Gold's Twelve Month March to $3,800 an Ounce

By David B. Loeper, CIMA®, CIMC®

ABSTRACT – Continuing concerns about the prospects of inflation have many investors and advisors looking toward deploying inflation hedges like gold, commodities, TIPs, and, despite the recent collapse, even real estate in their allocation models.

The rationale for this varies from the perspective of attempting to control the risk of traditional financial assets using a long-term strategic asset allocation model to outright fears of hyper-inflation fueled by massive federal deficits and expansion of the Fed's balance sheet. On the flip side of the opportunity argument for portfolio protecting appreciation from these assets are the calls for the impending doom of traditional portfolio protectors like government bonds, particularly those with maturities that are longer than just a few years.

Before we pull the trigger on changing our clients' asset allocation models, it is worth doing a bit of homework to verify that the odds are stacked in our clients' favor. With the attention this topic is consistently getting in all forms of media (and marketers), we just want to make sure that the popular opinion this time isn't a repeat of the Internet or Real Estate Bubbles that blew up for so many investors. Understand, my hesitancy to follow the herd with this is not because I have any clairvoyance or forecast for what will occur, but instead it is based on having a healthy level of skepticism of the motives of so many that have a stake in promoting these assets. This paper examines the historical data to see if that skepticism is justified.

TIPS and Commodities

There is not a lot of history to examine for TIPs, there is only a theory of how they "should" behave. If they are used to replace traditional government bonds, we have to recognize that their behavior is significantly different than the government bonds we modeled in our asset allocation. For example, the 3-7 Year Treasury ETF (IEI) has an effective duration of 4.52 years and was up 12.79% in 2008 when portfolios needed protection from the collapse of the equity and real estate markets. The 7-10 Year ETF (IEF) with an effective duration of 7.31 years returned 17.9% in the 2008 flight to safety. The TIP ETF (TIP) had a duration in between these two, so one would have thought (or hoped, or theorized) it would have appreciated somewhere in this 12% to 18% range, yet instead it returned minus 0.53% and its NAV returned minus 2.53%. A less severe spread for TIPs versus pure Treasuries was repeated in the market decline of the second quarter of 2010.

Personally, I'm always concerned about indexed investments that have that much tracking error relative to the underlying assets. (The delta for the market versus NAV return for traditional Treasury ETFs in 2008 was -12 basis points for IEF and -31 basis points for IEI, much lower than the 200 basis point delta for TIP.) I know I'm out there on my own on this topic and everyone but me is comfortable swapping out traditional Treasuries for the "bonus" features of TIPs, but my allocation models are based on extensive examination of long term historical data. We simply don't have the data to know how TIPs will behave. Accepting the theory of how they "should" behave is nothing more than speculation... especially when the limited data we do have demonstrates that they underperformed by 12-18% just when we needed performance the most. Bonds are in portfolios to protect us from severe equity markets. **If how I'm implementing the allocation subjects a significant portion of the portfolio to underperforming what I modeled, I may as well have not bothered to model the allocation in the first place.** Only time will tell how TIPs will behave, but in theory one could argue that it would be most similar to 90-Day T-bills, which has a correlation to inflation of 0.67 from 1/1/1972 through 9/30/2010, significantly higher than the negative correlation of stocks, bonds and real estate and much higher than Gold (+.45) or Commodities (+.21). (Due to limited data access, the CRB Commodity index monthly correlation to inflation was measured from 3/1/1983 to 9/30/2010.)

