Simple Financial Tools
promise better retirement

Dedicated to my family with the hope that this will also benefit the many readers of some of the hundreds of my financial articles in www.analyzenow.com, *The Wall Street Journal*, other newspapers, magazines, and my John Wiley & Sons books. And many thanks to both the professionals and friends who took their valuable time to make contributions!

Henry K. (Bud) Hebeler

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Introduction

I was lucky to be born in the Great Depression when money was truly precious and every penny was important. One friend kept her house so cold that it was only comfortable with a heavy sweater. She also bought a book titled "365 Ways to Serve Jell-O," and she tried every single one over the course of a year to help save food bills. All our relatives got together to make apple butter from grandma's tree. We darned our own socks and mom patched our jeans.

I was lucky when World War II broke out because it became patriotic to save money—in Savings Bonds. During those war years, it was also patriotic to have a Victory Garden. We grew enough vegetables which, together with some neighborhood vegetable street vendor products, my mother had enough to bottle for our winter use. Gas was rationed, so we learned to do everything that required a car for a once-a-week trip to town. That meant having a complete list of all that we needed, and my mother made sure that it really was needed, not just wanted. These disciplines made lasting impressions throughout my life.

My mother insisted that we prepare for two different kinds of work in case we lost a job. She thought music could supplement our income, so as a kid, I learned to play the piano, flute and trumpet. Later, as an engineer, my second career really turned out to be teaching. I taught aerodynamics and aeroelasticity in after-hours classes at Boeing to earn a down payment on our first house. I took a Boeing sabbatical to teach a course on ballistic missile design at Cal Tech, gave management lectures at MIT and other universities, and was on the boards of MIT's Sloan School of Management, University of Washington Engineering Department and the Defense Systems Management College. In retirement I discovered how poorly people were prepared for their own retirement, so I took on another task to help people with finances, was asked to write retirement books by John Wyley & Sons, wrote hundreds of *Wall Street Journal* articles and gave lectures to professional and financial organizations.

Times have changed with a more mobile work force, less allegiance to an employer, and a more affluent society with Amazon's easy purchases, streaming ads and the "Jones" enticing us with their latest electronics and furnishings. Houses have doubled in size and automobiles have gadgets that were unheard of in those economic troubled years in which I was raised.

Last night coming back to Park City, I listened to a Dave Ramsey program where he would only take calls from people who had saved over a million dollars. It was interesting. None of these people had really high working incomes and one was still in her forties. But they got an education, worked hard, saved money and invested it well. Great examples!

It is my hope that the next few pages will help you save, invest your money better, and, when retired, withdraw it judicially for what will likely be a longer life than previous generations. That longer life will be due, at least in part, to better medical care—and subject to its higher costs from new procedures, diagnostic equipment, medicines, administrative burdens and associated insurance. So prepare yourself for a longer life in tougher economic conditions. Your financial do-it-yourself capabilities will make the difference in your ability to survive the challenging times that are sure to come.

Prepare for a tougher future

The financial environment has REALLY changed:

Our birth rates have fallen beneath the 2.1 births per woman required to sustain the population. When social security was established there were 42 workers per retiree and few of those ever lived to collect it. By 1950, there were 16 workers per social security recipient. Today there are 2.8. Forecasts are for a little over 2 workers to support late Baby Boomer and Generation X retirements. There are no longer enough workers to support social security and all of the many other welfare programs. In many places the elderly outnumber the workers and states are in precarious financial straits unable to pay future pensions and Medicaid.

That once valuable penny of ours is now virtually worthless and will soon disappear along with the nickel. Though a penny is more zinc than copper, the copper is more valued for electronics and nickel for medical purposes than in coins.

National savings rates are half the historical rate leaving the Baby Boomers and Generation X folks destined to be largely dependent on welfare. This portends much higher taxes in forms that are hard to comprehend including those on gasoline, utility bills, hotel charges and other products and services. Industry is taxed highly even though it's the consumer who buys the products that really pays the resulting higher prices of goods. They do not realize that the costs of the goods include corporate and other taxes paid in all of the steps of production from mining to retailing before the relatively small sales tax that we see on the receipt.

Taxes are not large enough now to pay the interest on the ever growing national debt that has doubled in the last decade. Instead, the government prints the money, thereby further cheapening the dollar's value. This is not isolated to the United States but is common in most countries today. It's likely impossible to make reductions in the size of those debts, a problem that's exacerbated by low birth rates and population aging in Europe and Asia as well.

Doubling of the national debt in the last decade and continued increases bring another unseen cost—interest on that debt. In addition, the unfunded and unreported liabilities for social program growth and government pensions is over $200 trillion. State and local government pension funding is now about $6 trillion less than needed and ever widening. Government workers still get pensions while industry has dropped them in favor of employer savings plans.

The low birth rate, growth of government debt and unfunded obligations, decades of low savings and aging of the population are things that have largely determine the financial future of our citizens with little we can do to help. We have to face the reality that supporting our retirement is getting to be ever more difficult, especially for those younger people who have mounting student debt and difficulty getting employment. As a nation we are living beyond our means, and only those who are willing to make sacrifices to save more and work in ever growing markets will have much less retirement stress and less dependency on government checks, subsidized housing, food stamps, Medicaid and pro bono help from dentists.

The Rule of 72 Illustrates Financial Levers

Everyone that can divide two numbers can use the magic number of 72. If you want to find out how long it will take to double your savings, divide 72 by the current return on your savings. "Return" is the sum of annual interest, dividends and principal growth divided by the value of the principal at the beginning of the year. Pundits predict stock funds may have growth of 8% or so a year which is less than the 10% to 11% historical average. Bond fund returns are less than half of stocks.

