

SENIOR CONSULTANT

The Voice of the Investment Management Consultant

A Comprehensive View of After-Tax Investing and Tax Efficiency

Ron Pruitt, Chief Investment Officer, Placemark Investments

While the quest for effectively managing taxable assets has received notable emphasis in the last few years, efforts have fallen short of adequately describing a comprehensive view of after-tax investing. Albert Einstein once said, “The hardest thing in the world to understand is the income tax.” While we do feel that this is an overstatement, it is our opinion that the search for understanding has, in many cases, led many astute advisors and clients to incomplete and, in some cases, incorrect answers. To level the field of understanding, it is useful to review the development of modern day thought with respect to taxes and investing.

The Evolution of Taxable Investment Advice

As illustrated in Figure 1, taxable investment products and investment practices have their roots in those products managed for tax-exempt institutional clients. The first well-publicized article addressing the inherent challenges taxes, “Is Your Alpha Big Enough to Cover Its Taxes,” was written by Rob Arnott in 1993. The article suggested that taxes recognized via turnover cost a taxable client more than any reasonable estimate of the benefit of trading (i.e., alpha). The article indicated that annual turnover of 100% would require a manager to generate an excess return of 2.85% to pay for the tax bill that resulted from trading (as compared to the tax bill generated from holding a passive portfolio that had a 5% annual “frictional” turnover). This article has been used by other practitioners to justify two broad product decisions:

1. Since only ultra-low turnover avoids this tax hurdle, it is sufficient to remain “tax oblivious” (❶), and
2. Ultra-low turnover is “tax efficient,” and therefore a “buy and hold” strategy is the best answer for a taxable client (❷). Neither is a sufficient answer.

During the last few years we have witnessed a proliferation of articles regarding the management of taxable investment portfolios; many focused on the value of loss harvesting (❸). The premise of these articles has been that some trading is good (realizing

losses) and that other trading is bad (realizing gains). These articles have assumed that losses offset gains elsewhere in the client’s portfolio, thereby substantially reducing the client’s overall tax bill. When after-tax value is considered (and the savings reinvested in the strategy that generated the losses), the annual value of loss harvesting has been estimated to be in excess of 1%. While this creates hope for a taxable client, the ability to infinitely offset gains is both an unrealistic and very generous assumption in valuing losses for an individual taxpayer. (Corporations can use capital losses to offset ordinary income while individual taxpayers are limited to offsetting a maximum of

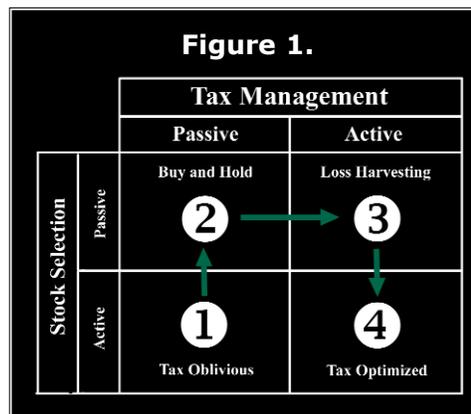
\$3,000 in ordinary income per year.) In fact, loss harvesting without offsetting gains reduces a client’s after-tax wealth as will be described more fully below.

We believe that taxable advice is evolving towards the better solution of “tax optimization” (❹). Tax optimization involves making comprehensive investment decisions in the presence of taxes by actively considering a client’s entire taxable portfolio. This paper will illustrate that the

best investment decisions can only be made by viewing a client portfolio in aggregate, making all decisions while accurately considering the complexities of the tax code.

A Comprehensive Look at Gains and Losses

To fully understand the value of losses, we must understand the trade-off being made when we choose to harvest a loss. By “taking a loss,” a manager has the opportunity to realize a gain while avoiding the immediate cost of taxes. By avoiding taxes on gains, more money can be invested in other assets, thus improving the portfolio’s compounding. While the client may eventually pay a tax bill, the ability to avoid taxes today can be considered an interest-free loan equal to the amount of the tax savings. This interest-free loan provides the client the opportunity to obtain a rate of return on the loan proceeds. Assuming that the gain to





be recognized is at least as large as the loss, the equation in Figure 2 illustrates the value of the loss when used to offset a gain. This equation simplifies the situation by not including the time value associated with the payment of transaction costs. However, examining this equation, one can notice some key observations about loss harvesting:

