

# Q2 2010 Ibbotson Market and Investment Strategy Commentary

*For Client Use Only. Not for Prospective Clients or Public Distribution.*



**Thomas M. Idzorek, CFA®**  
Chief Investment Officer, Director of  
Research and Product Development  
Ibbotson Associates

## Overall View

At the end of the first quarter, there was speculation that the National Bureau of Economic Research's Business Cycle Dating Committee was only a good data point away from declaring the end of the recession that began in December of 2007. A series of bad data points over the second quarter changed market sentiment rather dramatically, with many economists declaring that the massive stimulus had failed to jumpstart the private sector. Now the most likely outcomes include a slower-than-expected recovery, a continuation of the Great Recession, or a double-dip recession.

The market's new found pessimism seems to be more in line with our view of the economy and our concerns about substantial economic headwinds. In our view, the primary hurdles to the economic recovery continue to be: unemployed consumers with weak balance sheets; large fiscal deficits and debts (which have left governments with little room to maneuver in the face of new or continuing crises); a weak housing market coupled with a second wave of mortgage resets; lack of available credit; increased government regulation and taxes; increased global protectionism; and the end of "easy money."

The 10 percent decline in most equity markets during the second quarter helped to partially mitigate our concerns of severe equity market overvaluations. Over the long term, given the extremely low yields on bonds, we believe it is unlikely that bonds will outperform stocks over the next 10 years.



**Daniel Needham, CFA®**  
General Manager, Investments  
Ibbotson Associates Australia



**Francisco Torralba, Ph.D.**  
Economist  
Ibbotson Associates

## United States

Indicator	Latest	Date
Real GDP (QoQ, at annual rate)	2.7%	March-10
Core CPI (YoY)	0.9%	May-10
Unemployment rate	9.5%	June-10
Central Bank Rate	0.3%	June-10
10-year yield	2.9%	June-10

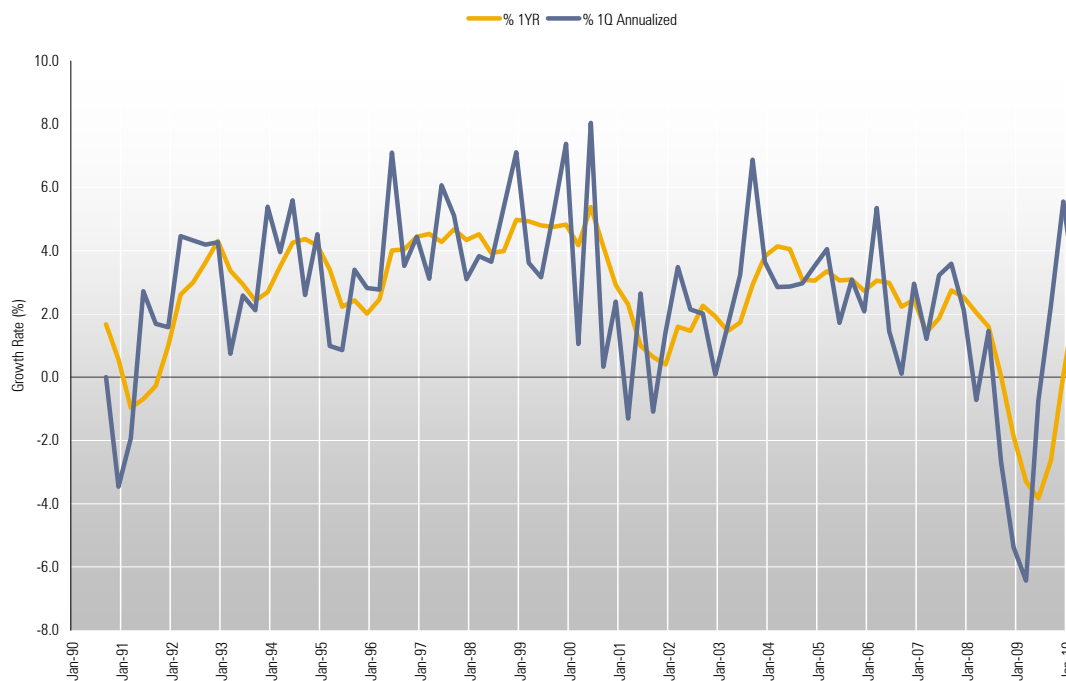
Source: FactSet

After a first quarter full of hints of an economic rebound, the data released during recent months have tempered the market’s optimism. Economic data released over the second quarter in the U.S. suggest that the recovery is losing steam.

The GDP growth figure for the first quarter was revised downwards (twice), to a final lackluster estimate of 2.7 percent. Private payrolls grew by an average of 119,000 per month, which is barely enough to keep up with the growth of the labor force (estimated at 100,000 per month). The unemployment rate fell, not because more people found a job, but because they stopped looking for work. Housing sales remain depressed, the stock of available houses for sale continues to grow, and foreclosures show no sign of abating, all of which dragged housing prices down and put even more homeowners in negative-equity territory, fuelling a vicious cycle. While a rebound of house prices is not a sufficient condition for a recovery of private demand, the health of the housing sector is nonetheless a good indicator of consumer confidence.

As if not all that was enough, the expiring extended unemployment benefits and the homebuyer tax credit will no longer help economic growth. The government, in the U.S. and elsewhere, is showing strong aversion to growing deficits and debt burdens, so the chances of a second fiscal stimulus package seem quite low. The million-dollar question is whether the recovery is strong enough to push through these headwinds, or whether the economy will fall into a second recession.

