
Case Study 1

David and Ann Doyle

CFP Examination Paper

(Last update August 2018)

Case Background

David and Ann Doyle, new clients, have requested that a CFP® professional assist them in evaluating and planning the family's financial future.

David is married to Ann, and they are both aged 50. The couple have two children, Conor and Simon, aged 22 and 13 respectively.

David is employed by Masonary Ltd, from which he is currently drawing a salary of €80,000 per annum. Ann is self employed, with yearly earnings €35,000 per annum from her company, Life Design, of which David is also a director. David has a residential investment property in Dublin, while Ann owns a residential investment property in Leeds.

Ann's father, Frank has just entered long term nursing home care. Frank is 70 years of age. His nursing home costs will come in at €26,000 per annum and he will be supported by Ann and David once his savings of €100,000 are exhausted.

Conor and Simon are in fulltime education. Conor is going into his final year in college. The associated costs of supporting Conor are estimated at €9,000 per annum. **None of these costs are tuition-related.** Simon is expected to go to college when he reaches 18 years of age.

The couple have a low risk tolerance.

Personal Information

Name:	David	Ann
Age:	50	50
Marital Status:	Married	Married
Health:	Good	Good
Occupation	Employed by Masonary Ltd	Company director and shareholder – Life Designs
Dependents	1. Conor, 22– is financially dependent on his parents (college fees) 2. Simon, 13 – is financially dependent on his parents 3. Frank, 70 – is financially dependent on David and Ann for any ancillary nursing home costs beyond his resources	

Client Objectives

1. The clients, *David* and *Ann*, plan to retire fully at age 65. They estimate that in retirement they will require an income of €40,000 net in today's values. This requirement will increase with inflation over the next 15 years.
2. *David* and *Ann* wish to create an education fund to provide Simon's 3rd level education.
3. *David* and *Ann* wish to create a fund to provide for the long-term care of *Ann's father*.
4. Upon their deaths, *David and Ann* wish to bequeath €800,000 between the two children.

Economic & Tax Environment

Currently, the domestic economic environment remains challenging. Inflation and interest rates are currently low and are expected to remain low for the foreseeable future.

You should assume that tax rates have remained unchanged on the 2017 treatments. No changes to tax rates are expected in future years.

David and Ann have asked that your advice regarding their own retirement objectives be framed ignoring Social Welfare entitlements. They prefer that their financial plans are based solely on the use of their own resources.

Financial Information

- David is employed by Masonary Ltd, a building materials company. The company has been heavily impacted by the downturn in the economy. He currently earns a salary of €80,000 per annum
- *David* has shares with current market value of €80,000, which, if disposed of now would result in a capital loss of €30,000.
- *David* has a personal pension fund of €80,000 but has not contributed to the fund in several years.
- *Ann*, currently on a salary of €35,000 per annum, has a personal pension worth €50,000 (she made no contribution in the previous 12 months). *Ann* is a director of the company, Life Designs, and is a 50% shareholder with her sister. *Ann* intends leaving the business on retirement and expects to wind the company down at that point. There is currently €200,000 of cash on the company balance sheet with no other substantial assets. *Ann* expects the company will be hold at least this amount of cash by the time she retires. The value of her business interest is €100,000.
- David and *Ann* have a joint deposit account of €100,000, earning 3% gross.
- David has life cover of €300,000, the detail of which is below.
- *David* and *Ann's* domestic residence is valued at €600,000 and is debt free.
- *Ann's* father, Frank, whose only means of income is from his Social Welfare pension and his savings of €100,000. He may need *David* and *Ann's* financial support. He has a normal life expectancy.
- *David* and *Ann* intend selling the investment property assets at retirement as they would prefer not to have the trouble of managing the properties.
- College fees for the engineering degree for Conor are €9,000 per annum but are expected to rise with inflation. Simon also wants to be an engineer.

