

Wilshire Consulting

2008 Asset Allocation Return and Risk Assumptions

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Introduction

This report is Wilshire Consulting's annual study on asset allocation for institutional portfolios. The return and risk assumptions contained within the report should be used for asset-liability and asset allocation studies conducted in 2008. Unless otherwise noted, all return assumptions represent median geometric returns based on a log-normal distribution.

The asset allocation process is comprised of four steps. The initial step requires forecasting return, risk, and correlation for all asset classes. The second step is client specific and involves a review of a fund's unique financial commitments. Next, using inputs from the first two steps, an efficient frontier of diversified portfolios is constructed. The portfolios residing on this frontier are specific to each client's commitments, or spending objectives, and represent varying tradeoffs between expected risk and funding cost or expected risk and real return. The final step is to select an asset mix from the efficient frontier that matches the institution's attitude toward risk. The research presented here aids in completing the first step of the asset allocation process. Wilshire Consulting works with funds individually to complete the remaining steps and to select the optimal portfolio which best reflects the risk tolerance and environment for that institution.

Expected Future Returns

At the beginning of each year, Wilshire reviews its long-term return and risk assumptions for the major asset classes. We define 'long-term' as forecasts that span at least the next ten years. This extended time horizon is consistent with the benefit/spending obligations of institutional investors, which generally average at least ten years. Wilshire's forecasting methodology, which will be illustrated in exhibits throughout the paper, has a strong degree of accuracy over intervals of ten or more years and is superior to short-term estimates that are notoriously error prone. As a result of this long-term forecasting horizon, Wilshire's assumptions typically change very little from year-to-year. One would only expect significant changes following a period of volatile directional swings in asset markets or valuations.

It is, however, routine practice for us to alter our return assumptions up or down to better fit changing market levels. This year is no exception and reflects the market impact from a turbulent 2007 environment that experienced a return of volatility and a tightening credit market. Though our inflation and equity return forecasts have remained unchanged since last year, Wilshire's return assumptions for most fixed income classes have been reduced by at least 25 basis points. High yield bonds are the exception among fixed income asset classes, as wider credit spreads have contributed to a quarter-point increase in our return forecast from 6.75% last year to 7.00% in this year's report. This increase in high yield spreads is reflected in increased borrowing costs to finance private equity buyouts and have thus led us to reduce our private markets return forecast. Further, as



will be discussed in the private markets section of this report, we have made some minor adjustments to the sub-asset class weightings implied in Wilshire's private market portfolio to better reflect typical institutional allocations. Finally, this year's report is Wilshire's first to include asset class assumptions for timberland investments.

Long-term return forecasts play an important role in the institutional investment process. Actuarial interest rate assumptions, which are essentially portfolio return forecasts, are intensively scrutinized because of their potential impact on plan contributions. Wilshire has been forecasting asset class returns using forward looking assumptions since 1981 with a strong record of success for ten-year periods. We believe the methods used in this report are both intuitive and robust.

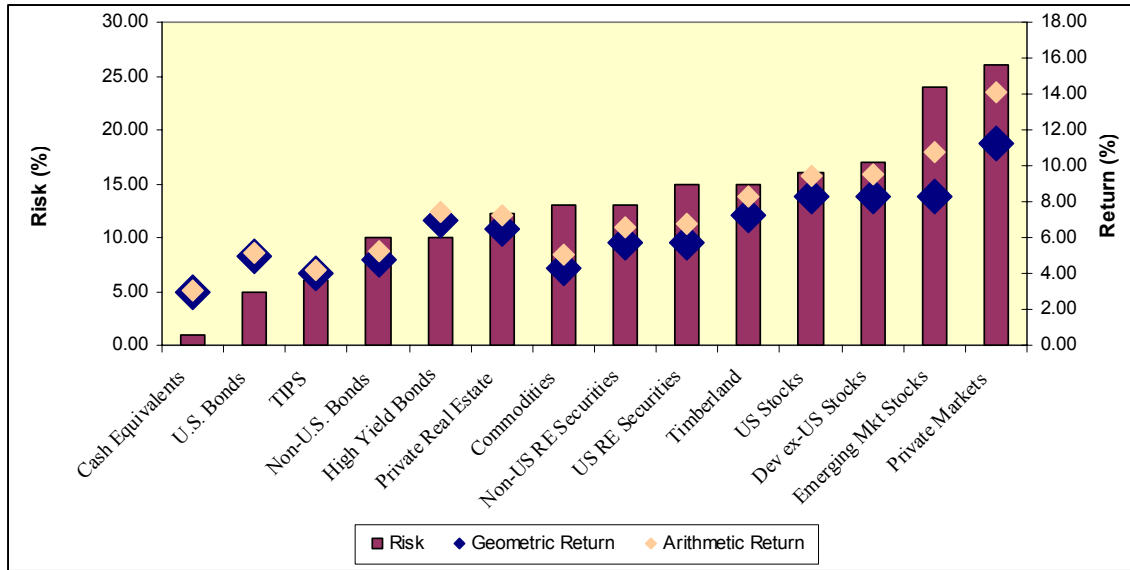
Exhibit 1 presents Wilshire's 2008 return forecasts and contrasts them with our 2007 assumptions; while Exhibit 2 displays our 2008 projections in graphical form.

Exhibit 1 Wilshire's Expected Return and Risk Assumptions

	Total Return			Risk		
	2007	2008	Change	2007	2008	Change
Investment Categories:						
US Stocks	8.25 %	8.25 %	0.00 %	16.00 %	16.00 %	0.00 %
Dev ex-US Stocks	8.25	8.25	0.00	18.00	17.00	-1.00
Emerging Mkt Stocks	8.25	8.25	0.00	24.00	24.00	0.00
Cash Equivalents	3.00	3.00	0.00	1.00	1.00	0.00
U.S. Bonds	5.25	5.00	-0.25	5.00	5.00	0.00
High Yield Bonds	6.75	7.00	0.25	10.00	10.00	0.00
TIPS	5.00	4.00	-1.00	6.00	6.00	0.00
Non-U.S. Bonds	5.00	4.75	-0.25	10.00	10.00	0.00
US RE Securities	5.75	5.75	0.00	15.00	15.00	0.00
Private Real Estate	6.75	6.50	-0.25	12.50	12.25	-0.25
Non-US RE Securities	5.75	5.75	0.00	13.00	13.00	0.00
Private Markets *	11.50	11.25	-0.25	26.00	26.00	0.00
Commodities	4.25	4.25	0.00	13.00	13.00	0.00
Timberland	n.a.	7.25	n.a.	n.a.	15.00	n.a.
Inflation:	2.25	2.25	0.00	1.00	1.00	0.00
Total Returns minus Inflation:						
U.S. Stocks	6.00	6.00	0.00			
U.S. Bonds	3.00	2.75	-0.25			
Cash Equivalents	0.75	0.75	0.00			
Stocks minus Bonds:	3.00	3.25	0.25			
Bonds minus Cash:	2.25	2.00	-0.25			

* The 2007 return/risk uses 2007 forecasts with 2008 private market sub-asset class component weights

Exhibit 2 2008 Return and Risk Assumptions



These return forecasts are more fully explained in subsequent sections dedicated to each asset class.

Historical Returns

A key check on the reasonableness of Wilshire's assumptions is their relationship to historical returns. Exhibit 3 contrasts Wilshire's return assumptions with historical returns over various periods of time and market scenarios.

Exhibit 3 Historical Returns¹ vs. Wilshire Forward-Looking Assumptions

	Historical Returns				Wilshire Forecast
	1802-2007 *	1926-2007	High Inflation 1970-1979	Bull Market 1980-1999	
Total Returns:					
Stocks	8.2 %	10.4 %	5.9 %	17.8 %	8.3 %
Bonds	4.9	5.7	7.2	10.0	5.0
T-bills	4.3	3.8	6.4	7.2	3.0
Inflation:	1.4	3.1	7.4	4.0	2.3
Total Returns minus Inflation:					
Stocks	6.8	7.3	-1.5	13.8	6.0
Bonds	3.5	2.6	-0.2	6.0	2.8
T-bills	2.8	0.8	-1.0	3.1	0.8
Stocks minus Bonds:	3.3	4.7	-1.3	7.8	3.3

* Jeremy Siegel return history from 1802-2001 ("Stocks for the Long Run" McGraw-Hill 2002) updated with the S&P 500 Index and Lehman Aggregate Bond Index.

¹ Source of historical returns throughout report is Wilshire Compass unless otherwise noted.

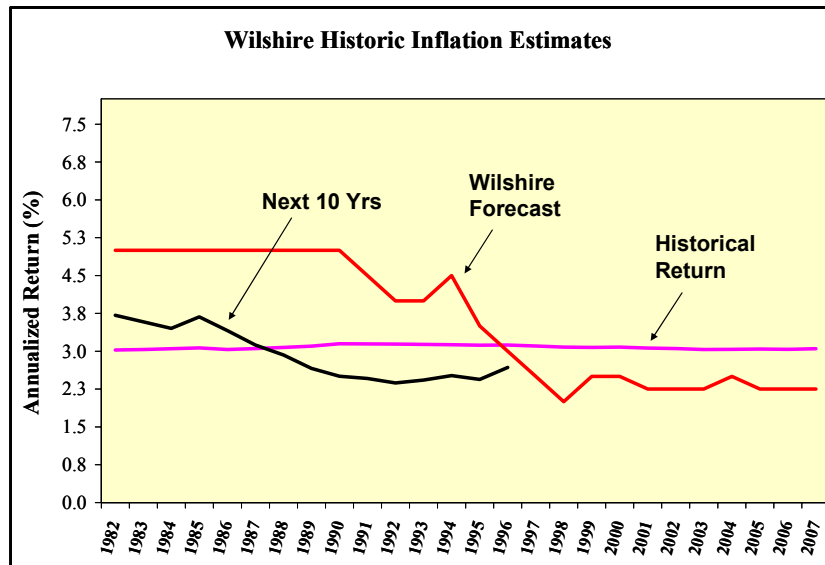
There are several notable relationships. Wilshire's stock and bond return forecasts, 8.3% and 5.0%, respectively, are close to the actual returns achieved over the 206-year period ending 2007. The 3.3% relative return forecast for stocks versus bonds is identical to the 206-year history, while our relative return forecast for stocks versus inflation of 6.0% falls below the long run historical average of 6.8%.

The remainder of the report explains the methodologies behind Wilshire's return forecasts.

