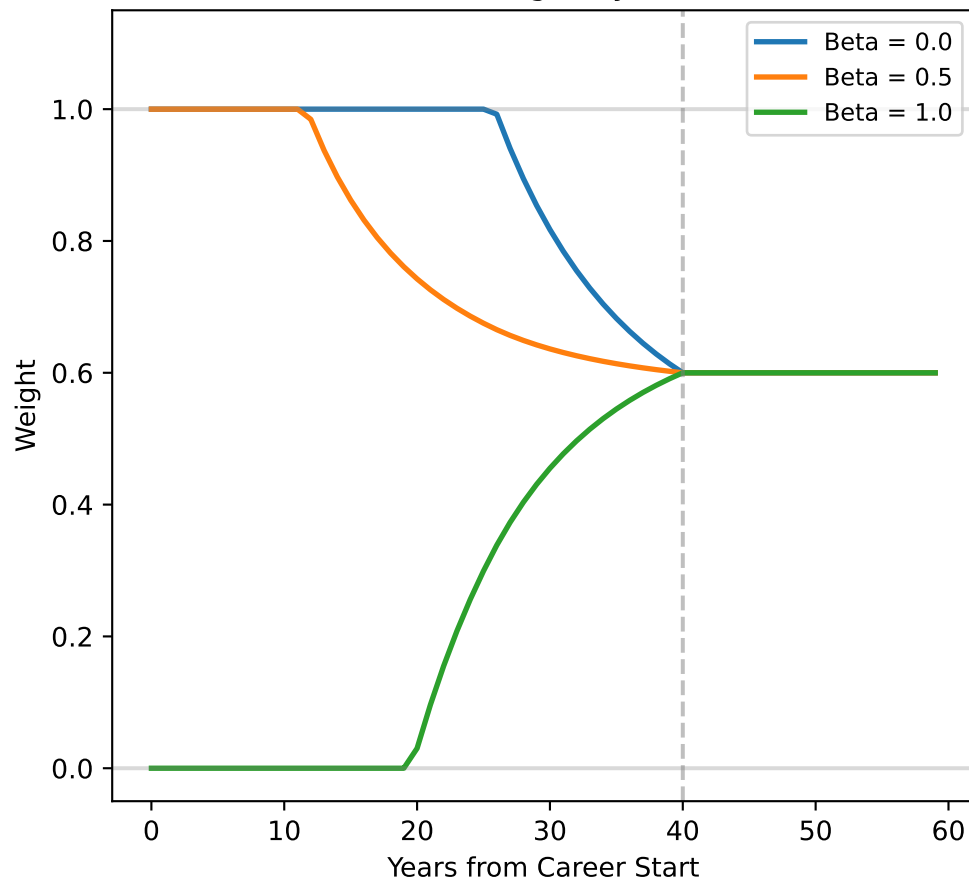
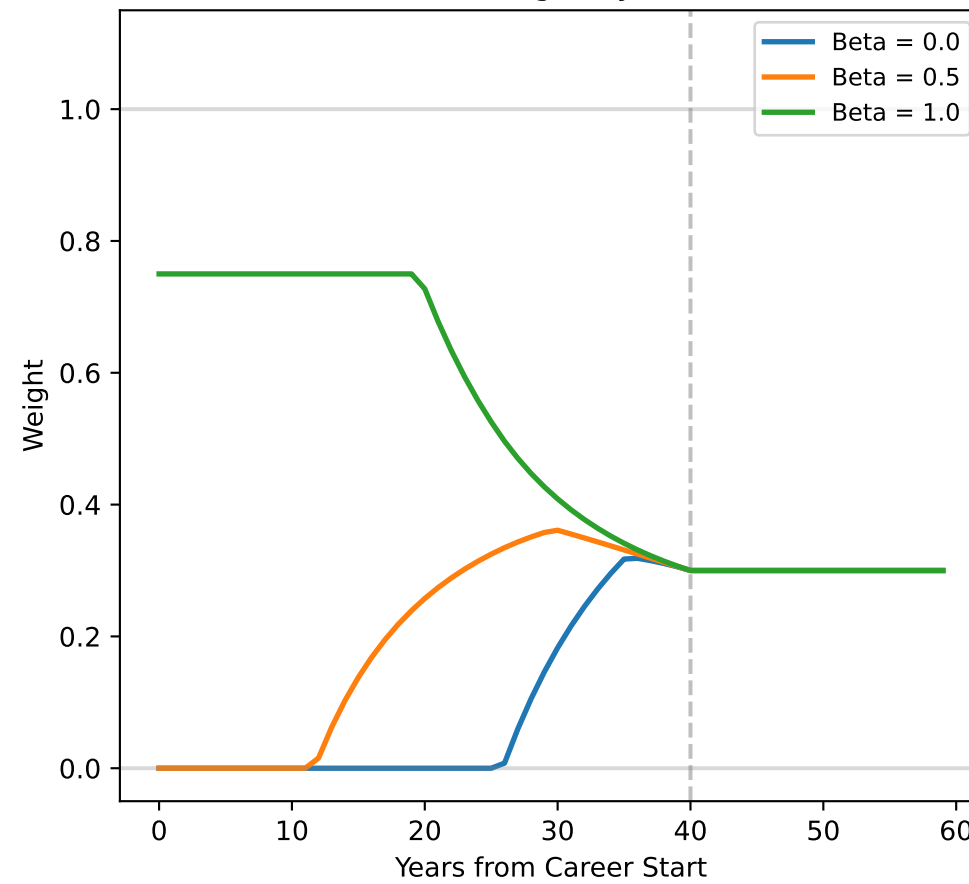