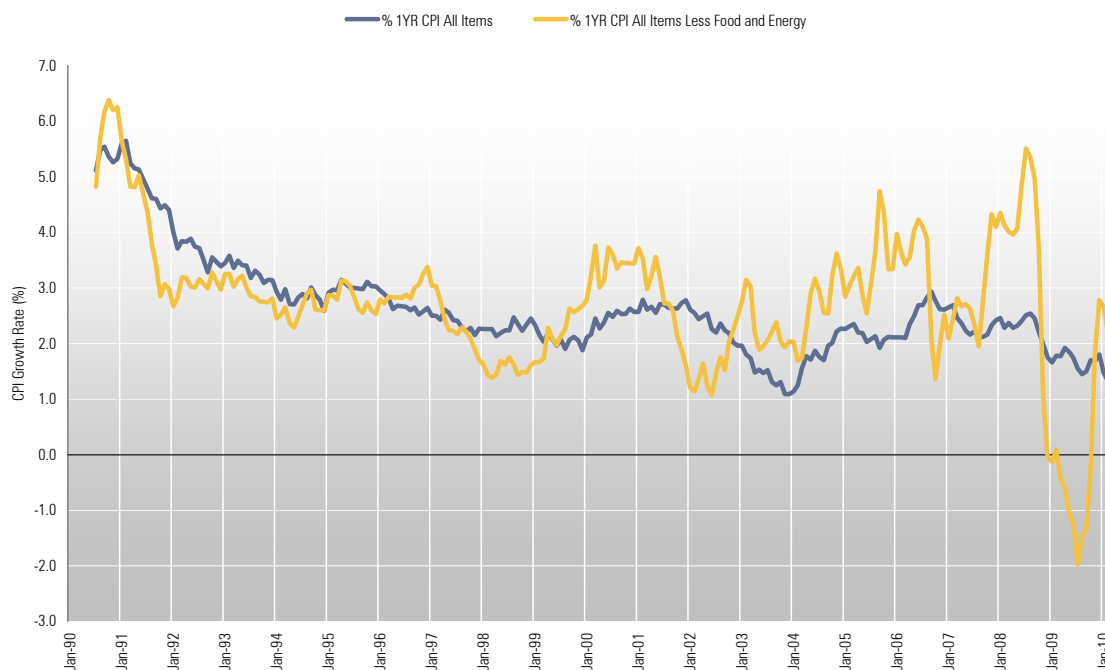
**Figure 1: U.S. Quarterly GDP Growth**



Source: Federal Reserve

Given the growing fear of a double-dip recession, or at least the prospect of a very slow recovery, inflation expectations have shifted down. The growing global push for fiscal austerity is more likely to result in deflation, rather than inflation, as the U.S. cuts government spending and increases taxes. The dire state of the job market will keep both wage growth and inflation low in the short term (in the long term, money supply is a more important determinant of inflation). On the prospect of the Fed raising interest rates, you only need to consider the central bank's dual mandate of maintaining employment and anchoring inflation to realize that it is going to be a while before Bernanke feels compelled to raise rates. We can therefore expect ultra-low rates from the Fed for at least another year.

**Figure 2: U.S. Quarterly Consumer Price Index Change**



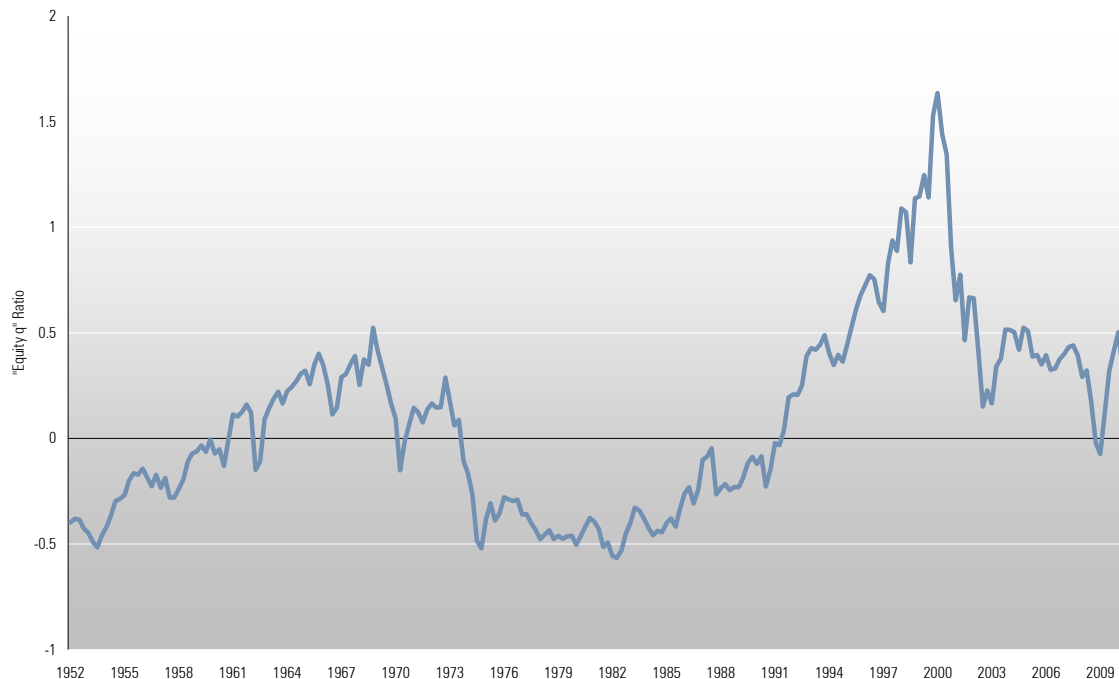
Source: Datastream

Despite the increasing gloom, profits of the S&P 500 companies in the previous quarters generally came in better than expected. Profits are likely to have benefited from a weaker dollar, inventory rebuilding, a steep yield curve (which benefits the U.S.'s large financial industry), and the diversified geographic exposure of large corporations.

We look now to the Q2 reporting season with great interest. While many of the aforementioned factors should again contribute to robust earnings, we expect that the negative macroeconomic outlook and the new financial regulation will make a dent in earnings growth. At the least, it will become harder for U.S. companies to continue delivering positive earnings surprises on a year-over-year comparison basis. Consensus earnings revisions have turned negative for the S&P 500 as analysts have begun to reconsider their bullish forecasts.

After the 10 percent plus fall in the U.S. stock markets during the second quarter, equities are now less overvalued, according to the “Equity Q” ratio (market capitalization divided by the replacement cost of capital). Based on that ratio, U.S. equities are about 35 percent overvalued, down from 50 percent last quarter. Based on the trailing price-to-earnings measure, the market seems to be just under long-term average valuation levels. Forward price-to-earnings ratios, on the other hand, suggest that the market is cheap, but it is worth noting that earnings forecasts can vary considerably in an environment of economic uncertainty, as highlighted by the most recent consensus earnings revisions. Morningstar’s bottom-up approach to valuation suggests that the market is approximately 25 percent undervalued.

