# AFTER-TAX BENCHMARKS FOR INDIVIDUAL INVESTORS

© James M. Poterba
MIT
November 2002

# CURRENT INTEREST IN MEASURING AFTER-TAX PERFORMANCE

- RISING INDIVIDUAL INVESTOR DEMAND FOR "TAX EFFICIENT" PRODUCTS – RECENT TAX CHANGES MATTER
- SEC REQUIREMENT FOR AFTER-TAX RETURN DISCLOSURE FROM MUTUAL FUNDS
- AIMR PROPOSAL TO REDRAFT AFTER-TAX PROVISIONS OF PPS STANDARDS

# PRESENTATION OBJECTIVES

- DESCRIBE TAX RATES AFFECTING AFTER-TAX PERFORMANCE
- DEFINE AFTER-TAX RETURN FOR AN INDIVIDUAL ACCOUNT
- DISCUSS AFTER-TAX BENCHMARKING
- OUTLINE ALTERNATIVE MEASURES OF "TAX EFFICIENCY"

# CALCULATING AFTER-TAX RETURNS AND REPORTING TO CLIENTS

- Standards Promulgated by AIMR
- Choice of Tax Rate:  Maximum Applicable Tax Rate vs. Anticipated Tax Rate
- Realized Capital Gains May Be Generated By Portfolio Manager Decisions or By Client Decisions Such as Cash Withdrawals

# AFTER-TAX RETURN MEASUREMENT: AIMR ALGORITHM

$$\text{Return} = \frac{\begin{array}{l}\text{Final Portfolio Value + Cash Distributions} \\ \text{- Starting Portfolio Value} \\ \text{- Realized Long-Term Gains}*t_{CG} \\ \text{- (Realized Short-Term Gains + Dividends)}*t_{DIV} \\ \text{+ Adjustment Factor for Client Withdrawals}\end{array}}{\text{Starting Portfolio Value}}$$

Source: AIMR Performance Presentation Standards Handbook 1997. Formula assumes no new cash infusions.

# EXAMPLE OF AFTER-TAX RETURN COMPUTATION

| | |
|---|---|
| Initial Portfolio Value | $1000 |
| Initial Unrealized Gains | 500 |
| Cash Dividends (Paid Out) | 30 |
| Realized Capital Gains (Long-Term) | 90 |
| Final Portfolio Value | 1100 |
| Final Unrealized Gains | 510 |
| Client Withdrawal (Before Final Valuation) | 50 |

# EXAMPLE OF RETURN CALCULATION (continued)

- **Pretax Return:**
  **(30 + 50 + 1100 - 1000)/1000 = 18%**
- **Post-Tax Return:**
  **[30 + 50 + 100 - 30*.396 - 90*.20 +**
  **.20*50*(600/1150)]/1000 = 15.53%**
- **Note Realized Long-Term Gains Are Not Assumed to Pass Through as Distributions**

# ADJUSTMENT FACTOR FOR CLIENT WITHDRAWALS

- Gain Ratio: (Realized Gains + End-of-Period Unrealized Gains)/(Net Client Withdrawals + End-of-Period Asset Value)
- Adjustment Factor = Gain Ratio*Net Client Withdrawal*Capital Gains Tax Rate

# AFTER-TAX RETURNS: MUTUAL FUND EXAMPLE

| | |
|---|---|
| Beginning of Period Market Value | $10.00 |
| Realized Long Term Capital Gains | 1.75 |
| Realized Short Term Capital Gains | 0.25 |
| Dividend Income | 0.50 |
| Unrealized Capital Gains | 0.50 |
| **Total Pretax Earnings** | **3.00** |

Pretax Return: 3.00/10.00 = 30%

After-Tax Return:

[1.75*(1-.20) + (.25 + .50)*(1-.396) + .50] / 10.00

= 23.5%

Effective Tax Rate = 21.7% (=6.5/30)

# SPECIAL ISSUES IN THE MUTUAL FUND CONTEXT

- Pass-Through of Realized Capital Gains
- No Adjustment for Client Withdrawals
- Debate on “Pre-Liquidation” vs. “Post-Liquidation” Measures of After-Tax Return

# OPEN ISSUES WITH AFTER-TAX RETURN COMPUTATIONS

- Is Zero the Right Tax Rate on Gains that Are Not Realized? ("Contingent Future Taxes")
- What About Provincial Taxes? Client-Specific Tax Variation?
- How Does a Manage Select the Accounts to Include in a Taxable Aggregate?