Inflation

Wilshire's long-term inflation forecast is 2.25%, which is unchanged from a year ago. To estimate long-term inflation, Wilshire derives a market-based inflation forecast by subtracting the yield of a TIPS bond from the yield of a traditional Treasury bond of the same maturity. For example, on December 31, 2007, the ten-year Treasury had a yield of 4.04% while the yield on the ten-year TIPS was 1.73%. The 2.31% difference in yields is the bond market's estimate for inflation over the next ten years, which is also referred to as the ten-year breakeven inflation rate. Wilshire's practice is to select a return forecast rounded to the nearest 0.25%. Consequently, we round the 2.31% breakeven inflation rate to arrive at our current inflation rate forecast of 2.25%.

Exhibit 4
Wilshire's Inflation Forecast and Historical CPI 1982-2007

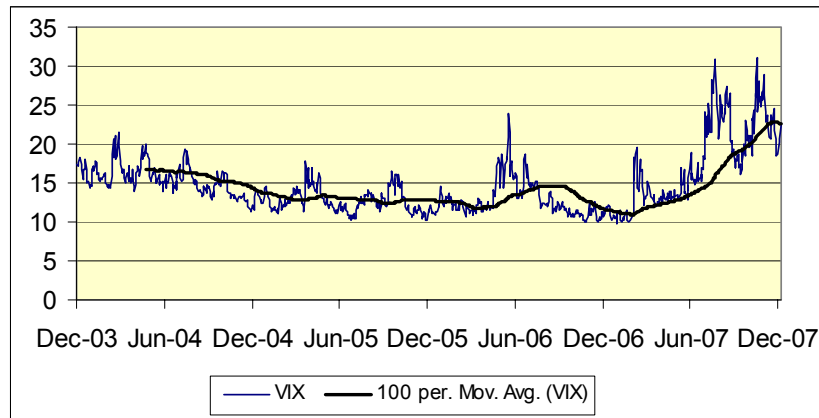


Equity

U.S. Stocks

Wilshire's long-term expected return for U.S. stocks is 8.25%, unchanged from the past two years. The relatively low volatility markets enjoyed in recent years came to an abrupt end in 2007 as the U.S. housing recession and related subprime credit woes contributed to investor uncertainty. Exhibit 5 below documents the return of risk by charting the CBOE Volatility Index (VIX), including a 100-day rolling trend line. From its recent lows under ten in November 2006, the VIX spiked to more than 30 in August and again in November 2007 as it found a new elevated trading range. Despite their wild ride, U.S. stocks posted deceptively stable mid-single-digit returns for 2007, with the Dow Jones Wilshire 5000SM Composite and S&P 500 indexes returning 5.62% and 5.49%, respectively. Operating earnings for S&P 500 companies were flat during the year, which when coupled with a modest 3.5% price increase pushed price-to-earnings (PE) ratios marginally higher from 16.2 at the end of 2006 to 16.8 in December 2007, compared to a 19.4 average PE ratio during the past 25 years.

Exhibit 5
Chicago Board Options Exchange Volatility Index (VIX)



It is Wilshire's practice to employ a dividend-discount model ("DDM") to forecast long-term U.S. stock returns.

Wilshire's current expected return for stocks incorporates the following assumptions:

- A year-end 2007 S&P 500 Index price of 1,468, up from 1,418 a year earlier;
- A base earnings level of \$87.5 per share, down slightly from \$87.7 per share a year earlier;
- Earnings-per-share growth of 8.5% during the next five years, dropping incrementally to 4.8% from years six through 15;
- A 33% dividend payout ratio over the next five years, increasing incrementally from years six through 15 to 45% - its historical average over the past quarter-century;

- Long-term earnings and dividend growth of 4.8% after 15 years, equal to a 2.25% inflation rate and a 2.50% real growth rate.

When establishing long-term return projections, it is helpful to identify the model's sensitivity to each of the assumptions that are used as inputs. This level of understanding is vital in forecasting returns that can be used with greater confidence. Exhibit 6 demonstrates the model's sensitivity to changes in five-year earnings growth estimates and dividend payout ratios.

Exhibit 6
DDM Forecast Sensitivity to Inputs

		Dividend Payout Ratio (Long Term)					
		25	30	35	40	45	50
	(%)						
5-Year EPS Growth	7.0	6.74	7.05	7.35	7.64	7.91	8.17
	7.5	6.82	7.15	7.46	7.76	8.04	8.31
	8.0	6.91	7.25	7.57	7.88	8.17	8.44
	8.5	7.01	7.36	7.69	8.00	8.30	8.58
	9.0	7.10	7.46	7.81	8.13	8.43	8.73
	9.5	7.20	7.58	7.93	8.26	8.57	8.87
	10.0	7.30	7.69	8.05	8.39	8.72	9.03
	10.5	7.41	7.81	8.18	8.53	8.87	9.18
	11.0	7.52	7.93	8.31	8.68	9.02	9.34
	11.5	7.63	8.06	8.45	8.82	9.17	9.50
	12.0	7.75	8.18	8.59	8.97	9.33	9.67

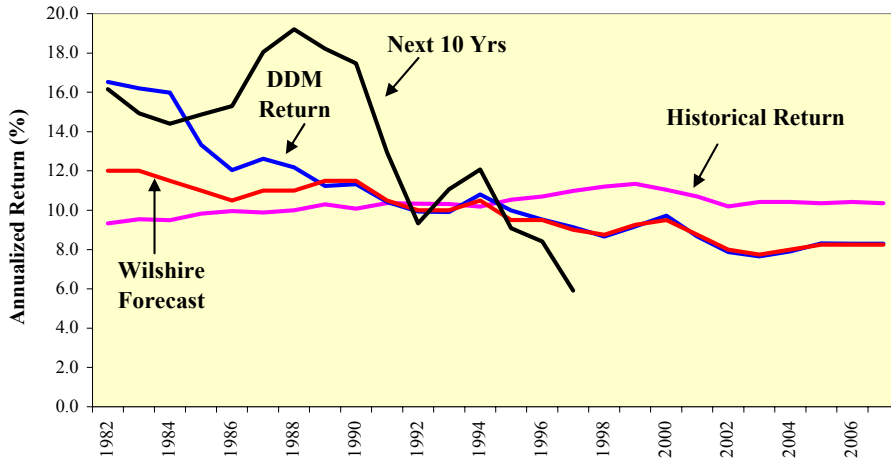
Wilshire's assumption of 8.5% earnings growth over the next five years is based on the historical relationship between the I/B/E/S 'bottom-up' security level median five-year long-term earnings growth rate and the actual five-year earnings growth rate following the forecast. The historical relationship between these two suggests the 'bottom-up' estimate is consistently overly optimistic and prone to 'over shoot' error by an average of approximately 40%. Therefore, in light of a year-end bottom-up long-term growth rate estimate of 12%, we expect the earnings growth rate over the next five years to be 8.5%. We expect dividend payout ratios to move towards their historical average of 45% during the next 15 years.

Exhibit 7 details the history of Wilshire's stock return forecasts together with the dividend-discount model return forecasts, historical returns, and the rolling returns for the ten-year period following each estimate. Beginning in the mid-1980s, Wilshire chose to base its stock return forecast on its DDM whereas previously our forecast blended the model return with historical stock returns. With the exception of periods beginning in the late 1980s and early 1990s, Wilshire's DDM forecast has been a very good predictor of the S&P 500's return during the following ten-year period. Actual ten-year returns that began in those years included the technology bubble of the late 1990s, something we would not expect our methodology to predict. Equity returns have subsequently deflated and Wilshire's forecasts from 1992 through 1996, which span both the inflating and



deflating of the bubble, are once again consistent with actual S&P 500 returns for the subsequent ten years. The ten-year return beginning in 1997 is the first to miss the early years of the bubble and reflects a disproportionate impact from the subsequent sell-off.

Exhibit 7
Wilshire Stock Return Forecast vs.
DDM Return, Historical Return & Actual 10-Year Return Following Forecast



Year End	S&P 500 1926 to	DDM at 12/31	Wilshire Forecast	S&P 500 Next 10 Yrs
1988	9.99	12.17	11.00	19.20
1989	10.30	11.23	11.50	18.21
1990	10.08	11.33	11.50	17.46
1991	10.37	10.42	10.50	12.94
1992	10.32	9.93	10.00	9.34
1993	10.32	9.91	10.00	11.06
1994	10.18	10.80	10.50	12.07
1995	10.53	9.99	9.50	9.08
1996	10.70	9.53	9.50	8.42
1997	10.99	9.14	9.00	5.92
1998	11.21	8.66	8.75	
1999	11.34	9.17	9.25	
2000	11.04	9.72	9.50	
2001	10.70	8.66	8.75	
2002	10.20	7.88	8.00	
2003	10.42	7.65	7.75	
2004	10.42	7.90	8.00	
2005	10.35	8.31	8.25	
2006	10.42	8.29	8.25	
2007	10.35	8.30	8.25	



Developed ex-U.S. Market Stocks

Wilshire uses the same 8.25% expected return for non-U.S. stocks of developed markets as it does for U.S. stocks. While this view has gained wider acceptance in recent years, some institutional investors and their money managers assume that the non-U.S. developed stock market will generate somewhat higher returns than U.S. stocks. As demonstrated in Exhibit 8, the historical record does not support a non-U.S. return premium.