**Figure 3: Market Valuation – The “Equity q” Ratio (q Ratio/Geometric Mean -1)**



Source: Federal Reserve - Z.1 Flow of Funds Accounts of the United States

In contrast with the U.S. equity market, bond markets enjoyed a positive second quarter as ten-year Treasury yields fell below 3 percent for the first time since the height of the financial crisis. Concerns over the health of the global economic recovery and continued concern over the P.I.G.S (Portugal, Italy, Greece, and Spain) triggered a flight to Treasuries from risk averse investors. Elsewhere in the bond markets, investment-grade corporate credit spreads widened on the weakness of the equity markets. Relative to the higher-beta sectors of high-yield bonds and emerging market bonds, however, the performance of high-quality bonds was robust. Despite these developments, and the prospect of low growth and low inflation in the short term, we continue to see the absolute level of current bond yields as unattractive over the longer term. Therefore, we continue to believe that bonds are likely to underperform equities over a longer time horizon.

**Figure 4: U.S. 10-Year Treasury Yield**



Source: Bloomberg

Finally, we believe that the true implications of the tragic oil spill in the Gulf of Mexico remain unknown. While early estimates indicate a limited impact of the spill on the broader economy, we are decidedly more pessimistic.

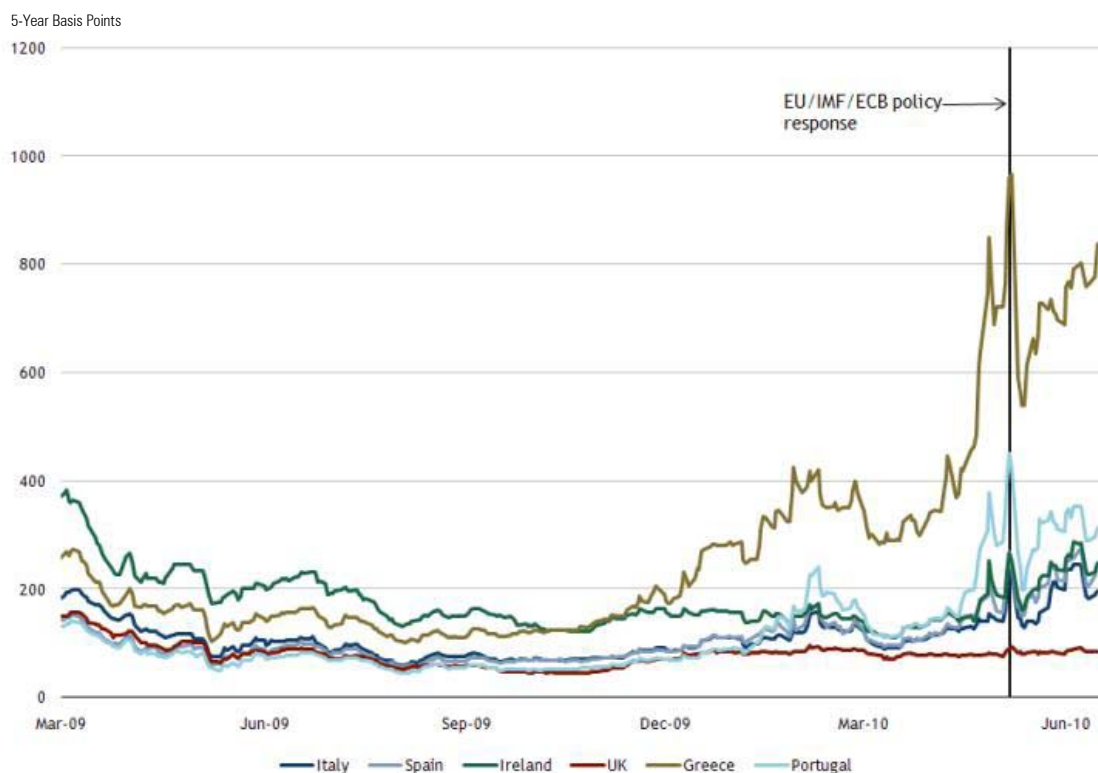
## Europe (excluding the United Kingdom)

Indicator	Latest	Date
Real GDP (YoY)	0.2%	March-10
CPI (YoY)	1.4%	June-10
Unemployment rate	10.0%	March-10
Central Bank Rate	1.0%	June-10
10-year bond yield	3.1%	June-10

Source: FactSet

Europe was again under the spotlight on the sovereign risk front, with concerns spreading in the second quarter beyond Greece to other European countries like Spain, Portugal and Italy. Such developments rekindled fears of a financial crisis akin to the events of September 2008 in the U.S. Figure 5 shows that the cost of credit default swaps increased dramatically at the beginning of the second quarter, dropped dramatically following the approval of a EUR 750 billion support package, and have since steadily increased suggesting that the market is skeptical that the support package will succeed.

**Figure 5: European CDS Spreads**



Source: Federal Reserve Bank of Atlanta

Despite an initial positive reaction to the news, risk aversion quickly returned with the markets turning their attention to the implications of the rescue package. In short, the package is set to see countries throughout Europe dramatically cutting spending and increasing taxes in order to decrease their burgeoning deficits. This is expected to reduce growth in the region, which in turn may have implications for global growth and inflation. While the securities of the peripheral countries were the hardest hit by the developments, the euro area as a whole was seen as a riskier place, as reflected by the 9 percent fall of the euro vis-a-vis the U.S. dollar over the quarter. The best-performing assets over the quarter were German bunds, as investors sought safety, pushing its yield down to historic lows.

**Figure 5: U.S. Dollar / Euro Exchange Rate**



Source: Bloomberg

Given the turmoil in Europe, earnings revisions over the quarter were significantly negative for Europe overall, although revisions for the DAX were slightly positive. Future earnings results for German companies are expected to benefit from the weaker euro due to their heavy reliance on exports.

Developments in the European bond markets drew a lot of attention. The government bonds of the P.I.G.S. came under intense pressure, although they saw a short period of relief after the announcement of the EU/IMF bailout plan. The European financial sector suffered the most, as it started to sink based on the belief that the rescue plan will increase their funding requirements over the next three years. The picture should become a little clearer once the results of the European bank-stress tests are known, at the end of July.

