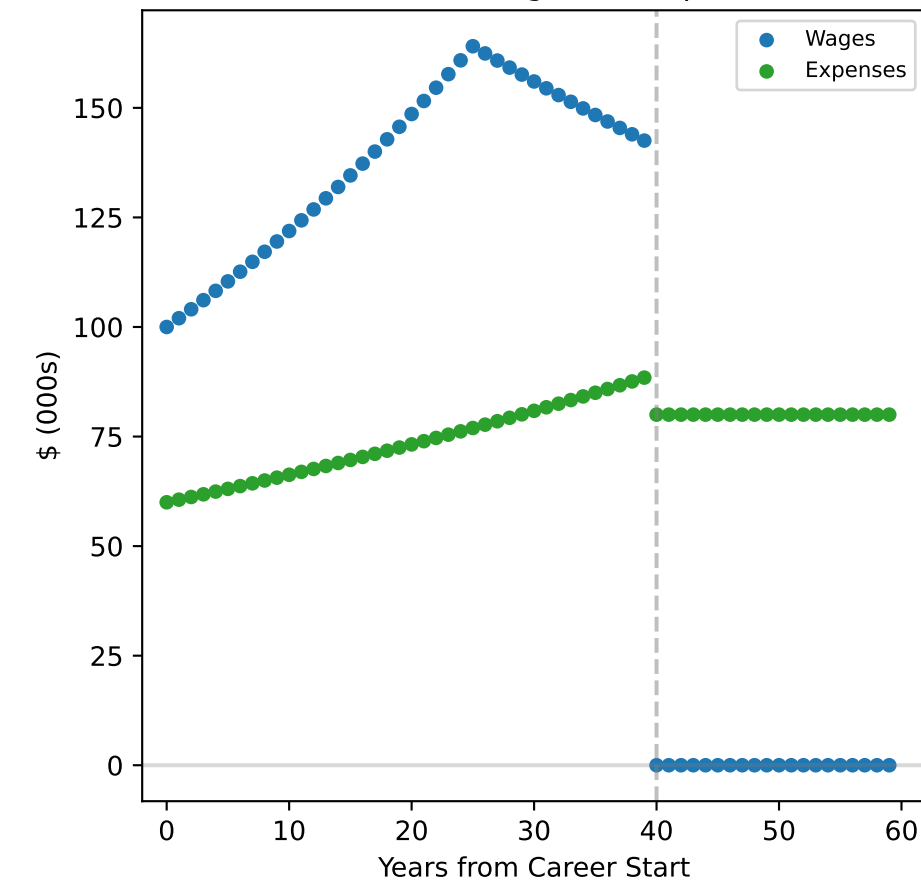
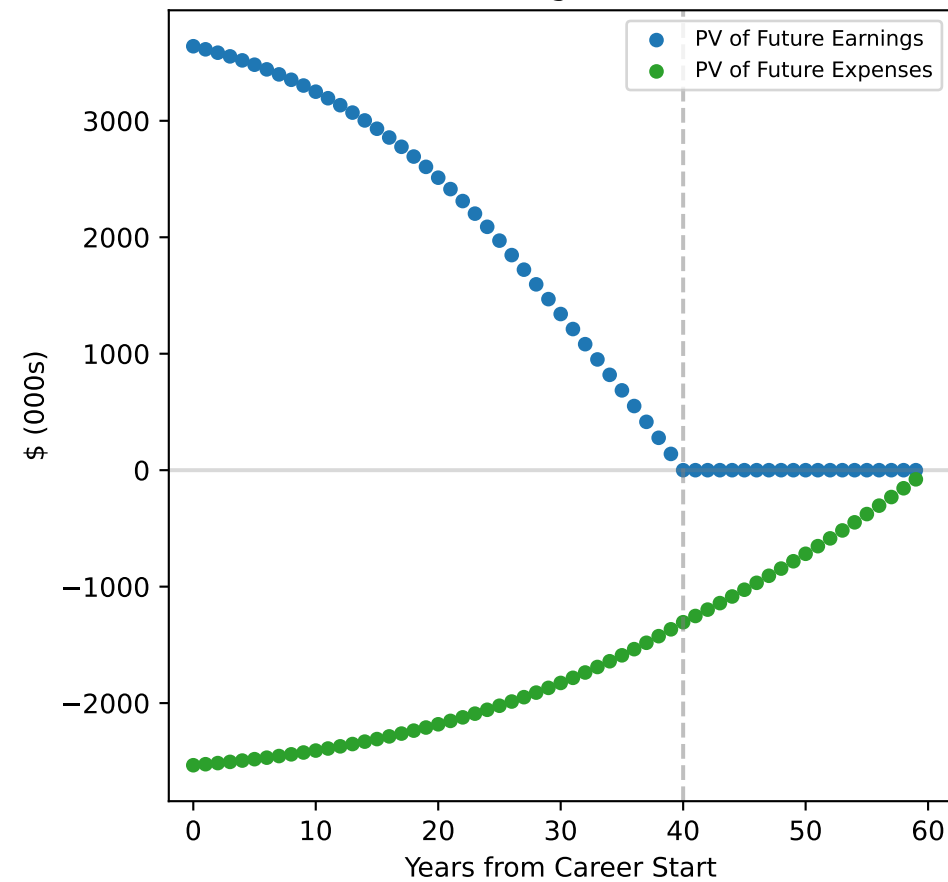


