

# Bridgewater®

## Daily Observations

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(203) 226-3030

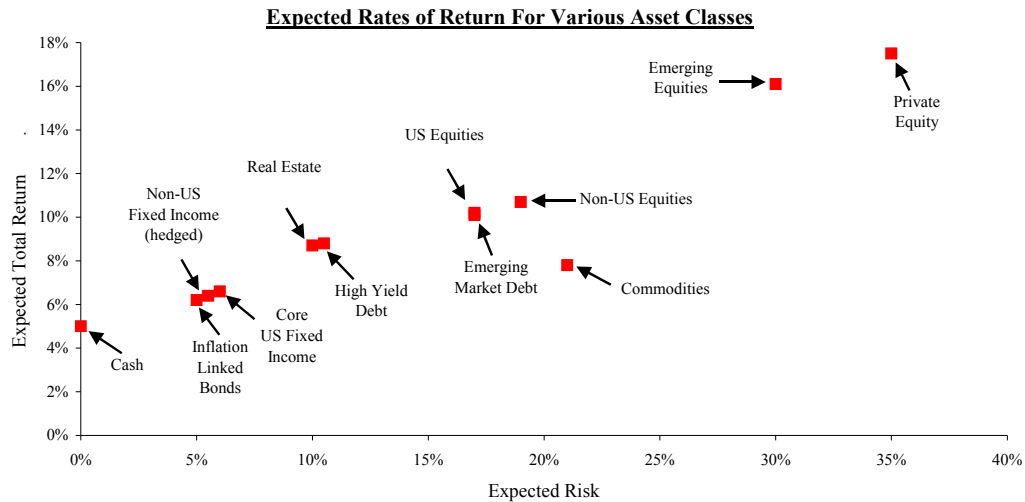
Greg Jensen  
Jason Rotenberg

### The Biggest Mistake in Investing:

Revised 3/10/2006

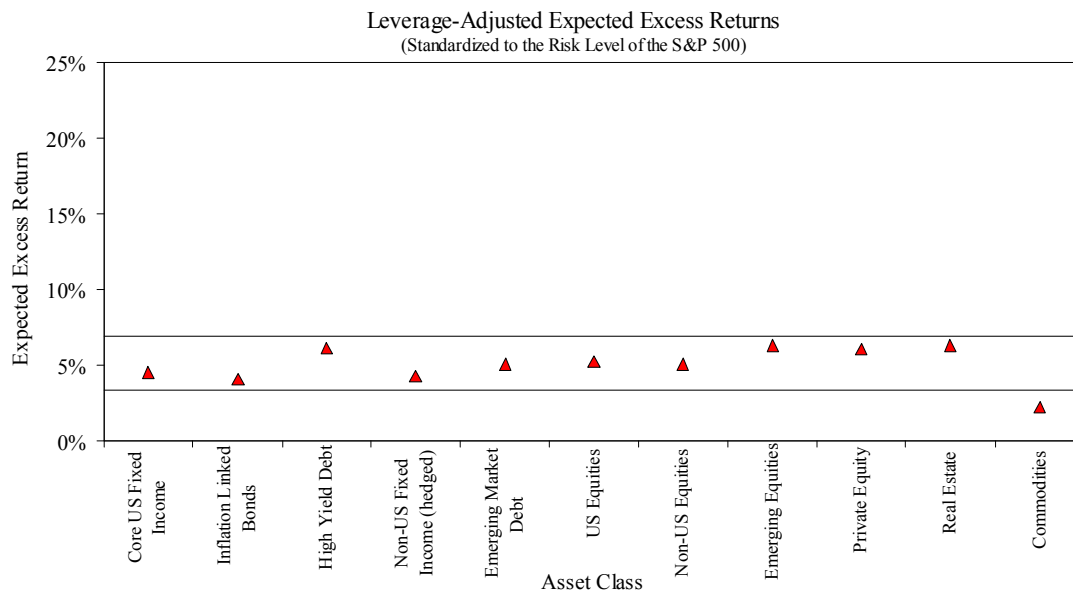
We generally use this communication to comment on the economies and markets, but today wanted to make a brief comment on investing. The vast majority of investors (that probably means you) are making a huge mistake in their asset allocation. ***Investors do not have balanced portfolios.*** A typical portfolio has 60% of its dollars in equity and equity like (i.e. private equity or venture capital) investments and because these assets have more risk than the rest of the portfolio (generally nominal bonds) over 80% of a typical investor's risk is in equities. The existence of nominal bonds and a scattering of other assets do very little to truly balance the portfolio because they make up such a small amount of risk. ***This over-investment in equities at the expense of other asset classes (nominal bonds, inflation indexed bonds, credit spreads, commodities) costs about 3% a year in expected value (which could alternatively be used for risk reduction), and dwarfs all other issues that investors face.*** The mistake, once understood, is relatively easy to rectify. Yet despite our pounding the table for a decade on this issue only a tiny percentage of investors have moved significantly in the direction of truly balancing (i.e. in risk terms) their asset class exposures (we would balance them with respect to their performance in different economic environments). Here is what we think is preventing most of the investing world from taking the free lunch.

