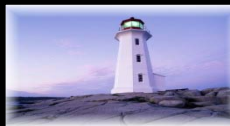


SHARPER ♦ GRANITE



Optimal Portfolio Management

SPRING
2003

Two factors currently dominate investments: the economic cycle and the Iraqi conflict. Each has been surrounded by substantial uncertainty. This quarter, we study both of these situations, looking at the big picture from a historical and statistical perspective.

Review of market tendencies during economic low points and wartime underscores the importance of maintaining proper asset allocation strategy and hedging against inflation for both long and short-term portfolios.

Sharper ♦ Granite is committed to studying history to help understand the big picture, especially during times of enhanced uncertainty. While history is an imperfect indicator of the future, its lessons are critical. With continuing war and the “orange” terrorism threat level, this quarter we discuss the impact of past wars and crisis events on investments.

With the help of Professor Tim Bollerslev at the Fuqua School of Business at Duke and research data from Professor Jeremy Siegel at the Wharton School of Business, Sharper ♦ Granite has compiled research on U.S. wars since 1885. Gulf War I is featured due to its geopolitical similarities to today’s conflict, but all past U.S. war involvement contributes to our learning as we consider the state of our investments within a long-term context.

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Financial Markets Summary

In the 1st quarter of 2003 the S&P 500 Index ended virtually unchanged, and the Lehman Aggregate Bond Index increased 1.3%. The average of all Sharper ♦ Granite client portfolios increased 2.5% and maintained a risk level 30% less than the S&P 500 Index.¹ Please refer to the personal letter from your advisor for a report on your portfolio performance this quarter.



The anticipation of war and mixed economic indicators kept equities at bay for most of the quarter until late March when Gulf War II initiated, and some of the war uncertainties were removed. The bond bull market, meanwhile, continued to hang on for at least a little longer, aided by the flight to short-term safety during these times of heightened uncertainty.

Market movements at quarter end were encouraging (week of March 21 was the best for the Dow since October, 1982), and war rallies have been frequent throughout history. However, the best strategies do not seek to outguess war events, but rather maintain course, positioning portfolios to take advantage of the long-term positive effects of the markets while bracing individual portfolios to withstand more or less short-term risk as required by client preference.

Similarly, the economic cycle, a prime determinant of corporate earnings and thus stock values, moves in upward trends and downward trends. However, predicting these trends in the overall economic cycle with precision has eluded all economists for decades. Furthermore, recent studies show that these predictions are not improving with time.² No one can consistently and accurately predict economic tops or bottoms.

As always, we guard against sort term investment “bets” that move asset positions significantly from the optimal time/risk base allocations. Sharper ♦ Granite portfolios are “tilted” only slightly to reflect current timing with the macro-economic cycle and current events. ●

Historical Impact of War on Investments

Returns during War

Reviewing stock market movements during the major wars of the last century teaches us that while war is a major backdrop of market action, market movements are more significantly tied to economic drivers than to war events themselves.



Since 1885, the U.S. economy has been at war or on the sidelines of a world war 20% of the time. Surprising to many, the stock market does equally well in terms of nominal returns during war or peace, but because inflation averages run three times higher during wartime, real returns on stocks during peacetime outstrip those during wars.³

Market behavior the week of March 21 typified the way stocks react when America engages in war. In the 26 U.S. military operations that took place from 1942 through 2003, the market rallied 23 times in the three weeks following initiation.⁴ The chart below shows that markets often decline when enemy forces initiate attacks, while rallies are frequent when the U.S. or its allies strike.

Impact to Stock Market during Wars^{3,5}

War	Start	Throughout	Near End
World War I	↓ -7% war declaration by Austria-Hungary on Serbia (July 28, 1914)	↑ +82% in 1915 is largest ever calendar year increase	↑ New highs set through 1919
World War II	↑ +7% war declaration by Britain on Germany (September 28, 1939)	↓ -3.5% day following Pearl Harbor attack ↓ -30% from 1939 high when Germany invaded France (April 28, 1942)	↑ +1.7% day following Hiroshima atomic bomb ↑ +20% from pre-war level on German surrender (May 7, 1945)
Korean War	↓ -4.7% on North Korean invasion (June 25, 1950)	↑ +12% six months following North Korean invasion	↑ +25% at war end. Market soared in following years
Vietnam War	↓ -1.2% day after Gulf of Tonkin attack (August 2, 1964)	↑ +18% in first 1 ½ years ↓ -25% when Nixon sent troops to Cambodia, combined with soaring rates and recession	↑ Small gains from 1965 – 1973, restrained by rising inflation, interest rates, other non-war problems
Gulf War I	↓ -1.1% day following Iraqi invasion of Kuwait (August 2, 1990); -18% two months later	↑ +2.9% day following U.S offensive initiation (January 18, 1991)	↑ +19% from day of Iraqi invasion to war end on February 28, 1991
Gulf War II	↑ + 8.4% first week (March 21, 2003) was largest weekly gain in 21 years	?	?