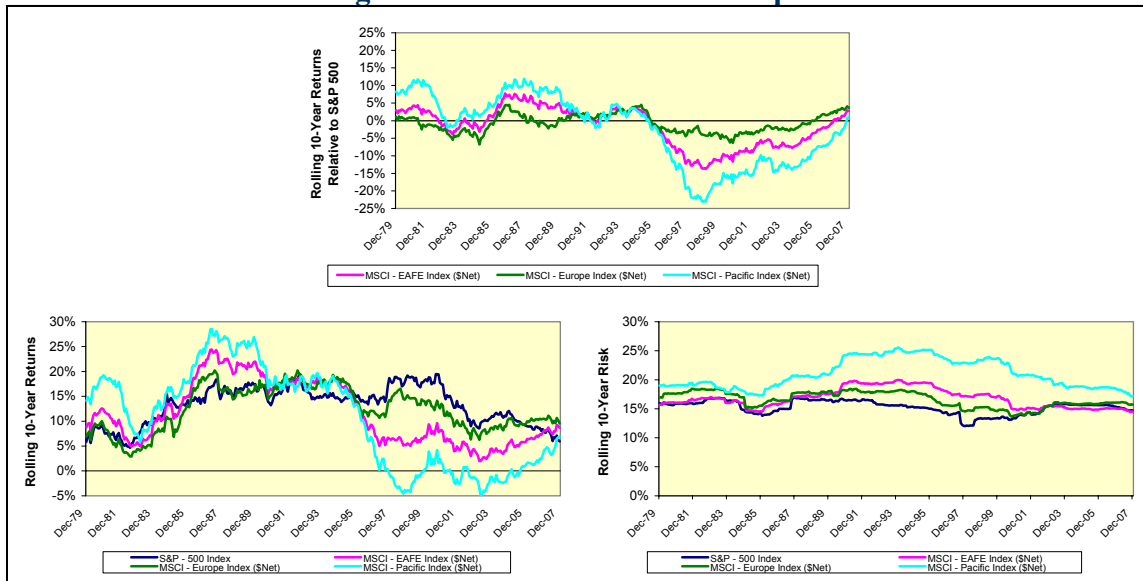
Exhibit 8
Historical Returns: 1970 - 2007

	U.S. Dollar		Local Currency	
	Return	Risk	Return	Risk
S&P 500 Index	11.1 %	15.1 %	11.1 %	15.1 %
MSCI EAFE Index	10.9	16.3	8.9	14.1
Europe	11.4	16.4	10.4	15.0
Pacific	10.7	20.3	8.0	16.8

Reliable returns for non-U.S. stocks are available beginning in 1970. Since that time U.S. stocks, as represented by the S&P 500 Index, have returned 11.1% per year, versus 10.9% for developed market non-U.S. stocks as measured by Morgan Stanley Capital International's ("MSCI") EAFE Index in U.S. dollars. Given this long-term performance record, similar risk levels, and common financial attitudes toward risk-taking, it would seem reasonable to forecast similar long-term returns for the U.S. and non-U.S. developed stock markets. In fact, evidence might suggest slightly lower expected returns on international stocks due to higher costs (transaction costs, taxes and dividend withholding) of investing outside U.S. markets.

Exhibit 9 includes the period from mid-1985 through most of 1995 during which the MSCI EAFE Index outperformed the S&P 500 Index due to the then robust Japanese market. However, the subsequent 11-plus years of out-performance by U.S. stocks versus non-U.S. stocks supports our assumption that the economic theories of Purchasing Power Parity ("PPP") and Interest Rate Parity ("IRP") prevail over long time periods and justify the selection of a single return assumption for both asset classes.

Exhibit 9 Rolling 10-Year Return & Risk Comparisons



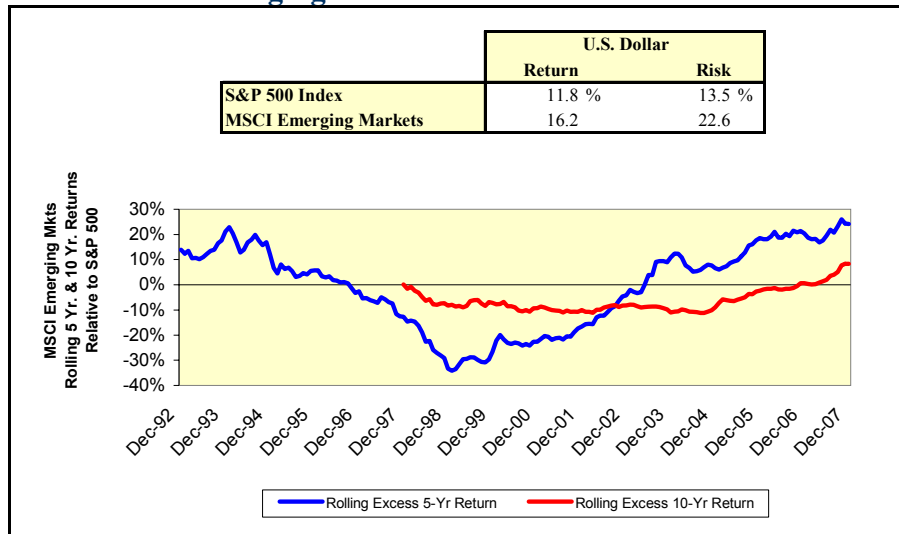
With the deficiency of concrete evidence that supports a non-U.S. equity return premium, Wilshire forecasts an 8.25% return for non-U.S. stocks of developed nations, the same as for U.S. stocks.

Emerging Market Stocks

Money managers have long supported the view that emerging markets should produce returns above the developed EA FE markets. Poor returns in the late 1990s combined with emerging markets' high volatility have, however, caused some managers to re-evaluate their position. In fact, it is important to understand that the historical record on emerging market performance is short and shows mixed results. This gives us little confidence in predicting a return premium to emerging markets above our return forecast for the developed stock markets. For example, prior to 2004, the historical return of the MSCI Emerging Markets Index was 12.4%, almost directly in line with the 12.5% return on the S&P 500 Index during the same period.

The last four years, however, have seen emerging markets outperform developed equity markets by a wide margin. This has caused the relative returns for emerging markets to again be superior to those of the developed markets, as measured from the start of the MSCI Emerging Markets Index, in a similar fashion to that seen in the early 1990's. As shown by the rolling 5-year relative return line in Exhibit 10, this appears to be a cyclical phenomenon and as such is insufficient justification to support a long-term return premium. The rolling 10-year relative return line demonstrates the questionability of anticipating a sustainable return premium for emerging stocks.

Exhibit 10
Emerging Market Returns: 1988 - 2007



Wilshire recommends an emerging market expected return equal to the return for developed markets, rather than assuming a small return premium to emerging markets. Our research shows that efficient portfolios include a small allocation to emerging markets, consistent with a market-weighting, even with a level of return equal to that of the developed equity markets. For example, an efficient frontier constructed from Wilshire's underlying assumptions for U.S., non-U.S. developed market and emerging market stocks suggests an allocation of approximately 13.5% to emerging markets at a 16% risk level, which is the expected risk level of global stocks. This allocation is slightly above the emerging markets' 11.5% weight within the global opportunity set.

Global ex-U.S. Market Stocks

Despite creating separate forecasts for the developed and emerging markets as discussed above, Wilshire's asset allocation work – unless otherwise directed by client circumstances – will implicitly assume a market weighted combination of our non-U.S. developed and emerging market components in a single non-U.S. equity asset class. The emerging markets component will be market-weighted, which, as of 2007 end of year market values, represents approximately 19% of total non-U.S. equity. This approach is consistent with Wilshire's treatment of the U.S. stock market where large stocks are not separated from small stocks and value stocks are not separated from growth stocks in the asset allocation process. Wilshire believes that emerging markets have become sufficiently integrated into the fabric of institutional money management that market capitalization weighting will give most investors a near optimal return/risk tradeoff.

In this framework, emerging stock markets become a risk management or diversification vehicle rather than an asset class that is expected to generate higher long-term returns. Some clients, including most non-U.S. fund sponsors, may prefer to treat emerging



markets as a separate asset class. Such an approach is easily accommodated and is well supported by our practice of deriving separate rate assumptions for the developed and emerging markets. A market-weighted blend of our developed ex-U.S. and emerging market stock forecasts leads to a combined global ex-U.S. equity return of 8.5%, or a 25 basis-point premium to each of the underlying components, which is due to the complementary nature of combining diversifying sub-asset classes.

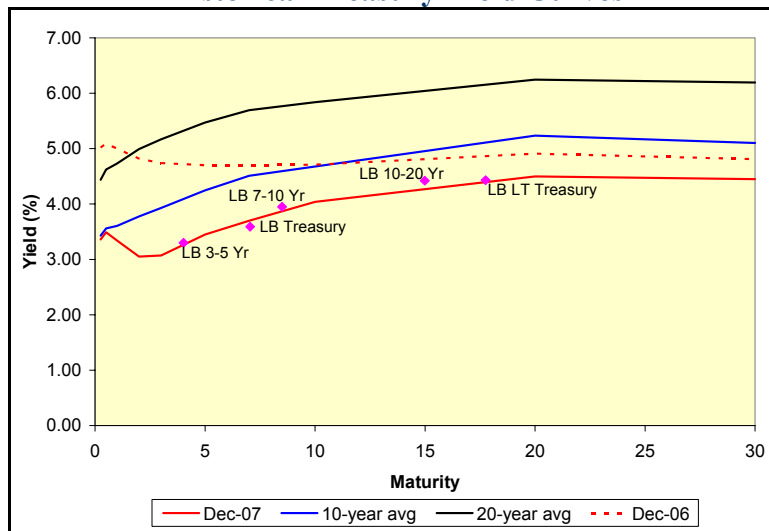
Fixed Income

U.S. Bonds

Bond market yields provide the most reliable forecast of long-term future bond returns. On December 31, 2007, the yield-to-maturity on the Lehman Aggregate Bond Index was 4.90%, 44 basis points lower than its 5.34% yield-to-maturity one year earlier. Wilshire's practice is to use the current yield-to-maturity as the predictor of future bond returns, as such we round the 4.90% yield-to-maturity of the Lehman Aggregate to arrive at our core bond forecast of 5.00%.

The U.S. yield curve moved from an inverted term structure to a more "normal" upward sloping curve during 2007 where long-term rates are higher than short-term rates. Exhibit 11 illustrates the yield curve shift and compares the current curve to the historical 10 and 20-year averages. Current yields are lower than recent history although the term structure is similar. The current spread between the ten and two-year yield is 0.99 versus 0.90 for the ten-year average and 0.84 for 20-years. The spread between the 30 and ten-year yield is 0.41 versus 0.42 and 0.35 for the 10 and 20-year averages, respectively. As will be explained in the discussion of Treasuries and TIPS, the Lehman Treasury Index and 7-10 Year Treasury Index provide the supporting data for our return forecasts.

