

A Simple Model of Investment Risk for an Individual Investor after Retirement

by Raymond J. Murphy

Abstract

With the growth of defined contribution plans and IRAs, a greater portion of our future retirement income may be provided through individual account plans. This paper presents a model that projects withdrawals and investment returns for a hypothetical retirement account. The model uses a stochastic or Monte Carlo simulation process to determine the probability that the fund will be exhausted under different withdrawal and asset mix scenarios. The output summarizes the 5th percentile through the 95th percentile account balances for each scenario.

The model shows that there will be great variability in the investment returns, especially if a retiree invests in the stock market. However, over a long time horizon, the results indicate that the difference in downside risk (that is, having your funds exhausted early because of poor returns) is minimal between asset classes, while there is more upside potential for significant gains with the more risky portfolios. Because of this uncertainty, there is clearly a need for more education on investment risk and spending plans.

Introduction

During the 1990s there has been continued growth in the number and size of defined contribution (DC) plans, and the federal government has expanded the IRA options allowing individuals to save for retirement. At the same time many corporate and government defined

benefit plans have been converted to DC plans. There has even been preliminary discussion of converting a portion of future Social Security contributions to a privatized system in which the individual taxpayer manages the investments.

The design of defined benefit plans has been changing also, with greater emphasis on lump-sum payment options and portability. Cash balance and pension equity plans define the benefit in terms of an account balance and typically offer a lump-sum payment. Although these plans are technically defined benefit plans, they have defined contribution plan characteristics. If an employee takes a lump sum, he or she faces the same investment decisions as a participant in a 401(k) plan.

The risk trend is certainly away from management by the institutional investor (insurance companies and pension funds) and toward the individual investor. The fact is that almost everyone will be making investment decisions on at least a portion of his or her retirement funds. Although there is plenty of information on retirement planning *before retirement*, there is less guidance for the employee at the point of retirement.

Retirees run the risk of outliving their funds because of insufficient investment returns, spending too much, or living too long. Retirees can purchase annuities to cover these risks, but more and more retirees are electing to manage these risks themselves. These retirees need guidance on how to invest their funds and how to manage their income needs. This paper presents a model for calculating the risks and suggests how retirees can make their retirement nest egg meet their long-term objectives.

The Basic Model

Consider a hypothetical new retiree with an initial balance of \$100,000. This may be an IRA, a 401(k) balance, a lump-sum rollover from a defined benefit plan, or a taxable account. The model does not make a distinction between tax-qualified or taxable investments. The model assumes before-tax returns, and that taxes must be paid from available income. The model is also age-neutral and does not take into account required minimum distributions at age $70\frac{1}{2}$.

The hypothetical retiree must make two very important decisions:

1. How should I structure the investment portfolio?
2. How much can I afford to spend?

The retiree's objectives are to

1. Increase the periodic withdrawals for inflation,
2. Make the funds last for his or her lifetime or a period of X years,
3. (Optional) leave sufficient funds to the heirs after death.

The model examines the effect of an initial withdrawal of 4%, 5%, 6%, 7%, and 8% of the initial balance. The lower the initial withdrawal, the longer the fund will last.

The model will index the initial withdrawal for inflation regardless of the balance. For example, the model will withdraw \$10,000 in a given year if the balance is \$11,000 or \$1,000,000. In reality, a retiree will adjust spending depending on his or her wealth, and the distributions required under the tax law would force a retiree to take higher withdrawals. However, this paper is primarily concerned with meeting the objectives, so the focus is more on the "downside" risk rather than the "upside" potential. If the fund happens to grow to \$1,000,000 in a long bull market, the retiree has met the basic objectives and will leave this fortune to his or her family or estate.

In reality, the retiree must always hold a reserve to cover at least a few years of payments, so there should always be a portion of the funds remaining after death. The model doesn't take this into account. The retiree

spends the target income regardless of the balance. This model does not start out with a target survivor benefit. The survivor balance will be greater if death is premature and zero if the fund is exhausted.

The model does not presume any change in the retiree's spending lifestyle, except for inflation increases. In this way the model is age-neutral and considers only the number of years spent in retirement.

Assumptions and Methods

Please refer to Appendices A and B for a detailed discussion of the development of the assumptions and methods. There are four hypothetical investment portfolios ranging from conservative (100% bonds) to aggressive (100% equities). The moderately conservative fund is assumed to be 65% bonds and 35% equities. The moderately aggressive fund is assumed to be 35% bonds and 65% equities (see Table 1). In addition, the assumed rate of increase for inflation has a mean of 4% and standard deviation of 2%.

Each of the four portfolios and each of the five initial withdrawal scenarios are run through a stochastic or Monte Carlo simulation model. Withdrawals are assumed to occur at the beginning of the year. Each scenario produces 500 possible outcomes, and it is expected that the results will simulate the behavior of the random variables. After each five-year increment in the projections, the model tracks the 5th, 10th, 25th, 50th, 75th, 90th, and 95th percentile fund balance. The 5th percentile values are the "pessimistic" or "worst case" scenarios, and the 95th percentile are the "best case," and so on.

Variability and the Risk of Outliving Your Retirement Funds

Many financial projections do not anticipate variation in the assumed variables. Consider a straightforward

TABLE 1
INVESTMENT PORTFOLIOS

Scenario	Asset Mix	Mean	Standard Deviation
Conservative	100% Bonds	7.00%	7.00%
Moderately conservative	65% Bonds/35% stocks	8.75	9.80
Moderately aggressive	35% Bonds/65% stocks	10.25	12.20
Aggressive	100% Stocks	12.00	15.00

“deterministic” projection of this model. Table 2 shows the future balance assuming a \$6,000, or 6%, initial withdrawal, with 4% annual increases, and investment returns at a constant rate of 8.75% (moderately conservative) per year. The account would cover full payments for 29 years. Note how the withdrawals increase from 6% of the initial balance to 7.6% at 10 years, and 13.0% at 20 years.

Figure 1 shows the deterministic scenario compared to two runs of the stochastic model. The “above average” projection would last 36 years, whereas the “below average” projection hits zero after 16 years. It is more meaningful to define a range of possible outcomes instead of a definite period of years.

TABLE 2
FUTURE BALANCE ASSUMING 8.75%
EXPECTED RETURN AND WITHDRAWALS
INCREASED BY 4% PER YEAR

Year	Fund Balance	Withdrawal	Withdrawal as Percentage of Balance
0	\$100,000	\$6,000	6.0%
1	102,225	6,240	6.1
2	104,384	6,490	6.2
3	106,460	6,749	6.3
4	108,435	7,019	6.5
5	110,290	7,300	6.6
6	112,002	7,592	6.8
7	113,546	7,896	7.0
8	114,895	8,211	7.1
9	116,018	8,540	7.4
10	116,882	8,881	7.6
11	117,451	9,237	7.9
12	117,683	9,606	8.2
13	117,534	9,990	8.5
14	116,953	10,390	8.9
15	115,887	10,806	9.3
16	114,276	11,238	9.8
17	112,054	11,687	10.4
18	109,149	12,155	11.1
19	105,481	12,641	12.0
20	100,963	13,147	13.0
21	95,501	13,673	14.3
22	88,988	14,220	16.0
23	81,311	14,788	18.2
24	72,343	15,380	21.3
25	61,948	15,995	25.8
26	49,974	16,635	33.3
27	36,256	17,300	47.7
28	20,614	17,992	87.3
29	2,851	2,851	100.0

Of course, more than three projections are needed to get an accurate picture of the results. Part X of Appendix C summarizes 500 outcomes run with the moderately conservative portfolio and 6% initial withdrawal. The 50th percentile account balance is about \$20,000 after 25 years, and 0 at 30 years. This implies that the probability of the fund lasting 25–29 years is 50%. Note that the \$6,000 withdrawal would grow to about \$16,000 at 4% inflation over 25 years. The 50th percentile “final year” is 26.

The final years in the 5th percentile and 10th percentile cases are 16 and 18, respectively. This implies that there is a 90% probability of the fund lasting 18 years or more. The 25th percentile final year is 21. If the retiree’s time horizon in retirement is 21 years or more, the results show that this asset mix and distribution plan should be successful about 75% of the time.

The 50th percentile account balance is about \$80,000 at 20 years. If the retiree died during the 20th year of retirement, the median death benefit is about 80% of the initial balance. This may be an important feature of an estate plan as well as a retirement plan.

The 75th and higher percentile results show balances that continue to grow despite the increasing withdrawals. With this favorable investment experience, a retiree could easily afford to increase his or her withdrawal rate.

A retiree could successfully manage his or her retirement funds for 30 to 40 years and *still* run out of money. Progress in disease management and medical technology and healthier lifestyles will continue to increase life expectancy. The 1983 Group Annuity Mortality Table projects that retirees aged 60 to 65 can expect to live to age 81 for males and 86 for females. A fair number of retirees can expect to hit age 100. Will their retirement fund last as long?

Time Horizon and Income Planning

The above scenario outlined only one investment portfolio and withdrawal assumption. The attached schedules in Appendix C show all 20 scenarios. The results are summarized in Tables 3 and 4. Table 3 shows the last year at which the 10th percentile value is positive, and Table 4 shows the last year at which the 25th percentile is positive. Table 4 has a 75% probability as opposed to 90% in Table 3.

Table 3 shows the year in which the retirement fund will be exhausted using results from the 10th percentile.

FIGURE 1
PROJECTED ACCOUNT BALANCE: 6% INITIAL WITHDRAWAL
AND EXPECTED RETURN = 8.75%

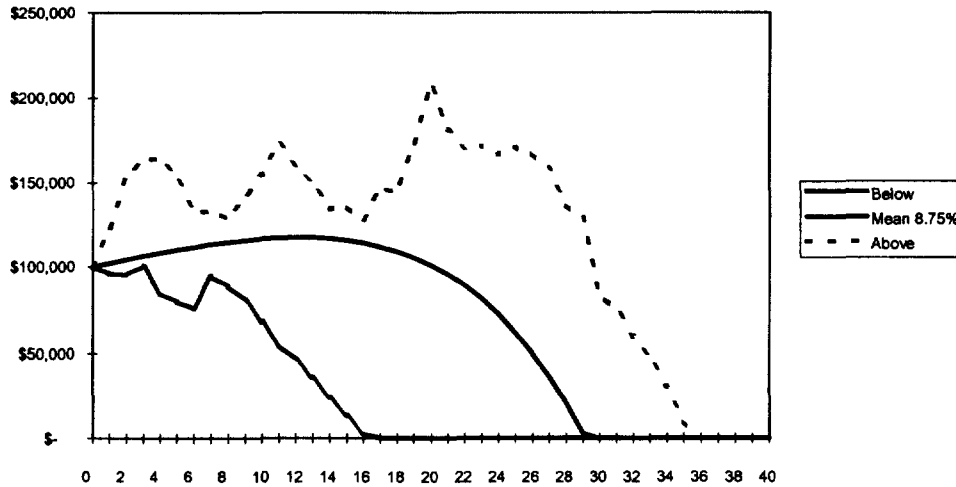


TABLE 3
LAST YEAR THAT 10TH PERCENTILE VALUE IS POSITIVE,
90% PROBABILITY TIME HORIZON

Initial Withdrawal Rate	Conservative Portfolio	Moderately Conservative Portfolio	Moderately Aggressive Portfolio	Aggressive Portfolio
4%	27	30	34	40+
5	20	22	22	25
6	16	18	18	18
7	14	14	14	15
8	12	12	12	12

TABLE 4
LAST YEAR THAT THE 25TH PERCENTILE VALUE IS POSITIVE,
75% PROBABILITY TIME HORIZON

Initial Withdrawal Rate	Conservative Portfolio	Moderately Conservative Portfolio	Moderately Aggressive Portfolio	Aggressive Portfolio
4%	31	40+	40+	40+
5	23	27	31	40+
6	18	21	22	27
7	15	16	17	19
8	13	14	15	15

In other words, the fund will last longer than this final year 90% of the time.

