Case Study

Planning for Retirement: Insurance versus Investing

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ABSTRACT

Personal financial instruction is often not included in the busy schedules of business students for various reasons. Many topics, particularly investing and life insurance can have a major financial impact on the lives of students once they leave school. By including a case on financial planning as part of a corporate or managerial finance class, the gap can be bridged. The following case is based on an experience of the author being "sold" cash value insurance. The case illuminates the challenges and concerns of comparing both insurance and investment vehicles and addresses many important issues. The case is flexible and can go either way, from discussing straight insurance to a discussion of the process of retirement planning and investing. The teaching note as well as PowerPoints on both Investing and Life Insurance Basics are also available.

LEARNING OBJECTIVES

1. To increase students' understanding of key retirement vehicles for retirement planning.
2. To help students understand how to calculate retirement savings using the different retirement vehicles.
3. To help students understand the difference between term and permanent life insurance products.
4. To help them understand the key differences among permanent life insurance products.
5. To help student understand how to compare benefits between investing and life insurance products.

INSURANCE VERSUS INVESTING

In September of 2012, Clinton Ford was discussing with his friend Tyler Smith, an insurance agent, the importance of life insurance and saving for retirement. They were discussing various ways that Clinton could get the insurance he wanted as well as ways to save money for when he retires in 30 years at his planned retirement age of 65. His wife Emily is recommending they look into contributing to Clinton's company 401k plan along with term life insurance, but Tyler is recommending a Variable Universal Life Insurance contract that combines both insurance and investing. Clinton is unsure what to do. He is trying to weigh the various options and make the best decision he can. He and Emily have a goal to have as much

saved as possible at retirement so they can have the resources to do what they want during their retirement years.

BACKGROUND

Clinton, age 35, is married with 4 children, ages 3 months to 10 years. He currently makes $60,000 per year as a marketing manager of a small internet firm that has been in existence for about 10 years. His wife Emily, an accounting graduate, works keeping the family organized and does not work outside the home except during tax season. Each year she brings in about $2,000 per year doing taxes, but they do not include this in the family budget. They have a moderate home with a $175,000 mortgage remaining, have two cars which are paid off, and are thinking about retirement. They started living on a budget four years ago, and paid off their last credit card one year ago this month. They have said they will never go into debt again. They have a three month or $15,000 emergency fund in a savings account, and are concerned about both life insurance and investing for the future. They are in the 15% marginal federal tax and 7% state tax bracket and have a goal to save 15% of their pre-tax total income each year for retirement and insurance. Given their current cash flow situation, they think this is doable. They have 4 children and pay lower taxes due to the Child Tax Credit and other deductions which will be gone when the kids turn 17, but expect tax rates to increase for them in retirement due to expected increases in taxes due to the increasing government debt. Clinton made a rough guess that his future marginal tax rates will be 25% federal and 10% state.

RETIREMENT OPTIONS

Emily has been talking with the Human Resource (HR) consultant at Clinton's work regarding retirement. She determined that Clinton's company has a Qualified Retirement Plan that has both a Roth 401k and traditional 401k option. For information on Qualified Retirement Plan limits which she got from HR, see Exhibit 1.

She also found out that Clinton's company has a company match. Her understanding is that if Clinton will save 5% of his salary in a traditional or Roth 401k, the company will match that contribution with 4% of company match money, subject to a 4 year vesting period. This means that for every dollar Clinton contributes, the company will match it with 80 cents, up to a maximum of 4% of his salary. She knows that this match money is his only if he stays with the company for at least 4 more years, the vesting period for the company match. In addition, if he chooses to utilize the Roth 401k plan, the company match will be in a traditional plan rather than a Roth 401k plan.

Emily has also studied about Individual Retirement Accounts. After reviewing the material online at the IRS website, she determined that she could contribute to either Roth or traditional IRAs to the phase out limits in Exhibit 2 and Exhibit 3. Her modified adjusted gross income is not beyond the earnings limits in Exhibit 3.

