What To Do When The Numbers Don't Add Up

SIMPLE
RETIREMENT
# MATH

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Simple Retirement Math

Planning for retirement is becoming more important for many Americans, especially Baby Boomers as they now near retirement. This generation will likely be the last generation to have access to any kind of employer-sponsored pension plans provided as part of their compensation package. The only option for retirement savings then, at least in the private sector, is self-funding and the historic transition from employer-funded retirement plans to self-funded retirement accounts is practically complete. For those younger Baby Boomers caught in this transition between pension plans and self-funded accounts, and who have not adequately planned, studies show nearly 75 percent of their retirement income will end up coming from Social Security.

Figure 1 - The Retirement Cycle
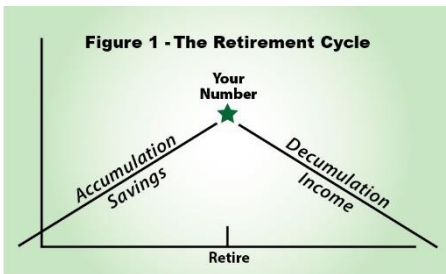
The key to successfully, self-funding retirement income is fiscal discipline, an art that has been challenged by this shift from employer-pay-all benefits to individual responsibility. The skills and discipline required to save for retirement are ones that many Americans have not heeded, or perhaps not learned at all.

The retirement cycle (**Figure 1**) details the importance of understanding the scope of the retirement problem. Everyone must save to invest, to grow their capital to create a sustainable income in retirement. When planning for retirement, it is important to answer these three questions:

1. **How much capital will I need to fund a sustainable income once I retire?**
2. **How much do I need to save to reach that objective?**
3. **How do I efficiently invest to give the highest probability of achieving my retirement objective with the lowest possible risk?**

Answering the first question reveals your NUMBER, the name coined by Lee Eisenberg in his 2006 book by the same title. Answering the second question helps you to define the three skills needed to reach that NUMBER by retirement. Answering the third question is what this book is all about – the Wealth Teams Retirement Solution. This refers to the options you have for decumulating your capital as you create your retirement income. Let's look at the three skills you need to develop to reach your NUMBER.

The First Skill – Maintaining a Budget

First and foremost, families must develop a budget and then stick to it. But, budgets are fragile. They can be disrupted by unforeseen events such as health and welfare issues, eldercare, or more immediate expenses like home maintenance emergencies and car repairs. By the time a family can begin to focus on accumulating money for retirement, they have lost the single most important weapon in their retirement arsenal … TIME. Unless a strong savings ethic is developed and maintained during your working years, building up enough capital to retire will be virtually impossible.

> **By the time a family can focus on accumulating money for retirement, they have lost the single most important weapon they once possessed: TIME**

The Second Skill – Learning to Save

If you can successfully budget your spending, you can develop a savings discipline. The compounding benefit of systematic savings is best understood by studying the Rule of 72 (the rule of how compound interest really works). According to this rule, if you divide seven percent into 72, the quotient is 10.3 years. This means your money will double in 10.3 years. If this factor is rounded to ten years, we can call this an interval. By counting

Figure 2 - Intervals at 7.0%

the intervals to retirement, you can determine the worth of your existing savings at retirement. Say you are thirty, and you are planning to retire at seventy, you have four intervals of ten years before retirement (retirement age minus your current age, divided by the years in the interval). So, substituting the factors: 70 – 30 = 40/10 = 4 intervals between now and retirement. But if you are fifty, you only have two intervals left before you are seventy. As **Figure 2** illustrates, the more intervals you have left, the more time there is to let compound interest work.
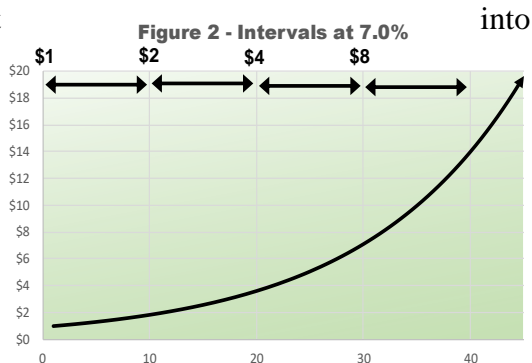
You will see how important intervals are by looking at **Figure 3**, the Ratio of Savings table, which shows the earlier you start saving for retirement, the less you will need to contribute "out-of-pocket" to reach your goal. Most families have never been taught this important principle in a way that would convince them they should start saving early. Einstein said *compound interest* is the eighth wonder of the world. If compound interest could be captured tax-free and used in your favor, it would be the foundation for building the capital you need for retirement.

Figure 3 - Ratio of Savings to Compound Growth at 7.0%

Age	Monthly Payments	Out of Pocket	Growth Value at Age 70	Earnings from Interest	Percent From Compound Interest
20	$184	$110,131	$1,000,000	$889,869	89%
25	$264	$142,383	$1,000,000	$857,617	86%
30	$381	$182,870	$1,000,000	$817,130	82%
35	$555	$233,197	$1,000,000	$766,803	77%
40	$820	$295,089	$1,000,000	$704,911	70%
45	$1,234	$370,338	$1,000,000	$629,662	63%
50	$1,920	$460,717	$1,000,000	$539,283	54%
55	$3,155	$567,891	$1,000,000	$432,109	43%
60	$5,778	$693,302	$1,000,000	$306,698	31%

Monthly payments based on 7.0% annual growth (credited monthly) payable to age 70.

This capital amount is your Number, which is the amount of capital you will need at retirement to sustain a stable income for life. Let's assume your retirement age is seventy. If you say you need $50,000 a year in retirement, plus social security, multiply $50,000 (your annual goal) times twenty (years to life expectancy), which equals $1,000,000 (Your Number). The Transamerica Center for Retirement Studies determined 85% of Americans have no idea how much capital they will need at retirement. Unfortunately, without a specific goal, it is impossible to know if you are on target.

The Ratio of Savings table (**Figure 3**) shows if you want $1,000,000 at age seventy, you need to save $184 per month starting at age 20. This table assumes you earn a constant 7% every year. Notice almost 90% of your retirement capital ultimately comes from compound interest earnings. But what happens if you wait until you are fifty to start saving? The same goal of $1,000,000 at age seventy is going to require you to contribute $1,920 each month. So, at a 7% growth rate, only 54%

of the $1,000,000 will come from compound interest earnings. This means 46% must come from your pocket. If you wait until you are sixty to start saving, only 31% will be derived from earnings, while 69% will be "out-of-pocket." As you can see from this ratio chart, the longer you wait to start saving for retirement, the more you must fund from your income to reach your goal because there is less time for compound interest to work for you. Compound interest requires time.

The Third Skill - Investing

Once you know your Number and how much you must save, you must decide how to invest your money. Investing then, is the third skill. I have found very few people understand how to invest. I regularly ask, "Are you an investor or a speculator?" Most people tell me they are an investor. But really, they act more like speculators. Everyone is susceptible to speculative behavior. Generally, the only way to protect your investment portfolio from speculative emotions is to understand how markets work. But, even knowing how markets function does not guarantee investing will work out for you. Trusting the market is very hard to do when everything you have is invested in it.