Table 4 shows the year in which the retirement fund will be exhausted using results from the 25th percentile. In other words, the fund will last longer than this final year 75% of the time.

I believe that the 10th and 25th percentile scenarios are more appropriate for planning than the median scenario. No one would recommend adopting a retirement plan that has a 50% probability of failure. If a retiree sets a plan based on the tables, there is a higher probability of success, and potentially good news if a conservative spending pattern is accompanied by favorable investment returns.

In Table 3 it is interesting that in the 5% withdrawal through the 8% withdrawal assumption, there is very little difference in the final years among the portfolios. For example, the final year with the 6% withdrawal is 16 for a conservative investor and 18 for an aggressive investor. This implies that the downside risk is similar for each portfolio. (However, the aggressive portfolio has a lower 5th percentile balance than the conservative portfolio at five years at each withdrawal rate, which suggests that 100% stock investing is inappropriate over a shorter period.) However, the aggressive investor has much greater potential for investment gains. This is an argument for taking more risk if you have a fairly long time horizon.

Table 4 shows a wider range of results. The 6% withdrawal scenario is expected to fund 18 years with a conservative bond fund, and 27 years with a stock fund. This table shows that an employee retiring early, at age 50 to 55, can reasonably expect to fund 30 to 40 years of retirement if the initial withdrawal is set below 6% of the initial balance and the investor is willing to risk some of the account in the stock market.

Once a retiree is old enough that the time horizon is under 10 years, he or she can withdraw more than 8% of the balance. For security more of the fund should be invested in fixed income at that time.

Note that the model is useful to early retirees with long time horizons and older retirees needing to fund fewer years. The model should be used frequently, and one can adjust his or her withdrawal rate as the horizon changes.

Spending Discipline

The model assumes that the distribution is indexed for inflation each year. In other words, the retiree is assumed never to deviate from this spending plan.

What if the retiree wants to help his or her grandchildren with college expenses? Suppose there are unexpected medical bills? Suppose he or she wants to start a small business? A retiree might also forget his or her original retirement income plan altogether, or spend the retirement funds in an irresponsible manner. Human nature may lead us to expect the retiree to spend more money earlier than assumed by this model. The above results are applicable only to retirees who stick to their original plan. In reality many retirees may exhaust their funds early even with favorable investment performance.

Social Security is the only retirement income source for many people. If a large portion of the Social Security benefit is placed in an individual account, people should not be allowed to withdraw too much of their account too soon. There should be withdrawal restrictions on this portion of the benefit to ensure that these retirees have a sufficient balance to last their lifetime.

Historical Scenarios

The success or failure of individual retirement plans will depend on the market's performance during the retirement years. As the following analysis shows, the historical markets have been generous to some generations of retirees and less generous to others.

Figures 2–4 show how a retirement fund with a 5% initial withdrawal on \$100,000 would have lasted with actual returns on large company stocks or long-term government bonds over three time periods.

A person retiring in 1960 with \$100,000 in stocks would have enjoyed favorable returns in the 1960s, lost money in the 1970s, and spent the gains of the 1980s and 1990s until the fund ran out in 1996. This person met his or her income needs over a 36-year period—a very risky, but successful retirement plan. Bond investors in 1960 would have seen their funds lasting only 21 years.

The 1970 retiree hit hard times with high inflation and poor returns in the stock market. Since he or she was withdrawing funds at the same time the retiree had trouble recovering. Bond returns were also poor in the 1970s as interest rates rose. The funds lasted only 23 years and 21 years, respectively.

The 1980 retiree has had nothing but good news. Both stock and bond markets have been strong over very long periods. Inflation has been under control, particularly through the 1990s. The withdrawals are merely loose change to this investor, who now has a

FIGURE 2
1960 RETIREE, 5% INITIAL WITHDRAWAL

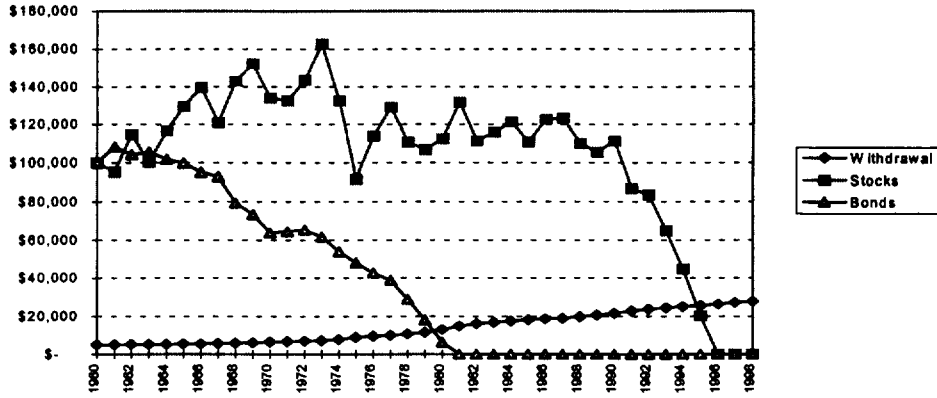


FIGURE 3
1970 RETIREE, 5% INITIAL WITHDRAWAL

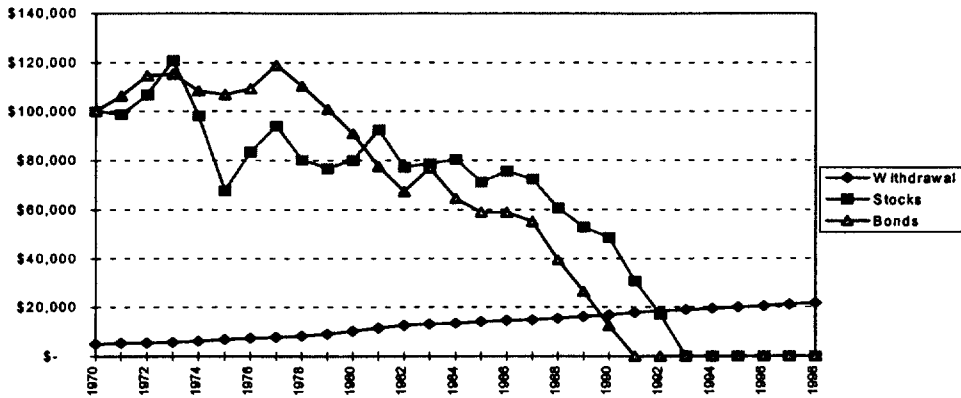
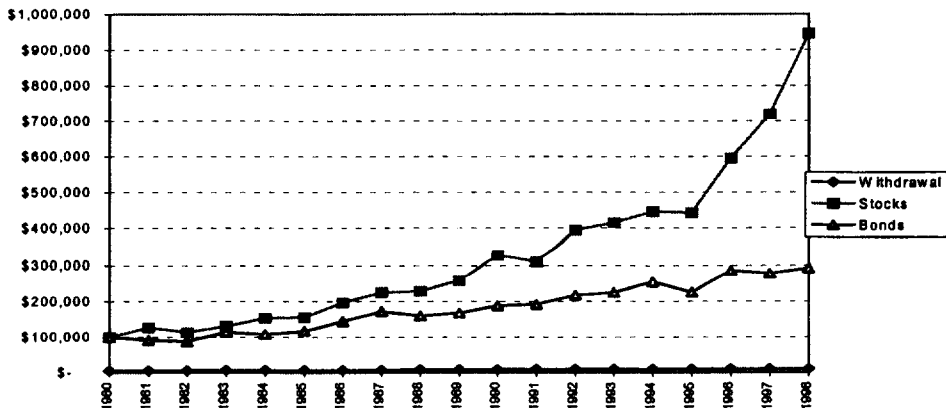


FIGURE 4
1980 RETIREE, 5% INITIAL WITHDRAWAL



stock fund worth over \$900,000 or a bond fund worth almost \$300,000. This investor could increase his or her spending at her discretion and have plenty left over for the long haul.

This experience illustrates the volatility of individual investing after retirement. Tables 3 and 4 suggest that a bond investor could take a 5% initial withdrawal and see the retirement fund last 20 to 23 years. A stock investor could be expected to last over 40 years 75% of the time or 25 years 90% of the time. This describes the experience of the 1960 retiree and the 1970 bond investor fairly well. The 1970 stock investor fell short of these targets, whereas the 1980 stock and bond investor exceeded the objectives.

Conclusion

The three-legged stool (Social Security, pensions, and savings) once symbolized the three sources of retirement income. Traditional pensions have been replaced with cash accumulation plans for many people, and even Social Security may someday include individual accounts. Because more of the responsibility will fall on the individual, there is a need to educate and assist people on investment matters and the management of their income and expenses both before and after retirement.

The three major conclusions from this analysis are the following:

1. Many people will mismanage their investments or spending and have a real risk of outliving their retirement funds. The poor returns shown in the 5th and 10th percentile outcomes will be a reality for some future generation of retirees. This will put pressure on Social Security or the welfare system to make up the difference.
2. A retirement portfolio with a high percentage of equities has about the same downside risk as a more

conservative portfolio over a long time horizon of ten or more years.

3. There are tremendous potential gains for retirees with long time horizons who take more investment risk and spend their funds prudently. With little downside risk and greater upside potential, future retirees should consider investing a portion of their funds in the stock market.

Appendix A: Assumptions on Future Investment Returns and Inflation

The validity of any model depends on its assumptions. Every investment projection model comes with the caveat that "past performance is not a guarantee of future performance." With a stochastic model we expect that there will be sufficient scenarios resulting in superior, intermediate, and disastrous returns to give an accurate sampling of the future. In other words, it is a scientific means of determining "best case, expected case, and worst case" scenarios.

The return assumptions presented here are based on overall past market data and specific performance of the largest stock and bond mutual funds. This paper is targeted to the small individual investor, and I assume that mutual funds will be the primary investment vehicle.

Table 5 is derived from data provided by Ibbotson Associates and Dow Jones. Only data from 1960 to 1997 were chosen because recent history is considered more representative of the current and future market. Note that this period includes several recessions, high and low inflation, and both positive and negative stock market movements.

As you might expect, the recent ten-year market outperformed the longer period. Also, recent inflation has been lower than the longer period.

TABLE 5
TOTAL RETURNS (PRICE CHANGE PLUS DIVIDENDS)

Period	Parameter	Stocks (S&P500)	Long Term Gov't Bonds	Inflation
1960-97	Mean	12.73%	7.74%	4.64%
	Standard deviation	15.81	11.25	3.18
1988-97	Mean	18.83	11.37	3.46
	Standard deviation	14.40	11.00	1.24

Source: Ibbotson and Associates, *Stock Bonds, Bills and Inflation 1998 Yearbook*.