Market Risk during War

We define stock market risk as volatility of the Dow Industrial Average, measured by daily and monthly stock market fluctuation .

The widely discussed market volatility increase during wartime is generally untrue. Surprisingly, risk is slightly greater on average during peacetime than during war. Since 1885 there have been 123 days where the Dow moved 5% or more in either direction in a single day. Only ten of those days were due to war related news (four of those ten were up days), all ten occurred before or after actual war, and all ten occurred before 1941.³ Market volatility is tied more to uncertainty of economic indicators than to the events of war.

No 5% single day drops have ever occurred during U.S. involvement in any war.

Inflation during War

The key economic factor that changes most during wars is inflation. Inflation averages 6% during wartime and less than 2% during peacetime. The increased value of oil, steel, chemicals, and other commodities feed directly into the costs of base goods and thus inflation.

Increasing price pressure is already being noted today across several commodity components, punctuated by higher oil prices. However, while oil prices hit \$39/barrel last month, the price of oil after Iraq invaded Kuwait in 1990 hit \$39/barrel, equivalent to \$52/barrel in today's dollars. The minimization of Iraqi oil field damage and stabilization of Nigerian production have been pulling oil prices back down as the quarter closed.

Nonetheless, oil prices have such strong influence on the overall economy, they must be watched closely. Economists estimate that every \$2/barrel increase costs the U.S. Gross Domestic Product (GDP) 0.1%.⁶

Iraqi Gulf War of 1990 - 1991

Gulf War I began on August 2, 1990, when Iraq invaded Kuwait, sending oil prices skyward and sparking a U.S. military buildup in Saudi Arabia. The rise in oil prices combined with an already slowing U.S. economy to drive the U.S. deeper into recession. The stock market fell precipitously, and by October 11, 1990 the Dow slumped 19% from pre-War levels.

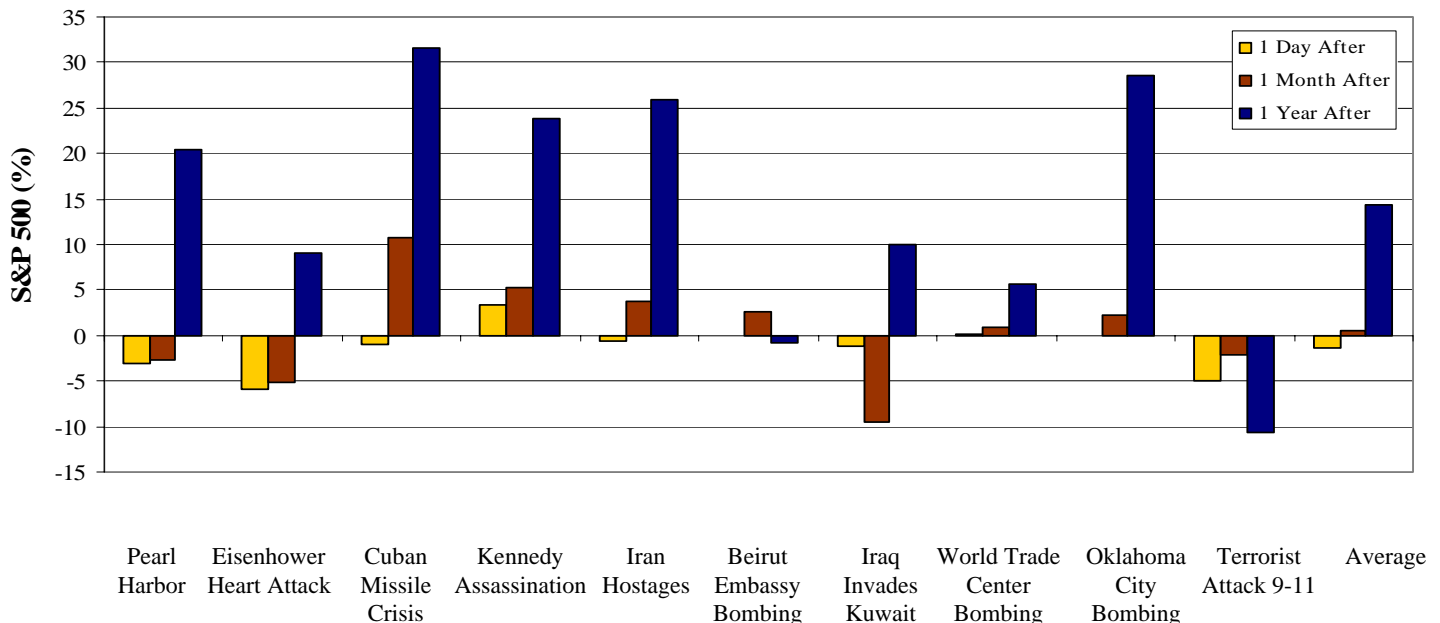
U.S. offensive action began on January 17, 1991. It was the first major war fought in a world where oil, gold, and U.S. government bonds traded around the clock in world markets. In that case, the markets judged the victors in a matter of hours. Oil prices fell by 33%, bonds collapsed, and stocks surged. By the time the U.S. deployed ground troops to invade Kuwait, the market had known for two months that victory was at hand. The war ended on February 28, and by the following week the Dow was up 19% from the point the war started. This result was typical of the market's tendency to rally toward the end of wars as shown in the chart.