Since I've touched on commodities and disclosed that my data vendor can't provide me with data for the CRB index prior to March of 1983, I'm not going to spend much time speculating on how they did in inflationary periods like the 70's. I'm sure they would have done quite well. But I'm not 100% certain that there is going to be this huge inflationary spike that everyone is betting on. That uncertainty is why I weigh the potential benefits to the potential price, just in case things like high unemployment temper the inflationary pressures everyone is so sure of, or, just in case we go through a double dip or even a depression. Despite popular opinion, such things are always possible. What I do know is that for the limited data set I have, the CRB index produced a nominal compound return of 0.77%, a real return of minus 2.16%, a standard deviation that is twice that of Treasuries, had a twelve month period with a loss of 48.74% and had a 27 year period with a negative compound return. Also, in the one 5% plus inflation surge that was in this data set, the CRB index produced a nominal compound return of 1.58% and a real return of minus 3.32%. All this for a cost **that is certain** to be 5 to 10 times the price of stocks and bonds for an indexed ETF, and much worse if one pays the huge price of some of the commodity partnerships being sold by the product manufacturers that have a bit of a conflict of interest on this topic.

To me though, in my humble recognition that the future is uncertain, I need to weigh the potential benefit versus the potential price of obtaining that benefit. If all we experience is something like the last 27 plus years instead of a period like the 70's, there is a cost, just like there is a cost to not using the asset if the 70's do repeat. To me it is a simple pro versus con decision in light of all of the odds of future uncertainty.

The Opportunities in Gold and Real Estate Versus the Risk of Treasuries

My data vendor does have great monthly data going back to 1/1/1972 for things like inflation, London PM Gold, NAREIT All index (real estate), the Wilshire 5000 (domestic stocks), EAFE (foreign stocks), and of course Treasury Bills, Notes and Bonds. With these indices I can model the structure of our asset allocation models, examine lots of different time periods and see the upside benefit and downside cost of a decision and measure the frequency of observations to get a sense of the odds. All of the data presented throughout the rest of this paper is based on monthly data from 1/1/1972 through 9/30/2010 unless otherwise specified.

If I zero in on major surges in inflation (measured throughout this paper as the rolling twelve month trailing CPI), I first observe that there were two periods with inflationary spikes of more than 8% and one tamer "speed bump" of more than 5%. The first major surge occurred in 1973 through 1975 with the trailing 12 month CPI spiking from 3.41% at the end of 1972 up to 12.34% before settling at 6.94% by the end of 1975. Table 1 examines how various asset classes performed in this period.

Table 1 – The First Inflationary Spike 12/31/1972 – 12/31/1975

Asset Class	Compound Return	Rolling 12 Month Returns: Best	Worst	Standard Deviation
CPI	9.30%	12.34%	3.65%	2.48%
Gold	29.29%	100.76%	-24.92%	39.50%
Real Estate	-16.93%	36.34%	-48.11%	24.12%
Domestic Stocks	-6.86%	39.65%	-41.51%	24.45%
Foreign Stocks	-2.88%	37.10%	-37.43%	22.61%
7-10 Year Treasuries	5.39%	12.53%	-1.82%	4.55%
90 Day T-bills	6.87%	7.90%	5.77%	0.70%

For this inflation surge, we see the benefit of gold compounding at over 29% a year for three years. Our real estate hedge, though, didn't help at all with a return of minus 16.93% during the period. Of course the bear market of 1973-1974 started at the beginning of this time period and equities had a return of minus 6.86%. It may be surprising to some that the worst twelve month return for Treasuries during this period was -1.82% and they produced a nominal return of 5.39%, behind only gold and T-bills.

After this inflation spike, inflation stabilized for a few years until another massive spike began in March of 1978 and went through February of 1982 with the trailing 12 month CPI going from 6.55% up to 14.76% before settling back to 7.62%.