The three largest stock funds were Fidelity Magellan, Vanguard Index 500, and Investment Company of America. The three largest bond funds were Vanguard Fixed-GNMA, Bond Fund of America, and Franklin U.S. Government Securities I. From 1988 through 1997, the average mean and standard deviation of these three stock funds were 18.46% and 14.16%, respectively; for the three bond funds they were 9.39% and 6.16%, respectively. The stock funds returned close to the overall market, while the performance of the bond funds was significantly different than that of long-term government bonds.

I assume that inflation over the next 40 years will be somewhere between the 10-year and the 38-year historical averages. My assumption is a mean of 4% and standard deviation of 2%.

The 38-year stock returns have averaged 8% over inflation. As a result, I assume a mean of 12%. The stock return standard deviation will be 15%, which falls between the 10- and 38-year average.

The bond return is not as straightforward. A portfolio of long-term Treasury bonds would suggest about a 3–4% real return with a standard deviation of 11%, whereas a bond mutual fund would have a lower return and standard deviation. Assuming a mix of Treasury bonds and mutual funds, the model will use a mean return of 7% with standard deviation of 7%.

The conservative portfolio will be comprised of 100% bonds. The aggressive portfolio assumes 100% stocks. The moderately conservative portfolio assumes 65% bonds and 35% stocks. The moderately aggressive portfolio assumes 35% bonds and 65% stocks (see Table 6

The model is highly dependent upon the reasonableness of these assumptions. I tested the sensitivity of the variables to determine the effect of a 1% change on the final results. The moderately conservative with 6% withdrawal scenario has a 50th percentile “final year” of 26 and a fund balance at 20 years of about \$75,000. Table 7 shows the effect of a 1% increase and decrease on the mean and standard deviation. This shows that a

change in the mean has a more significant impact than a change in standard deviation.

Appendix B: Stochastic Model Methodology

Random Trials

In a stochastic model or Monte Carlo simulation, the computer simulates several hundred possible outcomes that behave according to the statistical constraints of the assumptions. Each run of this model produces 500 outcomes.

This model was created using Microsoft Excel’s random number generator, which supplies a random number between 0 and 1. The model then associated that result with the corresponding point on the standard normal distribution. For example, a random number of 0.7054 corresponds to 0.54 on the standard normal distribution (there’s about a 70% probability of being less than 0.54 on $N(0,1)$).

The model assumes a normal distribution of returns. The same point for a stock return with mean of 12% and standard deviation of 15% would be

$$12\% + 15\% \times 0.54 = 20.1\%$$

There is about a 70% probability of having a stock return of less than 20.1%.

Modeling

Each scenario generates 40 years of future returns and inflation. The model starts with an assumed retirement fund of \$100,000 and an annual beginning of year withdrawal assumption equal to a percentage of \$100,000. The annual withdrawals are increased for inflation each year.

TABLE 6
SCENARIO MEANS AND STANDARD DEVIATIONS

Scenario	Asset Mix	Mean	Standard Deviation
Conservative	100% Bonds	7.00%	7.00%
Moderately conservative	65% Bonds/35% stocks	8.75	9.80
Moderately aggressive	35% Bonds/65% stocks	10.25	12.20
Aggressive	100% Stocks	12.00	15.00

TABLE 7
EFFECTS OF CHANGES IN MEAN AND
STANDARD DEVIATION

Mean	Standard Deviation	50th Pct. Final Year	50th Pct Balance at 20 years
8.75%	9.80%	26	\$75,000
7.75	9.80	22	36,000
9.75	9.80	32	127,000
8.75	8.80	27	85,000
8.75	10.80	24	58,000

When the fund hits zero, all funds are exhausted, and there is no assumed recovery. Hypothetically you could build a model with negative balances (loans?) and hope for a recovery. I did not do this for this model.

For output I saved the fund balance at the end of each five years for each of the 500 scenarios. Each run uses a different withdrawal rate and an investment portfolio.

Appendix C

The tables and figures in the parts of this appendix include the 5th through the 95th percentile fund balances

TABLE 8
APPENDIX C NOMENCLATURE

Investment Portfolio	Initial Withdrawal Rate	Table Key
Conservative	4%	C-4%
Moderately conservative	4	MC-4
Moderately aggressive	4	MA-4
Aggressive	4	A-4
Conservative	5	C-5
Moderately conservative	5	MC-5
Moderately aggressive	5	MA-5
Aggressive	5	A-5
Conservative	6	C-6
Moderately conservative	6	MC-6
Moderately aggressive	6	MA-6
Aggressive	6	A-6
Conservative	7	C-7
Moderately conservative	7	MC-7
Moderately aggressive	7	MA-7
Aggressive	7	A-7
Conservative	8	C-8
Moderately conservative	8	MC-8
Moderately aggressive	8	MA-8
Aggressive	8	A-8

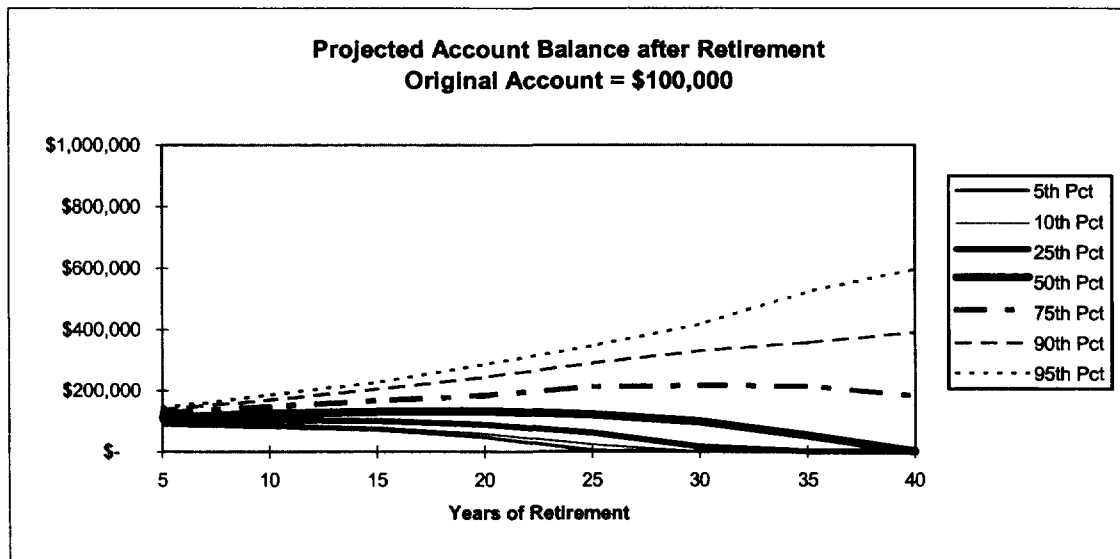
at the end of five-year increments for each withdrawal and investment portfolio scenario. Table 8 explains the nomenclature.

Part I: C-4%

	<u>Investment</u>	<u>Inflation</u>
Mean	7.00%	4.00%
St Dev	7.00%	2.00%

Withdrawal Rate 4.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 84,974	\$ 79,276	\$ 71,245	\$ 44,881	\$ 4,297	\$ -	\$ -	\$ -	25
10	\$ 91,106	\$ 87,040	\$ 78,706	\$ 57,231	\$ 23,768	\$ -	\$ -	\$ -	27
25	\$ 100,755	\$ 102,093	\$ 98,096	\$ 88,348	\$ 61,108	\$ 14,747	\$ -	\$ -	31
50	\$ 112,404	\$ 123,026	\$ 129,096	\$ 131,769	\$ 119,519	\$ 96,727	\$ 51,481	\$ -	38
75	\$ 125,201	\$ 146,120	\$ 165,160	\$ 183,767	\$ 211,407	\$ 216,164	\$ 213,174	\$ 180,280	40
90	\$ 136,808	\$ 168,181	\$ 204,677	\$ 243,184	\$ 289,999	\$ 328,873	\$ 355,812	\$ 391,183	40
95	\$ 143,650	\$ 183,883	\$ 226,886	\$ 285,552	\$ 346,096	\$ 415,497	\$ 520,975	\$ 596,468	40

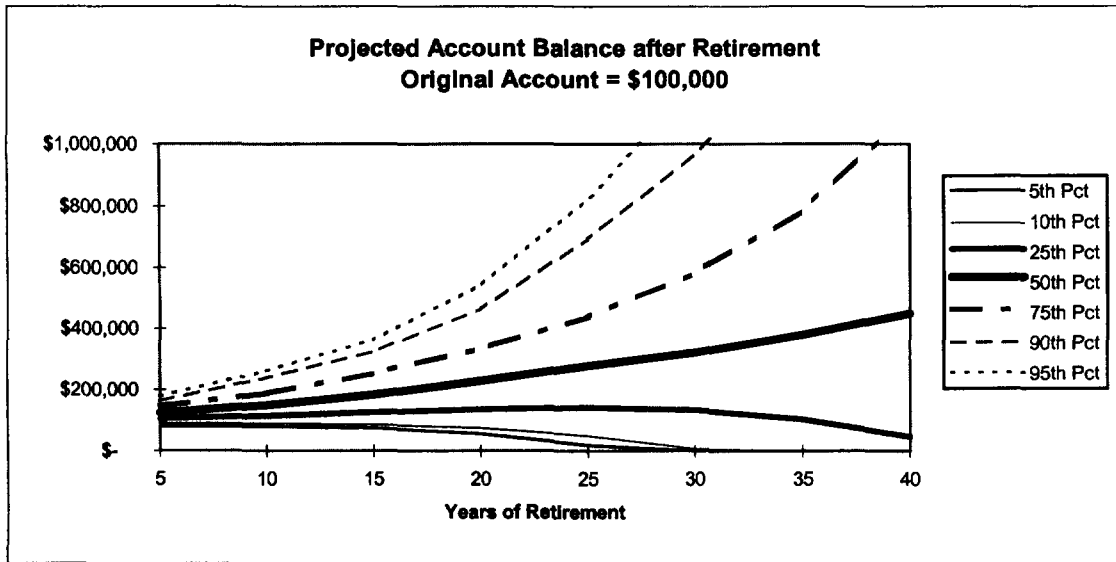


Part II: MC-4%

	<u>Investment</u>	<u>Inflation</u>
Mean	8.75%	4.00%
St Dev	9.80%	2.00%

Withdrawal Rate 4.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 80,521	\$ 80,044	\$ 74,293	\$ 54,849	\$ 18,824	\$ -	\$ -	\$ -	26
10	\$ 90,328	\$ 90,178	\$ 84,784	\$ 74,814	\$ 49,606	\$ 7,928	\$ -	\$ -	30
25	\$ 105,262	\$ 113,651	\$ 125,443	\$ 136,180	\$ 140,093	\$ 132,882	\$ 102,131	\$ 44,937	40
50	\$ 123,594	\$ 148,645	\$ 182,622	\$ 228,823	\$ 277,259	\$ 322,249	\$ 378,332	\$ 449,965	40
75	\$ 143,825	\$ 186,225	\$ 252,416	\$ 333,671	\$ 438,942	\$ 582,364	\$ 784,809	\$ 1,100,077	40
90	\$ 162,348	\$ 238,741	\$ 323,606	\$ 462,788	\$ 694,823	\$ 965,192	\$ 1,358,243	\$ 2,012,525	40
95	\$ 176,656	\$ 260,913	\$ 363,337	\$ 543,149	\$ 825,108	\$ 1,192,742	\$ 1,706,915	\$ 2,731,473	40