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Besides the savings discipline required, Warren Buffet, acknowledged as one of the most successful stock market investors says, "You should have an intellectual framework for making investment decisions to successfully invest. And then, once you have the framework, you should put up guardrails so that your emotions won't destroy it when volatility begins to shake the markets."[1] There are many different "intellectual frameworks" crafted by very smart people. The framework selected by The Wealth Teams Alliance (WTA) is based on

historic data and scientific testing, which we call the Wealth Teams Retirement Solution (WTRS). It provides an intellectual framework built on evidenced-based research from five Nobel Prizes. The financial scientists awarded these prizes discovered through historic data that this framework can optimize investment results while reducing volatility. WTA employs this investment strategy and then works with our clients to protect them from their speculative and emotional behaviors.
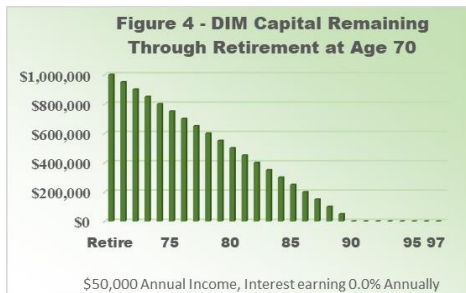
When used and adhered to, this method allows clients to manage both sides of the wealth equation – accumulation and distribution – and enhance the probability of achieving long-range objectives. Investment failure generally stems from an inability to stay with an investment strategy through the ups and downs of market cycles.

Earnings vs. Distribution

Once your Number is reached, there are two primary ways to maintain an income stream during retirement. The first way is to withdraw a fixed percentage every month. I call this method "spending the money, money makes" -- the *Earnings Income Method* (EIM). The second method is to systematically withdraw a fixed amount from your investment account every month, which includes spending down both the earnings and the capital in your investment account. I refer to it as the *Distribution Income Method* (DIM).

What Differentiates the Two Methods?

The Distribution Income Method (DIM) provides a stable income but has one major drawback: the life expectancy risk. Since the DIM calls for a specific withdrawal of principal,

Figure 4 - DIM Capital Remaining Through Retirement at Age 70

$50,000 Annual Income, Interest earning 0.0% Annually

regardless of performance, it is possible to outlive your capital and end up with nothing. Your capital is exhausted, but you are still healthy and need income**. Figure 4** is an example of how DIM might look. The example assumes an investor has $1,000,000 and withdraws $50,000 every year. The capital would likely last only twenty years.

If you elect, instead, to use the Earnings Income Method (EIM), there are two factors which can negatively impact the long-term safety of your portfolio. The first factor is investment risk. The EIM assumes the portfolio will produce sufficient earnings to pay you an adequate income every month for the rest of your life. Since market-based investing is risk-based, it is important to have a portfolio that has a very high probability of producing a sustainable income.
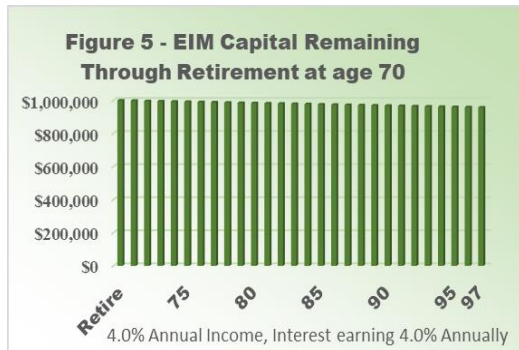
Most advisors would recommend you guard against risk by selecting a very conservative investment strategy. Unfortunately, a conservative approach usually results in a lower income distribution for fear of running out of capital. This style of investing protects against one of the most damaging investment risks called "sequence risk". This risk relates to a significant downturn in the market at the beginning of retirement.

The second risk factor is capital sufficiency. Do you have enough capital to produce a sustainable and consistent income for life? Studies have shown withdrawing income, based on the EIM, should not exceed four percent annually. A conservative approach would use an even lower percentage, closer to three percent, to preserve your investment capital. Dr. Wade Pfau has done significant research on why three percent is probably a safer withdrawal rate in a low interest world.
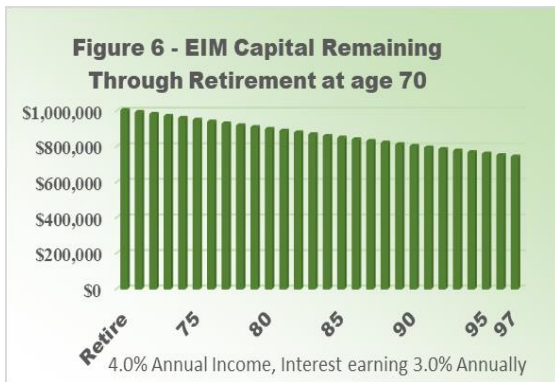
The EIM assumes social security and/or a pension will be the foundation of your base income, and any surplus income emanates from an independent savings source like a personal

investment account, an IRA, or a 401k plan. These are accounts that received your contributions during your working years leading up to retirement. Theoretically, this account should grow in value during the accumulation period preparing for retirement before the income spigot is turned on. When that income starts, a fixed amount is withdrawn from the account every month at a rate that will leave the capital intact.

In **Figure 5**, the graph shows how the account might look over many years, starting at age seventy. The assumed growth rate is 4%, the same as the withdrawal rate. Notice the capital remains relatively constant since the withdrawal equals the growth rate.

Figure 5 - EIM Capital Remaining Through Retirement at age 70

4.0% Annual Income, Interest earning 4.0% Annually

But what happens if the growth rate is less than 4%? Instead of your investment portfolio staying level, the capital spend-down will be reflected in a reduction in the account value. If you wish to retain the same constant income withdrawal in retirement,

Figure 6 - EIM Capital Remaining Through Retirement at age 70

4.0% Annual Income, Interest earning 3.0% Annually

regardless of earnings, the capital account value could decline. **Figure 6** shows the same 4% withdrawal model, with a 3% return instead of a 4% return. The model shows the account

should be well above zero past 100 years old. But you can see the account has declined twenty percent to $800,000.
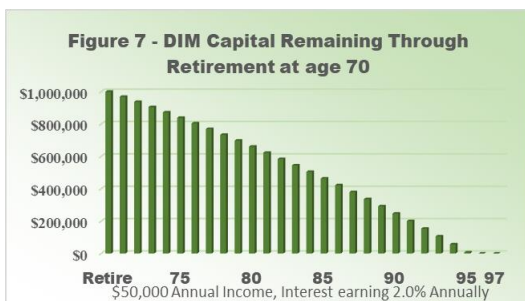
Capital erosion can also happen if you keep the money in a low yielding savings account or fixed income account. By selecting a very conservative investment allocation of stocks and bonds, you will probably end up spending down capital to maintain your desired monthly income. Numerous studies, such as the Trinity Study or work done by William Bengen on this subject, have shown at least 40% of the portfolio should be in equities to protect against total depletion.

Is there a Solution?

One solution to prevent capital erosion is to reduce the amount withdrawn when the earnings fall below your distribution rate. By limiting withdrawals from your investment account, more capital is retained and there is a higher chance of making it last into the later years of retirement.

Using a 20-times income formula with no earnings (the desired annual income in retirement multiplied by twenty) is a good estimator for answering the question, "What is your Number?" Or, to put it another way, how much capital do you really need to accumulate to produce a stable, conservative income?

The stock market goes up and down, so unfortunately, there is no way to avoid the risk associated with volatility when investing in the market. A negative return on your investment will make your capital decline, spending down the account more quickly so that you run the risk of running out of money before age ninety. The results would look similar the DIM **Figure 4** graph we saw earlier where the account declined to zero in twenty years by design, presuming a 70-year-old will likely live another twenty years to age ninety.

Figure 7 - DIM Capital Remaining Through Retirement at age 70

$1,000,000
$800,000
$600,000
$400,000
$200,000
$0

Retire 75 80 85 90 95 97
$50,000 Annual Income, Interest earning 2.0% Annually

But, in the case of a negative return on the investment, the account would end before age ninety. The opposite can also be true, however, as shown in **Figure 7**. If the DIM account earns just 2%, the income extends another six years, continuing to the age 96. The margin of error can be improved when a consistent, conservative return can be earned on your portfolio.

