

NB – The sample solution has not been updated to reflect 2018 tax legislation

Case Study 2

Paul and Linda Kelly

CFP® Examination Paper

(Revised August 2018)

Case Background

Paul and Linda Kelly, new clients, have requested that a CFP® professional assist them in evaluating and planning the family's financial future.

Paul is married to *Linda*, and they are both aged 40. The couple have two children, *Aoife* and *Aidan*, aged 18 and 10, respectively.

Paul owns his own company, *Raglan Communications*, from which he is currently drawing a salary of €100,000 per annum. *Linda* cares for the children and *Paul's* mother, and also works part time on an annual salary of €12,000. *Paul* also owns two investment properties in London and Dublin which provide additional income to the family.

Paul's 67 year old mother, *Mary*, has fallen ill after the death of her husband and requires long term nursing home care. Her nursing home costs will come in at €30,000 per annum and she will be entering the care in the coming weeks. *Paul* recently sold his mother's home, on her behalf, for net proceeds of €150,000 (after all costs and redeeming any outstanding loans).

During 2016, *Paul* received an inheritance from his late father of €100,000 which was placed on deposit in January 2017. The amount was net of CTA. During 2017, the deposit attracted a nominal deposit interest rate of 3%p.a. Interest is to be credited to the account at 31 December 2017.

Aoife and *Aidan* are in fulltime education. *Aoife* has just started college on a four year course, with fees of €8,000 per annum. *Aidan* is expected to go to college when he reaches 18 years of age.

The couple have a low risk tolerance.

Personal Information

Name:	Paul	Linda
Age:	40	40
Marital Status:	Married	Married
Health:	Good	Good
Occupation	Company Director & Shareholder	Housewife; also works part-time
Dependents	<ol style="list-style-type: none"> 1. Aoife, 18 – is financially dependent on her parents (college fees) 2. Aidan, 10 – is financially dependent on his parents 3. Mary, 67 – is financially dependent on <i>Paul</i> for any ancillary nursing home costs beyond her resources 	

Client Objectives

1. The clients, *Paul* and *Linda*, plan to retire fully at age 60. They estimate that in retirement they will require an income of €50,000 net in today's values. This requirement will increase with inflation over the next 20 years.
2. *Paul* and *Linda* wish to create an education fund to provide for their children's 3rd level education.
3. *Paul* and *Linda* wish to create a fund to provide for the long-term care of *Paul's* mother.
4. Upon their deaths, *Paul* and *Linda* wish to bequeath €1 million between the two children.

Economic & Tax Environment

Currently, the economy is challenging, but the technology sector continues to grow. 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.

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

Financial Information

- Paul is the sole (100%) shareholder in Raglan Communications. Raglan Communications has been independently valued at €200,000. He currently earns a salary of €100,000 per annum from Raglan as a director. He conservatively expects the company to be valued at €1.0 million (after tax) when he retires. He intends selling the company at aged 60.
- *Paul* has shares with current market value of €50,000, which, if disposed of now would result in a capital loss of €20,000.
- *Paul* has a personal pension fund of €50,000 but has not contributed to the fund in several years.
- *Linda*, currently on a salary of €12,000 per annum, has no pension. She has €50,000 in a deposit account with an interest rate of 3% gross. The money has been on deposit for the past year, and interest for 2016 has to be added to the valuation.
- *Paul* has life cover of €300,000, the detail of which is below.
- *Paul and Linda's* domestic residence is valued at €500,000 and is debt free.
- *Paul's* inheritance of €100,000 is in a deposit account with an interest rate of 3% gross.
- *Mary's* (*Paul's* mother) only means of income is from her Social Welfare pension and the proceeds from the sale of her house, €150,000. She may need *Paul's* financial support. Despite her illness, she has a normal life expectancy.
- *Paul and Linda* intend selling the investment property assets at retirement as they would prefer not to have the hassle of managing the properties.

Property Portfolio Detail – All Figures in € Euro

	Owner	Location	Est Value as at 31/12/17	Loan Details	Annual Income	Lease
Residential Property	Paul	Dublin Apartment - purchased in 2005 at a cost of €250,000	€150,000	€200,000 – term remaining 20 years – interest only; variable rate is 4.1%; principal to be repaid at maturity	€17,000	2 years into a 5-year lease
Residential Property	Paul	London Apartment – purchased in 2008 at a cost of €325,000	€300,000	€350,000 – term remaining 20 years – interest only - variable rate is 4.6%; principal to be repaid at maturity	€20,000	1 year into a 3-year lease

Life Insurance Detail

Life Insured	Owner	Beneficiary	Sum	Premium p.a.	Policy Type
Paul	Paul	Linda	€300,000	€1,000 p.a.	Whole of Life

Cash Flow

Paul and Linda 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. Current college fees are €8,000 per annum for Aoife but are expected to rise with inflation.
- By retirement, *Paul and Linda* expect their net annual retirement expenditure to be €50,000 per annum in today's values. This requirement will increase with inflation over the next 20 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%

Interest Rates

ECB Interest Expected To Remain At Current Levels

REQUIRED:

Using the Certified Financial Planner 6-step process, analyse *Paul* and *Linda'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 Paul and Linda'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.