Effect of Stock Beta on Portfolio Allocation

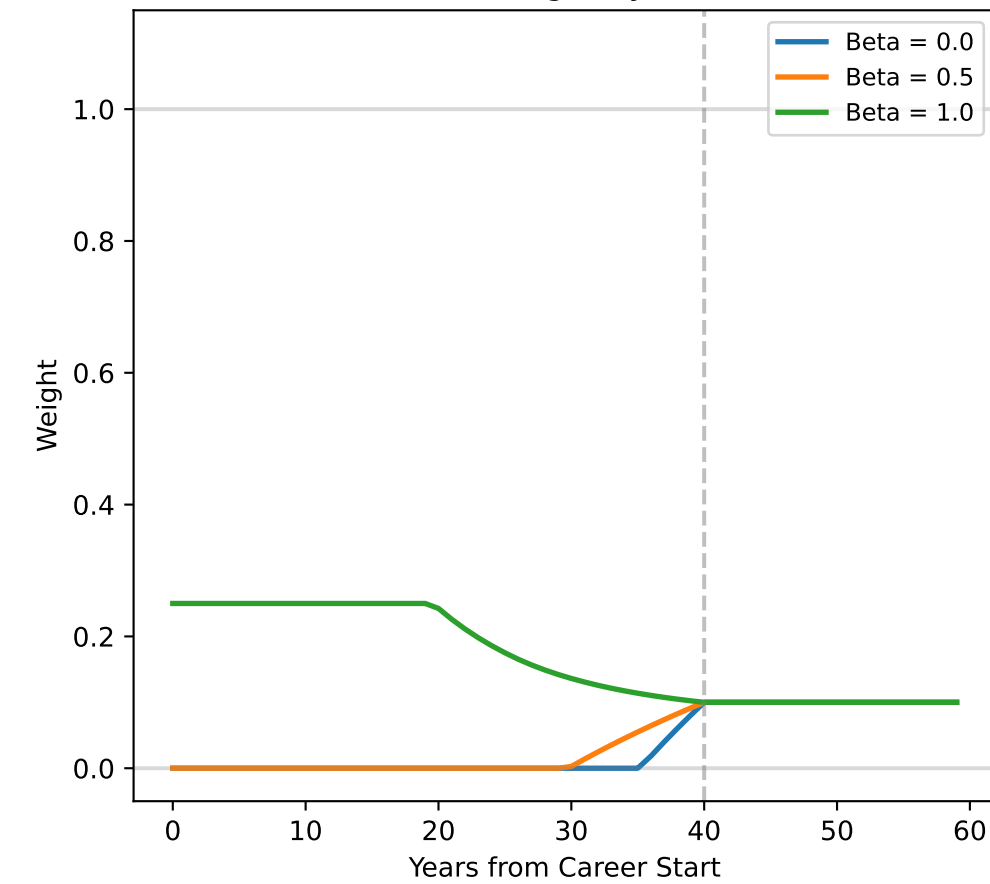
Stock Weight by Beta



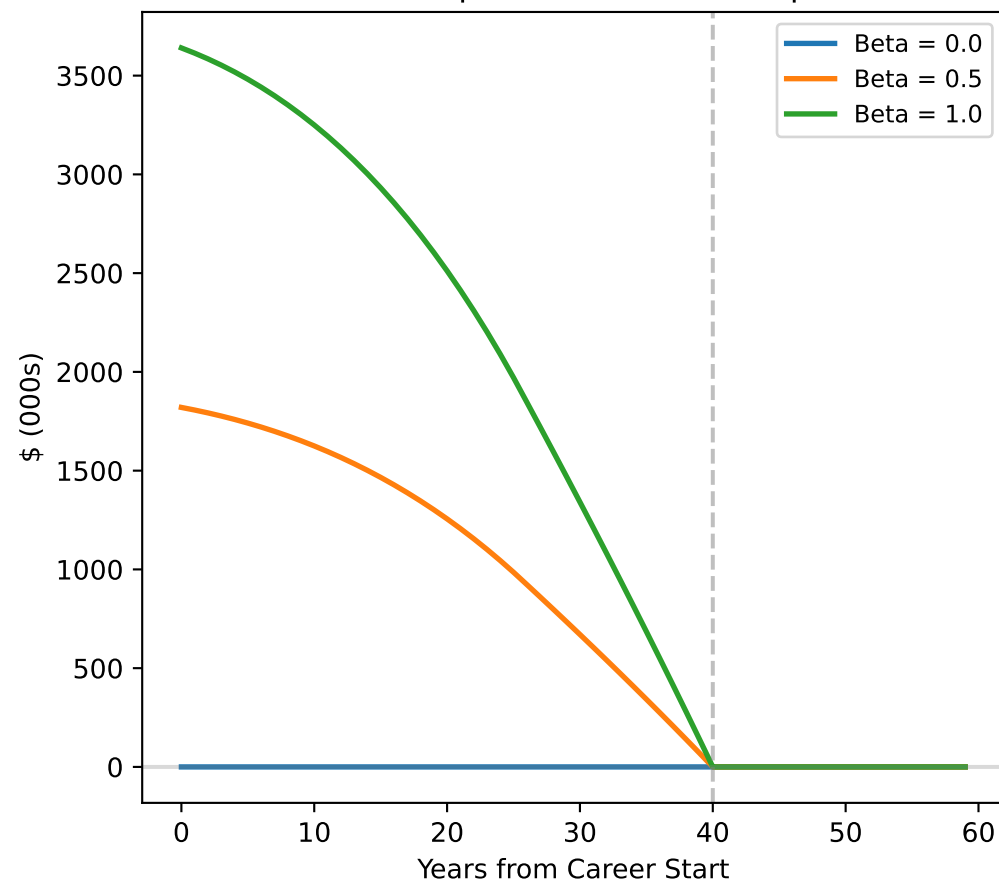
Bond Weight by Beta



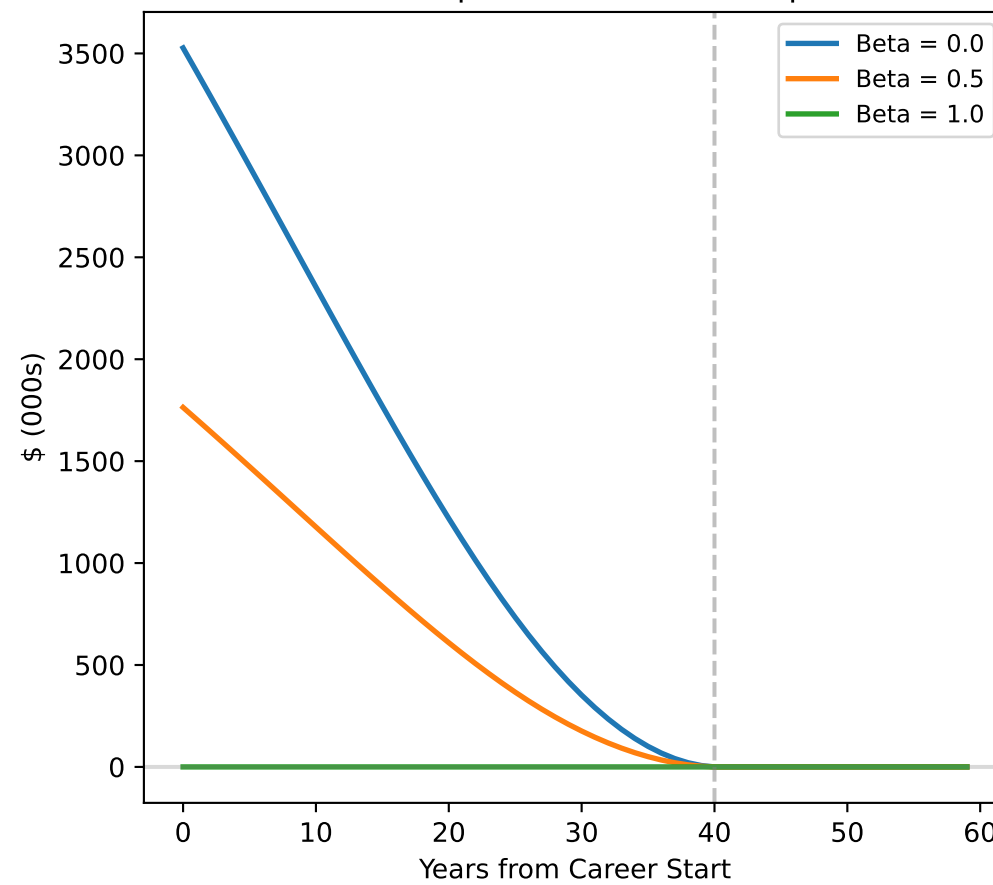
Cash Weight by Beta



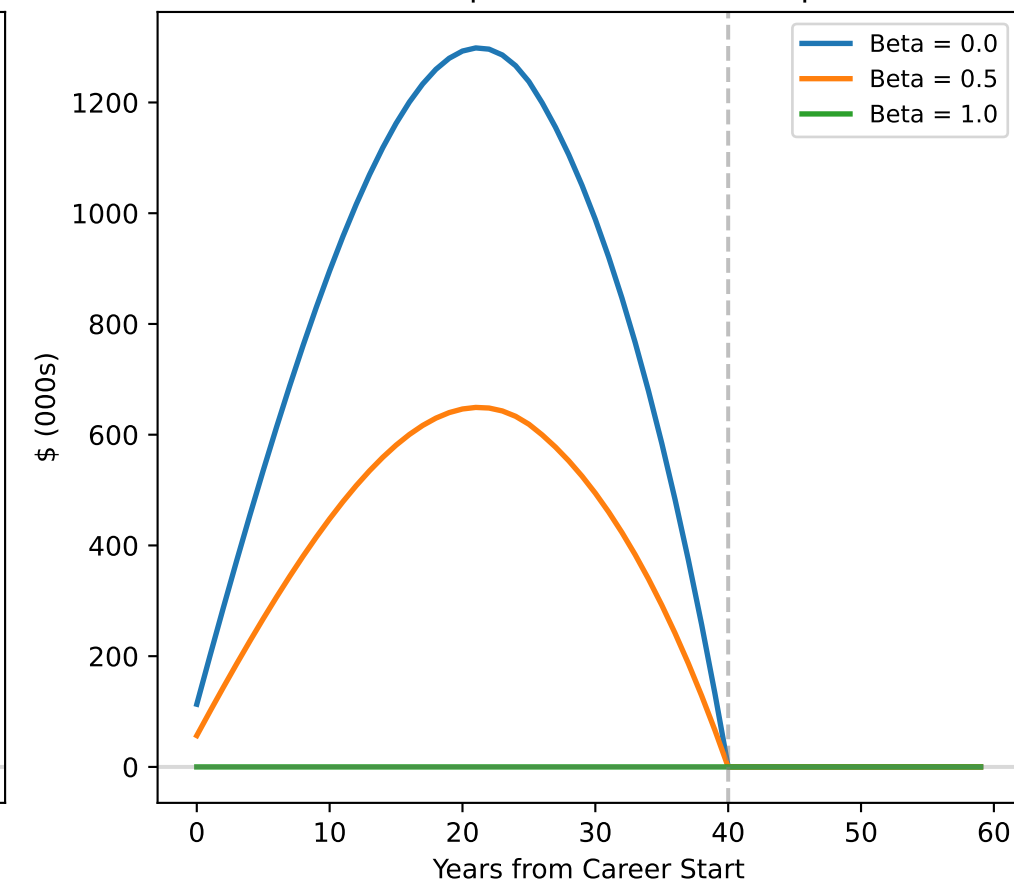