# WHAT IS THE APPROPRIATE BENCHMARK FOR AFTER-TAX RETURNS?

- "Tax-Adjusted" Return on Benchmark Portfolio (Example: After-Tax Ibbotson Data)
- After-Tax Return on a Traded Security Tracking the Benchmark (ETFs? Index Fund?)
- Shadow Portfolio with Same Cash Flow Patterns

# KEY TRADEOFFS IN BENCHMARK CHOICE

- "Public" Benchmarks: Make Implicit Assumptions About Cash Flows That May Not Apply to Particular Investors
- "Custom" Benchmarks: Confusing (Two Investors Working with the Same Manager May Have Different Benchmark Returns Over the Same Time Period); Difficult to Verify

# HOW PORTFOLIO INCEPTION DATE AFFECTS AFTER-TAX RETURN ON S&P 500

- After-Tax Return for Taxable Individual Investor in 2000 (Pretax Return = -8.282%)
- Portfolio Start on 1/1/2000: -8.853%
- Portfolio Start on 1/1/1995: -9.764%
- Portfolio Start on 1/1/1990: -9.817%
- Portfolio Start on 1/1/1980: -9.977%

# HOW SHOULD "TAX EFFICIENCY" BE MEASURED? SOME OPTIONS

- Portfolio Turnover: Assets Sold/Total Assets
- Accountants' Short-Term Gain Ratio: Short Term Gains/Total Realized Gains
- Capture Ratio: After-Tax Return/Before-Tax Return
- Gain Realization Rate: Realized Gains/Potential Realized Gains

# TURNOVER

- Trading Can Trigger Realization-Based Capital Gains Tax Liability and it Voids the Possibility of Using Basis Step-Up
- BUT Not All Trading Triggers Gains -- Trading Is Also Higher When a Manager Is Harvesting Losses

# SHORT-TERM GAIN RATIO

- A Manager Who Does Not Consider The Differential Tax Treatment of Long-Term and Short-Term Gains WILL Increase Client Tax Burdens
- BUT This Ratio Does Not Consider Whether the Manager Realized Gains (Long or Short Term) To Begin With!

# CAPTURE RATIO: After-Tax Return/Before-Tax Return

- Manager A: Pretax 10% After-Tax 8%. Capture Ratio = 80%
- Manager B: Pretax 7%, After-Tax 6.5%, Capture Ratio = 92.9%
- Who Is Better Serving Client Goals?
- Capture Ratio Does Not Allow for Negative Returns (Worse Becomes Better Given the Formula!)

# GAIN REALIZATION RATIO

- Attractive Because It Identifies Managers Who Are Not Deferring Gains
- Encourages Managers to Follow HIFO Strategy When Liquidating Positions
- Difficult to Apply When a Portfolio Has Net Unrealized Losses

# INVESTMENT GOAL: MAXIMIZE LONG-TERM CLIENT WEALTH ACCUMULATION

- MAXIMIZING AFTER-TAX RETURN MAY NOT BE EQUIVALENT TO MINIMIZING THE TAX BURDEN ON A PORTFOLIO
- AFTER-TAX RETURN OVER A SINGLE QUARTER OR YEAR MAY NOT REFLECT LONG-TERM EFFECTS OF TAX-RELATED CHOICES

# IS A SINGLE "TAX EFFICIENCY MEASURE" THE HOLY GRAIL?

- All of the Commonly-Suggested Measures Have Difficulties
- Focus Should Be on Measuring After-tax Returns on a Portfolio, Educating Clients About Comparison of Actual After-Tax Return with Potential Benchmarks