A portfolio of mostly stocks advertised in financial magazines and by promoted by pundits might have a return before tax and costs of 7% or so. Assuming a return of 7.2%, it will take ten years to double your money if you divide 72 by 7.2. If you have most of your savings in bond funds paying 3.6%, dividing 72 by 3.6 shows that it will take 20 years to double those savings. But let's see how inflation, taxes and investment costs destroy value if you don't pay attention.

Inflation degrades actual return by very close to the amount of inflation. Going back to the Great Depression, the average of scenarios with 20 years compound inflation is near 3.6%, so a return of 7.2% less 3.6% nets 3.6% "real" return or "inflation-adjusted" return. Hence that portfolio yielding 7.2% based on historic inflation would take 20 years to double, i.e, 72 / 3.6. That's doubling the real purchasing power, but 4 times the number of less valuable dollars.

Inflation is not the only thing that takes a big bite out of your investments. Taxes as well as the costs you pay to investment firms that market or hold your securities also are significant. If you pay the common 1.2% costs of investing to investment firms, that 7.2% return is worth only 7.2% less 1.2% netting 6%. Taxes may take another 2%, netting 4%. Subtract 3.6% inflation and you are down to only 0.4% real return. **You'll never get real growth that way. In the following pages we show you the ways to improve your savings so that they are worth much more.**

By buying index funds from low cost providers like Vanguard, Fidelity and TIAA-CREF, you can keep investment costs between 0.1% and 0.5%. Many people invest in "managed" and insurance funds or some in union retirement saving plans that take between 1.5% to over 2.5% from return percentages because few people realize the importance of saving in low cost funds.

Investment management costs don't end with the internal costs of the investments. People pay broker fees and some people turn their savings over to professional managers that generally charge 2% of the portfolio's value every year. Those with very large savings may get a break and be charged a little less than 1%. But that's additive to the other costs, and even 1% can compound to a 25% loss over 30 years.

It's for these reasons that I believe it's important for savers to learn enough to invest themselves, largely in low cost index funds or exchange-traded-funds (ETFs). Consultations before age 40 with a fee-only Certified Financial Planner (CFP) will give you improved financial perspective, help you with lower cost insurance of various kinds, and make personalized recommendations for wills, durable power of attorney, and a living will. Such consultation is valuable also about five years before retiring.

Where you choose to save can make a big difference

There are several account types for your investments. That account type is just as important as the investments themselves. The tables below illustrate that. Each deposit takes the same amount from gross income. Growth is shown as **today's dollar values** so as not to mislead with cheaper dollars of the future. This is not a sugar coated analysis that shows a future value, uncorrected for inflation as $534,054 instead of the $220, 023 purchasing power from those diluted dollars. The real (inflation-adjusted) return is (Actual Return minus Inflation) divided by (1 + Inflation) although usually approximated as simply Actual Return minus Inflation.

We use the words "stocks" and "bonds" throughout this document. We intend them to also mean mutual funds—which are often better because they offer diversification and less risk.

The first case we'll examine is for a portfolio dominated with 70% stocks.

Inflation-Adjusted Growth from 70% Stocks, 30% Bonds

$5,000 Saved * — 30 Years Growth

7% Return — 0.5% Variable Annuity Cost

3% Inflation — 20% Working Tax Rate

* Annual before-tax income saved. Increased by inflation each year. — 17% Investment Tax Rate

	Annual	Real	**Balance in today's dollars**		
			Retirement Tax Rate		
Account Type	Deposit	Return	10%	20%	30%
Taxable Account	$ 4,000	2.7%	182,138	182,138	182,138
Employer's Plan	$ 5,000	3.9%	247,526	220,023	192,520
Roth IRA	$ 4,000	3.9%	220,023	220,023	220,023
IRA (Deductible)	$ 5,000	3.9%	247,526	220,023	192,520
IRA (Not Deductible)	$ 4,000	3.9%	198,421	176,819	155,216
Variable Annuity	$ 4,000	3.4%	183,155	163,249	143,343

The green cells show the best choice for different retirement tax rates. In several cases, it makes a difference whether your tax rate in retirement is going to be more or less than your working tax rate.

Those who made deposits when their income was low may have higher tax rates in retirement. In my view, it is likely that our future tax rates will be much higher to accommodate the aging of our population with its continuing reduction in the number of workers to support each retiree as well as the unfunded pensions of both federal and state governments. Then there are the growing welfare costs including social security that take tax dollars to support from a relatively smaller working population.

The orange cells show the poorest results are for a variable annuity with an insurance wrapper of only 0.5%. Some variable annuities have much higher costs, and some teachers have variable annuities within a 403(b) along with 2% costs. That's a disgrace! However, there can be a place for a variable annuity including gifting money to very young people for their retirement many years later, especially compared to getting better results than in an estate subject to high estate taxes. The chart does not reflect that benefit. Get a CFP's opinion.

Taxable accounts, needed for emergency funds and replacement reserves, don't fare much better than variable annuities. On the other hand, if a retirement portfolio holds a taxable stock, capital gains tax rates are much lower than ordinary income tax rates on withdrawal from an employer's plan or IRA. Further, appreciated stocks make excellent charitable gifts. On death, the cost basis of securities are increased resulting in less tax on those investments. Again, the chart does not reflect those benefits.

Another thing not represented in the charts is that an employer's savings plan often offers matching funds. That's free money that can grow a very long time. A person should always take advantage of these free money offers when they are available from employers.

The next chart represents a substantially different investment allocation, namely mostly bonds. Such a portfolio is more representative of typical retirees who are risk adverse. The takeaway here is that the lower returns from interest bearing securities reduces the growth appreciably compared to portfolio dominated by stocks. Tax rates are higher because bond interest is taxed at a higher rate than stock's qualified dividends or capital gains.