Stock Component of Human Capital



Bond Component of Human Capital

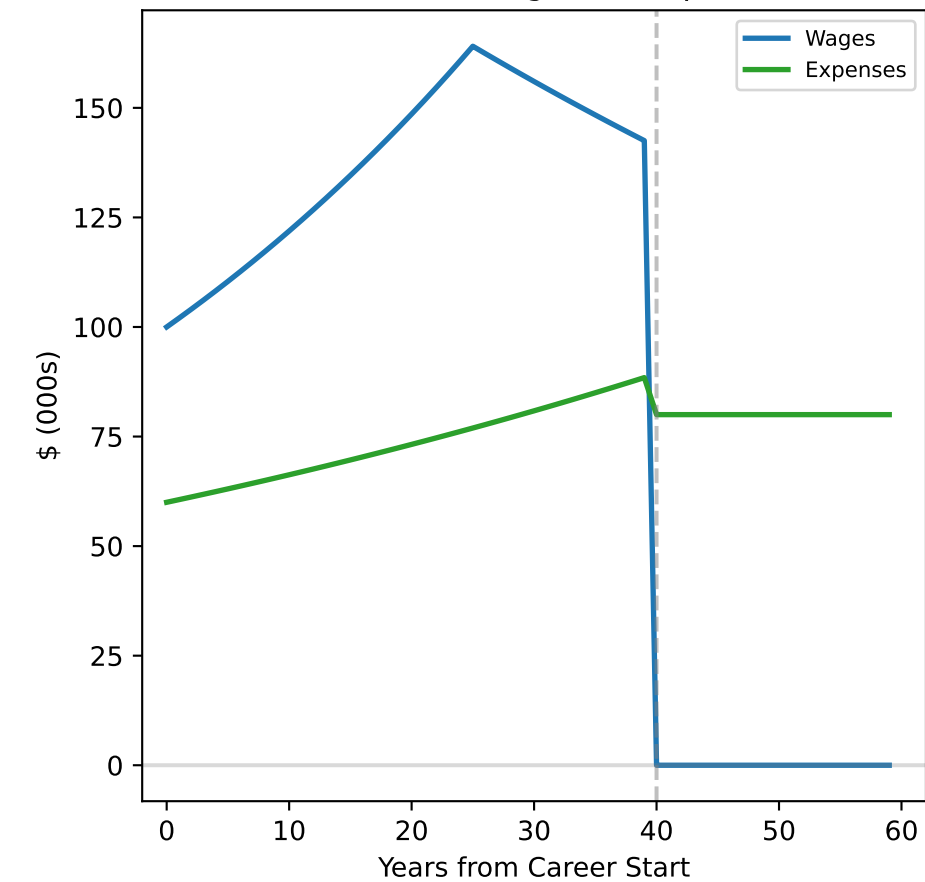


Cash Component of Human Capital

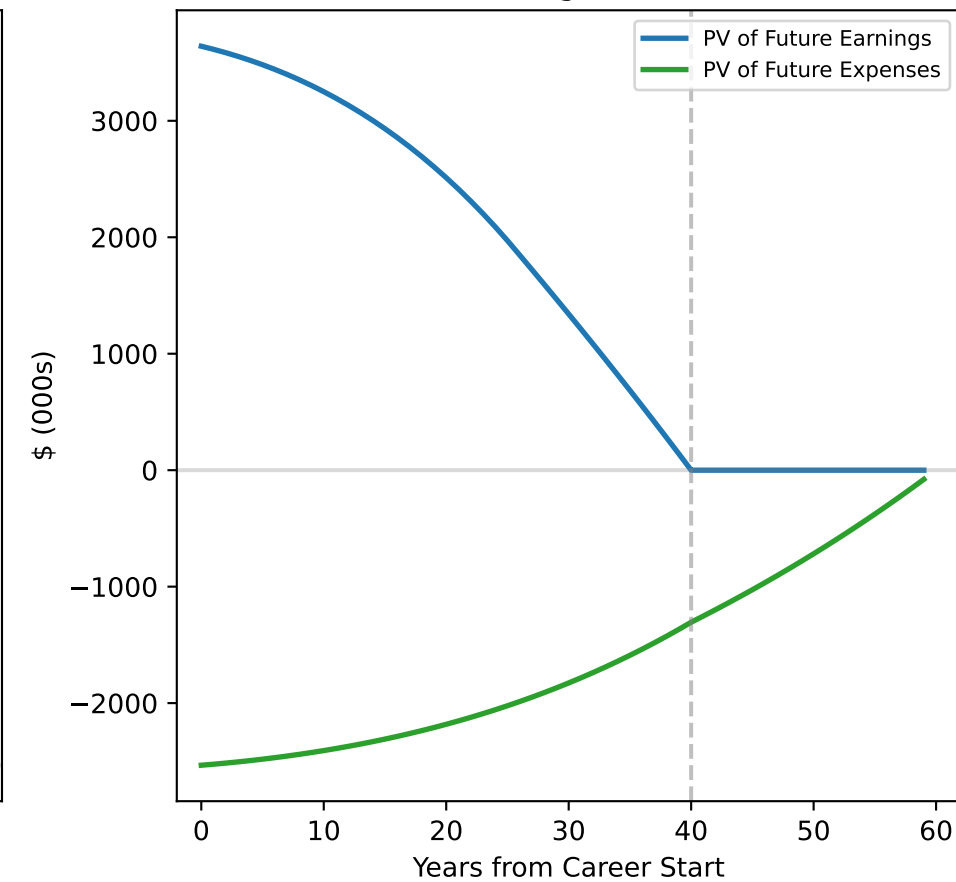


Lifecycle Investment Strategy - Beta = 0.0

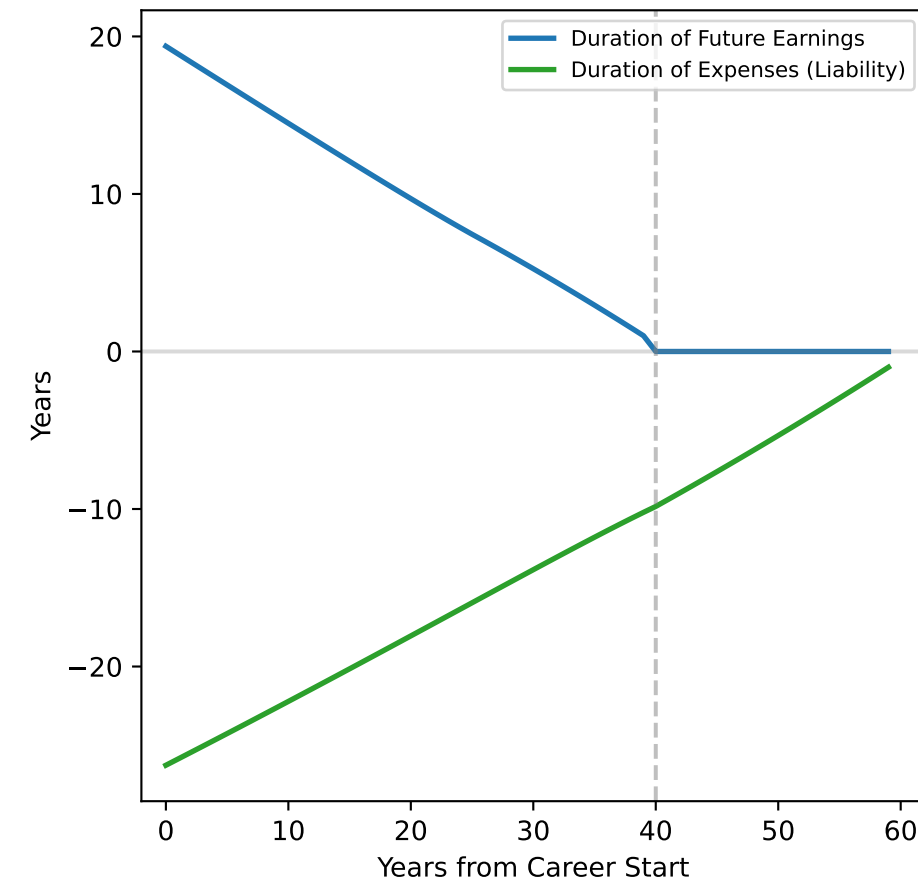
Profile of Earnings and Expenses