Table 2 – The Second Inflationary Spike 3/1/1978 – 2/28/1982

Asset Class	Compound Return	Rolling 12 Month Returns: Best	Worst	Standard Deviation
CPI	10.74%	14.76%	6.50%	2.27%
Gold	18.77%	179.42%	-35.70%	62.38%
Real Estate	15.34%	51.96%	0.23%	12.03%
Domestic Stocks	14.72%	44.26%	-8.93%	13.15%
Foreign Stocks	12.36%	34.44%	-11.48%	11.75%
7-10 Year Treasuries	2.74%	10.82%	-9.45%	5.61%
90 Day T-bills	10.91%	14.65%	7.66%	1.98%

The first two inflationary spikes had trailing twelve month inflation increasing by more than 8%, albeit from already higher levels. The last surge was more of a speed bump, but it was the only other time period in the data set when trailing 12 month inflation increased by more than 5% in a relatively short time period. Inflation as of 12/31/86 was 1.10% and expanded to 6.29% by October 1990 and ended that year at 6.11%. Of course, we had the Crash of 1987 in the midst of this data set, and I included the CRB index in this table since the data was available.

Table 3 – The Third Inflationary "Speed Bump" 12/31/1986 – 12/31/1990

Asset Class	Compound Return	Rolling 12 Month Returns: Best	Worst	Standard Deviation
CPI	4.90%	6.29%	1.46%	0.91%
Gold	-0.33%	22.03%	-20.57%	9.77%
Real Estate	-5.21%	18.16%	-24.74%	9.58%
Domestic Stocks	9.96%	36.64%	-16.37%	15.58%
Foreign Stocks	8.13%	31.68%	-27.39%	15.25%
7-10 Year Treasuries	7.57%	17.68%	-0.81%	4.53%
90 Day T-bills	7.01%	8.15%	5.77%	0.88%
Commodities (CRB)	1.58%	17.38%	-11.58%	7.32%

What might we learn from this data? I would first argue that there is a lot of uncertainty and the complexity of the markets and the economy are not as simple as an if/then statement like, "if we have inflation then asset class "A" will protect us."

None of the asset classes produced a positive real return in all of three of these periods. T-Bills, gold, foreign stocks and domestic stocks all produced a positive real return in two of the three periods. Real estate had nominal negative returns in two of the three periods, and in one period it produced a positive real return. Treasuries also produced a positive real return in one of the periods. For those of you who are betting big on foreign stocks as your protector when inflation erodes the value of the dollar, you might want to note that foreign stocks significantly underperformed domestic stocks in two of these three periods.

It is interesting to me that only two of the asset classes produced positive nominal returns in all three periods, that being 7-10 year Treasuries and of course T-Bills. I can't help but wonder about the motivations of all of the Treasury bond fear mongers out there misleading the public. If 7-10 year Treasuries produced positive returns in all three of these worst inflation spikes since 1972, and one of those was even a positive real return, is it really prudent to scare people into owning much riskier assets? Gold and foreign stocks had double digit twelve month losses in all three of these inflationary spikes. Domestic stocks and real estate had double digit twelve month losses in two of the three periods.

Only T-Bills and 7-10 Year Treasuries never experienced a double digit twelve month loss, something that is true not only during these periods, but actually all the way back to 1926[1].

Complexity and uncertainty not only apply to the economy and to these individual asset classes, but also to how they might be blended together in a diversified portfolio. To see the impact of this, I'll start with a balanced 60/40 portfolio of pure financial assets. Our balanced allocation has a weighting of 53% to domestic stocks, 7% to foreign stocks, 37% 7-10 year Treasuries and 3% cash. To this allocation, we will then create a "more diversified portfolio" weighted 80% to our 60/40 balanced allocation and 10% each to gold and real estate. Of course, the equity exposure of this allocation is much lower (48%), so we will also compare this to our 45/55 balanced income portfolio allocation that has 39% domestic stocks, 6% foreign, 50% 7-10 year Treasuries and 5% cash and a similarly weighted 50/50 balanced allocation to more closely match the lower volatility of the portfolio blended with gold and real estate. Table 4 shows the results for all three of the inflation surges for these four portfolios.

[1] Our long term historical data for 7-10 Year Treasuries is based on a blend of 60% 5- Year Treasuries and 40% 5+ Year Treasuries which correlates to the 7-10 Year Index from its inception in February 1980 at over .99 with an average monthly return within one third of one basis point.