# Lifecycle Investment Strategy - Median Path Analysis

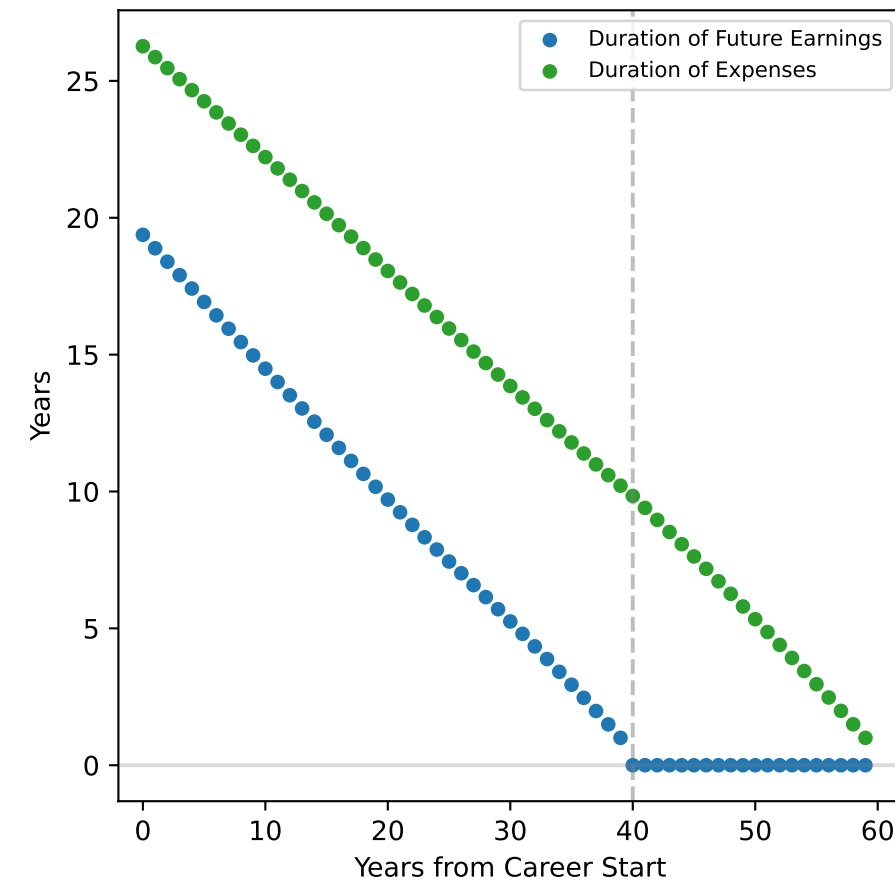
## Profile of Earnings and Expenses



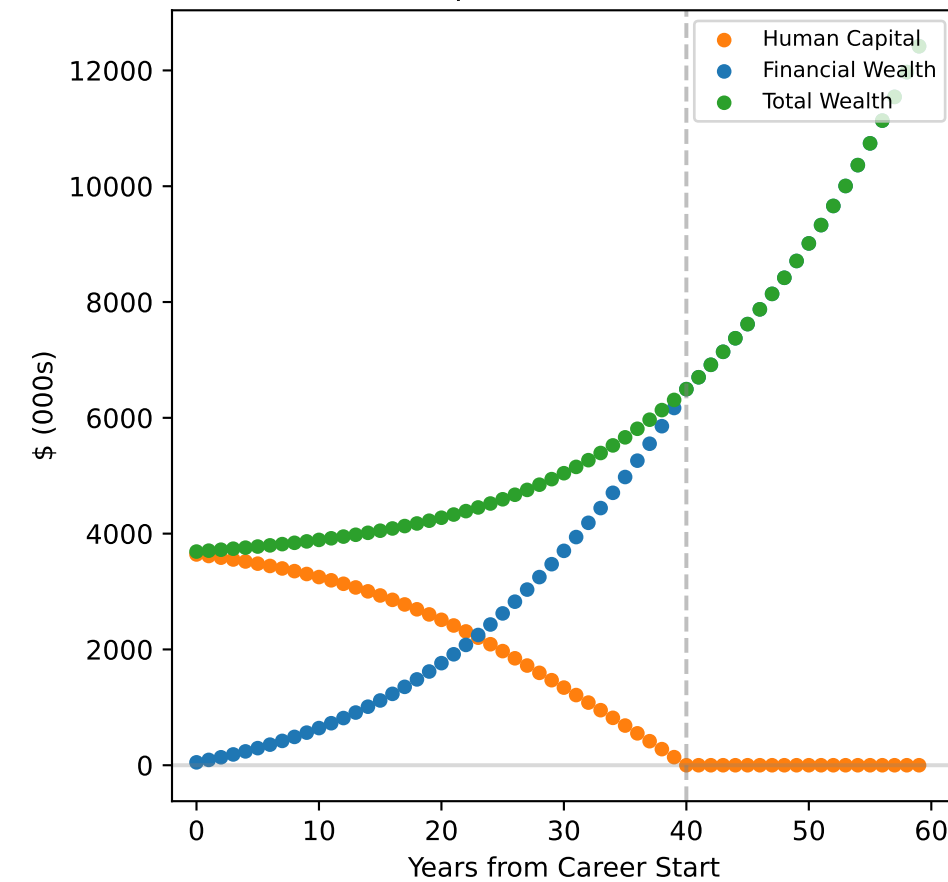
## Forward Looking Present Values



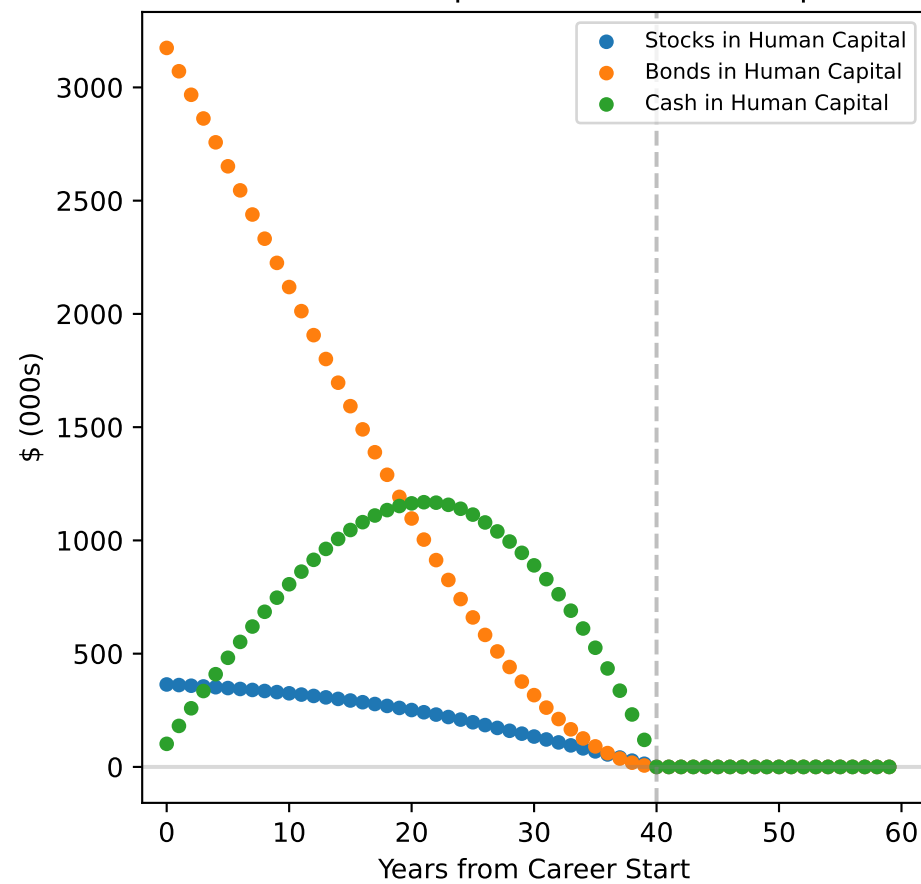
## Durations of Assets



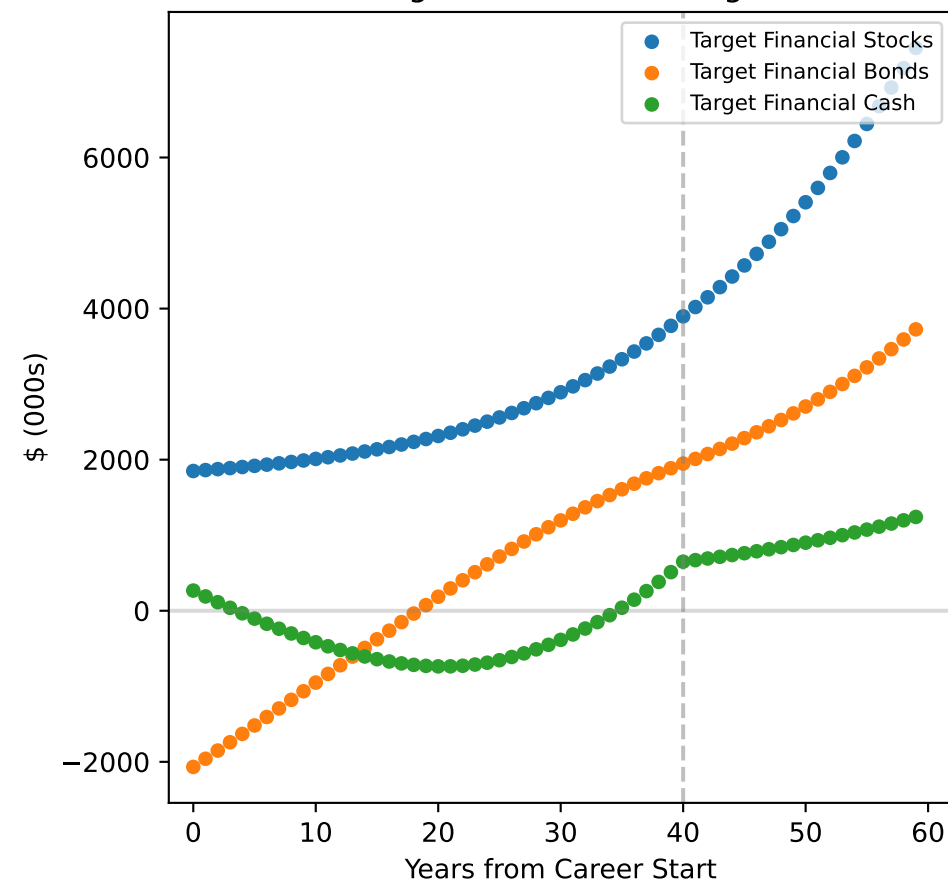
## Human Capital vs Financial Wealth



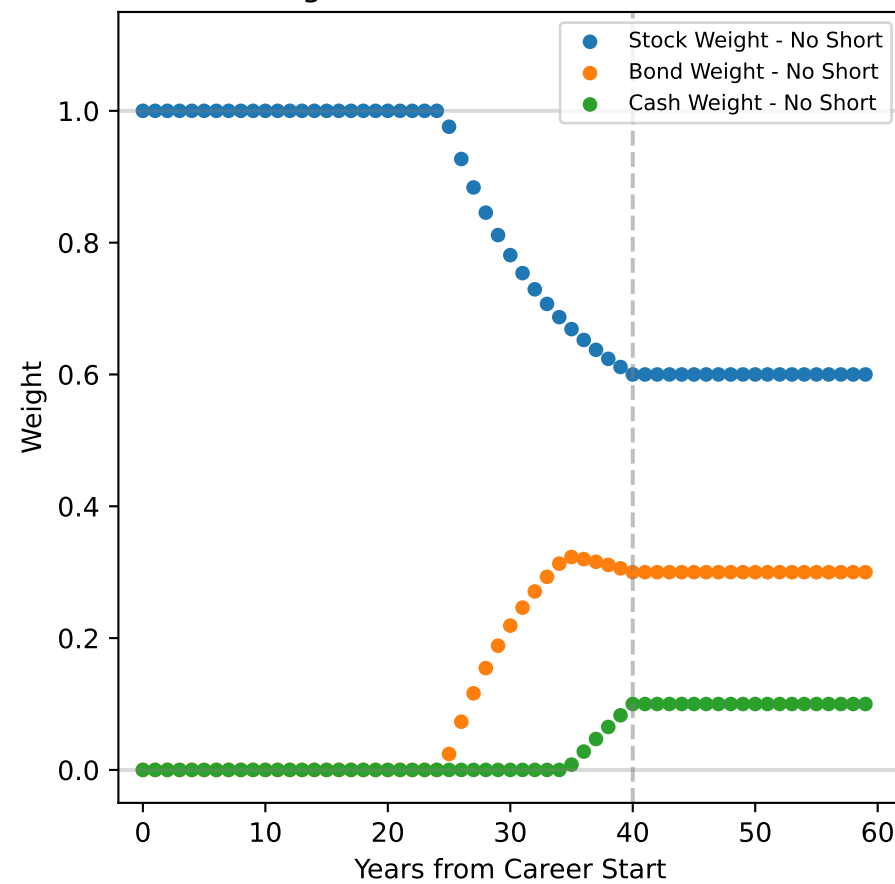
## Portfolio Decomposition of Human Capital