Property Portfolio Detail – All Figures in € Euro

	Owner	Location	Est Value as at 31/12/17	Loan Details	Annual Income	Lease
Residential Property	David	Dublin Apartment - purchased in 2001 at a cost of €250,000	€250,000	€150,000 – term remaining 15 years – interest only; variable rate is 5%; principal to be repaid at maturity	€15,000	1 years into a 7-year lease
Residential Property	Ann	Leeds Residential property – purchased in 2003 at a cost of €250,000	€300,000	€250,000 – term remaining 15 years – interest only - variable rate is 4.6%; principal to be repaid at maturity	€14,000	2 year into a 3-year lease

Life Insurance Detail

Life Insured	Owner	Beneficiary	Sum	Premium p.a.	Policy Type
David	David	Ann	€300,000	€2,000 p.a.	Whole of Life

Cash Flow

David and *Ann* have presented some basic cash-flow details to you:

- Current lifestyle/living expenses are €3,500 per month. This is exclusive of life insurance costs.
- By retirement, *David* and *Ann* expect their net annual retirement expenditure to be €40,000 per annum in today's values. This requirement will increase with inflation over the next 15 years.

Long Term Asset Returns/Inflation/Interest Rates

Long Term Asset Returns

	Yield	Capital Growth
Cash	1%	0%
Property		2%
Bonds	2%	1%
Equities	1.5%	7%

Inflation

Long term inflation expectation	2%
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Interest Rates

ECB Interest Expected To Remain At Current Levels

REQUIRED:

Using the Certified Financial Planner 6-step process, analyse *David* and *Ann's* situation and make appropriate recommendations. Your answer should take the form of a 'Summary Financial Plan' which should include:

1. A reflection of the clients' Current Position, including a Statement of Net Worth; an estimation of Income Tax; and a Statement of Current Cash-Flow;
2. An evaluation of David and Ann's stated objectives with a view to:
 - a. identifying the relevant issues associated with meeting those objectives
 - b. setting out your recommended solutions, including impact on cash-flows (if necessary, conduct a trade off analysis)
 - c. identifying relevant risks, and making suitable recommendations to mitigate those risks

Candidates should clearly state any assumptions made but should not apply assumptions that will materially alter the nature of this case.

Sample Solution

The following was identified as an acceptable solution to the Case Study. However this is not the sole acceptable answer, and it is recognised that alternative solutions might be produced that are acceptable.

Part A

Net Worth Statement

Balance Sheet as at Yr End									
Assets					Liabilities				
	DAVID	ANN	Joint	Combined		DAVID	ANN	Joint	Combined
Non-Financial Assets									
Primary Residence			600,000	600,000	Mortgage			-	-
Total			600,000	600,000	Total				-
Investment Property									
Dublin Apartment	250,000			250,000	Loan	150,000			150,000
Leeds Apartment		300,000		300,000	Loan	250,000			250,000
	250,000		-	550,000		400,000		-	400,000
Investment Assets									
Cash Deposit			100,000	100,000					
Business Interest		100,000		100,000					
Share Portfolio	80,000			80,000					
Pension Fund	80,000	50,000		130,000					
				410,000					
TOTAL ASSETS				1,560,000	TOTAL LIABILITIES				400,000
Net Worth				1,160,000					

Solvency Ratio = 74.3%

Estimated Income Tax 2018

			David	Ann	Combined				
Earned Income:									
Salary			80,000	35,000	115,000				
Case III Income:									
Leeds Property		<table border="1"> <thead> <tr> <th>Income</th> <th>Interest</th> </tr> </thead> <tbody> <tr> <td>14,000</td> <td>9,775</td> </tr> </tbody> </table>	Income	Interest	14,000	9,775	-	4,225	4,225
Income	Interest								
14,000	9,775								
Case IV Income:									
Bank Interest			1,500	1,500	3,000				
Case V Income:									
Dublin Apartment		<table border="1"> <thead> <tr> <th>Income</th> <th>Interest</th> </tr> </thead> <tbody> <tr> <td>15,000</td> <td>6,375</td> </tr> </tbody> </table>	Income	Interest	15,000	6,375	8,625	-	8,625
Income	Interest								
15,000	6,375								
Schedule F:									
Dividends on equity portfolio			1,200	-	1,200				
TOTAL INCOME			91,325	40,725	132,050				
Tax Calculation:									
Dirt	3,000	@	37%		1,110				
Next	69,100	@	20%		13,820				
Balance	59,950	@	40%		23,980				
					<u>38,910</u>				
Tax Credits:									
Married tax credit					3,300				
PAYE Credits			1650	1150	2,800				
					<u>-</u>				
					32,810				
Less:									
College Fees	-	@	20%		-				
Tax Payable					<u>32,810</u>				
Effective Tax Rate									
Effective Tax Rate					25%				
Estimated Tax & PRSI					11,885				
Total Tax and PRSI and Levies					44,695				
Effective rate of Tax and levies					34%				