Table 4 – Portfolio Allocation Results for the Three Inflationary Surges

Portfolio	Compound Return	Rolling 12 Month Returns: Best	Worst	Standard Deviation
First Surge 12/31/1972-12/31/1975:				
60/40 Balanced	-1.24%	26.48%	-26.94%	16.31%
60/40 w/ 10% Gold & RE	0.50%	22.24%	-23.42%	13.49%
50/50 Balanced	0.05%	23.32%	-22.86%	14.19%
45/55 Balanced Income	0.59%	22.01%	-20.94%	13.20%
Second Surge 3/1/1978 – 2/28/82:				
60/40 Balanced	10.35%	29.34%	-3.51%	7.22%
60/40 w/ 10% Gold & RE	12.29%	29.10%	-6.43%	10.34%
50/50 Balanced	9.31%	25.86%	-3.52%	6.06%
45/55 Balanced Income	8.73%	24.27%	-3.61%	5.60%
Third Speed Bump 12/31/86 – 12/31/1990:				
60/40 Balanced	9.50%	26.49%	-6.69%	9.69%
60/40 w/ 10% Gold & RE	7.17%	19.24%	-6.76%	7.61%
50/50 Balanced	9.25%	24.09%	-4.83%	8.37%
45/55 Balanced Income	9.13%	23.19%	-3.64%	7.87%

Despite the huge returns in gold in two of the three periods, adding gold and real estate produced a significantly larger maximum 12 month loss in each of these three periods when compared to the 45% balanced income allocation. It also underperformed that allocation and had a higher standard deviation in two of the three periods. The maximum 12 month losses were also somewhat larger in all three periods when compared to the 50/50 balanced allocation. Even relative to the 60/40 balanced allocation, the "more diversified" gold and real estate blend had larger 12 month losses in

two of the three periods, but it did outperform both the 60/40 and 50/50 balanced portfolios in two of the three periods.

Keep in mind these are the worst inflationary spikes that we have had since 1972 when these "diversifiers" should really shine. I would argue that the upside of this strategy isn't particularly compelling based on this data. The one time period when the gold and real estate blended portfolio appeared to add significant value, albeit with significantly higher risk, was during the second inflationary spike which included a twelve month time period when gold produced a 179% return and real estate deviated significantly from its otherwise underwhelming inflationary performance. Such a return would put gold at $3,800 an ounce from today's levels and of course would require the depressed real estate market to significantly rebound and interest rates to shoot up by more than 9% to cause the inferior performance of bonds. Do you really want to bet on that? Go for it! You might be right. (I'd seriously suggest otherwise.)

Of course, with inflationary spikes there are also disinflationary periods. For stocks during the entire period we had the 1973-1974 bear market, the '87 Crash, the tech bubble bursting with the three year bear market for stocks from 2000-2002, and of course the massive losses of 2008. Likewise, there was a nearly 27 year period where gold produced a negative nominal compound return and a significantly negative real return. Suffice it to say, there are a lot of moving parts, and if you don't know where things are headed (something I humbly always admit) it might be best to look at this probabilistically by combining all of these uncertainties.

Data observations, even over long periods of time, can easily be skewed by single events that may appear to be outliers. But, I don't exercise judgment on whether there are outliers in the data. That would be a bit presumptive. **However, I also do not look at one single time period (like the nearly 38 year period from 1972 through 2010) and presume that every asset class just happened to have a proper balance of its bull and bear extremes. The odds against that are enormous.** To look at it probabilistically then, I like to look at more data... in time frames that are more realistic for the expectations of the uncertainty I set with clients—like the next one, five and ten years. I also like to look at additional statistics, such as the median return, because this tells me that 50% of the periods exceeded this result and helps me gain perspective on whether outliers might be skewing the average return. Finally, I like to look at downside worst case periods for the same reason; because standard deviation can be skewed upwards for exceptionally positive returns and when we are talking about risk, most people worry more about the downside surprises rather than positive extremes.

