

# Your Winning Retirement Plan

Henry K. Hebel

## The Hazards of Postretirement Projections

In order to do preretirement planning, one first must know how much money is needed in retirement. Provided below is a basic summary of the methods you can use for your postretirement projections from worst to best. The descriptions provided below are to summarize the plans, while some flaws for these approaches are pointed out; they are not an analysis/comparison of each; this will be done latter.

**Spend-All** This technique assumes you can live off of interest and dividends from your investments and not touch your principle. This requires you to have a huge pool of assets for investment, since just for a \$60,000 budget, you would be required to have \$2,000,000 assuming you have a 3% return on investment every year. This plan is also flawed in that years with higher inflation would require higher returns, something that may not be possible in practice; finally dividends change year to year for each investment, so this plan would be highly volatile.

**Inflation-Adjusted Spending** Many factors such as inflation, life expectancy, and the present value of your investments are utilized in this calculation. Recent versions of this have even taken into account large one-time expenditures (such as purchasing a house or car). In this method you get an inflation-adjusted increase amount each year to match inflation thus providing a [constant standard of living](#). The flaws with this method is that it does assume constant rates of return/inflation, so funds likely [run out](#) before this method predicts due to [Reverse Dollar Cost Averaging](#). Additionally this technique only works while there are funds, once the funds are depleted there will be no more assets to live off of.

**Fixed-Percent Withdrawals** Here a percentage (usually 3.5% to 8%) of the overall year-end investment balance is used for determining the amount allowed for expenses and taxes for the year. In this book Hebel uses 6% as an example where an investment of 100,000 would imply \$6,000 could be withdrawn.

**Successive Annual Calculations** An annual budget is established each year based on analysis of long term market returns, inflation and new life expectancy. This method is subject to overly optimistic assumptions and typically does not take into account management fees, mutual fund cost and other expenses associated with owning securities.

**Retirement Autopilot Method** The method utilized in this book, incorporates a technique to adjust to swings in market performance, and changes to inflation. Reverse Dollar Cost Averaging is also taken into account. This method also takes into account large purchases that may be made in retirement. Additionally, it utilizes historic data. Hebel then describes how this method is similar to auto pilot in an airplane where minor adjustments are automatically made reduce the jolt that may be felt as aircraft encounters turbulence. One of the primary goals of this method is to provide a steady consistent plan, reducing whiplash that may be encountered based on market gyrations by making small adjustments to the overall plan on a regular basis (ie yearly). This process of making minor adjustments on a regular base due to changing inflation rates and market performance is known as [feedback](#).

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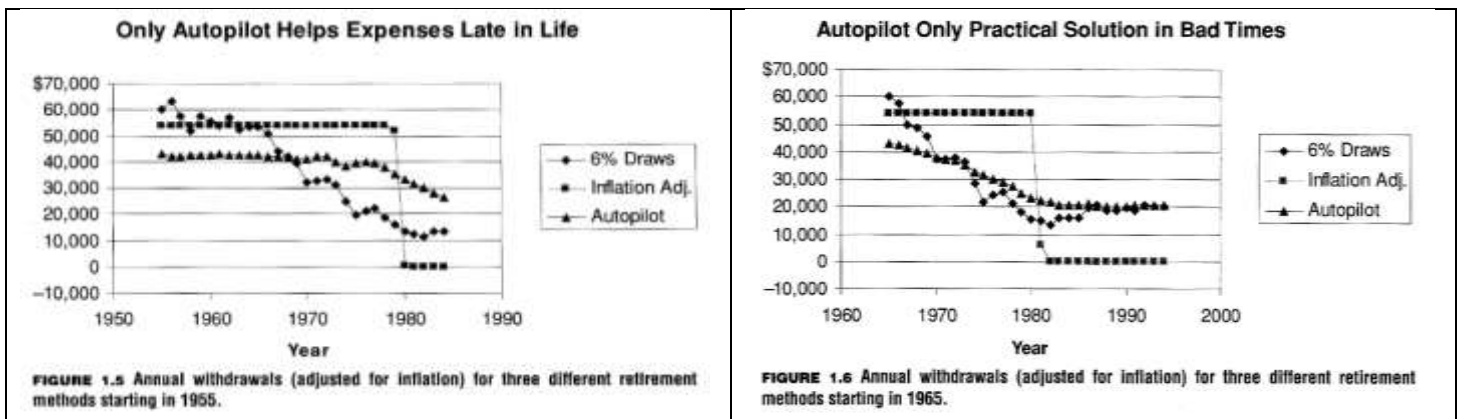
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**Comparing Methods** A hypothetical example will be used to compare the different plans.

Assumptions:

- Retirement at age 60
- Expected date of death at age 85
- Numbers provided in the figures below are Inflation adjusted numbers.
- Starting balance of \$1,000,000 in investments when retirement starts
  - 50% in S&P 500 index fund initially, decreased 1% each year.
  - 50% in long term corporate bonds, increasing 1% each year.
- Assumptions
  - Data utilized using two different periods
    - 1955 (Good times)
    - 1965 (Not so good times)
  - All funds are in deferred tax accounts (ie 401k, IRA, etc.)

