



YANNI  
PARTNERS

DELIVERING  
THE PROMISE

IN THIS  
ISSUE

How investors  
can guard  
against severe  
risks.

# MEASURING UP

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## Lessons Learned from the Bear Market and a Look Ahead

# Risk Management Revisited

The development of a successful investment strategy rests on several key principles. Managing risk is critically important. Two years ago, Yanni Partners explained how effective management of risk can guide an investor toward its goals. Yanni Partners' March 2002 paper *Managing Investment Risk: The Path to Achieving Objectives* presented a framework to help investors measure and manage risk.

Given the importance of risk management, we have revisited key elements of our previous risk research. The capital markets' dislocations from 2000 through 2002, and their subsequent recoveries through 2003 and 2004, teach us timely lessons about risk management. This edition of *Measuring Up* identifies the most severe risks that investors face, and it explains how investors can guard themselves against these risks.

### Managing Market Exposures

Excessive capital market exposure can trigger losses that exceed the investor's expectations. An investor might not be able to recover from such unanticipated losses. For example, a pension fund might not be able to meet all of its benefit obligations. Or, a college might need to curtail the activities of certain academic departments.

Investments that are more volatile, such as equities, can trigger large losses that might linger for long periods. It is very important for each investor to understand the potential losses that a given investment strategy (mix of equities and fixed income) can inflict. Such an understanding will enable the astute investor to avoid investment strategies with unacceptable outcomes. The investor must assess the magnitude of a potential loss that would jeopardize the investor's ability to meet its objective. The investor also needs to assess whether the organization can accept the possibility of such a loss, albeit with a low degree of probability.

### Historical Perspective

*Figure One*, Cumulative Returns During Periods of Capital Market Stress, illustrates key characteristics of the capital markets. *Figure One* shows that equities



have sustained periodic large losses. Fixed income investments have been relatively stable during historical periods of equity losses. Therefore, the inclusion of fixed income in a portfolio might help to reduce the risk of downside losses. *Figure One* shows the maximum peak to trough during several periods of capital market stress from December 1972 to May 2004.

Shocks to the economy have often triggered severe equity market losses. The 1972 to 1974 downturn occurred during an era of surging inflation and a disruption of oil supplies. The 1987 crash was associated with global uncertainties regarding the U.S. dollar. The 1998 downturn was part of a worldwide flight to quality in response to the Russian debt crisis and demise of the highly

F I G U R E O N E  
**Cumulative Returns During Periods of Capital Market Stress**  
December 1972 - May 2004

	Domestic Equity [a]	International Equity [b]	Domestic Fixed Income [c]
<b>December 1972 - September 1974</b>			
Cumulative Return	-42.6%	-35.2%	-3.0%
Recovery Time (Months)	42	52	1
<b>August 1987 - November 1987</b>			
Cumulative Return	-29.5%	-14.5%	2.2%
Recovery Time (Months)	21	7	NA
<b>May 1990 - October 1990</b>			
Cumulative Return	-14.7%	-9.6%	3.6%
Recovery Time (Months)	9	35	NA
<b>June 1998 - August 1998</b>			
Cumulative Return	-15.4%	-11.5%	2.0%
Recovery Time (Months)	5	6	NA
<b>August 2000 - September 2002</b>			
Cumulative Return	-44.7%	-42.6%	24.1%
Recovery Time (Months) [d]	45	45	NA

NA: Not applicable [a] S&P 500 [b] MSCI EAFE [c] Lehman Brothers Government/Credit  
[d] Domestic and international equity markets have not yet recovered to August 2000 levels.

The December 1972 to September 1974 equity market downturn subjected investors to relatively long recovery times, i.e., roughly three to four years. The 1987, 1990 and 1998 downturns were followed by relatively rapid recoveries. The August 2000 to September 2002 downturns have been severe. The domestic and international equity markets still have not recovered to the peak August 2000 levels after nearly four years since the beginning of these downturns.

leveraged hedge fund Long Term Capital Management. The 2000 to 2002 bear markets followed extremely high equity valuation levels and a drop in investors' confidence in corporate managements, following numerous revelations of accounting manipulations.

Some market observers express concerns about another severe market downturn due to possibilities of further domestic terrorist attacks or instability in the Middle East. There are numerous possibilities of terrorism, such as a coordinated series of attacks on

the U.S. highway or rail system or a major disruption in the production from Saudi oil fields to name a few. Although it is difficult to forecast the future, investors must remain aware of the risks of future market downturns.

