MANAGE MARKETS NOT STOCKS

By Guy Baker, MBA, PhD

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Wealth Teams Solutions

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CAN YOU ANSWER THESE IMPORTANT QUESTIONS?

If not, reading this booklet may be beneficial to your wealth.

- Every Portfolio Buys Risk. Not all Risk is Equal. Do You Know How Much Risk and What Type Of Risk You Are Buying?
- Do You Have An Investment Policy Statement? Do You Know Why An Investment Policy Statement Is Important?
- Based On Your Investment Policy Statement Are You Buying More Risk Than You Need To For The Return You Are Receiving?
- Do You Know In Which Markets You Are Invested?
- Do You Know How Sub-Markets Can Enhance Investment Performance?
- Do You Know How The Largest Institutional Investors Manage Their Portfolios?

These questions are key to surviving and thriving in the Stock market. Based on sound research, Wealth Teams Solutions can bring you sophisticated answers you can afford.

Reading this booklet will help you understand some very important elements every investor should consider when they invest their “safe” money for long periods of time.

MANAGE MARKETS NOT STOCKS

A short novel about Grocery Stores and Christmas Parties.

This essay was synthesized and updated from Guy's very popular and successful book Investment Alchemy. Not much has changed since the book was written. But there has been additional research and thinking developed to enhance the investment data described in Investment Alchemy.

More important, since 1993, when Guy began using modern portfolio theory, there have been some major market upheavals – both up and down. The most significant movement was the steep decline of the stock market in 2008 and 2009. This was preceded by a large drop from 2000 to 2002. In both cases these drops were followed by major rebounds and then several declines followed by corrections. Through all of this, the model portfolios have done extremely well.

"All the time and effort that people devote to picking the right fund, finding the hot hand, the great manager, have in most cases led to no advantage."

Peter Lynch

Why?

Is it because we are smarter than the thousands of stock pickers scouring the financial sectors for good buys every day? Is it because they are better able to anticipate the market movements and head for the hills when they see trouble coming? Or is it because they have been disciplined, strategic stock pickers using a proven methodology backed by a good research team?

Actually, it is none of these. We have merely invested in markets using the basic teachings of Modern Portfolio Theory (which received the Nobel Prize in 1990). This exhaustive research is and has been the foundation for institutional investing throughout the world for several decades. But it has only become readily available for individual clients as a result of the personal computer becoming as powerful as the Supercomputers. Now, smaller investors can take

"Most investors, both institutional and individual, will find that the best way to own common stocks is through an index fund that charges minimal fees."

Warren Buffet

advantage of what smart money has known for more than 40 years. Markets work, stocks don't.

This booklet was written to summarize what we have learned. Hopefully, you will be able to find value in reading this and perhaps find a solution to the age old problem that plagues most investors–

Asked where he invests his money – "I invest in index funds."

Alan Greenspan

"*Where should I put my safe money?*"

A REAL LIFE STORY

Not too long ago, my friend and client John came to me and said, "Guy, why should I invest with you when I have been averaging 20% for the last 5 years?" In questioning him and discovering his investment methodology, I learned he was exclusively purchasing energy stocks and trading them regularly, some every day. He cared very little about long term volatility. He was only interested in finding the stocks he could catch on the upswing and selling the ones that were out of favor. He subscribed to a number of newsletters and followed their recommendations with discipline. He was fascinated by the process.

I told John if he loved what he was doing that much and felt comfortable in those markets, he should continue doing it. I also told him I didn't think Modern Portfolio Theory (MPT) was suited to his risk temperament nor could it satisfy his fascination with the market. But I also told him that if he ever felt like he wanted to take some of his money "off the table", then he should talk to us. You see, we at Wealth Teams are all about safe money. Our approach is for people who want more return than risk, not the other way around.

Most people have no idea how much risk they have purchased in their portfolio. To successfully invest in the stock market over long periods of time, you have to buy risk. Most rely on someone else's judgment, someone they trust, to pick their portfolio for them with the expectation their portfolio will grow over time and meet their long term investment objectives. But is this a wise choice?

It certainly can be, if the portfolio truly reflects the appropriate relationship between risk and reward. But what if the trust is misplaced? What if you are assuming skills and research that is not really there? It is a fact that few brokers are stock analysts. They are instead, marketers for their research team in New York. As a result, they rarely are the ones who construct your portfolio. Their team is isolated and aloof. Money to them is a game and they are trying to win – sometimes at any cost – to you. Does your portfolio properly reflect the optimum relationship between risk and return? Who would know? And how would you ever find out? Well, let's look closer at the relationship between risk and return.

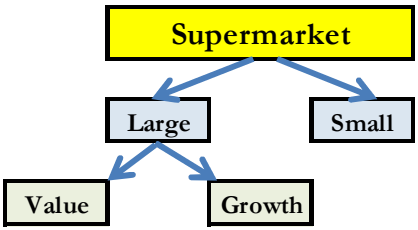
WHAT IS A MARKET?