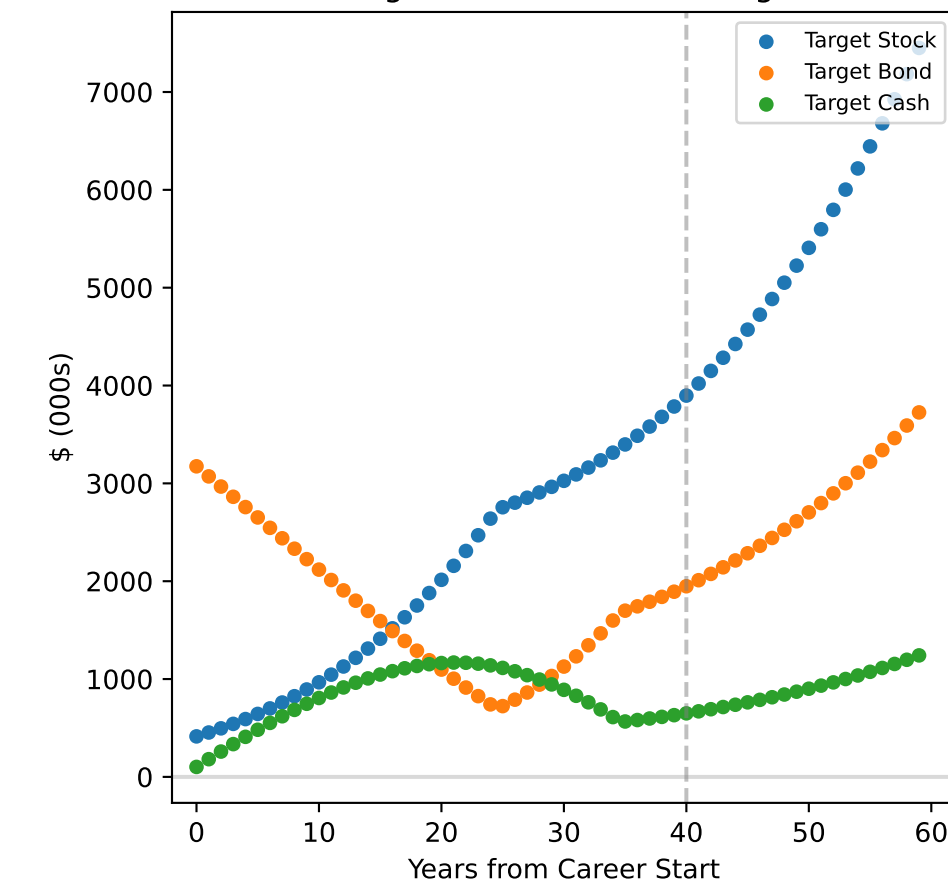
## Target Financial Holdings



## Target Financial Portfolio Shares

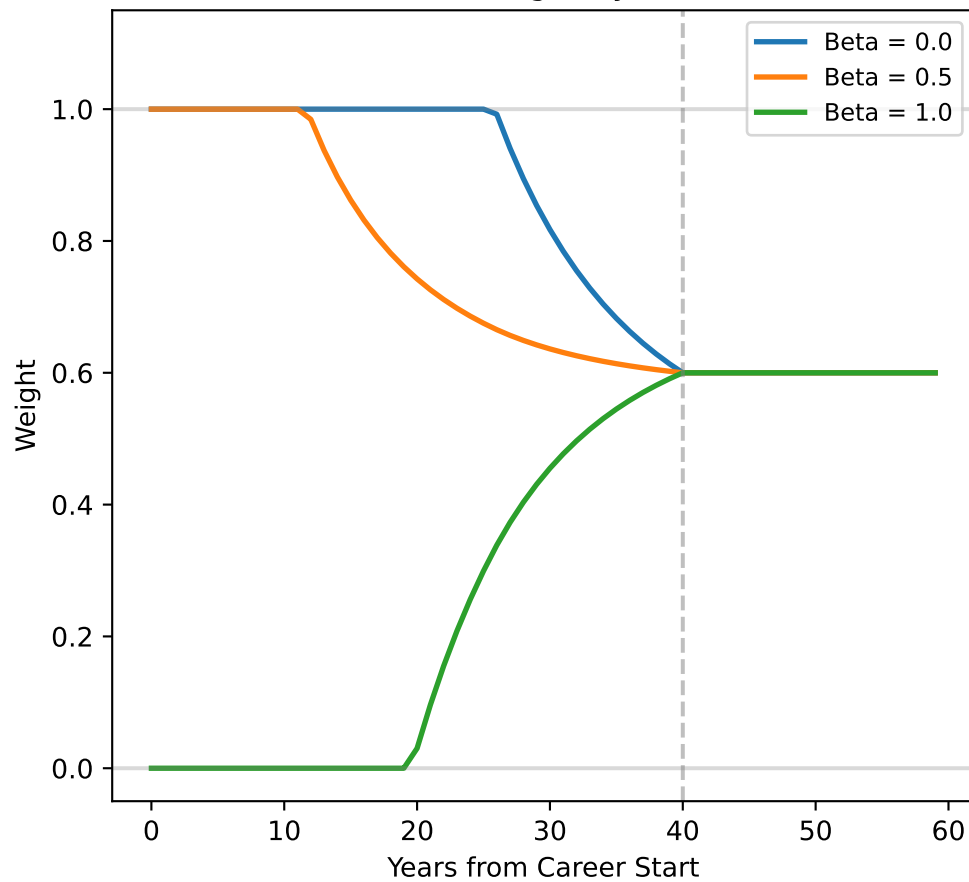


## Target Total Wealth Holdings

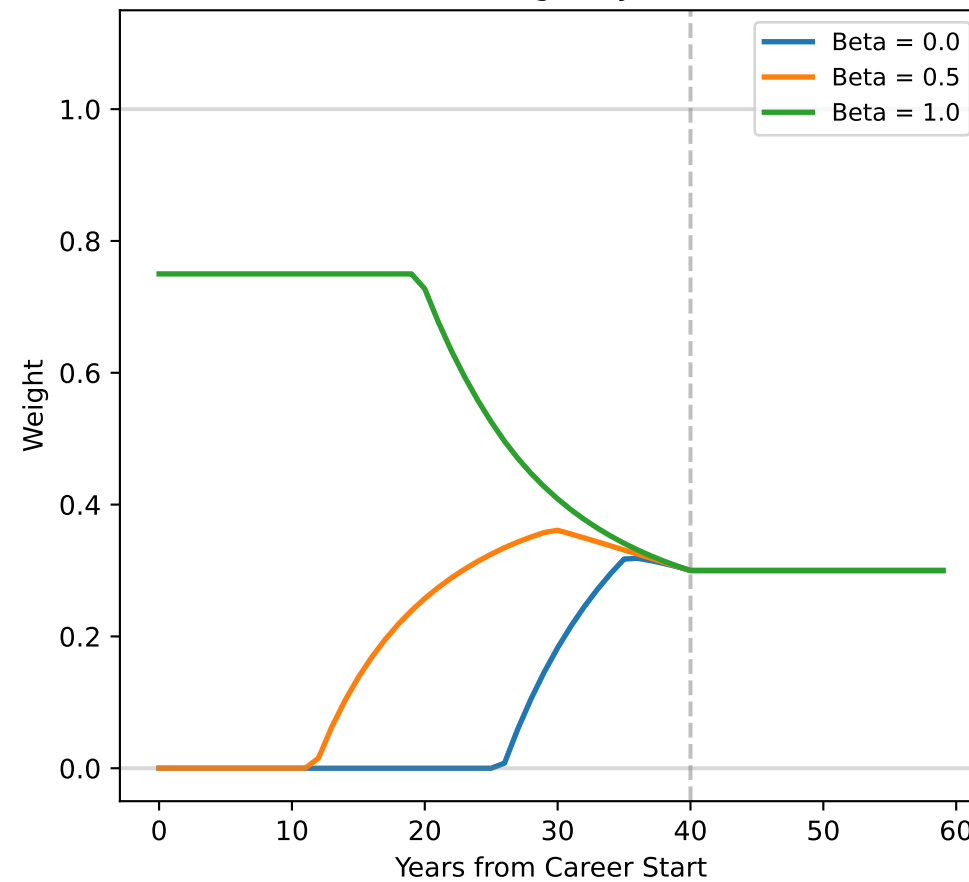