**Risk and Leverage Confusion:** Most investors are familiar with typical portfolio math and they take assets as they are packaged (i.e. unlevered and with the risk/return characteristics offered in the market place). Many will use assumptions of risk, return, and correlation and create an "optimized portfolio" given their return target and the asset classes that are out there. To achieve their return targets most investors end up being "forced" into a portfolio dominated by the riskiest assets out there (equity and equity like assets). By simply injecting leverage into the equation there is no longer a need to be forced into equities. The following chart illustrates a typical expected return and risk scatter chart for asset classes as they come packaged in the market place (we got this from a consultant and it is probably similar to the ones most investors are thinking about). The basic relationship is clear and logical: higher risk assets are expected to have higher returns and the relationship between risk and expected return is essentially linear (i.e. one unit of risk gets you one unit of return).



Note: This chart is for illustrative purposes only. It is based on Bridgewater analysis of return and risk expectations from an independent study by Rocaton, a third party consultant. No claim is being made that any account can or will achieve the theoretical results shown. This illustration should not be relied upon to make predictions of actual future account performance. Please refer to the Research disclosure for a discussion of Bridgewater research and sources.

On the previous chart there are big differences between the return of different asset classes, but ***if you neutralize for risk (i.e. lever up lower risk assets, and delever risky assets) the differences between asset classes disappear.*** Leverage is the asset class equalizer. The following chart illustrates the expected returns (based on this typical consultant survey) of different asset classes.