## Comparing Three plans Figure 1.5 and Figure 1.6



Method	1955 retirement (Good Times) Observations	1965 Retirement (Bad Times) Observations
Inflation Adjustment	<ul style="list-style-type: none"> <li>• Initial withdraws at <b>\$55,000</b></li> <li>• No changes in standard of living until funds run out.</li> <li>• <b>\$0</b> funds remaining at age <b>80</b></li> <li>• 5 years before date of death. You are now on welfare</li> </ul>	<ul style="list-style-type: none"> <li>• Initial withdraws at <b>\$55,000</b></li> <li>• No changes in standard of living until funds run out.</li> <li>• <b>\$0</b> funds remaining at age <b>75</b></li> <li>• <b>10</b> years before date of death. You are now on welfare</li> </ul>
6% Draws	<ul style="list-style-type: none"> <li>• Initial withdraw mount at <b>\$60,000</b></li> <li>• Initial withdraw amounts higher than other plans, but rapidly decreases over time.</li> <li>• Final withdraws ending at about <b>\$15,000</b></li> </ul>	<ul style="list-style-type: none"> <li>• Initial withdraw mount at <b>\$60,000</b></li> <li>• Initial rapid decrease in withdraws reflecting poor market behavior over time that stabilizes as market rebounds.</li> <li>• Final withdraws ending at about <b>\$20,000</b></li> </ul>
Autopilot	<ul style="list-style-type: none"> <li>• Initial withdraw mount at <b>\$42,000</b></li> <li>• Gradual decrease in amounts over time.</li> <li>• Final withdraws ending at about <b>\$25,000</b></li> </ul>	<ul style="list-style-type: none"> <li>• Initial withdraw mount at <b>\$42,000</b></li> <li>• Gradual decrease in amounts over time.</li> <li>• Final withdraws ending at about <b>\$20,000</b></li> </ul>

One of the lessons we can draw from these examples is that there is no perfect way to overcome really bad economic times. However the autopilot systems, provides the best results with the least amount of system shock over time.

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## The Hazards of Preretirement Planning

Some observations on saving for retirement:

- The further away from retirement you are the more risk you can take. Over a 20 year span a person more heavily weighted in stocks can realize a double in savings over a person heavily weighted in Bonds. Over a 30 year span this can be triple.
- The earlier you start savings the more benefits you will enjoy from the [miracle of compound growth](#).
- Live below your means and save for retirement. Take full advantage of tax savings and use tricks like devoting raises to go to savings plans.
- As you near retirement estimates can whiplash based on market conditions, the autopilot method tries to dampen these gyrations.

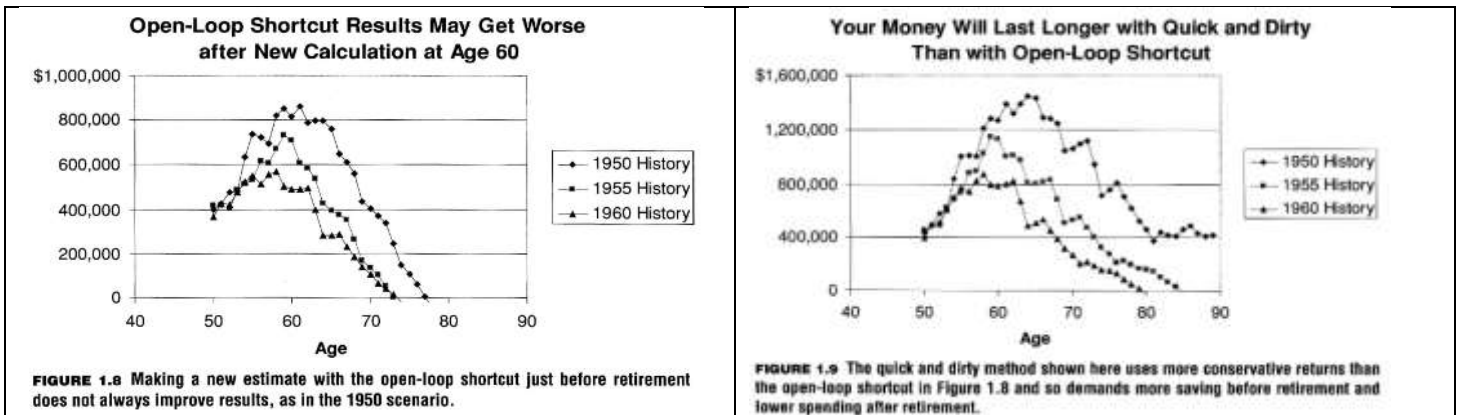
**Open-Loop Shortcut** A one-time estimate and scheduled savings plan that does not adjust on a regular basis to compensate for accumulated savings value (based on current market valuations) or inflation variations. This method does not take into account investment cost and reverse dollar cost averaging. This method is dependent on the year the calculation is performed that may cause people to over-spend (if it is a good market year), dramatically decreasing the number of years funding may last. This method is also very dependent upon estimates of future market performance and inflation rates. These estimates tend to be overly optimistic (ie 5% before retirement, 4% after retirement of inflation adjusted returns).

**Quick and Dirty** This method estimates returns based on a classification of your investment allocations:

- Conservative – Mostly Bonds
- Moderate – 50% Bonds, 50% Stocks
- Aggressive – Mostly Stocks

Investment costs are assumed to be 1%. This method does not take into consideration one-time purchases.