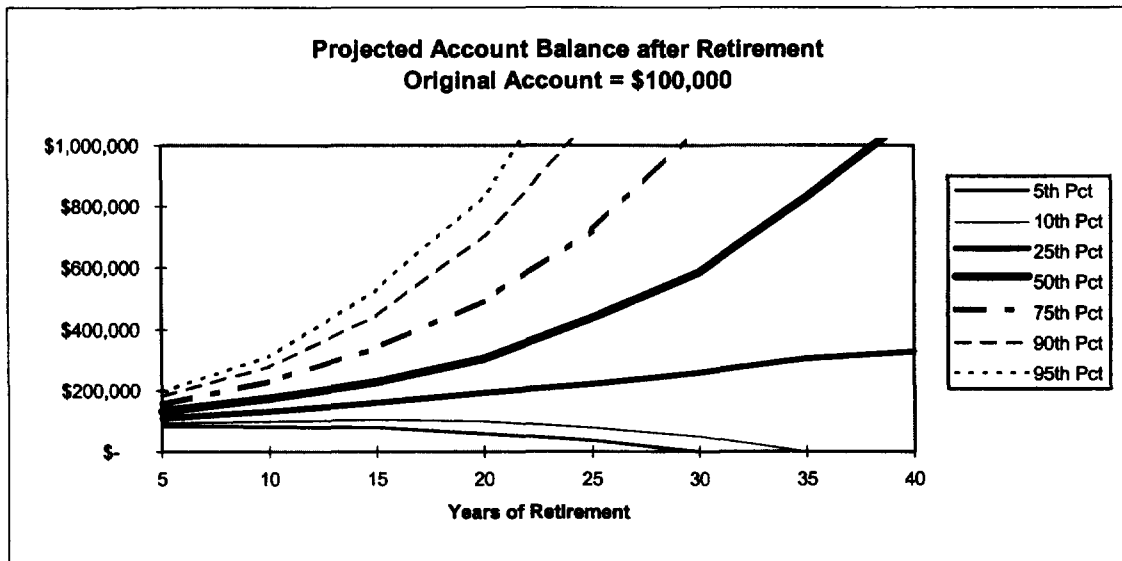


Part III: MA-4%

	<u>Investment</u>	<u>Inflation</u>
Mean	10.25%	4.00%
St Dev	12.20%	2.00%

Withdrawal Rate 4.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 84,163	\$ 82,496	\$ 79,905	\$ 59,614	\$ 36,381	\$ -	\$ -	\$ -	28
10	\$ 93,784	\$ 99,056	\$ 105,374	\$ 98,104	\$ 77,344	\$ 48,890	\$ -	\$ -	34
25	\$ 108,536	\$ 130,544	\$ 160,563	\$ 192,642	\$ 220,787	\$ 259,273	\$ 304,550	\$ 327,754	40
50	\$ 130,506	\$ 174,466	\$ 228,609	\$ 305,456	\$ 438,021	\$ 584,871	\$ 830,723	\$ 1,100,309	40
75	\$ 155,210	\$ 230,012	\$ 341,635	\$ 492,313	\$ 719,691	\$ 1,059,441	\$ 1,605,908	\$ 2,589,601	40
90	\$ 181,656	\$ 278,417	\$ 446,607	\$ 703,213	\$ 1,084,408	\$ 1,710,668	\$ 2,902,031	\$ 4,545,524	40
95	\$ 196,094	\$ 313,048	\$ 530,444	\$ 831,570	\$ 1,378,218	\$ 2,284,419	\$ 3,573,561	\$ 5,713,429	40

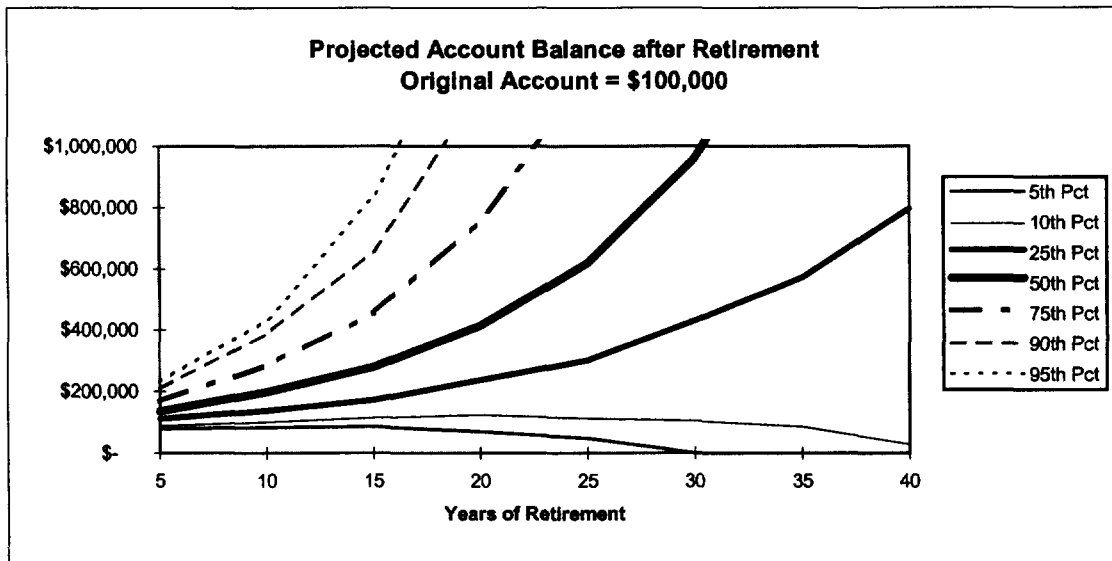


Part IV: A-4%

	<u>Investment</u>	<u>Inflation</u>
Mean	12.00%	4.00%
St Dev	15.00%	2.00%

Withdrawal Rate 4.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5 \$	78,333 \$	84,070 \$	85,076 \$	69,945 \$	47,898 \$	- \$	- \$	- \$	29
10 \$	87,993 \$	100,147 \$	113,415 \$	123,910 \$	112,446 \$	105,287 \$	85,134 \$	28,789	40
25 \$	109,936 \$	137,471 \$	171,166 \$	236,587 \$	301,043 \$	431,020 \$	571,254 \$	796,234	40
50 \$	136,055 \$	197,707 \$	227,839 \$	413,200 \$	618,609 \$	959,503 \$	1,521,731 \$	2,339,987	40
75 \$	168,415 \$	283,577 \$	452,586 \$	755,327 \$	1,226,439 \$	2,144,356 \$	3,660,431 \$	6,285,417	40
90 \$	206,826 \$	386,668 \$	657,289 \$	1,177,066 \$	2,024,029 \$	3,711,849 \$	6,328,523 \$	12,159,869	40
95 \$	230,272 \$	432,948 \$	829,872 \$	1,537,843 \$	2,738,768 \$	4,981,359 \$	8,951,653 \$	17,213,987	40

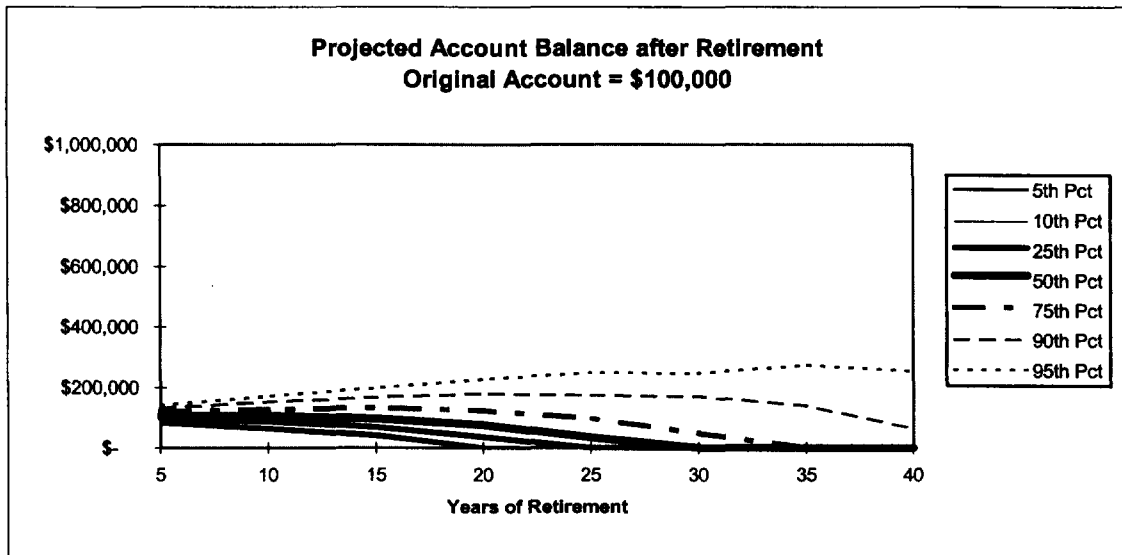


Part V: C-5%

	<u>Investment</u>	<u>Inflation</u>
Mean	7.00%	4.00%
St Dev	7.00%	2.00%

Withdrawal Rate 5.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 79,572	\$ 61,779	\$ 36,363	\$ -	\$ -	\$ -	\$ -	\$ -	19
10	\$ 85,656	\$ 70,408	\$ 48,195	\$ 5,339	\$ -	\$ -	\$ -	\$ -	20
25	\$ 95,288	\$ 87,053	\$ 67,876	\$ 35,506	\$ -	\$ -	\$ -	\$ -	23
50	\$ 107,130	\$ 106,383	\$ 96,570	\$ 75,711	\$ 33,695	\$ -	\$ -	\$ -	27
75	\$ 119,430	\$ 128,185	\$ 132,983	\$ 124,236	\$ 97,886	\$ 47,281	\$ -	\$ -	33
90	\$ 131,681	\$ 152,177	\$ 167,321	\$ 179,385	\$ 172,406	\$ 168,710	\$ 138,244	\$ 62,984	40
95	\$ 140,225	\$ 170,750	\$ 199,021	\$ 226,053	\$ 247,257	\$ 244,916	\$ 271,892	\$ 253,741	40