As previously mentioned, *sequence risk* is a significant issue. A down market early in retirement can cause irreparable damage to your investment income, which is hard to recover even with many subsequent years of higher earnings. Early loss of capital in a down market causes a downward spiral resulting in a double cost because the account is being depleted by both the withdrawal and the loss of capital. The loss of future earnings on that lost capital is hard to recover, lowering the pool available for future income withdrawals.

Figure 8 shows a comparison of three investment examples with different outcomes. Example #1 shows the *sequence risk* many investors actually endured at the beginning of 2000. The returns

| Figure 8 - Drawing $50,000 of Income from $1,000,000 of Starting Capital							
Calendar Year	S&P Returns	Remaining Capital Example #1	DFA 60/40	Remaining Capital Example #2	Reverse S&P Returns	Remaining Capital Example #3
2000	-9%	$863,499	6%	$1,003,859	22%	$1,157,412
2001	-12%	$716,818	5%	$999,387	12%	$1,239,868
2002	-22%	$519,439	-4%	$912,662	1%	$1,206,332
2003	29%	$604,120	34%	$1,153,058	14%	$1,314,629
2004	11%	$614,398	10%	$1,218,416	32%	$1,674,215
2005	5%	$592,123	7%	$1,245,536	16%	$1,884,135
2006	16%	$627,758	13%	$1,354,270	2%	$1,872,883
2007	5%	$609,510	4%	$1,360,565	15%	$2,097,474
2008	-37%	$352,508	-26%	$965,369	26%	$2,589,311
2009	26%	$382,563	25%	$1,143,515	-37%	$1,599,841
2010	15%	$382,659	13%	$1,237,178	5%	$1,635,015
2011	2%	$339,686	-3%	$1,154,443	16%	$1,835,389
2012	16%	$336,044	12%	$1,241,982	5%	$1,873,092
2013	32%	$378,688	15%	$1,375,130	11%	$2,021,414
2014	14%	$373,684	3%	$1,366,398	29%	$2,537,005
2015	1%	$328,163	-2%	$1,285,659	-22%	$1,937,331
2016	12%	$311,433	9%	$1,341,412	-12%	$1,663,030
2017	22%	$318,511	13%	$1,464,981	-9%	$1,466,158

in this illustration are the 2000-2017 S&P 500 returns[2]. You may remember the S&P reached an all-time high at the end of 1999. The wonderful world of technology was exploding and reached "bubble" proportions. The tech stocks were overpriced based on any reasonable measure of value. Stocks that had no profits were going public and growing at exponential rates. Investors were giddy over the future appreciation of their portfolios and fell for "Bubble Exuberance". Bubbles always drive up markets, but when they burst, the correction is very painful. Unfortunately, when this bubble burst, the market declined over three years before it stabilized and returned to a growth mode. Many investors painfully lost as much as 40-60% of their portfolios.

If you look closely at **Figures 8 and 9**, you will notice what happened in the first year as the bubble began to burst. Assuming an income withdrawal of $50,000 from a $1,000,000 portfolio, the net market loss reduced the account value to $863,499. with the -9% market return in 2000. In 2001 (year two), the market

Figure 9 - Drawing $50,000 of Income from $1,000,000 of Starting Capital

continued to decline. Another $50,000 was withdrawn, and when combined with a -12% loss, the account balance further declined to $716,818. But the pain was not over. In year three, the market took its biggest down turn in the recession with a -22% return, which meant the total account, after another $50,000 withdrawal, was now only worth $519,439. In three years, the account was reduced by almost 50%, yet only $150,000 was withdrawn as income.
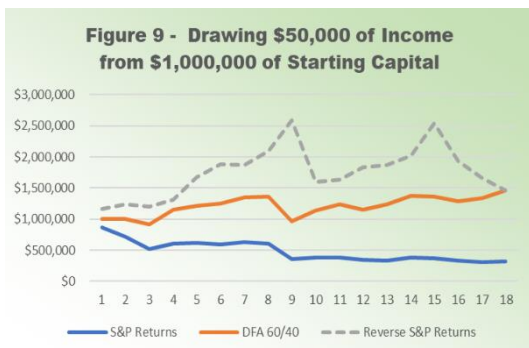
Finally, in 2003 (year four), the recovery began, and the market turned upward. Remember, markets go up and markets go down.

The market grew 29% that year, but with another $50,000 income withdrawal, the account value only increased to $604,120, making the actual gain 20%, instead of 29%. It was still $400,000 (40%) less than where the portfolio started in 2000. Even the three successive positive years could not restore the negative impact those early losses had on the portfolio.

Look what happened next. After a brief four-year respite, the market was struck with a horrific downturn again, in 2008. The credit bubble burst caused by unregulated mortgages, and the worldwide financial markets went into terror mode. The -37% decline in the S&P caused nearly a -50% decline in the account after the $50,000 withdrawal, reducing the capital from $609,510 to $352,508.

The $50,000 distribution originally was a 5% withdrawal rate based on a starting balance of $1,000,000. But, now the distribution is the equivalent of a 15.51% withdrawal rate based on the new remaining balance. Very few financial planners could have foreseen the unintended consequence of this volatility, and virtually no retirement advisor at that point could offer a solution to restore the losses and provide financial certainty for the future. It was too late. The

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best solution would have been to reduce the distributions to 3% or 4% ($15,000) or less, instead of the desired $50,000, which was hardly a satisfactory solution. Example #1 is a clear illustration of the devasting effects of sequence risk.

It is also important to keep in mind the S&P 500 is an all-equity index. There are no buffers or shock absorbers built into the portfolio to help stop the damage caused by a down market.

While it is important to note you cannot invest directly in an index, synthetic investments that mirror the index are vehicles for achieving a S&P 500 stock-like return or a more balanced portfolio where 60% of the portfolio is in stocks and the balance is in low duration agency paper. These funds invest in government guaranteed bonds, such as Treasuries. The results of a more conservative portfolio than the S&P are shown in the middle set of columns in **Figure 8** (DFA, Example #2). The expected return illustrated for this portfolio is based on annual historical returns of the DFA Global Allocation 60/40 Fund[3] from 2000 to 2017.

Expected return is an academic term researchers use to describe the anticipated earnings based on historic data. It includes market performance but smooths out the return over long periods of time using a regression analysis. It is also referred to as the Internal Rate of Return or IRR. This expected return is only used for modeling performance. No portfolio can actually offer the expected return as a guarantee.

If Example #2 in **Figure 8** were possible, the DFA account would have been worth $1.46 million in 2017, even after withdrawing $50,000 annually for seventeen years and including both down markets during that time period. Obviously, the outcome is much different than Example #1. While this outcome is not a guarantee of what will happen in the future, it does demonstrate the power and importance of building stabilizers into the portfolio to mitigate 50% shocks that, while unlikely, could happen again.

The final columns in **Figure 8** (S&P Example #3), show the same S&P 500 returns but in reverse order from those used in Example #1. Example #3 illustrates the effect of a down market on the portfolio when it happens later in retirement. Using the 2017 S&P return in 2000, the 2016 S&P return in 2001, and so on, the *sequence risk* effect is minimized because of the strong returns at the beginning of the retirement period. When the down market

finally occurs, there is enough profit built up in the account to absorb the downturns and the account values are much higher than if the downturn had occurred in the early years. The point is, *sequence risk* is a real threat to any portfolio. Planning a strategy to mitigate sequence risk is important, even if it is not likely to happen.

Protecting Against Sequence Risk

What should an investment planner/advisor do to protect their clients from *sequence risk,* besides building in shock absorbers? One of the most popular strategies is to set aside five years of income and invest the rest. This Income Account Protection (IAP) methodology is simple. If the annual income distribution goal is $50,000, set aside $250,000 (five times) from the initial $1,000,000 portfolio and put it in a treasury account, which has no stock market risk. Then, distribute $50,000 each year as income from this treasury account. In the example shown in **Figure 10a**, the treasury account value reduces to $200,000 at the end of year one because of the first $50,000 withdrawal. The remaining $750,000 is invested in a more aggressive S&P portfolio.