# Effect of Stock Beta on Portfolio Allocation

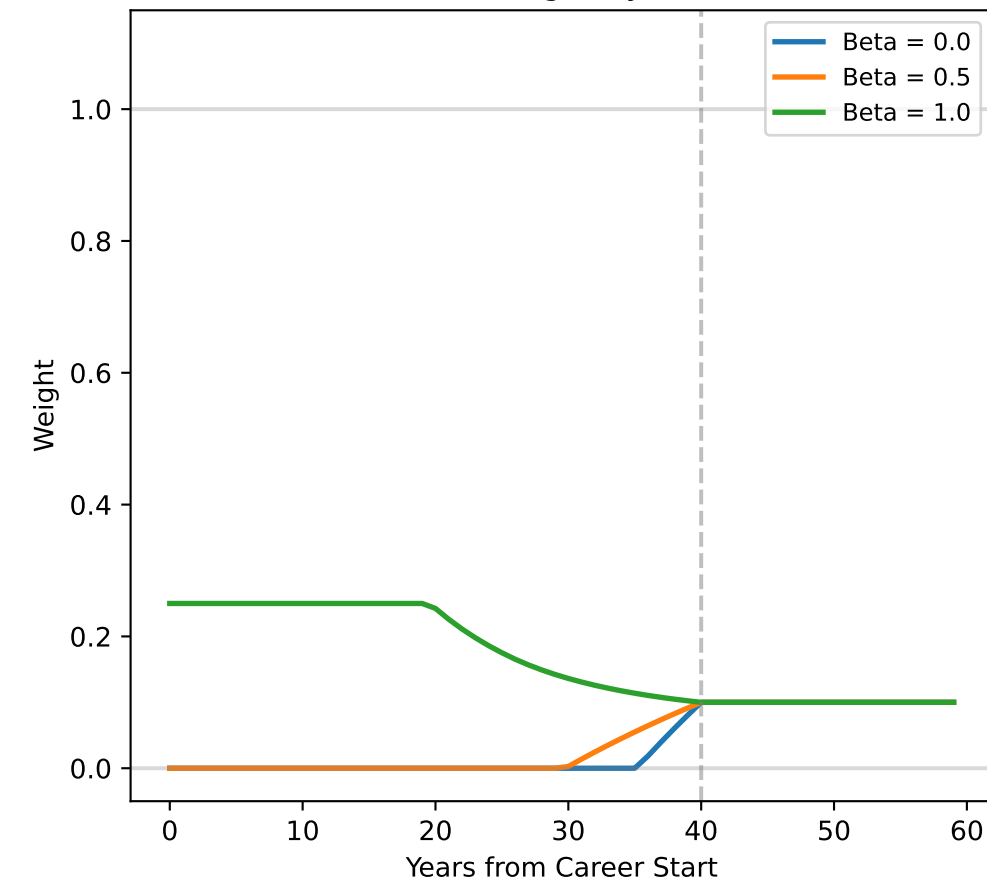
## Stock Weight by Beta



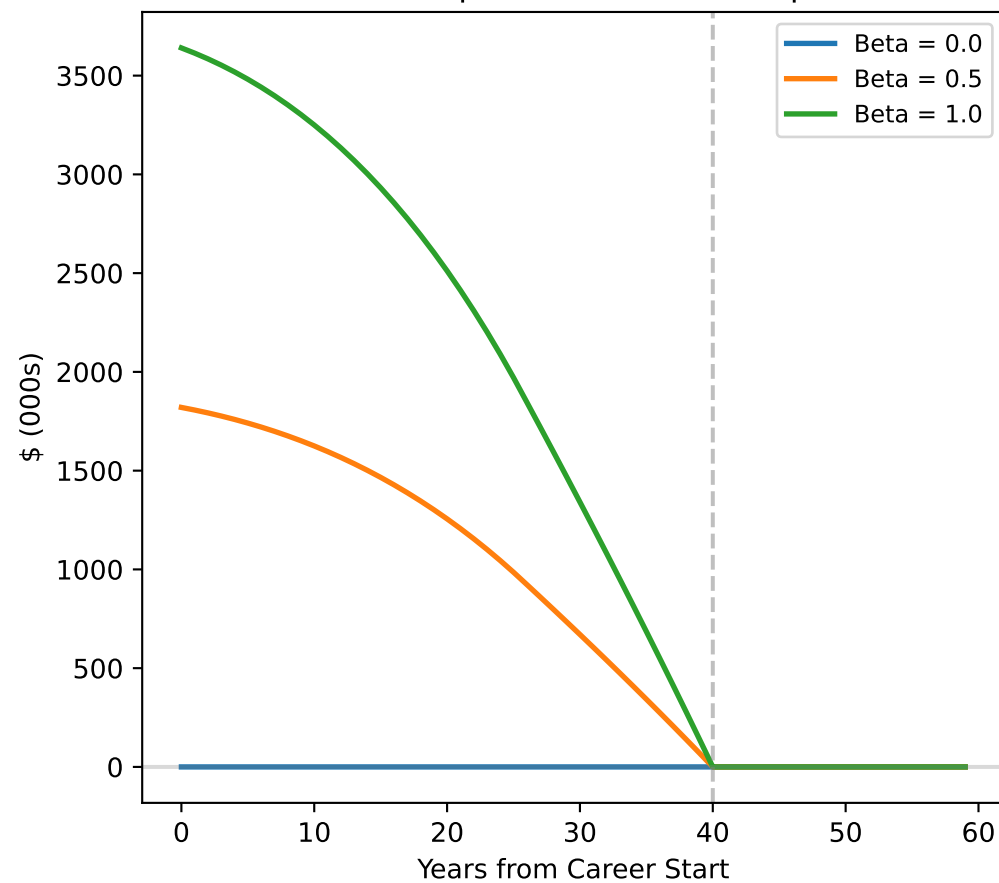
## Bond Weight by Beta



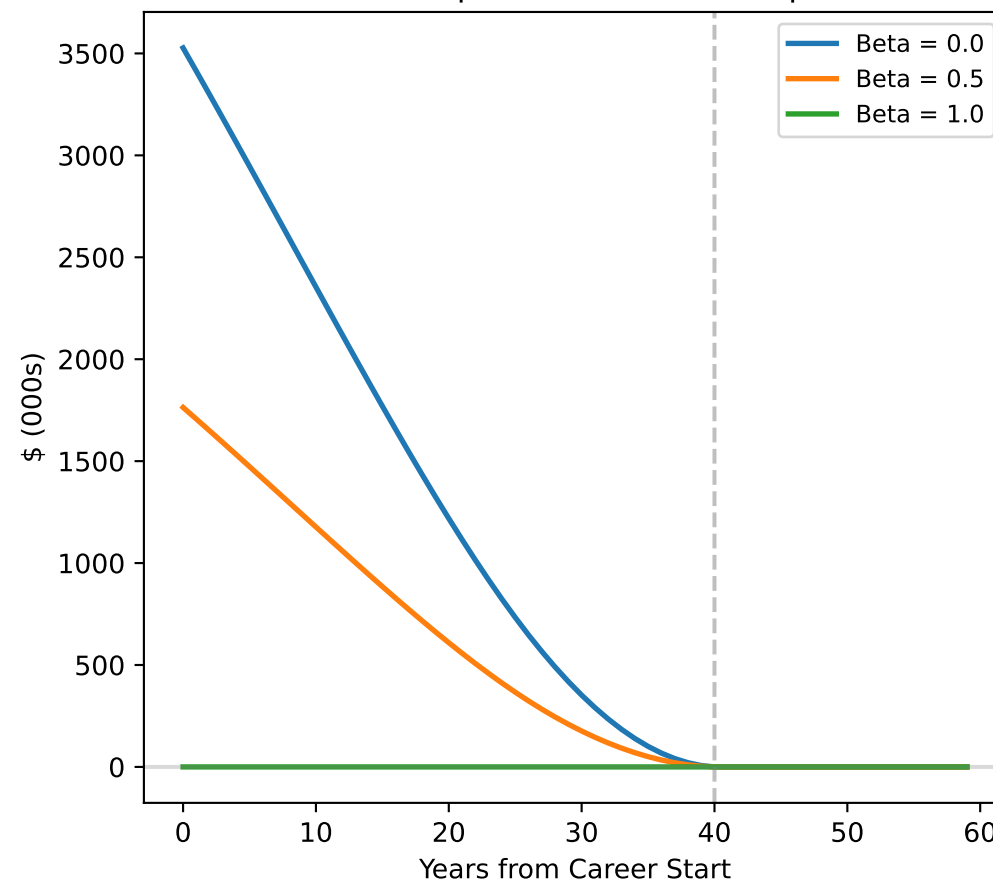