To understand risk and return, it is important to understand the nature of the stock market. The stock market is really made up of many submarkets – markets that have characteristics unique to the size and value of the underlying corporations in that market.

Assume you went into your favorite supermarket to shop for food. Ralph's, Trader Joe's, Von's, or Albertson's - They too, are organized by what we will call submarkets. If you look at the perimeter of the market, in no particular order – you will likely find on the left the bakery. Next to the bakery is often the meat market, the butcher. Then come the packaged cheeses and sandwich meats, the eggs, the milk and other dairy products. On the other side of the super market is all the produce, the fresh vegetables and fruit. In the middle aisles we will find the paper goods, the canned goods, the chips, the condiments and so on. Little markets within the big market – this is the supermarket.

The stock market is exactly the same way. When you open up the Wall Street Journal and turn to the stock prices, and see stock exchanges. This is a supermarket of corporations. What is not readily evident however, are the submarkets within the supermarket. You have to go to specialty shops to find the submarkets. What are these specialty shops? They are mutual funds that only invest in these defined submarkets – ETFs, Index Funds are examples of two specialty shops.

When you enter the Supermarket, you probably have a shopping list. On the list are the many different foods you want to buy. Sometime these lists are often organized by planned meals for the week, nutrition or other subjective criteria. The goal is probably a balanced meal and it dictates how you might approach the task of picking various foods from the different sub markets.



In much the same way, shopping for investments in the submarkets requires a criteria as well. Investment objectives are usually packaged around risk tolerance and a long term retirement income goal or a specified amount of accumulated capital. Regardless of the goal, a balanced diet is the safest way to eat and the safest way to invest. A balanced portfolio is referred to as asset allocation – building a portfolio that can withstand the ups and downs of a volatile market.

TWO PRIMARY SUBMARKETS

There are many ways to define the submarkets. One of the most common ways is by the size of the company – called capitalization. Capitalization is calculated by multiplying the number of outstanding shares (those shares authorized and issued – often in the hands of investors) by the daily share price. So for instance, when I wrote this booklet, Microsoft had 11.5 billion shares held by investors. The capitalization or "cap value" of Microsoft was around $350 billion. Capitalization changes every day because the price of the stock fluctuates. Microsoft would be considered a large cap stock because the capitalization value ranks among the top 50% of all publicly traded companies. Companies ranked in the bottom 50% would be considered small cap stocks. These two markets have differing characteristics and have divergent historical returns and volatility.

There are approximately 11,000 publicly traded companies traded in the supermarket of stocks. Most of the individual stock portfolios we see have at most, one hundred individual stocks in them. That is not much diversification, is it? More important, how were they selected?

What were the criteria? How many are from each of the submarkets. In all my years of advising clients, it is rare for anyone to be able to tell me how or why they have the stocks they own.

When you look inside a mutual fund, you are likely to see several interesting things. First, they usually only own a few stocks. Now an index fund might own 500 stocks (like the S&P 500). But most of the highly touted, professionally managed, name brand funds only own 75-150 stocks. The next thing you will discover is they do not buy and hold. According to Morningstar, the average turnover for a professionally managed fund is around 75%. That means if you invest $100,000 in the fund on Jan 1, $75,000 of value will be bought and sold and re-bought during the year. The managers are trying to find the right stocks and hold them for the right amount of time. The third thing is the amount of hidden fees you pay without knowing how much or how often. Every time the fund buys and sells part of the portfolio, there are trading costs. These costs are incurred on both sides of the transaction.

Besides capitalization, there is another way to classify stocks. This category delineates stocks by the ratio of the assets to the fair market value - commonly referred to as Value and Growth stocks.

Let's say we are going to shut down a corporation. We would be required to liquidate all of the assets. If the liquidation value of the company is close to the capitalization value – it is said to be a value company. However, if the book value is just a small fraction of the capitalization value, then the company is considered to be a growth company. Historically, the large value market has outperformed large growth market by a factor of five.

MANAGING MARKETS

One of the important aspects of markets is how predictable they are. Each market has unique characteristics which, when measured over long time frames will result in predictable returns.

Chart A is a list of various submarkets and the returns since 1927 (marked in yellow). If you were to look at the total returns – 1927-2013, 1928-2013, 1929-2013 all the way to the last ten years – you would see the returns have been consistently similar.

Now look at how consistent the returns have been in rolling 10 year brackets. Some ups and downs – but even in 10 year time frames, these submarkets have delivered value.

Past is never prologue in a market. But is there any reason to thi nk these markets will make a huge about face and begin to perform differently in the future than they have historically?