Inflation-Adjusted Growth from 30% Stocks, 70% Bonds

$5,000 Saved * — 30 Years Growth

5% Return — 0.5% Variable Annuity Cost

3% Inflation — 20% Working Tax Rate

* Annual before-tax income saved. Increased by inflation each year. — 19% Investment Tax Rate

Account Type	Annual Deposit	Real Return	Balance in today's dollars: Retirement Tax Rate 10%	20%	30%
Taxable Account	$ 4,000	1.0%	139,548	139,548	139,548
Employer's Plan	$ 5,000	1.9%	180,900	160,800	140,700
Roth IRA	$ 4,000	1.9%	160,800	160,800	160,800
IRA (Deductible)	$ 5,000	1.9%	180,900	160,800	140,700
IRA (Not Deductible)	$ 4,000	1.9%	145,120	129,440	113,760
Variable Annuity	$ 4,000	1.5%	134,635	120,120	105,605

There are different limits on annual contributions which may influence your choices as well. Currently, workers can save up to $18,000 a year in a 401(k) if they are under 50. In contrast,

they can put only $5,500 a year in an IRA or Roth. Older workers can add $6,000 more a year to 401(k) annual savings and $1,000 more to an IRA or Roth annual savings. Small business owners have special limits as well with instruments like SEP-IRAs.

Of course there are some other good ways to save. Some can benefit from Health Savings Accounts (HSA) and others from deferred compensation. The key is to compare any savings method with other alternatives. But first you have to cut spending. I tell my grandchildren, "You can save a dollar or spend a dollar, but you can't do both with the same dollar."

HSAs deserve more attention. Fidelity Benefits Consulting says that a 65-year-old couple would need $260,000 (in 2016 dollars) for retirement medical expenses and almost $400,000 to include long-term care expenses. A small part of that will be covered by Medicare Part B deductions from social security, but the rest will have to come from pensions and savings.

It's good to consider where the best account type for stock or bonds may be. Generally if you have a choice between putting them in different places, you would choose to have the fastest appreciating securities preferably in a Roth or secondly in an employer's savings plan or IRA. Those who already have appreciated securities in taxable accounts can't transfer them to such accounts but they make excellent charitable gifts or to leave to heirs because the cost basis then is the price of the security on the day of the death—hence no capital gains tax.

So there you are. Fulltime employees may have the choices above. Selecting the correct one will make a big difference in your retirement lifestyle. One of the best choices might be putting in at least as much money into an employer's saving plan to capture the matching funds and the rest to a Roth IRA, but you also need some savings in a taxable account for emergencies and replacement of things that wear out or become obsolete.

If you can't think your way through this maze of additional factors, go to a fee-only Certified Financial Planner (CFP) for a one-time consultation. They carry a fiduciary responsibility to put the client's interest above their own. You can likely find one in your area on www.napfa.org or www.FPAnet.org. The fee is going to be miniscule compared to the gains you can make.

ATTENTION! Investment Costs: I can't mention this too much. Those who buy index funds from low cost providers like Vanguard and Fidelity may have costs of roughly between 0.1% and 0.5%, while some funds from insurance companies, schools and union retirement plans have costs higher than 2%. The difference in retirement savings growth is huge. For example, $1,000 invested at 7% over 30 years grows to $7,612 or, with 3% inflation, **$3,243 in today's dollar values**. With 2% costs, that 7% investment grows to only **$1,811 in today's dollar values**. **That's a loss of 64% of the growth over 30 years!** The difference grows exponentially larger over longer periods. You have to remember that it's not just the number of years until you retire; a good deal of those investments will be held during the retirement years as well.

Allocations key to risk management and buy/sell signals

One of the biggest secrets to successful investing is knowing when to buy stock funds or bonds and when to sell them. If you try to guess when one is high or low, you are going to be wrong much of the time. However, there is a discipline that can be right most of the time. That discipline is allocation control. It results in selling or buying only a portion of a stock fund while buying or selling only an equivalent value of a bond fund, for example.

With allocation control, you set certain target percentages for each type of security within a portfolio. Most often, it's simply percentages of stocks and fixed-income investments like bonds or CDs. Stocks have greater growth but are more risky than most fixed-income investments. So, as a person approaches retirement and wants less risk, the allocation percentage of stocks should be adjusted downward and the fixed-income allocation upwards.

When the allocation grows or falls from the nominal values, we rebalance by selling part of stocks and buying more bonds, or vice versa, to bring the allocations back to nominal values. **In this simple action, we sell when a security has gone up and buy one that has gone down. That's what's required to make money.** Balanced and target funds are managed to do this automatically but can demand more internal brokerage costs which are seldom reported.

Allocation Components: I believe that allocation control should be relegated to investments meant for your retirement. This excludes emergency funds and replacement funds. Nor should it include your home but should include investment real estate as if it were a stock. Investment brokers like to include the Present Value (PV) of all other future income sources like pension and annuity payments or even social security. Present value is determined from a formula that sums discounted future payments until death. However, including present value of social security and pensions drives the allocation in retirement funds to almost 100% stock funds. Brokers and those with 12b-1 kickbacks from funds love that idea, but it's a mistake.

Amplifying Allocation Gains: Generally, you can increase the return on your portfolio by establishing a tolerance band before rebalancing. I let the allocations get either 5% above or 5% below the nominal allocation targets before buying or selling. Not only that, except for what might be extraordinary events, I only look at my allocations once a year. Most of the time, I don't have to rebalance but every two or three years. The reason that the rebalancing is so infrequent is that 5% added to or subtracted from a nominal 20% allocation requires that the security change its value by 25% before rebalancing. That requires time, often many years.

The Simplest Allocation: The approach that requires practically no actions on your part is to have only three funds: (1) A money market in a taxable account for your emergency and replacement funds, (2) another money market fund in your retirement fund that's about 10% of your retirement fund, and (3) before retirement either an age-related target fund or a balanced fund that has about 60% stocks and 40% bonds. After retiring change to a balanced fund with about 40% stocks and 60% bonds. Vanguard and Fidelity offer balanced funds like Wellesley, Wellington, and others. Target and balanced funds benefit some from their INTERNAL balancing.