To maintain $50,000 of income distribution, we move $50,000 from the investment portfolio to the Treasury account. This way, there is always five years of income remaining at the beginning of each year until the investment account is fully depleted.

In **Figure 10a**, we again use the S&P 500 returns from 2000 to 2017 to illustrate *sequence risk*. By keeping the income bucket filled with five years of income, the account is able to fund $50,000 of income for the entire eighteen years, until age 87. At that point, there would be $182,085 left in the Treasury account and the investment account would be fully depleted.

Contrast this to example in **Figure 10b** which uses the same DFA Global 60/40 Fund returns used in the **Figure 8**, Example #2.

Figure 10 a - Income Account Protection Method

Capital	$1,000,000
Income Distribution	$50,000

Year	Calendar Year	Age	BOY Treasury Account	BOY Annual Distribution	EOY Treasury Account Earning 3.0%	EOY Transfer from Investment Account	BOY Investment Account	S&P 500 Rate	EOY Investment Account After Transfer	EOY Combined Remaining Account Value
1	2000	70	$250,000	$50,000	$206,000	$50,000	$750,000	-9%	$631,710	$837,710
2	2001	71	$256,000	$50,000	$212,180	$50,000	$631,710	-12%	$506,634	$718,814
3	2002	72	$262,180	$50,000	$218,545	$50,000	$506,634	-22%	$344,658	$563,204
4	2003	73	$268,545	$50,000	$225,102	$50,000	$344,658	29%	$393,540	$618,641
5	2004	74	$275,102	$50,000	$231,855	$50,000	$393,540	11%	$386,350	$618,205
6	2005	75	$281,855	$50,000	$238,810	$50,000	$386,350	5%	$355,329	$594,139
7	2006	76	$288,810	$50,000	$245,975	$50,000	$355,329	16%	$361,457	$607,432
8	2007	77	$295,975	$50,000	$253,354	$50,000	$361,457	5%	$331,322	$584,676
9	2008	78	$303,354	$50,000	$260,955	$50,000	$331,322	-37%	$158,743	$419,697
10	2009	79	$310,955	$50,000	$268,783	$50,000	$158,743	26%	$150,752	$419,535
11	2010	80	$318,783	$50,000	$276,847	$50,000	$150,752	15%	$123,460	$400,307
12	2011	81	$326,847	$50,000	$285,152	$50,000	$123,460	2%	$76,069	$361,221
13	2012	82	$335,152	$50,000	$293,707	$50,000	$76,069	16%	$38,242	$331,949
14	2013	83	$343,707	$50,000	$302,518	$50,000	$38,242	32%	$627	$303,145
15	2014	84	$352,518	$50,000	$311,593	$713	$627	14%	$0	$311,593
16	2015	85	$312,307	$50,000	$270,176	$0	$0	1%	$0	$270,176
17	2016	86	$270,176	$50,000	$226,781	$0	$0	12%	$0	$226,781
18	2017	87	$226,781	$50,000	$182,085	$0	$0	22%	$0	$182,085

Note: BOY is Beginning of Year, EOY is End of Year

Figure 10 b - Income Account Protection Method

Capital	$1,000,000
Income Distribution	$50,000

Calendar Year	Year	Age	BOY Treasury Account	BOY Annual Distribution	EOY Treasury Account Earning 3.0%	EOY Transfer from Investment Account	BOY Investment Account	DFA 60/40	EOY Investment Account After Transfer	EOY Combined Remaining Account Value
1	2000	70	$250,000	$50,000	$206,000	$50,000	$750,000	6%	$742,520	$948,520
2	2001	71	$256,000	$50,000	$212,180	$50,000	$742,520	5%	$727,961	$940,141
3	2002	72	$262,180	$50,000	$218,545	$50,000	$727,961	-4%	$649,801	$868,347
4	2003	73	$268,545	$50,000	$225,102	$50,000	$649,801	34%	$818,543	$1,043,645
5	2004	74	$275,102	$50,000	$231,855	$50,000	$818,543	10%	$854,146	$1,086,001
6	2005	75	$281,855	$50,000	$238,810	$50,000	$854,146	7%	$860,523	$1,099,333
7	2006	76	$288,810	$50,000	$245,975	$50,000	$860,523	13%	$924,776	$1,170,751
8	2007	77	$295,975	$50,000	$253,354	$50,000	$924,776	4%	$914,692	$1,168,046
9	2008	78	$303,354	$50,000	$260,955	$50,000	$914,692	-26%	$623,767	$884,721
10	2009	79	$310,955	$50,000	$268,783	$50,000	$623,767	25%	$729,234	$998,017
11	2010	80	$318,783	$50,000	$276,847	$50,000	$729,234	13%	$775,039	$1,051,886
12	2011	81	$326,847	$50,000	$285,152	$50,000	$775,039	-3%	$703,668	$988,820
13	2012	82	$335,152	$50,000	$293,707	$50,000	$703,668	12%	$741,297	$1,035,004
14	2013	83	$343,707	$50,000	$302,518	$50,000	$741,297	15%	$805,198	$1,107,716
15	2014	84	$352,518	$50,000	$311,593	$50,000	$805,198	3%	$780,273	$1,091,867
16	2015	85	$361,593	$50,000	$320,941	$50,000	$780,273	-2%	$712,054	$1,032,995
17	2016	86	$370,941	$50,000	$330,570	$50,000	$712,054	9%	$722,994	$1,053,564
18	2017	87	$380,570	$50,000	$340,487	$50,000	$722,994	13%	$770,167	$1,110,653

Note: BOY is Beginning of Year, EOY is End of Year

Because of the shock absorbers built in with the DFA/Global 60/40, the plan weathered the market downturns better than the S&P 500. The investment account at the end of year eighteen is illustrated to have $770,167 remaining. When added to the Treasury account of $340,487, the total is $1,110,653 compared to $182,085 in the S&P 500 example.

The Cost of Protecting Against Sequence Risk

It is important to see how the IAP method provided a level of protection against the down market, but at what price? **Figure 8** shows our hypothetical, totally unprotected S&P 500 portfolio during the same period still had $318,511 (Example #1) remaining in the account at the end of 2017. Figure 10a shows that using the Treasury account to protect the income, the combined remaining account balance, EOY 2017, was $182,085 - - $136,426 lower than the unprotected method, after adjusting both methods for $50,000 a year withdrawal for eighteen years ($900,000). While the Treasury Account reduced the ending value, it provided more income stability. For those who want more peace of mind, the IAP is an option, but at what cost? In this case, it cost $136,426.

For **Figure 10b**, the results were similar, but the cost differential was higher. The unprotected method cost $355,505 more than the IAP method. In both cases, the difference can be attributed to the amount that was sitting in the Treasury account earning only an assumed 3%. So, is there a better way?

Defining the Problem

We have already seen how devastating *sequence risk* can be to a portfolio. **Figure 11** re-illustrates account activity using real S&P returns using the real S&P returns out to age 87. This illustration shows the account still has $318,511 in it at the end of the year. However, it would still be frightening for most retirees to watch their account decline to one-third its original value over the years.