## Cash Weight by Beta



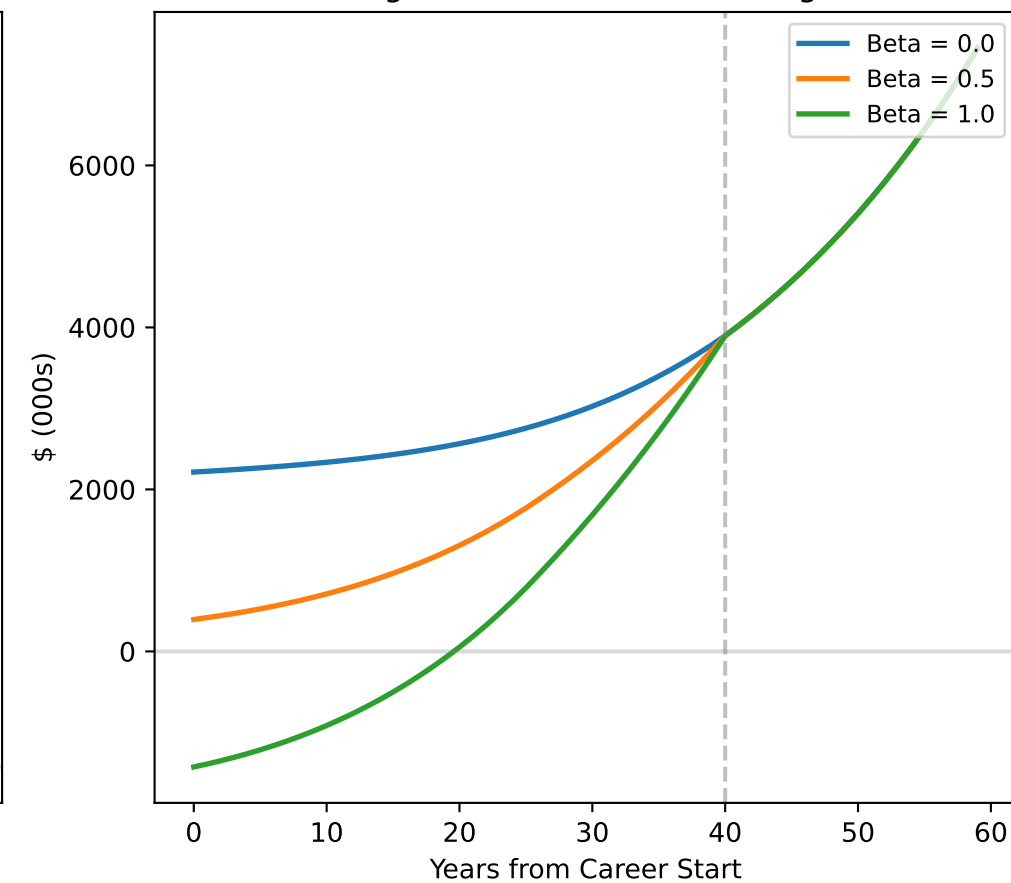
## Stock Component of Human Capital



## Bond Component of Human Capital

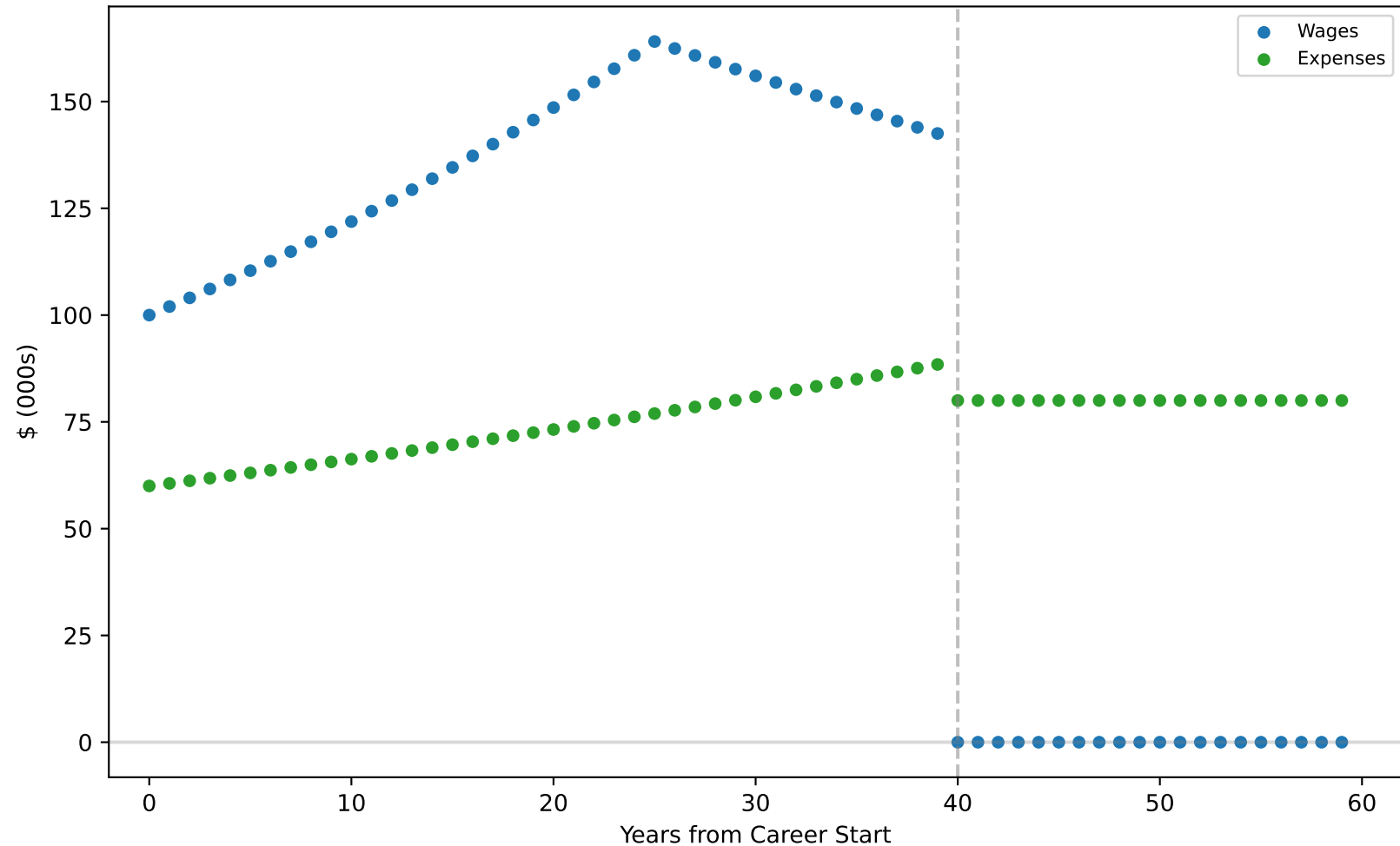


## Target Financial Stock Holdings



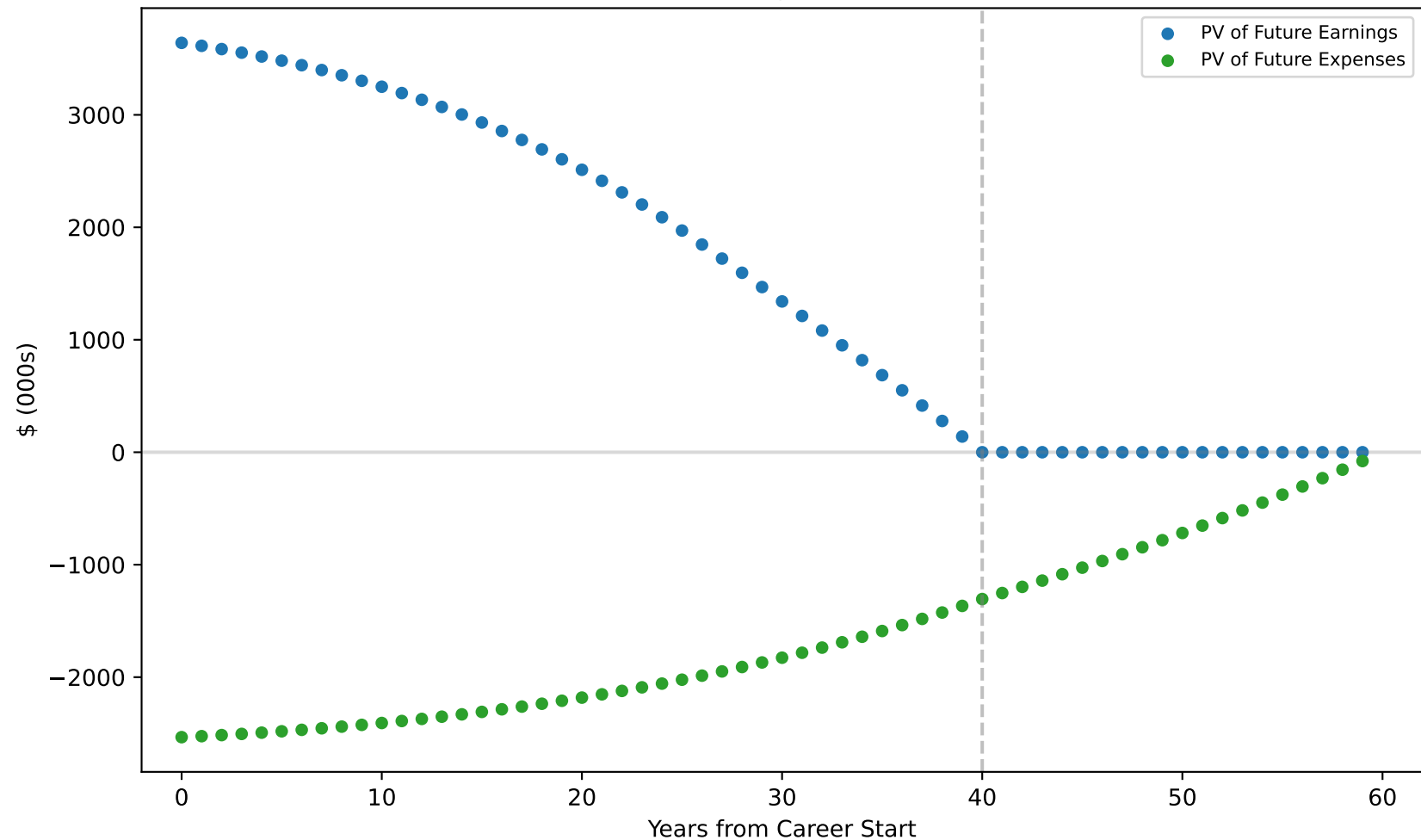