Emily is unsure of whether to use traditional or Roth retirement vehicles. She knows that with the traditional retirement vehicle (401k or IRA), the contribution is tax-deductible, meaning she gets a tax benefit now but must pay taxes on the money she takes out of the account after retirement at ordinary income tax rates. She also knows that if she takes the money out before age 59½, there is a penalty of 10% on the distribution plus the distribution is taxed at ordinary income rates.

Her understanding is that with the Roth retirement vehicles (Roth 401k or Roth IRA) there is no tax deduction now, but when she takes the money out after age 59½, she will pay no income taxes on the money at all. In addition, if she needs some principal before retirement, she can take out principal (but not earnings) without penalty and without tax. This is because she has already paid taxes on the Roth principal. If she takes out earnings, there is a 10% penalty on earnings and the earnings are taxed at ordinary rates.

INSURANCE OPTIONS

Clinton currently has only has a company life insurance policy on himself, provided as a free benefit by the company, which will pay $50,000 on his death. Because of the number of kids at home, he is concerned that this will be insufficient to support his wife and children should he pass away. After discussing the face amount with his wife, they decide that $500,000 would be sufficient should he die. They also determined that they would likely only need life insurance for 30 years until the last child graduates from college. After that time, their investments should be sufficient for their retirement needs.

He has looked into a number of options. He has read the comments "buy term and invest the rest" as well as "if you buy term you are throwing your money away" but is unsure what either of these comments mean. After some investigative work on the internet, he came up with Exhibits 4 and 5 which explain Term and Permanent Insurance types, risks and flexibility.

Clinton has been reviewing both the term and permanent options with Tyler. He realizes that he will be purchasing insurance with after-tax dollars. He feels he understands well the term insurance options, particularly with the annual, renewable, and convertible term policies. Tyler brought a paper with 8 different quotes for level renewable convertible term life insurance. It is level term for 30 years, automatically renewable should he make the payments, and at his option, it can be converted into a very basic type of permanent insurance. The cost of these policies ranged from $460-480. Clinton assumes it would cost about $470 per year (see Exhibit 6).

He is not quite so sure about the permanent policies. Tyler has emphasized that the permanent insurance is just that, permanent. If Clinton wants it for his entire life, that is the way to go for perhaps a part of his insurance. In his discussions with Tyler, he determined that the major differences between the permanent insurance options relate to how the cash value is invested and the policy flexibility needs of the insurance contract (see Exhibit 5). He also knows that his premium is divided into two portions, the first pays for the mortality and other costs of his life insurance, and the second, the cash value, is that portion that is invested in a variety of financial instruments depending on the type of permanent policy.

Tyler has been recommending that Clinton look into a Variable Universal Life insurance product. This policy allows Clinton to choose his investments among variable subaccounts, similar to mutual funds. Clinton knows it is more risky for him to choose, but he is comfortable with this framework. Tyler shared an illustration with a 10% growth rate, but Clinton felt that it was too high. He asked for and received an illustration with an 8% rate (see Exhibit 7). Clinton felt that an 8% return was more indicative of the types of returns that current investments would earn going forward.

The cash value is the amount that he can borrow against at retirement. He can take the cash value as a tax-free distribution of principal or a tax-deferred loan. He knows that the cash value portion of the permanent policies grow tax deferred, meaning he does not have to pay taxes on the annual growth in the cash value accounts. Should he pass away before the loan is repaid,

the face amount of the policy will be reduced by the loan amount plus any interest the loan accrued.

Clinton agreed to look at the VUL policy because he wanted to assess the difference between the investment value earned in the VUL policy, versus investing in other retirement vehicles of similar risk and return. By having both vehicles where he could control the portfolio asset allocation, he considers he can better analyze the various alternatives. He wants to try to compare, as carefully as possible, the risks and benefits of the investment versus the insurance options.