Chart A - Annual Returns in Rolling 10 Year Periods

	1927 to 2013	1934 to 1943	1944 to 1953	1954 to 1963	1964 to 1973	1974 to 1983	1984 to 1993	1994 to 2003	2004 to 2013
Total Stock Market	10.1%	8.0%	13.7%	15.4%	6.0%	12.2%	14.5%	10.8%	8.1%
Large Cap Growth	9.5%	7.1%	12.5%	15.1%	6.5%	8.4%	14.6%	9.4%	8.6%
Large Cap Value	11.3%	7.7%	17.5%	17.4%	9.9%	17.6%	15.9%	9.9%	7.7%
Small Cap Growth	9.3%	13.2%	11.0%	11.8%	3.3%	20.7%	6.8%	6.8%	8.3%
Small Cap Value	14.3%	15.2%	17.1%	18.1%	10.2%	28.2%	14.6%	16.1%	10.2%
International						13.5%	17.5%	5.7%	5.5%

Source: Fama/French Research Index es obtained from DFA Returns Program, 2013.

The Power Of Submarkets

Before we look at how to utilize these markets to your advantage, let's look closer at the historical performance of the markets dating back to 1927. Let's suppose you invested $1 in the large cap growth market in 1927. Today (end of 2013) that $1 would be worth $2,512. If you had invested $10,000 – your portfolio would be worth over $25 million dollars. We would all take that right now, wouldn't we? But if you had invested the $1 in the large cap value market, it would have been worth $9,597. Your $100,000 would have been worth over $95,000,000!

Large Cap Growth	Large Cap Value	Small Cap Growth	Small Cap Value
$2,512	$9,597	$2,172	?

What if you had invested in the small cap growth market in 1927? Your $1 would be worth about the same as the large cap growth market - $2,172.. Not much difference in return. But there is a lot of difference in variance. We'll look at what that means in a bit. But what if you had invested your dollar in the small cap value market in 1927? What would that have been worth. Turn the page upside down to see the answer.

Amazing, huh? What can we conclude from this documented information? The research shows that every portfolio needs to have some value element and some small cap element in it to take full advantage of the wide range of opportunity in the submarkets.

So, are markets a good place to invest your safe capital. Based on past experience, yes they are! But if you believe the markets will continue to follow their historic pattern, then which market should you invest in? And how much?

INVESTMENT POLICY STATEMENT

This is why every investor should have a written Investment Policy Statement (IPS). An IPS commits to writing your investment objectives and philosophy. It defines your non negotiables – how much risk you are willing to take and what markets you are willing to have in your portfolio. Basically, it is a clear blueprint for your financial advisor to use when they help you build and monitor your portfolio.

Using a risk tolerance assessment tool, your advisor helps you determine how much risk you are willing to take. If you tend to be a more aggressive investor, then your advisor should have something in writing that shows you are willing to take a higher level of risk. You might have fewer bonds and more stocks in your portfolio, If you are more conservative, then you might have more bonds. But the point is, this should be in writing as well. How is your advisor going to help you build and maintain the best portfolio if they don't have this type of guidance?

Part of the process for writing an accurate IPS is to pick the appropriate submarkets (also called asset classes) and determine the correct amount of variance you are willing to endure (based on historical performance.) Your investment policy statement should

Answer: $98,913

detail these risk elements for you. It needs to specifically define the amount of risk you are willing to accept and in which asset classes.

What is Risk?

Risk is a misunderstood term. Many people think risk just means the chance of losing your money. But over the years, we know markets have gone up and up. So if you invested in markets, you would never have lost money. The people who lost money were the ones who tried to "beat" the market. They zigged when they should have zagged. Risk really means volatility. And while many people do think risk means the possibility of losing money, risk really relates only to when you want to exit the market.

Markets go up and they go down. You can avoid risk by putting your money under your mattress. But then you face a different kind of risk – called inflation. If you want more return in your portfolio, then you have to accept more volatility – you have to take more risk. This may seem intuitively obvious. But Miller, Markowitz and Sharpe, the researchers, shared the Nobel prize because they proved the relationship between risk and reward.

This research is referred to as Modern Portfolio Theory. And while their research proved the relationship between risk and reward, they further proved not all risk is equal. Meaning, there are various ways to manage risk within a portfolio and that how you combine market risk contributes to your overall return. Many investors accept more risk than their expected portfolio return requires. This is an important aspect of managing risk. Knowing the risk and managing the elements of risk satisfactorily.

SO HOW DO YOU MEASURE VARIANCE?

Volatility is measured by the amount of variance you have in the portfolio. Every asset class has historic returns dating back 70 years or longer. The average return for each asset class is different. To understand the merits of this distinction, it is important to understand the difference between an average return and a time weighted return (called the IRR – Internal Rate of Return) .