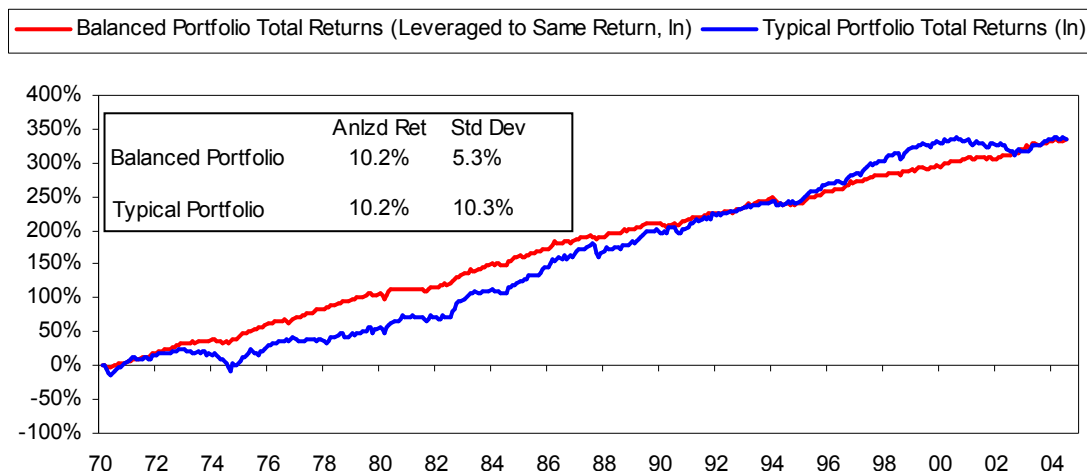


Note: This chart is for illustrative purposes only. It is based on Bridgewater analysis of return and risk expectations from an independent study by Rocaton, a third party consultant, scaled to the expected volatility level of domestic stocks. Risk is measured by the standard deviation of returns. This would be accomplished by leveraging the lower risk assets and de-leveraging the higher risk assets. No claim is being made that any account can or will achieve the theoretical results shown. This illustration should not be relied upon to make predictions of actual future account performance. Please refer to the Research disclosure for a discussion of Bridgewater research and sources.

If you do not constrain yourself by the fact that some asset classes have more risk in the way they are packaged than other asset classes than you would have no reason to select an asset class on return alone (as they are all essentially equal). Practically, what this means is that by leveraging up a treasury bond, for instance, you can create an asset with the same risk and return characteristics as equities. If you accept that in risk adjusted terms asset classes have roughly equivalent returns,

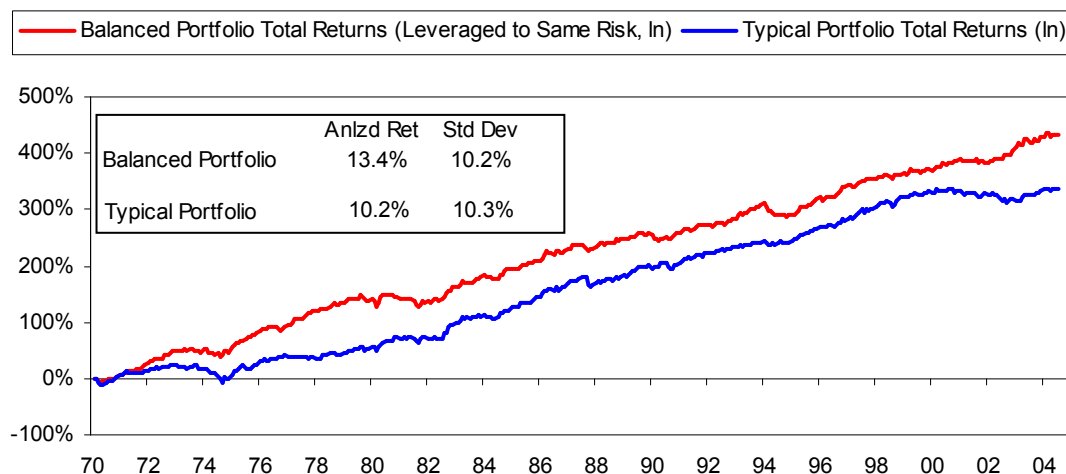
you essentially want to balance them in your portfolio in risk adjusted terms after taking into account the correlations between them. To get to this point and allow yourself to create the optimal portfolio you need to utilize leverage to lever up the lower risk assets. **Many people still confuse leverage with risk, but the reality is that levering up low-risk assets so you can diversify away from risky investments is risk reducing.** After all, most high return asset classes come with leverage in them (i.e. what is more risky, a 2:1 levered inflation indexed bond or a share of GE).

The following chart illustrates the results of the typical investor portfolio against a balanced portfolio of asset classes targeted to have the same return (the risk is cut almost in half).