Clinton has four different death benefit options with the VUL policy (see Exhibit 7. Notes: death benefit options). He chose option A, where upon his death, the insurance company will pay his beneficiary the face amount of the policy and not the cash value. He could have chosen different options, each of which would have had a different effect on his VUL illustration.

Clinton has looked at the various riders, those additional features that can be added to the insurance contract for a fee. He has found most of them not useful or not worth the cost. The only rider he considers useful would be the "waiver of premium" rider which, should he be disabled, would pay the premium for the life of the policy. The waiver of premium rider is included in the Variable Universal Life plan and is not included in the Term Insurance quotes, but may be added for $40 per year.

Clinton received the VUL illustration from Tyler for the top preferred rate. He knows that should he sign up for this policy, he will need to have a medical exam. Based on that medical exam, he may or may not receive that preferred rate. There is a risk that he may, if the medical results are not as good as expected, have to pay more for the same insurance based on the results of that exam.

Clinton is aware of the "agency" problem in selling insurance, and that insurance salesmen may make between 40 and 110% of the first year commissions. As such, he wants to make sure that this is really what he needs, and not just something Tyler is selling to make a commission. He and Tyler have been friends since high school, so he is not too concerned about this.

Clinton must make a decision soon. He is unsure what he should do.

CASE QUESTIONS:

Note: For the purpose of these questions case, assume all payments are annual and are at the end of the year.

Retirement Questions:

1. Regarding potential retirement vehicles:
    a. What is the difference between the Roth and traditional retirement vehicles?
    b. In what situations would you prefer the Roth over the traditional 401K/IRA?
    c. In what situations would you prefer the traditional over the Roth 401k/IRA?
2. Regarding the company match:
    a. What is the impact on Clint and Emily's family savings goal of the company match?
    b. What is the return he is earning on the company match?
    c. There are very few situations where getting the company match is not recommended. What might one of those situations be?

3. Assume Clinton saves all 15%, less the cost of term insurance which includes the disability rider, in the traditional 401k plan each year. How much is he saving this year in terms of:
    a. The cost of insurance?
    b. His retirement contributions?
    c. The company match?
    d. Tax savings from the tax deductible option?
    e. Total Savings, which is contributions + company match + tax savings? For the purpose of this question, do not worry about future taxes.
4. Assume Clinton invests the full amount, his 15% of pre-tax income each year into the traditional 401k less the cost of a 30 year term policy each year at 8%.
    a. How much will he have at retirement (after paying taxes when he withdraws the money after age 59½)?
    b. Should he include the company match?
    c. How many years would he include the company match?
5. Assume he invests the same 15% pre-tax amount into the Roth 401k less the cost of a 30 year term policy each year at 8%.
    a. How much will he have at retirement after taxes?
    b. Will he have more or less in the Roth or the traditional 401k at retirement after taxes?
    c. Why or why not?
6. Assume Clinton invested the stated amounts in the VUL each year and invested the remaining funds in the Roth 401k.
    a. How much would he have at retirement at age 65 assuming the VUL at current charges? (Assume he borrows against the cash value for his retirement funds).
    b. How much would he have at retirement at age 65 assuming the VUL at maximum charges? (Assume he borrows against the cash value for his retirement funds).
7. Clinton and Emily have a goal to save 15% of their gross income each year.
    a. What is the maximum amount that Clinton and Emily can save each year in their Roth or traditional 401k and IRA accounts in 2012 (assume they have no additional income that would put them over the phase out range for a traditional or Roth IRA)?
    b. Is there room to invest additional retirement assets at their current level of income and savings?

Insurance Questions

8. What are the main differences between term and permanent life insurance (particularly the VUL which Clinton is considering) in terms of:
    a. Cost?
    b. Permanence (length of policy)?
    c. Investment risk?
    d. Commissions to the insurance agent?
    e. Flexibility?
9. Please answer the following questions regarding permanent policies below:
    a. What are the main differences between whole and universal life?
    b. What are the main differences between variable universal life and equity indexed universal life?
    c. What is the difference between the current charges and maximum charges and the impact on the retirement amount in the VUL policy?

   d. Does the uncertainty on costs make a difference in the analysis? Is this something that Clinton should be aware of?