Looking at all of the 454 one year periods based on monthly data starting 1/1/1972, we see that there does indeed appear to be some value to blending gold and real estate into our 60/40 balanced allocation.

Table 5 – 454 Rolling Twelve Month Returns Based on Monthly Data from 1/1/1972 to 9/30/2010:

Portfolio	Median	Average	Best	Worst	Standard Deviation
60/40 Balanced	11.07%	10.17%	48.41%	-26.94%	11.95%
60/40 w/ 10% Gold & RE	11.14%	10.26%	48.64%	-27.34%	11.05%
50/50 Balanced	10.12%	9.81%	44.71%	-22.86%	10.50%
45/55 Balanced Income	9.49%	9.65%	42.93%	-20.94%	9.89%

Another one of those complexities that we have to recognize is that there is nothing particularly magical about 12 months, other than that is how we have chosen to construct our calendar. Some returns are serially correlated (like inflation and T-Bills) while others appear completely random (like stocks). Our portfolios are blending these dynamics but one year periods do not show the impact of this. Therefore, I like to observe rolling five and ten year periods too, so I am not accidently fooled by ignoring the effect of this uncertainty. Table 6 shows the results for rolling five and ten year periods for these portfolios.

Table 6 – Rolling Compound Returns Based on Monthly Data from 1/1/1972 to 9/30/2010:

Portfolio	Median	Average	Best	Worst
406 Five Year Periods:				
60/40 Balanced	11.22%	10.65%	24.15%	-0.93%
60/40 w/ 10% Gold & RE	11.01%	10.54%	22.11%	0.46%
50/50 Balanced	10.61%	10.29%	22.82%	0.23%
45/55 Balanced Income	10.33%	10.13%	22.12%	0.77%
346 Ten Year Periods:				
60/40 Balanced	12.42%	11.24%	16.69%	1.55%
60/40 w/ 10% Gold & RE	11.19%	10.76%	16.00%	3.08%
50/50 Balanced	11.74%	10.85%	16.12%	2.42%
45/55 Balanced Income	11.46%	10.69%	15.86%	2.84%

All I could really ascertain from this is that what appeared to be somewhat conclusive evidence for the portfolio blended with gold and real estate when looking only at the magical one year returns becomes far less conclusive when the randomness and serial correlations of the returns of various asset classes are blended together.

Another statistic I like to use to keep me objective about all of these results is the probability of one portfolio under-performing another. While the median returns show me what the 50th percentile result is, they don't show me the shape of the distribution and **how frequently a benefit was experienced or a price was paid for a particular strategy.**

In Table 7, we examine the percentage of the time periods during which the portfolio blended with gold and real estate underperformed the others.

Table 7 – Percentage of Rolling Periods When the 60/40 Balanced Portfolio Blended with 10% Gold and 10% Real Estate Underperformed:

Allocation	Periods:	One Year	Five Year	Ten Year
60/40 Balanced		51.10%	54.19%	60.40%
50/50 Balanced		49.78%	52.71%	54.34%
45/55 Balanced Income		50.66%	49.26%	52.02%

Here again, there is nothing particularly compelling about the frequency of the observations of the gold and real estate blended portfolio other than the odds of it out performing tend to be lower than the odds of it underperforming. Some of this clearly is skewed in rolling data with the inflationary period in the beginning of the data set and the lost decade for stocks at the end of the period being counted less frequently than the data in the middle of the data set, which had only one inflationary spike and one inflationary speed bump. But then again, I don't know which of any of the results the future may hold.

Finally, I like to observe period to period relative performance to help me identify if there may be outliers in the data that could be skewing all of these other results. Not that I will discount the results, but it does help me understand the expectation of the type of environment that occurred to garner the benefit.