- Losses add value, either by generating a return on the deferred tax costs and/or by allowing trading (that would otherwise be taxed at unfavorable rates) while deferring taxes until the transaction can receive a preferential tax rate
- “Banking losses” (harvesting losses to use against future gains) adds value only when there is a sufficiently long period (at least one tax year) between putting the loss to work and the eventual sale at a gain of the security purchased to replace the harvested loss.
- Loss Harvesting adds no value in a purely passive portfolio. In a passive context, losses are banked to offset future gains of the equity portfolio but, in a passive portfolio, the only reason to recognize gains is to create liquidity. When the portfolio is liquidated, the gains will be greater by the amount of the losses. In this situation, the variable N in Figure 2 is zero because the use of the losses occurs at the same time that the future gains are recognized.
- Transaction costs are paid on current value P, whereas loss value is based on a decline in value (C-P). It is therefore prudent to only sell losses that are relatively large such that the transaction costs are small relative to the loss and its associated benefit.

The Appropriate Rate of Return for the Decision

In determining how to integrate time value into the analysis, consider whether the client expects to recognize a gain. In many cases, some other decisions or outcomes will drive the client to recognize a gain. Some examples include the sale of a business, distributions from a limited partnership or the sale of real estate. In such situations, the client will pay a tax on the gain. The client, by using losses to avoid the tax, can obtain the market rate of return on the savings. Thus, the market return is the most appropriate return for valuing the loss.

Figure 2.

$$V = \underbrace{(C - P)}_{\text{Amount of Loss}} \times \underbrace{T_I}_{\text{Tax Cost Avoided}} \times \underbrace{(1 + R)^N}_{\text{Compounded Return on Deferred Tax Cost}} - \underbrace{(C - P)}_{\text{Amount of Loss}} \times \underbrace{T_F}_{\text{Eventual Tax Cost}} - \underbrace{(P \times S)}_{\text{Transaction Costs}}$$

where

- C = Cost Basis of Asset to be Harvested
- P = Current Price of Asset to Be Harvested
- TI = Tax Rate of Gain that will be offset
- TF = Tax Rate Paid on Eventual Gain
- R = Annual Rate of Return on Tax Savings
For Active Management – Excess Return
For Net Loss Generator – Market Return
- N = Years Between Loss Use and Future Gain Recognized
- S = Cost to round trip trade (Spread and Market Impact) in Percentage Terms

However, when a gain is recognized for the purpose of purchasing a similar asset with a higher expected return (a typical active investment management decision), the appropriate rate of return is the excess return to be generated by the trade. After all, if there were no excess return expectation, there would be no reason to trade. To illustrate, consider an example of a client who will not obtain any “extra” return for trading the gain; the client would still obtain the market return without trading. Therefore, the correct valuation of trading a gain is the difference in expected return between the current stock and the replacement stock.

In summary, losses only have value when offsetting gains. Financial events exogenous to the portfolio can result in losses having substantial value to a client. However, losses do not have value when a client has the vast majority of their net worth in a passive strategy. In such a strategy, there is no reason to recognize gains (no excess return opportunity) and no benefit to loss harvesting. If excess return can be generated, harvesting losses can add value to an active investment strategy by reducing the cost of taxes for a client while enabling trading to occur.

Compelling Strategies in the Presence of Taxes

Two compelling strategies stem from the simple analysis above. The value of either of these strategies is dependent on the client’s current situation and outlook, and it may be

possible to implement both strategies for the same client during different periods in the client’s investment time horizon.

The first strategy uses the taxable investment portfolio as a net loss generator to offset gains outside the portfolio. Since the client can recognize the market rate of return on the tax savings, substantial benefits occur from this type of strategy. However, the dichotomy of such a strategy is that the losses only have value when offsetting gains. If the client has a substantial allocation to the net loss generating strategy, then the client will likely have excess losses, which we have demonstrated do not have value in the absence of gains. Conversely, if the client has a substantial allocation of their wealth in those “other” assets generating the gains, there may not be enough losses available to offset gains, and the value generated by the strategy may be relatively small to the client. For example, if the loss generating assets add 1% of after-tax value to the client but constitute only 10% of the client’s total assets, then the client recognizes only a 0.1% savings.

An additional consideration is that a passive loss harvesting strategy, in the absence of new cash invested, bears a greater risk of running out of losses (i.e., portfolio lock). Therefore, the primary product feature of passive loss harvesting – its ability to offset other tax events – has a limited shelf life. Quantifying the value of a net loss generator strategy should be done with extreme caution as the value can fluctuate substantially, based on the client’s situation. Some published researchers have used



generous and often incongruent assumptions in quantifying value. These assumptions include large allocations to a passive strategy, coupled with an assumption of infinite gains in assets outside of the portfolio.