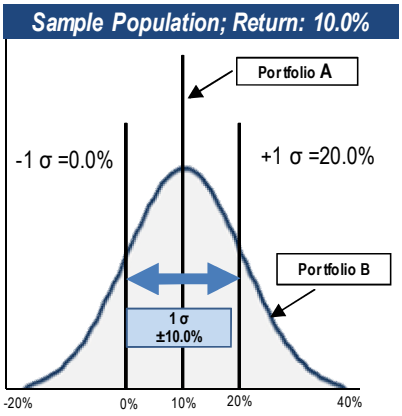
Look at Chart B. There are two portfolios – A and B. Mythical Portfolio A earns 10% every year. Obviously, unrealistic, but go with me on this. The average return for the 10 years illustrated is 10%. It has to be, since it earned 10% every year. There was no variance in this portfolio,

Now look at Portfolio B. The average is also 10%. But the returns bounce all around the average. There is variance in this portfolio. Most of the returns were either higher or lower than the 10% average. Variance is measured by a statistical method called standard deviation.

Sample Rates of Return Chart B

Year	Portfolio A	Portfolio B
1	10%	20%
2	10%	30%
3	10%	-10%
4	10%	-5%
5	10%	5%
6	10%	10%
7	10%	5%
8	10%	25%
9	10%	-20%
10	10%	40%
Average	**10%**	**10%**

Standard deviation (σ) measures the dispersion of occurrences (annual returns) around the mean (the average). One standard deviation from the mean is marked by 2/3rds of all the occurrences. Assume the standard deviation is 10%. This means 66 2/3% of all occurrences (all returns) are within 10% of the average – on either the high side (+20%) or the low side (0%). Since we know markets are chaotic and convulse. The knowledgeable investor would then expect the returns to fluctuate between 20% and 0% most of the time. But remember, one standard deviation only measures 2/3rds of the returns. There is an additional 1/6th above and 1/6th below this range.



As stated, markets do go up and markets do go down. Everyone who has ever invested in the stock market has experienced this drama. And when the market is down, they probably wonder if this is the only time in history when the market would never recover. But it always does. Even the NASDQ, which marked it's high in March of 2000, has

recovered much of the loss. It is about half way back to its all time high. But even though, markets have always gone up, this is not always true of individual stocks. Some stocks fall and never recover. When you buy a stock, you are gambling the management will never change course, the technology will never become obsolete. That there will never be a lawsuit and the buyers will always buy at an increasing rate. In other words, there are many factors that go into the success of an individual stock. And if you are wrong, the stock will go down, down, down and it could stay there for a long time.

Markets are not dependent on these factors. Markets ebb and flow on macro issues – the big issues – interest rates, budget surpluses and deficits, consumer confidence, war and shortages. But over time these tend to bounce back dramatically. Clearly, the amount of swing in your portfolio dictates the success of your invested capital. But what MPT proved is this: If you can minimize the variance around the average return for a market, you will have larger net returns over time, even if your portfolio highs are not as high as the market actually goes. Let's explore this more specifically because the effect of variance is an IMPORTANT concept.

WHY IS VARIANCE IMPORTANT?

Let's look again at these two portfolios from Chart B. Portfolio A earned 10% every year for 10 years. No variance whatsoever. The average is 10%. Portfolio B had significant variance around the same average 10%. The average return is one measure of performance, but it is NOT the only measure and may not be the true measure.

A more advanced measure of return that is more important than the average – is the time weighted return – this is called the internal rate of return (IRR). It measures how the invested capital did each and every year. Here is a simple example. Suppose a portfolio over the next two years, goes up 10% and then falls 10%. The average is 0%. But a $1 is ultimately worth only $.99. (It went from $1 to $1.10 and then dropped by $.11 to $0.99). So the average of 0% is misleading because it suggests no change occurred.

A different portfolio went up 50% and fell 50%. Using our dollar illustration, it would increase to $1.50 and then decline 50% to $.75. The average would be exactly the same 0%, just like the 10%

example. But the dollar is now only worth $.75. Obviously, 0% return cannot mean it earned nothing. This portfolio lost 25% of its total value.

This is why the IRR – the internal rate of return – was developed. It measures what happened by describing the return, year by year. For the 50% portfolio the IRR would be -13.4%. Whereas the IRR for the 10% portfolio is -0.5%. The IRR is much more descriptive of what happened to both portfolios. So please note, both portfolios had an average rate of return of 0%, yet the IRRs were entirely different.

Here is another important point – the 50% portfolio has to earn 33% the next year to get back to even. The 10% portfolio only had to earn 1% to get back to even. Conclusion: the amount of loss recovery is more critical to the success of the portfolio than the amount of market growth.

Let's assume the 50% portfolio rebounds 50% in the 3rd year. If you had originally invested $100,000, it would now be worth $112,000. The 10% portfolio only had to go up 14% to accomplish the same thing. If it had gone up 25% (half the return in 50% portfolio), the value would have been $123,750. So remember this - it is more important to protect the portfolio from wide fluctuations on the downside than it is to participate in the full recovery on the upside.