Exhibit 11
Historical Treasury Yield Curves

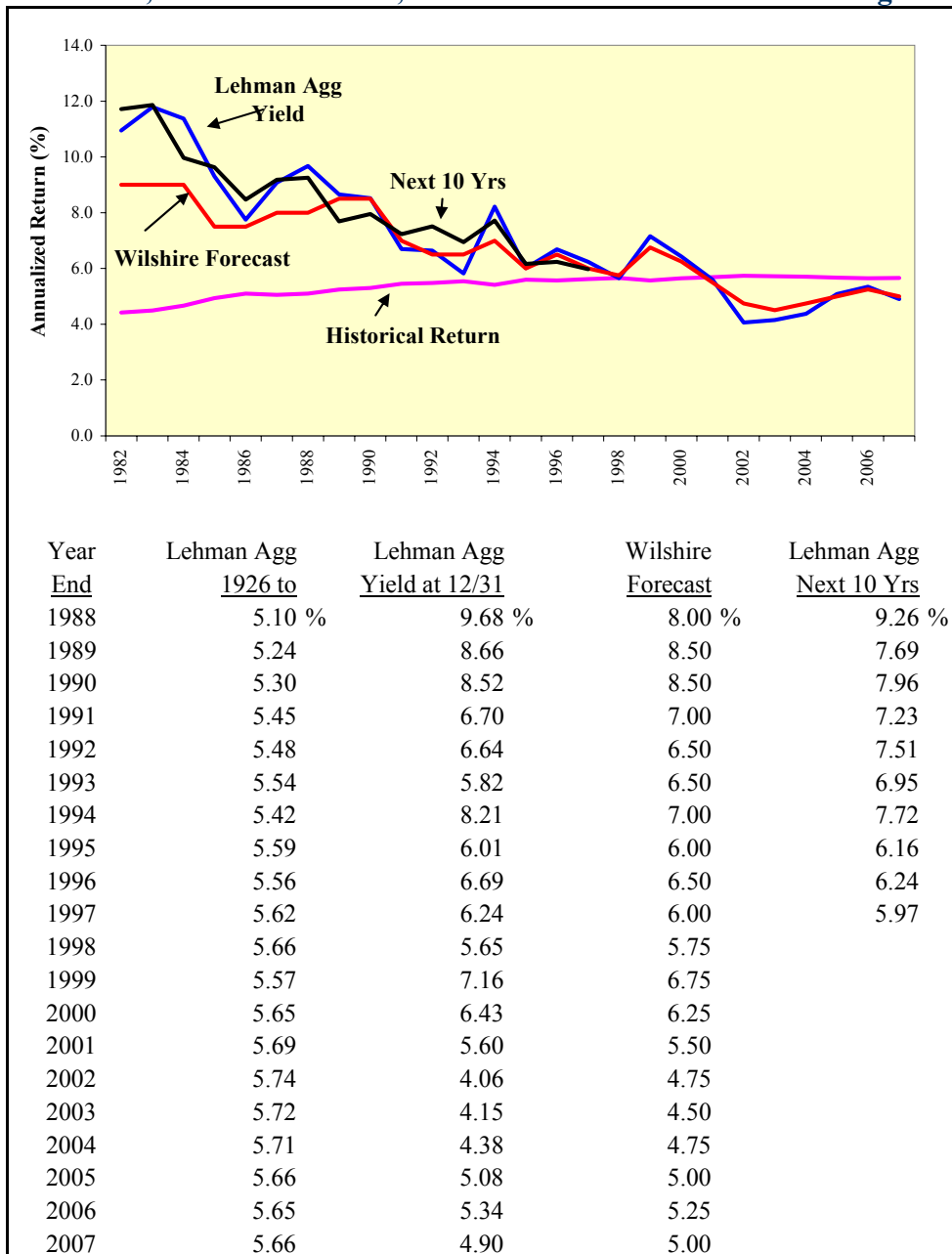


Source: Lehman Brothers, U.S. Department of Treasury



Exhibit 12 below compares Wilshire’s past bond return assumptions with historical returns, yields and the rolling returns for the ten year period following each forecast. The accuracy of Wilshire’s forecast methodology of future long-term returns is confirmed by the tight relationship between the forecast line and the rolling ten-year historical return line depicted below.

Exhibit 12
Wilshire Bond Return Forecast vs.
Current Yield, Historical Return, & Actual 10-Year Return Following Forecast



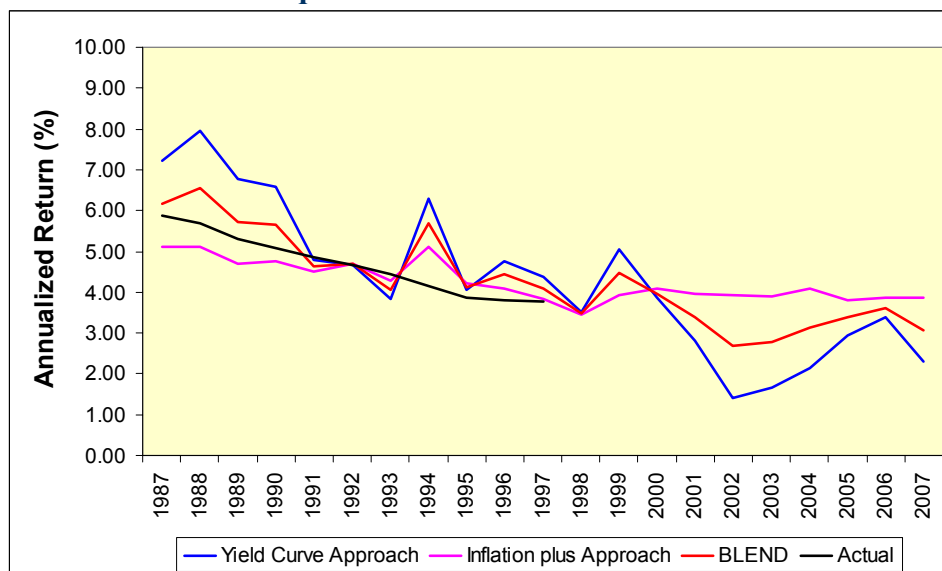
Cash Equivalents

Wilshire blends two methodologies in forecasting returns for cash equivalents: the “Yield Curve Approach” and the “Inflation-plus Approach.”

The yield curve approach starts with the yield-to-maturity on Treasury bonds and subtracts the average yield premium between short and long bond yields. As we alluded to previously in the U.S. Bonds section, this premium can change for even long time periods. A 20-year observation allows for changes in market conditions while avoiding undesirable swings in the assumed premium. As of December 31, 2007, the 20-year yield curve premium averaged 1.31%. Subtracting 1.31% from the yield-to-maturity of 3.59% on the Lehman Treasury Index gives a 2.28% cash return forecast. Alternatively, the inflation-plus approach adds a short-term real return component to our inflation rate forecast. Over the past half-century, real returns for Treasury bills have averaged 1.62% that, when added to our 2.25% inflation rate assumption, equals a 3.87% cash return forecast. An equal blend of the two approaches, rounded to the nearest 0.25%, leads to a 3.00% cash return forecast.

Exhibit 13 compares Wilshire’s yield curve approach, inflation-plus approach and a 50/50 blend of the two approaches with the Treasury bill return for the rolling ten year period following each estimate. Focusing on the red line depicting a 50/50 blend of the two approaches and the black line depicting the Treasury bill rolling ten-year return, it appears that the 50/50 blend serves as a relatively accurate predictor of cash equivalents for the forward ten-year period.

Exhibit 13
Wilshire’s Cash Equivalents Forecast vs. Actual 10-Year Return



Source: Wilshire Compass, U.S. Department of Treasury



Non-U.S. Bonds

Investment theory suggests that non-U.S. bond yields will be equivalent to core U.S. bond yields when currency adjustments are taken into account. This would imply using the same five percent core U.S. bond return forecast for non-U.S. bonds. Our experience, however, shows that custodial costs, taxes, transaction fees and a higher credit quality versus the U.S. bond market, due to the large proportion of government debt in non-U.S. bond indexes, reduce the non-U.S. bonds return by 25 basis points. Thus, our methodology results in a 4.75% expected return for non-U.S. bonds. Exhibit 14 compares historical core U.S. bond return and risk values² with hedged and unhedged values of the Citigroup Non-U.S. Government Bond Index.

**Exhibit 14
 U.S. vs. Non-U.S. Bond Returns (1985 through 2007)**

	U.S. Dollar		Local Currency	
	Return	Risk	Return	Risk
Core U.S. Bonds	8.3%	4.8%	8.3%	4.8%
Citigroup Non-U.S. Govt.	10.0%	11.5%	7.5%	4.0%

Unhedged non-U.S. bonds offered better returns over the 23-year period due to a net fall in the dollar for the entire time period. Hedged non-U.S. bond returns take out expected and unexpected currency movements and exhibit returns 80 basis points below core U.S. bonds at less risk. A long-term forecast for non-U.S. bonds should not include a currency return, positive or negative, and should rely upon historical hedged returns. Risk forecasts, however, should come from the experience of the unhedged indexes unless a hedged strategy is employed.

In summary, Wilshire is using a 4.75% expected return for unhedged non-U.S. bonds and a 4.65% expected return for hedged non-U.S. bonds, with a ten basis point deduction in return due to expected additional hedging costs.

Treasury Bonds and Treasury Inflation Protected Securities (TIPS)

Wilshire's return assumption for Treasuries is derived from the yield-to-maturity on the Lehman Treasury Index. Our return forecast for Treasuries is 3.50%, which is based on the index's December 31, 2007 yield-to-maturity of 3.59%. Wilshire recommends using an expected return for Treasury Inflation Protected Securities (TIPS) equal to the expected return for similar maturity, nominal Treasury bonds. The average maturity for the Lehman U.S. TIPS Index was 9.3 years on December 31, 2007. The index with the closest average maturity is the U.S. Treasury 7-10 Year Index, at 8.5 years. Therefore, our return forecast for TIPS is 4.00% and is based on the 3.95% yield-to-maturity of the

² Wilshire uses the Lehman Aggregate U.S. Bond Index as the principal benchmark for U.S. Core Bonds.



Treasury 7-10 Year Index. The assumption is 50 basis points higher than our forecast for Treasuries and reflects a TIPS portfolio that mirrors the Lehman U.S. TIPS Index, which has a longer average maturity than the Lehman Treasury Index.

Long-Term Bond (Citigroup LPF)

Wilshire's return assumption for long-term bonds is derived from the yield-to-maturity of the Citigroup Large Pension Fund (LPF) Index. The LPF index consists of fixed income beyond just U.S. Treasury securities that have maturities greater than the core market as represented by the Lehman Aggregate Bond Index. The index includes Treasuries, asset-backed securities and credit securities with a minimum maturity of seven years. Our return forecast for long-term bonds is 5.25% and is based on the yield-to-maturity of 5.17% on the Citigroup LPF Index as of December 31, 2007. While the assumption is greater than our long-term Treasury assumption of 4.50%, the difference is due to the inclusion of spread products in the Citigroup LPF Index. The duration of the LPF index is actually lower than that of the Lehman Long-Term Treasury Index, with the average maturity of the Citigroup LPF Index at 12.0 years and 17.8 years for the long-term Treasury index.

High Yield Bonds

Wilshire's return forecast for high yield bonds is 7.00%. This return forecast is based upon our high yield bond model that accounts for the dynamic nature of credit yield spreads, defaults and recoveries.