Assumptions

- That share dividends are not re-invested
- That Aoife's college fees are tuition-related for tax purposes
- That retirement relief will continue to be available in the future

Part A

Net Worth Statement

Balance Sheet as at 31/12/16									
Assets					Liabilities				
	Paul	Linda	Joint	Combined		Paul	Linda	Joint	Combined
Non-Financial Assets									
Primary Residence			500,000	500,000	Mortgage			-	-
Total			500,000	500,000	Total				-
Investment Property									
Dublin Apartment	150,000			150,000	Loan	200,000			200,000
London Apartment	300,000			300,000	Loan	350,000			350,000
	450,000		-	450,000		550,000		-	550,000
Investment Assets									
Cash	101,770	50,885		152,655					
Business Interest	200,000			200,000					
Share Portfolio	50,000			50,000					
Pension Fund	50,000			50,000					
				452,655					
TOTAL ASSETS				1,402,655	TOTAL LIABILITIES				550,000
Net Worth				852,655					

Supporting Calculations

1. Deposit Interest calculation

Estimated Interest for 2015				
			Paul	Linda
Deposit			100,000	50,000
Interest rate			3.00%	3.00%
Interest (gross)			3,000	1,500
Net Deposit after DIRT	41%		1,770	885
Deposit Value as at 31/12			101,770	50,885

Income Tax Calculation

Estimated income from all sources				
		Paul	Linda	Combined
Earned Income:				
Salary		100,000	12,000	112,000
Case III Income:				
London Property	Income			
	Interest			
	20,000	7,925		7,925
	350,000			
	4.6%			
Case IV Income:				
Bank Interest		3,053	1,527	4,580
Case V Income:				
Dublin Apartment	Income			
	Interest			
	17,000	10,850		10,850
	200,000	10,850	-	10,850
	4.1%			
Schedule F				
		750	-	750
TOTAL INCOME		122,578	13,527	136,105

Notes to Tax Calculation:

- 1 London Property is assessable under Case III. 75% allowable
- 2 75% only of interest can be offset against Dublin apartment
- 3
- 4
- 5

Income Tax Calculation 2017 (Estimated)

Tax Calculation:			
Taxable Income			136,105
Tax			
First	54,800	20%	10,960
DIRT	4,580	41%	1,878
Balance	76,725	40%	30,690
STANDARD-RATED TAX CREDITS			
Basic Personal tax credit	1,650	1,650	3,300
Employee (PAYE) Tax credit	550	1,650	2,200
Carers Allowance			-
College Fess	-	20%	-
Tax on earned Income			38,028
Effective Tax Rate			28%
Estimated Total PRSI & Levies			12,249
Effective Rate			9.00%
Total Tax and Levies Due			50,277
Estimated Net Income			85,828
Effective Tax & PRSI rate			37%

Cash flow Position

Cash-Flow Statement

Income:	
Combined Salary	112,000
Deposit Interest	4,580
Child Benefit	1,680
<u>Rental Income</u>	
Residential Property - London	20,000
Residential Property - Dublin	17,000
Total Rental Income	37,000
Dividends	750
Total Income	156,010
Expenses:	
Estimated Tax & PRSI	50,277
<u>Property-related loans</u>	
Residential Property - London	16,100
Residential Property - Dublin	8,200
<u>Other Costs</u>	
Lifestyle Expenses	42,000
College Fees	8,000
Life Insurance	1,000
Total Expenses	125,577
Net Surplus / (Shortfall)	30,433