# Earnings and Expenses Profile

Profile of Earnings and Expenses



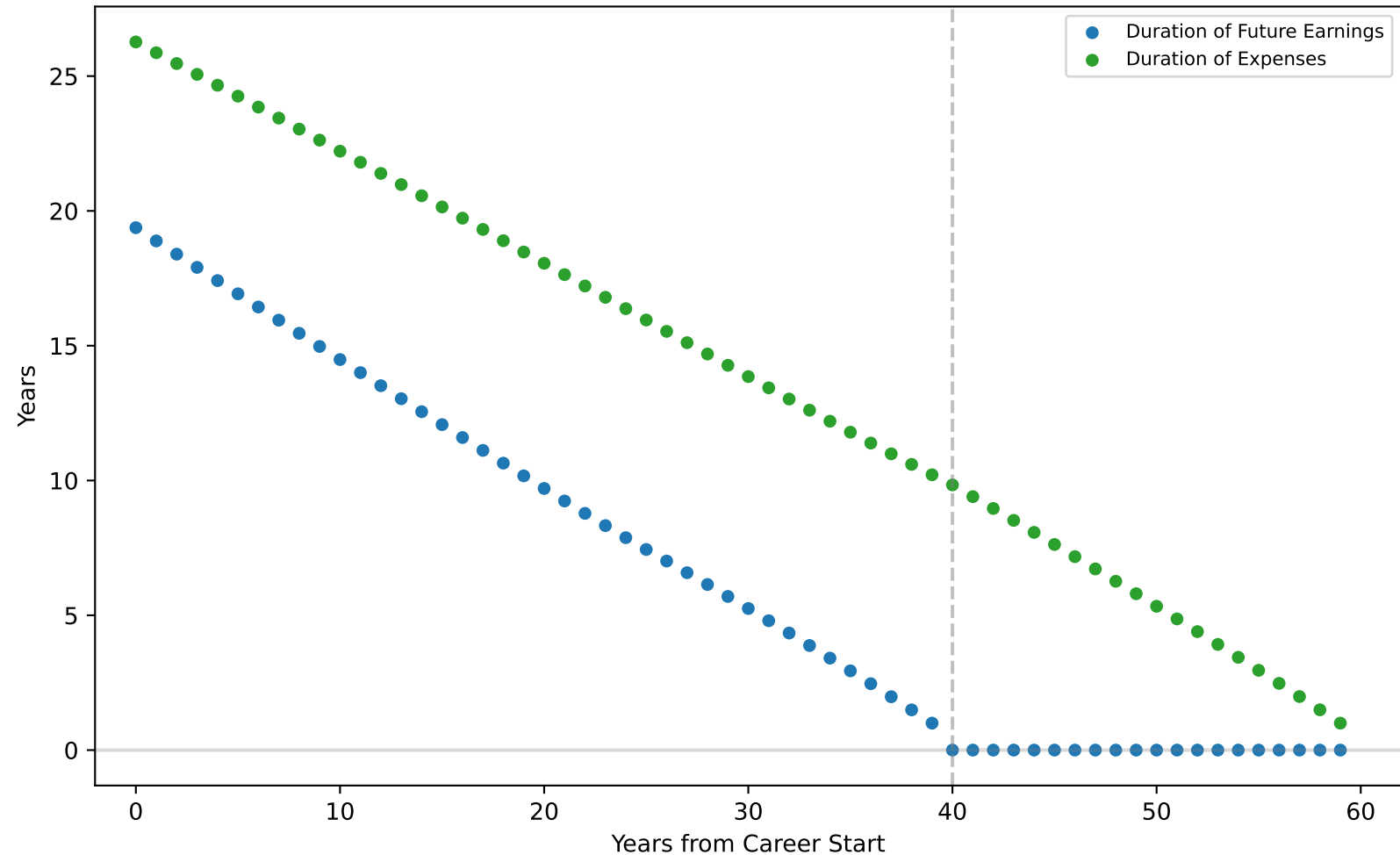
# Forward Looking Present Values

Forward Looking Present Values



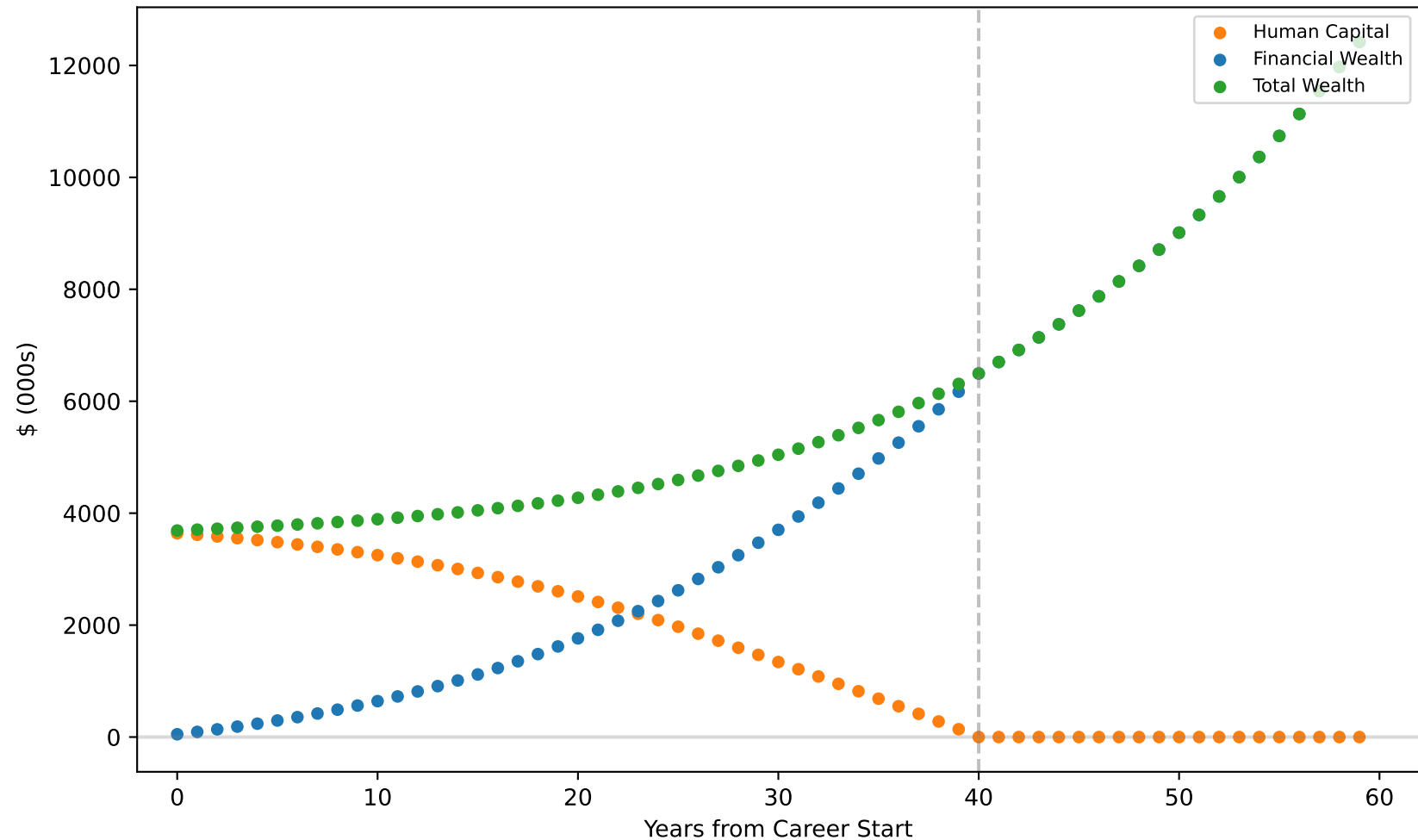