Notes:

1. As both investment properties are residential, only 85% of interest is allowable for tax purposes.
2. In the majority of cases, students at 18 will not have to pay tuition fees, and will only need to pay registration fees.

Projected Cash flow Position

Salary	115,000
Deposit Interest	3,000
Child Benefit	1,680
Rental Income - London	14,000
Rental Income - Dublin	15,000
Dividends	1,200
TOTAL INCOME	149,880
Expenses:	
Tax & PRSI	44,695
Loan - Leeds Property	11,500
Loan - Dublin Property	7,500
Lifestyle Expenses	42,000
College Fees	9,000
Life Insurance	2,000
TOTAL EXPENSES	116,695
Net Surplus/deficit	33,185

Objective 1 – Retirement

1	Cash Flow Requirement- adjusted to take account of retirement		
	Net Retirement Income required	40,000	Given
	Assumed Effective Tax & Levies rate	20.0%	
	Gross retirement income required	50,000.00	
2	Future Value of Gross Income Required at retirement		
	Years to retirement	15	Given
	Inflation Rate	2.0%	Given
	Income adjusted for inflation	67,292.42	
3	Capital required to generate this income		
a	To age 100	35	
	Conservative Investment Returns	3.0%	Assumed
	Inflation	2.0%	Given
	Capital Sum required at 65	2,004,979	D/F = 0.9804 BEG
b	Capitalisation using n annuity factor	2.27%	Given
	Capital required	2,964,424	
4	Capital Available In Retirement - assessment of client asset values		
	Pension - David		
	Current Value	80,000	Given
	Annual contributions	-	Given
	Estimated Growth rate	4%	Assumed
	Years to retirement (sale)	15	
	Estimated Value at retirement	144,075	
	Pension - Ann		
	Current Value	50,000	Given
	Annual contributions	-	Given
	Estimated Growth rate	4%	Assumed
	Years to retirement (sale)	15	
	Estimated Value at retirement	90,047	
	Company (To Be Sold on Retirement)		
	Current Value	100,000	
	Estimated Growth rate	0%	
	Years to retirement (sale)	15	
	Estimated Value at retirement	100,000	
	Retirement Relief		
	Property Portfolio		
	Current Value	550,000	Given
	Annual contributions	-	Given
	Estimated Growth rate	2%	Given
	Years to retirement (sale)	15	
	Estimated Value at retirement	740,228	
	Estimated CGT	71,259	See calc
	Loans to be repaid	400,000	
	Net Proceeds	268,969	
	Deposits		
	Current Value	-	Used elsewhere
	Annual contributions	-	Given
	Estimated Growth rate	1%	Given
	Years to retirement (sale)	15	
	Estimated Value at retirement	-	
	Estimated Value of assets at retirement	603,091	
5	Capital Shortfall in Retirement provisioning		
	Scenario	1	
	Capital Required	2,004,979	From 3
	Shortfall in assets	1,401,888	From 4 and 3
	Required annual increase in retirement asstes @ 4%	67,319	
	Scenario	2	
	Capital Required	2,964,424	From 3
	Shortfall in assets	2,361,333	From 4 and 3
	Required annual increase in retirement asstes @ 4%	113,392	

CGT Calculation (estimated)