10. What is the impact of Clinton's health on the life insurance illustration?
    a. Can this have an impact on the benefits of the policy?
    b. What can Clinton do if he does not get the preferred rate?
11. What would have been the impact on the policy illustrations of choosing a different death benefit option?
12. If Clinton saved well throughout his life and did not need the cash value, what would be the death benefit Internal Rate of Return be:
    a. At age 65?
    b. At age 80?

Combined Retirement and Insurance Questions

13. Which of the retirement vehicles is closest to the permanent insurance product as to the impact of taxes on the amount available going into the retirement vehicles and the amount available coming out at retirement?
14. What impact does taxes have on the retirement results in the retirement problems 4 and 6 above?
15. Clinton and his family are currently making $60,000 per year. As Clinton's earnings increase, what is the impact of that increased earnings on his family's life insurance needs?
16. If Clinton were to become disabled, what would be the impact be to the:
    a. Term life
    b. Variable Universal Life
    c. Traditional 401k
    d. Roth 401k
17. Could it make sense to have both term and permanent insurance as part of Clinton's insurance and retirement plans?

Thought Question:

Are there some concepts that would help Clinton decide which retirement vehicles to use first in a specific situation, i.e., a "priority of money" that he can use in saving for retirement? What should that "Priority of Money" be (i.e., what vehicles should he invest in first, then second, then third)?

Case Exhibits

Exhibit 1. Qualified Retirement Plan Annual Contribution Limits

for a 401(k), Roth 401(k), 403(b), Roth 403(b), and 457 Plan:**

Year	Contribution Limit	Catch Up Contribution*
2007	$15,000	$5,000
2008	15,500	5,000
2009	16,500	5,500
2010	16,500	5,500
2011	16,500	5,500
2012	17,000	5,500

*The catch up contribution is for those over age 50

** 457 Plan participants also have the option of the final 3 years before retirement to increase their deferrals to the lesser of twice the normal limit ($33,000 in 2010) or the normal limit not applied in previous years.

Exhibit 2. Individual Retirement Account Annual Contribution Limits

For a Traditional and Roth IRA

Year	Traditional / Roth Contribution Limit	Catch Up Contribution*
2007	4,000	1,000
2008	5,000	1,000
2009	5,000	1,000
2010	5,000	1,000
2011	5,000	1,000
2012	5,000	1,000

* The catch up contribution is for those over age 50

Exhibit 3. Contribution Phase Out Ranges

MAGI Phase Out Range (in 000's)

	Year	Single Range	Married FJ Range
Traditional IRA			
	2007	$50-$60	$80-$100
	2008	$53-$63	$85-$105
	2009	$55-$65	$89-$109
	2010	$56-$66	$89-$109
	2011	$56-$66	$89-$109
	2012	$58-$68	$92-$112
Roth IRA			
	2007	$95-$110	$156-$166
	2008	$101-$116	$159-$169
	2009	$105-$120	$166-$176
	2010	$105-$120	$167-$177
	2011	$105-$120	$167-$177
	2012	$110-$125	$173-$183

Your modified Adjusted Gross Income is your adjusted gross income and adding back certain items such as foreign income, foreign-housing deductions, student-loan deductions, IRA-contribution deductions and deductions for higher-education costs.

Exhibit 4. Term Insurance Types, Risks, and Flexibility

Type of Policy	Mortality Risk	Investment Control	Policy Cost/ Additional Fees	Investment Choice	Policy Flexibility Invest.	Premium	Face Amt.
Annual Term	High May not be renewed	None	Lowest Low initial cost	None	None	None	None
Renewable Term	Lower May be renewed for more periods	None	Low Higher initial cost	None	None	None	None
Convertible Term	Lowest If converted, cannot be cancelled	None until converted, then see chart below	Low / higher Lower initial cost, higher when converted	None	None	None	None