Figure 11 - Remaining Capital in Retirement

Year	Age	Investment Account	Income Distribution	S&P Returns	EOY Account Balance
1	70	$1,000,000	$50,000	-9%	$863,499
2	71	$863,499	$50,000	-12%	$716,818
3	72	$716,818	$50,000	-22%	$519,439
4	73	$519,439	$50,000	29%	$604,120
5	74	$604,120	$50,000	11%	$614,398
6	75	$614,398	$50,000	5%	$592,123
7	76	$592,123	$50,000	16%	$627,758
8	77	$627,758	$50,000	5%	$609,510
9	78	$609,510	$50,000	-37%	$352,508
10	79	$352,508	$50,000	26%	$382,563
11	80	$382,563	$50,000	15%	$382,659
12	81	$382,659	$50,000	2%	$339,686
13	82	$339,686	$50,000	16%	$336,044
14	83	$336,044	$50,000	32%	$378,688
15	84	$378,688	$50,000	14%	$373,684
16	85	$373,684	$50,000	1%	$328,163
17	86	$328,163	$50,000	12%	$311,433
18	87	$311,433	$50,000	22%	$318,511

My experience has shown very few retirees are willing to risk all their money in the stock market to receive a long-term income.

Surveys show almost all retirees want safety, security, and a sustainable income for life. Most of all, they want peace of mind. They don't want to look at their portfolio and wonder if they will have an income the next year. Even a five-year set aside is hardly sufficient protection in volatile markets, and as we have just demonstrated, it comes with a cost.

Up to now, I have discussed three different, but common methods to approach income in retirement – DIM, EIM and IAP.

All three ways can work if the market holds. But, market returns are not the only risk. Do any of these approaches really protect you against the other four basic problems that concern almost every retiree:

1. **Inflation** – loss of purchasing power
2. **Longevity** – outliving your money
3. **Sequence Risk** – devastating market performance in the early years of retirement
4. **Sustainable Income** – having to reduce income to preserve capital

How can you protect yourself against these problems to create a sustainable and consistent income that grows with inflation, has flexibility to accommodate a longer life, provides a buffer against sequence risk, and can provide a sustainable income for life?

The Answer is in the Wealth Teams Retirement Solution ™

The Wealth Teams Retirement Solution (WTRS) was designed to protect against the four most destructive problems facing retirees by using three investment tools integrated into the solution, which provide a higher probability of having a sustainable and consistent income in retirement. These tools are:

1. Liability Driven Investing
2. Alternative Investments
3. A Balanced Portfolio

Tool #1: Liability Driven Investing

The first tool of investing in the WTRS toolbox is a Liability Driven Investment (LDI), which addresses the problem of inflation by using Treasury Inflation Protected Securities (TIPS). These securities act like a laddered, zero coupon bond portfolio that matures for full face value annually. They are certain and are backed by the Federal Government. The only risk is if the U.S. government defaults on its obligation.

The discount (the purchase price compared to the maturity value) is based on the guaranteed interest rate offered at the time of issue. You can buy a bond to mature every year, so at the end of year two, the two-year bond matures at full value. At the end of

year three, the three-year bond matures at full value, and so on, for the determined number of years, giving it a laddered strategy. It can be designed for any number of years, with any type of bond, and is used to structure an income that will mature at specified intervals. Notice, however, a TIPS bond is a payment of both principal and interest. When it matures, the bond pays out the face value of the bond (the discounted value you paid to buy the bond) plus the interest earnings. In addition, the earnings can include an inflation adjustment.

As an example, if you invest $990 today in one-year TIPS, the bond is guaranteed to mature for $1000, plus any inflation adjustment.

Using this tool, a retiree could set aside a portion of their capital in a laddered TIPS portfolio and know for certain, they would receive a government-guaranteed amount of income plus inflation every year.

Figure 12 - LDI Inflation Adjusted Income per $100,000 Invested

Number of Years	Income Per Year	Percentage Payout
5	$22,397	22.4%
6	$18,664	18.7%
7	$15,998	16.0%
8	$13,998	14.0%
9	$12,443	12.4%
10	$11,198	11.2%
11	$10,180	10.2%
12	$9,332	9.3%
13	$8,614	8.6%
14	$7,999	8.0%
15	$7,465	7.5%
16	$6,999	7.0%
17	$6,587	6.6%
18	**$6,221**	**6.2%**
19	$5,891	5.9%
20	$5,599	5.6%
21	$5,332	5.3%
22	$5,292	5.3%
23	$4,869	4.9%
24	$4,666	4.7%
25	$4,479	4.5%
26	$4,307	4.3%
27	$4,147	4.1%
28	$3,999	4.0%
29	$3,861	3.9%
30	$3,732	3.7%

Source: DFA Retirement factor calculator 10/1/2017

Using the TIPS table shown in **Figure 12**, if $100,000 was invested in a five-year laddered bond program, the bonds would pay $22,397 each year. This is 22.4% of the original investment.

The table shows the longer the ladder, the lower the payout percentage each year.

Figure 13 shows a historical example of the percentage paid out each year, using TIPS. These percentages change over time. **Figure 13** shows how much annual income would be paid out if you invested $100,000 in an 18-year laddered TIPS portfolio each year for eighteen years at different inflation rates. The 18-year number from **Figure 12** is $6,221, the income amount annually for eighteen years resulting in a total payout of 112%, not including any inflation adjustments.

Figure 13 - Projected TIPS Ladder Income with Inflation			
18 Year LDI factor from figure 12: $6,221			
Inflation			
End of Year	0.00%	1.00%	1.50%	2.00%
---	---	---	---	---
1	$6,221	$6,283	$6,314	$6,345
2	$6,221	$6,346	$6,409	$6,472
3	$6,221	$6,410	$6,505	$6,602
4	$6,221	$6,474	$6,603	$6,734
5	$6,221	$6,538	$6,702	$6,868
6	$6,221	$6,604	$6,802	$7,006
7	$6,221	$6,670	$6,904	$7,146
8	$6,221	$6,736	$7,008	$7,289
9	$6,221	$6,804	$7,113	$7,435
10	$6,221	$6,872	$7,220	$7,583
11	$6,221	$6,941	$7,328	$7,735
12	$6,221	$7,010	$7,438	$7,890
13	$6,221	$7,080	$7,550	$8,048
14	$6,221	$7,151	$7,663	$8,208
15	$6,221	$7,222	$7,778	$8,373
16	$6,221	$7,295	$7,894	$8,540
17	$6,221	$7,368	$8,013	$8,711
18	$6,221	$7,441	$8,133	$8,885

	0.00%	1.00%	1.50%	2.00%
Total Income	$111,978	$123,244	$129,376	$135,870
Percent of Investment	112%	123%	129%	136%

If inflation was one percent, the total payout would be 123% and the annual income would increase from $6,221 to $7,441 in the final year. But, if the inflation adjustment was 2%, the total payout would jump to 136% of the initial investment of $100,000, growing to $8,885. Obviously, the income would be even greater if we assumed the inflation adjustment grew at a three percent rate. The point of this illustration is to show the stability of using a laddered income approach and the effect the inflation adjustment has on the annual income over an 18-year period.

Again, remember the 112% income contemplates the liquidation of the initial investment of $100,000. But, this is no different than a single premium, 18-year fixed annuity. The result would be the same. Compare this method to a 3-4% payout from an equity portfolio with sequence risk and market risk. Also, unlike an annuity which is locked in and cannot be liquidated, the TIPS can be liquidated at any time for the remaining balance in the portfolio with no surrender fee but a possible mark-to-market adjustment based on interest rate fluctuations. The TIPS liquidation feature gives you the ultimate in flexibility -- an inflation protected income plus the ability to exit any time you want, with no penalties other than a potential market adjustment.

Compare this flexibility to the problem with the various types of annuities, in which once the guaranteed-basis income spigot is turned on, you are no longer able to liquidate, which also means there is no inflation adjustment. The only way to maintain access to capital, is to accept risk. The income from the annuity is based on the internal performance of the underlying contractual promise to pay in the annuity, which is not a bad thing. It is just not comparable to the laddered TIPS approach.

