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# Tax Management of Municipal Bonds

## *Abbreviated Version*

Fixed 2014
Income
Conference

UNIVERSITY OF
SOUTH CAROLINA
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# Unique Challenges of Managing Munis

Bond values depend on taxes on gains and losses

- Standard systems ignore taxes; reported interest rate risk and credit risk measures are unreliable
- Theoretical bond valuation framework has been extended to include taxes

Main topic: maximizing after-tax return

- How to calculate benefit from selling
- How to decide when to sell
- *Need after-tax analytics*

# When Rates Rise Prices Will Fall More Than Expected
## Bond Buyer, March 18, 2013

| Single-A Par Bonds | Rates Rise 100bps | | | | | |
|---|---|---|---|---|---|---|
| | Standard Approach | | Kalotay Approach | | Mistake by Standard Approach | |
| | Price | Yield | Price | Yield | Price | Yield (bps) |
| 2-yr 0.90% | 98.05 | 1.90 | 96.82 | 2.54 | -1.23 | 64 |
| 5-yr 1.65% | 95.35 | 2.65 | 92.84 | 3.21 | -2.51 | 56 |
| 10-yr 3.00% | 91.82 | 4.00 | 88.94 | 4.38 | -2.88 | 38 |

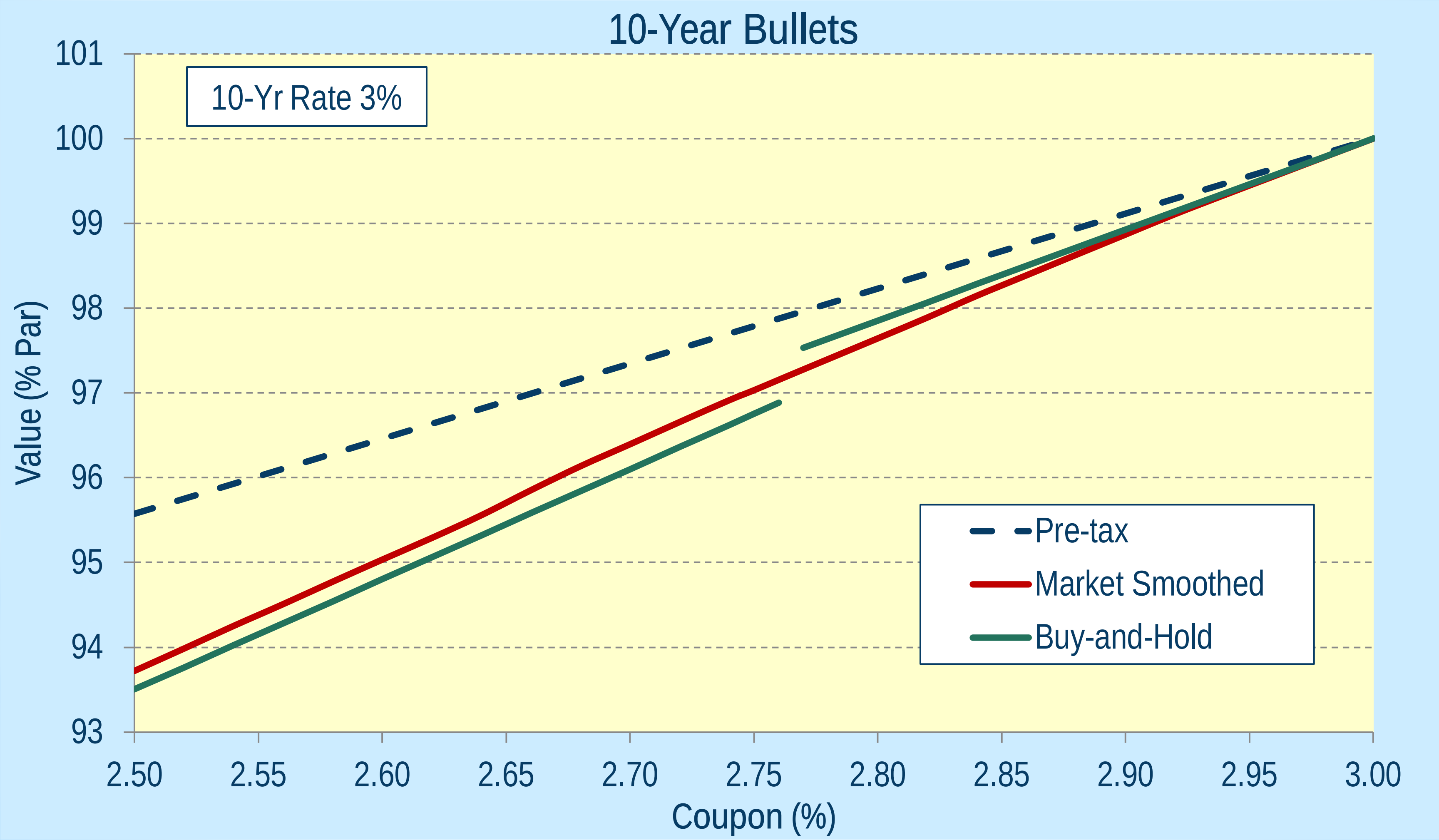
# Taxation of Tax-Exempt Munis Held to Maturity