## Open-Loop vs Quick & Dirty Figure 1.8 and Figure 1.9

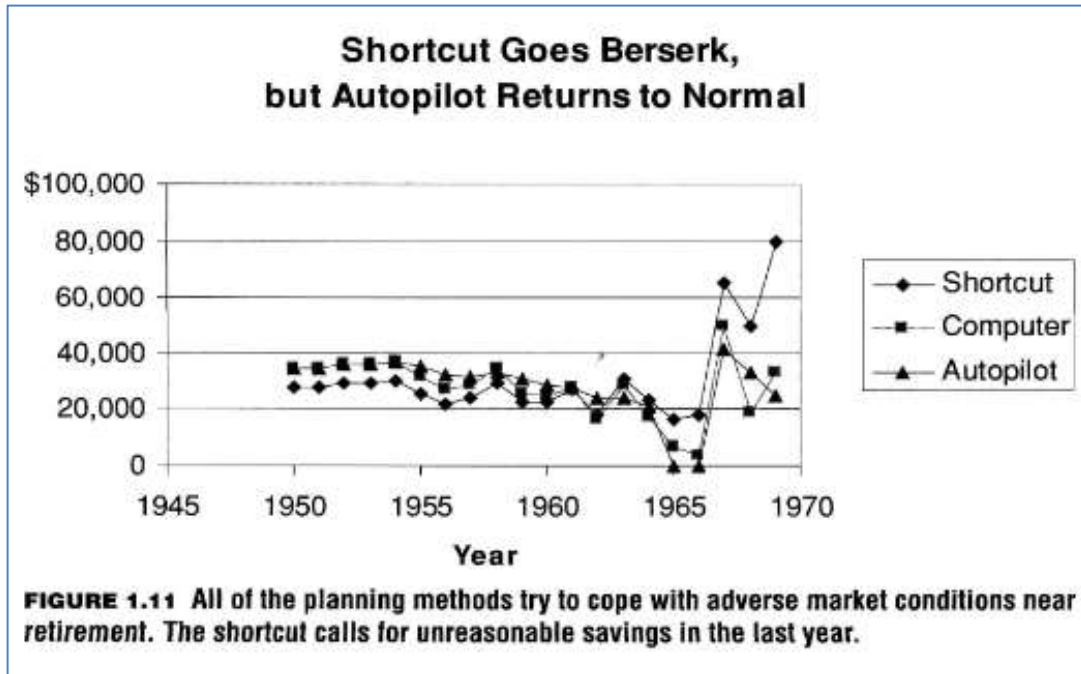


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**Recalculation Methods** Reassessing your retirement plans on an annual basis allows you to make adjustments to your plans to ensure you stay on track and on time for your retirement. On downside to this process is that the closer you get to retirement, the more volatile these adjustments can become in reactions to current market fluctuations.

Figure 1.11



**My Observation** Both the Computer and Autopilot methods drop savings to zero in the 1965 region. I think if you introduce a general rule of never cutting saving more than  $\frac{1}{2}$  of the previous year was introduced, it would have greatly stabilized the huge jumps in savings requirement years just previous to 1970. Better yet, if you never decrease savings for retirement, the savings increase for the autopilot method may have been eliminated. Worst case scenario following this approach would be that you exceeded your target savings.

It is vital that one avoids optimistic theoretical assumptions on future investment performance and use realistic data that represents what can realistically be expected from your investments based on what your **asset allocation** is (Bonds vs Stocks), **investments cost** and **inflation** expectations.

## Chapter Closing Thoughts

The Autopilot method is a great planning tool in determining how much you need to save for a safe retirement. You may want to consider if you can live under your means and still have a modest and pleasing lifestyle. To that ends consider maxing out your 401k (or other retirement saving plan) and Roth contributions each year. There really is no downside to over-saving! The upside is that you are ensured extra cushion for unexpected turns of the market, or you may be able to retire earlier than initially projected. Certainly not everyone is able to do this, but you might find by cutting some expenses (ie The Cable TV, the unlimited data phone plan, eating out multiple times in a week, etc.) you can save more money than you thought. **Save as much as you can as soon as you can** so [the miracle of compound growth](#) can work its magic!

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## Chapter 2: Some Fundamental Planning Facts

### Chapter Summary

Opportunity Cost associated with spending money on unnecessary items is conveyed. The concept of life expectancy and how these tables are used by the IRS is explained along with how the expected life expectancy in these tables change as you age is explained. The dynamically changes estimate of life expectancy is used to help insure you never outlive your retirement funds. The concept of compounding is introduced here and how this can work to your benefit when applied to investments but work against you when applied to inflation. The concept of **Today's Dollars** is introduced and explained why this is used with the Autopilot method. Basic financial terms are introduced. Recognizing that unplanned events and what some of these may be is discussed. It is pointed out that Taxes should play a role in financial decisions and retirement planning. Finally it is pointed out that there are many uncertain factors that may impact your retirement planning. It is also pointed out that Autopilot method introduces mechanisms for dealing with these uncertainties.

### References and Resources

- ArtCentrics: [Chapter 2 Spreadsheets](#)
  - Figure 2.9 – Last Years Taxes
  - Figure 2.10 – Last Years Gross Income
  - Last Years Tax Rate

### Terms and Concepts

- **Affordable Expenses** – The level of expenditures that will get you through retirement without depleting your savings before you die. These are expenses that are constrained to ensure you don't spend down your savings too quickly in retirement. This value is subject to change each year to reflect changing market, and inflation conditions.
- **Expenses** – This will also include both unusual and infrequent expenses as well as normal living cost that would be paid out in the course of one year.
  - **Usual Expenses** – Expenses that occur on a regular basis such as utility bills, insurance, entertainment etc. In preretirement they also include taxes and debt payments, in postretirement planning they do not.
  - **Infrequent Expenses** – Typically non-reoccurring expenses such as an expensive vacation, the purchase of a new car or house, a large one-time hobby expense (building of an observatory with equipment).
- **Feedback** – The process of making periodic corrections to a system to ensure it stays on target. In the context of this book the periodic corrections are performed on a yearly basis.
- **Front loading your savings and back loading you're spending** – This simply means to save as much as you can as early as possible, and delay spending as long as possible to maximize the amount of time your funds are allowed to grow through the magic of compounding.
- **Gross Income** – As used in this book is defined as the annual total of wages, alimony, Social Security, pension, and/or annuity payments, and all income from investments, including dividends, both taxable and tax-exempt interest, capital gains, income from businesses, both Roth and Regular IRA distributions, and before-tax cash flows from investment real estate.