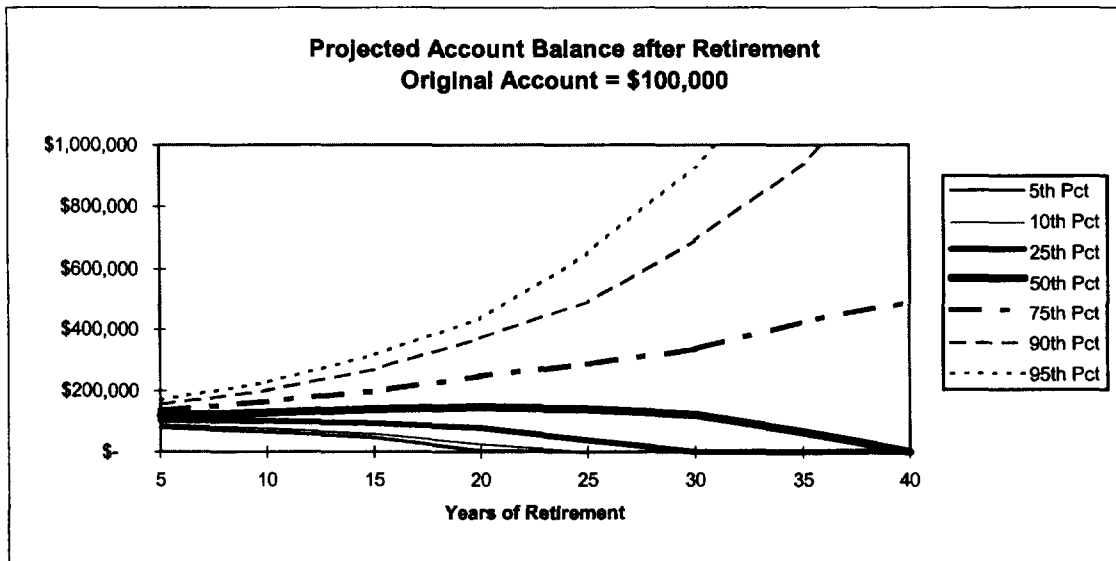


Part VI: MC-5%

	<u>Investment</u>	<u>Inflation</u>
Mean	8.75%	4.00%
St Dev	9.80%	2.00%

Withdrawal Rate 5.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 78,164	\$ 64,748	\$ 46,004	\$ 4,414	\$ -	\$ -	\$ -	\$ -	20
10	\$ 87,938	\$ 77,050	\$ 59,080	\$ 25,267	\$ -	\$ -	\$ -	\$ -	22
25	\$ 101,920	\$ 100,639	\$ 93,658	\$ 78,652	\$ 37,670	\$ -	\$ -	\$ -	27
50	\$ 117,464	\$ 127,097	\$ 138,919	\$ 146,859	\$ 139,570	\$ 122,055	\$ 64,180	\$ -	38
75	\$ 135,646	\$ 163,254	\$ 198,260	\$ 247,934	\$ 285,128	\$ 335,813	\$ 421,979	\$ 488,688	40
90	\$ 155,042	\$ 199,448	\$ 268,198	\$ 371,237	\$ 488,746	\$ 688,949	\$ 936,636	\$ 1,310,464	40
95	\$ 169,521	\$ 226,353	\$ 316,985	\$ 434,345	\$ 649,438	\$ 928,514	\$ 1,314,373	\$ 1,828,394	40

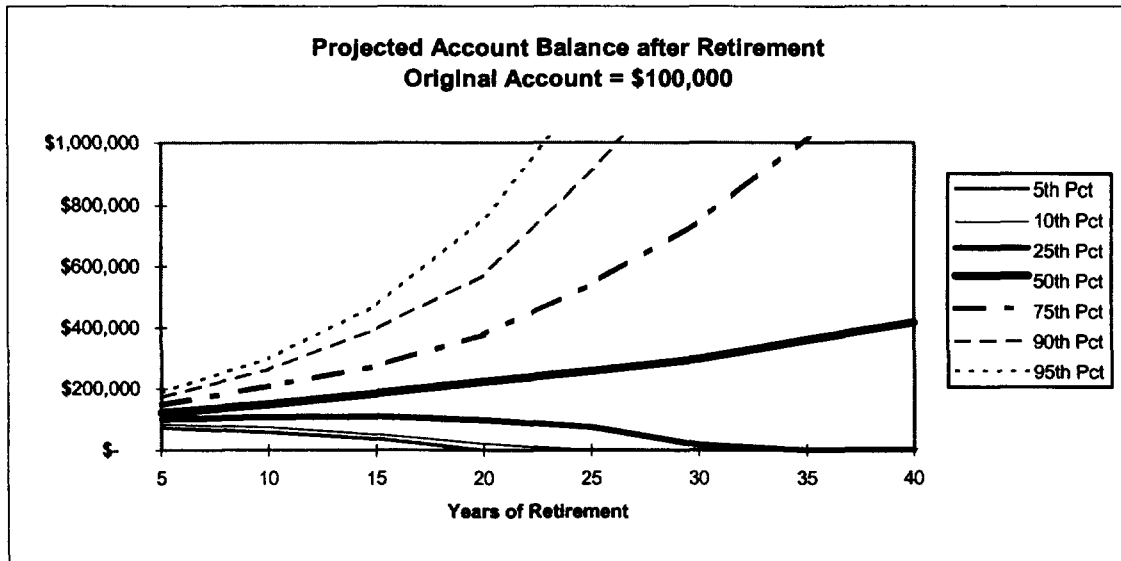


Part VII: MA-5%

	<u>Investment</u>	<u>Inflation</u>
Mean	10.25%	4.00%
St Dev	12.20%	2.00%

Withdrawal Rate 5.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 72,073	\$ 57,177	\$ 35,378	\$ -	\$ -	\$ -	\$ -	\$ -	19
10	\$ 84,376	\$ 73,621	\$ 52,366	\$ 20,500	\$ -	\$ -	\$ -	\$ -	21
25	\$ 101,083	\$ 107,279	\$ 108,163	\$ 96,324	\$ 73,436	\$ 16,531	\$ -	\$ -	31
50	\$ 122,646	\$ 148,644	\$ 184,742	\$ 222,002	\$ 257,341	\$ 296,393	\$ 359,109	\$ 416,359	40
75	\$ 146,577	\$ 207,391	\$ 275,033	\$ 376,714	\$ 540,024	\$ 745,962	\$ 1,016,457	\$ 1,563,120	40
90	\$ 171,723	\$ 262,046	\$ 395,276	\$ 570,955	\$ 912,329	\$ 1,301,055	\$ 1,982,027	\$ 3,274,451	40
95	\$ 188,901	\$ 299,827	\$ 474,162	\$ 758,671	\$ 1,190,358	\$ 1,889,720	\$ 3,093,959	\$ 4,933,756	40

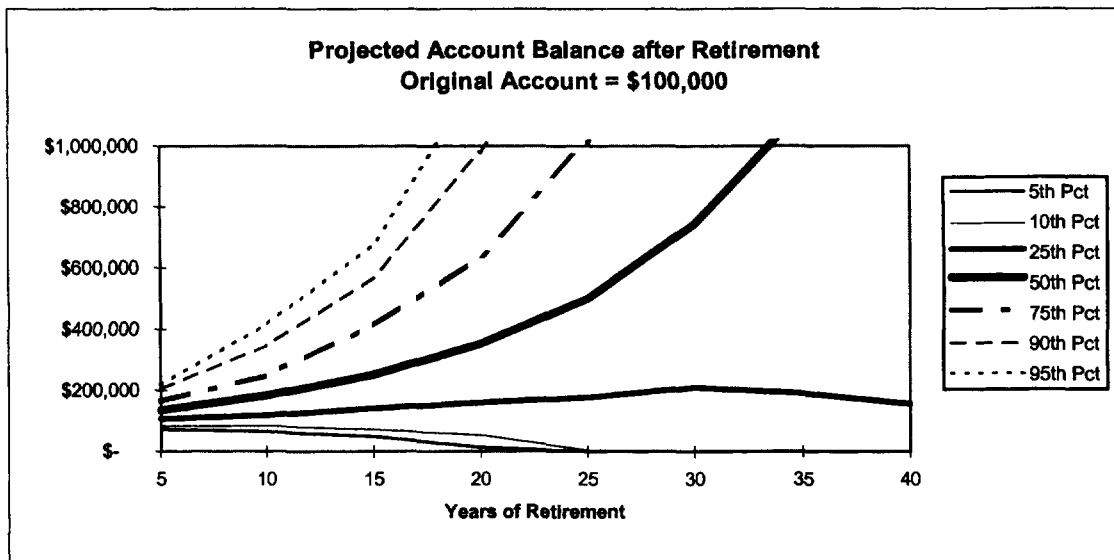


Part VIII: A-5%

	<u>Investment</u>	<u>Inflation</u>
Mean	12.00%	4.00%
St Dev	15.00%	2.00%

Withdrawal Rate 5.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>Year Fund Exhausted</u>
<u>Percentile</u>									
5	\$ 72,837	\$ 64,256	\$ 50,130	\$ 13,761	\$ -	\$ -	\$ -	\$ -	21
10	\$ 83,697	\$ 84,455	\$ 72,710	\$ 52,420	\$ 3,342	\$ -	\$ -	\$ -	25
25	\$ 106,060	\$ 119,041	\$ 140,562	\$ 160,125	\$ 177,673	\$ 209,667	\$ 189,537	\$ 156,878	40
50	\$ 134,599	\$ 182,336	\$ 250,834	\$ 351,958	\$ 501,251	\$ 742,797	\$ 1,114,142	\$ 1,648,762	40
75	\$ 164,542	\$ 247,256	\$ 413,322	\$ 635,414	\$ 1,016,833	\$ 1,644,388	\$ 2,759,211	\$ 4,254,946	40
90	\$ 203,479	\$ 345,601	\$ 568,586	\$ 979,461	\$ 1,584,705	\$ 2,849,443	\$ 4,994,259	\$ 8,504,696	40
95	\$ 217,247	\$ 416,437	\$ 675,716	\$ 1,237,136	\$ 2,158,283	\$ 3,274,252	\$ 7,002,329	\$ 13,083,032	40

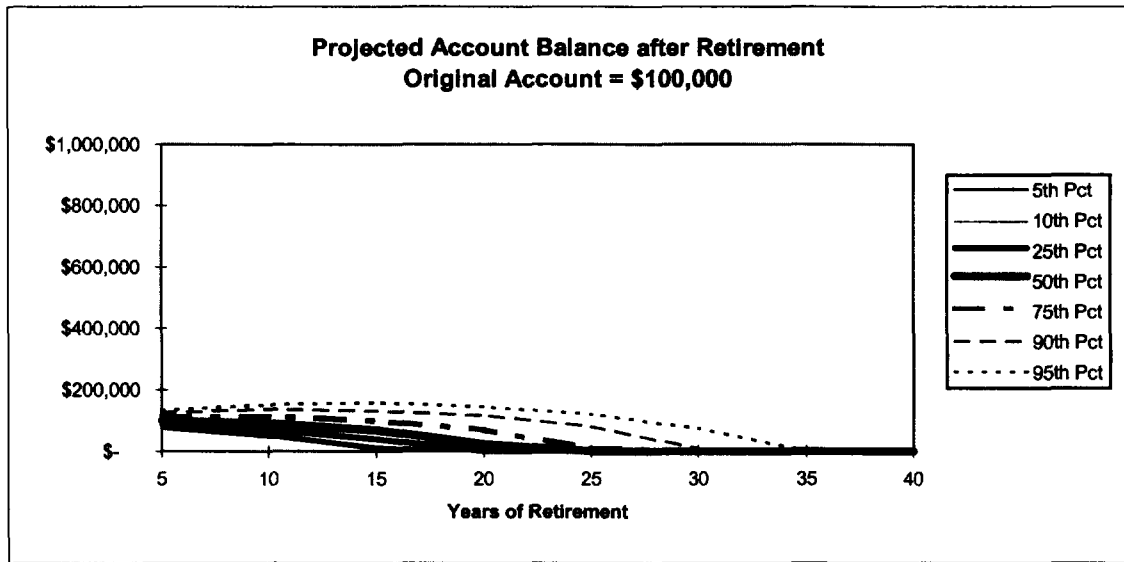


Part IX: C-6%

	<u>Investment</u>	<u>Inflation</u>
Mean	7.00%	4.00%
St Dev	7.00%	2.00%

Withdrawal Rate 6.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>Year Fund Exhausted</u>
<u>Percentile</u>									
5	\$ 73,851	\$ 46,756	\$ 6,674	\$ -	\$ -	\$ -	\$ -	\$ -	15
10	\$ 79,716	\$ 56,977	\$ 17,571	\$ -	\$ -	\$ -	\$ -	\$ -	16
25	\$ 89,080	\$ 70,855	\$ 39,856	\$ -	\$ -	\$ -	\$ -	\$ -	18
50	\$ 100,626	\$ 91,529	\$ 68,102	\$ 23,051	\$ -	\$ -	\$ -	\$ -	21
75	\$ 112,524	\$ 113,862	\$ 98,472	\$ 68,686	\$ 10,084	\$ -	\$ -	\$ -	25
90	\$ 126,546	\$ 136,745	\$ 132,247	\$ 116,864	\$ 80,210	\$ 7,337	\$ -	\$ -	30
95	\$ 132,591	\$ 152,135	\$ 158,432	\$ 144,559	\$ 120,166	\$ 75,232	\$ -	\$ -	33