- Gain is taxable at maturity, but loss is not deductible
  - Large gain taxed as ordinary income
  - Small gain (purchase above de minimis threshold) taxed as capital gains
- When rates rise, tax on gain to new buyer depresses price
  - *But 'hold value' depends on current investor's purchase date and price, and can differ from market price*

# Analytical Approach: Overlay Taxes on Standard OAS Framework

- Incorporate taxes on capital gains and losses
  - Including callables and OID's
  - Assume investors are in the top tax bracket
- Key concepts: *tax-neutral value* and *OAS*
  - Tax-neutral value is the PV of after-tax cashflows, *including tax at maturity;* determined iteratively
  - Tax-neutral OAS adjusts for both call option and taxes

# Taxes Depress Prices of Discount Munis



# After-Tax Performance Is The Right Measure

Munis are held in after-tax accounts
- Directly: Individual and separately managed accounts (SMA's)
- Indirectly: Mutual funds and ETF's
- Also: insurance companies and other financial institutions

Objective should be to achieve superior *after-tax* return
- Including taxes associated with gains and losses

Performance can be enhanced by strategic sales
- Tax-loss harvesting is the standard, but not the only, method

# Tax Treatment of Gain/Loss on Sale Prior to Maturity

- Depends on *investor's tax basis*
  - Purchased at a premium: amortized value
  - Purchased at a discount: purchase price
    - Gain can have split treatment
  - OIDs are complicated (not discussed)
- Can be short-term or long-term
  - For high-income individuals, short-term rate is 43.4%; long-term rate is 23.8%
  - Losses need offsetting gains; otherwise carry forward

# Tax Management Opportunities

- Familiar transaction: selling losers
  - Known as tax-loss harvesting
  - Short-term loss @ 43.4% can be very valuable
- Selling winners (bonds purchased at a discount whose value surged) can also be beneficial
  - Can you figure out why?