To calculate this, I take the difference from the returns of the portfolio blended with gold and real estate to the 60/40 portfolio for multiple rolling time periods. In essence, we are observing the pure delta of relative performance.

Table 8 – Period Specific Rolling Relative Delta of Returns for the Gold and Real Estate Blended Portfolio Compared to the 60/40 Balanced Portfolio:

Periods:	One Year	Five Year	Ten Year
Median	-0.07%	-0.73%	-0.58%
Average	0.10%	-0.12%	-0.48%
Minimum	-7.50%	-3.59%	-2.41%
Maximum	13.36%	4.03%	2.28%

Remember that the median and average of *all* one year returns was slightly higher for the gold and real estate blended portfolio (see Table 5). But, we observe in Table 8 that when we look at the relative returns on each of the specific 454 one year periods, that half (median) of the one year periods underperformed by 0.07% or more. What is discovered here is the impact of the one year where the best relative return of the portfolio blended with gold and real estate might be skewing the previous data.

Observe the ten year relative returns when the gold and real estate portfolio under performed by as much a 241 basis points and never outperformed by more than 228 basis points. Even in the five year data, the dispersion of out-performance and underperformance is within +/- about 400 basis points. But, in the one year data, the gold and real estate balanced portfolio only underperformed by 750 basis points, while in one period it outperformed by 1336 basis points. That time period is obviously in the five and ten year data too but is tempered in the longer time periods. It is also what causes the median and average of all returns to look higher even though in 50% of the one year periods the gold and real estate blended portfolio underperformed by 0.07% or more.

What does all this mean? Overall, in reality adding gold and real estate to a 60/40 balanced portfolio looks pretty similar to a 50/50 balanced portfolio without the extra weighting to gold and real estate. (Keep in mind that domestic equities already include REITS, gold and commodity stocks.) And, if we are doing this to avoid risk, we might be better off in a 45/55 balanced portfolio. This also exposes that even in the most extreme inflationary spikes, there are plenty of examples where our expectations for protection and positive real returns were not met. We also observe that the fears about 7-10 year Treasuries imploding might be a bit of an overstatement, at least from a historical perspective.

From our perspective, these extra positions beyond traditional asset classes are certain to add cost (like taxes, trading expenses and expense ratios… this was all based on monthly rebalancing) and do not appear to be worth much unless we do have that perfect storm like the second inflationary spike, and in that period our relative performance didn't suffer all that much and still had much less risk.

I guess the biggest hesitancy I have with gold, other than all of the historical evidence presented here, is that to me there appears to be no fundamental reason that it should be appreciating other than perhaps due to the declining dollar and how much it is being hyped. In Jeremy Siegel's book, *Stocks for the Long Run*, he showed that the 200 year real return for gold was around zero. One could question what would be a catalyst for it being anything different going forward? Is it a supply versus demand issue?

Not knowing the answer, I thought it would be wise to look it up. According to the World Gold Council, total identifiable world-wide demand for gold has decreased by 88 tonnes from 2007 to 2009. World-wide demand for gold *excluding investing* has declined by 659 tonnes while world-wide supplies have increased by 534 tonnes. That means that outside of investing, from 2007 to 2009, there is 1,193 tonnes difference in the direction of supply and demand. You would think that a commodity under that kind of pressure would experience significant losses. But, investing

consumed a lot of this by increasing 652 tonnes during the period, mostly in the form of ETFs and similar funds, and official coins[2].

Somehow to me this smells like another one of those bubbles created by financial product manufacturers and sellers based on recent short term track records. The story sounds good, but the longer term data doesn't show much in the way of real value, much like the Internet Bubble, where clicks counted more than revenues, or the Real Estate Bubble which was presumed to be unidirectional in price despite the history that showed otherwise.