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- **Income** – This definition of this term is relative to the context, either as Preretirement or Postretirement planning:
  - **Preretirement Income:** The amount that you will need in retirement to pay your normal living expenses, related income taxes, and debt payments.
  - **Postretirement Planning Income:** Income as defined on a tax return including Social Security, pension payments, annuity payments, wages from part-time work, and returns from investments that you would enter on a tax return.
- **Income Tax** – the annual amount that you calculate on a tax return. It is not the tax that is deducted from Social Security or Medicare, nor any of the other taxes you may pay such as real estate, personal property or automobile.
- **Inflation Adjusted Returns** – The value of an investment over time where the growth is adjusted by subtracting the corresponding inflation during that time period.
- **Life Expectancy** – An average, a person is expected to live. This indicates 50% of the population will die at a younger age and that 50% will die at an older age.
- **Limiting Equation** – A mathematical factor included in Autopilot calculations to safeguard against major swings in year to year calculations.
- **Long Term Investment** – An investment that is held longer than one year before being sold and may have a lower tax rate applied to the profits that may have been realized.
- **Maturity** – The amount of time before you will automatically get back your principle from a purchased bond.
- **Net Tax Rate** –  $(\text{State income tax} + \text{Federal income tax}) / (\text{Gross Income})$ .
- **Opportunity Cost** – The concept that decisions on made on one item can limit options on others. In the investment and retirement context; Money spent on unnecessary items can end up costing a lot more than the actual purchase price of an item as time goes by due to the miracle of compound Growth, thus limiting options that the funds would have provided if they had been saved and invested instead of spent.
- **Present Value** – A term used to describe the value of something in today's dollars. This term may be used when projecting future or past values/cost and indicates what the item would be in present day numbers.
- **Required Minimal Distribution (RMD)** – The amount that must be distributed each year from a retirement tax deferred account (i.e. IRA, SEP, 401k etc.) based on the age of the IRA owner. Currently RMDs start when the owner reaches 72 years of age, but this age may change in the near future. Failure to withdraw the appropriate amount each year can result in steep fines (50% of funds that should have been withdrawn). RMD's are based on the amount of funds available in the qualifying accounts and the age of the recipient. [IRS website](#).
- **Savings** – The total of all of your mutual funds, stocks, bonds, CDs, money markets, real estate equity, or similar financial resources.
  - **Annual Savings Input:** An annual amount that you take from your wages and deposit in a bank or investment account.
  - **Preretirement Savings:** Would include employer annual contributions such as matching funds for a 401(k).
  - **Postretirement Savings:** Generally there will be no savings in retirement, but this may include new income you save from a part time job.



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- **Short Term Investment** – An investment that is held less than one year before being sold and whose gains from the sale may be taxed at the tax payers ordinary income tax rate.
- **Statistical Cancellation** – The idea that have many in depended changing factors used in determining final output can dampen large variations in final output since some of the individual factors may cancel or compensate each other.
- **Todays Dollars** – A key concept in the Autopilot method where future cost and/or savings are presented to the reader in todays cost/value to make the presented numbers easier for the reader to relate to. For example, the cost of a loaf of bread in 30 years may be projected to be 3x of todays cost the 3x value is not used. Similarly, when discussing the value of a nest egg, while growth is expected over time, inflation reduces this growth, so the value presented to the reader and used in calculations is the Inflation Adjusted growth.
- **Wages** – The annual amounts that you receive from your employer. These are gross wages, that is wages before any tax or other deductions from your paycheck.
- **Unplanned Expenses** – The idea of including a funding in your yearly budget to accommodate unforeseen expenses in your retirement planning budget.

## Spend Now and (Really) Pay Later

Here the author attempts to convey to the reader the importance of saving for retirement early and not spending money on unnecessary “Things”. Two scenarios are provided that show how \$1,000 spent 30 years prior to retirement could have grown anywhere from \$17,400 to \$210,000 in retirement funds depending on the situation.

**The Preretirement Blowout** – Many newly retired persons will spend money on select big-ticket items like a new car, or a big retirement or a vacation home. There can be large opportunity cost with this since these funds must last you the rest of your life. **On the other hand, if you have determined you can afford these items without risking running out of funds before retirement, then I don't see why you would live like a monk!**

## What If You Outlive Your Current Life Expectancy?

Average live expectancy indicates that 50% of a population will die before the average life expectancy, while 50% of the population will live longer than the life expectancy.

**Your Life Expectancy Depends on Your Age** – As one age increases, the life expectancy of that person increases. This is an important concept since it can be used to insure you never run out of funds in retirement if you update your expected life expectancy every year and make appropriate changes to your budget based on your new life expectancy. This concept will be explored later in the book.

**Working With Life Expectancy Data** – First it should be noted the data in this table is not current (get the latest version of [PUB 590, Part B](#) from the IRS for the appropriate tables), so should not be used for actual tax calculations, but can be used as approximations for the examples in this book. This table can be utilized to approximate the expected life expectancy of you and your spouse. Calculations for the RMD for a given year is accomplished by combining the market value of all qualifying accounts on December 31<sup>st</sup> of the previous year combined, and dividing by the single life Expectancy column value in the row corresponding to your age.