An approach that's even simpler is to turn your retirement investments over to a professional manager, but their 2% typical fees will reduce your growth appreciably. A 2% reduction in a portfolio that would normally yield 7% reduces the yield to 5%. That's painful! The professional will select a mix of 5 to 10 different funds based on what would have been the best in the past, but the past I feel is going to be quite different than the future we'll face. I feel that a simple mix of a few different securities as illustrated below will do a lot better because it starts off with a 2% return advantage over the professional's charges. A better way to engage a professional is to have an occasional consultation with a fee-only certified financial planner (CFP), especially sometime after you have been in the labor force as well as a couple of years before you plan to retire and/or after a significant life changing event or perilous stock collapse.

Immediate Annuities for Simplification: Some retired people like to buy an immediate annuity to make lifetime payments in exchange for part of the fixed-income allocation. The immediate annuity provides lifetime payments in exchange for a one-time cash payment. This is all right for a part of the fixed-income allocation but not for the total fixed-income allocation nor for emergencies of replacements. That's because an annuity is not liquid, and most leave nothing for heirs. Immediate annuities are not for those who have not yet reached retirement.

If buying an immediate annuity, the payments increase appreciably the older you are when bought. So it might be a more sensible purchase later in retirement, or you might buy one and then wait a few years to buy another. Buy only from highly rated companies.

If this is your choice, consider inflation-adjusted immediate annuities instead of fixed payment ones because fixed payments degrade quickly with inflation. Also, amplify the stock allocation somewhat if buying an immediate annuity. Each year a purist would calculate the present value of the immediate annuity payments with an arbitrary discount rate and include that as part of the fixed-income allocation. That's pretty messy and overly complex.

Likely Better Allocations: This takes more effort than the simplified approach above, but the chart illustrates what I believe can yield better results in the future I perceive. The allocations are percentages of retirement savings (not emergency or replacement funds) and get more conservative moving from age 20 till retirement.

Retirement Savings	**Likely Better Allocations**		
	20 to 40	40 till Retire	Retirement
Low-cost S&P 500 index fund	30%	25%	20%
Low-cost small cap index fund	25%	20%	15%
Real Estate Investment Trust (REIT)	20%	20%	15%
Intermediate-Term Bond Index Fund gradually turned into Savings I Bonds*	20%	30%	40%
Money Market Fund	5%	5%	10%
Total	100%	100%	100%

*In retirement, keep Savings Bonds but add laddered 10 year TIPS in Roth

With the allocations on the chart, there are additional gains from rebalancing. Admittedly, this was good in the past and does not guarantee similar future performance. Pundits will notice that the chart does not include any foreign components. That reflects my personal concern that foreign investments are subject to different laws and not only have their own ups and downs but are subject to currency changes such as devaluations. That said, most successful U.S. companies today have a large foreign component. We get exposed to foreign economics through them. Hopefully their managers have better insight in what might be growth foreign markets than we might.

I like to use the S&P 500 index to represent large cap stocks, but I can't argue much with those who use the Russell 1000 index which reaches down to medium sized companies. For small cap companies I like to use the Russell 2000. In fact I don't object much to simply using a total stock market index fund to simplify things further, but I prefer what is illustrated in the chart.

Those in a high tax bracket with significant retirement savings in taxable accounts should consider Vanguard's Tax Managed Capital Appreciation and Tax Managed Small Cap index funds to represent their stock components. If this requires the sale of other taxable securities with associated tax consequences, consider simply adding these when making new savings in pre-retirement or from any excess RMD distribution in retirement.

Fixed-Income Considerations: Fixed-income securities are based on lending money to someone in exchange for monthly or annual payments and, at maturity, return of the principal. Most of these have fixed payments, but others such those with inflation adjustments, are also a part of fixed-income because they are contract amounts. Fixed-income does not represent ownership. They are debt instruments where the rating is important. Conversely, stocks and real estate represent ownership even though that may be supported by debt financing. Over the long haul, stocks appreciate. Debt securities do not. Debt securities are generally low risk, but some like junk bonds are high risk. Stock is generally high risk but sometimes can be lower risk than low rated bonds. Some experts make money by speculating on changing bond values, but that's beyond most of our capabilities. Sensible allocations have higher risk when we are young and can more easily accommodate a significant loss. Few retirees have that capability and so rely more heavily on fixed-income performance than stocks.

Inflation-Protected Fixed-Income Securities: I really like the idea of buying Savings I Bonds before retirement providing that you also contribute to a retirement fund. Buy Savings I Bonds from www.treasurydirect.gov in a taxable account, not a qualified account like an employer's savings plan or IRA. The amount you can buy each year is limited to $10,000 per person which would be $20,000 per couple. After one year they can be cashed without loss of principal unlike other bonds that would not be held to maturity. If cashed before 5 years, there is a small interest loss. Unlike other bonds in taxable accounts, they defer the tax due until cashed thereby effectively increasing the return just as in an employer's savings plan or IRA.

The footnote on the chart above illustrates an optional way to further replace a bond fund with laddered TIPS. Those are Treasury Inflation Protected Securities that you can buy in an IRA, preferably a Roth IRA, with the mutual fund's brokerage office. Learn more about TIPS from

www.treasurydirect.gov. The lowest costs are obtained during the government auctions of original issues. You can ladder them if you want, that is, buy a 10 year bond every year. As they mature, depending of the size of your portfolio, expected years to live, and cash needs, you can replace the matured TIPS with another 10 year TIPS every year. This may well be the very best way to protect your fixed-income components from inflation and, if in a Roth, taxes. My own fixed-income retirement investments are almost all TIPS that I bought in a Roth after retiring and Savings Bonds that I bought before retiring.