Let's now apply this principle to the portfolios in Chart B. Even though our common sense tells us that if you average 10% in both portfolios A and B, your end result should be the same, we now know this can NOT BE TRUE. By applying what we just studied, we know the IRRs can be significantly different. The only way to measure the effect of the variance is to take time into consideration. If we invested $100,000 in both portfolios - A and B. Portfolio A would be worth $259,000 at the end of 10 years. Portfolio B would only be worth $226,000. Same average and same time frame. The IRR for A is 10% because there has been no variation in any year. The IRR for Portfolio B is 8.5% because of the ups and downs. This delta – the difference between the 10% IRR for A and the 8.5% for B is what I would call the "recovery factor." The more variance around the mean, the larger the recovery factor will need to be. The $32,000 decrease in Portfolio B is equivalent to earning 1.5% less every year, even though the average return was the same - 10%.

So if you really want to earn more – you have to vary less. That is the rule. Minimizing the variance minimizes the recovery factor.

HERE IS A MIND BENDER

Why is this really relevant? Let's say you are at a Christmas cocktail party and you see one of your least favorite people, Joe. He is always bragging about how well he does at everything. You hear the good – but not necessarily the ugly, it is always the best, the greatest, the most sensational – there is never a downside.

So later in the evening, Joe engages you in a discussion about his stock market investments. Bragging, he says, "Yeah, I got 25% last year."

You think to yourself, that's impressive because you only got 14%. Wonder what he is doing, that I am not doing? Joe has that effect on people.

You don't see Joe again until the next Christmas. It is the same story. And sure enough Joe got the same 25% and you actually did better – you got 16%. Now normally, this would be a sensational return. But Joe's 25% looks spectacular by comparison.

This goes on for 2 more years. Joe keeps getting 25% the next two years and you are bumping along, getting good returns – but they are not 25%. (Point of fact - the total market average IRR is 10.3% dating back to 1927. So 14%- 16% is sensational).

Average Rate of Return			
Year	JOE	YOU	YOU-2
1	25%	14%	14%
2	25%	16%	16%
3	25%	13%	13%
4	25%	18%	18%
5	-30%	4%	-2%

Christmas #5 is coming and you are getting real tired of hearing about Joe and his fabulous returns. You start thinking; maybe you have made a mistake with this submarket thing. Maybe MPT is not the best way to go and good old Joe really does knows what he is talking about. After all, 25% every year for the last 4 years is pretty good. This is the same mindset that existed prior to getting clobbered by the Internet Bubble bursting.

But year 5 was a different year. The market started rocking and rolling. The subprime market crumbled. The tech bubble burst. The

dollar fell, oil prices rose and the stock market convulsed. You ride it out and your portfolio doesn't do very well either. Your portfolio only earns 4%. The MPT cushion worked and while you didn't earn much, you didn't lose either. You know you are doing better than practically everyone else. Wonder what happened to good old Joe?

That next Christmas, Joe isn't quite as chipper as usual. He puts on the good face but finally admits his portfolio declined 30% and he is hoping it comes back soon. You are glad yours didn't go down 30%. But how did you fare over the last 5 years? He did earn 25% those other four years in a row. Let's look at the results.

	JOE	YOU	YOU-2
IRR	11.31%	12.89%	11.56%

Joe gets credit for 25% compounding each year for 4 year. We have no idea how much risk he is really taking to get this return. But if his portfolio is doing well, your portfolio is likely to be doing pretty well too. But the point is, what goes up, goes down. Markets fluctuate. The question is, what type of a safety net does Joe have under him when the markets convulse? In this case, a fall of 30% wipes out any advantage he might have had over you. Using our IRR lesson, you actually beat Joe over the five year period. If you look at the difference between YOU and YOU-2, we see the 5th year was either up 4% or down 2%. YOU got 12.89% (assumes the 5th year was up 4%). YOU-2 got 11.56% (if you were down 2%). You would have had to lose more than 3% in year 5, for Joe to have beaten you overall for the 5 years.

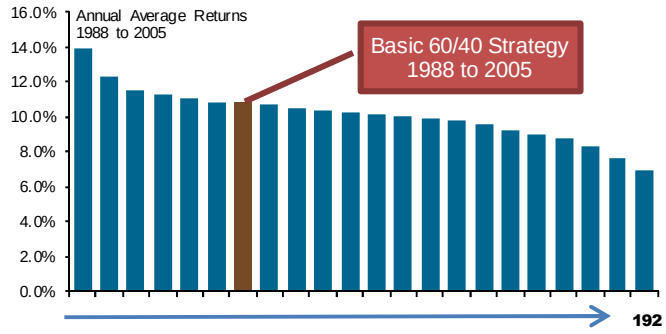
	JOE	YOU	YOU-2
Value at 4 years	$244,141	$176,329	$176,329
Value at end of 5th year	$170,898	$183,382	$172,802
Recovery Factor	20%	12%	19%
New Value	$205,388	$205,388	$205,388

But beating Joe is not the point. The point is that by controlling the variance, you are positioned for the ups in the markets better than if you had wide variance, like Joe. If you were only up 4% and the market bounced 12%, Joe would have to earn 20% to catch up with you. Again, controlling the variance makes a lot of difference. YOU-2 would have to earn 19% instead of 20% to break even.