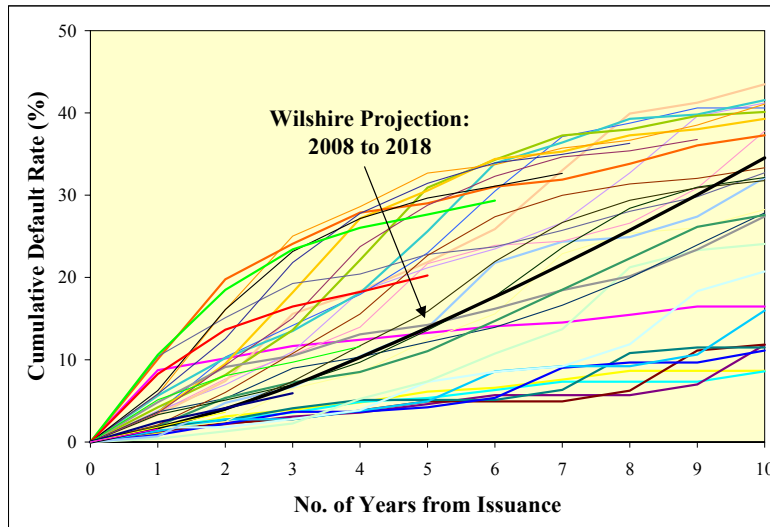
Wilshire's 7.00% high yield expected return incorporates the following assumptions:

- An initial yield spread of 6.04%, up from 2.91% one year prior;
- An initial default rate of 1.20%, increasing incrementally over a ten-year explicit period to a historical 4.50% average;
- A ten-year cumulative annual default rate of 34.50%;
- A constant 40.00% recovery rate, equal to the historical average recovery rate;
- A ten-year cumulative annual loss rate – defaults minus recoveries – equal to 20.70% versus 22.10% last year;

Wilshire's high yield bond model incorporates the ability to input variable default rates. In Exhibit 15 we graph Wilshire's expected future default rates against all historical cumulative default rates from 1970 through 2006. Each line represents the historical cumulative default rates for high yield bonds issued in a single vintage year. The dark solid line is Wilshire's forward-looking default rate that is used in our expected return model for high yield bonds. Wilshire's default forecast line represents default expectations for a market portfolio holding bonds issued across various years. While it differs in nature from the vintage year default lines, which represent cumulative default rates specific to each single year of issue, the chart is useful in comparing our projection to historical default rate paths.



Exhibit 15 Historical Cumulative Default Paths - 1970 to 2006



Source: Moody's Investor Service

Our previous research on high yield bonds³ explains the rationale behind Wilshire's long-term return forecasting methodology in greater detail.

Private Market Investments

Private equity firms began 2007 with a spate of public to private transactions executing a record number of mega-deals capturing roughly 39% of the U. S. deal value vs. 35% for 2006⁴. Also generating a large percentage of deal flow were foreign investors exploiting the declining value of the U.S. dollar, purchasing a record 46% of the \$230.5 billion of U.S. mergers and acquisitions announced in the fourth quarter, the largest recorded portion since 1998.

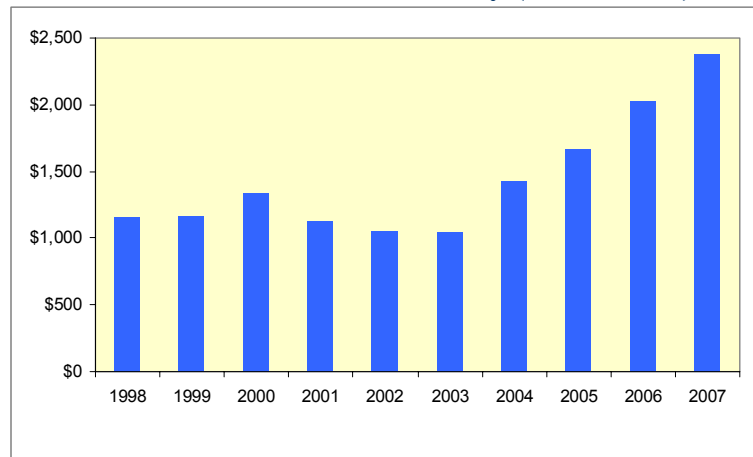
As the third quarter rolled over however, the sub-prime market began to send tremors through the rest of the capital markets, squeezing liquidity from the new deal pipeline. Exhibit 16 charts North American LBO transactions for the past ten years. Despite the slowdown in the third and fourth quarters, North American Buyouts experienced growth of 17.4% in 2007, while M&A transactions grew 10.3%.

³ Wilshire Associates, Inc. (2005). *High Yield Market Update*.: Yang.

⁴ Altassets.com



Exhibit 16
North American LBO Activity (in \$ billions)



Source: Dealogic, RREEF

Wilshire's assumptions for individual private market asset classes are contained in Appendix B together with risk and return comparisons to some of the major public asset classes. Our private market return expectations are based upon drawing parallels to the public markets where appropriate. Further detail on Wilshire's methodology is available in part two of our three part series on private equity investing.⁵ Return forecasts are shown in the first row of Appendix B.

Wilshire's risk forecasts, which are expressed as standard deviations of annual returns, are reported in row two of Appendix B. Risk estimates for the Private Market asset class pose a unique challenge because infrequent private market investment valuations preclude the calculation of short-term periodic returns. As a result, projections of risk based on accounting data consistently understate risk. Wilshire's approach has thus been to estimate risk by drawing parallels to the public markets and adjusting for any added risk contributed by financial leverage, the absence of liquidity, or greater business risk.

The remaining rows in Appendix B contain correlation forecasts. Again, these estimates come from parallels to the public markets and are useful in assessing the diversification benefits of private markets. In general, Wilshire views the use of private equity as a type of super-charged equity return rather than a diversification tool. The linkage between these markets is quite intuitive, as private equity returns are subject to the receptiveness of the capital markets to generate their outsized returns.

Buyouts

Our expected return for U.S. buyouts is 10.00%. The assumption is that buyouts will exhibit similar business risks as publicly traded companies but will have greater financial risk. Therefore, it is appropriate to model buyout returns using public market proxies for

⁵ Wilshire Associates, Inc. (2002). *Private Equity Investing Part 2 – Generating Asset Class Assumptions*.: Foresti and Toth.



equity returns and financing costs. All expected returns in Appendix B are intended to be net returns. For example, the 10.00% expected return for buyouts should be viewed as net of all fees, including carried interest.

Wilshire's risk forecast for U.S. buyouts is 28.00%. This forecast is considerably higher than the 16.00% risk level we assume for public stocks and is attributable to greater financial risk due to a more leveraged capital structure in buyout companies. Our leverage assumption is based on a capital structure with 40% short-term debt, 20% high yield debt, and 40% equity for buyouts, which is consistent with historical measurements.

Venture Capital

Wilshire's return assumption for venture capital is 12.00%, unchanged from last year and consistent with our view on the public markets. The valuation of venture capital investments can vary by manager. This mix of current and stale valuations becomes an issue when aggregating venture performance for use in asset allocation. Therefore the presence of stale valuations suggests that to the extent venture capital performance is related to public market performance it will have some sensitivity to both recent and past returns. By including lagged data from the public markets, a more correct beta can be derived versus one naively found with a regression on contemporaneous data.

Our analysis indicates that venture capital exhibits a beta of 1.7 to the public market. Using the familiar CAPM formula $E(r) = \beta(R_m - R_f) + R_f$, we can derive an expected return for venture capital. This return estimate makes intuitive sense as investors should demand a return premium for making venture investments considering the uncertainty inherent in investing in new ventures.

$$E(r) = 1.7(8.25 - 3.00) + 3.00 = 11.93\%, \text{ which we round to } 12.00\%.$$

The first three quarters of 2007 saw total equity investments in venture-backed companies of \$21.8 billion versus \$20.1 billion for the same time period in 2006.⁶

Non-U.S. Buyouts

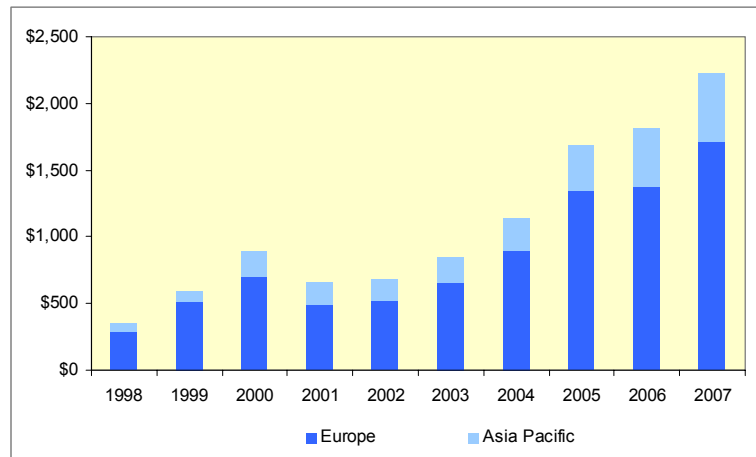
Non-U.S. Buyouts volume expanded by 22.9% despite the contraction in U.S. private equity markets in the latter half of the year. Sovereign wealth funds played a major roll over the past year taking minority stake investments in a wide variety of companies.⁷

⁶ MoneyTree Survey, Q3 2007 Results, U.S. Report. Price Waterhouse Coopers, National Venture Capital Association, Data provided by Thomson Financial. Located on the Web at www.pwcmoneytree.com.

⁷ www.bloomberg.com



Exhibit 17 2000-2007 Non-US LBO Transactions



Source: Dealogic, RREEF

Return and risk forecasts for non-U.S. buyouts follow the same methodology used for U.S. buyouts with two changes: non-U.S. developed market equity is used as a public market proxy instead of U.S. equity and Wilshire's non-U.S. bond assumption is used as the corporate debt proxy. The result is a 10.00% expected return and 30.00% risk.

Distressed Debt

The Citigroup Global Markets Bankrupt/Defaulted Debt Index was selected as a public market proxy for distressed debt investments. The index contains virtually all issues in default. The 19.00% risk forecast and correlations reported in Appendix B for distressed debt are based upon historical measurements for the Citigroup Index. The 8.75% expected return for distressed debt comes from our view that successful distressed investors take equity-like control positions in distressed companies with significant upside potential but less risk than other buyouts because these companies have already encountered financial distress.

Our analysis suggests that one of the benefits of including distressed debt in a private markets portfolio is its low correlation with public asset classes, particularly stocks, when compared with other private market asset classes.