There is good reason for my preference for inflation protection when dealing with common fixed-income securities like bond funds and immediate annuities. Inflation reduces the relative value of debt. Our national debt and unfunded obligations are so large that taxes alone will not pay the interest, much less the principal. So the government prints money—which is inflationary. The debt is exacerbated by the aging of our population with increasing welfare needs.

Then there is the fact that the value of bond principal is inversely proportional to interest rates. Interest rates are extraordinarily low now and most likely will rise reducing the value of bonds. When interest rates were coming down combined with low inflation, bond funds were a great investment. But we live in a different time now, and the future is unlikely to be like that past.

Difficult Securities in Allocations: Some securities like immediate annuities, partnerships, investment real estate and reverse mortgages are best analyzed by financial experts, so if this is your bent, go to a CFP who can converse readily on these.

A "No" is as important as a "yes"

I've learned lots of lessons from both my own and associates experiences.   These usually result from very bad outcomes from financial choices. Here are a few to keep in mind:

Livestock: When I was a kid, my father had a bad experience with an investment to raise animals. He told me frequently, "Don't invest in anything that eats." One of my business associates told me his worst experience was investing in cattle and said he wished he had heard my father's words. I took my father's advice when approached by a friend who had a great sales pitch and wanted some seed money for a catfish farm. It and his fish went belly-up, one in the water and the other in bankruptcy.

Commodities: Another business associate got involved with options trading and speculated in eggs. He was at the end of the chain of trades and ended up with a boxcar full of eggs that he had to distribute. Once I met with a member of the Chicago Board of Exchange. His advice was, "Don't invest in commodities. I can make money from fees on every trade, but it's very unlikely for the novice." Of course there was the exception and scandal when the wife of a famous politician invested $10,000 in cattle futures and, with the "help" of a political supporter, turned those option contracts into $100,000.

Collectibles: On the lighter side, my wife and her friends bought hundreds of Beanie Babies jokingly speculating on their future price.   She and her friends still laugh about it, but the Beanie Babies wait in a chest for our great grandchildren. More seriously, an eye doctor of mine was an expert in ancient armor. I believe he actually may have been successful at that, but he left the country to avoid a large number of malpractice suits.   Investing in valuables from diamonds to art requires real expertise and very close ties with buyers.

Partnerships: I personally have been in about a dozen of these, lost money on many, and was very fortunate to make up for the losses with one of them. Tax returns are much more complicated, especially with some oil and gas ventures. I still have a real estate partnership that I have great difficulty selling. It makes a good return but does not fit in at all with our estate plans. And I haven't been able to get the general partner to sell after almost 40 years. Stick with public investments where the market prices are posted and you can easily sell a part.

Complex Investment Contracts: The small print often exceeds the large print and explains how you are the responsible party. By reading carefully, you'll find how the seller makes its money. You likely have seen some get-rich-quick ads on TV or financial articles written by shills of the company. READ the small print whether it be a life insurance product, specialized annuity, reverse mortgage or any other investment contract. "Ever upwards, never downwards" or "Convert your ….." should warn of caution. Don't understand the small print? See a CFP.

Specialized Funds: You are making a big bet that you know what will happen in the future when you pick funds specializing in a market sector. I had a lot of experience trying to predict the future as Boeing's officer responsible for its strategic planning for six years. Stick with broad based index funds. Over the long haul you'll do better and feel more comfortable.   The major components of those specialized funds are likely components of the indexes anyway.

Picking Startups: When Boeing had its big crash and Seattle was going down with it, there was a large billboard that said, "Will the last person out of Seattle please turn off the lights." I was appointed by the governor to be on his Economic Development Council to join with a number of bank officers to try and promote some new businesses. Most of the choices we made were marginal at best and the one that most of the members thought had the least chance turned out best. You need lots of money to succeed in this and really know what you are doing.

Portfolios of Individual Stocks: When I was a young man and before I had a CFP help me with investments, I took the advice of a stock broker and from several financial magazines with sure-winner stock picks. I did horribly. People like Warren Buffett have expert staffs that can do due diligence with personal visits to the many components of a company. You don't. Again, stick with low-cost broad based index funds.

Real Estate: I know a number of people who have done extraordinarily well in various kinds of real estate, but that is their full time job. They are good at it and are able to get low interest financing. Flipping houses has proved to be a disaster for most that try often ending with bills they cannot afford. Stick with low-cost diversified Real Estate Investment Trusts (REITs) index funds which have a daily market value and you can sell a small part when needed.

Time Shares: Vacation properties that offer points or certain periods of time are better considered as life-style purchases rather than "investments." They presuppose that you have the ability to know their use often a year in advance and that you will use them for many years. They are difficult to sell and carry annual charges. Heirs often do not like their obligations.

Illiquid Investments: Always consider if an investments are "liquid." These are purchases that have a published market value and generally are divisible so that you can sell only a part. Antiques, art, collectibles, time shares, most partnerships and real estate are not liquid and make poor investments for those who are not otherwise wealthy. Think carefully about considering the total value of your home as a retirement investment.

Predicting the Future: There is good reason that economic pundits finish their pitch with something like "On the other hand …." Even this Grandpa here can't see the future and knows that predicting when the markets will fall or grow is futile. I was lucky in many respects for our long stretch of personal investment successes and the six years I was responsible for Boeing's strategic planning to determine where the company should best spend its money. Further I was well connected in the economic, academic, business and government worlds and was paid to know what was happening. Still, all that would not guarantee that I would be right.

And, **most certainly** do not listen to the financial advice from TV ads, long internet infomercials, your beautician or drinking buddies. Authentic sounding financial and media pundits can be just as bad. I read numerous financial publications and have written articles in them as well. If publications are to be your source, know something about how the author earns money. In fact, know a LOT about that. Authors with good material are John Bogle, Jonathan Clements, and Larry Swedroe. You might even read mine, most of which are in the *What's New* section of www.analyzenow.com.