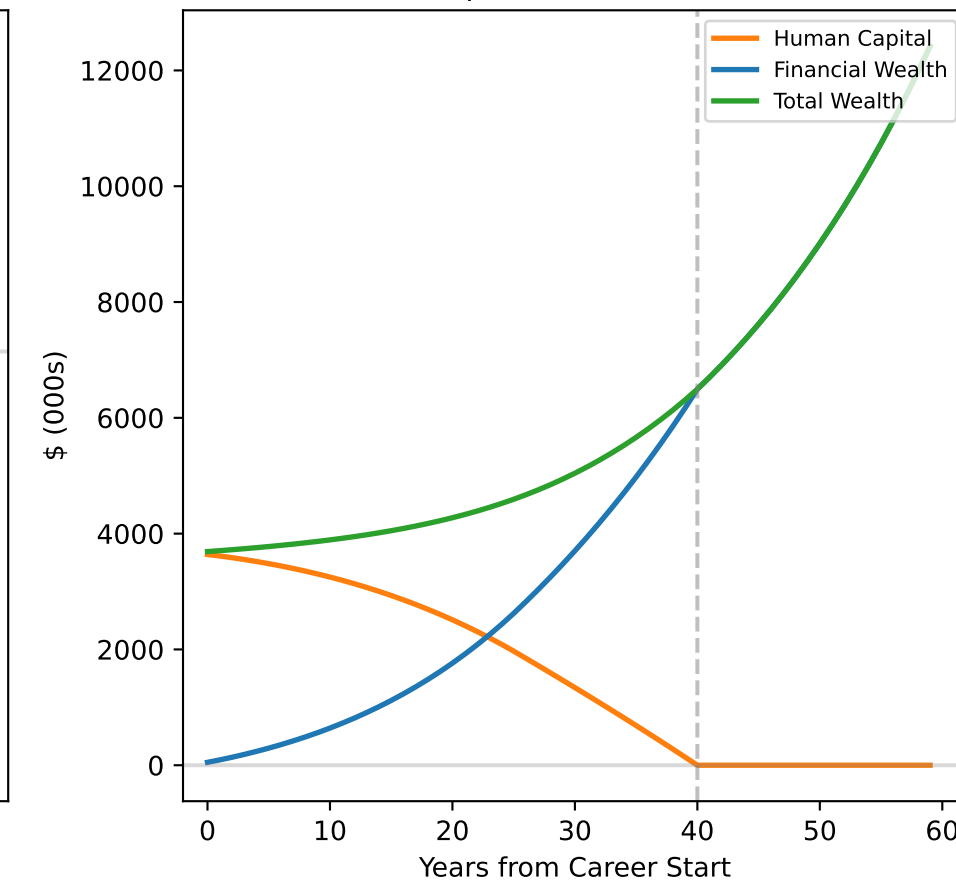
Forward Looking Present Values



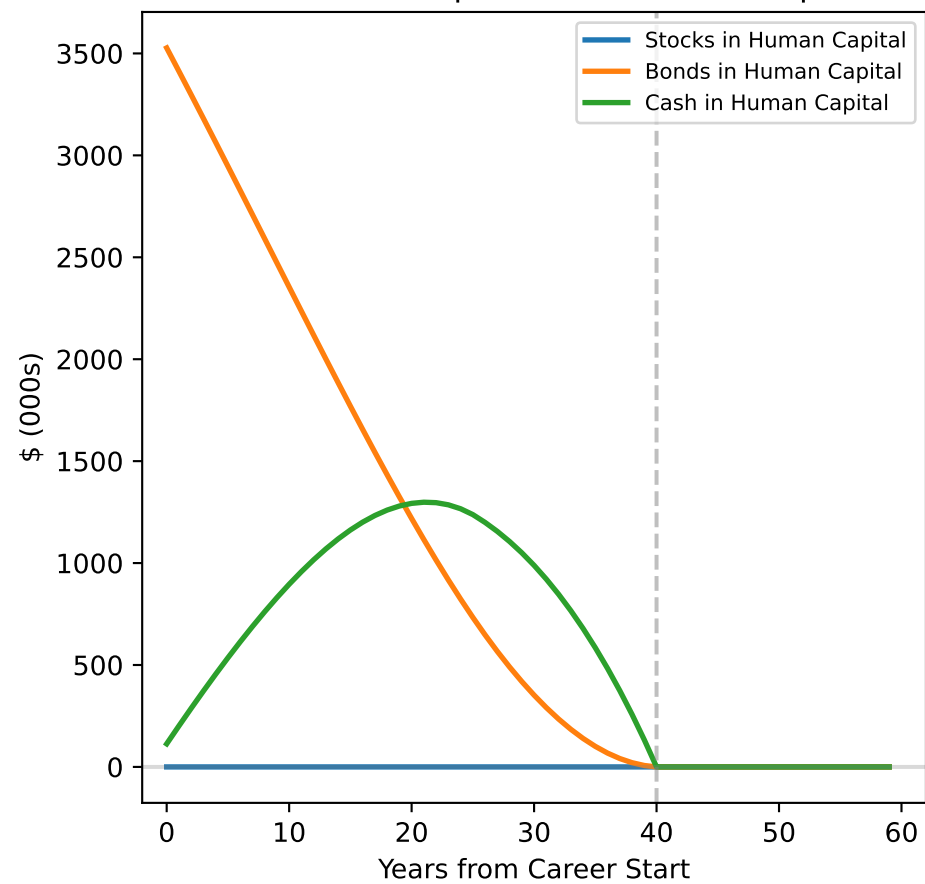
Durations of Assets



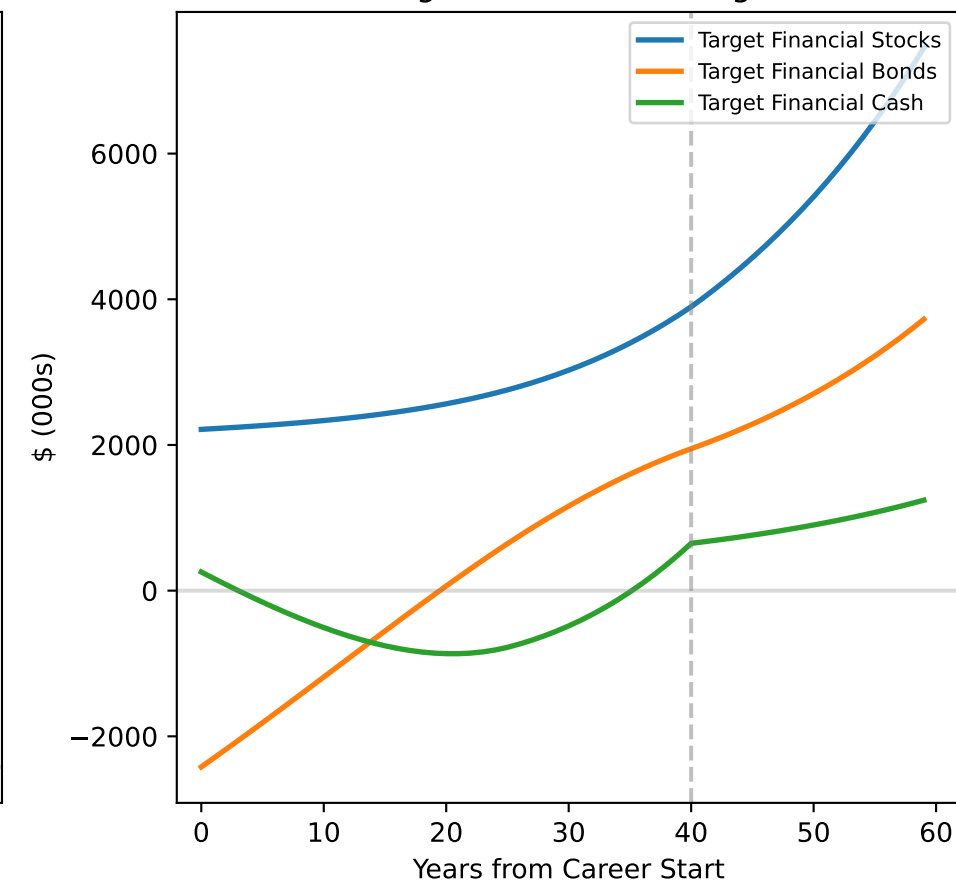
Human Capital vs Financial Wealth



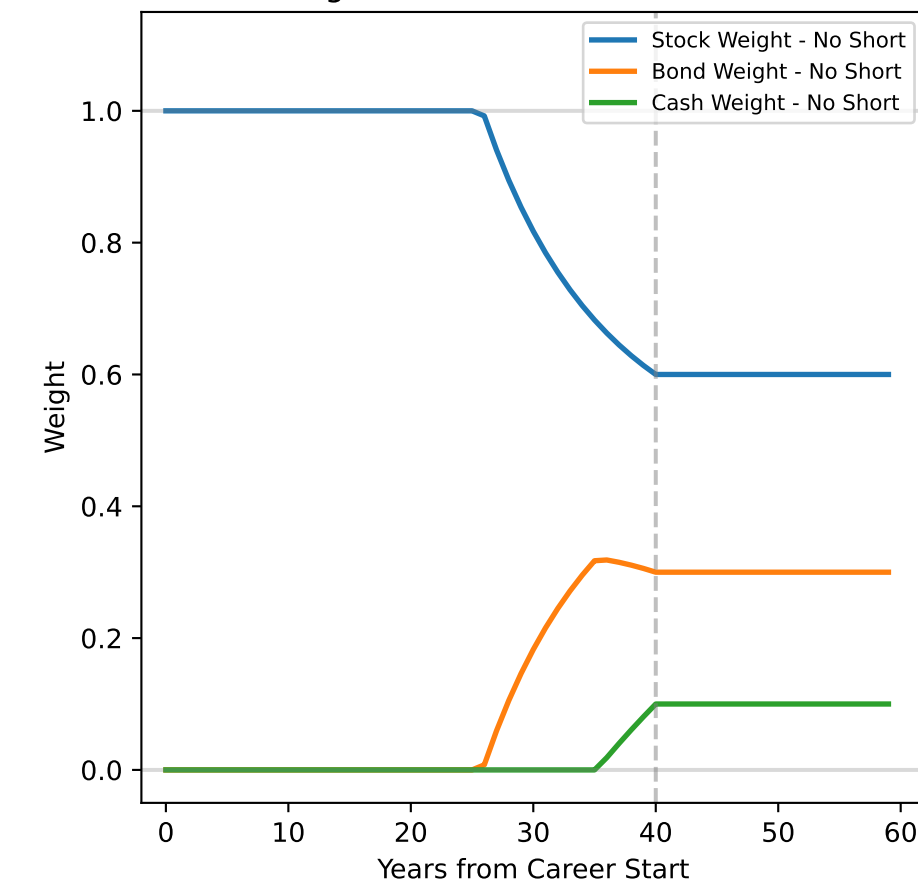
Portfolio Decomposition of Human Capital