Mezzanine Debt

Wilshire views mezzanine debt like a convertible bond. However, unlike publicly traded convertibles with characteristics combining stocks and bonds, mezzanine debt possesses characteristics combining buyouts and high yield bonds. Consequently, we expect their return and risk measures to lie somewhere between buyouts and high yield bonds. Therefore, the 8.75% return and 19.00% risk forecast for mezzanine debt in Appendix B is based upon a blend of our buyout and high yield assumptions.



Private Markets Portfolio

The return and risk forecast for a diversified private markets portfolio is provided in Appendix B. The makeup of the private markets portfolio is:

U.S.	Buyouts	50%
Venture	Capital	20%
Non-U.S.	Buyouts	20%
Mezzan	ine Debt	5%
	Distressed Debt	<u>5%</u>
		100%

The weightings were chosen because they are representative of typical private market allocations of large institutional investors. Different from last year, the allocation to Venture Capital decreased from 30% to 20% representing a diminished role in representative private market portfolios. Additionally, U.S. Buyouts decreased by ten percent where Non-U.S. Buyouts became more accessible and increased by ten percent. Mezzanine Debt and Distressed Debt have not changed in weighting but are now explicitly broken out to give a more detailed view of the basket given recent changes in component weights.

When the components are geometrically calculated with a lognormal assumption, the forecast return for a diversified private markets portfolio is 11.36%, which we round to 11.25% given our convention to round to the nearest quarter percent. This level of return is three percent above the 8.25% expected return for U.S. stocks. This year's forecasted return spread is down from 3.50% in last year's forecast as a result of the decrease in U.S. and Non-U.S. Buyout returns. The expected risk for the diversified private markets portfolio is 26%, down from 29% in last year's forecast, reflecting the decrease in venture capital exposure and the general re-weighting of the private markets' basket components. The 26% risk level is slightly more than 1.5x the forecasted risk of U.S. stocks.

Real Assets

Asset correlation, or the degree to which asset prices move in tandem, results from a common sensitivity to underlying economic forces (i.e. growth, employment inflation). Real assets, in particular, share a positive correlation to inflation and consequently, can partially hedge real asset investment values against inflationary environments. This connection with inflation generates a relatively low correlation with other traditional assets; therefore Wilshire groups the discussion of Real Estate, Timberland, and Commodities into a Real Assets⁸ section. While we consider TIPS a member of the real asset class, they are absent from this section as a discussion of our TIPS methodology was included in the Fixed Income section above.

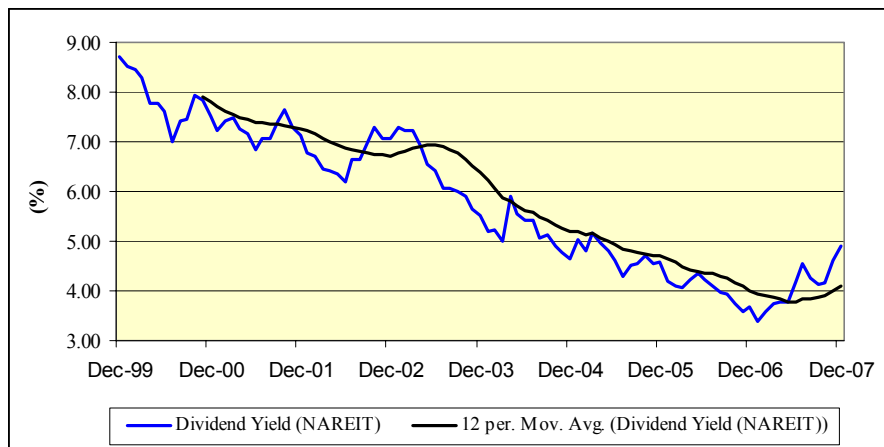
⁸ Wilshire Associates, Inc. (2007). *Real Asset Investments*. Browning. 08/06/2007.



U.S. Real Estate Securities

Wilshire is forecasting an expected return of 5.75% for U.S. real estate securities, unchanged from last year's forecast. This assumption is derived from combining the one-year average Equity REIT dividend yield for 2007 of 4.09% with an expected dividend growth rate of 1.7%. Examining REIT dividend growth over the past 33 years, Wilshire found that REITs were able to pass through a bout three-quarters of inflation through rent and dividend increases. The 1.7% expected dividend growth equals three-quarters of Wilshire's 2.25% inflation forecast. The REIT sector followed up the 36.0% gain in 2006 with a sharp -17.6% loss in 2007. Exhibit 18 shows that while the REIT dividend yield increased steadily throughout the year, this increase is the direct result of falling index values and is a key reason for our stable expected return forecast for U.S. Real Estate Securities.

Exhibit 18
REIT Dividend Yield



Source: FTSE Group and the National Association of Real Estate Investments Trust

Non-U.S. Real Estate Securities

Wilshire's usual practice is to assume comparable non-U.S. and U.S. returns within a global asset class containing regional components. Within this context we often employ a market or model based approach to forecasting the U.S. component return, which we then build into a non-U.S. component assumption. Similar to our equity assumptions, we forecast a long-term return for U.S. real estate securities and then expand that result to serve as our non-U.S. real estate securities return forecast. While the historical record for global real estate securities is short, it does not support a non-U.S. return premium and until strong evidence supports otherwise, we are comfortable assuming a similar return globally. This approach leads to our 5.75% long-term return forecast for global real estate securities.



Private Real Estate (Direct Property)

Private real estate investments with the exception of infrastructure⁹ can be divided into three primary subsets: core, value-added, and opportunistic. Wilshire's return assumption for private real estate is 6.50% and is based on a private real estate portfolio consisting of 70% core, 15% value-added, and 15% opportunistic. The 25 basis point decrease in our private real estate return mainly reflects a decrease in the prospects of individual components in our private real estate portfolio. These private real estate asset weightings are flexible and dependent on a client's investment objectives. Wilshire's assumptions for individual private real estate asset classes are contained in Appendix C together with comparisons to some of the major public asset classes.

As mentioned above, the private real estate portfolio can be broken up into three categories: core, value-added, and opportunistic. Core real estate investments are characterized by larger properties with more stable cash flows, less utilization of financial leverage and a lower level of risk than the other real estate investment strategies. Value-added investments in the real estate market are characterized by improvements in a number of attributes. Value-added real estate investors are able to create wealth by developing new properties as well as redeveloping underperforming properties through physical, financial and operational upgrades. Investing in opportunistic real estate occurs after the cyclical nature of assets in different geographies and property types cause market values to fall. The opportunistic investor attempts to successfully exploit inefficient market pricing through property selection and market-timing while at the same time managing risk appropriately. For a more detailed discussion on Private Real Estate Investing, please refer to Wilshire's 2006 research paper "Private Real Estate Investing."

Timberland

Timberland investment returns are driven by four primary components: biological growth, the market price for timber, the market price for land, and the skill of active management. Wilshire's return assumption for the timber asset class is 7.25% and is based on a return attribution of 5.00% annual biological growth and a 2.25% increase in timber market prices. The timber market price component is consistent with our inflation forecast and reflects the ability of timberland products to capitalize expected and unexpected inflation over long time periods. The holding period return to land is assumed to be negligible, and thus estimated to have no addition to return unless successful management is employed. Active timber management is thus viewed as a source of excess return, which is assumed to contribute 0% net-of-fees across the universe of timber managers. Wilshire forecasts the risk for the timberland asset class to be 15.00%. For a more detailed discussion on our forecast methodology, please refer to Wilshire's 2007 research paper "Timberland Investments – Does the Return Fall Far From the Tree?"

⁹ Wilshire Associates, Inc. (2007). *Infrastructure Investing*: Dudkowski and Toth.



Commodities

Investor appetite for commodities exposure continues to grow after a year of outstanding index performance and increasing signals of inflationary pressure on the horizon as investors continue to search for enhanced returns and portfolio diversification. Institutional investors can gain exposure to commodities through either the futures market or via a swap contract.

The returns for commodities differ from other asset classes because commodities do not represent compensation for the risk associated with future cash flow uncertainty. Instead, investors in commodity futures are compensated for bearing the risk of short-term commodity price fluctuations. In other words, a majority of a commodity future investor's exposure is to short-term economic conditions. Wilshire's 2005 paper "Commodity Futures Investing: Is All That Glitters Gold?" provides a more in depth examination of the history of commodities and their use in an institutional portfolio. Exhibit 19 lays out a return history for the Dow Jones-AIG Commodity IndexSM, an equal weight index, CPI-U, and CPI-U + 2% premium over time. From this historical record, we estimate that the future expected return for commodities will be inflation plus a two percent risk premium, or 4.25%.

Exhibit 19
Historical Commodity Returns



Source: Gary Gorton and K. Geert Rouwenhorst "Facts and Fantasies about Commodity Futures," Wilshire Compass

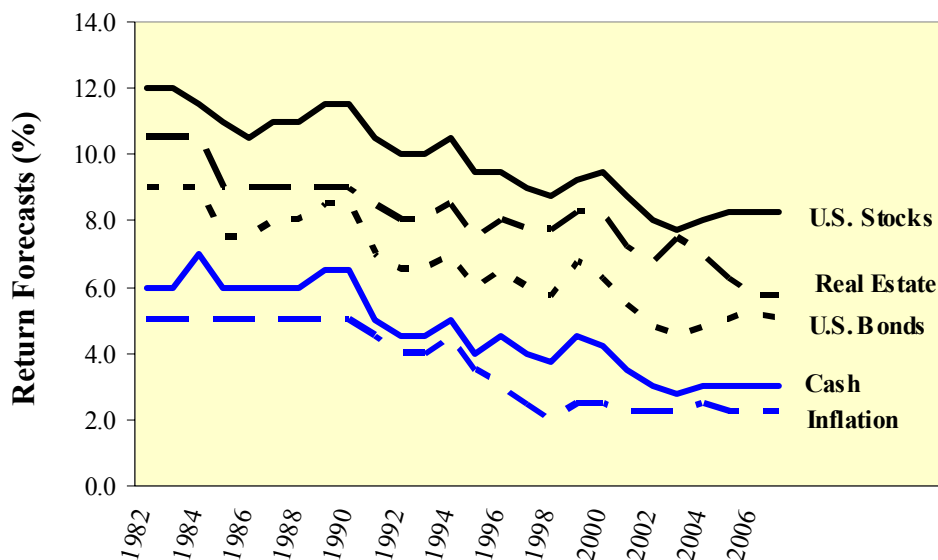
Wilshire's forecasted risk for commodity futures is 13% based on the historical record of the Dow Jones-AIG Commodity Index. It is important to note that other indexes differ in composition from the Dow Jones-AIG index and therefore may be substantially more or less risky.