## United Kingdom

Indicator	Latest	Date
Real GDP (YoY)	1.2%	May-10
CPI (YoY)	3.3%	May-10
Unemployment rate	7.9%	April-10
Central Bank Rate	0.5%	June-10
10-year bond yield	3.4%	June-10

Source: FactSet

In the U.K. developments were a little less dramatic than in continental Europe, but the country still faces huge deficit and debt problems that are set to impair its growth profile for years to come. For the first half of the quarter, the focus was on the outcome of the election, which ultimately saw a hung parliament. Eventually, however, the Conservatives took power from the Labor party, after striking a deal with the Liberal Democrats.

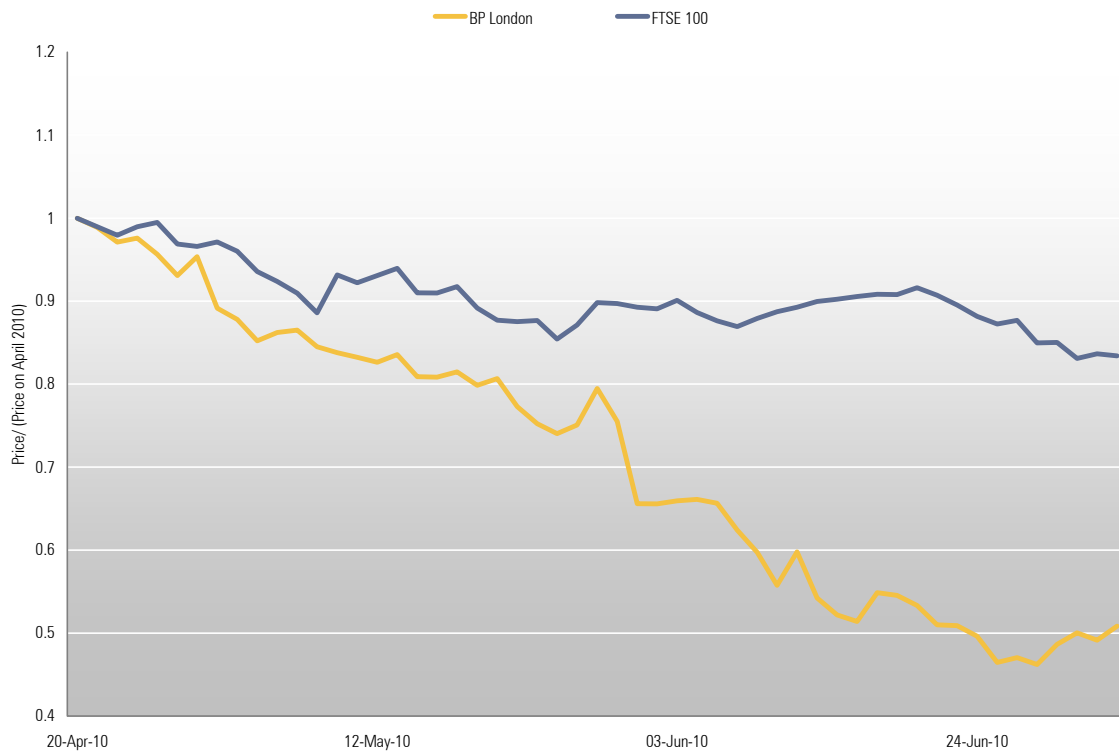
Uncertainty around the final composition of Parliament put the British pound under pressure and saw it reach multi-decade lows against most major currencies. Faced with a monumental task to address the country's finances, the new government has introduced a tough budget aimed at eliminating the deficit over the next five years. In the meantime, the country will experience elevated inflation (above 3 percent), aided by the rise of the value-added tax from 17.5 percent to 20 percent in the next year.

After the appointment of the new government and the approval of the budget, U.K. equities, gilts, and the pound have all begun to recover some of the lost ground. We would like to believe that the deficit-reducing resolutions of the new government will succeed, we would wait for at least another quarter before assessing whether the change in trend is real. After the new government's 'honeymoon,' the scale of the proposed expenditure cuts may incite doubts later on.



In light of this uncertainty, the U.K. equity market underperformed the U.S. market by 1.5 percent and its European counterparts by 3.6 percent (in local currency terms). Undoubtedly, the focus of the quarter was on oil heavyweight BP, which saw its market value almost halve during the second quarter after the now infamous spill in the Gulf of Mexico. On a broader level, however, earnings revisions for U.K. companies were slightly positive; reflecting how decoupled the globalized earnings of the large-cap companies are from the troubled British economy.

**Figure 6: BP Share Price Since Spill**



Source: Bloomberg

## Japan

Indicator	Latest	Date
Real GDP (YoY)	5.0%	December-09
CPI (YoY)	-1.2%	March-10
Unemployment rate	5.2%	February-10
Central Bank Rate	0.1%	March-10
10-year bond yield	1.1%	March-10