Pre-Retirement Financial Help

Financial Goals: An ultimate savings goal for pre-retirees is to accumulate (1) a significant retirement fund, (2) an emergency fund, (3) pay off credit cards and other debt as soon as practical, and (4) build a fund for expensive things that wear out so that they can earn interest instead of paying interest on a credit purchase. These are tall orders, so first focus on retirement savings.

The retirement savings goal will require saving between 10% and 15% of your after-tax income every year until retirement sometime in your sixties. Retiring earlier requires larger savings than most people recognize, so be sure to meet with a fee-only CFP before taking this action. If your employer offers matching funds for savings in an employer's savings plan, choose that first because that includes free savings. So with 4% matching you'd only have to save 6% to 11% of your own contributions each year instead of 10% to 15%.

More specific savings needed around age 40: By middle age, you should start refining how much you should be saving. It is helpful to try a couple of free internet retirement program downloads, but a consultation with a fee only certified financial planner (CFP) can help even more with perspective, money matters, insurance, and estate planning. Any analysis should consider (1) the prospect of living 5 to 10 years past your life-expectancy (the age at which 50% of the population will die), and (2) a lump sum for long-term-care of perhaps $100,000 (in today's dollar values) for the last to die and $50,000 for the first to die if the surviving spouse can provide half of the care. The analysis will provide the annual pre-retirement savings you need to support what you postulate as annual retirement spending and retirement age.

Investment vehicles: I'd first choose to put the yearly savings into an employer's savings plan especially if it offers a matching percentage for the reasons mentioned above. My next choice would be a Roth IRA because it offers tax free growth. Often a very good combination is to put enough in the employer's plan to at least capture the free matching money and the rest in a Roth IRA with a low cost mutual fund firm like Vanguard, Fidelity or TIAA-CREF. Of great importance is to make the retirement savings contributions automatically drawn from your paychecks if possible. This forces you to save first and spend what's left instead of spending first and saving what's left.

Investment Funds: We previously reviewed particular investment funds as well as Savings I Bonds and TIPS. For stocks, buy low cost, broad market based index funds or fixed-income securities with low acquisition costs. I've previously mentioned no commodities, collectibles, insurance funds, specialized funds nor the recommendations of your barber or news pundit. Some may turn out better, usually by luck, but they are not for average investors. If you choose to gamble with these, do not invest more than 10% of your savings in them.

Savings EE Bonds: The returns for EE Bonds vary, but if you buy them at what appears to be a low rate, they are guaranteed to double in value at the 20 year mark. That's a return of 3.6% and close to the 20 year historical rolling inflation rate. They are not as protected from runaway inflation as Savings I Bonds, but that 20 year mark may be of interest to some people.

The total interest is taxable when cashed as with Savings I Bonds, but the latter can be cashed any time after one year without loss of principal before they reach their 30 year maturity.

Investment Costs: I'll say this again and again. Those who buy index funds from low cost providers like Vanguard and Fidelity may have costs of roughly between 0.1% and 0.5%, while some funds from insurance companies, schools and union retirement plans have costs higher than 2%. The difference in retirement savings growth is huge. For example, $1,000 invested at 7% over 30 years grows to $7,612 or, with 3% inflation. that $7,612 is worth only **$3,243** in today's dollar values. With 2% extra costs and 3% inflation, that 7% investment grows to only **$1,811** in today's dollar values after 30 years. **That's a loss of 64% of the growth over 30 years!**

The difference becomes exponentially larger over longer periods. You have to remember that it's not just the number of years until you retire, a good deal of the investments will be held in the retirement years as well. So part of your early investments may grow a very long time--50 or even 70 years for younger people. In taxable accounts (as opposed to IRAs and employer savings plans) the growth will be even less since your returns are reduced by income taxes.

Saving, diversification and allocation rules are the way to build retirement wealth in both good and bad times. The sacrifices to save more now may be large, but consider the last one-fourth or one-third of your life without a working wage that will be determined by what you do and how you live BEFORE retirement. Most people are living beyond their means as they try to emulate the lives and luxuries on television or their neighbors and friends who likely also are living beyond their means.

Emergency Savings Funds: The major objective of an emergency fund should be to support your family for whatever number of months you think it will take to regain employment after a job loss. Unlike retirement savings, emergency funds have to be liquid, i.e., divisible and turned into cash very quickly without a penalty. So an emergency fund cannot be part of your employer's savings plan with taxes due on withdrawals and, worse, penalties for draws before 59 1/2. Older pre-retirees have to add contingencies for health issues and children or elderly parent problems that require your financial help and too often destroy retirement savings.

Many suggest 3 to 6 months of after-tax income to cover job loss as well as unforeseen and uninsured charges. This means taxable investments with checking privileges like a mutual fund money market, a bank savings account or Savings I Bonds from www.treasurydirect.gov. The latter is redeemable without loss of principal after each bond is held for one year. I like the idea of buying Savings I Bonds in smaller denominations supplemented by a money market from a low-cost mutual fund firm with checking privileges. The savings bonds provide some growth to offset inflation.

A word on debts: Debts are a negative investment. If you really have to buy a house instead of renting when young, wait until you can put a significant amount down and ensure that you will be able to make the resulting payments without great stress even with a job loss of several months. By the time you buy your second or third auto purchase you should do so only if you have enough saved in a taxable account to pay cash for the entire purchase. Pay all credit card balances monthly.

All debts, particularly credit card debts, have serious consequences if payments are missed, and large payments make retirement and emergency plan saving difficult. Debt management is a tough task but is often the key to a stress free retirement. Unpaid student loans will ultimately reduce your social security receipts, and social security is often the main source of funds for many retirees. For more on student loan problems see http://www.marketwatch.com/story/how-student-loans-could-hit-your-social-security-2012-08-10.