HOW DOES MODERN PORTFOLIO PROTECT YOUR PORTFOLIO?

MPT is based on the principle of predictable markets. Look again at Chart A on page 7. It shows the rolling 10 year returns for six different submarkets. How you combine these markets together is the power of MPT. Look at Graph 1. This shows the IRR rankings for 192 of the largest pension plans in America from 1988 to 2005. The red bar shows how a portfolio comprised of just two index funds, are 60% S&P 500 Stock Index and 40% Barclays Aggregate Bond Index, would have fared by comparison.

Graph 1: 192 Corporate Pension Plans

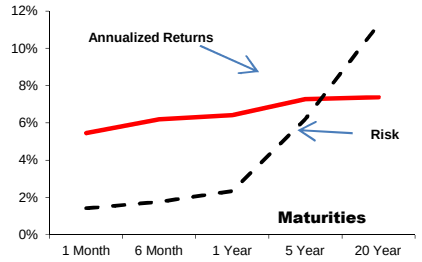


Notice the red bar is in about the 33rd percentile, meaning nearly 2/3rds of the pensions under-performed this simple 60/40 asset mix despite spending millions of dollars on management fees.

The intent of this section is to demonstrate the power of MPT research. By using additional data provided by Dimensional Fund Advisors, I want to show how to diversify the portfolio using a full range of submarkets. Remember how much the Small Cap Value index outperformed the other three major markets? Nearly tenfold. So what is the smart way to accomplish this objective?

DIVERSIFYING PORTFOLIOS USING DFA RESEARCH

Graph 2: Bond Performance



First, we must take advantage of research related to the bond market. DFA data shows there is no real benefit to owning bonds with maturities longer than 5 years. Notice in Graph 2 there is a steep elbow in the risk curve. This occurs after the 5th year. So to protect our portfolio from this unnecessary additional risk, we will replace the Barclays Aggregate Bond Index with a portfolio of 1 year Treasury Bonds. What did this do to our portfolio performance? It decreased the return from 9.67% to 9.01%. But it also reduced the risk from 11.68% to 10.95%. But this is OK because we are going to use the risk when we add small cap value and growth. Although small cap does have a higher variance than large cap, using the risk savings from shortening the maturities in the bond segment allows us to benefit from the higher returns.

	Compound Return	Standard Deviation
Portfolio 1	9.67%	11.68%
Portfolio 2	**9.01%**	**10.95%**

Remember, in every portfolio, you are always buying risk. So it is a matter of understanding the cost benefit of the risk you have purchased.

ADDING THE SIZE EFFECT

If we think back to what we learned earlier about submarkets, the small cap stocks have been a viable asset class for many years. The goal is to diversify our market based portfolio in such a way we can increase return and lower risk. This is done by reducing the S&P 500 Index from comprising 60% of the portfolio down to 30% and investing the other 30% in the small cap market. We will use the returns from the

	Compound Return	Standard Deviation
Portfolio 1	9.67%	11.68%
Portfolio 2	9.01%	10.95%
Portfolio 3	**9.91%**	**12.04%**

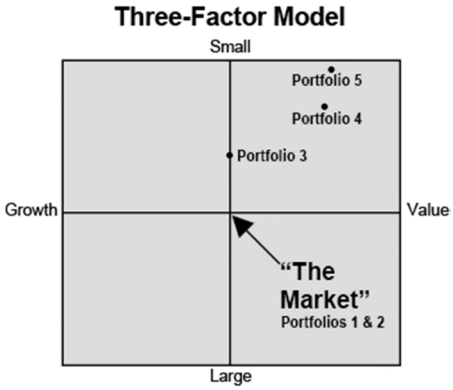
DFA US Small Cap Index. We'll call this Portfolio 3.

Here we see by adding the Small Cap fund to the portfolio, we add 0.90% of additional return. But notice that it increases the risk from 10.95% to 12.04%. But again, that is OK, because we will ultimately reduce the risk back to our benchmark.

ADDING THE VALUE EFFECT

After 1990, the one factor model, the core of the Nobel Prize research, was expanded to the three factor model. Not only could return be improved by adding small cap, it was also important to consider price. This is called the Book to Market effect – often referred to as Value.

Remember, it was the small cap value fund that grew from $1 to $98,913 from 1927 to 2013 and the large cap value went to $9,597.We see size matters – but so does price.



The crosshair "map" offers a more comprehensive analysis to pinpoint the degree of size and value exposure in the portfolio. This map plots the entire US equity universe in two dimensions, with size on the vertical axis (large vs. small) and Book to Market along the horizontal axis (growth vs. value). All portfolios can be described in terms of these two coordinates. By determining the relative relationship of value to growth and small to large, (the intersection of the crosshairs), it is possible to explain both risk and return for any portfolio.