Part B

Objective 1 – Retirement

1	Cash Flow Requirement- adjusted to take account of retirement		
	Targeted expenditure - post retirement	50,000	Given
	Assumed Effective Tax Rate	25.0%	
	Gross Income required	66,667	
2	Future Value of Gross Income Required at retirement		
	Years to retirement	20	Given
	Inflation Rate	2%	Given
	Income adjusted for inflation	99,063	
3	Capital required to generate this income		
a	Life Expectancy to age 100	40	
	Conservative Investment Returns (post-ret)	3.0%	
	Inflation	2.0%	Given
	Capital Sum required at 60	3,264,850	Disc. 0.98%
	Implied Annuity Rate	3.0%	
b	Capitalisation using prevailing annuity rates		
	Current annuity rates	1.80%	Tables
	Capital sum required at retirement	5,503,509	
4	Capital Available In Retirement - assessment of client asset values		
	Property (To Be Sold on Retirement)		
	Investment Property - current value	450,000	Given
	Forecasted Growth	2%	Given
	Estimated Value at retirement	668,676	
	Less CGT	30,494	Calc 1
	Less outstanding mortgages	550,000	
		88,182	
	Company (To Be Sold on Retirement)		
	Current Value	200,000	
	Estimated Value at retirement	1,000,000	Given
	Pension - Paul		
	Current Value	50,000	Given
	Forecasted Growth	4%	Estimated
	Estimated Value at retirement	109,556	
	Deposits		
	Current Value	-	Given
	Forecasted Growth	0%	
	Estimated Value at retirement	-	
	Total Retirement Assets (Pre tax)	1,197,738	
5	Capital Shortfall in Pension Provision		
	Scenario	1	
	Capital Required	3,264,850	From 3
	Shortfall in assets	2,067,111	From 4 and 3
	Scenario	2	
	Capital Required	5,503,509	From 3
	Shortfall in assets	4,305,770	From 4 and 3
		(excluding deposits)	
6	Retirement Planning funding requirements		
	Calculating the annual pension contributions		
	Required Funding of pension	2,067,111	From 5
	Term (years)	20	Until Retirement
	Estimated return	4%	
	Annual Contributions Requirement	69,417	
	OR		
	Required Funding of pension	4,305,770	
	Annual Contributions Requirement	144,595	

Objective 2 – Education Fund

	Aidan	
Years until college age	8	N=8 I = 2 PV=8,000 PMT=0 FV=SOLVE
Inflation	2%	
Estimated costs (currently)	8,000	
Inflation-adjusted costs	9,373	
↗		
Years in College	4	N=4*12 I = -1.3824 PV=SOLVE PMT=9,373 FV=0
Discount Factor	-1.38240%	
Lump-sum required at start of college	38,826	
↗		
<u>Option 1 - Savings Plan</u>		
Gross rate to be applied	1.0%	N=8*12 I =0.59/12 PV=0 PMT=SOLVE FV=38,826
DIRT	41.0%	
Monthly contributions	395.06	
↗		
<u>Option 2 - Lump sum investment</u>		
	37,036	N=8*12 I =0.59/12 PV=SOLVE PMT=0 FV=38,826
↗		

Objective 3 – Nursing Home costs

Annual costs	30,000
Frank's Social Welfare pension	12,000
Shortfall	<u>18,000</u>

What funding is available from Mary's 150k?

Life Expectancy at age 67	22.5 years
Deposit rate	1.00%
Inflation	2.00%
Discount factor	-1.0000% <i>Exempt from DIRT because of age and income</i>

Option 1 - create an annuity stream for the 22.5 years duration

Annual Income to be derived from deposit (incl Cap.)	6,031.34 <i>adjusted for inflation begin</i>
Annual shortfall to be funded by Paul and Linda	11,968.66
Net shortfall after allowing for tax relief	7,181.20 @40%
1 - fund from annual cash-flow	
2 - create a sinking fund immediately (set aside a lump-sum now)	184,841.89 <i>(n=22.5 I = -1.3824% PMT = 7181.20 FV = 0 BEG</i>

1% Deposit | 41% DIRT

Option 2 - exhaust the mother's 150k - how many years will it cover?

Annual shortfall	18,000
How many years will the 150k last?	8.04 <i>I = -1.00% PV = -150,000 PMT = 18000 FV = 0 BEG</i>
How will Paul and Linda fund the shortfall from year 8 to 22.5?	
1. cost of the nursing home in 8 years time	21,089.87 <i>Note: For case purpose, the future estimated costs will be based on whole years</i>
2. Calculate Sinking required in 8 years time to fund expense	
Net cost after tax relief	12,653.92 @40%
Capital sum required in 8 years time =	195,589.00 <i>n = 14.5 I = -1.43824% PMT = 12653 FV = 0 BEG</i>
3. Options	
a. Set aside a lump-sum now	186,597.56 <i>n = 8 I = 0.59% PMT = 0 FV = 202294 BEG</i>
b. Create a savings plan for next 8 years	23,807.75 <i>n = 8 I = 0.59% PV = 0 FV = 125343 BEG</i>
c. Fund from cash flow during years 7 - 19	12,653.92 <i>indexed to inflation</i>

1% Deposit | 41% DIRT

Objective 4 – Estate Planning

The clients stated objective is to leave an estate of €1m for the benefit of the children.