	<u>Dublin</u>	<u>Leeds</u>	<u>Total</u>
Current Value	250,000	300,000	550,000
Estimated Future Value @2%	336,467	403,761	740,228
Cost	250,000	250,000	
Indexation	1.087	1.000	
Adjusted cost	271,750	250,000	
Assessable Gain	64,717	153,761	218,478
Losses forward			-
Capital Gains			218,478
Less: Annual Exemption			2,540
Taxable gains			215,938
Estimated Tax @33%			71,259

Objective 2 – Education Fund

Estimated annual costs =	9,000
Number of years to college =	5 years
Inflation =	2%
Inflation-adjusted costs	9,936.73
No. years in college	4
Growth rate on capital whilst in college =	1%
DIRT Rate	37% <i>Net Growth = .63%</i>
	-1.3431 $[(1.0063/1.02)-1]*100$ <i>0.63%-2%</i>
Capital sum required at start of college =	40,566 <i>(begin)</i>
Annual contribution to sinking fund @ 1%	7,961.46 <i>Assumed rate of 1% - DIRT</i>
<u>OR Lump-sum investment (now)</u>	39,311.97

Note that Conor's education cost comes out of this year's cashflow.

Objective 3 – Nursing Home costs

Annual costs	26,000
Frank's Social Welfare pension	<u>12,000</u>
Shortfall	14,000

What funding is available from the father's 100k?

Life Expectancy at age 70	19 years
Deposit rate	1.00%
Inflation	2.00%
Discount factor	-0.9804% <i>Exempt from DIRT because of age and income</i>

Option 1 - create an annuity stream for the 19 years duration

Annual Income to be derived from deposit (incl Cap.)	4,809.55 <i>adjusted for inflation begin</i>
Annual shortfall to be funded by David and Ann	9,190
Net shortfall after allowing for tax relief	5,514 @40%
1 - fund from annual cash-flow	
2 - create a sinking fund immediately (set aside a lump-sum now)	118,648.88 <i>(n=19 I = -1.3431 PMT = 5514 FV = 0 BEG</i>

1% Deposit | 37% DIRT

Option 2 - exhaust the father's 100k - how many years will it cover?

Annual shortfall	14,000
How many years will the 100k last?	6.94 <i>I = -1.00% PV = -100,000 PMT = 14000 FV = 0 BEG</i>
How will David and Ann fund the shortfall from year 8 to 19?	
1. cost of the nursing home in 7 years time	16,082 <i>Note: For case purpose, the future estimated costs will be based on whole year</i>
2. Calculate Sinking required in 7 years time to fund expense	
Net cost after tax relief	9,649 @40%
Capital sum required in 7 years time =	124,864 <i>n = 12 I = -1.3431% PMT = 9649 FV = 0 BEG</i>
3. Options	
a. Set aside a lump-sum now	119,494 <i>n = 7 I = 0.63% PMT = 0 FV = 124,864 BEG</i>
b. Create a savings plan for next 7 years	17,394 <i>n = 7 I = 0.63% PV = 0 FV = 124,864 BEG</i>
c. Fund from cash flow during years 7 - 19	9,649 <i>indexed to inflation</i>

1% Deposit | 41% DIRT

Objective 4 – Estate Planning

The clients stated objective is to leave an estate of €800,000 for the benefit of the children.

For the purpose of calculating Capital Acquisitions Tax, the following reliefs are likely to apply:

- Business Relief which has the effect of reducing the estate by 90,000

Dwelling House Relief may not apply as there is more than one Dwelling house being inherited. Structuring of the will may allow application of the relief for 1 child with significant tax relief. For the purpose of the case, the relief has not been applied.

The adjusted value of the estate after allowing for reliefs is 1,370,000

Individual Threshold for each child is 310,000

Value of the estate as per NWS	1,160,000
Add:	
Life Insurance	300,000
Mortgage Protection policies	-
Less:	
Dwelling House Relief	0
Business Relief	90,000
Net estate for CAT	1,370,000
Child Thresholds	620,000
Liable to CAT	750,000
CAT Liability	247,500.00 @33% CAT
Net Value of estate passing to kids	1,212,500.00

- CAT liability would be 247,500
- Options
 - Take out a S72 policy for the amount of CAT
 - Family to pay the tax from “free” cash
- As the client’s objective is to leave a net estate of €800k, this could be achieved without incurring any further costs, ie Value of estate without reliefs = 1.46m; less CAT = 247,500; Net estate to kids of 1,212,500
- This position will need reviewing during the post-retirement years. As the client’s intentions are to liquidate all assets in order to provide for their retirement income, it is quite possible that the primary asset to be inherited on death will be the principal residence.