Gulf War I was one war where risk levels ran higher than normal. This was partly due to the increased risk imparted by volatile oil prices. Oil prices have tremendous effects on world economies. A similar effect occurred already at the start of Gulf War II. Furthermore, the transparency of the events of this war provided by embedded journalists removes many "filters", allowing immediate market reaction to wartime events and potentially increasing market volatility.

The Market Following Crisis Events

Examining returns following other crisis events shows a similar result. The chart below shows that sharp drops in the aftermath of traumatic events are often followed by long-term rallies, illustrating the resiliency of the market and of the U.S. economy in general. One year after these selected ten events, the S&P 500 Index increased an average 14.4%. The biggest exception was the aftermath of 9-11, whereby we are still battling low returns, although much of these low returns can be attributed to the economic cycle downswing which initiated prior to 9-11.

The Market Following Crisis⁶



Summary

- While war significantly impacts world economies, few sudden big market movements generally occur due to war.
- Surprisingly, market volatility during wartime has actually been lower than during peacetime. However, additional volatility may be expected during Gulf War II due to the influence on oil prices.
- In the months following wars or other crisis events, the market tends more often than not to rally.
- History has also shown the importance of hedging against inflation during wartime. Inflation is a killer of bond and money market returns and is best hedged through equities and real estate, whose core values are little affected by inflation.
- Based on these facts, Sharper ♦ Granite is making only slight changes to long-term portfolios due to a war of unknown duration and severity. However, short and long-term portfolios have been reviewed to ensure appropriate tilts toward inflation resistant holdings. In some cases this can result in reduced long-term bond exposure. ●

First Quarter 2003 Economy Review

Although it's hard to tell by looking at the stock market, the economy is not doing too badly. While at a relative low point, the economy is expanding, albeit slowly. With monetary stimulus in place, low inflation, and more fiscal stimulus on the way, we expect the U.S. economy to continue its slow improvement as the year unfolds.

Yet, the economy has been far from the thoughts of most investors in light of the current clash with Iraq. Gulf War II has left investors with little appetite for investment risk now. And as the war concludes, investors' concerns will quickly return to the economy.

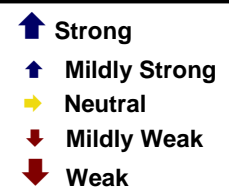


During the past three years we have been conditioned to focus on stock market risk (due to economic contraction), because that is the factor that has ravaged many portfolios over the past few years. But other risks are possible as well. Inflation, for example, is a necessary evil we have accepted into our economy since moving off the gold standard in the 1930's. Federal Reserve Board monetary policy has contributed to keeping inflation at bay (2% – 4%) since 1983.

While moving assets out of stocks and into cash or bonds removes stock market risk, it exposes portfolios to interest rate and inflation risk. Sharper ♦ Granite and colleagues from the Kellogg Graduate school of Business have developed models of minimum risk portfolios (stock/bond/cash mixes) for different time horizons, balanced against all potential risks. If you are interested in building a portfolio of lower or minimum risk for your financial situation, contact your Sharper ♦ Granite portfolio manager.