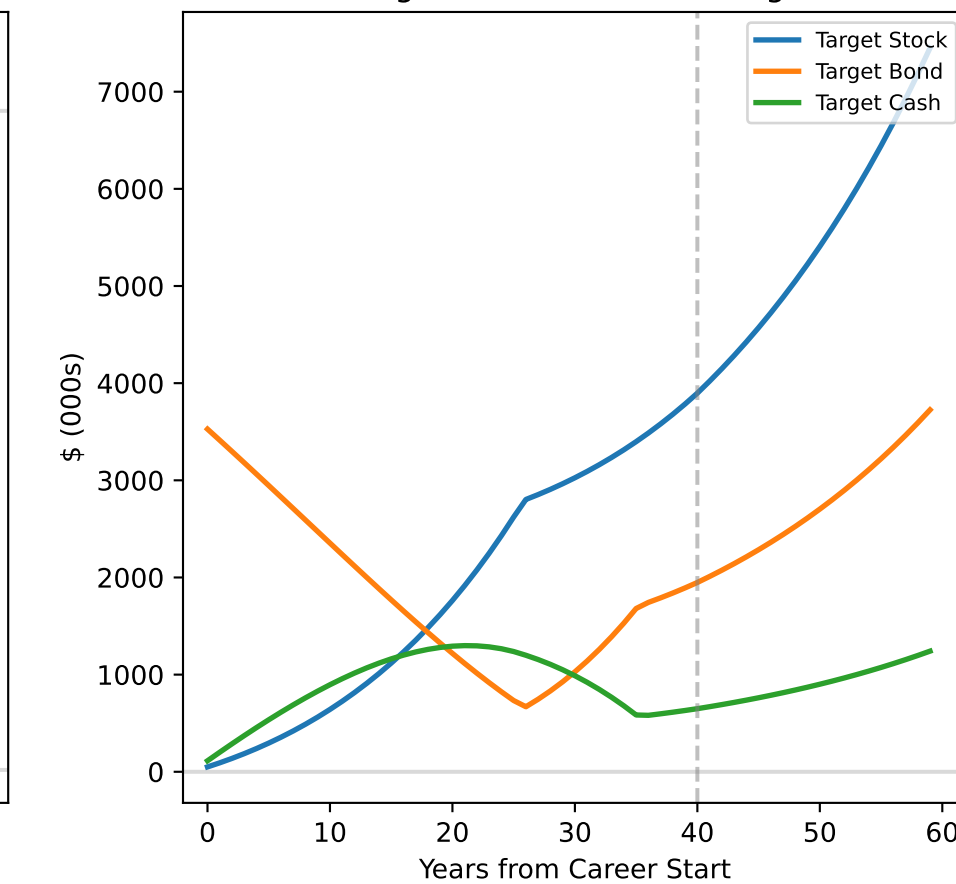
Target Financial Holdings



Target Financial Portfolio Shares

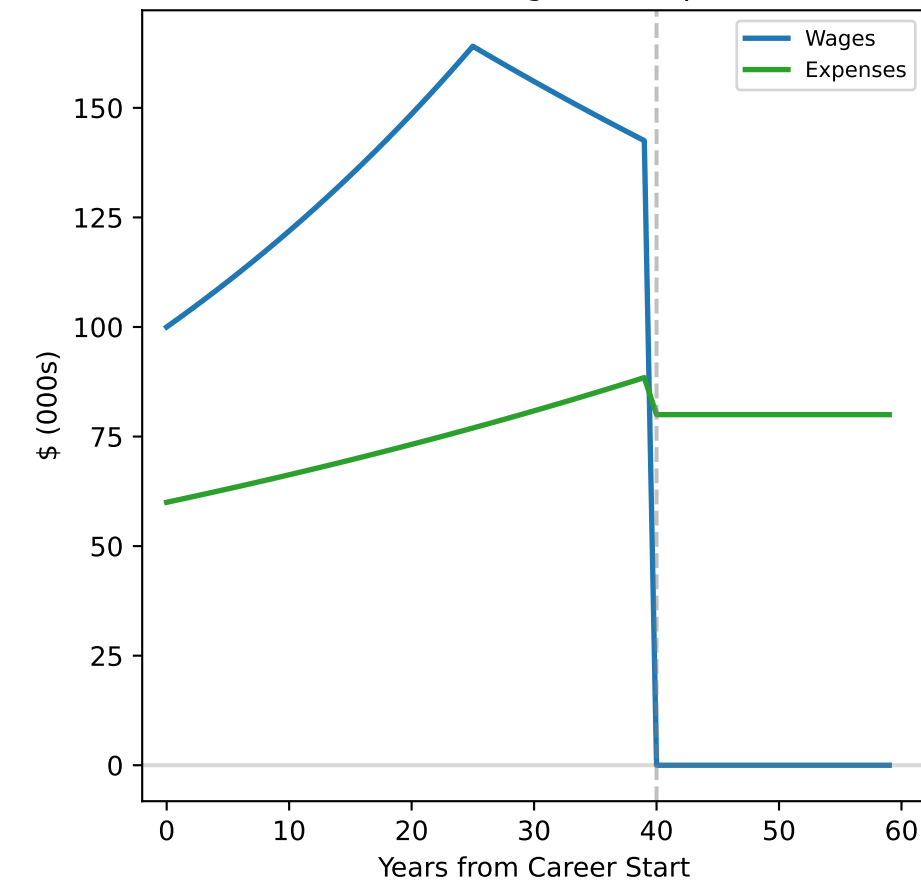


Target Total Wealth Holdings

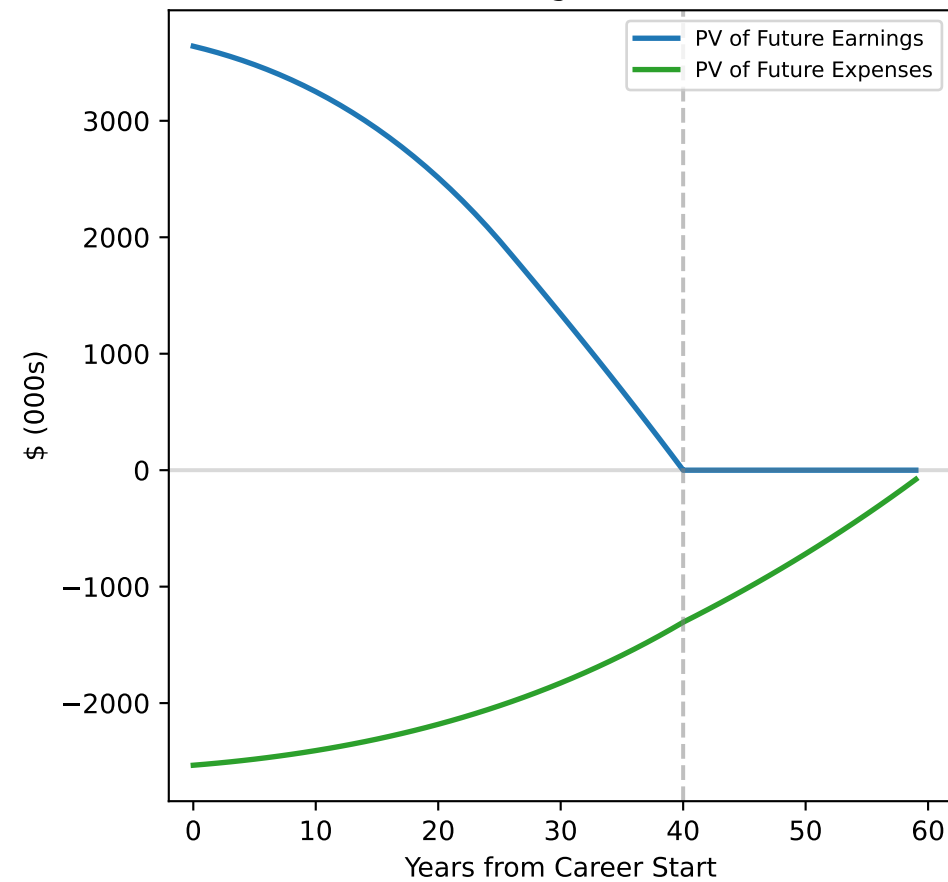


Lifecycle Investment Strategy - Beta = 0.5

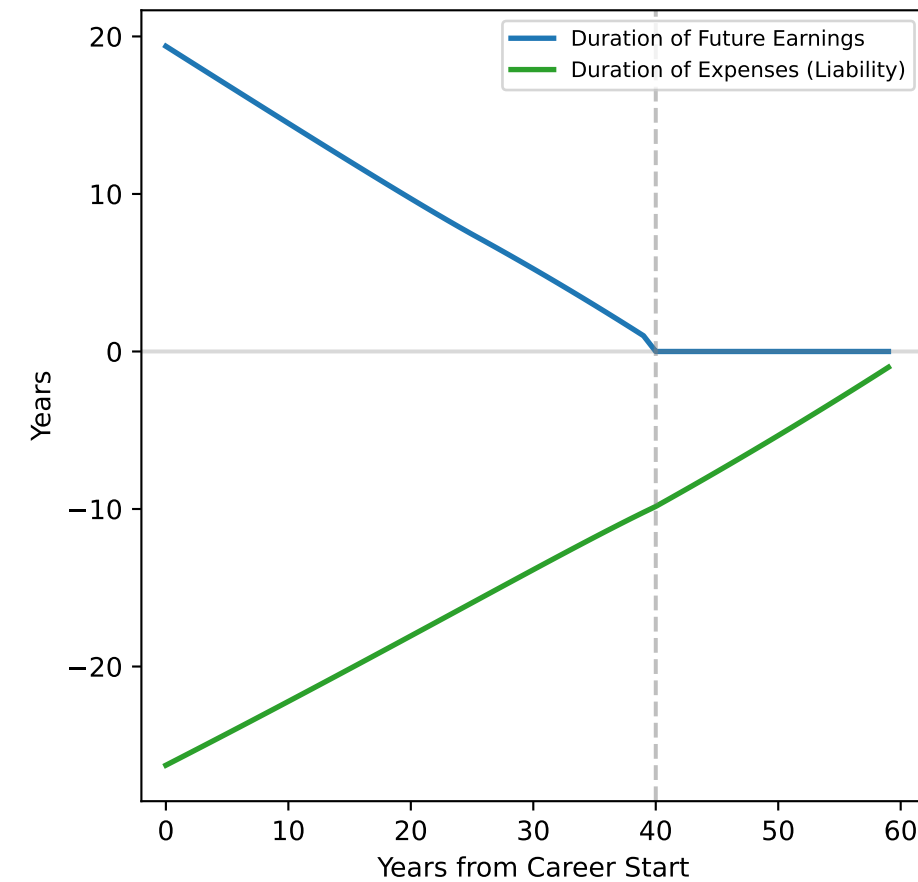