Estimated cost of Income protection

	David	Ann	
Salary	80,000	35,000	
Insured to 70%	56,000	24,500	
Less State Disability Payment	9,776	-	<i>Personal Rate</i>
Balance to be covered via PHI	46,224	24,500	
Cost of cover per 10,000 of income	495	495	<i>per tables</i>
Cost of PHI	2,288	1,213	
Tax Relief	40%	40%	<i>Marginal rates</i>
Net cost to cash-flow	1,373	728	

Summary Recommendation

The following table sets out the resources available to and required by David and Ann in order to satisfy their objectives:

<u>Resources available:</u>		<u>Resources Required:</u>	
Cash	100,000	Education Fund	
Share Portfolio	80,000	a Savings Plan	7,961
<i>'(NB Capital Losses of 30k)</i>		b Set aside a lump-sum =	39,312
Annual Cash Surplus	33,185	Nursing Home	
		<i>Annuity Option</i>	
		a Pay from cash-flow	5,514
		b Set aside a lump-sum =	118,648
		<i>Exhaust Capital Sum</i>	
		Capital Sum required in 7 year	124,864
		a Set aside a lump-sum =	119,494
		b Annual Savings Plan =	17,394
		c Pay from cash-flow (years 8-19)	9,649
		Retirement	
		Shortfall requires annual accumulation	
		a Sinking Fund	67,319 per annum
		b Annuity	113,393 per annum
		Income Protection	2,101 Net of tax

David and Ann currently have a net worth of €1.16m, and an annual cash-flow surplus of circa €33,185.

51% of their net worth comprises of the value of their Primary residence, which is debt free. In addition they have unallocated financial resources in the form of cash reserves of €100k; and a share portfolio of €80,000.

The purpose of this section is to allocate as efficiently as possible these resources to the satisfaction of David and Ann's stated objectives. This is a moment in time exercise and does not seek to identify future surplus resources that may available either through and increase in income, or a reduction in expenses.

The following is a recommended strategy to effectively re-organise David and Ann's finances to best suit their stated objectives; and implicit needs:

1. As all of David and Ann's objectives, plus the financial needs of Frank and their children, are dependent on David and Ann's continued ability to generate earned income; it is essential that this is protected in the form of life and illness insurance. David and Ann to protect current lifestyle and family by insuring against ill-health. The annual premiums will cost 3,501, although tax relief is available at marginal rate of 40%, meaning a net cost to cash-flow of €2,101. This would have the effect of reducing the clients annual cash flow surplus to 31,084.
2. Nursing home costs are to be paid for from Franks deposit base, which should be partly invested. The remainder of the fees are to be covered by David and Ann. As it would be more prudent for the clients not to incur significant cash-flow costs during their retirement years; and it is expected that Frank will survive into the clients retirement years, we recommend that David and Ann set aside a lump-sum now of €118,648. The assets to be set aside towards this objective are the cash investment of €100,000 plus €20,000 from the share portfolio. As the clients risk tolerance has been identified as low, the recommendation is that these assets are held in cash. The suggested approach to be taken is that Franks' lump-sum is used to provide a portion of the costs each year (€4,809); with David and Ann providing the balance (€5,514). In this way some tax relief on the nursing home costs is availed of, the trade-off being that Frank's lump-sum will last longer.
3. Set aside 40,000 of the share portfolio towards Simon's education fees. This may need re-investing in line with the purpose of the funds, and the risk tolerance of the clients. The remaining €20,000 in the share portfolio to be held as an emergency fund, in cash. This would be sufficient to provide almost 6 months of lifestyle expenses – nursing home and college fees will be maintained separately via the sinking funds created for their explicit purpose.
4. Liquidating the share portfolio will have the effect of creating capital losses forward of €30,000 which will be offset against the property sales at retirement. This would reduce the estimated CGT bill by €9,900 (30,000 x 33%). For reasons of prudence no adjustment has been made to the retirement planning calculations at this stage.
5. Their desire to leave a substantial estate to their children will depend on their ability to accumulate assets for retirement income needs. As it stands, their children stand to inherit a substantial estate upon the death of their parents.