# Durations of Assets

Durations of Assets



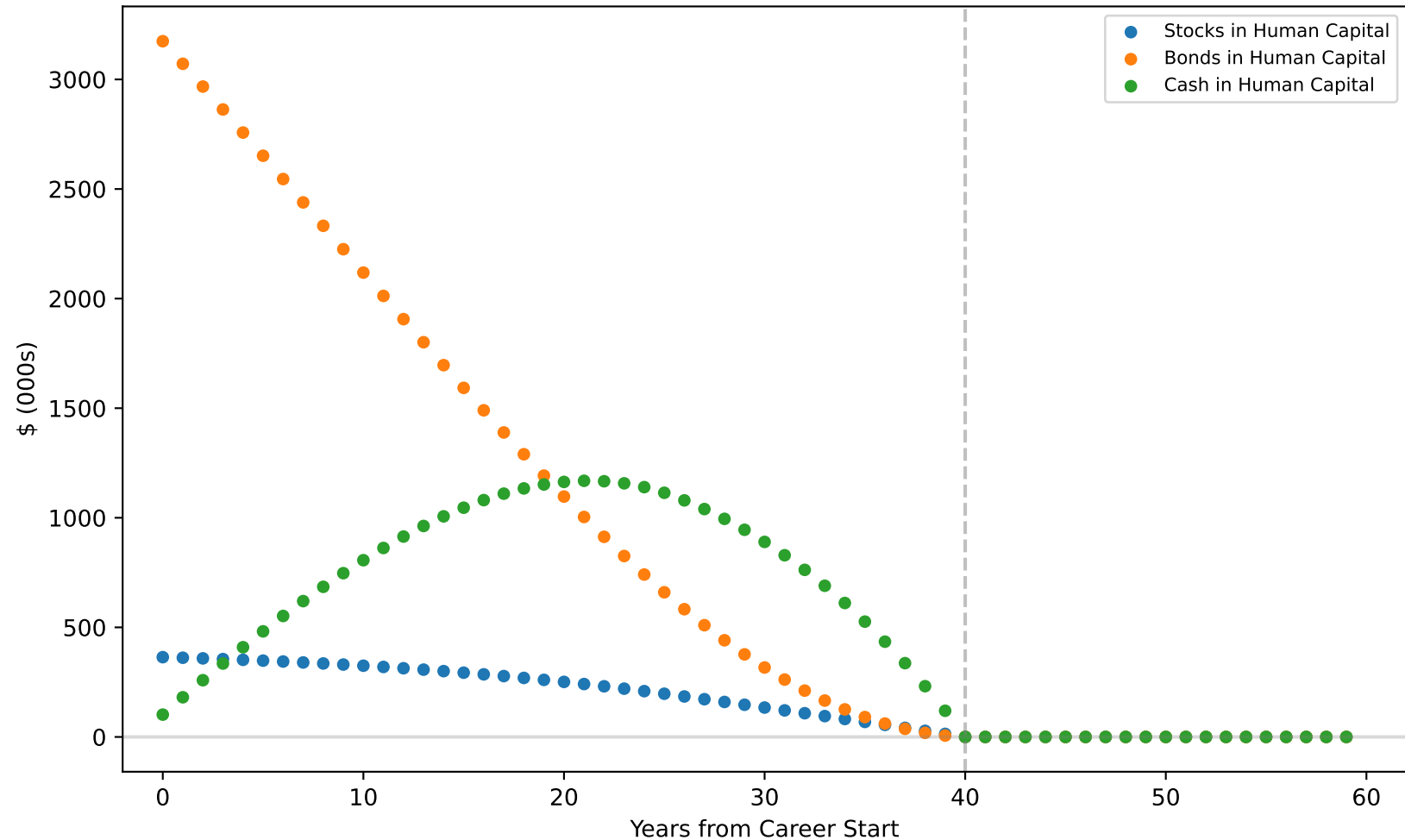
# Human Capital vs Financial Wealth

Human Capital vs Financial Wealth



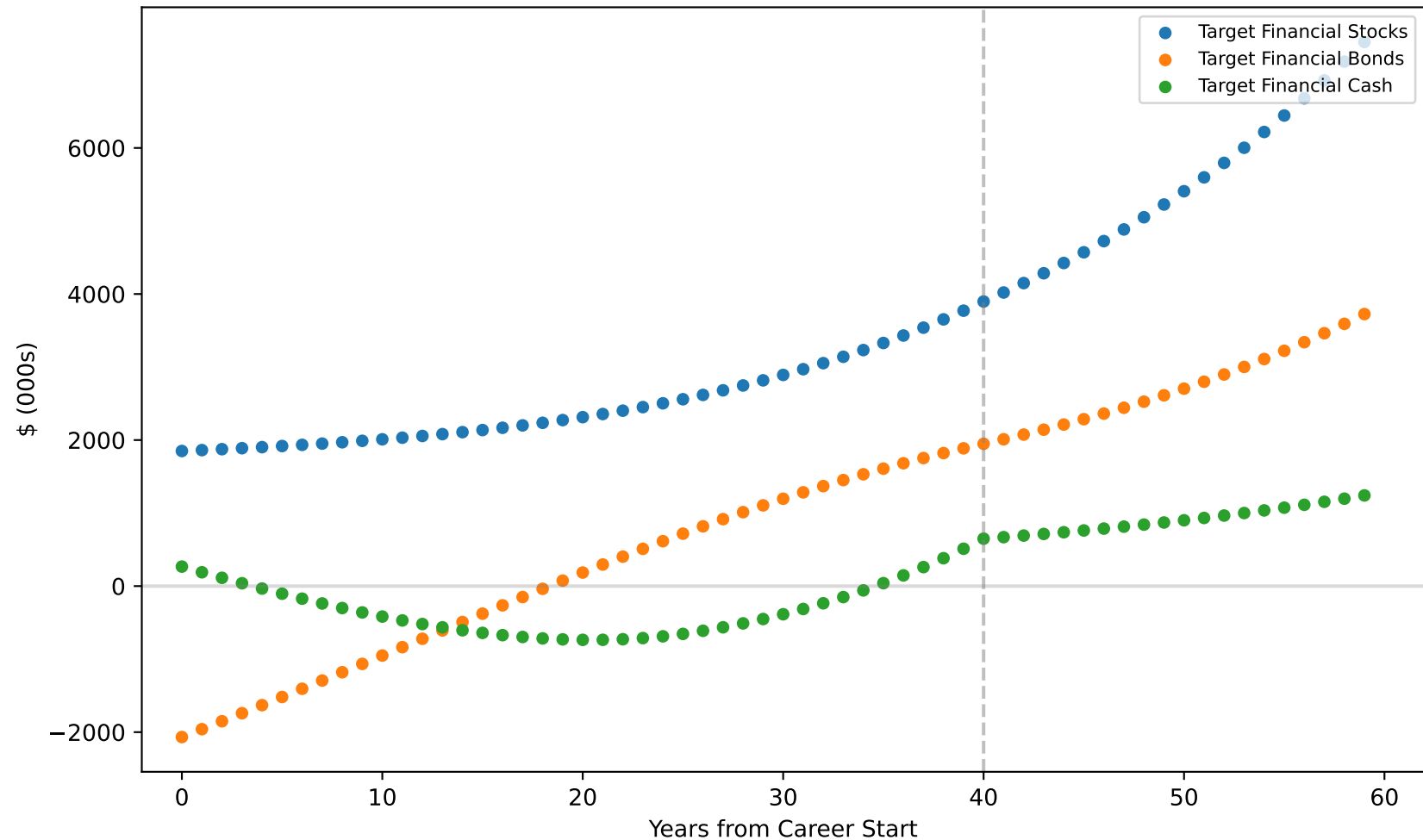
# Portfolio Decomposition of Human Capital