Profile of Earnings and Expenses



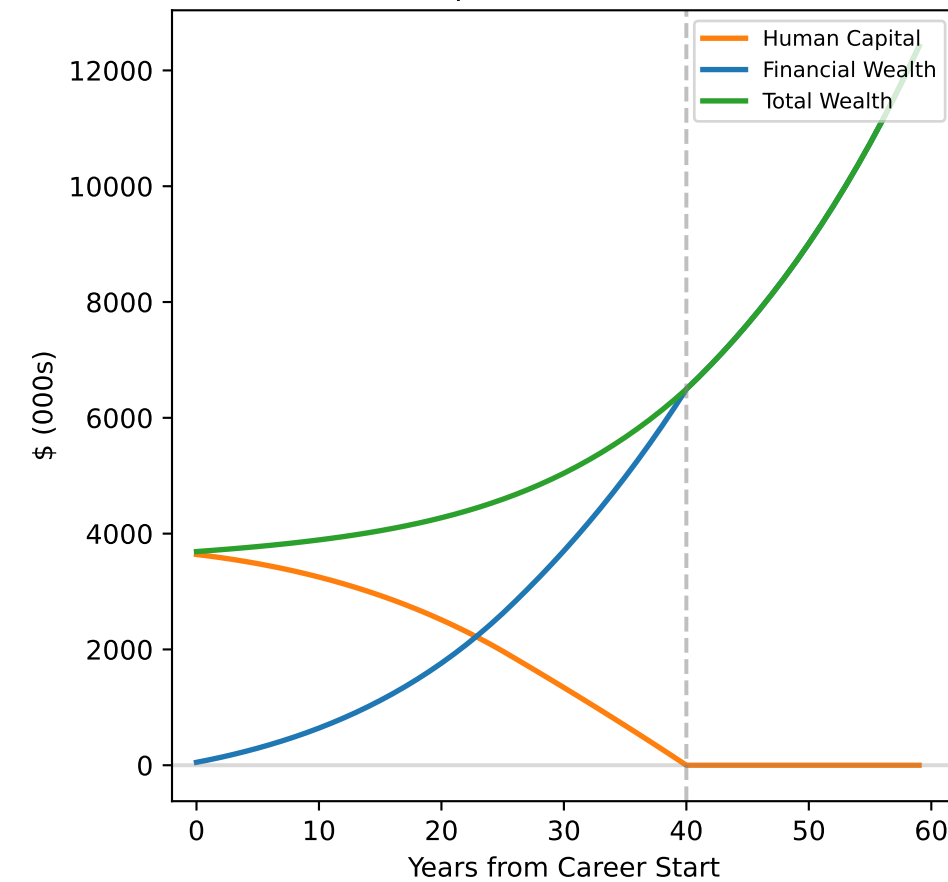
Forward Looking Present Values



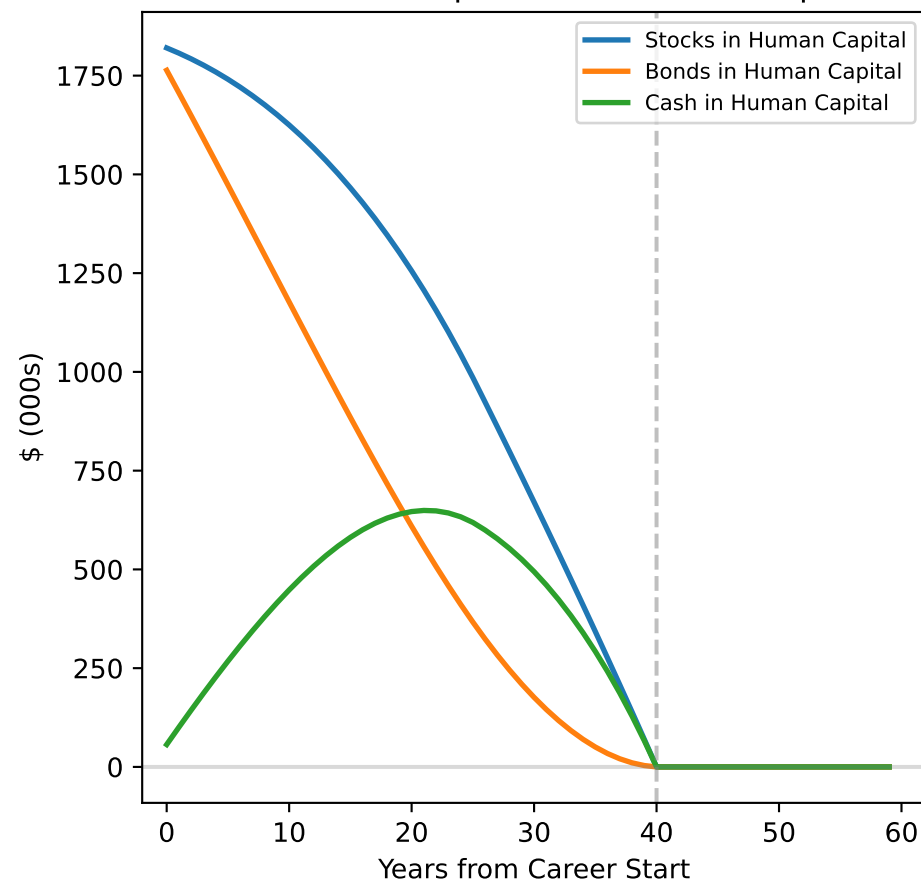
Durations of Assets



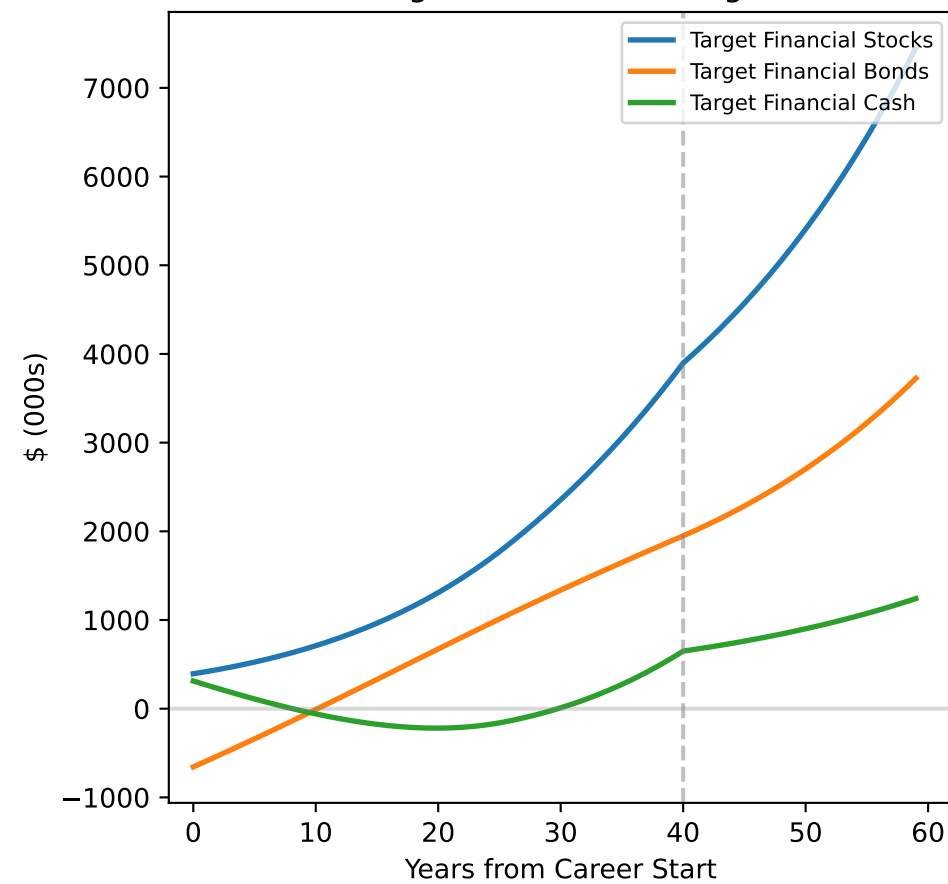
Human Capital vs Financial Wealth



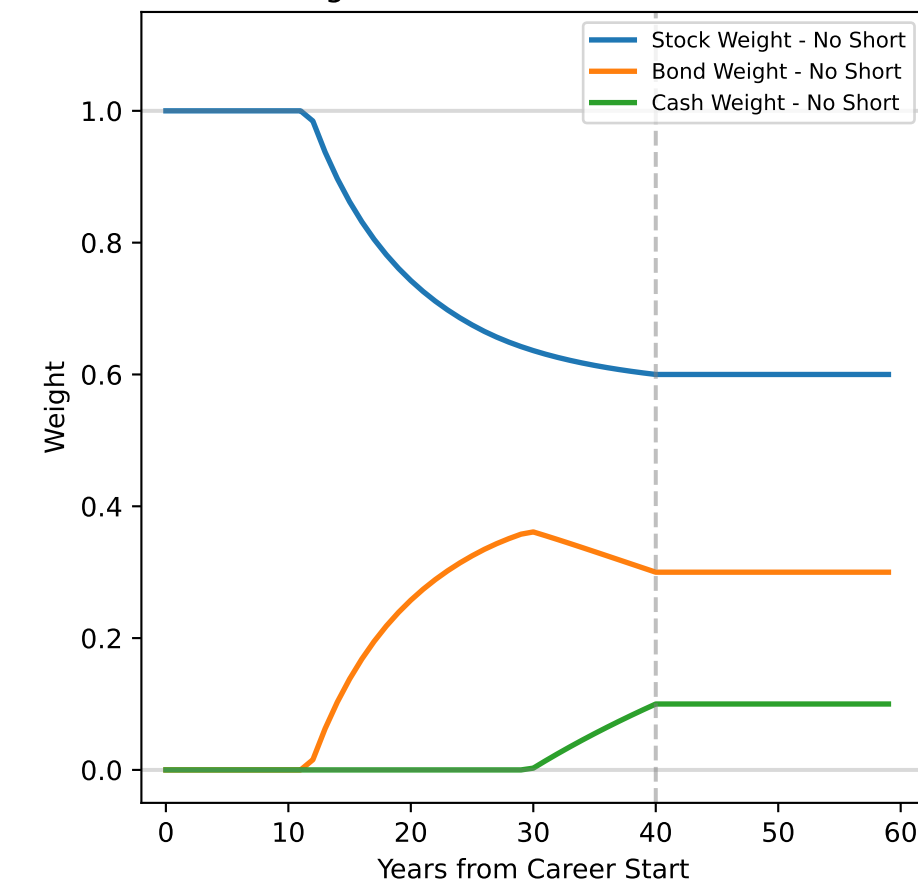
Portfolio Decomposition of Human Capital