Exhibit 5. Permanent Insurance Types, Risks, and Flexibility

Type of Policy	Mortality Risk	Investment Control / Risk	Policy Cost/ Additional Fees	Investment Choice	Policy Flexibility Invest.	Premium	Face Amt.
Whole Life	Low Cannot be cancelled	None Investment risks assumed by insurance company	Lower Lower costs (but higher than term)	None Insurance company long-term bonds and mortgages	None	None	None
Universal Life	Low Cannot be Cancelled but premiums may be raised	Minimal Investment risk assumed by insurance company	Higher Higher costs	Minimal short-term money market investments	None	Max.	Max.
Variable Life	Low Cannot be cancelled but premiums may be raised	Highest Higher investment risk due to sub-account choices	Higher Higher costs	Maximum common stocks, money market, bonds, etc.	Max	None	None
Variable Universal Life	Low cannot be cancelled but premiums may be raised	Highest Higher investment risk due to sub-account choices	Higher Higher costs	Maximum common stocks, money market, bonds, etc.	Max.	Max.	Max.
Equity Indexed Universal Life	Low Cannot be cancelled but premiums may be raised	Higher Minimal investment risk, blended control	Higher Higher costs	Equity products and options	None	Max	Max

Notes to Exhibit 4 and 5: There are five different areas of concern when evaluating life insurance contracts. ***Mortality Risk*** is the risk that the insured dies outside the contract period and is not covered by insurance. ***Investment Control /Risk*** is who controls the investment choice and who takes responsibility for the risk from the outcome of the investments. ***Policy Cost*** is the cost of the policy compared to other policies. ***Investment Choice*** is the types of investment vehicles the non-mortality portion of the premiums may be invested in, i.e., bonds, stock, cash, etc. ***Policy Flexibility*** is the ability to change the types of investments, between bonds, stocks, mutual funds, etc.; monthly premium amounts, the ability to pay less or more depending on your cash flow situation; or the face value amount during the life of the contract, which is the ability to increase or decrease the face amount of the policy.

Exhibit 6. Term Insurance Cost Illustrations

Rate is for a Preferred, Non-tobacco User

Age: 35 Cost per year: 8 Companies Policies were from $460-480 per year

He will need to add $40 per year if he chooses to add the waiver of premium benefit

Exhibit 7. Custom Variable Universal Life Illustration

For: Clinton Ford, 35 year old Male — Initial Specified Amount: $500,000

Initial Death Benefit Option A: Specified Amount — Initial Monthly Premium: $485.83

Cash Value Accumulation Test

Death Benefit Guarantee: Lifetime

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		8% Gross (7.79% Net) - Current Charges				8% Gross (7.79% Net) - Maximum Charges			
End of Year	Age (Beginning of Year	Annual Cash Outlay	Death Benefit	Annual Invested Assets	Cash Surrender Value	Annual Cash Outlay	Death Benefit	Annual Invested Assets	Cash Surrender Value
1	35	5,830	500,000	4,758	1,844	5,830	500,000	4,091	1,176
2	36	5,830	500,000	9,451	6,537	5,830	500,000	8,042	5,127
3	37	5,830	500,000	14,478	11,563	5,830	500,000	12,250	9,335
4	38	5,830	500,000	19,862	16,947	5,830	500,000	16,714	13,799
5	39	5,830	500,000	25,626	22,711	5,830	500,000	21,456	18,541
6	40	5,830	500,000	31,800	29,468	5,830	500,000	26,494	24,162
7	41	5,830	500,000	38,414	36,665	5,830	500,000	31,835	30,086
8	42	5,830	500,000	45,506	44,340	5,830	500,000	37,485	36,319
9	43	5,830	500,000	53,111	52,528	5,830	500,000	43,461	42,878
10	44	5,830	500,000	61,264	61,264	5,830	500,000	49,770	49,770
11	45	5,830	500,000	71,330	71,330	5,830	500,000	57,710	57,710
12	46	5,830	500,000	82,142	82,142	5,830	500,000	66,129	66,129
13	47	5,830	500,000	93,758	93,758	5,830	500,000	75,054	75,054
14	48	5,830	500,000	106,232	106,232	5,830	500,000	84,574	84,574
15	49	5,830	500,000	119,625	119,625	5,830	500,000	94,725	94,725
16	50	5,830	500,000	133,966	133,966	5,830	500,000	105,527	105,527
17	51	5,830	500,000	149,421	149,421	5,830	500,000	117,013	117,013
18	52	5,830	500,000	165,977	165,977	5,830	500,000	129,196	129,196
19	53	5,830	500,000	183,757	183,757	5,830	500,000	142,124	142,124
20	54	5,830	510,766	202,865	202,865	5,830	500,000	155,814	155,814