Leading Economic Indicator Summary

↑ Market Cycle: The S&P 500 has declined now for three consecutive calendar years for only the third time in the last century. The only four year consecutive downturn in the last 200 years was during the Great Depression 1929 - 1932. As poor as the economy looks today, it is not nearly as bleak as the Depression. In 1932 industrial production fell more than 65% and car sales declined 80% from their 1929 levels. Unemployment was near 30%.



Of the 57 years since the end of World War II, the market has fallen in only 17, and has fallen consecutively only three times, two of which were 2000 - 2001 and 2001 - 2002. In the 16 one-year periods following these yearly declines, the average index gain was 12.4%.⁷

↑ Political Cycle: This is the third year of President George W. Bush's term. Traditionally, the third year in the presidential cycle is the strongest as elected officials, both the President and Congress, typically try to boost the economy to improve chances of re-election. Since 1948, the third year of the presidential cycle has seen the S&P 500 post an average gain of 23.3% (21.9% with Republican presidents), far in excess of the other years of the cycle.³

Specifically looking at the third year of presidential cycles when the U.S. was at war, the stock market has also risen significantly. The average gain of the S&P 500 was 18.4%.⁵

➔ **GDP Growth:** Gross Domestic Product (GDP) is the official economic measure of the U.S. economy. In the 4th quarter of 2002 the economy grew 1.4%.⁸ It was the sixth consecutive quarter of expansion, or positive economic growth, since the official recession ending in November, 2001. While we are officially out of recession, growth remains low. We do not believe there will be a “double-dip” recession as defined by two consecutive quarters of negative GDP growth.

⬆️ **Purchasing and Manufacturing:** The key economic purchasing indicator is the Chicago Purchasing Managers Index (PMI).⁹ This measure indicates slow expansion as it has over the past year and a half. Ditto the key manufacturing indicator, the Institute of Supply Management (ISM) Index.⁸ Manufacturing represents one-sixth of the total U.S. economic output.

⬆️ **Inflation Control:** The most widely used measurement of inflation is the Consumer Price Index (CPI). The core CPI remained low at +0.2% during the first two months of the quarter, implying a continued low inflation environment. However, when volatile energy and food prices were factored, February saw the CPI’s biggest monthly gain in two years.¹⁰ Because of this and the typical inflationary effects of war, we are keeping special watch on oil prices and inflation risk.

⬇️ **Consumer Spending:** Consumer spending is currently the weakest of the key economic indicators we watch. Heavy winter storms, war, and terror fear contributed to low consumer spending data across the board. Discretionary spending had the slowest increase in three years.¹¹ Home sales, which have buoyed the consumer over the past few years, may finally be crumbling.

Meanwhile, the Consumer Confidence Index reached its lowest level since October 1993. The February monthly decline was the sharpest drop since April 1980, after the failed attempt to rescue U.S. hostages in Iran. Furthermore, auto buying plans dropped to their lowest since June 1995.

⬆️ **Capital Spending:** While capital spending has been a significant illness in the economy over the last three years, it is now one of the most encouraging indicators, continuing its steady upward trend over the last eight quarters.

⬇️ **Investor Sentiment:** Investor sentiment is an important contrarian indicator. Market conditions are more favorable when “expert” newsletters are more bearish. This is true for two reasons. First, studies show “experts” seeking to time the market are consistently wrong more often than they are right. Second, short-term investors place their bets first, then tout their directional picks. For example, when investors are openly bullish, they have likely already employed their capital, leaving less money to be pushed into the market generating demand. Bullish readings are not currently at an extreme, but are higher than we like to see.¹² ●

Questions?
Contact us at:
questions@sharpergranite.com

Notes and Acknowledgements:

1. Arithmetic average used for return measurement. Asset weighted average beta used for risk-adjustment to market risk level. Performance includes assets tracked for clients that lie outside Sharper ♦ Granite direct management, which amount to less than 10% of total assets. All client portfolios weighted equally in calculation.
2. Deborah Lucas, Professor of Finance, Kellogg Graduate School of Management at Northwestern University; and Sharper ♦ Granite Research.
3. Jeremy J. Siegel, Professor of Finance, Wharton School of Business at Penn University; and Sharper ♦ Granite Research.
4. LIM Research.
5. TD Waterhouse Research; and Sharper ♦ Granite Research.
6. Merrill Lynch.
7. Ibbotson Associates; and Sharper ♦ Granite Research.
8. U.S. Commerce Dept.
9. NAPM-Chicago.
10. U.S. Labor Dept.
11. Conference Board.
12. *Investors Intelligence*, April 2, 2003.