Note: The Typical and Balanced portfolios are simulated and gross of fees. Balanced portfolio returns have been scaled to match the return level of the Typical portfolio. Balanced portfolio excess returns are scaled linearly by a scaling factor, which is calculated by dividing the annualized excess return of the Typical Portfolio by the annualized excess return of the unleveraged Balanced portfolio. The benchmark cash return is subsequently added back to the adjusted excess returns to arrive at a total return for the specified return level. For a detailed description of the "Typical Portfolio" and simulated portfolios please see the "Simulated Portfolios Note" below. SIMULATED PERFORMANCE IS NOT NECESSARILY INDICATIVE OF ACTUAL OR FUTURE PERFORMANCE.

The following chart illustrates the balanced portfolio against the typical portfolio at the same risk. The return increases 3.2%.



Note: The Typical and Balanced portfolios are simulated and gross of fees. Balanced portfolio returns have been scaled to match the risk level of the Typical portfolio. Balanced portfolio excess returns are scaled linearly by a scaling factor, which is calculated by dividing the annualized volatility of the Typical Portfolio by the annualized volatility of the unleveraged Balanced portfolio. The benchmark cash return is subsequently added back to the adjusted excess returns to arrive at a total return for the specified return level. For a detailed description of the "Typical Portfolio" and simulated portfolios please see the "Simulated Portfolios Note" below. SIMULATED PERFORMANCE IS NOT NECESSARILY INDICATIVE OF ACTUAL OR FUTURE PERFORMANCE.

The logic and the data all point in the same direction and the potential benefits are huge, yet most investors have not begun to move in that direction. Just recently, we have seen some of the smartest investors we know re-engineering their portfolios to implement this approach. More will likely follow.

## What About the Market Portfolio?

For those fully schooled in the Capital Asset Pricing Model (CAPM), the previous results may leave you shaking your head and asking why the market portfolio isn't the best portfolio. Our experience in markets, common sense, and data indicate that CAPM, while an internally consistent theory, does not reflect the real world. The rest of this is a bit tedious explanation of why.

CAPM assumes that...

...investors agree on the return, risk, and correlation characteristics of all assets and invest in all assets accordingly

- Investors clearly disagree frequently on all of these, and many investors have limits on what asset classes they can invest in.

...perfect capital markets exist: there are no restrictions on borrowing or lending

- Many investors face (or self-impose) leverage constraints, forcing them to overweight risky assets in search of higher returns

...all investors have the same time horizon

- Investors with different time horizons consider different assets "risk-free"
- Same is true for investors with real vs. nominal liabilities
- Different investors will choose different portfolios to leverage or de-leverage

...investors can securitize and trade all wealth

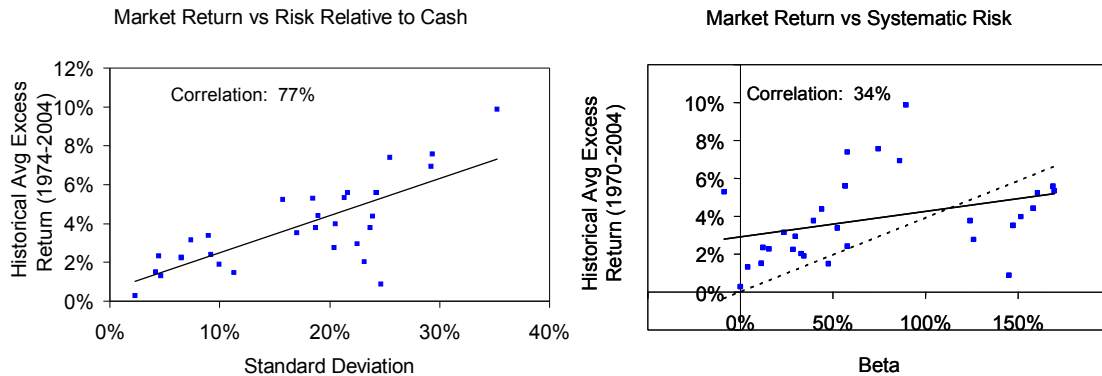
- The majority of the world's wealth is not securitized (human capital, residential real estate, etc.)
- Investors owning different non-tradable assets could choose different optimal portfolios of tradable assets