For the purpose of estate planning, their assets are as follows:

	Combined
Non-Financial Assets	
Primary Residence	500,000
Total	500,000
Investment Property	
Dublin Apartment	- 50,000
London Apartment	- 50,000
	- 100,000
Investment Assets	
Cash	152,655
Business Interest	200,000
Share Portfolio	50,000
Pension Fund	50,000
	452,655
Insurance Policies	
Existing Policy on life of Paul	300,000
Proposed Policy (see Section 5)	-
	300,000
TOTAL NET ASSETS	1,152,655

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 180,000

The adjusted value of the estate for CAT purposes, after allowing for reliefs is 972,655.

Individual Thresholds for the children are 280,000. CAT would be payable @33% = 136,176.

After tax, the net value of the estate is 1,016,479.

At the present moment, Paul and Linda cannot afford to transfer any of their assets to their children in the form of gifts. However on death there is substantial wealth to be transferred, although not the €1m that Paul and Linda had hoped for. This will change in future years as wealth continues to be accumulated.

Objective 5 – Personal Risk Assessment

	Current Cash-Flow	Death of Paul	Death of Linda
Income:			
Combined Salary	112,000	12,000	100,000
Deposit Interest	4,580	4,580	4,580
Child Benefit	1,680	1,680	1,680
Residential Property - London	20,000	20,000	20,000
Residential Property - Dublin	17,000	17,000	17,000
Dividends	750	750	750
Total Income	156,010	56,010	144,010
Add SW pension		10,062	10,062 <i>Under age 66</i>
		66,072	154,072
Expenses:			
		20%	32%
Estimated Tax & PRSI	50,277	13,214	49,303
Residential Property - London	16,100	16,100	16,100
Residential Property - Dublin	8,200	8,200	8,200
Lifestyle Expenses	42,000	31,500	31,500 <i>Assumed 25% reduction</i>
College Fees	8,000	8,000	8,000
Life Insurance	1,000	-	1,000 ?
Total Expenses	125,577	77,014	114,103
Net Surplus / (Shortfall)	30,433 -	21,004	29,907
Short-term expenses that can be covered by other capital			
School fees		8,000	<i>removed as it is a short-term expense (next 3 years only)</i>
Adjusted long-term shortfall	-	13,004	
Required assets to generate this income to age 65		323,583	<i>(END, n=25, i=.036, pmt = 13004, fv=0. solve pv)</i> <i>Rate = 4% - 41% GRU - 2% inflation)</i>
Assets available:			
Insurance		300,000	
Balance		23,583	

- In addition to life insurance, Paul and Linda will need to consider protecting the family against illness interrupting their earnings potential. As the main earner, Paul in particular will need to consider some form of PHI.
- It is also worthwhile considering some form of key-man insurance that would provide the company with the necessary funds to employ a replacement manager, should that be necessary.

Calculation 1 – Estimated CGT on sale of properties (at retirement)

	<u>Dublin</u>	<u>London</u>	<u>Total</u>
Current Value	150,000	300,000	450,000
Estimated future Value @2%	222,892	445,784	668,676
Cost	250,000	325,000	575,000
Indexation	0	0	
Assessable Gains	- 27,108	120,784	93,676
Less: Annual Exemptions			1,270
Taxable Gain			92,406
Estimated CGT @33%			30,494

Calculation 2 - Discount factor for College Fees

A.	Estimated deposit rate	1.0%
B.	Estimated DIRT	41%
C.	Net Interest rate	0.5900%
D.	Estimated Inflation rate	2.000%
E.	Discount Factor (annual)	-1.3824%
	$[(1+C)/(1+D)-1]$	

Summary Recommendation

Paul and Linda currently have a cash-flow surplus of circa 30,433 per annum. In addition they have cash reserves of €152,665k.

The purpose of this section is to allocate as efficiently as possible these resources to the satisfaction of Paul and Linda's stated objectives.