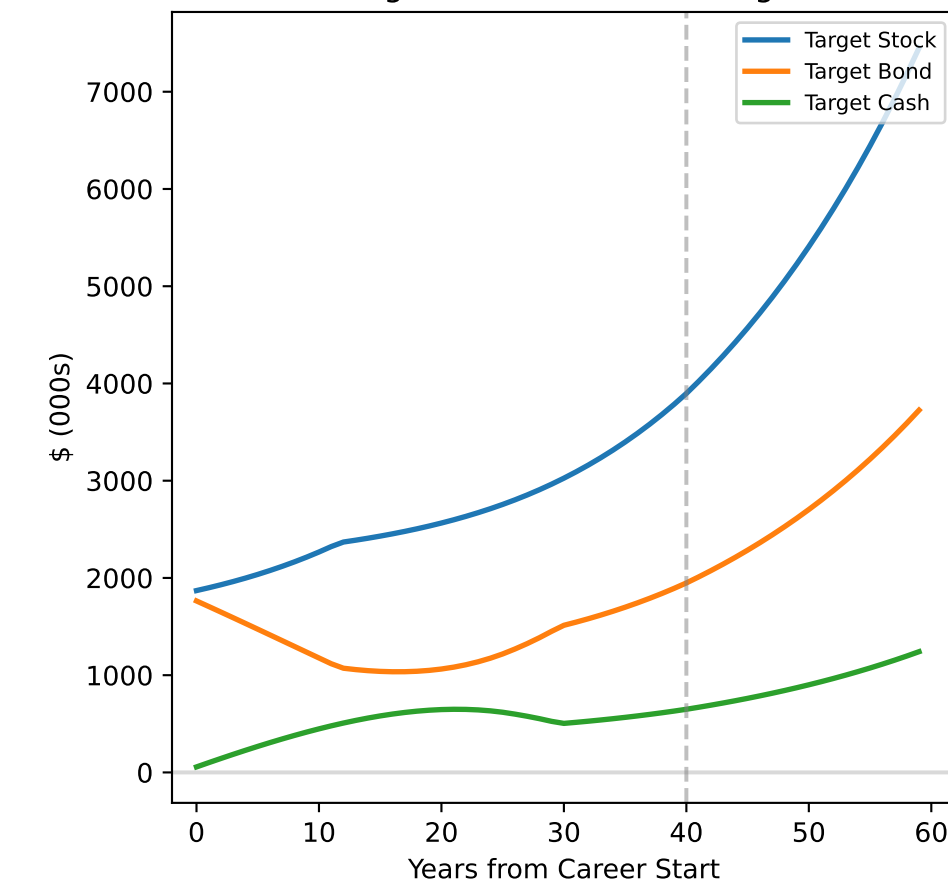
Target Financial Holdings



Target Financial Portfolio Shares

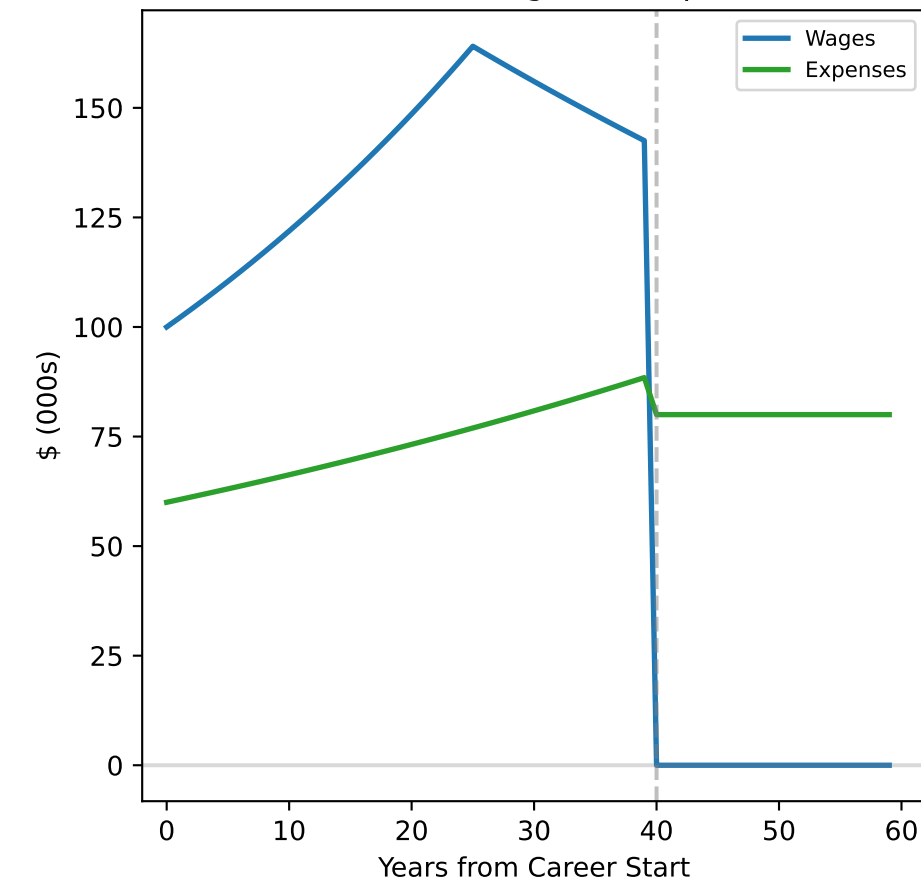


Target Total Wealth Holdings

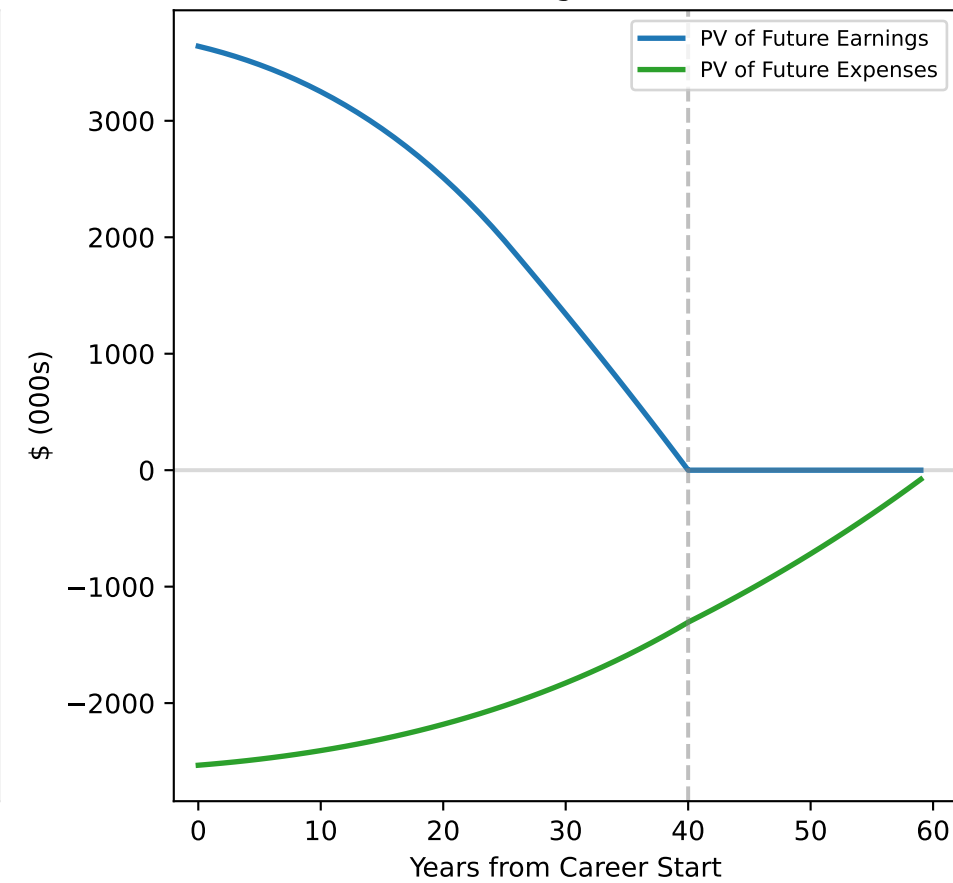


Lifecycle Investment Strategy - Beta = 1.0

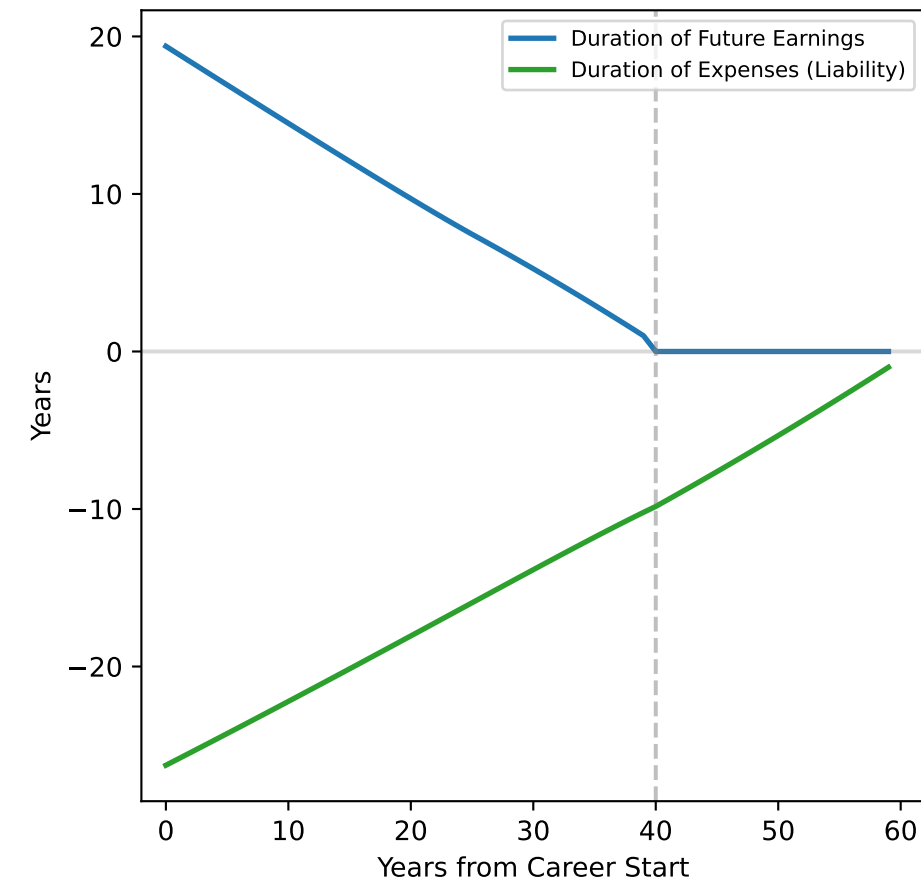
Profile of Earnings and Expenses



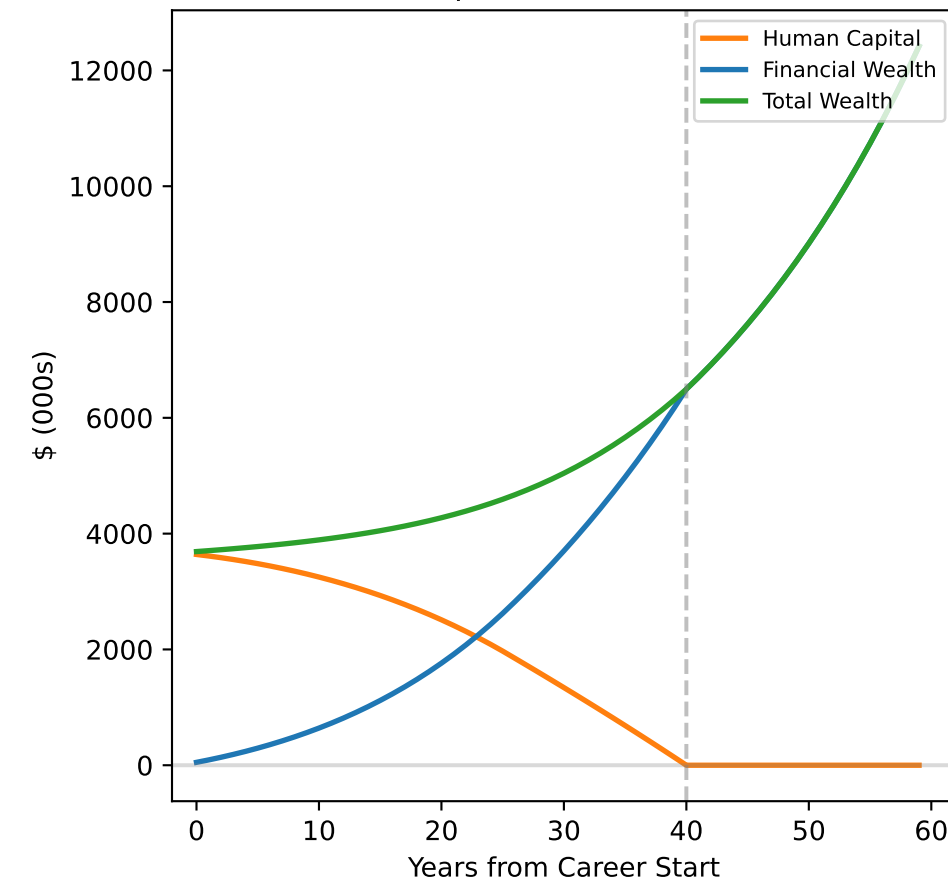
Forward Looking Present Values



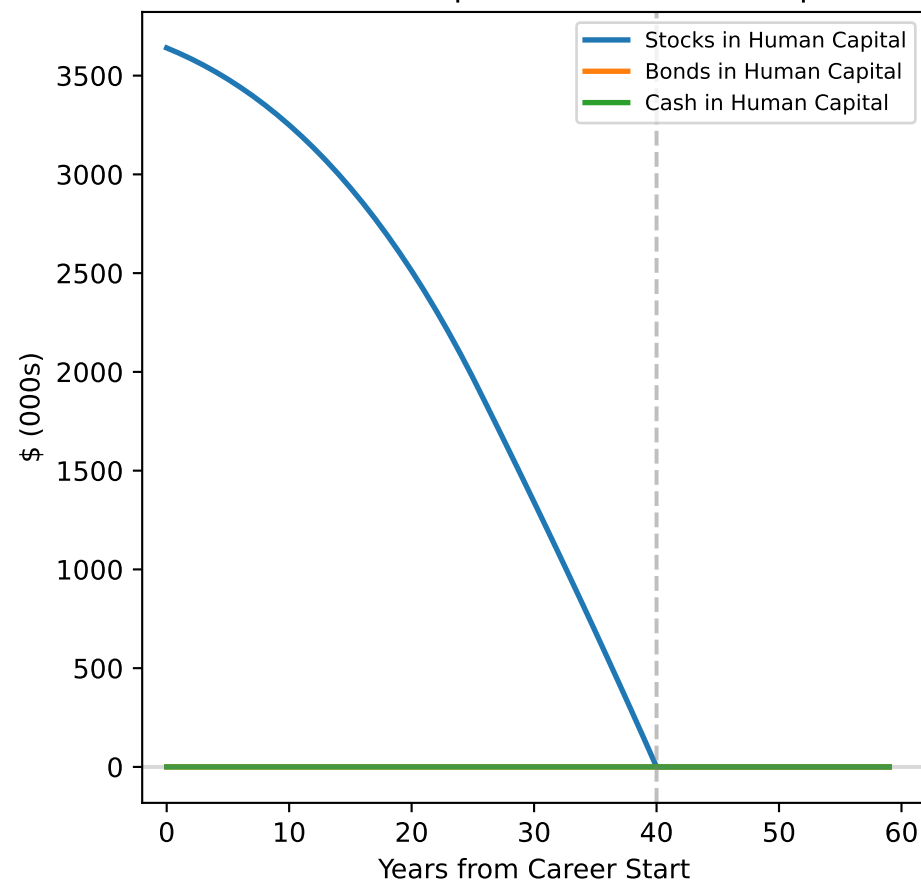
Durations of Assets



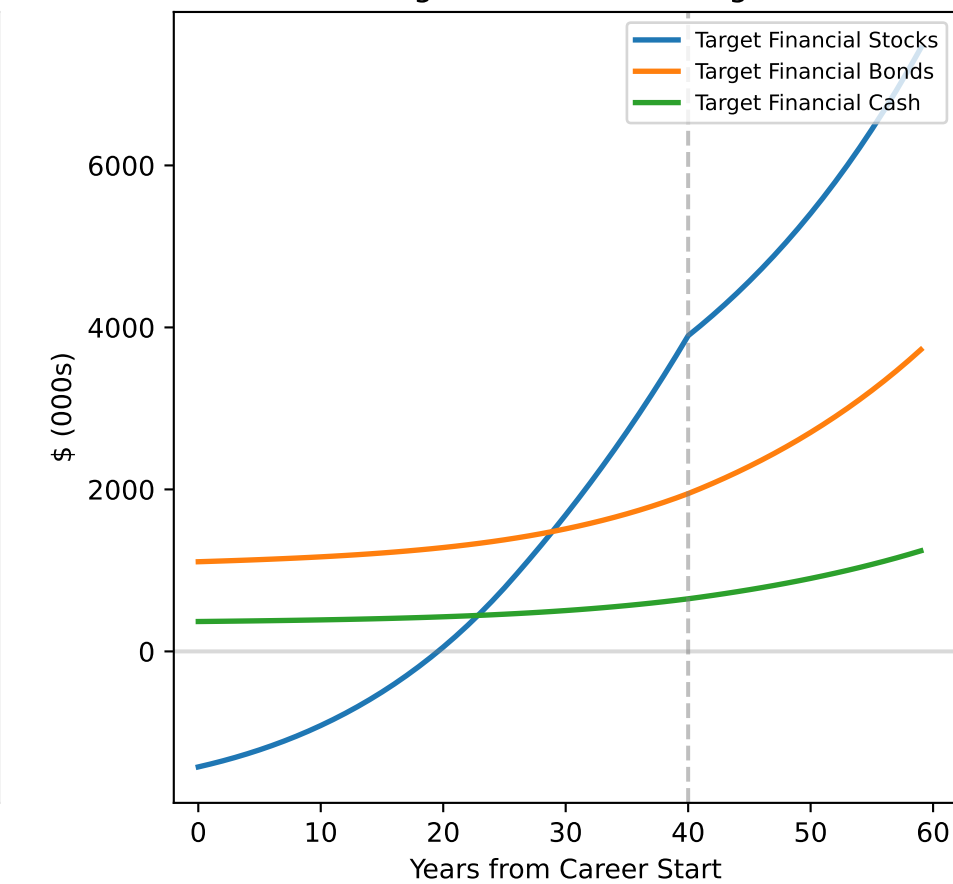
Human Capital vs Financial Wealth



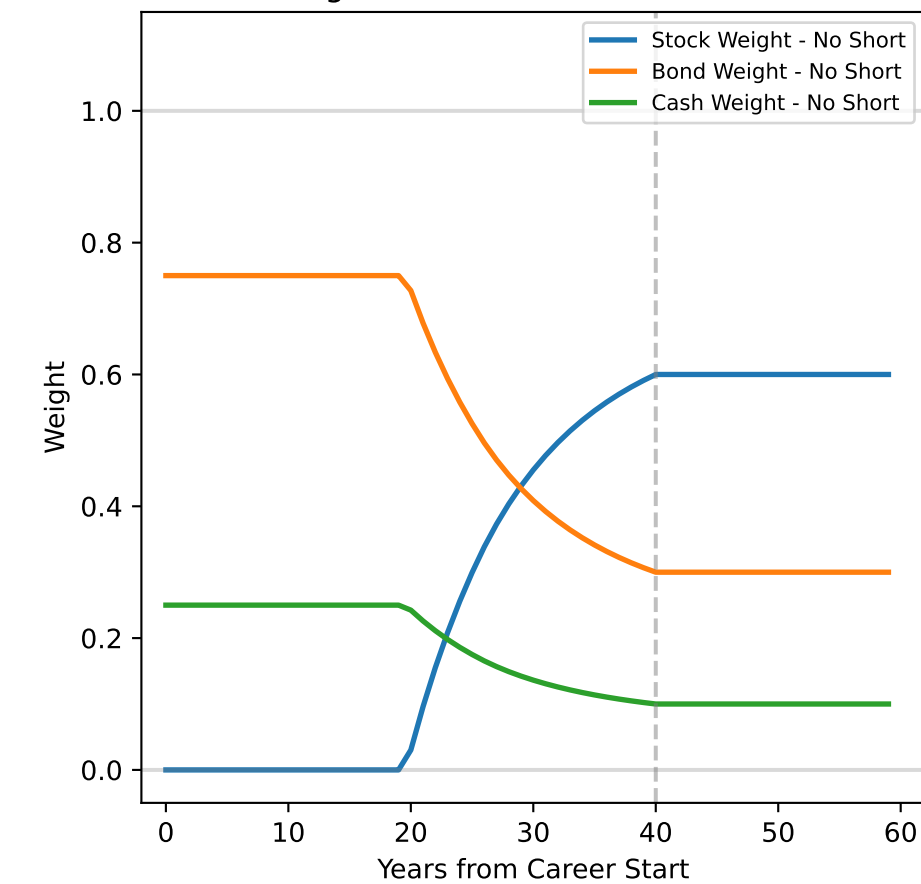
Portfolio Decomposition of Human Capital



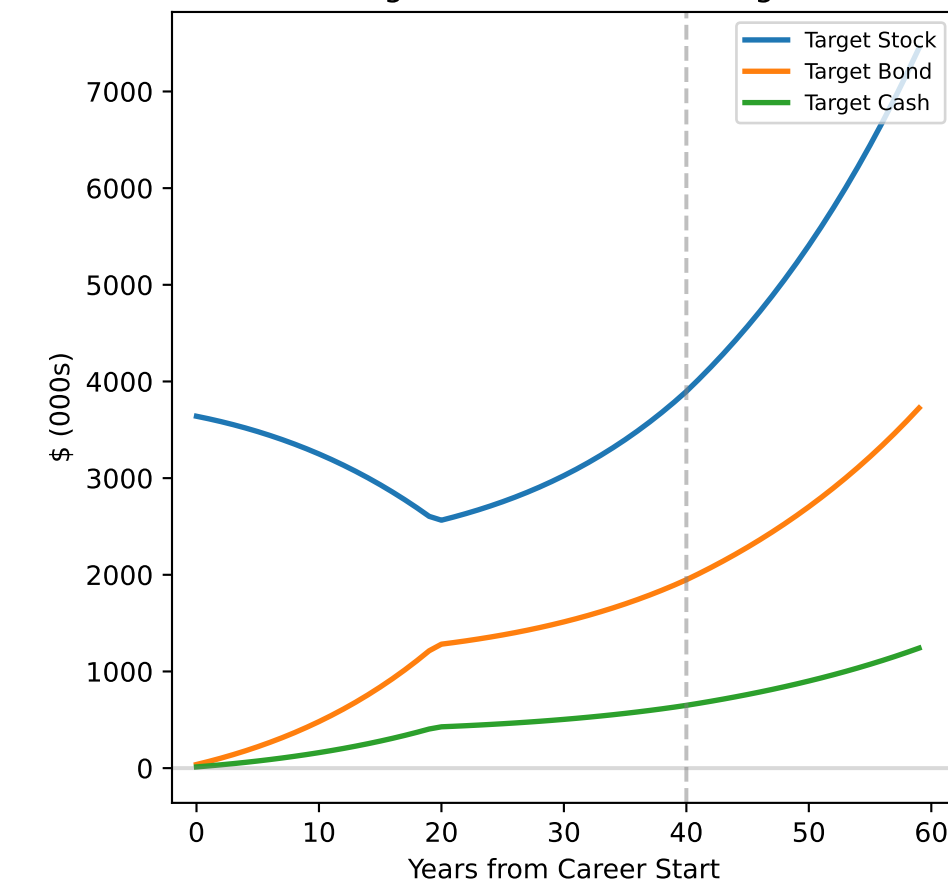
Target Financial Holdings



Target Financial Portfolio Shares



Target Total Wealth Holdings



Lifecycle Investment Strategy Parameters

Age Parameters:

- Career Start: 25
- Retirement Age: 65
- Planning Horizon: 85

Income Parameters:

- Initial Earnings: \$100k
- Earnings Growth: 2.0%
- Peak Earnings Age: 50

Expense Parameters:

- Base Expenses: \$60k
- Retirement Expenses: \$80k

Human Capital Allocation:

- Stock Beta: 0.10
- Bond Duration Benchmark: 20.0 years
- Non-stock portion allocated to bonds/cash based on HC duration

Target Total Wealth Allocation:

- Stocks: 60%
- Bonds: 30%
- Cash: 10%

Economic Parameters:

- Risk-Free Rate: 2.0%
- Equity Risk Premium: 4.0%
- Rate Persistence (ϕ): 1.00

Key Insights:

1. Human capital is decomposed using stock beta for equity exposure and duration for fixed income allocation.
2. Stock component = $HC * stock_beta$ (market correlation).
3. Non-stock portion allocated between bonds/cash based on duration: higher duration = more bond-like exposure.
4. As HC duration shortens near retirement, more of the non-stock portion shifts from bonds to cash.
5. This approach captures both market risk (via beta) and interest rate risk (via duration) in human capital.