The second strategy is to use losses actively to offset gains within an equity investment portfolio and thus minimize tax costs while still pursuing an active strategy. In cases where losses are not available, gains should be deferred (at a minimum) to a preferential (i.e., long term) tax status. While implementation of this strategy requires a manager to provide some amount of stock selection expertise, the hurdle (or “tax drag”), as described more fully below, is substantially lower than what some researchers have estimated.

Reducing Tax Drag via Tax Management

As was suggested earlier, Arnott and others have placed a great deal of emphasis on tax drag as an important component in understanding tax efficient investing. In order for a change to be economically efficient, the benefit generated by the change must exceed the cost. In the case of tax efficiency, the cost is the reduction in foregone compounding (of the tax payment) over the investment horizon, while the benefit is the expected improvement achieved by trading the gain, while avoiding the immediate tax costs of doing so. In order to better understand these trade-offs, it is useful to understand the single period relationship between taxes and return, and then extend this scenario to a multi-period example.

In a single period, three things can explain the cost of taxes: (1) the amount of gains realized (ranging from 0% to 100%), (2) the blended tax rate (ranging from the income tax rate to the preferential capital gains rate) and (3) the pre-tax investment return on the portfolio. In this framework, dividend yield is the equivalent of a realized short-term gain. As shown in Figure 3, deferring short-term gains and reducing the total gains realized substantially reduces the tax costs of a typical tax oblivious investment. (Note that the assumptions used in the tax oblivious investment are consistent with the after-tax performance of most mutual funds.) This example implies that simply reducing gains realization to 0% per year preserves the entire pre-tax return and

eliminates tax costs entirely. This is misleading unless the client can forever avoid liquidating the portfolio. Expanding this analysis to consider a multi-period scenario, two other factors must be included:

1. the eventual tax cost to liquidate the portfolio and
2. quantification of the benefit a client must receive such that trading outweighs the costs of taxes and lost compounding.

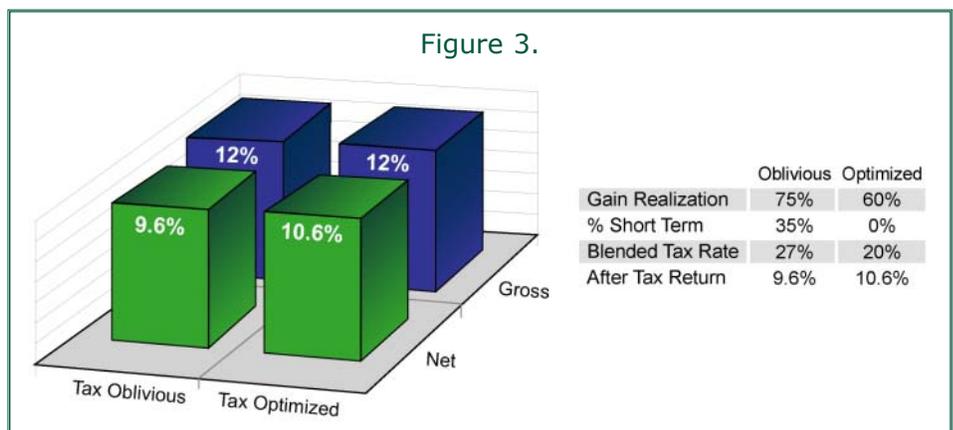
The aforementioned analysis is very similar to the Rob Arnott article (“Is Your Alpha Big Enough to Cover Its Taxes?”) which compared the value needed today in better pre-tax return to make up for the lost deferral. The key differences between this analysis and the analysis published in 1993 are:

- Use of a blended tax rate of 20% in this analysis versus 35% in Arnott’s analysis. (Note that corporations do not benefit from a preferential capital gains tax rate.) For individual taxpayers, this change is reasonable, given the reduction in capital gains tax rates as well as the use of a tax managed separate accounts to minimize short-term gain exposure.
- The inclusion of tax costs at liquidation since most taxable assets will require liquidation/consumption during the client’s life. Step-up basis at estate transfer will be eliminated for many assets by 2010 (although re-introduction is planned) negating the ability to avoid taxation of non-consumed assets through estate transfer. Charitable giving is a noted exception in which gains are never recognized.