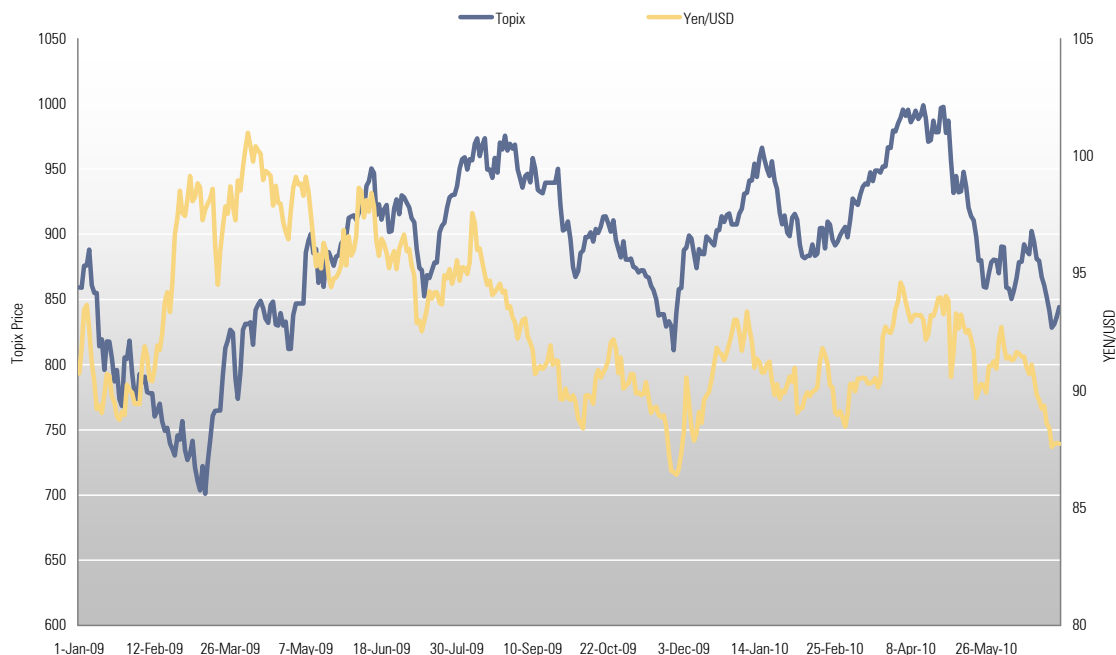
Source: FactSet

With sovereign risk in Europe a key focus point over the last quarter, the spotlight regularly turns to Japan's lost decade. The concern is that this is the path that the European peripheral nations may follow. Japan is at the extreme end of the spectrum, with the worst European countries not coming close to its debt-to-GDP ratio of above 200 percent. Despite Japan high debt-to-GDP ratio over the years, Japan has managed to avert a European-style debt crisis thanks to its domestic savings base and the Japanese government's repurchasing program.

The jury is still out on when Japan's debt problem will worsen, but over the last quarter, we saw some significant developments that may steer Japan into a new path. Most notably, a new prime minister was appointed. While his objectives and strategy are only beginning to emerge, comments towards favoring debt reduction, a capped annual supply of government bonds, and embracing a weaker currency, all look to be moves in the direction of addressing the debt problem.

Macroeconomic data continue to suggest strong economic activity: 5 percent GDP growth (on the back of strong exports) and positive PPI (for the first time in two years). The positive economic data was not enough to help the Japanese equity market, which headed south during most of the second quarter.

**Figure 7: Yen/USD Exchange Rate and Japanese Equities (Topix)**



Source: Bloomberg

## Asia ex Japan

Indicator (China)	Latest	Date
Real GDP (YoY)	11.60%	March-09
CPI (YoY)	4.3%	March-10
Unemployment rate	5.4%	March-09
3-Month Rate	1.9%	June-10
10-year bond yield	3.1%	June-10

Source: FactSet

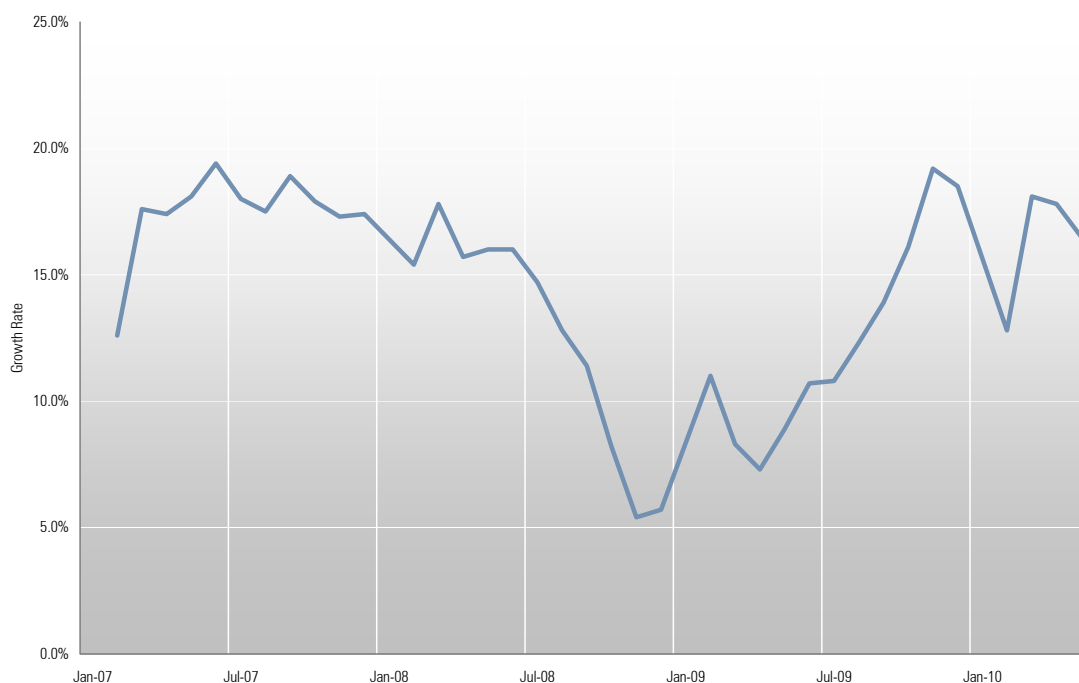
Momentum in the major Asian economies continued into the second quarter. China posted GDP and export growth of 10 percent and 50 percent, respectively. Industrial production continues to grow at double-digit pace (see Figure 8 below). Such astronomical growth rates are not expected to last, since the area is sensitive to global developments.

The highlight of the quarter was China's announcement that it would allow revaluations of its currency. Markets responded positively to the news, on the expectation that this would provide the impetus necessary to pull risky assets out of their May-June slump. However, just like in the case of the ECB/IMF rescue package for the P.I.G.S., the euphoria was short-lived, and the market dismissed the announcement as political posturing ahead of the G20 summit at the end of June.

The Yuan move was not the only one by the Chinese authorities to try to rein in growth. Further bank lending restrictions were announced in order to contain the property 'bubble.' The measures are expected to be welcome, but given the scale of the stimulus and the availability of cheap credit, it is questionable whether they will have much success. Clearly, equity market investors remain nervous as to the outcome, as reflected by extended bouts of weakness in the Chinese and neighboring equity markets.

Other countries in the region looked to take the heat out of their economies. Australia, New Zealand and India all tightened monetary policy. Australia also captured the headlines with its failed resources tax, which looked to undermine the country's sovereign risk.