The costs of meeting the various objectives are estimated as follows:

- Nursing Home costs = 7,181 per annum, or a lump-sum of 184,842
- School fees (sinking fund) = 4,740 per annum, or a lump-sum of 37,036
- Life Insurance = 0 per annum
- Retirement objectives = 69,417 (as a minimum) per annum

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

1. General tax adjustments.
 - a. As they are currently structured, Paul and Linda's marginal rate of tax is applied on earnings above 54,800. If the rental income was allocated to Linda (no CGT implications), then the maximum threshold of 67,600 could be applied. This would have the effect of reducing income tax by 2,560 ($12,800 \times 40\% - 20\%$). This would increase their cash-flow surplus to 32,993.
 - b. By making Linda a shareholder (>20%) of the company, the couple would be able to avail of two lots of retirement relief on the eventual disposal of the business. This would mean that circa €1m could be taken from the sale proceeds tax-free.
 - c. The couple are drawing unnecessary income from the business, and paying the highest rates of marginal tax. They enjoy a very healthy cash-flow surplus, however, the surplus is costing circa 30k per annum in income taxes and related levies. This is an unnecessary expense.
 - d. Into the future, as tax-relief changes minimise the amounts that company owners can accumulate within their pension funds, it may well be appropriate for Linda to become an employee of the company to allow maximisation of contributions to pension funds.
2. As Paul is self-employed, the couple should retain circa 50k in cash, the equivalent of circa 6 months of lifestyle-related expenses. I have ear-marked Linda's deposit for this purpose.
3. Nursing home costs are to be paid for by investing Mary's cash proceeds from the sale of the house in a deposit account, and drawing an amount of €6,031 per annum on an amortization basis. The balance of the fees (11,968 gross, or 7,181 net of tax relief) is to be met from Paul and Linda's cash surplus.
4. Savings plans will be set up to accumulate funds for the Aidan's college education. Total cost to cash-flow per annum is circa 4,740. Fees for Aoife will continue to be paid from current cash-flow as she has started college. Fees for Aidan will be accumulated in a conservative investment portfolio as he will not be starting college for another 8 years.

5. I am recommending that Paul invests his deposit funds of 102,190 into a diversified investment portfolio. This will contribute towards closing their retirement asset problem. To fund their retirement shortfall, Paul and Linda need to accumulate circa 69,417 per annum in retirement assets. The most tax-efficient means of doing so is via a company pension scheme. On the basis that Paul's salary will be reduced by 30,000 to pay for the contributions (thereby ensuring that the company does not incur extra costs) the net cost to Paul and Linda will be €15,000 net of tax. (Reduced salary of 16k, less tax and PRSI at the higher rates 50%). Contributing at this level will increase their retirement assets by 1,103,356; and will still leave them with a cash-flow surplus. As the business grows into the future, the rate of asset accumulation can be re-visited, particularly as costs in the form of education and nursing home costs are freed up.
6. In the event of death, there are enough assets to cover the family lifestyle in the event of the death of Linda. However, there is a need for increased life insurance on the life of Paul. The estimated cost of this additional cover is €613 (**Refer tables 3.72 *€165**)
7. However, in the event of illness to Paul in particular, the family lifestyle unit is at risk. Paul will need to take out an income protection policy covering 70% of his salary. The estimated cost of this is €3,290 p.a. (**Refer tables €470*7**)

Existing Surplus	30,495
Adjustments:	
Transfer of rental income to Linda	2,163
Income Protection	- 3,290
Life Insurance	- 613
Reduced salary	- 30,000
Reduced Tax	15,000
Nursing Home fees	- 7,181
Education fees	- 4,740
Adjusted Cash-flow position	1,834

There are several risks associated with this plan:

- Paul & Linda's retirement plans, and indeed their current lifestyle is very much predicated on the continued success of Paul's company. It would be prudent to transfer personal wealth to other structures such as pension funds and assets in personal names, in order to minimise their financial exposure to the company.
- If interest rates increase, it will have an adverse impact on the costs of purchasing their properties.
- That tax rates will increase dramatically in coming years, reducing their disposable income.
- That tax relief on nursing home costs is altered, thereby making it more expensive to fund the costs out of Paul and Linda's cash-flow.

Calculation 1 – Estimated CGT on sale of properties (at retirement)

	<u>Dublin</u>	<u>London</u>	<u>Total</u>
Current Value	150,000	300,000	450,000
Estimated future Value @2%	222,892	445,784	668,676
Cost	250,000	325,000	575,000
Indexation	0	0	
Assessable Gains	- 27,108	120,784	93,676
Less: Annual Exemptions			1,270
Taxable Gain			92,406
Estimated CGT @33%			30,494

Calculation 2 - Discount factor for College Fees

A.	Estimated deposit rate	1.0%
B.	Estimated DIRT	41%
C.	Net Interest rate	0.5900%
D.	Estimated Inflation rate	2.000%
E.	Discount Factor (annual)	-1.3824%
	$[(1+C)/(1+D)]-1$	