Replacement Funds: These are savings to replace things that have outlasted their lives such as autos, appliances or a roof without borrowing. The first challenge is to start saving enough to pay for your next automobile with cash and thereby improve your bargaining potential. The discipline requires dividing the acquisition cost by the estimated life of the item to determine annual savings until purchase. You can find more information on www.analyzenow.com or http://www.marketwatch.com/story/replacement-savings-make-real-money-2013-02-07.

Donor Advised Funds: Many consider helping others an important part of life. Vanguard, Fidelity and some other mutual funds make this easy with charitable gift funds. Donate to these preferably with appreciated stock and get an immediate tax deduction (and without paying tax on appreciated stock or your estate), let the money grow, and then, when you want, instruct the fund to give a certain amount to a charity of your choice. You can instruct them to give anonymously—a great way to avoid those perpetual mailings requesting money. Once given to the fund, you can never get the money back, and it must be given to legitimate charities. Most gift funds have qualified charity lists.

Professional Management Costs: A professional money advisor usually charges 2% of the total of your investments that they manage every year, but very wealthy people with large investment balances may pay less than 1%. One of my colleagues was shocked when he first engaged a professional planner to handle his $500,000 savings only to find out that the manager took out $10,000 on the first day for his fees and comparable amounts every year thereafter. That was more than he was putting in every year. In addition he ended up with higher cost funds and brokerage fees. Ugh!

That said, some people have great difficulty managing their own money or are pressed with other tasks. They should consider a professional to manage their funds, but they should inquire diligently about the overall costs and compare different managers. I think an intermediate approach that may be better is to pay a professional a consulting hourly fee and maybe even get advice from two different professionals. Professionals should have a CFP designation which generally bears a fiduciary responsibility to put the client above the professional's own interest. A CFP can also help with insurance selection and estate planning as well. Good fee-only CFPs can be found for most locales on www.napfa.org and www.FPAnet.org.

Finally, and very important: Maintain good health practices**.** Start developing good habits for eating and exercise to carry on into retirement. It may well reduce one of the biggest health costs of all: Ever increasing medical and dental bills.

Financial Help for a Prosperous Retirement

Retirees usually need 3 or 4 kinds of saving: (1) retirement savings, (2) an emergency fund, and (3) a replacement reserve which can be kept in the same account as the emergency fund. Some will want to add (4) a Donor Advised Fund for charitable gifting.

Retirement Investment Accounts: You may have an employer savings plan, possibly an IRA or Roth IRA, and some investments that yield taxable interest, dividends and capital gains distributions. You may want to consider converting your employer's savings plan or IRA to a Roth IRA if you can do so in increments without increasing your current tax rate nor depleting your emergency and replacement funds. A conversion is a taxable event. Your mutual fund company can help you with the conversion. A Roth IRA will provide tax free growth and is not subject to **Required Minimum Distributions (RMDs)** after you reach 70.

RMD Factors from IRS Publication 590

Age	Factor	Age	Factor	Age	Factor	Age	Factor
50	44.2	63	32.7	76	22.0	89	12.0
51	43.3	64	31.8	77	21.2	90	11.4
52	42.3	65	31.0	78	20.3	91	10.8
53	41.4	66	30.2	79	19.5	92	10.2
54	40.5	67	29.4	80	18.7	93	9.6
55	39.6	68	28.6	81	17.9	94	9.1
56	38.7	69	27.8	82	17.1	95	8.6
57	37.9	70	27.4	83	16.3	96	8.1
58	37.0	71	26.5	84	15.5	97	7.6
59	36.1	72	25.6	85	14.8	98	7.1
60	35.2	73	24.7	86	14.1	99	6.7
61	34.4	74	23.8	87	13.4	100	6.3
62	33.5	75	22.9	88	12.7	101	5.9

RMDs: "Qualified" accounts like 401(k)s, 403(b)s and IRAs (but not Roth IRAs) require that, after you reach 70, you must make minimum withdrawals every year—and those distributions are taxed. You can find the factors for RMDs in IRA Publication 590 and in the table here for the original owner of the account. The RMDs for ages below 70 are not mandatory for the original owner. Owners of inherited accounts use a different table from IRS Publication 590 and non-spousal beneficiaries may incur RMDs or accelerated withdrawals. **Divide last year's ending balance by the factor to get the RMD. Draws from qualified accounts incur penalties before age 59 ½. RMDs can also be used for non-qualified investments as a way to determine how much to spend each year if no complexities like long-term-care.**

The factors are actually life-expectancies for a couple with an age difference of less than 10 years. In this theory, you divide last year's remaining balance by the life-expectancy so that each of the remaining years would have the same inflation-adjusted income to death of owner if the return equals inflation each year.

In practice RMDs can be very much different each year because the theory assumes a perfect economy with returns always equal to inflation. (http://www.marketwatch.com/story/why-the-rmd-is-a-tough-call-for-retirees-2015-01-06) If you encounter large year-to-year changes in RMDs, you might consider taking an average of (1) the new RMD and (2) last year's RMD increased by last year's inflation. Conservative retirement portfolios should not face as much variation however. If you decide you do not need to spend that much, you must still take RMDs from qualified accounts and then reinvest the amount of the RMD that you did not need in a taxable account.

Affordable Retirement Spending: RMDs are only one way to determine how much a retiree can spend each year and still have income in the last year of life, but the RMD method is

oversimplified for many situations. Most CFPs offer very good analysis. Some internet planning downloads also help like those from large mutual funds or www.newretirement.com, but few are as comprehensive as the free Pre & Post Retirement Planner from www.analyzenow.com. You do need the full version of Microsoft's Excel though to cope with the formulas working behind that program.

Managing Savings: Few people require a professional to take control of, and manage, their savings. If you can understand the principles I have described earlier, I believe that self-management is better than paying a large part of your savings every year to a professional money manager. A consultation with a fee-only Certified Financial Planner (CFP) early in retirement is likely to be more beneficial and well worth the cost compared to the gains.