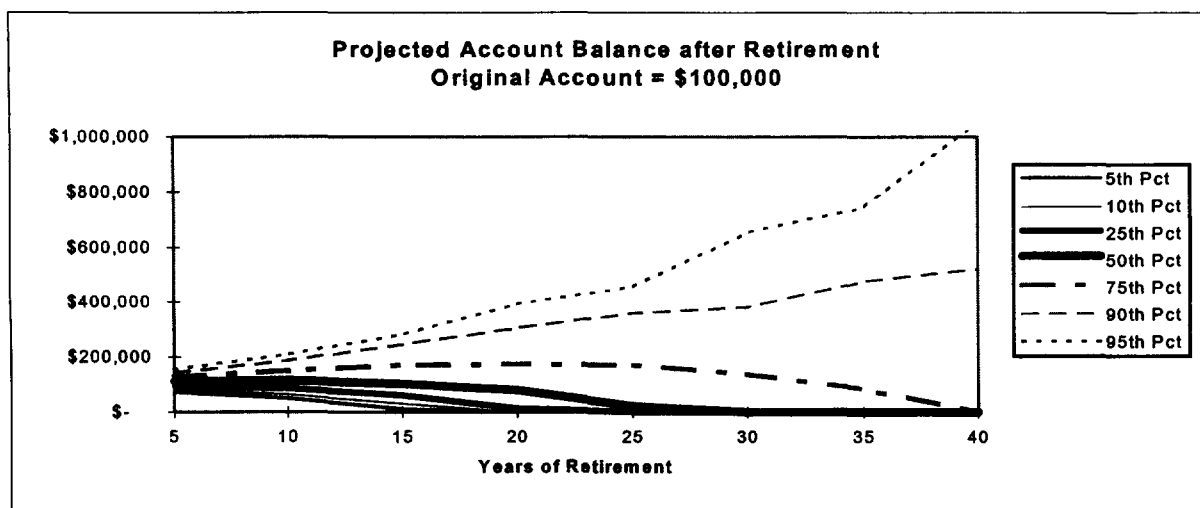


Part X: MC-6%

	<u>Investment</u>	<u>Inflation</u>
Mean	8.75%	4.00%
St Dev	9.80%	2.00%

Withdrawal Rate 6.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>Exhausted</u>
<u>Percentile</u>									
5	\$ 72,318	\$ 50,022	\$ 11,860	\$ -	\$ -	\$ -	\$ -	\$ -	16
10	\$ 81,926	\$ 62,406	\$ 30,737	\$ -	\$ -	\$ -	\$ -	\$ -	18
25	\$ 94,325	\$ 85,068	\$ 60,463	\$ 13,512	\$ -	\$ -	\$ -	\$ -	21
50	\$ 109,548	\$ 114,010	\$ 102,325	\$ 80,188	\$ 20,361	\$ -	\$ -	\$ -	26
75	\$ 127,638	\$ 148,985	\$ 169,220	\$ 172,980	\$ 169,446	\$ 136,628	\$ 84,167	\$ -	38
90	\$ 143,736	\$ 183,830	\$ 243,721	\$ 302,476	\$ 356,938	\$ 379,059	\$ 473,970	\$ 520,844	40
95	\$ 153,550	\$ 207,361	\$ 280,943	\$ 390,215	\$ 454,347	\$ 652,493	\$ 743,612	\$ 1,052,626	40

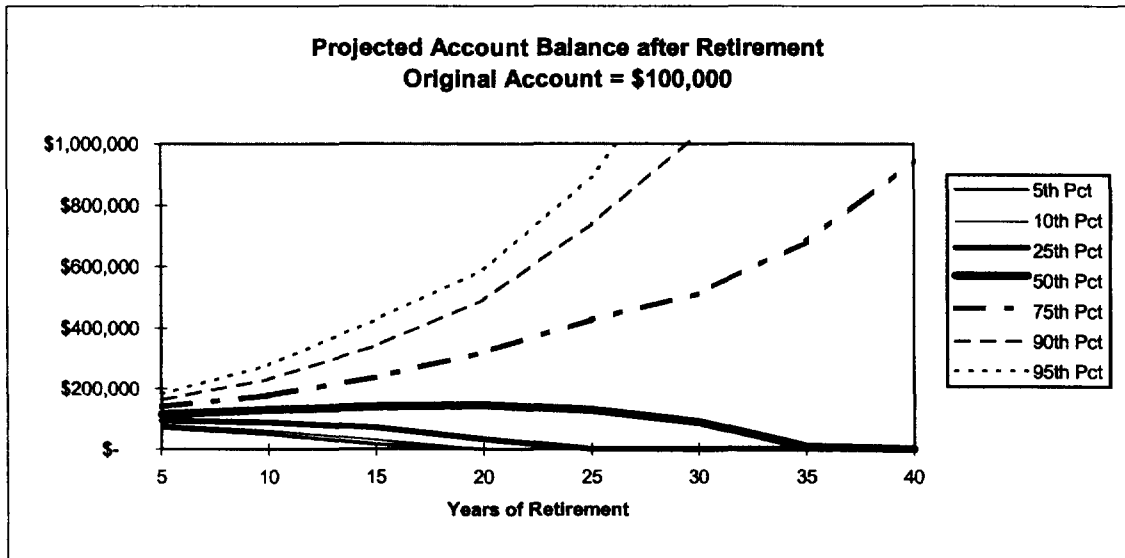


Part XI: MA-6%

	<u>Investment</u>	<u>Inflation</u>
Mean	10.25%	4.00%
St Dev	12.20%	2.00%

Withdrawal Rate 6.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
Percentile									
5	\$ 69,451	\$ 48,645	\$ 14,751	\$ -	\$ -	\$ -	\$ -	\$ -	16
10	\$ 77,291	\$ 60,944	\$ 30,953	\$ -	\$ -	\$ -	\$ -	\$ -	17
25	\$ 92,438	\$ 87,481	\$ 71,394	\$ 32,250	\$ -	\$ -	\$ -	\$ -	22
50	\$ 113,743	\$ 130,178	\$ 139,508	\$ 144,484	\$ 128,086	\$ 87,390	\$ 7,632	\$ -	35
75	\$ 138,487	\$ 178,035	\$ 236,632	\$ 320,324	\$ 426,384	\$ 510,408	\$ 679,216	\$ 946,372	40
90	\$ 161,601	\$ 231,153	\$ 340,124	\$ 490,715	\$ 739,109	\$ 1,032,244	\$ 1,515,375	\$ 2,417,007	40
95	\$ 181,027	\$ 278,474	\$ 426,130	\$ 588,749	\$ 893,496	\$ 1,377,265	\$ 2,184,176	\$ 3,569,085	40

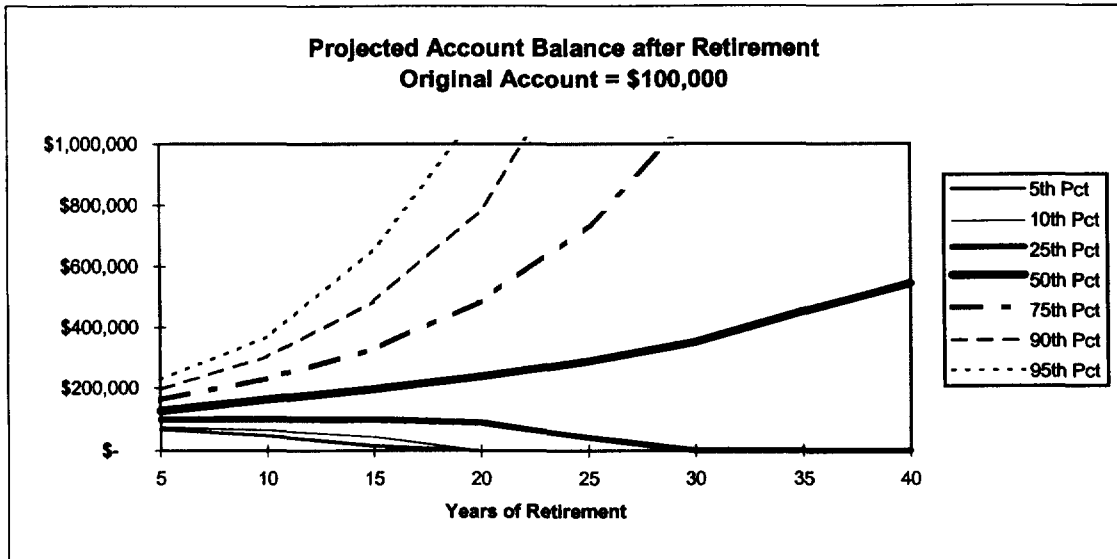


Part XII: A-6%

	<u>Investment</u>	<u>Inflation</u>
Mean	12.00%	4.00%
St Dev	15.00%	2.00%

Withdrawal Rate 6.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 68,847	\$ 47,013	\$ 15,981	\$ -	\$ -	\$ -	\$ -	\$ -	16
10	\$ 76,986	\$ 67,028	\$ 44,582	\$ -	\$ -	\$ -	\$ -	\$ -	18
25	\$ 99,604	\$ 100,677	\$ 99,412	\$ 89,043	\$ 41,934	\$ -	\$ -	\$ -	27
50	\$ 126,188	\$ 161,016	\$ 197,046	\$ 237,396	\$ 287,675	\$ 350,074	\$ 452,247	\$ 544,479	40
75	\$ 159,276	\$ 230,665	\$ 326,985	\$ 484,494	\$ 732,935	\$ 1,096,008	\$ 1,688,112	\$ 2,740,740	40
90	\$ 193,442	\$ 302,581	\$ 486,256	\$ 780,330	\$ 1,347,007	\$ 2,064,496	\$ 3,488,386	\$ 5,806,744	40
95	\$ 225,763	\$ 367,568	\$ 656,085	\$ 1,104,588	\$ 1,717,641	\$ 3,127,819	\$ 5,104,570	\$ 8,694,346	40