The low measured correlation of commodity returns with more traditional assets, such as stocks and bonds, stems from their price sensitivity to current economic supply and demand for ces. In contrast, stock and bond valuations are more heavily driven by forward-looking expectations. Historically, these factors have caused traditional assets and commodities to have lower correlations. A complete list of correlations for commodities versus other asset classes can be found in Appendix A.

Wilshire's Historical Forecasts

Exhibit 20 shows how Wilshire's return forecasts have changed during the past 26 years. Notice the relative relationship between asset classes and how, when the assumptions change, they generally move together. This co-movement in assumptions is the result of common economic drivers, such as the level of inflation and interest rates, which contribute to all asset class valuations, thereby linking various investments to each other in, at minimum, an indirect way. Such a natural linkage accommodates Wilshire's practice of generating asset class assumptions on an annual basis and protects the usefulness of forecasts based on somewhat lagged valuations and market conditions.

Exhibit 20
Wilshire's Past Forecasts for Asset Class Returns



Risk and Correlation

Wilshire's approach to forecasting long-term risk and correlation is largely based on observed historical asset class behavior. Generally, past relationships serve as very good predictors of future risk and correlation. In practice, Wilshire applies sound financial theory and judgment to the interpretation and analysis of historical results. The role of



judgment (‘art’) versus measured statistics (‘science’) is more pronounced for investment categories with less historical data or that have experienced material structural changes.

In practice, Wilshire places much more confidence in the predictive accuracy of past relationships for asset classes with longer and more robust historical data. In this report we rely upon historical measurements of risk and correlation through 2007 to estimate future risk and correlation. To maximize the quality of our estimates, we observe this historical behavior over various time horizons (i.e. five years, ten years, full history, etc.). Wilshire does not use a preset or static rolling time period to derive these forecasts; as such an approach could result in forward numbers reacting too quickly to what may prove to be short-term relationships or event driven anomalies between markets.

A full listing of Wilshire’s risk and diversification assumptions for all asset classes is found in Appendix A.



Appendix A: Wilshire 2008 Correlation Matrix

	Equity					Fixed Income						Alternative						US CPI		
	US Stock	Dev ex-US Stock		Emg Stock	Gbl ex-US Stock	Cash	Core Bond	LT		High Yield	Non-US Bond		Real Estate			Prvt Mkts	Cmdty		Timbr	
		(USD)	(Hdg)					(LPF)	Treas		(USD)	(Hdg)	US RES	Prvt RE	xUS RES					
Expected Return (%)	8.25	8.25	8.15	8.25	8.50	3.00	5.00	5.25	4.50	4.00	7.00	4.75	4.65	5.75	6.50	5.75	11.25	4.25	7.25	2.25
Expected Risk (%)	16.00	17.00	16.00	24.00	17.25	1.00	5.00	7.00	11.00	6.00	10.00	10.00	4.00	15.00	12.25	13.00	26.00	13.00	15.00	1.00
Cash Yield (%)	2.00	2.75	2.75	2.00	2.60	3.00	5.00	5.25	4.50	4.00	7.00	4.75	4.65	4.00	4.00	4.00	0.00	3.00	0.00	
Correlations:																				
US Stock	1.00																			
Dev ex-US Stock (USD)	0.80	1.00																		
Dev ex-US Stock (Hdg)	0.85	0.85	1.00																	
Emerging Mkt Stock	0.70	0.68	0.63	1.00																
Global ex-US Stock	0.83	0.98	0.85	0.81	1.00															
Cash Equivalents	0.00	-0.09	-0.01	-0.05	-0.09	1.00														
Core Bond	0.29	0.05	0.04	0.00	0.04	0.20	1.00													
LT Bond (LPF)	0.34	0.09	0.05	0.01	0.07	0.10	0.95	1.00												
LT Treasury	0.19	0.10	0.03	-0.05	0.07	0.10	0.85	0.87	1.00											
TIPS	-0.05	0.05	-0.05	0.00	0.04	0.15	0.20	0.15	0.20	1.00										
High Yield Bond	0.48	0.35	0.40	0.35	0.37	0.00	0.28	0.30	0.21	0.01	1.00									
Non-US Bond (USD)	-0.01	0.32	-0.07	-0.04	0.25	-0.10	0.40	0.39	0.44	0.05	0.01	1.00								
Non-US Bond (Hdg)	0.16	0.26	0.25	-0.01	0.21	0.10	0.63	0.60	0.62	0.25	0.27	0.45	1.00							
US RE Securities	0.35	0.25	0.25	0.30	0.28	0.00	0.15	0.15	0.10	0.15	0.30	0.05	0.00	1.00						
Private Real Estate	0.34	0.24	0.24	0.29	0.27	0.02	0.24	0.24	0.19	0.16	0.37	0.14	0.08	0.82	1.00					
Non-US RE Securities	0.50	0.65	0.50	0.60	0.68	0.00	0.10	0.10	0.05	0.15	0.40	0.30	0.10	0.50	0.44	1.00				
Private Markets	0.75	0.65	0.68	0.63	0.69	0.00	0.32	0.32	0.24	0.01	0.34	0.07	0.27	0.35	0.33	0.58	1.00			
Commodities	0.00	0.20	0.15	0.24	0.22	-0.05	0.00	0.00	0.00	0.20	0.08	0.15	0.00	0.20	0.21	0.25	0.05	1.00		
Timberland	0.00	0.10	0.05	0.15	0.12	-0.05	0.00	0.00	0.00	0.15	0.05	0.1	0.00	0.15	0.16	0.20	0.02	0.30	1.00	
Inflation (CPI) *	-0.10	-0.15	-0.05	-0.13	-0.15	0.10	-0.12	-0.12	-0.12	0.10	-0.08	-0.05	-0.08	-0.10	-0.07	0.00	-0.10	0.20	0.15	1.00

* Inflation correlations are provided for informational purposes and do not represent forward-looking assumptions.



Appendix B: Wilshire 2008 Private Markets Correlation Matrix

	Buyouts	Venture Capital	Distressed Debt	Mezz Debt	Non-US Buyouts	Pvt Mkts Portfolio	US Stocks	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Cash	Core Bond	High Yield Bond	US RES
Expected Return (%)	10.00	12.00	8.75	8.75	10.00	11.25	8.25	8.25	8.25	8.50	3.00	5.00	7.00	5.75
Expected Risk (%)	28.00	42.00	19.00	19.00	30.00	26.00	16.00	17.00	24.00	17.25	1.00	5.00	10.00	15.00
Correlations:														
Buyouts	1.00						0.70	0.55	0.55	0.59	0.00	0.40	0.30	0.35
Venture Capital	0.65	1.00					0.60	0.50	0.50	0.53	0.00	0.10	0.25	0.30
Distressed Debt	0.15	0.10	1.00				0.30	0.25	0.25	0.27	0.00	0.05	0.55	0.10
Mezzanine Debt	0.65	0.35	0.65	1.00			0.70	0.55	0.58	0.59	0.05	0.35	0.65	0.40
Non-US Buyouts	0.78	0.50	0.15	0.40	1.00		0.60	0.70	0.60	0.72	0.00	0.25	0.25	0.20
Pvt Mkts Portfolio	0.96	0.81	0.21	0.62	0.83	1.00	0.75	0.65	0.63	0.69	0.00	0.32	0.34	0.35



Appendix C: Wilshire 2008 Private Real Estate Correlation Matrix

	----- Private RE -----						US Stocks	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Cash	Core Bond	High Yield Bond
	US RES	Non-US RES	Core	Value Added	Opport	Prvt RE Basket							
Expected Return (%)	5.75	5.75	5.50	7.75	9.25	6.50	8.25	8.25	8.25	8.50	3.00	5.00	7.00
Expected Risk (%)	15.00	13.00	10.50	15.50	23.00	12.25	16.00	17.00	24.00	17.25	1.00	5.00	10.00
Correlations:													
US RE Securities	1.00						0.35	0.25	0.30	0.28	0.00	0.15	0.30
Non-US RES	0.50	1.00					0.50	0.65	0.60	0.68	0.00	0.10	0.40
Core RE	0.90	0.45	1.00				0.30	0.20	0.25	0.23	0.00	0.15	0.30
Value-Added RE	0.70	0.40	0.85	1.00			0.35	0.25	0.30	0.28	0.05	0.30	0.40
Opportunistic RE	0.55	0.35	0.70	0.95	1.00		0.35	0.25	0.30	0.28	0.05	0.35	0.40
Private RE Basket	0.82	0.44	0.96	0.96	0.88	1.00	0.34	0.24	0.29	0.27	0.02	0.24	0.37