An investor seeking above-market returns must take higher risks, which can be achieved by owning a greater-than-market proportion of small cap and value stocks. The upper right quadrant offers the target area for pursuing above-market portfolio returns—and the farther one travels to the upper right, the higher the small cap and value exposure.

Since all portfolios can be plotted on this map according to their risk factor loading for a given period in time, the resulting position reveals much about their investment strategy—or lack of one.

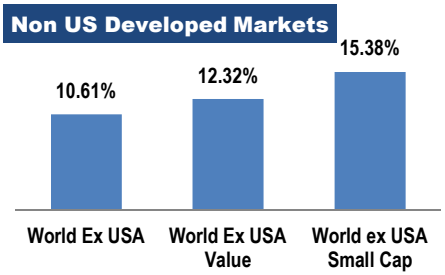
The fourth step in our portfolio development is to add the value effect to our model portfolio. This is done by adding small cap value and large cap value funds to the portfolio. We reduce the 60% S&P 500 holdings to 15%. Now 15% is in the Small Cap fund and 15% is in each of the Large and Small Cap value funds. What did this do to our returns and risk?

	Compound Return	Standard Deviation
Portfolio 1	9.67%	11.68%
Portfolio 2	9.01%	10.95%
Portfolio 3	9.91%	12.04%
Portfolio 4	10.40%	11.19%

The return has increased to 10.40%, a small increase of 0.49%, but notice that the risk has dropped by 0.85%. This results in broader diversification and allows the portfolio to take full advantage of the value effect.

ADDING INTERNATIONAL TO THE PORTFOLIO

Think back to our starting point. We began with a portfolio that was 40% Barclays Aggregate Bond index and 60% S&P 500 index. There was no attempt to diversify this portfolio with international stocks. But in the last 30 years, world wealth has dramatically shifted. In 1970, 70% of the world's wealth was attributed to assets in the United States. Today, 70% of the world's wealth is outside the United States. Does this mean the USA is worth less? I don't think so. What it means is that the world is dramatically growing in value as the world economies develop. A portfolio that does not include the international effect is missing out on a significant growth opportunity. But what is the best way to capture this.



Internal Rate of Return from 1975 to 2013
MSCI World Index (ex USA, net div.)

The most common approach to capturing the international market is to utilize the EAFE index. (The European, Asia &

Far East Index.) This index has delivered good value for many years. But as you might guess, the value effect has been even better. The Fama/French International Value Index has outperformed the EAFE over the last 20 years.

By diversifying the portfolio even more by adding the international value and international small cap asset classes to the portfolio we can improve return AND reduce risk. Why? Based on historic evidence, combining the international and domestic allocations actually increases return and decreases the risk for the entire portfolio.

	Compound Return	Standard Deviation
Portfolio 1	9.67%	11.68%
Portfolio 2	9.01%	10.95%
Portfolio 3	9.91%	12.04%
Portfolio 4	10.40%	11.19%
Portfolio 5	**10.58%**	**11.39%**

Source: DFA Returns Program
Period: 1973 to 2013, Annually rebalanced

Portfolio 5 now has a return of 10.58% even though the standard deviation increased by only 0.20%. Why? There is a correlation effect between domestic and international funds that can produce amazing results in a portfolio. Each of these asset classes alone have more risk than if you combine them together. Historically, the domestic and international asset classes have not moved in lock step. And because of this, they actually end up offsetting the volatility of the other. So by combining them you actually have less risk.

The net result is our "new" portfolio has increased the return from by 0.91%, a 9.45% increase, while the risk has been reduced by 0.29%, a 2.49% decrease.

WHERE DO WE GO FROM HERE?

As I said at the outset, there are three important things we think an investor who is looking for a safe place to invest their money needs/should do.

1. Learn about the new research and strategies associated with Modern Portfolio Theory and the research to reduce risk and improve returns.

2. Determine your investment policy. Is it in writing? Have you communicated what you want to your advisor? Are they following it?

3. Compare your current portfolio to your IPS. If you are buying more risk than you need in yours, what can you do to correct that problem?

OUR METHODOLOGY

The first thing we would have you do is a risk assessment to find out what type of an investor you are. It is likely you already know, but it is good to have it confirmed.

The next step is to take your existing portfolio and do a market analysis. How much of the research is being incorporated in your portfolio? Our risk assessment analysis (RAA) will tell you, based on historical data derived from Dimensional Fund Advisors research, exactly how much risk you are buying in your current portfolio. You may be content with your current position. Or you may feel you are paying too much for the risk compared to the expected return. Either way, you will have a benchmark to measure other strategies.

Our final step is to compare your portfolio to one of our Modern Portfolio Theory model portfolios. This will give you a viable alternative to consider for future investment decisions.

THE TENANTS OF OUR PHILOSOPHY

1. Investing in anything is risky. Whether it is under your mattress, in a bank, CDs or the stock market – there is risk associated with any investment. The question is "How Much?"