...all investors are mean-variance optimizers

- Many are not

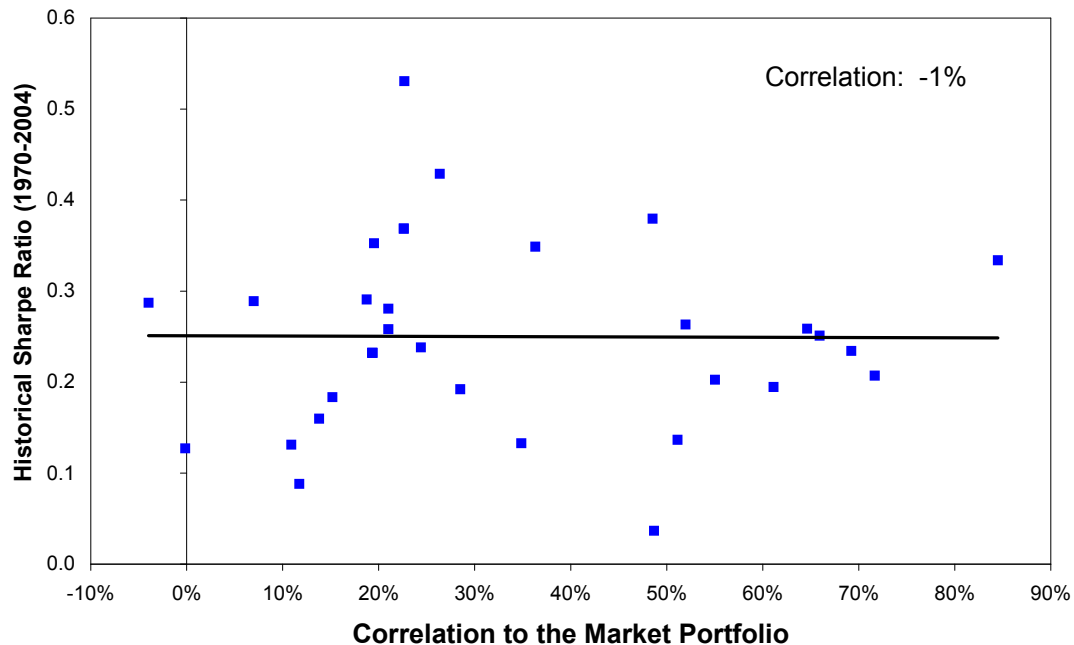
Most proponents of CAPM would agree that the assumptions don't reflect the real world, but that the output does. We just do not understand that, since what one must believe to think CAPM is even roughly right stretches the imagination. You have to essentially believe that the market somehow shifts the pricing in asset classes around to force the exact expected return/risk ratios in different asset classes to match exactly the issuance by the suppliers of assets. We do not see any evidence that this is happening. CAPM theory argues that investors will value (and therefore price) any security based on how much a marginal addition of that security would increase the Sharpe ratio of the portfolio they already hold. The return demanded on a given security will depend on its volatility as well as its correlation to the market portfolio (said more technically, the excess return is supposed to be a function of the beta to the market portfolio). Does this theory hold up to evidence, do markets really clear this way?

Historically it is clear that market returns have not turned out this way. We have looked at actual asset class returns and charted below the relationship between return and risk (which we think is the relationship priced into the markets) vs. the actual returns against the beta to the market portfolio. It is clear that the security market line is not a great predictor of returns, while risk is.