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## Find Out How Long the IRS Thinks You Will Live

Age of Single or Older Person	Single Life Expectancy	JOINT LIFE AND LAST SURVIVOR LIFE EXPECTANCY (YEARS)										
		Other Spouse Is Younger By										
		Equal Ages	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
55	28.6	34.4	34.9	35.4	35.9	36.5	37.1	37.7	38.4	39.0	39.7	40.4
56	27.7	33.4	33.9	34.4	35.0	35.6	36.1	36.8	37.4	38.1	38.7	39.5
57	26.8	32.5	33.0	33.5	34.0	34.6	35.2	35.8	36.4	37.1	37.8	38.5
58	25.9	31.5	32.0	32.5	33.1	33.6	34.2	34.8	35.5	36.1	36.8	37.5
59	25.0	30.6	31.1	31.6	32.1	32.7	33.3	33.9	34.5	35.2	35.9	36.6
60	24.2	29.7	30.1	30.6	31.2	31.7	32.3	32.9	33.6	34.2	34.9	35.6
61	23.3	28.7	29.2	29.7	30.2	30.8	31.4	32.0	32.6	33.3	33.9	34.6
62	22.5	27.8	28.3	28.8	29.3	29.9	30.4	31.0	31.7	32.3	33.0	33.7
63	21.6	26.9	27.3	27.8	28.4	28.9	29.5	30.1	30.7	31.4	32.0	32.7
64	20.8	25.9	26.4	26.9	27.4	28.0	28.6	29.2	29.8	30.4	31.1	31.8
65	20.0	25.0	25.5	26.0	26.5	27.1	27.6	28.2	28.9	29.5	30.2	30.9
66	19.2	24.1	24.6	25.1	25.6	26.1	26.7	27.3	27.9	28.6	29.2	29.9
67	18.4	23.2	23.7	24.2	24.7	25.2	25.8	26.4	27.0	27.6	28.3	29.0
68	17.6	22.3	22.8	23.3	23.8	24.3	24.9	25.5	26.1	26.7	27.4	28.1
69	16.8	21.5	21.9	22.4	22.9	23.4	24.0	24.6	25.2	25.8	26.5	27.1
70	16.0	20.6	21.1	21.5	22.0	22.5	23.1	23.7	24.3	24.9	25.6	26.2
71	15.3	19.8	20.2	20.7	21.2	21.7	22.2	22.8	23.4	24.0	24.7	25.3
72	14.6	18.8	19.4	19.8	20.3	20.8	21.3	21.9	22.5	23.1	23.8	24.4
73	13.9	18.1	18.5	19.0	19.4	20.0	20.5	21.0	21.6	22.2	22.9	23.5
74	13.2	17.3	17.7	18.2	18.6	19.1	19.6	20.2	20.8	21.4	22.0	22.7
75	12.5	16.5	16.9	17.3	17.8	18.3	18.8	19.3	19.9	20.5	21.1	21.8

76	11.9	15.7	16.1	16.5	17.0	17.5	18.0	18.5	19.1	19.7	20.3	20.9
77	11.2	15.0	15.4	15.8	16.2	16.7	17.2	17.7	18.3	18.8	19.4	20.1
78	10.6	14.2	14.6	15.0	15.4	15.9	16.4	16.9	17.5	18.0	18.6	19.2
79	10.0	13.5	13.9	14.3	14.7	15.1	15.6	16.1	16.7	17.2	17.8	18.4
80	9.5	12.8	13.2	13.5	14.0	14.4	14.9	15.4	15.9	16.4	17.0	17.6
81	8.9	12.1	12.5	12.8	13.2	13.7	14.1	14.6	15.1	15.7	16.2	16.8
82	8.4	11.5	11.8	12.2	12.5	13.0	13.4	13.9	14.4	14.9	15.5	16.0
83	7.9	10.8	11.1	11.5	11.9	12.3	12.7	13.2	13.7	14.2	14.7	15.3
84	7.4	10.2	10.5	10.9	11.2	11.6	12.0	12.5	13.0	13.5	14.0	14.5
85	6.9	9.6	9.9	10.2	10.6	11.0	11.4	11.8	12.3	12.8	13.3	13.8
86	6.5	9.1	9.3	9.7	10.0	10.4	10.8	11.2	11.6	12.1	12.6	13.1
87	6.1	8.5	8.8	9.1	9.4	9.8	10.1	10.6	11.0	11.4	11.9	12.4
88	5.7	8.0	8.3	8.6	8.9	9.2	9.6	10.0	10.4	10.8	11.3	11.8
89	5.3	7.5	7.8	8.1	8.3	8.7	9.0	9.4	9.8	10.2	10.7	11.1
90	5.0	7.1	7.3	7.6	7.9	8.2	8.5	8.8	9.2	9.6	10.1	10.5
91	4.7	6.7	6.9	7.1	7.4	7.7	8.0	8.3	8.7	9.1	9.5	9.9
92	4.4	6.3	6.5	6.7	6.9	7.2	7.5	7.8	8.2	8.5	8.9	9.4
93	4.1	5.9	6.1	6.3	6.5	6.8	7.1	7.4	7.7	8.0	8.4	8.8
94	3.9	5.6	5.8	5.9	6.2	6.4	6.6	6.9	7.2	7.6	7.9	8.3
95	3.7		5.4	5.6	5.8	6.0	6.3	6.5	6.8	7.1	7.5	7.8
96	3.4			5.3	5.5	5.7	5.9	6.1	6.4	6.7	7.0	7.3
97	3.2				5.1	5.3	5.5	5.8	6.0	6.3	6.6	6.9
98	3.0					5.0	5.2	5.4	5.6	5.9	6.2	6.5
99	2.8						4.9	5.1	5.3	5.5	5.8	6.1
100	2.7							4.8	5.0	5.2	5.4	5.7

FIGURE 2.1 Life expectancies depend on your age. (Based on data from IRS Publication 590.)