# ‘Hold Value’ is Critical to the Sale Decision

*Hold Value = PV (bond flows + tax due from current holder)*

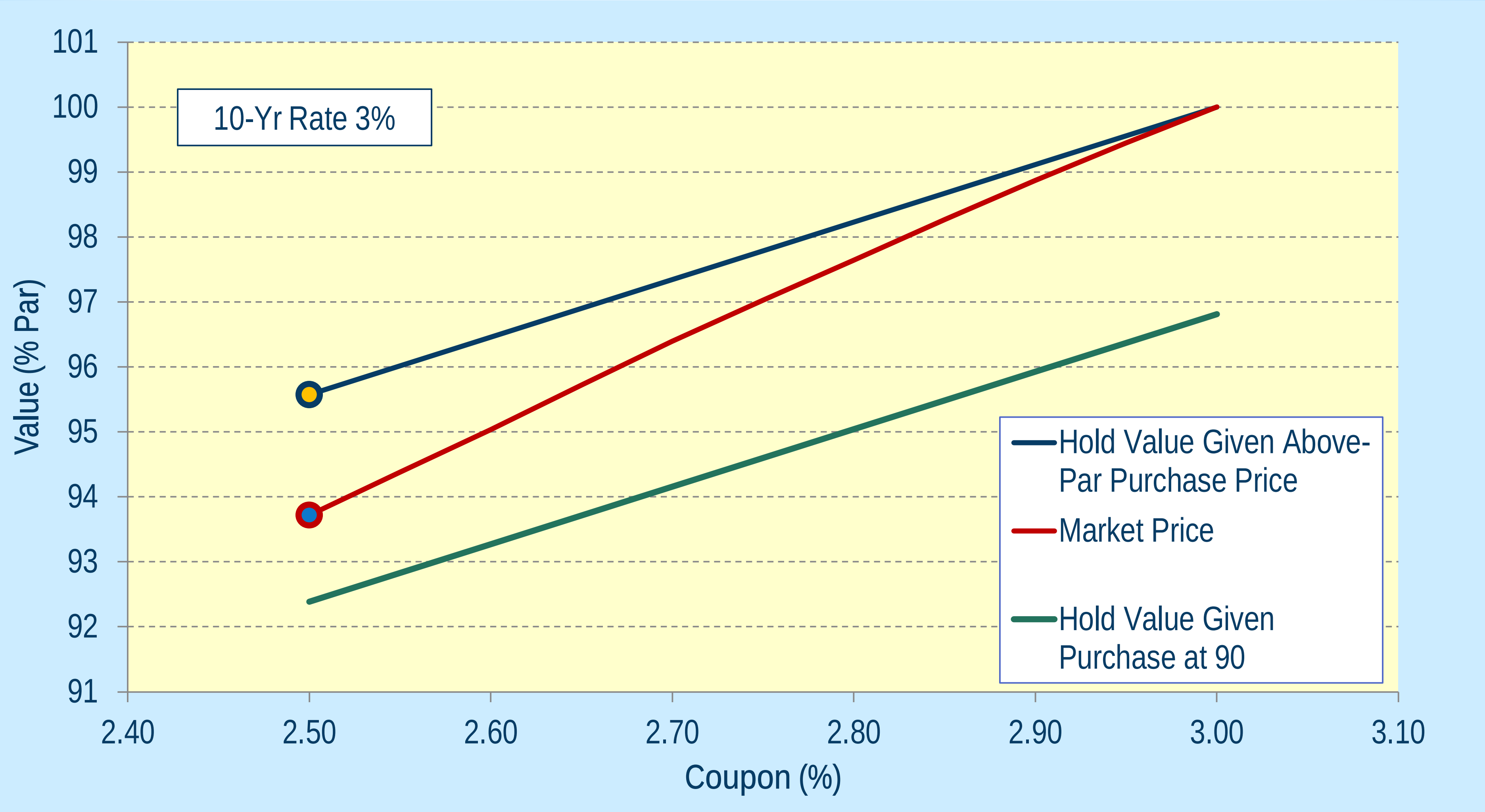
- Tax is based on purchase date and price
- Applicable tax rate is investor-specific
- Discount rates estimated from trades of like bonds

Hold value and market price can diverge

- Market price depends on tax considerations of the new buyer
- It is also affected by liquidity

*Bonds purchased or selling at a discount require special attention*

# Market Price and Hold Value Can Diverge
## 10-Year Bullets



# Sale Decision Is a Two-Step Process

1. Is it beneficial?

   Compare after-tax proceeds from sale to hold value

   *Benefit does not depend on the replacement bond, but reinvestment in like bond maintains risk exposure*

In practice, tax-driven sales are presented to retail clients as ‘swaps’ – an unnecessary source of confusion

# Calculation of Benefit from Selling a Loser
## Bond Purchased at a Premium, Sold Below Par

| 2.50% Bond – 10 Years to Maturity | |
|---|---|
| Purchase Price (2 years ago) ① | 111.85 |
| Holder's Basis ② | 110.00 |
| Sale Price (after 0.5% spread) ③ | 93.22 |
| Loss ④ = ③ – ② | (16.78) |
| Tax Savings @ 23.8% ⑤ | 3.99 |
| After-tax Proceeds from Sale ⑥ = ③ + ⑤ | *97.21* |
| Hold Value ⑦ | *95.57* |
| Net Benefit of Transaction ⑧ = ⑥ – ⑦ | 1.64 |