**Figure 8: Chinese Industrial Production Changes**



Source: National Bureau of Statistics

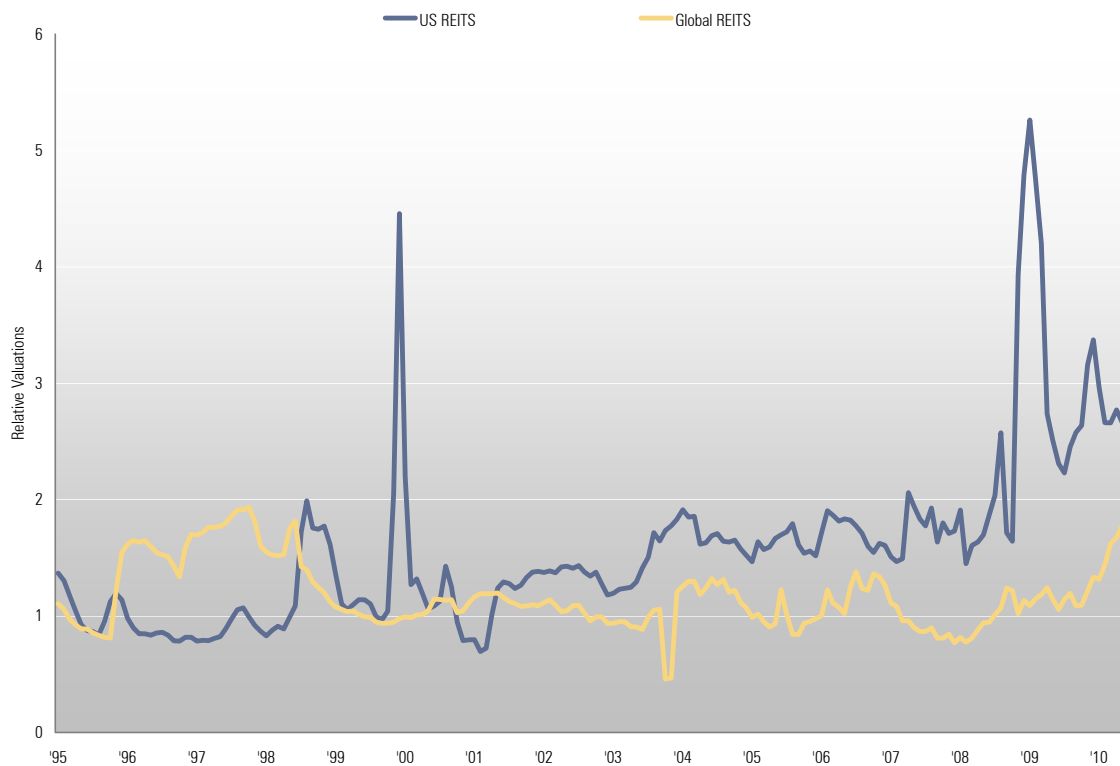
## REITs

After delivering a healthy return in the first quarter, U.S. REITs posted disappointing returns over the second quarter. Risk aversion returned to the market in May, along with the concerns about the sustainability of the economic recovery. U.S. REITs continued to be active in raising equity capital, in an effort to improve the quality of their balance sheets, or build up cash for potential distressed asset opportunities. It is yet to be seen whether many attractive distressed assets will come on to the market depending on the banks' willingness to refinance property debt loans. The worst performing sub-sectors for the quarter were Industrials and Hotels, with Hotels being particularly exposed to a subdued economic outlook given the short-term nature of their leases.

Non-U.S. property stocks delivered lower returns than U.S. REITs over the second quarter, with Asian developers and European REITs performing poorly. Concerns about the sovereign debt of the P.I.G.S. continued to weigh on sentiment within Europe. European countries with fiscal concerns, poor corporate governance track records, or including REITs with higher leverage levels performed poorly, with Austrian REITs, Italian REITs and Norwegian REITs amongst the worst performers. The Chinese government's bank lending restrictions and investor concerns regarding further dampening measures weighed on Chinese/Hong Kong property stocks. Japanese developers also performed poorly over the quarter, weighed down by negative sentiment in the broader Japanese equity market. Australian REITs held up better than their regional counterparts in the market sell-off, with many of the larger A-REITs exhibiting stronger balance sheets after raising large amounts of equity over the past 18 months.

Figure 9 below shows that U.S. REITs appear expensive relative to non-U.S. REITs.

**Figure 9: Relative Valuations of U.S. and Non-U.S. REITs**



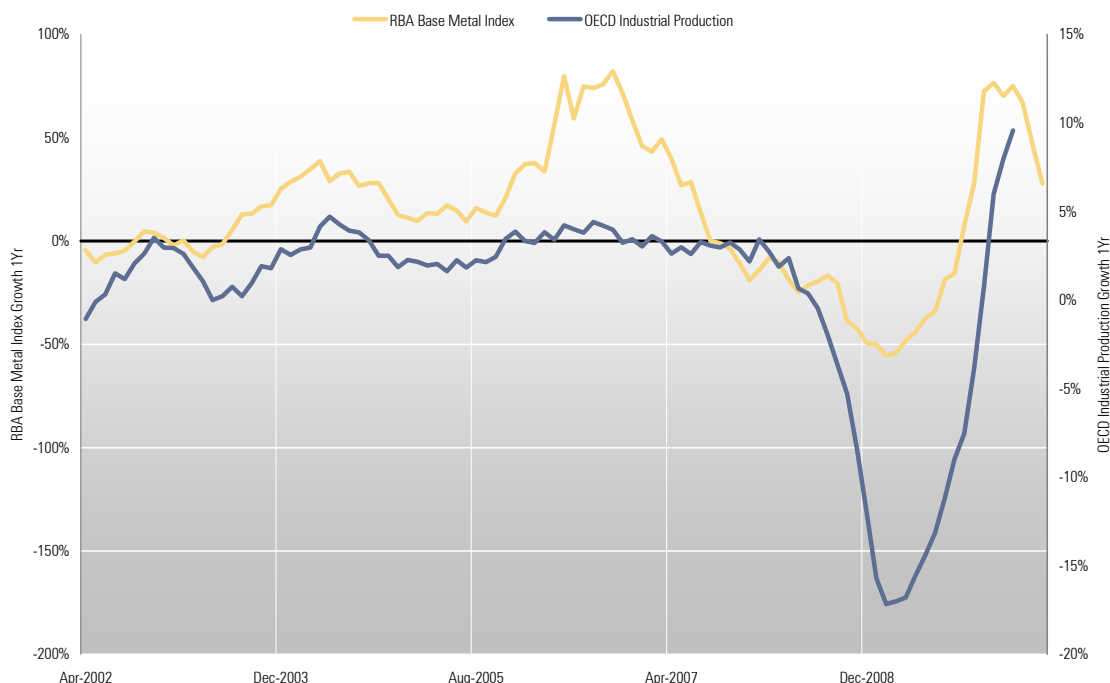
Source: FactSet

## Commodities

Commodities retraced all the gains of the first quarter as concerns over a weaker global economic environment took hold. Concerns about a slowdown in China were probably the major catalyst, since Chinese demand fuelled the extraordinary rise in recent years.