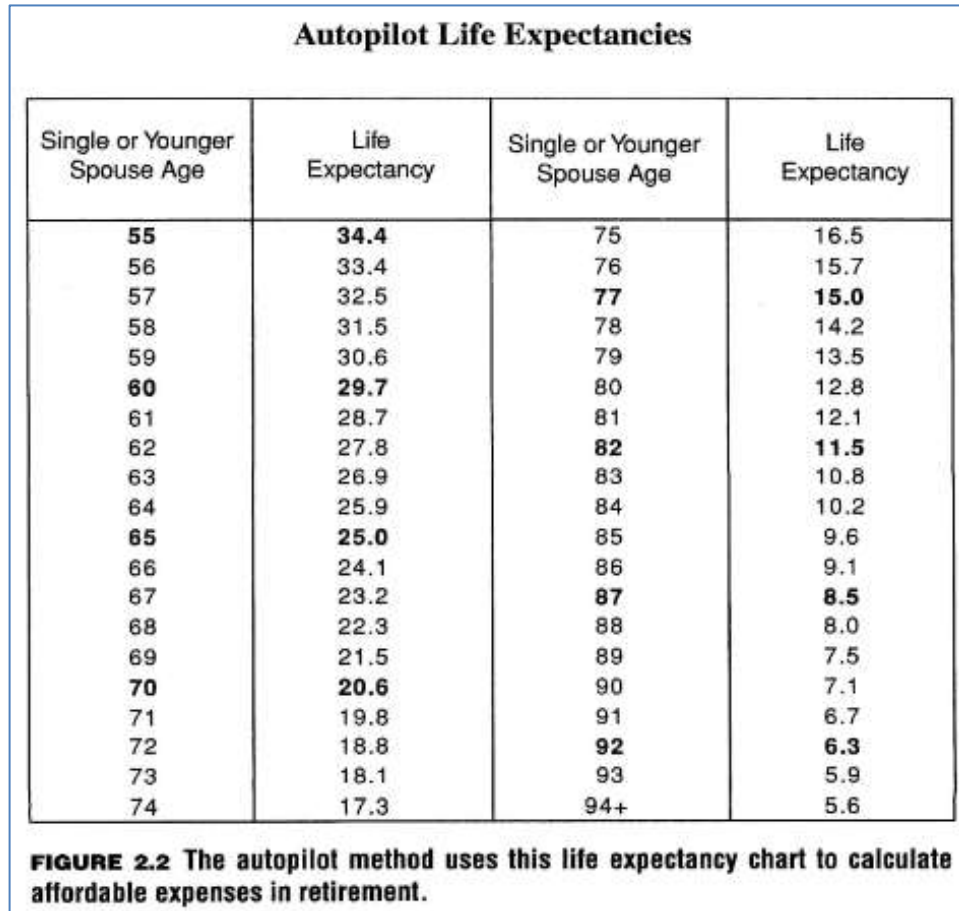
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**Making Your Money Last a Lifetime** – Figure 2.2 is introduced as a tool that can be used to determine how much retired people can afford to spend every year and still have enough to last for the rest of their lives. Two examples are provided to show how this works:

- Single person age 65 would have a life expectancy of 25 years
- Married couple of ages 65 and 55 would use the younger spouses age (55) to get a life expectancy of 34.4 years.

Re-calculating your sending budget every year based on this table will ensure you will never run out of fund, and that changes in your budget (be they increase or decrease) will be from year to year.