So, I fully recognize I may end up regretting this decision and that it is possible for gold to appreciate by 179% to $3,800 an ounce, that interest rates will shoot up by 9% or more, and somehow the unemployed will find plenty of well paying jobs to buy the glut of unused real estate by borrowing money from banks that will freely lend money at the new higher interest rates. If that occurs, I will owe my clients an apology for not jumping on the conventional wisdom and will have no excuse for our miserable 8.7% to 10.3% returns of our balanced portfolios when the gold and real estate weights would have out-performed by about 2% to 3.5%, if history repeats itself like our worst inflationary spike. If that occurs I'll at least have a headline that predicted the advance of gold to $3,800 an ounce. (Note the sarcasm)

Then again, there is a chance that the inflation spike might look more like the first inflation spike with little being gained in return and mostly just an increase in risk by adding gold and real estate. Perhaps the inflation surge that is coming will look more like the third inflation speed bump where adding gold and real estate significantly lowered returns and increased downside risk.

There is even a chance, believe it or not, that unemployment remains high and inflation low, that the Euro market's financial problems spread resulting in a flight to safety of the dollar, that real estate remains weak with lenders and the Fed's keeping up standards for credit worthiness, and that the market for new gold speculators dries up and the price catches up to supply and demand. I know that sounds silly and the odds of that are really remote, but it is possible and **I want clients to be prepared for that as well.**

The issue here is expectation management as much as it is investment research. I can hold the expectation out to clients that I can forecast that inflation is around the corner and that I've positioned their portfolios accordingly. And if inflation doesn't occur I'll be wrong and it will probably hurt the portfolio, or, if I'm right about the impending inflation forecast but the portfolio I construct doesn't help, like in some of the historical surges of inflation, I'll be stuck making excuses again. To me, I'd rather simply say that the under-performance in our unconventional "conventional" allocations may occur, but when weighing all of the odds, the risk of the bet isn't worth the payoff on the odds and the certainty of the cost the client would have to pay. At least, that is what I see in the data. What do you see?

[2] See http://www.gold.org/assets/file/value/stats/statistics/pdf/Demand_Tonnes.pdf

……

A popular industry speaker and writer, DAVID B. LOEPER is the CEO and founder of Financeware, Inc. in Richmond, VA. He is author of the top selling book Stop the 401(k) Rip-off!, three other books released in 2009 by John Wiley & Sons (Stop the Retirement Rip-off, Stop the Investing Rip-off and The Four Pillars of Retirement Plans) and numerous whitepapers. He has appeared on CNN, Fox Business, CNBC and Bloomberg TV, served on the Investment Advisory Committee of the $30 billion Virginia Retirement System, and was chairman of the Advisory Council for the Investment Management Consultants Association (IMCA). He regularly writes for Forbes, Dow Jones, Advisor Perspectives and has a monthly column on ethics for Transitions Magazine. Before founding Financeware in 1999, he was Managing Director of Strategic Planning for Wheat First Union. He earned the CIMA® designation (Certified Investment Management Analyst) from Wharton Business School in 1990 in conjunction with IMCA.

……

IMPORTANT DISCLOSURES: Examples and concepts used in this white paper are intended for illustrative, educational purposes only. Nothing in this paper should be construed as investment advice regarding any particular investments for any particular individual circumstance and you should consult with your own financial advisor regarding your personal situation. There is no representation or guarantee of specific results, explicit or implied. In addition, the information based on historical time periods cited or other information generated by Wealthcare Capital Management ® do not reflect our actual investment results and are not guarantees of future results. All returns cited are based on gross asset class performance before advisory, transaction or other fees. Illustrative data used in the presentation regarding market, asset class or other investment returns or other investment statistics on any specific investment, including average investor returns, are from sources believed reliable but not verified independently by Wealthcare Capital Management®.

Financeware, Inc. d/b/a Wealthcare Capital Management® is a Registered Investment Adviser and its SEC Form Part II is available through the internet at http://www.financeware.com/ruminations/WCMADVII.pdf.