*All values in percent of par*

# Sale Decision Is a Two-Step Process

1. Is it beneficial?

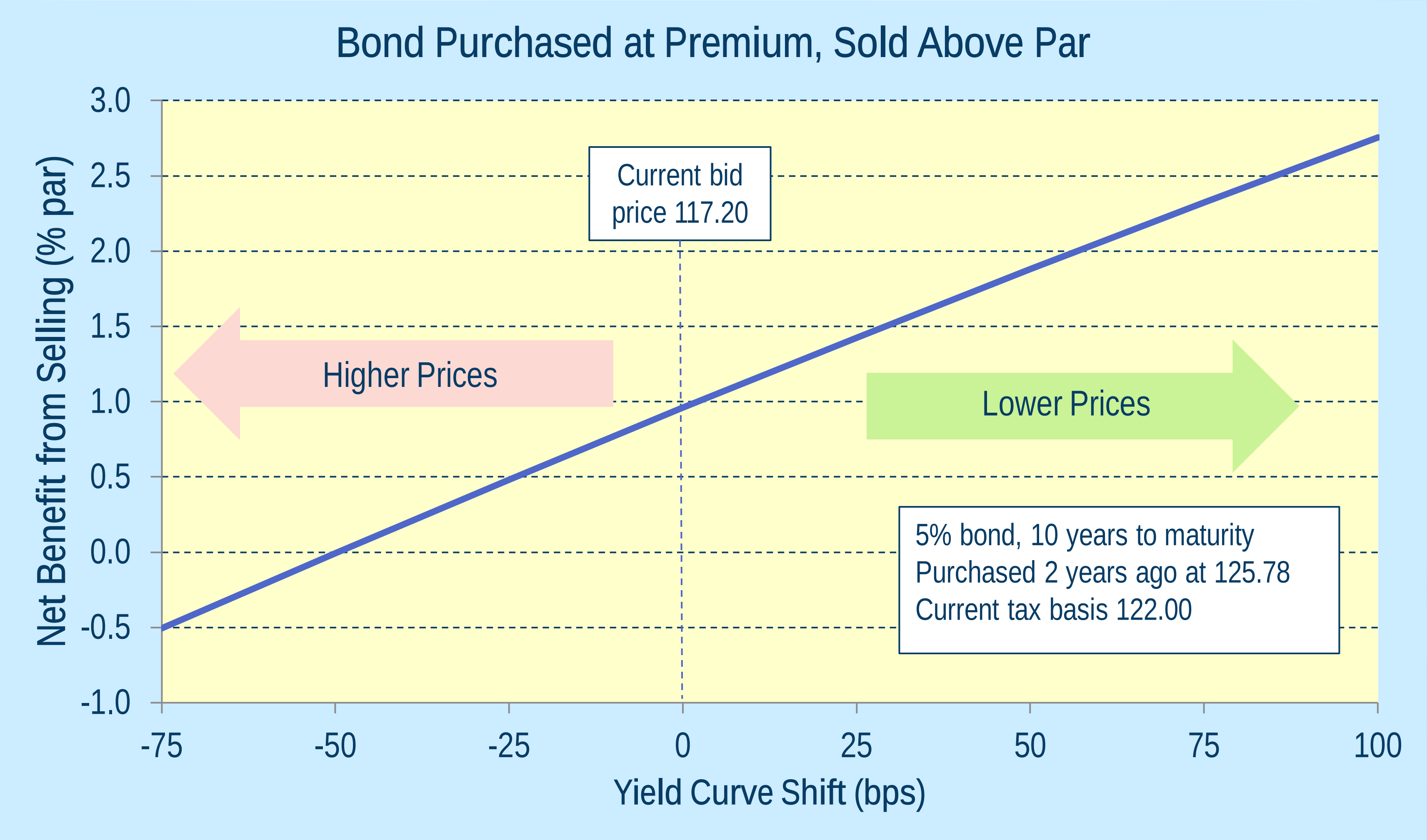
   Compare  after-tax proceeds from sale to hold value

2. Do it now or wait?

   Sale at a later time may be more beneficial, depending on rates

   How to deal with interest rate uncertainty?

