description: Enter Description..., Start: 2017 Mathieu: 58 | Max: 58, Duration (Years): 20, Value (pa): \$25,000, Indexation: 5.00%, Death %: 100%, TPD %: 100%, Trauma %: 100%, and all 'Continue on' options are set to 100%. There is an 'Add Income' button and a 'Done' button.

10 years of expenditure @ \$50,000 from the current year

The screenshot shows the 'Expenditure' configuration window. It includes a 'Use Budget' dropdown set to 'No'. The table has columns: Type, Owner, Description, Start, Duration (Years), Value (pa), Frequency, Indexation, Death %, TPD %, Trauma %, and two sets of 'Continue on' options (Client's and Partner's). The values are: Type: Expenditure, Owner: Client, Description: Enter Description..., Start: 2017 Mathieu: 58 | Max: 58, Duration (Years): 10, Value (pa): \$50,000, Frequency: Every Year, Indexation: 3.00%, Death %: 100%, TPD %: 100%, Trauma %: 100%, and all 'Continue on' options are set to 100%. There is an 'Add Expenditure' button and a 'Done' button.

Client Needs

Requirements - Mathieu				
	Life	TPD	Trauma	Pt
Capital Requirements				
Liabilities to clear	\$0	\$0	\$0	
Future Expenditure Required	\$370,322	\$370,322	\$370,322	
Future Education Expenses (PV)	\$0	\$0	\$0	
Medical costs/Recovery income	\$0	\$0	\$0	
Provision for Tax	\$0	\$0	\$0	
Other Provisions	\$0	\$0	\$0	
Other	\$0	\$0	\$0	
Total Capital Required	\$370,322	\$370,322	\$370,322	
Total Upfront Needs	\$0	\$0	\$0	
Capital Provisions				
Disposable Assets	\$0	\$0	\$0	
Continuing Income (PV)	\$333,144	\$333,144	\$333,144	
Total Capital Available	\$333,144	\$333,144	\$333,144	
Capital Required to solve Cashflow Shortfall	\$132,855	\$132,855	\$132,855	
Insurance Needs				
Total Cover Required	\$170,032	\$170,032	\$170,032	
Existing Cover	\$0	\$0	\$0	
Gross Up for Superannuation Tax	Not Applied	Not Applied		
Surplus/Shortfall	-\$170,032	-\$170,032	-\$170,032	

Under Splits Mode, our shortfall is:

Plus	PV of Future Expenditure Required:	\$370,322
Less	PV of Continuing Income:	\$333,144
		\$37,178

Under Detailed Mode, the income to be received after year 10 cannot realistically be used to offset the expenses prior to year 10, so we need to invest sufficient capital now in order to make up the difference. The full year 20 value of all the income is \$801,169, discounted to present day (by the return on investment) is \$333,144. However of the \$333,144, the incomes after year 10 has a PV of \$132,854. This is the Capital required to compensate for the Cashflow Shortfall experienced **before** year 10.

Our shortfall under Detailed mode is therefore:

PV of Net cashflows	\$37,1778+
Capital Required to solve Cashflow Shortfall	\$132,854
	\$170,032

Period	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Age - Max	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
In the event of Mathieu's Death																	
In Profile Used: Partner																	
In Profile: Moderately Low																	
ROR: 9.4% pa																	
ICR: 0.0%																	
Opening Value	01	121,553	105,875	88,546	69,437	48,411	25,319	0	42,636	91,412	147,012	210,188	281,770	362,672	453,900	556,560	671,870
Continuing Income	141	30,388	31,907	33,502	35,178	36,936	38,783	40,725	42,750	44,850	47,024	49,272	51,594	53,990	56,460	58,904	61,424
Other Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expenditure	136	56,275	57,964	59,703	61,494	63,339	65,239	0	0	0	0	0	0	0	0	0	0
Other Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Earnings	148	10,209	8,728	7,092	5,290	3,310	1,137	1,914	6,017	10,703	16,036	22,084	28,929	36,664	45,360	55,144	66,120
Closing Value	153	105,875	88,546	69,437	48,411	25,319	0	42,636	91,412	147,012	210,188	281,770	362,672	453,900	556,560	671,870	801,160