Tool #2: Alternative Investments

The second tool in the WTRS tool box is an alternative investment to bonds or stocks. Why? Bonds offer a fixed interest return; however, their value varies depending on interest rate fluctuations. When interest rates rise, the liquidation value of the bonds decline, unless they are held to maturity. This risk is called mark-to-market.

We prefer using a First Trust Deed (FTD) mortgage. The value is stable, and income is fixed. In most cases, the income is higher than bonds. Although there are other choices, like income producing real estate, commodities, and even gold or silver, FTDs mirror the security and safety of bonds without the mark-to-

market risk. Like bonds, the value is fixed and liquidates at the loan maturity for full value. It is possible FTDs could default, so it is important to have a low loan-to-value ratio.

Think of the mortgage on your house. The lender is in first position to be paid if the borrower defaults on the loan. Failure of the borrower to bring the loan current within a prescribed timeframe would result in forfeiture of the property. The investor holding the first position would take possession of the property. A FTD is a mortgage in first position.

If you invest in a FTD, you hold a first position in the property and would take possession should a default occur. The terms of these mortgages generally range from six to eighteen months with an occasional option to renew. In the case of a default, if the property does not lose value, the lender will get all their principal back, plus some or all the interest. In some cases, the lender might make a slight profit. Defaults can and do happen. They are inconvenient, but default is a manageable risk.

There are other investment options besides FTDs. You can buy property outright. You can invest in a mutual fund specializing in real estate mortgages or in a Real Estate Investment Trust (REIT) – a mutual fund of properties, usually owned free and clear of any debt. Another option is to make a personal loan directly to the owner of a property in exchange for a security position. A FTD is similar to the latter method. The difference is whether you arrange the loan yourself, or you use a facilitator. Both provide the lender an opportunity to earn interest every month, while holding a security interest in the property should the borrower default.

FTDs can be pooled by a facilitator or can be individualized. If they are pooled, the investors share a proportional interest in a large portfolio of properties. If one property has problems, it has less of an impact on the interest in the ownership. However, there

is no control over the property in question. Investors are not on the title so they must rely on the facilitator to handle all the details to recover the investment. With an individualized interest, you as the lender, have a lien on a specific property. In the case of a foreclosure, you participate directly in the recovery. If the property was properly appraised, you should recover all your loan proceeds plus a proportionate share of any gain when it is sold at auction. Both methods are reasonable ways to invest in FTDs.

Assume you invest $100,000 in a FTD individualized program. as shown in **Figure 14**. The mortgage company who makes the transaction between the borrower and the lender, records the title in the lender's name. The mortgage company collects the interest from the borrower monthly and after deducting a 2% fee, pays the rest to the lender. Typically, this payment is an 8%-9% interest rate, which is established by contract when the loan is initiated. Rates vary by property and borrower, but once established, it is set for the term of the contract. It is important to note the capital remains in tact during the term of the investment.

Figure 14 - First Trust Deeds			
End of Year	Amount Invested	Income at 8.0%	Income at 9.0%
1	$100,000	$8,000	$9,000
2	$100,000	$8,000	$9,000
3	$100,000	$8,000	$9,000
4	$100,000	$8,000	$9,000
5	$100,000	$8,000	$9,000
6	$100,000	$8,000	$9,000
7	$100,000	$8,000	$9,000
8	$100,000	$8,000	$9,000
9	$100,000	$8,000	$9,000
10	$100,000	$8,000	$9,000
11	$100,000	$8,000	$9,000
12	$100,000	$8,000	$9,000
13	$100,000	$8,000	$9,000
14	$100,000	$8,000	$9,000
15	$100,000	$8,000	$9,000
16	$100,000	$8,000	$9,000
17	$100,000	$8,000	$9,000
18	$100,000	$8,000	$9,000
Total Income		$144,000	$162,000
Percent of Investment		144%	162%

Tool #3: An Equity Balanced Portfolio

The third tool in the tool box is a managed equity portfolio that fits your risk profile. When the first two buckets, LDIs and FTDs are full, we believe that an equity portfolio is an acceptable risk

for the remaining capital. The money is still liquid for emergency purposes but can be invested for long-term growth. Without the LDIs and FTDs, the investor needs to be more conservative to guard against sequence risk, which puts pressure on the portfolio to create sufficient income for life.

Again, for comparison purposes, both the S&P 500 index and a diversified, evidence-based balanced portfolio managed by WTA, using Dimensional Funds Advisors (DFA) are illustrated in

Figure 15 - Equity Portfolios				
Starting Investment: $100,000				
Calendar Year	S&P 500 Index	Amount Invested	DFA 60/40	Amount Invested
		$100,000		$100,000
2000	-9.1%	$90,895	5.7%	$105,669
2001	-11.9%	$80,092	4.8%	$110,713
2002	-22.1%	$62,390	-3.9%	$106,430
2003	28.7%	$80,290	33.7%	$142,258
2004	10.9%	$89,024	10.5%	$157,135
2005	4.9%	$93,397	6.6%	$167,507
2006	15.8%	$108,151	13.3%	$189,747
2007	5.5%	$114,094	4.3%	$197,937
2008	-37.0%	$71,883	-26.3%	$145,801
2009	26.5%	$90,905	24.9%	$182,141
2010	15.1%	$104,599	13.1%	$206,070
2011	2.1%	$106,809	-2.8%	$200,387
2012	16.0%	$123,901	12.5%	$225,342
2013	32.4%	$164,030	15.4%	$259,966
2014	13.7%	$186,485	3.1%	$268,062
2015	1.4%	$189,066	-2.3%	$261,803
2016	12.0%	$211,679	8.6%	$284,209
2017	21.8%	$257,895	13.4%	$322,407
Internal Rate of Return	5.7%		7.1%	

Note: *DFA Global Allocation 60/40 Portfolio Class I* DGSTX
60 bps annual management fee included in rate.

Figure 15. As mentioned before, the DFA portfolio[3] is an evidence-based portfolio using research from five different academic papers, for which the researchers received Nobel Prizes.

DFA has been providing investment opportunities to individual investors since 1992, but their track record and performance goes back into the 1980s when DFA established itself as an institutional asset manager. My relationship with DFA started in 1993, just after DFA first decided to offer their portfolio to individual investors through Registered Investment Advisors.

Compare DFA's historic Global Balanced Allocation fund returns from 2000-2017 to the S&P 500 performance over the same seventeen years. DFA, a fully diversified balanced portfolio with 40% in bonds, had an internal rate of return (IRR) of 7.10%. The S&P index, which is 100% stocks, had an IRR of 5.70% over the same period. Both the S&P index and the DFA Balanced portfolio were fully invested during the tech bubble of 2000 and the credit crisis of 2008. Referring to the discussion on sequence risk, the data shows how two significant down cycles impacted outcomes.

I have written several books and brochures about the DFA method. In summary, a DFA Balanced Portfolio is based on anomalies found in three basic market characteristics – size, relative price, and profitability – that have been determined through robust research using scientific hypothesis testing, and documented in the academic literature, dating back to the 1950s.

No investment strategy can deliver optimum results all the time. However, the DFA methodology we follow has provided excellent returns for many years. Most investors say they want an intellectual process that is evidence based. They want a strategy which is sensible, pervasive, persistent and robust. Investors also want cost efficiency. The DFA methodology meets all five criteria.