# Benefit from Selling Increases as Rates Rise



# Introducing the Tax Option

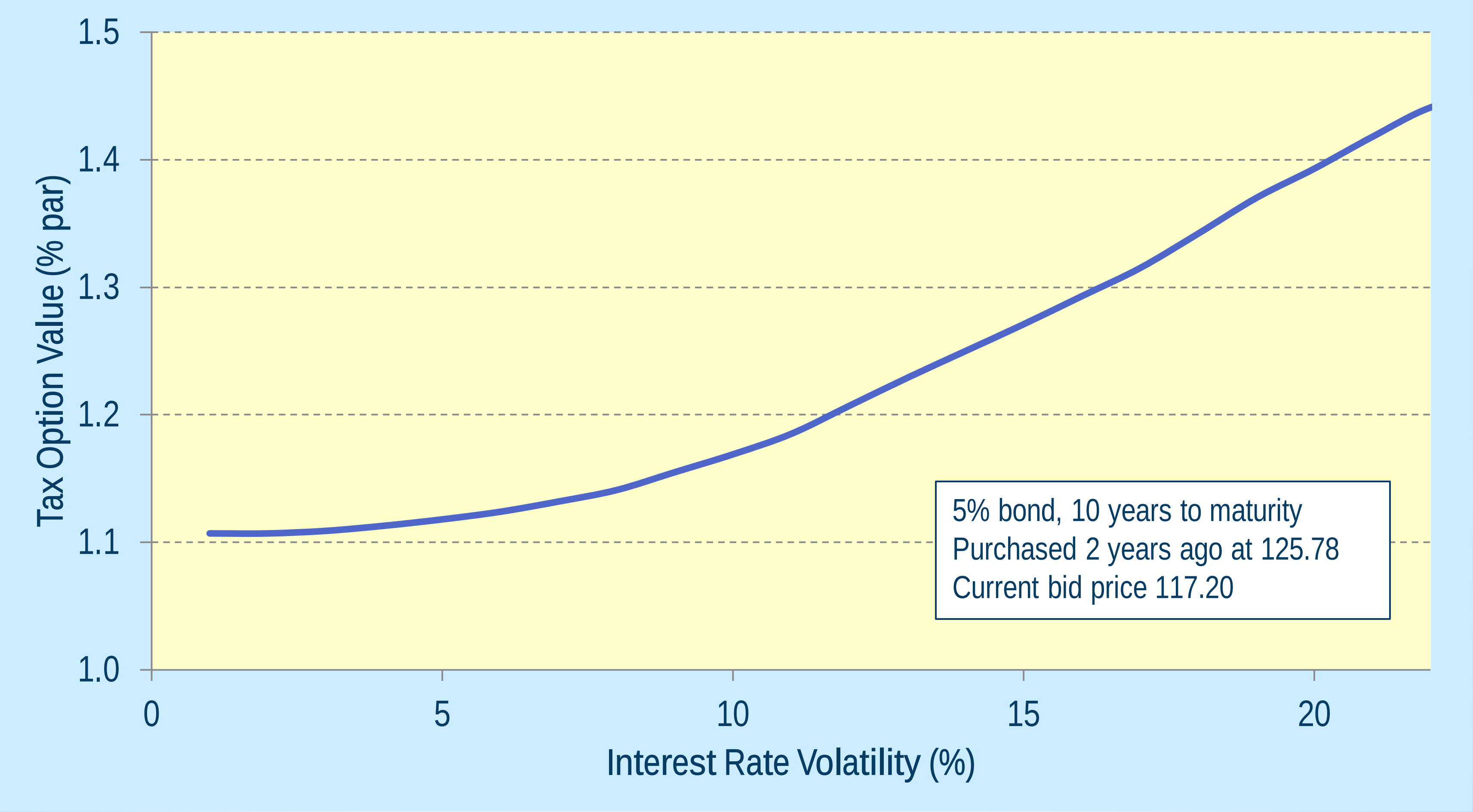
The right to execute tax-driven trades is a ***tax option***

- Every investor owns this *free* option
- But only astute managers know how to 'monetize' it