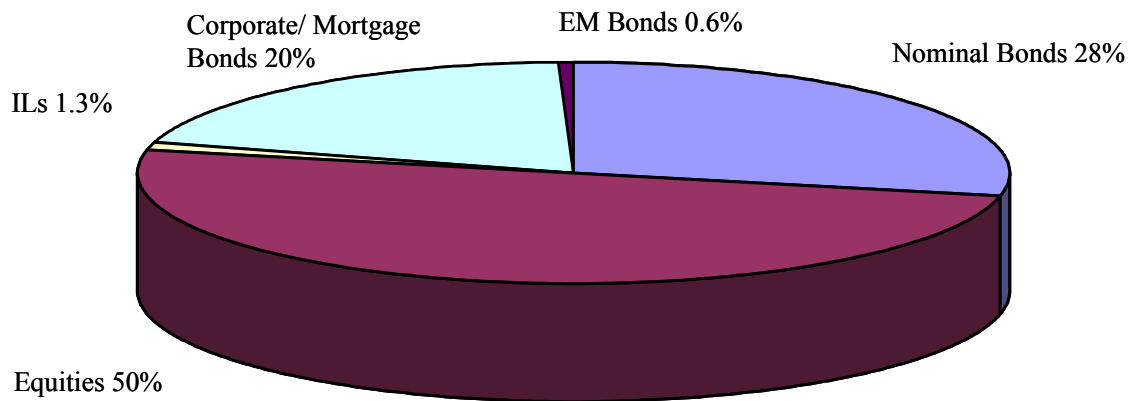
Said another way, if CAPM theory was right you would expect asset classes with low correlations to the market portfolio to have lower information ratios than assets that have higher correlations. This relationship does not exist. Correlation to the market portfolio has never been a determinant of asset class returns, and we don't believe the mechanism exists to make this happen in the future (we do recognize that if people adopt what we are saying the world will move towards that more efficient world, but we are just a drop in an inefficient ocean).

### Sharpe Ratio vs Correlation

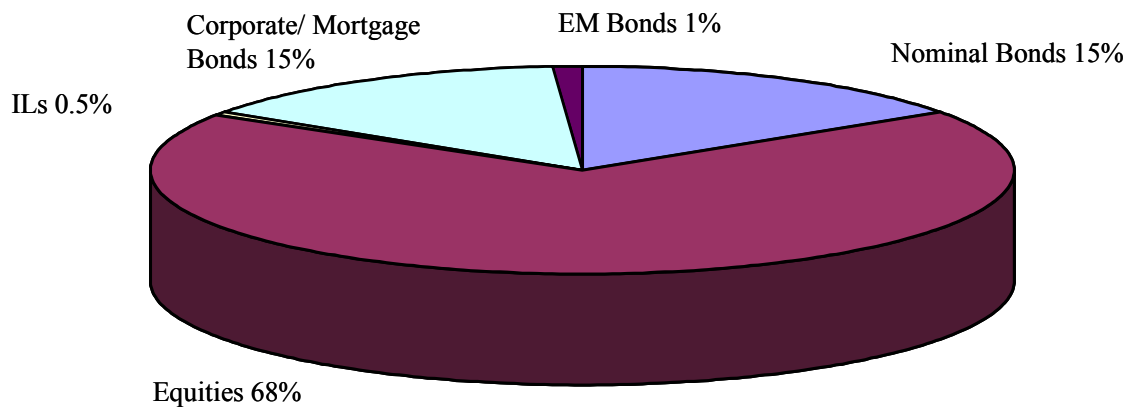


The previous charts illustrate that historically CAPM has not explained the world well at all. On a going forward basis the implied assumptions of CAPM do not smell good to us. The following charts illustrate the generally accepted CAPM portfolio as of today both in dollar and risk adjusted weights.