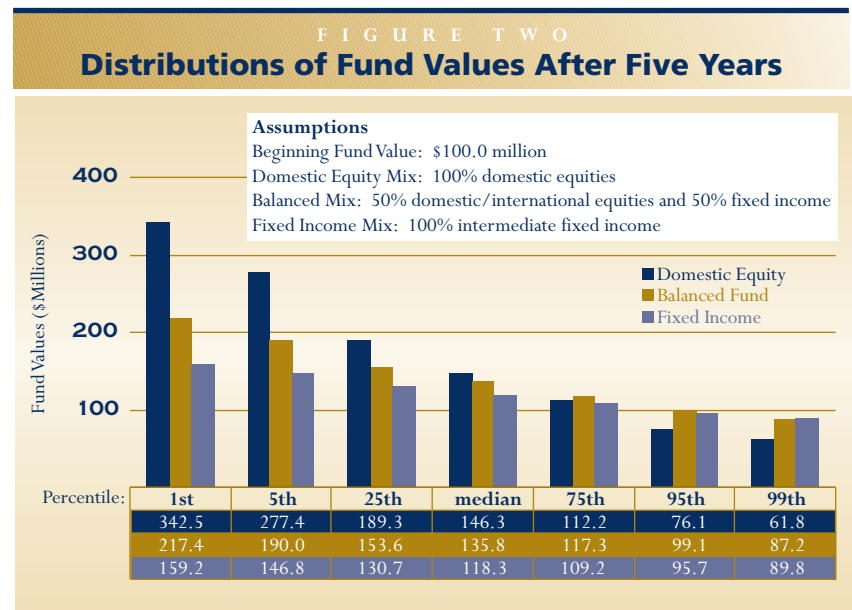
## Looking Ahead

How can investors avoid potential losses that might incapacitate the organization from carrying out its mission or meeting its responsibilities? The investor can mitigate the risk of devastating losses by understanding the probabilities and magnitudes of potential losses from a given investment strategy. Such an understanding will enable the investor to avoid investment strategies with unacceptable outcomes. A rigorous investment planning framework can quantify the probabilities and magnitude of potential losses.

Yanni Partners has developed an asset allocation model that quantifies the outcomes of a given investment strategy (mix of equities and fixed income). The model generates outcomes based on Yanni Partners' forecast of the long-term expected returns and risks of the capital markets. The Fall 2003 edition of *Measuring Up, Capital Market Expectations*, explained Yanni Partners' framework for projecting the markets' risks and returns.

*Figure Two*, Distributions of Fund Values After Five Years, illustrates results for three hypothetical investment strategies based on Yanni Partners' asset allocation model. The three strategies are 100% domestic equities, a balanced fund of 50% equities and 50% fixed income, and 100% fixed income. *Figure Two* projects portfolio values after five years for each of the three investment strategies. There are no assumed contributions to the fund or distributions from the fund. Yanni Partners' model projects a distribution of future asset values for any given investment strategy. Each distribution is based on numerous simulations. The dispersion of potential outcomes conveys the risk inherent in a given investment strategy. *Figure Two* summarizes seven points from the distribution of outcomes for

each strategy. These points are the 1st, 5th, 25th, 50th, 75th, 95th and 99th percentile results. The 50th percentile is the median; this is a measure of the expected result. The 1st percentile means that only 1% of the outcomes are more favorable. The 99th percentile means that 99% of the outcomes are more favorable. Results lower than the 95th percentile represent highly unfavorable outcomes. An investor can evaluate the risk and return trade-offs of different investment strategies by comparing the expected results (medians) relative to unfavorable outcomes (those less favorable than 95th percentile results).



In the above example (*Figure Two*), suppose the investor is a hospital that currently has a \$100 million funded depreciation pool. The Trustees have determined that they would like to increase the balance of the fund over time provided that the hospital can maintain the fund's value at a minimum of \$100 million at a 95% confidence level. *Figure Two* suggests that highly aggressive and conservative investment strategies would be inappropriate for this hospital. The 100% domestic equity and 100% fixed income strategies do not provide the prospects of preserving the \$100 million value at a 95% confidence level. In other words, there is more than a 5% likelihood that these strategies will result in

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five-year terminal fund values below \$100 million. The balanced strategy of 50% equities and 50% fixed income offers the prospect of preserving the \$100 million fund value at a confidence level that approaches 95%. This framework therefore suggests that this 50% equity and 50% fixed income strategy might help the Trustees to reach their investment objectives. *Figure Two* shows that at the 95% confidence level, the outcome is close to the objective, but falls somewhat short of the goal at \$99.1 million. With the \$99.1 million result, the investor needs to assess the risk and return tradeoffs. This framework provides a disciplined

method for an investor to identify investment strategies that might produce unacceptable outcomes for the institution.

### Conclusion

Large and unanticipated investment losses might incapacitate an organization. Successful investment management requires realistic expectations of the markets' risks and returns as well as a rigorous framework to identify investment strategies that might subject investors to intolerable losses. Yanni Partners' strategic investment planning for clients will continue to focus on rigorous management of risk.

## Calendar of Events

Aug. 23, 2004

### Yanni Partners Educational Symposium and Golf Outing

Manufacturers' Golf  
and Country Club  
Fort Washington, PA

Attendance by  
invitation only.



### Ilya Zusman

Ilya Zusman has joined Yanni Partners as an Investment Consulting Analyst. Mr. Zusman will provide investment consulting services to clients, as well as assist in developing investment policy and investment consulting

research. Previously, Mr. Zusman served as a Portfolio Analyst at Coury Financial Group and at Russell/Mellon Analytical Services, Inc. Mr. Zusman graduated Magna Cum Laude from the University of Pittsburgh with B.S. degrees in Economics and Physics including a minor in Mathematics.



### Paul R. Ames

Paul R. Ames has joined Yanni Partners as the Director of the Institutional Data Division. Mr. Ames will be responsible for Yanni Partners' proprietary databases of investment manager performance, statistics and distinguishing

product characteristics. Previously, Mr. Ames worked as a Consultant for Biophan Technologies, as well as a Financial Consultant for both Mellon Bank and Merrill Lynch. Mr. Ames earned a B.A. in Finance from Bryant College, with a Cum Laude distinction, and holds an MBA in Business Administration from the University of Rochester.

Yanni Partners provides a full range of consulting services vital to the management of various portfolios. Our ultimate goal is to offer a basis for improved investment monitoring and performance.

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