Appendix D: Historical 1, 5 & 10-Year Rolling Returns: 1926 to 2007

Appendix D: 1-Year Returns

Year	S&P 500 Index	Bond Index	T-bills	CPI	Year	S&P 500 Index	Bond Index	T-bills	CPI
1926	11.6	7.4	3.3	-1.5	1967	24.0	-5.0	4.2	3.0
1927	37.5	7.4	3.1	-2.1	1968	11.1	2.6	5.2	4.7
1928	43.6	2.8	3.5	-1.0	1969	-8.5	-8.1	6.6	6.1
1929	-8.4	3.3	4.7	0.2	1970	4.0	18.4	6.5	5.5
1930	-24.9	8.0	2.4	-6.0	1971	14.3	11.0	4.4	3.4
1931	-43.4	-1.9	1.1	-9.5	1972	19.0	7.3	3.8	3.5
1932	-8.2	10.8	1.0	-10.3	1973	-14.8	2.3	6.9	8.7
1933	54.0	10.4	0.3	0.5	1974	-26.4	0.2	8.2	12.4
1934	-1.4	13.8	0.2	2.0	1975	37.2	12.3	5.8	7.0
1935	47.7	9.6	0.1	3.0	1976	24.1	15.6	5.0	4.9
1936	33.9	6.7	0.2	1.2	1977	-7.3	3.0	5.4	6.7
1937	-35.0	2.8	0.3	3.1	1978	6.4	1.4	7.5	9.0
1938	31.1	6.1	0.0	-2.8	1979	18.5	1.9	10.3	13.3
1939	-0.4	4.0	0.0	-0.5	1980	32.2	2.7	11.8	12.5
1940	-9.8	3.4	0.0	1.0	1981	-4.9	6.3	14.5	8.9
1941	-11.6	2.7	0.0	9.7	1982	21.1	32.6	11.1	3.8
1942	20.4	2.6	0.3	9.3	1983	22.4	8.4	8.8	3.8
1943	25.9	2.8	0.4	3.2	1984	6.1	15.2	9.9	4.0
1944	19.7	4.7	0.3	2.1	1985	32.1	22.1	7.7	3.8
1945	36.4	4.1	0.3	2.3	1986	18.6	15.3	6.1	1.1
1946	-8.1	1.7	0.4	18.2	1987	5.2	2.8	5.4	4.4
1947	5.7	-2.3	0.5	9.0	1988	16.8	7.9	6.7	4.4
1948	5.5	4.1	0.8	2.7	1989	31.5	14.5	9.0	4.6
1949	18.8	3.3	1.1	-1.8	1990	-3.2	9.0	8.3	6.1
1950	31.7	2.1	1.2	5.8	1991	30.6	16.0	6.4	3.1
1951	24.0	-2.7	1.5	5.9	1992	7.7	7.4	3.9	2.9
1952	18.4	3.5	1.7	0.9	1993	10.0	9.8	3.2	2.8
1953	-1.0	3.4	1.8	0.6	1994	1.3	-2.9	4.2	2.7
1954	52.6	5.4	0.9	-0.5	1995	37.5	18.5	6.1	2.5
1955	31.6	0.5	1.6	0.4	1996	23.1	3.6	5.4	3.3
1956	6.6	-6.8	2.5	2.9	1997	33.3	9.7	5.5	1.7
1957	-10.8	8.7	3.2	3.0	1998	28.8	8.7	5.4	1.6
1958	43.4	-2.2	1.5	1.8	1999	21.0	-0.8	4.6	2.7
1959	12.0	-1.0	3.0	1.5	2000	-9.1	11.6	6.2	3.4
1960	0.5	9.1	2.7	1.5	2001	-11.9	8.4	4.4	1.6
1961	26.9	4.8	2.1	0.7	2002	-22.1	10.3	1.8	2.4
1962	-8.7	8.0	2.7	1.2	2003	28.7	4.1	1.2	1.9
1963	22.8	2.2	3.1	1.7	2004	10.9	4.3	1.3	3.3
1964	16.5	4.8	3.5	1.2	2005	4.9	2.4	3.1	3.4
1965	12.5	-0.5	3.9	1.9	2006	15.8	4.3	4.8	2.6
1966	-10.1	0.2	4.8	3.4	2007	5.5	7.0	5.0	4.1

Winning Percentage: 62% 24% 13%



Appendix D: 5-Year Returns

Year	S&P 500 Index	Bond Index	T-bills	CPI	Year	S&P 500 Index	Bond Index	T-bills	CPI
1926-30	8.7	5.8	3.4	-2.1	1965-69	5.0	-2.2	4.9	3.8
1927-31	-5.1	3.9	3.0	-3.7	1966-70	3.4	1.2	5.4	4.5
1928-32	-12.5	4.5	2.5	-5.4	1967-71	8.4	3.3	5.4	4.5
1929-33	-11.2	6.0	1.9	-5.1	1968-72	7.5	5.8	5.3	4.6
1930-34	-9.9	8.1	1.0	-4.8	1969-73	2.0	5.8	5.6	5.4
1931-35	3.1	8.4	0.5	-3.0	1970-74	-2.4	7.6	6.0	6.6
1932-36	22.5	10.3	0.3	-0.8	1971-75	3.2	6.5	5.8	6.9
1933-37	14.3	8.6	0.2	2.0	1972-76	4.9	7.4	5.9	7.2
1934-38	10.7	7.8	0.1	1.3	1973-77	-0.2	6.5	6.3	7.9
1935-39	10.9	5.8	0.1	0.8	1974-78	4.3	6.3	6.4	8.0
1936-40	0.5	4.6	0.1	0.4	1975-79	14.8	6.7	6.8	8.1
1937-41	-7.5	3.8	0.1	2.0	1976-80	13.9	4.8	8.0	9.2
1938-42	4.6	3.8	0.1	3.2	1977-81	8.0	3.1	9.9	10.1
1939-43	3.8	3.1	0.1	4.5	1978-82	13.9	8.4	11.0	9.5
1940-44	7.7	3.3	0.2	5.0	1979-83	17.2	9.8	11.3	8.4
1941-45	17.0	3.4	0.3	5.3	1980-84	14.6	12.6	11.2	6.5
1942-46	17.9	3.2	0.3	6.8	1981-85	14.6	16.5	10.4	4.8
1943-47	14.8	2.2	0.4	6.8	1982-86	19.7	18.4	8.7	3.3
1944-48	10.9	2.4	0.5	6.7	1983-87	16.4	12.5	7.6	3.4
1945-49	10.7	2.2	0.6	5.8	1984-88	15.4	12.4	7.1	3.5
1946-50	9.9	1.8	0.8	6.6	1985-89	20.4	12.3	7.0	3.7
1947-51	16.7	0.9	1.0	4.3	1986-90	13.2	9.8	7.1	4.1
1948-52	19.4	2.0	1.3	2.7	1987-91	15.4	9.9	7.1	4.5
1949-53	17.9	1.9	1.5	2.2	1988-92	15.9	10.9	6.8	4.2
1950-54	23.9	2.3	1.4	2.5	1989-93	14.5	11.3	6.1	3.9
1951-55	23.9	2.0	1.5	1.4	1990-94	8.7	7.7	5.2	3.5
1952-56	20.2	1.1	1.7	0.8	1991-95	16.6	9.5	4.8	2.8
1953-57	13.6	2.1	2.0	1.3	1992-96	15.2	7.0	4.6	2.8
1954-58	22.3	1.0	1.9	1.5	1993-97	20.2	7.5	4.9	2.6
1955-59	15.0	-0.3	2.3	1.9	1994-98	24.1	7.3	5.3	2.4
1956-60	8.9	1.4	2.6	2.1	1995-99	28.6	7.7	5.4	2.4
1957-61	12.8	3.8	2.5	1.7	1996-00	18.3	6.5	5.4	2.5
1958-62	13.3	3.6	2.4	1.3	1997-01	10.7	7.4	5.2	2.2
1959-63	9.8	4.5	2.7	1.3	1998-02	-0.6	7.5	4.5	2.3
1960-64	10.7	5.7	2.8	1.2	1999-03	-0.6	6.6	3.6	2.4
1961-65	13.2	3.8	3.1	1.3	2000-04	-2.3	7.7	3.0	2.5
1962-66	5.7	2.9	3.6	1.9	2001-05	0.5	5.9	2.4	2.5
1963-67	12.4	0.3	3.9	2.2	2002-06	6.2	5.1	2.4	2.7
1964-68	10.2	0.4	4.3	2.8	2003-07	12.8	4.4	3.1	3.0

Winning Percentage: 74% 22% 4%



Appendix D: 10-Year Returns

Year	S&P 500 Index	Bond Index	T-bills	CPI	Year	S&P 500 Index	Bond Index	T-bills	CPI
1926-35	5.9	7.1	2.0	-2.6	1963-72	9.9	3.0	4.6	3.4
1927-36	7.8	7.0	1.7	-2.3	1964-73	6.0	3.0	5.0	4.1
1928-37	0.0	6.5	1.4	-1.8	1965-74	1.2	2.6	5.4	5.2
1929-38	-0.9	6.9	1.0	-2.0	1966-75	3.3	3.8	5.6	5.7
1930-39	-0.1	6.9	0.6	-2.0	1967-76	6.7	5.3	5.7	5.9
1931-40	1.8	6.5	0.3	-1.3	1968-77	3.6	6.2	5.8	6.2
1932-41	6.4	7.0	0.2	0.6	1969-78	3.2	6.1	6.0	6.7
1933-42	9.4	6.2	0.1	2.6	1970-79	5.9	7.2	6.4	7.4
1934-43	7.2	5.4	0.1	2.9	1971-80	8.4	5.6	6.9	8.1
1935-44	9.3	4.5	0.2	2.9	1972-81	6.4	5.2	7.9	8.6
1936-45	8.4	4.0	0.2	2.8	1973-82	6.6	7.4	8.6	8.7
1937-46	4.4	3.5	0.2	4.4	1974-83	10.6	8.1	8.8	8.2
1938-47	9.6	3.0	0.2	5.0	1975-84	14.7	9.6	9.0	7.3
1939-48	7.3	2.8	0.3	5.6	1976-85	14.2	10.5	9.2	7.0
1940-49	9.2	2.7	0.4	5.4	1977-86	13.7	10.5	9.3	6.6
1941-50	13.4	2.6	0.5	5.9	1978-87	15.2	10.4	9.3	6.4
1942-51	17.3	2.0	0.7	5.5	1979-88	16.3	11.1	9.2	5.9
1943-52	17.1	2.1	0.8	4.7	1980-89	17.5	12.4	9.1	5.1
1944-53	14.3	2.2	1.0	4.4	1981-90	13.9	13.1	8.7	4.5
1945-54	17.1	2.2	1.0	4.2	1982-91	17.5	14.1	7.9	3.9
1946-55	16.7	1.9	1.1	4.0	1983-92	16.2	11.7	7.2	3.8
1947-56	18.4	1.0	1.3	2.5	1984-93	14.9	11.9	6.6	3.7
1948-57	16.4	2.1	1.6	2.0	1985-94	14.4	10.0	6.1	3.6
1949-58	20.1	1.4	1.7	1.9	1986-95	14.9	9.6	5.9	3.5
1950-59	19.4	1.0	1.9	2.2	1987-96	15.3	8.5	5.8	3.7
1951-60	16.2	1.7	2.0	1.8	1988-97	18.0	9.2	5.9	3.4
1952-61	16.4	2.4	2.1	1.3	1989-98	19.2	9.3	5.7	3.1
1953-62	13.4	2.9	2.2	1.3	1990-99	18.2	7.7	5.3	2.9
1954-63	15.9	2.7	2.3	1.4	1991-00	17.5	8.0	5.1	2.7
1955-64	12.8	2.7	2.6	1.6	1992-01	12.9	7.2	4.9	2.5
1956-65	11.1	2.6	2.8	1.7	1993-02	9.3	7.5	4.7	2.5
1957-66	9.2	3.3	3.0	1.8	1994-03	11.1	6.9	4.5	2.4
1958-67	12.9	1.9	3.1	1.8	1995-04	12.1	7.7	4.2	2.4
1959-68	10.0	2.4	3.5	2.1	1996-05	9.1	6.2	3.9	2.5
1960-69	7.8	1.7	3.9	2.5	1997-06	8.4	6.2	3.8	2.4
1961-70	8.2	2.5	4.3	2.9	1998-07	5.9	6.0	3.8	2.7
1962-71	7.1	3.1	4.5	3.2					

Winning Percentage: **81%** **14%** **5%**

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