Commodity prices across both the metal and soft complex sold off over the second quarter, with industrial metals hardest hit, while precious metals proved to be the most resilient, especially gold in its role of safe haven. In recent years, downturns in commodity prices have typically preceded downturns in industrial production, suggesting that the recent sharp up-tick in OECD industrial production is set to reverse in the near term.

**Figure 10: OECD Industrial Production and Base Metal Prices**



Source: Reserve Bank of Australia

As we noted above, precious metals were again the best performers in the commodity sector: gold was up 11.7 percent for the quarter, while silver also rose by 6.4 percent. Soft and agricultural commodities also enjoyed a good quarter, reversing the dire performance of the first quarter. Oil too enjoyed an uptick in the month of June despite the volatility. In the industrial-metal sector, on the other hand, aluminum, copper, lead, nickel and zinc all fell over 15 percent over the quarter.

One final measure that has been attracting attention as a leading indicator of commodity prices has been the Baltic Freight Dry Index. This index essentially measures the demand/ supply balance for shipping capacity, with higher values representing constrained capacity. The index is down 20 percent year-to-date, but in June, it fell by 41 percent. While such large drop might have something to do with the supply of vessels than with the demand for shipping, it is worthwhile to keep an eye on it.

**Figure 11: Baltic Freight Dry Index**



Source: London Baltic Exchange

## Global Perspective

Throughout the 1980s and 1990s, Western economies accumulated large amounts of debt. Consumers made liberal use of their credit cards and home-equity loans. Firms improved their growth and returns by borrowing money. And when the economy entered a recession, governments came to the rescue with stimulus and bailout packages. Combining consumers, companies, banks and governments, debt-to-GDP ratios reached over 300 percent in many OECD countries, including the U.S.

Debt financing created a mirage of abundance. Asset prices, profits, and consumption rose on the back of growing liabilities. When the music stopped, "rich" countries were left with stalling economies. Real growth is essential to get out of the current debt hole and as numerous economies face the growing costs of an aging population. Unfortunately, it is not obvious at all where growth will come from.

The population of the developed nations is leveling off. The rise in the number of working women, a historically untapped pool of labor, has largely played out. The only way out seems to be a rise in productivity, but that will only come with reforms (which are especially needed in Europe), and the reshuffling of productive resources away from finance, construction, and manufacturing and towards other, perhaps yet unknown, economic activities.

While rich nations spent their future away, developing economies, most notably China and the oil-producing countries, accumulated massive trade surpluses and savings. These growing economies went on to lend to the OECD countries so that they could continue to buy their commodities and manufactured goods. For now, borrowers and creditors are forced to dance together. A collapse of demand in the U.S., Europe, and Japan would send the developing countries into an economic and political crisis of their own.

In the long run, however, the developing countries face good prospects. Their population is young and growing fast. Their balance sheets are healthy. Eventually, domestic consumption and investment will replace trade surpluses as the drivers of demand, and a re-balancing of saving between the now developed and the developing nations will take place. It is only a matter of one or two decades. The question is whether the rich world has that much time, before it drowns under a pile of debt.

**Total Returns to Select Indexes for the Second Quarter of 2010**

<b>U.S. Stock Indexes (Total Return in U.S. \$)</b>		<b>Non-U.S. Stock Indexes (Total Return in U.S.\$)</b>	
Russell 3000	-11.32%	MSCI EAFE	-13.75%
Russell 3000 Growth	-11.55%	MSCI Europe	-14.84%
Russell 3000 Value	-11.09%	MSCI Japan	-10.07%
Russell Top 200	-12.07%	MSCI Canada	-10.34%
Russell Top 200 Growth	-12.33%	MSCI Emerging Markets	-8.29%
Russell Top 200 Value	-11.79%	MSCI EM Emerging Europe	-15.32%
S&P 500	-11.43%	MSCI EM Emerging Latin America	-11.94%
Russell Mid Cap	-9.88%	FTSE EPRA/NAREIT Developed x US REITs	-10.39%
Russell Mid Cap Growth	-10.2%		
Russell Mid Cap Value	-9.57%		
Russell 2000	-9.92%	<b>U.S. Bond Indexes (Total Return in U.S. \$)</b>	
Russell 2000 Growth	-9.22%	Barclays Capital U.S. Aggregate	3.49%
Russell 2000 Value	-10.60%	Barclays Cap U.S. Government Long	11.83%
Morningstar U.S. Stock Sectors		Barclays Cap U.S. Government 1–3 Yr	1.17%
Morningstar / Software	-14.93%	Barclays Cap U.S. Corporate High Yield	-0.11%
Morningstar / Financials	-12.82%	Barclays Cap 1–3 Month Treasury Bill	1.20%
FTSE NAREIT All REIT	-3.66%		
FTSE NAREIT Equity REITs	-4.06%	<b>Non-U.S. Bond Indexes (Total Return in Local Currency)</b>	
		JP Morgan GBI Global ex U.S.	0.02%

Source: Morningstar, Inc.

The above commentary is for informational purposes only. Nothing in this commentary should be construed as an offer/recommendation to buy or sell a particular security. The data and/or information noted are from what we believe to be reliable sources, Ibbotson Associates has no control over the methods or means used by these sources to collect their data and/or information; therefore, we cannot guarantee their accuracy or completeness. The opinions and estimates noted herein are accurate as of a certain date and are subject to change. The indices referenced are unmanaged and cannot be invested in directly. The performance data shown represents past performance. Past performance does not guarantee future results.



## Appendix: Index Definitions

Citigroup Non-U.S. 1+ Year Government BIG Index: Index representing sovereign bonds issued by non-U.S. industrialized countries with maturity of at least one year.

EPRA/NAREIT Global ex US REITs Index: Capitalization-weighted index representing the full universe of publicly traded REITs outside the United States.

FTSE NAREIT All REIT Index: Capitalization-weighted index representing the full universe of publicly traded U.S. REITs, including those companies that do not meet the minimum size rule, liquidity criteria, or free float adjustments.