Figure 16 - Wealth Teams Retirement Solution

Starting Investment: $1,000,000

Year	Calendar Year	Income Distribution			Account Value				Combined Account Value
		LDI Income - Inflation at 1.5%	FTD Income at 9.0%	Total Income	LDI Capital	FTD Capital	DFA 60/40 Rate	Balanced DFA 60/40 Portfolio	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					$500,000	$300,000		$200,000	
1	2000	$31,105	$27,000	$58,105	$482,446	$300,000	5.7%	$211,339	$993,785
2	2001	$31,572	$27,000	$58,572	$463,906	$300,000	4.8%	$221,426	$985,332
3	2002	$32,045	$27,000	$59,045	$444,342	$300,000	-3.9%	$212,861	$957,202
4	2003	$32,526	$27,000	$59,526	$423,718	$300,000	33.7%	$284,516	$1,008,233
5	2004	$33,014	$27,000	$60,014	$401,996	$300,000	10.5%	$314,270	$1,016,266
6	2005	$33,509	$27,000	$60,509	$379,136	$300,000	6.6%	$335,013	$1,014,149
7	2006	$34,012	$27,000	$61,012	$355,099	$300,000	13.3%	$379,494	$1,034,593
8	2007	$34,522	$27,000	$61,522	$329,842	$300,000	4.3%	$395,873	$1,025,716
9	2008	$35,040	$27,000	$62,040	$303,323	$300,000	-26.3%	$291,602	$894,925
10	2009	$35,565	$27,000	$62,565	$275,496	$300,000	24.9%	$364,281	$939,778
11	2010	$36,099	$27,000	$63,099	$246,316	$300,000	13.1%	$412,139	$958,456
12	2011	$36,640	$27,000	$63,640	$215,736	$300,000	-2.8%	$400,775	$916,511
13	2012	$37,190	$27,000	$64,190	$183,707	$300,000	12.5%	$450,685	$934,391
14	2013	$37,748	$27,000	$64,748	$150,177	$300,000	15.4%	$519,932	$970,110
15	2014	$38,314	$27,000	$65,314	$115,097	$300,000	3.1%	$536,124	$951,221
16	2015	$38,888	$27,000	$65,888	$78,411	$300,000	-2.3%	$523,605	$902,016
17	2016	$39,472	$27,000	$66,472	$40,064	$300,000	8.6%	$568,418	$908,482
18	2017	$40,064	$27,000	$67,064	$0	$300,000	13.4%	$644,815	$944,815
	Totals	$637,322	$486,000	$1,123,322	$0	$300,000		$644,815	$944,815

Note: *DFA Global Allocation 60/40 Portfolio Class I* DGSTX
60 bps annual management fee included in rate.

Combining the Three Tools

The Wealth Teams retirement strategy, **The Wealth Teams Retirement Solution (WTRS)** combines all three tools discussed above into one solution. By utilizing Liability-Driven Investing, First Trust Deeds, and a Balanced DFA Portfolio, studies show

this methodology has a high probability of answering the key questions which concern most retirees –

1. How do I protect income against longevity risk?
2. How do I protect against the inflation risk?
3. How do I protect my income from sequence risk?
4. How do I protect against market risk?
5. How do I sustain a stable income for life?

Assume our retiree has $1,000,000 of investible capital. The WTRS would suggest putting $500,000 in the TIPS (LDI) program, $300,000 in First Trust Deeds (FTD) and $200,000 in a Balanced Portfolio (BP). Notice in **s**, the total income in the first year is $58,105 (Column 3). The annual inflation assumption is 1.5%, which increases the LDI income from $31,105 to $40,064 over the 18-year payout period. Notice the income is projected to increase annually to $67,064 in year eighteen when combined with the income from the FTD. Meanwhile, based on the historic returns of the DFA Balanced 60/40 Fund (Column 6), we invested the remaining $200,000 in the DFA balanced portfolio account. Using the history of the DFA Global funding dating back to 2000, the DFA account would have grown to $644,815 at the end of eighteen years. Add that to the $300,000 in the First Trust Deeds, the total account value illustrated at the end of eighteen years would be $944,815 (Column 8). This result is only $55,185 less than the original account investment eighteen years earlier after producing over $1,123,322 of income over the eighteen years.

Comparing the Wealth Teams Retirement Solution ™

How does this strategy compare to the other options when considering four of the key questions? The next chart compares key elements of the Earnings Income Method (EIM), the Distribution Income Method (DIM) with the WTRSolution.

Question	EIM	DIM	WTRSolution
1. How do I protect my income against longevity?	If the capital is invested conservatively, it is possible it would last throughout retirement	Depending upon assumptions and performance, an annuity income program will run out of money at some future age.	The WTRS is designed to provide a set income for 15 years. At the end of 15 years, the capital account is used to create a new income period.
2. What do I do about inflation?	Inflation is only offset if the portfolio earns more than the stated withdrawal.	If inflation causes the need for additional income, it may cause the capital account to be depleted sooner.	TIPS are inflation adjusted each year by the government.
3. How do I protect my income from sequence risk?	The more funds set aside into a separate account, the lower the investment risk will likely be.	If enough capital is placed in a fixed account, sequence risk is not likely to be a problem.	Income is not dependent upon the stock market. The capital account is managed to weather sequence risk.
4. How do I sustain a stable income for life?	Income is totally dependent upon return. If the expected return is reached, income can be relatively stable.	Using a fixed account and liquidating capital, creates a stable income for a stated period.	The Income account is a combination of trust deed interest and bonds maturing each month. Income is expected to be very stable.

Figure 17 - Comparing Three Income Methods Using the S&P and DFA

Year	Calendar Year	S&P 500	Earning Income Method		Distribution Income Method		DFA 60/40	WTRS Method	
			Income Distribution at 6.0%	S&P 500 Account Value	Income Distribution $60,000	S&P 500 Account Value		WTRS Income Distribution	WTRS Account Value
				$1,000,000	$60,000	$1,000,000			$1,000,000
1	2000	-9.1%	$60,000	$854,410	$60,000	$854,410	5.7%	$58,105	$993,785
2	2001	-11.9%	$51,265	$707,695	$60,000	$699,998	4.8%	$58,572	$985,332
3	2002	-22.1%	$42,462	$518,204	$60,000	$498,546	-3.9%	$59,045	$957,202
4	2003	28.7%	$31,092	$626,863	$60,000	$564,364	33.7%	$59,526	$1,008,233
5	2004	10.9%	$37,612	$653,352	$60,000	$559,230	10.5%	$60,014	$1,016,266
6	2005	4.9%	$39,201	$644,319	$60,000	$523,753	6.6%	$60,509	$1,014,149
7	2006	15.8%	$38,659	$701,332	$60,000	$537,009	13.3%	$61,012	$1,034,593
8	2007	5.5%	$42,080	$695,482	$60,000	$503,224	4.3%	$61,522	$1,025,716
9	2008	-37.0%	$41,729	$411,884	$60,000	$279,244	-26.3%	$62,040	$894,925
10	2009	26.5%	$24,713	$489,630	$60,000	$277,264	24.9%	$62,565	$939,778
11	2010	15.1%	$29,378	$529,583	$60,000	$249,992	13.1%	$63,099	$958,456
12	2011	2.1%	$31,775	$508,325	$60,000	$194,006	-2.8%	$63,640	$916,511
13	2012	16.0%	$30,499	$554,291	$60,000	$155,451	12.5%	$64,190	$934,391
14	2013	32.4%	$33,257	$689,785	$60,000	$126,365	15.4%	$64,748	$970,110
15	2014	13.7%	$41,387	$737,161	$60,000	$75,450	3.1%	$65,314	$951,221
16	2015	1.4%	$44,230	$702,519	$15,664	$15,664	-2.3%	$65,888	$902,016
17	2016	12.0%	$42,151	$739,353	$0	$0	8.6%	$66,472	$908,482
18	2017	21.8%	$44,361	$846,729	$0	$0	13.4%	$67,064	$944,815
	Totals		$705,851	$846,729	$975,664	$0		$1,123,322	$944,815

Notes: WTRS Account: DFA Global Allocation 60/40   LDI Account: Inflation at 1.5%
60 bps annual management fee.   FTD Account: Earnings at 9.0%
S&P 500 Accounts: No management fee

Figures 17 and 18 compare the projected 18-year income and capital account for each of the three methods – EIM, DIM, and WTRS. The Figure 17 compares the EIM and DIM to WTRS DFA Global Balanced Portfolio returns using the historic 2000-2017 returns for all three methods. These are only illustrations based on historic assumptions. There is no guarantee these results would occur in the future. However, the model shows the WTRS income is higher and the capital account in year eighteen is approximately equal to the beginning capital for the WTRS in the first year. Clearly, EIM and DIM methods have the potential for significant erosion of capital. All the accounts started with $1,000,000 invested in the Capital Account, but all accounts ended quite differently.