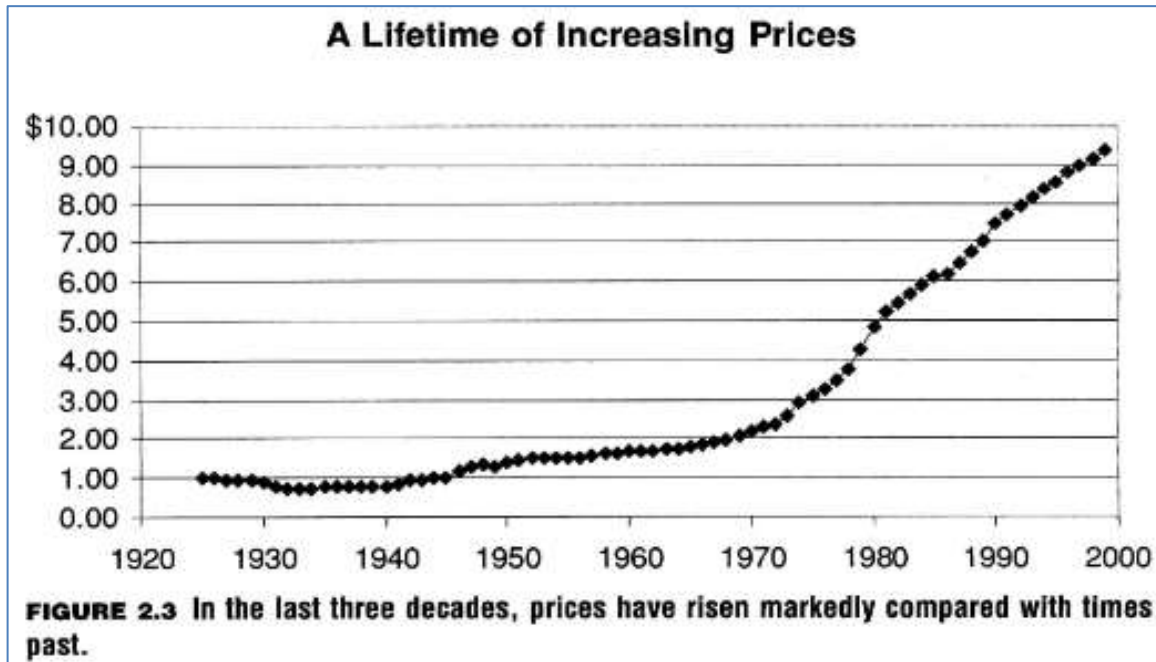


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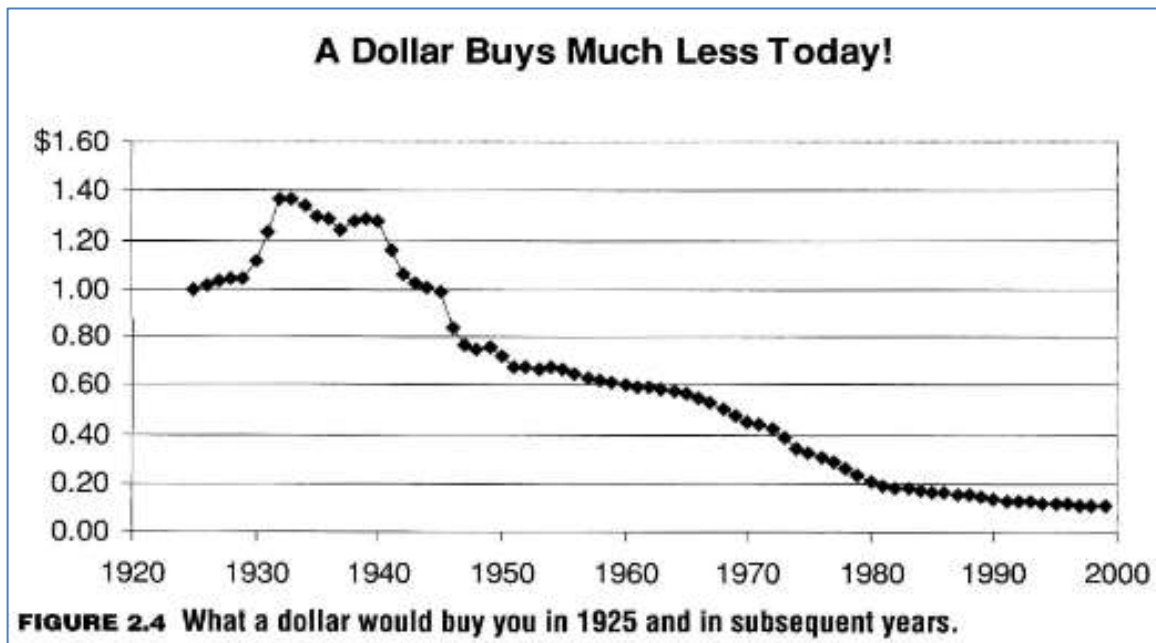
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## Inflation Really Hurts

Inflation compounds over time, and can severely decrease the purchasing power of your savings. At 4% inflation what cost \$100 today will cost \$219 in 20 years and \$1,052 in 60 years. Consider how long you expect to be in retirement and remember the impact of inflation on your purchasing power. Inflation can destroy the value of fixed pension, investment returns and savings.



**The Truth about Compounding** – The miracle of compounding can turn into the terror of compounding when it is applied to inflation. Figure 2.4 demonstrates the purchasing power of a dollar from the 1920's to the 1990's.



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**Inflation in Retirement** – Due to the higher rate of inflation for medical and services and since these tend to make up more of a retirements budget, it is generally understood that [inflation rates for retirees is greater than the overall population](#). Although Social Security makes annual increases based on the inflation rate, it appears it [doesn't keep up with the cost of living](#).

**Calculating Your Personal Inflation Rate** – Figures 2.5 and 2.6 are provided to help you assess the Future value of one dollar over time and how much the dollar is worth (purchasing power) in todays dollars.