2. Every investor is constantly buying risk. There is a required amount of risk associated with every investment. So the question is – are you paying too much for the risk you are buying compared to the return you are expecting?

3. Markets go up and markets go down. Ask yourself, in ten years – do you think the S&P 500 will be higher, lower or about the same? Based on historical data, the markets have always gone

up. Stocks are much less predictable. Diversification of risk means having your eggs in many baskets not just one. A stock is one basket. When you buy a mutual fund of stocks, how many stocks are you really buying? The average is 120 stocks. That is not much diversification compared to markets which have 3,500 or more stocks.

4. The lower the fees, the higher your return. You never get something for nothing. But there are fees and there are FEES. Do you know what you paying for the investment advice you are receiving? Are there hidden fees, fees that you are being charged but are never reported or measured?

5. Buy and hold market positions, but rebalance often. Gambling is done in spurts and usually over the short run. Investing is for the long run. There is an optimum asset mix. That mix will change because of the ebb and flow of markets. By rebalancing, a portfolio is optimized on a regular basis.

6. Buy Low, Sell High – this is the essence of rebalancing. You sell off your profits in the up markets and buy into the down markets. Why? Because what goes up goes down and what goes down goes up. Rebalancing optimizes your ownership in this variance.

Wealth Teams Solutions has researched the investment strategies and discovered that Modern Portfolio Theory makes a lot of sense for long term investors who want to protect their safe capital.

- If you have capital you want to protect.
- If you have capital you do not want exposed to undue risk.
- If you have capital you would like to grow at a reasonable return over a long period of time …

… *then you should explore how MPT can work for you.*

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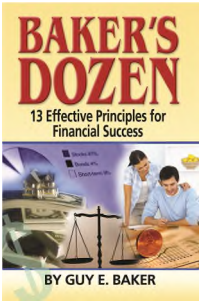
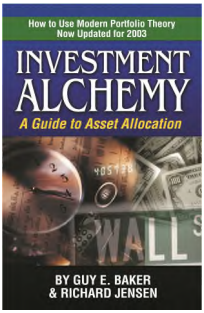
Great Educational Resources To Help You Better Manage Your Money

Baker's Dozen



Guy's 13 fundamental principles for financial independence are time-tested and economically sound principles. You will learn firsthand from Guy's own experience how he applied these principles to create wealth in his own life. This 188 page book highlights the value of securing your family's welfare before taking on the risk of higher yields.

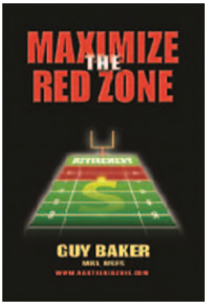


Investment Alchemy

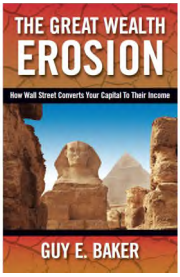
What investment strategies should an investor mix together to achieve long term financial success? *Investment Alchemy* describes a sensible, systematic method for shaping your investment decisions for the long term.

Written by Guy Baker and Rick Jensen, this 180 page book guides you through the components of Modern Portfolio Theory. Learn how to manage risk using concepts such as diversification, efficient frontier, efficient markets, asset allocation, and market timing.

Maximize The RED ZONE



Most business owners work a lifetime building an organization so they can convert it to income at retirement. But when is the best time to start the process? We call this the Red Zone. Guy has written this booklet to help jump start the thinking process for business owners and give them an understanding of the issues and opportunities available to help them score big in The Red Zone.



The Great Wealth EROSION

Guy's latest book on how to maximize investment return by avoiding common pitfalls. Reading this book will help you understand important principles every investor should consider when they invest their "safe" money. Guy devotes much of the book to discussing hidden costs and expenses associated with modern investing. Available as an EBook only.

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MANAGE MARKETS NOT STOCKS

Can You Answer These Important Questions?

Reading this booklet will help you understand some very important elements every investor should consider when they invest their "safe" money for long periods of time.

- Every Portfolio Buys Risk. Not all Risk is Equal. Do You Know How Much Risk and What Type Of Risk You Are Buying?
- Based On Your Investment Policy Statement Are You Buying More Risk Than You Need To For The Return You Are Receiving?
- Do You Know In Which Markets You Are Invested?
- Do You Know How Sub-Markets Can Enhance Investment Performance?
- Do You Know How The Largest Institutional Investors Manage Their Portfolios?
- Do You Have An Investment Policy Statement? Do You Know Why An Investment Policy Statement Is Important?

ABOUT THE AUTHOR

Guy Baker, MBA, PhD, MSFS, ChFC, CFP is an internationally known author and speaker. Guy also authored the book *Baker's Dozen—13 Principles for Financial Success* and developed "The BOX" concept, a simple explanation of the mathematics of life insurance. Guy is managing director of Baker Jensen Investment Advisors, an asset management firm specializing in increasing return and minimizing risk.