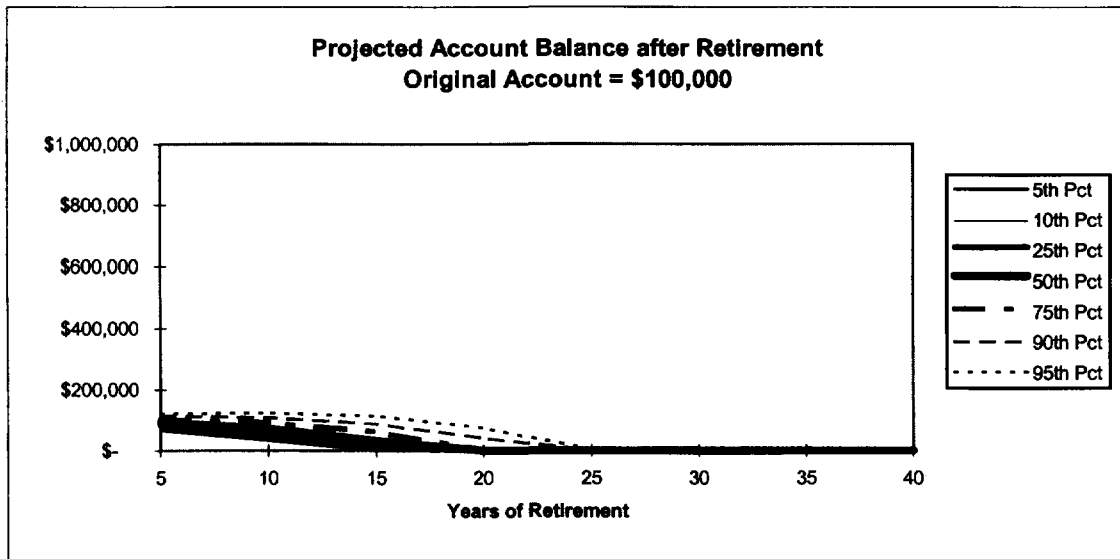


Part XIII: C-7%

	<u>Investment</u>	<u>Inflation</u>
Mean	7.00%	4.00%
St Dev	7.00%	2.00%

Withdrawal Rate 7.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 67,286	\$ 33,758	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	13
10	\$ 73,707	\$ 41,356	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	14
25	\$ 81,976	\$ 54,886	\$ 8,497	\$ -	\$ -	\$ -	\$ -	\$ -	15
50	\$ 92,472	\$ 71,899	\$ 32,309	\$ -	\$ -	\$ -	\$ -	\$ -	17
75	\$ 103,094	\$ 91,223	\$ 61,815	\$ 2,493	\$ -	\$ -	\$ -	\$ -	20
90	\$ 114,393	\$ 107,757	\$ 87,390	\$ 40,441	\$ -	\$ -	\$ -	\$ -	22
95	\$ 121,961	\$ 124,304	\$ 113,416	\$ 74,662	\$ 2,671	\$ -	\$ -	\$ -	25

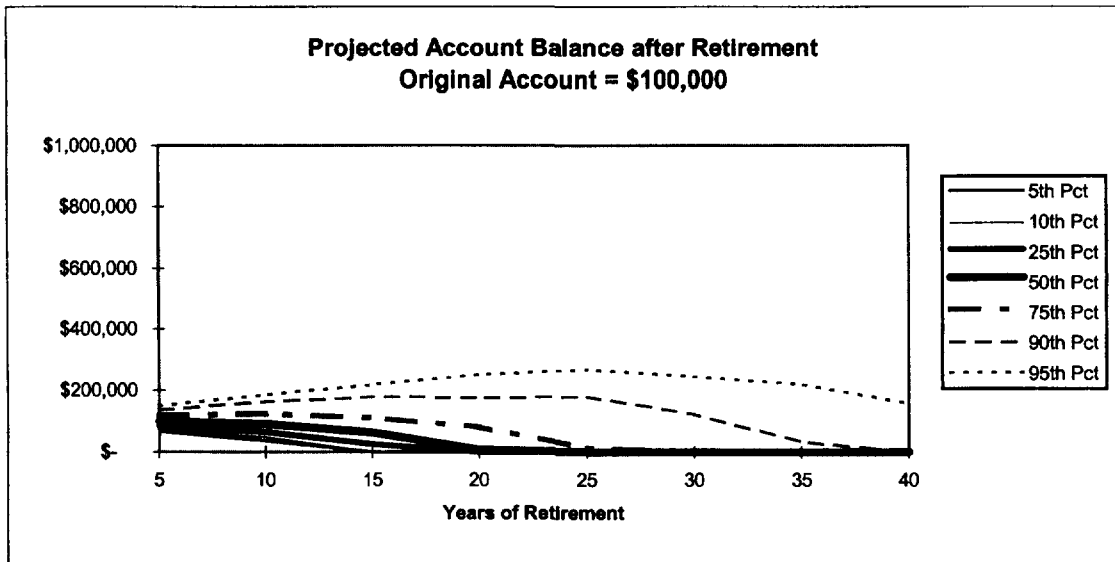


Part XIV: MC-7%

	<u>Investment</u>	<u>Inflation</u>
Mean	8.75%	4.00%
St Dev	9.80%	2.00%

Withdrawal Rate 7.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>Year Fund Exhausted</u>
<u>Percentile</u>									
5	\$ 65,981	\$ 36,509	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	13
10	\$ 72,038	\$ 47,053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	14
25	\$ 83,417	\$ 64,912	\$ 24,575	\$ -	\$ -	\$ -	\$ -	\$ -	16
50	\$ 98,842	\$ 91,234	\$ 62,876	\$ 7,952	\$ -	\$ -	\$ -	\$ -	20
75	\$ 117,628	\$ 122,900	\$ 109,862	\$ 80,393	\$ 14,066	\$ -	\$ -	\$ -	25
90	\$ 135,990	\$ 162,740	\$ 176,528	\$ 174,931	\$ 176,348	\$ 122,573	\$ 33,218	\$ -	36
95	\$ 149,053	\$ 185,508	\$ 217,698	\$ 249,672	\$ 265,883	\$ 244,541	\$ 218,999	\$ 156,882	40

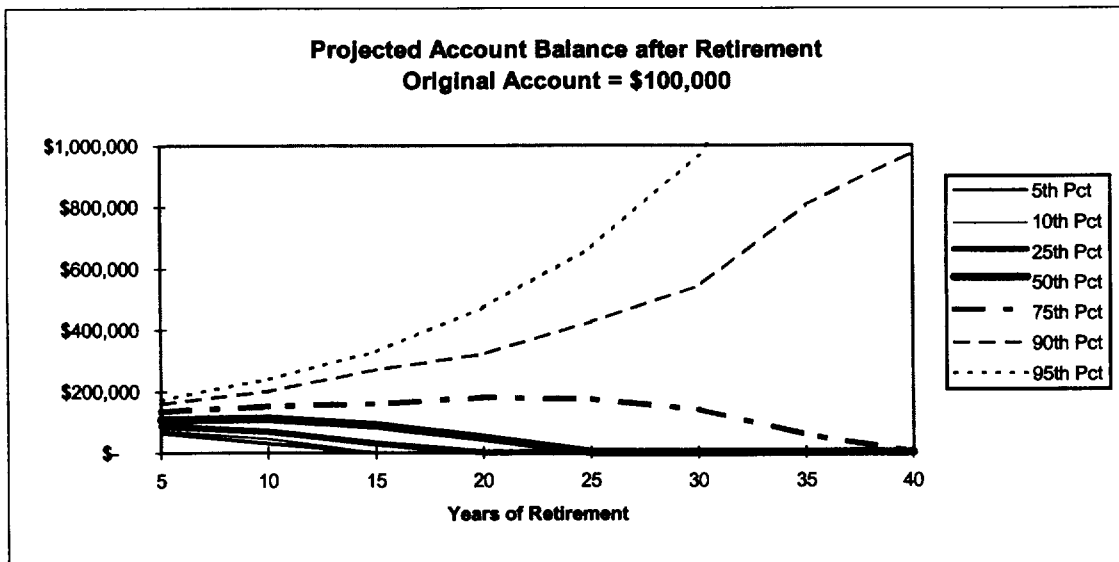


Part XV: MA-7%

	<u>Investment</u>	<u>Inflation</u>
Mean	10.25%	4.00%
St Dev	12.20%	2.00%

Withdrawal Rate 7.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 63,999	\$ 30,990	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	13
10	\$ 72,377	\$ 44,772	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	14
25	\$ 87,635	\$ 69,604	\$ 29,937	\$ -	\$ -	\$ -	\$ -	\$ -	17
50	\$ 108,304	\$ 111,956	\$ 90,469	\$ 47,338	\$ -	\$ -	\$ -	\$ -	23
75	\$ 135,168	\$ 152,402	\$ 160,675	\$ 178,724	\$ 174,068	\$ 139,726	\$ 56,055	\$ -	36
90	\$ 159,567	\$ 199,168	\$ 271,200	\$ 319,705	\$ 423,683	\$ 540,850	\$ 803,402	\$ 975,695	40
95	\$ 172,550	\$ 240,102	\$ 329,417	\$ 469,643	\$ 665,967	\$ 966,347	\$ 1,496,792	\$ 1,927,311	40

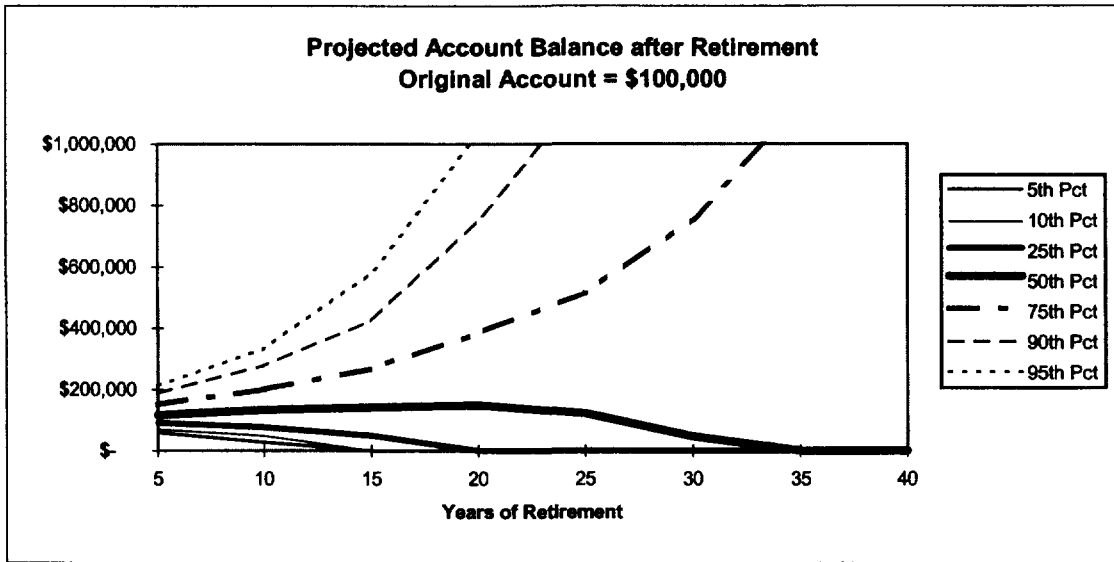


Part XVI: A-7%

	<u>Investment</u>	<u>Inflation</u>
Mean	12.00%	4.00%
St Dev	15.00%	2.00%

Withdrawal Rate 7.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>Year Fund Exhausted</u>
<u>Percentile</u>									
5 \$	58,531	\$ 27,319	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	12
10 \$	69,184	\$ 47,215	\$ 157	\$ -	\$ -	\$ -	\$ -	\$ -	15
25 \$	91,826	\$ 76,830	\$ 49,054	\$ -	\$ -	\$ -	\$ -	\$ -	19
50 \$	116,974	\$ 133,152	\$ 141,650	\$ 148,718	\$ 121,169	\$ 45,947	\$ -	\$ -	32
75 \$	150,354	\$ 199,206	\$ 269,123	\$ 383,850	\$ 514,824	\$ 755,527	\$ 1,130,807	\$ 1,640,448	40
90 \$	187,246	\$ 277,425	\$ 423,910	\$ 752,386	\$ 1,169,129	\$ 1,973,173	\$ 3,114,067	\$ 5,800,251	40
95 \$	211,372	\$ 334,218	\$ 581,577	\$ 1,030,195	\$ 1,902,169	\$ 3,072,093	\$ 4,902,438	\$ 8,969,616	40