Example 2: Expenses are of a longer duration than income

10 years of income @ \$50,000 from the current year

Income
✕

Type	Owner	Description	Start	Duration (Years)	Value (pa)	Indexation	Continue on			Continue on Partner's		
							Death %	TPD %	Trauma %	Death %	TPD %	Trauma %
Income	Client	Enter Description...	2017 Mathieu: 58 Max: 58	10	\$50,000	5.00%	100%	100%	100%	100%	100%	100%
<input type="button" value="Add Income"/>												

Expenditure
✕

Use Budget: No

Type	Owner	Description	Start	Duration (Years)	Value (pa)	Frequency	Indexation	Continue on Client's			Continue on Partner's		
								Death %	TPD %	Trauma %	Death %	TPD %	Trauma %
Expenditure	Client	Enter Description...	2017 Mathieu: 58 Max: 58	20	\$25,000	Every Year	3.00%	100%	100%	100%	100%	100%	
<input type="button" value="Add Expenditure"/>													

Client Needs				
Requirements - Mathieu				
	Life	TPD	Trauma	Pro
Capital Requirements				
Liabilities to clear	\$0	\$0	\$0	
Future Expenditure Required	\$286,493	\$286,493	\$286,493	
Future Education Expenses (PV)	\$0	\$0	\$0	
Medical costs/Recovery income	\$0	\$0	\$0	
Provision for Tax	\$0	\$0	\$0	
Other Provisions	\$0	\$0	\$0	
Other	\$0	\$0	\$0	
Total Capital Required	\$286,493	\$286,493	\$286,493	
Total Upfront Needs	\$0	\$0	\$0	
Capital Provisions				
Disposable Assets	\$0	\$0	\$0	
Continuing Income (PV)	\$400,579	\$400,579	\$400,579	
Total Capital Available	\$400,579	\$400,579	\$400,579	
Capital Required to solve Cashflow Shortfall	\$114,086	\$114,086	\$114,086	
Insurance Needs				
Total Cover Required	\$0	\$0	\$0	
Existing Cover	\$0	\$0	\$0	
Gross Up for Superannuation Tax	Not Applied	Not Applied		
Surplus/Shortfall	\$0	\$0	\$0	
Projection/Funding Period				
Actual Funding Period	Partner Life Exp. 27 years *	Partner Life Exp. 27 years *	Partner Life Exp. 27 years *	

Under Splits Mode our shortfall is

PV of Future Expenditure Required: \$286,493-

Less PV of Continuing Income: \$400,579

ZERO

In this instance, zero will also be the result in Detailed Mode because we assume that we save our surplus of income over expenditure for the initial 10 years at the return on investment. We will therefore have an investment of sufficient value to cover drawdowns equal to the required expenditure.

So, by our two conventional measures, we will have sufficient capital to cover expenses.

However, if you also wish to consider the insuring against the loss of the capital required from year 10, when there will be no continuing income but expenses for an additional 10 years, you will need to invest sufficient capital now in order to make up the difference. The incomes from before year 10 cannot be used to offset expenditure after year 10, and the required expenditure not covered by income is \$114,085. This is the Capital required to compensate for the Cashflow Shortfall experienced **after** year 10.

Client --> Death

Period	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Age - Max	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
In the event of Mathieu's Death																	
Inv Profile Used: Partner																	
Inv Profile: Moderately Low																	
ROR: 5.4% pa																	
ICR: 0.0%																	
Opening Value	14	132,553	179,185	232,498	293,252	362,288	440,530	528,999	628,548	738,409	858,838	989,958	1,131,838	1,284,512	1,448,016	1,622,466	1,807,862
Continuing Income	81	60,775	63,814	67,805	70,355	73,873	77,566	0	0	0	0	0	0	0	0	0	0
Other Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Expenditure	18	28,138	28,982	29,851	30,747	31,669	32,619	33,598	34,606	35,644	36,713	37,815	38,949	40,118	41,321	42,561	43,838
Other Withdrawals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Earnings	76	13,994	18,481	23,601	29,427	36,039	43,522	48,147	49,467	50,815	52,191	53,594	55,024	56,480	57,962	59,468	60,997
Closing Value	53	179,185	232,498	293,252	362,288	440,530	528,999	628,548	738,409	858,838	989,958	1,131,838	1,284,512	1,448,016	1,622,466	1,807,862	1,879,962