As mentioned earlier, a typical conclusion from Arnott’s research is that 100% turnover will require 2.85% in excess return when compared to a passive portfolio. Using the same capital market assumptions, but considering liquidation costs and using effective tax management (reducing gains realization and managing to a blended tax rate of 20%), the “alpha hurdle” can be reduced to 0.33%. An active portfolio delivering this much excess return makes the net present value of the passive and active portfolios equal. Based on equal net present value alone, investors should be indifferent between the cash flow they would receive between a tax-managed strategy and a much simpler passive one, yet net present value doesn’t adequately quantify the increased flexibility provided by active management. For this, we must turn to the option value of active management.

The Real Option Embedded in A “Pay as You Go” Strategy

In capital budgeting analysis, two projects with equal net present values are not necessarily equal. If one can make changes during the life of a project (choosing to abandon the project, reducing/increasing the output/expenses, etc.), it will embody an optionality function, which may improve the project’s cash flow during implementation. This optionality is valuable. In the example above, the embedded option in the actively traded strategy is the ability to change the investment over time. Financial plans should be updated at least annually for each client due to the changing





nature of a client's needs. Yet, a passive "tax efficient" strategy only remains so, if it is not traded, hence not allowing for changes. For years, financial advisors have emphasized the need for rebalancing, yet a passive strategy that does not allow change, does not allow rebalancing. Similarly, a strategy that does not allow change does not permit active risk control or allow for responses to a client's liquidity needs. Such optionality also allows a client to switch to a net loss generating strategy if the client expects to recognize substantial external gains; there is no value in assuming the risk of banking losses earlier than needed.

A strategy with 100% gain recognition, that pays taxes annually, effectively liquidates the portfolio each year and, as such, can be changed without any embedded capital gains and associated incremental tax costs. If the manager is able to generate just enough alpha to meet the tax hurdle for the 10-year time horizon, but the portfolio is liquidated in three years, then the manager would have generated positive after-tax returns by the difference in the tax hurdles.

For example, a client makes an investment that he or she intends to hold for ten years. After three years, the client needs to liquidate the investment. Assuming the client's investment has outperformed the market by 33 basis points per year (just enough to pay the estimated tax drag over 10 years), the client will realize better after-tax returns based on the 3-year tax hurdle than he or she would on the 10-year tax hurdle. That is, the incremental value added is the difference between the 10-year annual hurdle (33 basis points) and the 3-year hurdle (which calculates at 6 basis points). After three years, the client has outperformed the market on an after-tax basis by 27 basis points annually.

One final point regarding alpha hurdles: many an astute investor has been led astray by research that suggests the existence of several additional tax hurdles including an alpha hurdle of 285 basis points, a manager selection/deselection tax, a rebalancing tax and a benchmark reconstitution tax. In fact, the traditional alpha hurdle of 285 basis points fully encapsulates the worst-case scenario. This traditional hurdle assumes that all gains are realized each year and almost all are at an unfavorable tax rate. As demonstrated above, this number can

be reduced substantially and, in doing so, enable an investment strategy that is consistent and adapts to a client's changing financial plan and lifestyle needs.

Delivering Tax Management – Is a Tax Quarterback Needed?

We have outlined two potential strategies for a taxable client. One strategy involves using losses to offset capital gains from lifestyle events through an ultra-low turnover strategy with loss harvesting; the other employs a pay-as-you-go tax strategy that has the flexibility to rebalance, manage risk and deliver on-demand liquidity. Both strategies can be very beneficial to a client, and the selection of the appropriate strategy should be based on the client's overall belief in the managers' ability to add value, the distribution of the client's net worth, the timing of gains recognition and the client's investment time horizon. So, once the "right" strategy is determined for the client, what is required to implement this strategy?

In order to understand this issue, it is useful to examine a hypothetical scenario wherein two managers attempt to manage a client's portfolio for taxes, even though each is managing only a portion of the client's assets. By use of this example, we illustrate the need for tax coordination across accounts.

In Figure 4, each manager has succeeded in realizing only long-term gains. Based on each manager's independent tax calculations and combined Federal/Massachusetts rates of 22.46% for capital gains and 45.9% for income the client would pay only \$16,842 in taxes. However, when the portfolios are combined and the client prepares his or her tax return, the tax calculation would change. The long-term losses would be used to offset the long-term gains, leaving the client with a short-term gain exposure of \$75,000. The client, therefore, would end up with a tax bill of \$34,478, more than double the amount calculated by the managers "independently."