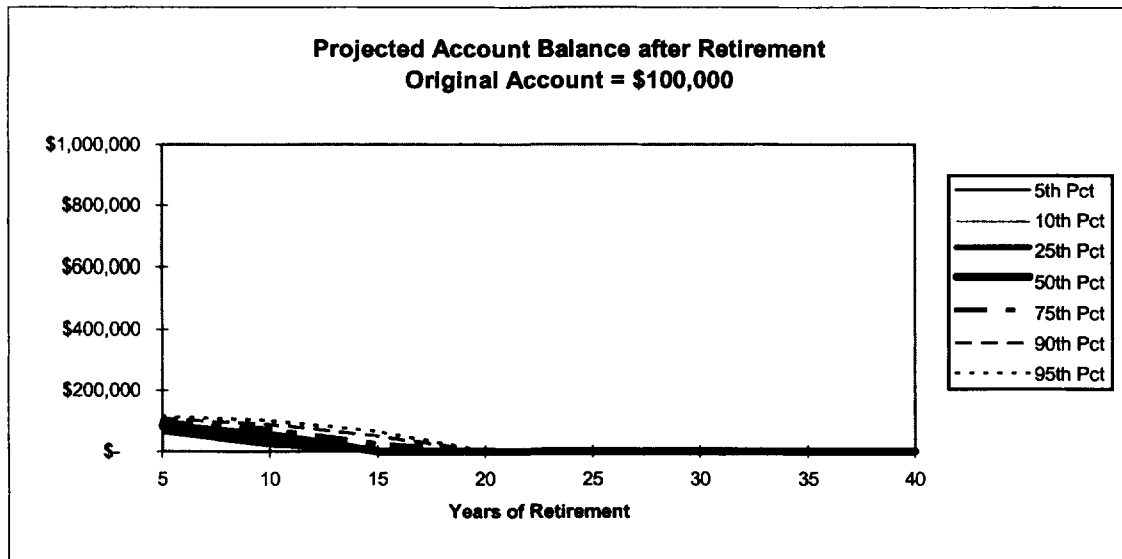


Part XVII: C-8%

	<u>Investment</u>	<u>Inflation</u>
Mean	7.00%	4.00%
St Dev	7.00%	2.00%

Withdrawal Rate 8.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5 \$	60,172 \$	19,339 \$	- \$	- \$	- \$	- \$	- \$	- \$	11
10 \$	67,196 \$	25,340 \$	- \$	- \$	- \$	- \$	- \$	- \$	12
25 \$	75,864 \$	38,122 \$	- \$	- \$	- \$	- \$	- \$	- \$	13
50 \$	84,572 \$	53,794 \$	- \$	- \$	- \$	- \$	- \$	- \$	14
75 \$	95,487 \$	71,319 \$	23,205 \$	- \$	- \$	- \$	- \$	- \$	16
90 \$	107,278 \$	88,118 \$	49,496 \$	- \$	- \$	- \$	- \$	- \$	18
95 \$	114,471 \$	100,457 \$	65,247 \$	68 \$	- \$	- \$	- \$	- \$	19

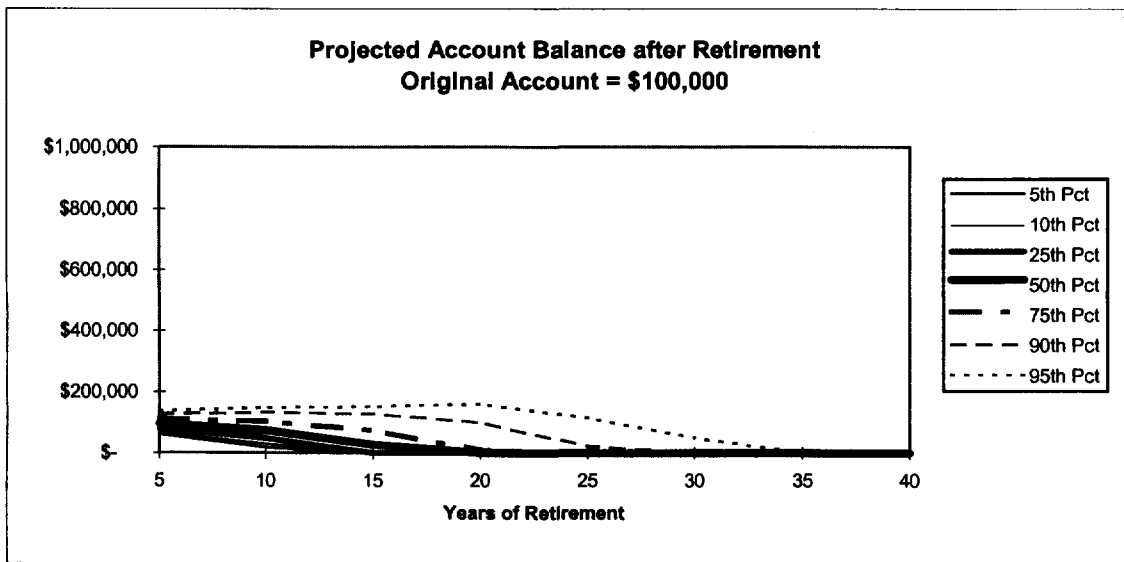


Part XVIII: MC-8%

	<u>Investment</u>	<u>Inflation</u>
Mean	8.75%	4.00%
St Dev	9.80%	2.00%

Withdrawal Rate 8.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund <u>Exhausted</u>
<u>Percentile</u>									
5	\$ 60,475	\$ 19,622	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	11
10	\$ 67,196	\$ 29,693	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	12
25	\$ 79,225	\$ 47,910	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	14
50	\$ 94,539	\$ 74,172	\$ 26,302	\$ -	\$ -	\$ -	\$ -	\$ -	16
75	\$ 110,873	\$ 103,484	\$ 71,839	\$ 6,784	\$ -	\$ -	\$ -	\$ -	20
90	\$ 125,065	\$ 132,704	\$ 127,380	\$ 99,087	\$ 20,527	\$ -	\$ -	\$ -	25
95	\$ 137,523	\$ 147,919	\$ 153,268	\$ 159,546	\$ 113,393	\$ 49,806	\$ -	\$ -	32

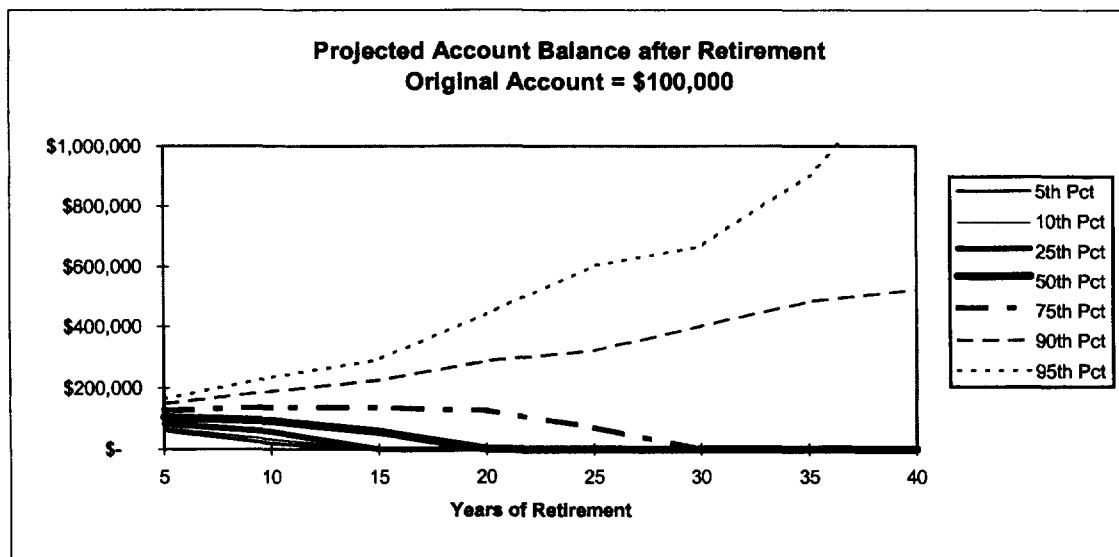


Part XIX: MA-8%

	<u>Investment</u>	<u>Inflation</u>
Mean	10.25%	4.00%
St Dev	12.20%	2.00%

Withdrawal Rate 8.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	Year Fund Exhausted
<u>Percentile</u>									
5	\$ 60,360	\$ 19,734	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	11
10	\$ 67,930	\$ 32,195	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	12
25	\$ 83,401	\$ 56,445	\$ 156	\$ -	\$ -	\$ -	\$ -	\$ -	15
50	\$ 104,911	\$ 94,120	\$ 57,906	\$ -	\$ -	\$ -	\$ -	\$ -	19
75	\$ 127,766	\$ 137,072	\$ 136,338	\$ 125,910	\$ 70,982	\$ -	\$ -	\$ -	28
90	\$ 148,969	\$ 188,083	\$ 225,078	\$ 286,456	\$ 319,810	\$ 399,628	\$ 481,818	\$ 522,494	40
95	\$ 164,385	\$ 234,381	\$ 292,330	\$ 439,970	\$ 602,502	\$ 666,336	\$ 901,674	\$ 1,300,996	40



Part XX: A-8%

	<u>Investment</u>	<u>Inflation</u>
Mean	12.00%	4.00%
St Dev	15.00%	2.00%

Withdrawal Rate 8.00%

Years	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>Exhausted</u>	Year Fund
<u>Percentile</u>										
5 \$	54,943 \$	13,583 \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	11
10 \$	64,908 \$	29,386 \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	12
25 \$	85,001 \$	62,153 \$	13,671 \$	- \$	- \$	- \$	- \$	- \$	- \$	15
50 \$	109,994 \$	113,648 \$	98,644 \$	45,784 \$	- \$	- \$	- \$	- \$	- \$	22
75 \$	140,938 \$	168,139 \$	198,236 \$	225,058 \$	254,925 \$	282,585 \$	265,506 \$	284,927		40
90 \$	170,148 \$	239,578 \$	337,288 \$	490,944 \$	744,610 \$	1,034,993 \$	1,725,069 \$	2,624,098		40
95 \$	190,749 \$	300,992 \$	480,627 \$	728,433 \$	1,251,814 \$	1,858,689 \$	3,436,442 \$	5,281,472		40

