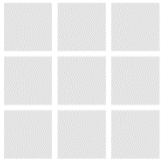




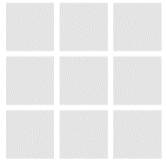
The Natomas Basin Conservancy  
**INTEREST RATE RISK**

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October 2016



## Interest Rate Risk – Defined

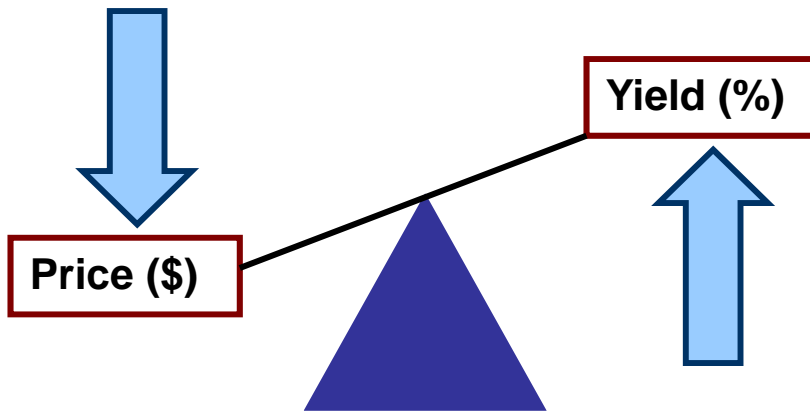
- The risk that the prices of the debt instruments held by the Conservancy may be affected by changes in interest rates.
- A rise in interest rates typically causes the price of a fixed rate debt instrument to fall and its yield to rise. Conversely, a decline in interest rates typically causes the price of a fixed rate debt instrument to rise and the yield to fall.
- Generally, securities with longer maturities or durations, and portfolios with longer weighted average maturities or durations, carry greater interest rate risk.



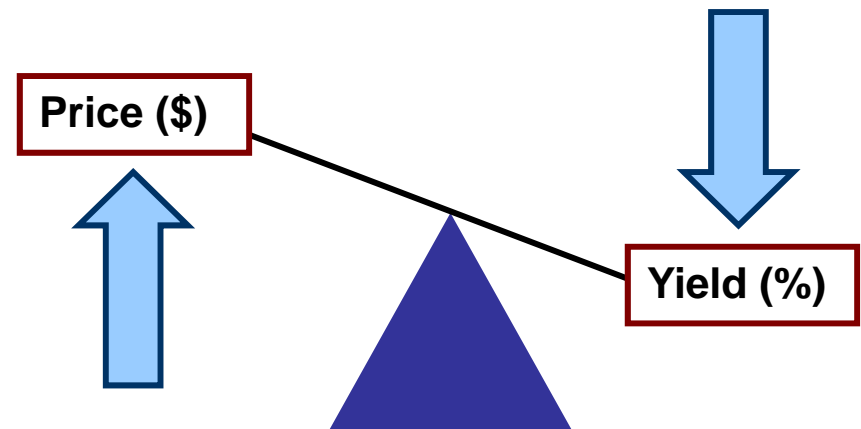
# Interest Rate Risk – Illustrated

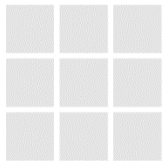
Bond Prices and Yields have a fundamental inverse relationship.

As Interest Rates rise, Prices on outstanding issues fall...



...and as Interest Rates fall, Prices on outstanding issues rise.



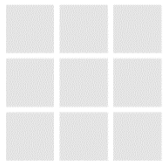


## Interest Rate Risk – Example 1

- Lower market interest rate → higher bond price → lower yield

| Financial Term                     | Today    | One Year Later ↓  |
|------------------------------------|----------|-------------------|
| Market Interest Rate               | 3%       | 2%                |
| Coupon Rate (semi-annual payments) | 3%       | 3%                |
| Face Value                         | \$1,000  | \$1,000           |
| Maturity                           | 10 years | 9 years remaining |
| Price                              | \$1,000  | \$1,082           |
| Yield to Maturity                  | 3%       | 2%                |

Source: SEC – Office of Investor Education and Advocacy

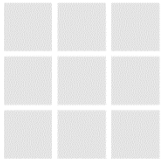


## Interest Rate Risk – Example 2

- Higher market interest rate → lower bond price → higher yield

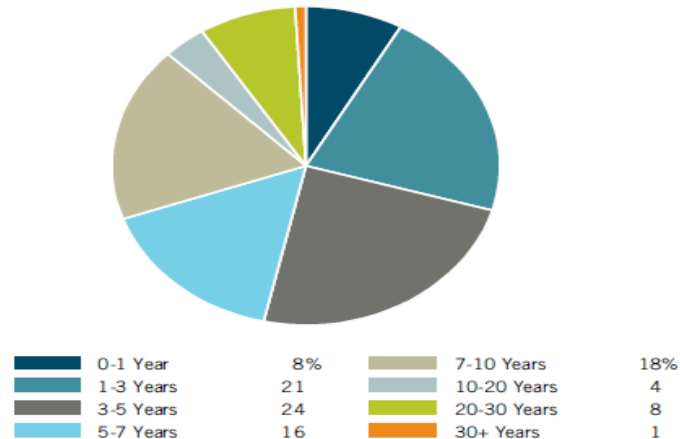
| Financial Term                     | Today    | One Year Later ↑  |
|------------------------------------|----------|-------------------|
| Market Interest Rate               | 3%       | 4%                |
| Coupon Rate (semi-annual payments) | 3%       | 3%                |
| Face Value                         | \$1,000  | \$1,000           |
| Maturity                           | 10 years | 9 years remaining |
| Price                              | \$1,000  | \$925             |
| Yield to Maturity                  | 3%       | 4%                |

Source: SEC – Office of Investor Education and Advocacy



## Interest Rate Risk – TNBC Endowment

- How is the TNBC Endowment dealing with interest rate risk?
  1. Diversification between Bonds (~43% of portfolio) and Stocks (~57% of portfolio)
  2. Emphasis on bonds with shorter maturities that have less interest rate risk



3. Minimization of credit risk which is the other main risk with bonds (Weighted Average Credit Quality is A+)

Source: T. Rowe Price. As of September 30, 2016