Future Value of One Dollar									Future Dollars Are Not Worth As Much								
Year	With Inflation Of								Year	With Inflation Of							
	2%	3%	4%	5%	6%	7%	8%	10%		2%	3%	4%	5%	6%	7%	8%	10%
1	1.02	1.03	1.04	1.05	1.06	1.07	1.08	1.10	1	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.909
2	1.04	1.06	1.08	1.10	1.12	1.14	1.17	1.21	2	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.826
3	1.06	1.09	1.12	1.16	1.19	1.23	1.26	1.33	3	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.751
4	1.08	1.13	1.17	1.22	1.26	1.31	1.36	1.46	4	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.683
5	1.10	1.16	1.22	1.28	1.34	1.40	1.47	1.61	5	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.621
6	1.13	1.19	1.27	1.34	1.42	1.50	1.59	1.77	6	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.564
7	1.15	1.23	1.32	1.41	1.50	1.61	1.71	1.95	7	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.513
8	1.17	1.27	1.37	1.48	1.59	1.72	1.85	2.14	8	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.467
9	1.20	1.30	1.42	1.55	1.69	1.84	2.00	2.36	9	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.424
10	1.22	1.34	1.48	1.63	1.79	1.97	2.16	2.59	10	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.386
11	1.24	1.38	1.54	1.71	1.90	2.10	2.33	2.85	11	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.350
12	1.27	1.43	1.60	1.80	2.01	2.25	2.52	3.14	12	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.319
13	1.29	1.47	1.67	1.89	2.13	2.41	2.72	3.45	13	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.290
14	1.32	1.51	1.73	1.98	2.26	2.58	2.94	3.80	14	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.263
15	1.35	1.56	1.80	2.08	2.40	2.76	3.17	4.18	15	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.239
16	1.37	1.60	1.87	2.18	2.54	2.95	3.43	4.59	16	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.218
17	1.40	1.65	1.95	2.29	2.69	3.16	3.70	5.05	17	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.198
18	1.43	1.70	2.03	2.41	2.85	3.38	4.00	5.56	18	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.180
19	1.46	1.75	2.11	2.53	3.03	3.62	4.32	6.12	19	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.164
20	1.49	1.81	2.19	2.65	3.21	3.87	4.66	6.73	20	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.149
21	1.52	1.86	2.28	2.79	3.40	4.14	5.03	7.40	21	0.660	0.538	0.439	0.359	0.294	0.242	0.199	0.135
22	1.55	1.92	2.37	2.93	3.60	4.43	5.44	8.14	22	0.647	0.522	0.422	0.342	0.278	0.226	0.184	0.123
23	1.58	1.97	2.46	3.07	3.82	4.74	5.87	8.95	23	0.634	0.507	0.406	0.326	0.262	0.211	0.170	0.112
24	1.61	2.03	2.56	3.23	4.05	5.07	6.34	9.85	24	0.622	0.492	0.390	0.310	0.247	0.197	0.158	0.102
25	1.64	2.09	2.67	3.39	4.29	5.43	6.85	10.83	25	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.092
26	1.67	2.16	2.77	3.56	4.55	5.81	7.40	11.92	26	0.598	0.464	0.361	0.281	0.220	0.172	0.135	0.084
27	1.71	2.22	2.88	3.73	4.82	6.21	7.99	13.11	27	0.586	0.450	0.347	0.268	0.207	0.161	0.125	0.076
28	1.74	2.29	3.00	3.92	5.11	6.65	8.63	14.42	28	0.574	0.437	0.333	0.255	0.196	0.150	0.116	0.069
29	1.78	2.36	3.12	4.12	5.42	7.11	9.32	15.86	29	0.563	0.424	0.321	0.243	0.185	0.141	0.107	0.063
30	1.81	2.43	3.24	4.32	5.74	7.61	10.06	17.45	30	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.057
31	1.85	2.50	3.37	4.54	6.09	8.15	10.87	19.19	31	0.541	0.400	0.296	0.220	0.164	0.123	0.092	0.052
32	1.88	2.58	3.51	4.76	6.45	8.72	11.74	21.11	32	0.531	0.388	0.285	0.210	0.155	0.115	0.085	0.047
33	1.92	2.65	3.65	5.00	6.84	9.33	12.68	23.23	33	0.520	0.377	0.274	0.200	0.146	0.107	0.079	0.043
34	1.96	2.73	3.79	5.25	7.25	9.98	13.69	25.55	34	0.510	0.366	0.264	0.190	0.138	0.100	0.073	0.039
35	2.00	2.81	3.95	5.52	7.69	10.68	14.79	28.10	35	0.500	0.355	0.253	0.181	0.130	0.094	0.068	0.036
36	2.04	2.90	4.10	5.79	8.15	11.42	15.97	30.91	36	0.490	0.345	0.244	0.173	0.123	0.088	0.063	0.032
37	2.08	2.99	4.27	6.08	8.64	12.22	17.25	34.00	37	0.481	0.335	0.234	0.164	0.116	0.082	0.058	0.029
38	2.12	3.07	4.44	6.39	9.15	13.08	18.63	37.40	38	0.471	0.325	0.225	0.157	0.109	0.076	0.054	0.027
39	2.16	3.17	4.62	6.70	9.70	13.99	20.12	41.14	39	0.462	0.316	0.217	0.149	0.103	0.071	0.050	0.024
40	2.21	3.26	4.80	7.04	10.29	14.97	21.72	45.26	40	0.453	0.307	0.208	0.142	0.097	0.067	0.046	0.022

**FIGURE 2.5** Your future requires more money.

**FIGURE 2.6** One dollar will buy less in the future.

# Your Winning Retirement Plan

Henry K. Hebeler

**The Rule of 72** – The Rule of 72 is a quick and easy way to determine the effects of inflation. The rule is applied by dividing 72 by the inflation rate you are checking. The resulting number indicates the number of years it would take for the item to double in price, or you can also think of it as the number of years it takes to cut by  $\frac{1}{2}$  the purchasing price of today's dollar. An example of 6% would be  $72/6 = 12$ , so that 12 years from now at 6% inflation it will cost twice as much for something that it does today.

**Today's Value and Future Value** – In retirement autopilot method used in this book, they describe future values in today's values. Example of investment that had grown to an amount of \$100,000 over 10 years, knowing that in 10 years the purchasing power of \$100,000 will be much less due to inflation, the actual value shown in the autopilot method will be much lower. This technique makes it easier to understand values presented to you in calculations since they can be understood in today's dollars.