This example illustrates the difficulty of trying to make investment tax decisions in a silo without a total picture of a client's tax exposure. The scenario gets more complex if you consider that the average separate account client has 3-4 managers plus external gains and losses that are effectively self-managed. We

Figure 4.

Tax Efficient Manager 1 Realized Gains/Losses	
Short-Term Gains	\$ 75,000
Short-Term Losses	—
Long-Term Gains	—
Long-Term Losses	\$ (75,000)
Taxes Due	—
Tax Efficient Manager 2 Realized Gains/Losses	
Short-Term Gains	—
Short-Term Losses	—
Long-Term Gains	\$ 75,000
Long-Term Losses	—
Taxes Due	\$ 16,842
Client Tax Return Realized Gains/Losses	
Short-Term Gains	\$ 75,000
Short-Term Losses	—
Long-Term Gains	\$ 75,000
Long-Term Losses	\$ (75,000)
Taxes Due	\$ 34,478

would argue that the only way to effectively make correct tradeoffs for a client is by using an overlay manager or "tax quarterback" that can make decisions across all of a client's managed assets, deviating from the underlying individual managers' typical decisions only for purposes of after-tax certainty. The overlay manager ensures that the coordinated tax decisions result in an efficient solution for the client.

Many advisors are also led to believe that, given a complete view of a client's taxable events, a manager can manage a passive portfolio for losses used to offset the tax costs generated by other managers. The problem with this approach is similar to the example of a passive manager offsetting external gains; hence, the same problems arise. In order for losses to have value they must offset a substantially large amount of gains; in order to have a large amount of gains, the loss harvesting strategy must be a relatively small portion in relation to the tax oblivious strategy. If the loss harvesting strategy is too small, however, it will not generate enough losses. If the loss harvesting strategy is relatively large, then the excess losses don't add value to the investor's



overall return. Furthermore, if the opportunity exists to add value before taxes without excessive turnover (i.e., applying active management), then it is possible to tax manage all the assets and thus deliver a greater added value. (65 basis points across 100% of the assets is more valuable than 100 basis points across 10% of the assets.) This decision analysis not only suggests that a tax quarterback is needed but that maximizing a client's after-tax value also involves critical decisions in equity policy mix and structure.

Quantifying the Value Added Opportunity

We have demonstrated that in order to manage taxes effectively, decisions must be coordinated across all the client's assets, and that the value added by tax management is determined by the difference in gain realization and the blended tax rate of the different managed portfolios (i.e., trading each product with no regard to taxes versus managing the taxes across all products). When a tax overlay is implemented across active investment products, the goal is to reduce the tax costs to the client while minimizing the pre-tax performance differences between the overlaid product and the original product. In order to minimize performance risk, the overlaid product must continue to trade in sync with its non-overlaid brethren except when doing so would result in trades at unfavorable tax rates. Losses are matched against gains to enable continued trading. When losses are unavailable and/or their use is expected to introduce substantial performance risk, then gains would be deferred until they can receive preferential tax treatment.

As most trades will be made immediately and only a small percentage deferred until the client has held the security longer than 12 months, the effect of gain deferral will only slightly reduce the gain realization rate but may have a substantial reduction to the blended tax rate. To be conservative, we assume that the gain realization between the overlaid product and the original product will be the same and that the primary value added will be through managing a lower blended tax rate. Since the value is dictated by reducing the short-term gain exposure, the value added is determined

primarily as a difference from short-term gain recognition in the non-overlaid product.

Figure 5 illustrates the opportunity to add value assuming no difference in annual gain realization and a reduction in short-term gain realization from 40% to 0% through a tax management process. As is readily apparent, tax management can add substantial value that is very certain. (Unlike investment returns, the cost of taxes is certain and absolute.) As is also evident from Figure 5, the opportunity to add value increases with the client's time horizon and the realized market return over the time horizon. However, when the tax drag exceeds any reasonable expectation of manager expected alpha, then the rational choice would be to:

- a. Remain entirely passive and/or
- b. Use a strategy that starts active, but avoids all taxation possible (gains realization) and becomes locked over time due to the growing embedded capital gains, eventually transitioning to a passive strategy.

Figure 5 illustrates the value added through tax management but assumes that tax management introduces no pre-tax performance risk. In order to better quantify the value-add opportunity, we have conducted extensive Monte Carlo analysis that more accurately reflects the real world tradeoffs that are made in managing taxable investments.