FTSE NAREIT Equity REIT Index: Market-capitalization-weighted index that includes healthcare and net lease REITs but excludes real estate operating companies. There is no minimum size or liquidity requirement for an equity REIT to be included in this index.

FactSet U.S. Real Estate Investment Trusts Aggregate: Market-capitalization-weighted index of U.S. REITs stocks, not limited to equity REITs but including mortgage and hybrid REITs as well.

JP Morgan Government Bond Index (GBI) Global ex U.S.: Total return index (with dividends reinvested) of traded international debt issues from a sample of industrialized countries. The return for this index is calculated from prices quoted in U.S. dollars.

Morningstar U.S. Market Index: Diversified broad market index that targets 97% market capitalization coverage of the investable universe.

Morningstar U.S. Large Cap Index: Diversified, float-weighted index that targets the top 70% market capitalization coverage of the investable universe.

Morningstar U.S. Small Cap Index: Diversified, float-weighted index that targets the fourth through the 10th percentiles of market capitalization coverage within the U.S. investable universe.

Morningstar U.S. / Financial Services Index: Capitalization-weighted index measuring the performance of companies within the Morningstar U.S. Market Index that are classified in the Financial Services sector.

Morningstar U.S. / Software Index: Capitalization-weighted index measuring the performance of companies within the Morningstar U.S. Market Index that are classified in the Software sector.

MSCI EAFE Index: This index tracks non-U.S. stock funds (EAFE refers to Europe, Australasia, and Far East). The EAFE Index is an aggregate of 21 individual country indexes that collectively represent many of the world's major markets.

MSCI Europe Index: Capitalization-weighted index tracking companies within the MSCI EAFE Index listed on European stock markets.

MSCI Japan Index: Capitalization-weighted index tracking companies within the MSCI EAFE Index listed on Japanese stock markets.

MSCI Canada Index: Capitalization-weighted index tracking the Canadian stock market.

MSCI Emerging Markets Index: Capitalization-weighted index measuring the total returns of stocks from a number of emerging markets across the world.

MSCI EM Emerging Europe Index: Capitalization-weighted index measuring the stock market's performance in mainly Eastern European emerging markets.

MSCI EM Emerging Latin America Index: Capitalization-weighted index measuring the performance of the stock market in Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

MSCI Nordic Countries Index: Capitalization-weighted index of Scandinavian stock markets.

Russell 3000 Index: Market-capitalization-weighted index that includes the 3,000 largest U.S. companies based on total market capitalization. The Russell 3000 Index represents 98% of the investable U.S. equity market.

Russell 3000 Growth Index: Market-weighted total return index that measures the performance of companies within the Russell 3000 Index having higher price-to-book ratios and higher forecasted growth values.

Russell 3000 Value Index: Market-weighted total return index that measures the performance of companies within the Russell 3000 Index having lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Growth Index: Market-weighted total return index that measures the performance of companies within the Russell 200 Index having higher price-to-book ratios and higher forecasted growth values.

Russell Top 200 Index: includes the 200 firms from the Russell 3000 Index with the largest market capitalizations.

Russell Top 200 Value Index: Market-weighted total return index that measures the performance of companies within the Russell 200 Index having lower price-to-book ratios and lower forecasted growth values.

Russell Mid Cap Growth Index: Market-weighted total return index that measures the performance of companies within the Russell Mid Cap Index having higher price-to-book ratios and higher forecasted growth values.

Russell Mid Cap Index: Capitalization-weighted index including firms 201 through 1000, based on market capitalization, from the Russell 3000 Index.

Russell Mid Cap Value Index: Market-weighted total return index that measures the performance of companies within the Russell Mid Cap Index having lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Index: A capitalization-weighted index including the 2000 firms from the Russell 3000 Index with the smallest market capitalizations.

Russell 2000 Growth Index: Market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratios and higher forecasted growth values.

Russell 2000 Value Index: Market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratios and lower forecasted growth values.

Standard & Poor's 500 Index: Market-capitalization-weighted index of 500 widely held stocks. Member companies are chosen based on market size, liquidity, and industry group representation. Included are the stocks of industrial, financial, utility and transportation companies.

Barclays Capital Aggregate Index: Market-value-weighted performance benchmark for investment-grade fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities, with maturities of at least one year.

Barclays Capital U.S. Aggregate Government Long Index: Serves as a measure of total return of all public-issued nonconvertible investment-grade corporate debts that have a maturity of 10 years or more.

Barclays Capital 1–3 Month Treasury Bill Index: Market-value weighted index of very short-term U.S. Treasury securities. We use it as a proxy of money market investments.

Barclays Capital U.S. Aggregate Government 1-3 Yr Index: Total returns index comprised of both the Treasury Bond Index (all public obligations of the U.S. Treasury, excluding flower bonds and foreign-targeted issues) and the Agency Bond Index (all publicly issued debt of U.S. Government agencies and quasi-federal corporations and corporate-debt guaranteed by the U.S. Government). These bonds must have maturities of one to three years.

Barclays Capital U.S. Corporate High Yield Index: Index measuring returns of the high yield bond market. The Index includes issues rated BB and below by S&P or Moody's.

Barclays U.S. TIPS Index: the Barclays US Government Inflation-linked bond index (US TIPS) measures the performance of the TIPS market. Inflation-linked indices include only capital indexed U.S. government bonds with a remaining maturity of one year or more.

Barclays Capital Emerging Markets Bond Index (U.S. Dollar Issues): Index measuring the performance of emerging market sovereign bonds denominated in U.S. dollars.

LIBOR: London Inter-Bank Offered Rate. Besides being an interbank short-term lending rate, it is one of the most common benchmark interest rate indexes used to determine the variable rate of adjustable rate mortgages.

3 Month T-Bill Index: Represents the average of T-bill rates for each of the prior three months.

JP Morgan EMBI+: Index of external-currency-denominated bonds from emerging markets.

Return on equity (ROE): Ratio of total net earnings (profits) to shareholders' equity. It measures the profitability of a company.

## About Ibbotson

Ibbotson Associates is a leading independent provider of asset allocation, manager selection, and portfolio construction services. The company leverages its innovative academic research to create customized investment advisory solutions that help investors meet their goals.

For more information, contact:

Ibbotson Associates  
22 West Washington Street  
Chicago, Illinois 60602  
312 696-6700  
312 696-6701 fax  
[www.ibbotson.com](http://www.ibbotson.com)