Professional Management Costs: A professional money manager usually charges 2% of the total of your investments that they manage every year, but very wealthy people with large investment balances may pay less than 1%. One of my colleagues was shocked when he first engaged a professional planner to handle his $500,000 savings only to find out that the manager took out $10,000 on the first day for his fees and comparable amounts every year thereafter. That was more than he was putting in every year. In addition he ended up with some high cost funds. Ugh!

That said, some people have great difficulty managing their own money or are pressed with other tasks. They should consider a professional to manage their funds, but they should inquire diligently about the overall costs and compare different managers. I think an intermediate approach that may be better to pay a professional a consulting hourly fee and maybe even get advice from two different professionals. Professionals should have a CFP degree which generally bears a fiduciary responsibility to put the client above the professional's own interest. A CFP can also help with insurance selection and estate planning as well. Good fee-only CFPs can be found for most locales on www.napfa.org and www.FPAnet.org

Appropriate Savings Funds: Only employ **low cost** broad market based index funds. No international funds, commodities, collectibles, insurance funds, specialized funds, or hedge funds nor the recommendations of your barber or a news pundit. Some may turn out better, but they are not for average investors. If you choose to gamble with these, do not invest more than 10% of your savings in them.

Investment Costs: We've mentioned this and some of the items herein before, but they are just as important to a retiree as a working person. Those who buy index funds from low cost providers like Vanguard and Fidelity may have costs of roughly between 0.1% and 0.5%, while some funds from insurance companies, schools and union retirement plans have costs higher than 2%. The difference in retirement savings growth is huge. For example, $1,000 invested at 7% over 30 years grows to $7,612 which, after 3% inflation, is worth only **$3,243** in today's dollar values. With 2% extra costs and 3% inflation, that 7% investment grows to only **$1,811** in today's dollar values after 30 years. **That's a loss of 64% of the growth over 30 years!**

Emergency Savings Funds: Unlike retirement savings, these have to be liquid which means divisible and turned into cash very quickly without a withdrawal penalty. The money is to cover

items like uninsured charges, large surprise bills, or special family needs. There is no specific amount, but 3 to 6 months of your retirement spending is often used as a guide. This requires taxable investments with checking privileges like a mutual fund money market, a bank savings account or Savings I Bonds from www.treasurydirect.gov. The latter is redeemable without loss of principal after each bond is held for one year. I like the idea of buying Savings I Bonds in smaller denominations supplemented by a money market from one of the low cost mutual firms above with checking privileges.

Replacement Reserves: This is meant to be able to replace things that have outlasted their lives such as autos, appliances and roof so that no loan is required. They need not be in a separate account, and may best be combined in the same taxable account as emergency savings. You want to gradually build up the reserve until (a) there is enough money to purchase the item, and (b) the item has reached its useful life—admittedly a time that's arguable but will sometime arrive. Without savings ready, the alternative debt financing is bad for retirees. Here is an article which suggests a number of things to consider and has a table to assist in the calculation of the size of the reserve: http://www.marketwatch.com/story/replacement-savings-make-real-money-2013-02-07. You can also find this on www.analyzenow.com.

Donor Advised Fund: Many consider helping others an important part of life. Vanguard, Fidelity and some other mutual funds make this easy with gift funds. Donate to these preferably with appreciated stock and get an immediate tax deduction (and without paying tax on appreciated stock), let the money grow, perhaps in stock funds within the charity. Then, when you want, instruct the donor advised firm to give a certain amount to a charity of your choice. You can instruct them to give anonymously—a great way to avoid those perpetual mailings requesting money. Caution: Once given to the fund, you can never get the money back, and you must instruct that the money go to a legitimate charity.

Pensions: Government employees often get pensions with a Cost of Living Adjustment (COLA). Those are the best. Few companies offer pension plans anymore, but virtually all of the remainder provide fixed payments which degrade rapidly with inflation. If you spend only an amount of the fixed pension multiplied by your Age divided by 100 and save the rest for later withdrawals, you can make your own approximate COLA pension.

Social Security: Most professional advisors recommend delaying the start of social security even if it consumes a significant part of your retirement savings. Each year that you make the delay provides a lifetime payment increase of 6% to 8% for both you and generally your spouse. Should the primary earner die first, even the spousal benefit will be larger. One caution: Make sure that you always have emergency and replacement reserves. For more on delayed social security see: http://www.marketwatch.com/story/if-you-love-your-spouse-youll-wait-to-claim-social-security-2014-10-23

Long Term Care (LTC): There is a good chance that at least one person of a couple will need LTC. Costs vary widely by location and facility, but can approach $100,000 a person per year and could be needed for several years. Often a family member or a home care provider can serve this function. You can get LTC insurance which is best purchased early, even before retiring. In certain circumstances a reverse mortgage might help if you can comply with the

small print in the contract. Fidelity suggests something over $150,000 might be required on average for a couple to cover LTC. If destitute, Medicaid will cover it. Don't ignore it. Develop a plan appropriate for your circumstances, perhaps with the help of a fee-only CFP.

Debts: Debts are a negative investment. Try not to buy any very large purchase with a loan. Retirees often buy vacation homes with a mortgage. It's imperative that the retirement budget be able to cover all of a vacation home's costs without strain because they often are difficult to sell and heirs may not want the obligation. Pay all credit card balances monthly. All debts have serious consequences if payments are missed, and large payments make dangerous draws on retirement savings. Debt management is important for a stress free retirement.

Like those in almost any age group, retirees will benefit from healthy eating and exercise. It may well reduce one of the biggest health costs of all: Ever increasing uninsured medical and dental bills. Remember that the most common expenses that retirees have are uninsured dental, hearing and eyesight problems. Medicare and most Medigap policies do not cover these expenses.

Postscript: It is my hope that the material I have presented helps you with a fulfilling and prosperous retirement. I have done far better than I would have dreamed by using the principles described in this document and hope you do as well.

Bud Hebeler

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