## CAPM Portfolio actual weights



## CAPM Portfolio risk-adjusted weights



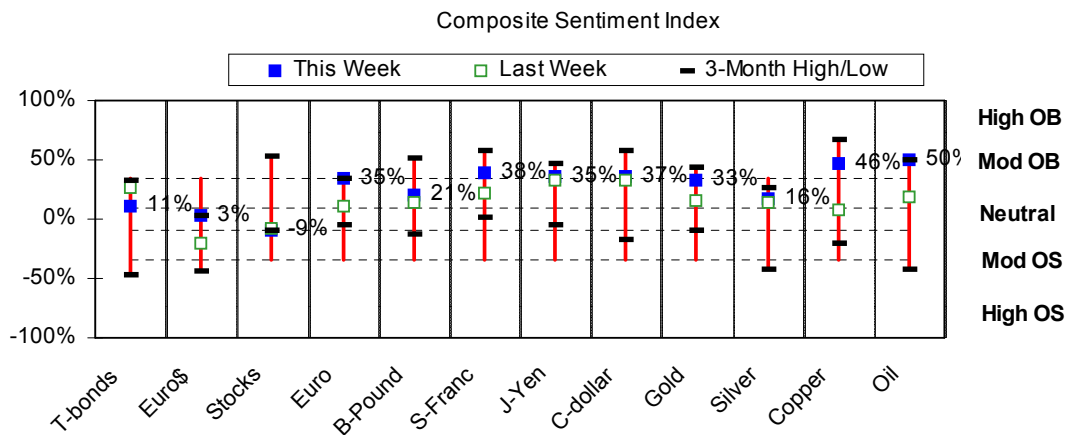
As we said, the assumptions necessary to make these weights the optimal weights are inconsistent with logic and how markets are actually priced. These weights, combined with historical correlations, would imply a negative expected excess return on inflations indexed bonds and a ratio on equities way out of line with all other asset classes. The following table illustrates the implied expectations of performance of different asset classes (you can judge for yourself).

<b>Expected Returns/Ratios Implied by CAPM Weights</b> assuming historical volatilities and annual correlations		
	Implied Excess Return	Implied Sharpe Ratio
World Equity	4.2%	0.31
World Bond	<b>1.2%</b>	0.19
World IL	<b>-0.1%</b>	-0.03
EMD Bonds	4.0%	0.15
Corporate/Mortgage Bonds	1.7%	0.21

Logically, we just do not see the mechanism that would force expected returns and ratios to match the assumptions implied by CAPM. We do see investors assessing return relative to risk all the time. But the data and the smell check of the output make it clear that CAPM may be nice in the classroom, but it is dangerous to your portfolio.

## Weekly Sentiment:

Below is our updated weekly sentiment.



<b>Composite Sentiment Index</b>				
(avg of raw numbers)				
<u>Market</u>	<u>This Week</u>	<u>Last Week</u>	<u>3 mth high</u>	<u>3 mth low</u>
T-Bonds	53	58	61	32
Euro\$	50	40	50	30
Stocks	42	43	63	42
Euro	63	52	63	45
B-Pound	56	52	70	40
S-Franc	63	55	72	45
J-Yen	58	57	63	40
C-Dollar	61	60	71	38
Gold	62	54	67	44
Silver	53	52	58	30
Copper	66	53	66	42
Oil	87	80	87	44

**Simulated Portfolios Note:**

The Typical and Balanced portfolios are simulated and do not take into account any costs or fees that may be associated with their implementation.. The Typical Portfolio capital allocation weights are estimates based upon Bridgewater Associates' understanding of standard asset allocation and may change without notice. The Typical portfolio is constructed using the historical monthly returns of the S&P 500 and Lehman Brothers US Aggregate weighted 60% and 40%, respectively. S&P 500 returns are the official reported returns for the full history. Lehman Brothers US Aggregate returns are actual returns since January 1976 and Bridgewater estimates prior to then.

The Balanced portfolio is constructed using a proprietary mix and weighting of assets. The returns used to construct the Balanced portfolio are actual market returns where available and Bridgewater Associates' estimates otherwise. Bridgewater Associates' estimates for various market returns are based on Bridgewater Associates' understanding of global market pricing and may change without notice. The benchmark cash return is defined as the Repo rate since 1991 and prior to 1991 the lesser of the 3 month T-bill times 1.05 and the 3 month Euro rate.

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