Value of tax option depends on volatility of interest rates

- Interest rates affect price, which in turn affects tax benefit

# Volatility Increases Value of Tax Option
## Greater Potential for Tax-Loss Harvesting



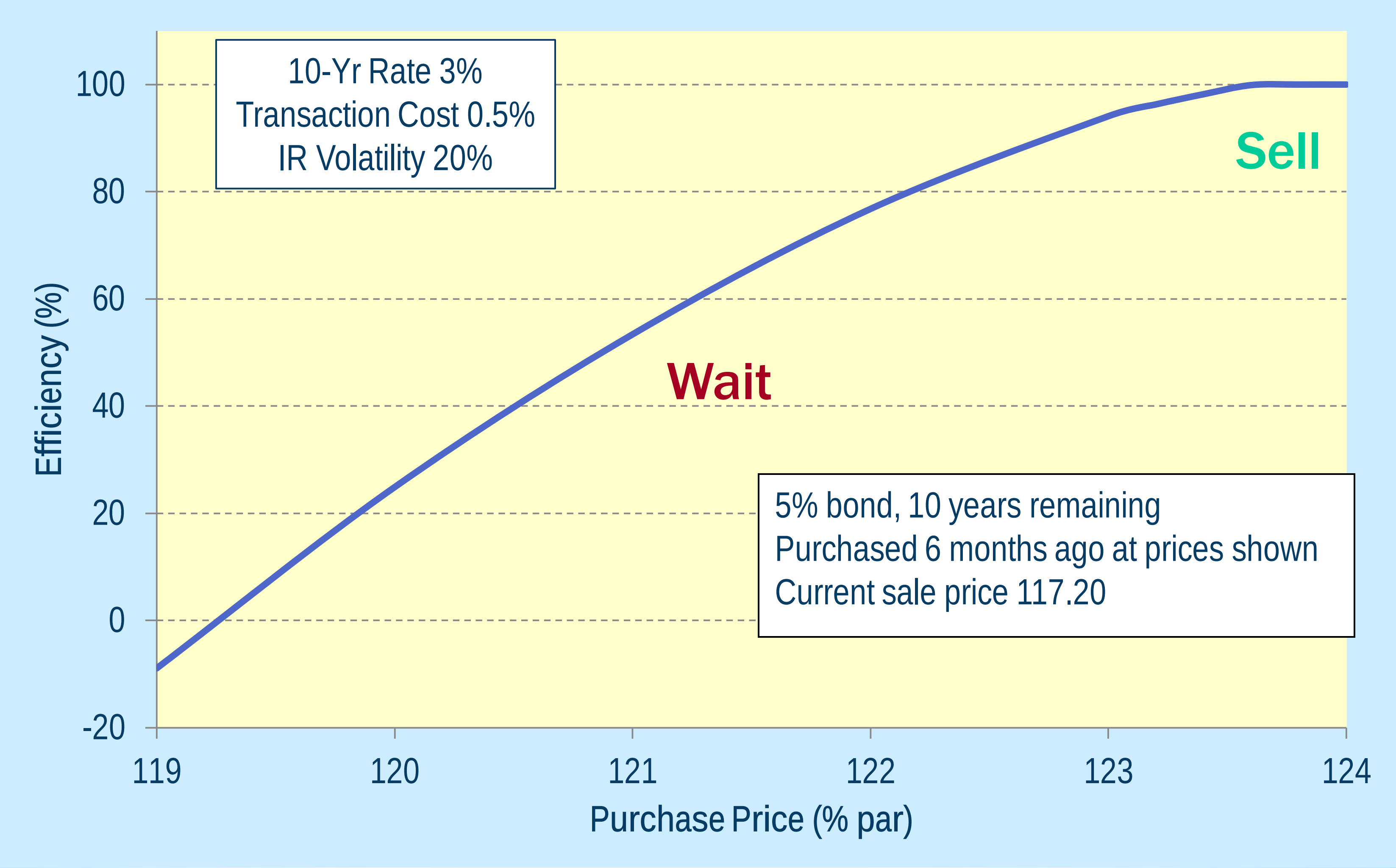
# Tax Efficiency Signals When to Sell

Benefit should realize most of forfeited tax option value

- Decision depends on risk tolerance; 90% minimum recommended
- No reason for delaying at 100%

$$Efficiency = \frac{Aftertax\ Proceeds\ - Hold\ Value}{Tax\ Option\ Value}$$

# Short-Term Loss Enhances Tax Efficiency



# Summary

Munis offer opportunities for tax-driven sales

- Can generate positive after-tax cashflow

Tax option: right to execute such sales

- Its value depends on market volatility and transaction cost

Tax efficiency signals when to execute

# Tax Management Today: Theory and Practice

Benefit can be considerable

- Value of tax option in new long-term muni is roughly 5 points
- Translates into at least 30 bps annual outperformance over 'buy-and-hold'

But tax considerations are largely ignored by managers

- Mutual funds and ETF's report only pretax performance
  - Investors are responsible for taxes on capital gains
- Managers of SMA's are reluctant to advise on taxes
- For individuals, transaction cost is prohibitive

# References

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