21	55	5,830	545,958	223,698	223,698	5,830	500,000	170,288	170,288
22	56	5,830	582,427	246,055	246,055	5,830	500,000	185,608	185,608
23	57	5,830	620,220	270,034	270,034	5,830	500,000	201,834	201,834
24	58	5,830	659,325	295,748	295,748	5,830	500,000	219,076	219,076
25	59	5,830	699,813	323,298	323,298	5,830	513,790	237,360	237,360
26	60	5,830	741,858	352,862	352,862	5,830	540,451	257,065	257,065
27	61	5,830	785,636	384,550	384,550	5,830	567,601	277,828	277,828
28	62	5,830	831,376	418,498	418,498	5,830	595,278	299,651	299,651
29	63	5,830	879,205	454,839	454,839	5,830	623,561	322,587	322,587
30	64	5,830	929,209	493,716	493,716	5,830	652,497	346,691	346,691
31	65	5,830	981,475	535,287	535,287	5,830	682,238	372,085	372,085
36	70	5,830	1,278,077	789,097	789,097	5,830	841,230	519,383	519,383
41	75	5,830	1,648,921	1,137,310	1,137,310	5,830	1,020,114	703,603	703,603
46	80	5,830	2,121,013	1,607,070	1,607,070	5,830	1,223,315	926,894	926,894
51	85	5,830	2,721,471	2,218,280	2,218,280	5,830	1,455,833	1,186,708	1,186,708

Exhibit 7 Notes from the Life Insurance Contract Illustration

Note: The complete Illustration with all years is in the Excel Exhibits handout.

Difference Between Current and Maximum Charges. There is the risk of an increase in Current Fees and Expenses at the discretion of the Insurance Company. Certain insurance charges are currently assessed at less than their maximum levels. The Insurance Company may increase these current charges in the future up to the guaranteed maximum levels, based on the Company's emerging experience or future expectations, as determined in its sole discretion, with respect to, but not limited to, mortality, expenses, reinsurance costs, taxes, persistency, capital requirements, reserve requirements, and changes in applicable laws. Although some Funds may have expense limitation agreements, the operating expenses of the Portfolios are not guaranteed and may increase or decrease over time. If fees and expenses are increased, you may need to increase the amount and/or frequency of Premium Payments to keep the Policy in force.

Death Benefit Option. Death benefit is defined by the option selected by the applicant. The death benefit under Option A is equal to the Specified Amount. Under Option B, the death benefit is equal to the Specified Amount plus the Policy Value. Under Option C, the death benefit is equal to the Specified Amount plus cumulative premiums paid minus cumulative withdrawals.

Cash Value Accumulation Test. In order to be treated as life insurance under the Internal Revenue Code §7702, a policy must meet one of two tests. One of the tests is the Cash Value Accumulation Test. The test requires that the policy meet a minimum ratio of death benefit to policy value, with the ratios decreasing as the age of the insured advances. The minimum death benefit at all times must equal the net single premium factor stated in the policy multiplied by the policy value.

Cash Surrender Value. This is the value that the customer would receive should he decide to terminate the policy.

Death Benefit. This is the amount that would be paid on death of the insured.

Note: There is an Excel Exhibits Handout with this case.