6. The impact of the above on David and Ann's cash-flow is:

Current Surplus	=	33,185
Nursing Home costs (net)	=	0
Income Protection (net)	=	2,101
Additional Net Deposit Interest	=	504 (80,000*1%-DIRT)
Loss of Dividend Income	=	<u>720</u> (1,200 - 40% tax)
Adjusted surplus	=	30,868

7. Use the balance of their cash-flow, circa €30,868 to accumulate retirement assets. The most tax-efficient means of doing this is by making pension contributions for both. For David, this would take the form of contributions to his personal pension.

The maximum amount contributable by David is 30% of earnings (€80,000) = €24,000 gross; at a cost of €14,400 after tax relief at the marginal rate. The couple have sufficient surplus cash-flow to be able to afford this. David, to start contributing to his personal pension again at the maximum rate allowed. Based on a 4% target return over 15 years, this would accumulate to €499,788. (*begin*)

This would have the effect of reducing the couple's retirement deficit from €1.4m (*sinking fund basis*) / €2.4m (*annuity basis*) to €0.9m/1.9m respectively.

For Ann, thought would need to be given to how best to fund retirement. A company pension should form part of her long-term plans; it is unclear as to whether the company can afford it or not at this point. Nevertheless, it should be possible to make personal contributions either in the form of AVCs, or alternatively by setting up a personal plan for the short-term.

Through a personal pension fund, the maximum allowable is 30% of earnings (35,000) = €10,500. The cost to cash flow would be €6,300. This would accumulate to €218,657 over the next 15 years. Their deficit would be reduced to €683,443 (*sinking fund basis* [1,401,888 - 499,788 - 218,657]) / €1,642,888 (*annuity basis* [2,361,333 - 499,788 - 218,657])

It would be preferable to have Ann contribute to an executive pension plan, however as information is not available on the company's ability to pay, I have not addressed this issue.

Recommendation is for Ann to contribute the maximum allowable to at least a personal pension fund.

The impact on personal cash-flow surplus is as follows:

Surplus carried forward from point 6	=	€30,868
David's pension contributions	=	€14,400
Ann's pension contributions	=	€ 6,300
Remaining surplus	=	€10,168

This will still leave the couple with a shortfall in retirement assets, which if not closed over the remaining years to retirement will result in a shortfall in retirement assets, or a dependency on the state pension, something the clients wished to avoid. This situation should be revisited next year when their might be greater scope to increase the rate of capital accumulation arising from changes to cash-flow, particularly as other funds will become available once their eldest son completes his education. In order to close the gap on their retirement asset deficit, the couple will need to accumulate capital annually at a rate of €32,819 / €78,891 gross.

** Our analysis is based on funding retirement income to age 100. For this reason it is imperative that the funding levels suggested here are viewed as a bare minimum. This will need constant reviewing, particularly if an annuity structure is used to provide income post-retirement.

8. The Doyle's have sufficient resources to meet short-term objectives; longer term, there is a need to increase wealth accumulation in a more tax-efficient manner by using pension funds.
9. There will be sufficient liquid assets in the form of the remaining cash held in the deposit account to cover for emergencies.
10. One option which has not been considered here but which may be a consideration closer to retirement is the possibility of reducing in size their primary residence and thus freeing up capital for retirement income purposes. This decision can be taken closer to, or past, their retirement date. Delaying their retirement may also be a consideration, a delay to age 70 would mean that the measures put in place here would be sufficient to provide them with their required retirement income – on the sinking fund basis.

11. Risks to the plan

- Targeted rates of return are not delivered on
- Inflation is higher than anticipated
- Tax changes result in a larger share of income being taken; or benefits associated with pensions being reduced/removed.
- Elderly father lives longer than expected

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