The EIM method distributes 6% of the account value at the beginning of each year. The DIM method distributes a flat $60,000 at the beginning of each year. The WTRS distributes income from the TIPS and the Trust Deeds at the beginning of each year based on the historic returns.

In all three models, the retiree receives $60,000 income every year, however the capital accounts at the end of the period are remarkably different. This difference speaks to the risk of longevity. At age seventy, the retiree may feel confident that taking $60,000 annually from their investment account is an acceptable risk, but if the market does not cooperate, it could leave them in a financially precarious position in the case of a market downturn.

Figure 18 compares all three methods, but instead of using the S&P 500 returns for the EIM and DIM, we substituted the 2000-2017 DFA Global Balance Portfolio historic returns net of all fees. The EIM and DIM strategies produced a better result using the DFA returns than using the non-diversified S&P returns over this same period. In fact, both strategies had more capital at the end of eighteen years than the WTRS.

Figure 18 - Comparing Three Income Methods Using DFA Returns

Year	Calendar Year	DFA 60/40	Earning Income Method		Distribution Income Method		DFA 60/40	WTRS Method	
			Income Distribution at 6.0%	DFA 60/40 Account Value	Income Distribution $60,000	DFA 60/40 Account Value		WTRS Income Distribution	WTRS Account Value
				$1,000,000		$1,000,000			$1,000,000
1	2000	5.7%	$60,000	$993,292	$60,000	$993,292	5.7%	$58,105	$993,785
2	2001	4.8%	$59,598	$978,260	$60,000	$977,838	4.8%	$58,572	$985,332
3	2002	-3.9%	$58,696	$883,993	$60,000	$882,334	-3.9%	$59,045	$957,202
4	2003	33.7%	$53,040	$1,110,676	$60,000	$1,099,155	33.7%	$59,526	$1,008,233
5	2004	10.5%	$66,641	$1,153,220	$60,000	$1,147,829	10.5%	$60,014	$1,016,266
6	2005	6.6%	$69,193	$1,155,577	$60,000	$1,159,630	6.6%	$60,509	$1,014,149
7	2006	13.3%	$69,335	$1,230,465	$60,000	$1,245,630	13.3%	$61,012	$1,034,593
8	2007	4.3%	$73,828	$1,206,560	$60,000	$1,236,805	4.3%	$61,522	$1,025,716
9	2008	-26.3%	$72,394	$835,433	$60,000	$866,840	-26.3%	$62,040	$894,925
10	2009	24.9%	$50,126	$981,037	$60,000	$1,007,937	24.9%	$62,565	$939,778
11	2010	13.1%	$58,862	$1,043,327	$60,000	$1,072,475	13.1%	$63,099	$958,456
12	2011	-2.8%	$62,600	$953,685	$60,000	$984,556	-2.8%	$63,640	$916,511
13	2012	12.5%	$57,221	$1,008,103	$60,000	$1,039,694	12.5%	$64,190	$934,391
14	2013	15.4%	$60,486	$1,093,218	$60,000	$1,130,224	15.4%	$64,748	$970,110
15	2014	3.1%	$65,593	$1,059,627	$60,000	$1,103,553	3.1%	$65,314	$951,221
16	2015	-2.3%	$63,578	$972,792	$60,000	$1,019,185	-2.3%	$65,888	$902,016
17	2016	8.6%	$58,367	$992,684	$60,000	$1,041,277	8.6%	$66,472	$908,482
18	2017	13.4%	$59,561	$1,058,538	$60,000	$1,113,163	13.4%	$67,064	$944,815
		Totals	$1,119,117	$1,058,538	$1,080,000	$1,113,163		$1,123,322	$944,815

Assumptions: Equity Account: DFA Global Allocation 60/40 Portfolio Class I - DGSTX 60 bps annual management fee.

LDI Account: Inflation at 1.5%
FTD Account: Earnings at 9.0%

What is the

difference? The DFA Global Balanced portfolio, which is balanced between stock and bonds, is the difference. Only 60% of the portfolio is invested in stocks and the other 40% is in fixed investments. It provided a more stable investment platform than the more volatile S&P 500, which is 100% invested in stocks.

The question a retiree must answer is, how much risk are they willing to buy? Generally, the greater the risk, the more return can be expected. The more conservative the investor, taking less risk, will most likely see less in return. The trade-off can translate into lower income in retirement and less spending power caused by the hidden risk of inflation, powerful factors to consider.

Of course, the ultimate outcome in all cases is dependent upon market performance but As a Wealth Coach, I have found the intangible factors are equally as important as the economic ones. So, it is important that a thorough and honest discussion of the options be part of the decision process.

The WTRS answers the five key questions – inflation, longevity, sequence risk, market risk, and sustainable income – and helps to find the balance between risk and return. The WTRS can give more peace of mind and confidence that is not likely to be found at age 85 if the portfolio has been ravaged by market volatility.

Summary

The Wealth Teams Retirement Solution™ is unique. As of this writing, I have not seen any publications suggesting the use of laddered bonds, first trust deeds, and a balanced investment portfolio combined in one strategy. It is my hope this analysis will provide you with more insight and understanding of how we structure retirement income and why we structure it this way.

How should a retiree address these four critical questions? The unfortunate aspect of wealth planning is that there are no guarantees. It is all done based on assumptions and probabilities. If we knew for sure what the future holds, decision-making would be much simpler. Hopefully, the tools I have discussed in this booklet will help you understand your options. The strategy is a hedge against the discomfort of the unknown and is meant to bring peace of mind about your financial future.

Almost all the professional athletes have a team of coaches. They have a strength coach, a flexibility coach, a dietician, a technique coach, among others. Shouldn't investors have a coach as well? We want to be your Wealth Coach. We look forward to having this discussion with you.

– Dr. Guy E. Baker

Endnotes

1. Benjamin Graham, "*The Intelligent Investor,*" Harper Collins, Warren Buffet from Preface.
2. S&P 500 annual returns from the DFA Returns 2 program. *DFA Global Allocation 60/40 Portfolio Class I* DGSTX annual returns provided by DFA Returns 2 program. 60 bps annual management fee included in rate.

What do you do when the Numbers don't add up?

Half of all Baby Boomers will derive most of their income from Social Security

The Problem for those who have assets to invest:
- How do you protect the assets you have?
- How do you generate the largest income possible with acceptable risk?
- How do you avoid depleting assets before death?

The Answer – SIMPLE RETIREMENT MATH
- Learn the risks of trusting the wrong advisor with the wrong strategy?
- Discover the latest income distribution strategies for making the assets you have last?
- Increase the probability of sustained and consistent income in retirement?

Guy Baker, PhD, MBA, MSFS, CFP, ChFC is internationally known for his expertise and financial skills. A prolific writer and speaker, he was listed among the top 250 Registered Investment Advisors in the United States by Worth Magazine. He also was inducted by the National Association of Estate Planning Councils into their Hall of Fame for his Distinguished Service. He has served President of the prestigious Million Dollar Round Table, an association of over 62,000 advisors in 75 countries. He is only one of twenty Financial Advisors to maintain membership in the TOP OF THE TABLE, the top 4% of MDRT members, for more than forty years.

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