The details of the Monte Carlo analysis are beyond the scope of this white paper but suffice it to say, the depth and magnitude of this research far surpasses any efforts to-date that have attempted to integrate active tax management and active investment management. The full analysis analyzes multiple strategies (including mixed strategies such as Multi-Style Portfolios), manager skill levels (including passive allocations), full tax lot accounting and multiple methods of integrating taxes into a typical investment process.

While largely dependent on a large number of variables, including manager skill and turnover, the value added by managing taxes ranges between -22 and 100 basis points. Manager skill and portfolio turnover largely dictate the minimum and maximum value-add opportunities. At low turnover, a manager is forced to be pseudo tax-efficient since their holding period results in avoidance of any short-term gains. Moreover, minimal value is associated with large allocations to passive strategies and tax management methods that don't accurately model the tax code. Accurate tax code modeling across all client assets, reducing short-term gain exposure and utilizing active managers where it is determined that they demonstrate the ability to add reasonable levels of alpha, adds between 40 and 100 basis points of value compared to managing without regard to the implication of taxes.

Figure 5.

Market Return	Client Time Horizon	Drag without Tax Management	Drag with Tax Management	Value Add
6%	5	0.88%	0.24%	0.64%
8%	5	1.22%	0.36%	0.86%
10%	5	1.59%	0.51%	1.08%
12%	5	1.97%	0.67%	1.30%
14%	5	2.37%	0.85%	1.52%
6%	10	0.98%	0.33%	0.65%
8%	10	1.40%	0.53%	0.87%
10%	10	1.85%	0.75%	1.10%
12%	10	2.33%	1.00%	1.33%
14%	10	2.84%	1.27%	1.57%
6%	30	1.20%	0.53%	0.67%
8%	30	1.75%	0.84%	0.91%
10%	30	2.33%	1.18%	1.15%
12%	30	2.94%	1.55%	1.39%
14%	30	3.57%	1.94%	1.63%

Summary

While understanding taxes may not be the daunting task that Albert Einstein once suggested, this paper demonstrates that one cannot assume away many real world factors. Doing so has led many advisors to insufficient solutions for managing their clients' taxable assets. Adding significant value to taxable portfolios through good tax management is not only achievable, but improves portfolio flexibility, allowing the advisor to adapt it to the client's changing life needs. ■

About the Author

Ron Pruitt, senior vice president and chief investment officer of Placemark Investments

has led the design of Placemark's patent pending technology for managing multiple manager products, with a special emphasis on tax optimization, and has been instrumental in the integration of 19 world-class investment firms onto the Placemark system. Ron is an expert in the field of after-tax investing and has spent several years conducting extensive research on the impact of taxes on active and passive investment strategies as well as the design of highly quantitative systems designed to deliver client-level customization to the managed account business. For more information about constructing tax-optimized equity investment portfolios, visit Placemark Investments' web site at www.Placemark.com.

Notes

SENIOR CONSULTANT

THE VOICE OF THE INVESTMENT MANAGEMENT CONSULTANT

JAMES P. OWEN
Co-Founder

STEPHEN C. WINKS
Co-Founder, Publisher & Editor-in-Chief

SYDNEY LEBLANC
Consulting Editor

MAMIE WOO MCNEAL
Production Editor

EDDIE BRYANT
Marketing Consultant



Advisory Board

JERRY BOTT
Bott Anderson

JOHN BROCK
Brock-Hazzard/Wachovia Securities

DICK CHARLTON
New England Pension Consultants

BOB CLUCK
Canterbury Capital

HAROLD EVENSKY
Evensky Brown & Katz

JEFF FRUM
Wells Fargo

RICH GLEASON
Salomon Smith Barney

KATHLEEN E. HEGENBART
Salomon Smith Barney

BRIAN HUNTER
Prudential Securities

GREG HUNTER
Merrill Lynch

BILL JOHNSON
CapTrust

JOHN KELSEY
Salomon Smith Barney

KEITH PHILLIPS
Morgan Stanley Dean Witter

BOB ROWE
Morgan Stanley Dean Witter

DICK SMITH
Cap Group

JIM YANNI
Yanni Partners

SENIOR CONSULTANT

1457 Crystal Springs Lane
Richmond, Virginia 23231

Ph 804-643-1075 ■ Fax 804-643-1544

www.SRCONSULTANT.COM