Portfolio Decomposition of Human Capital



# Target Financial Holdings

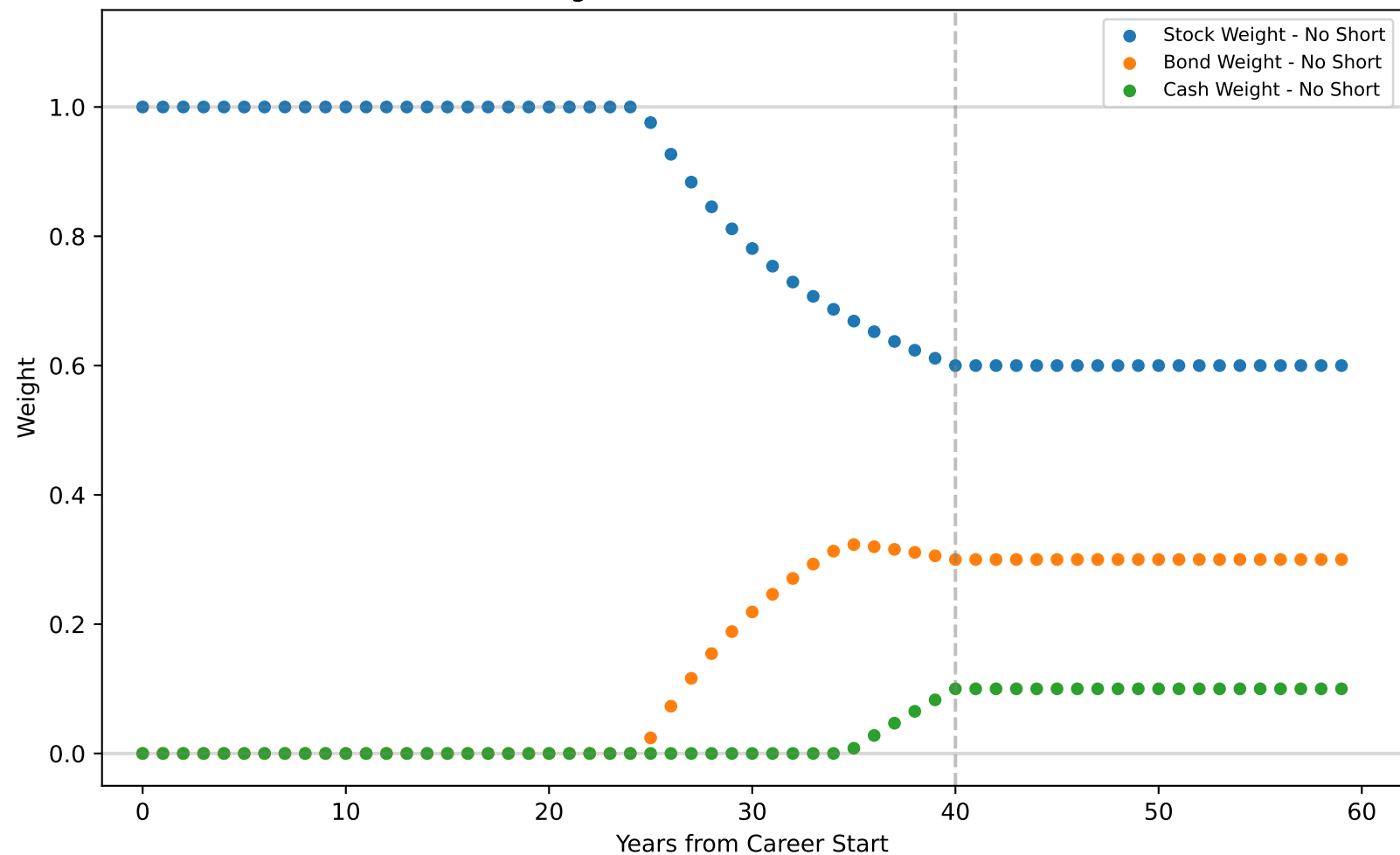
## Target Financial Holdings





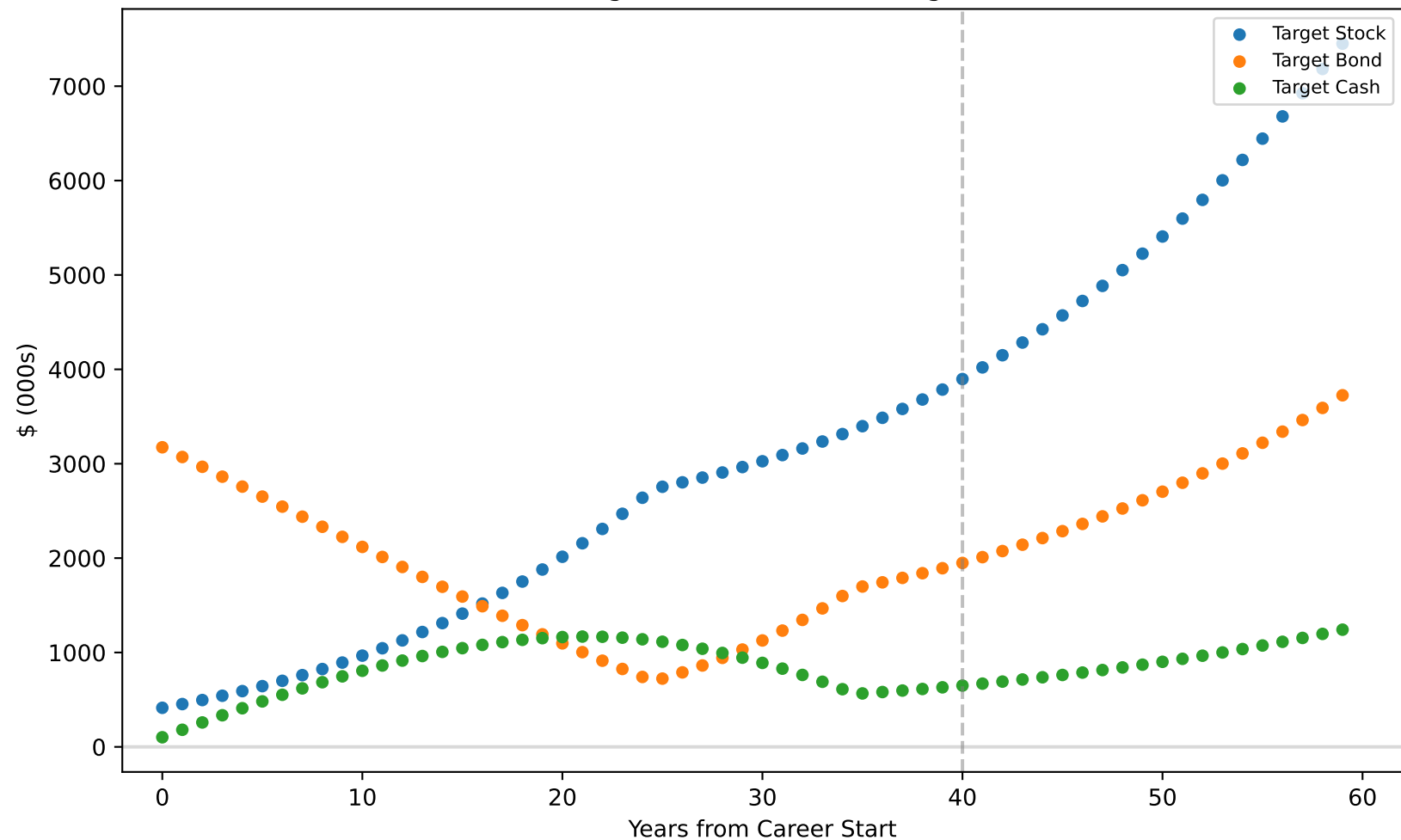
# Target Financial Portfolio Shares

Target Financial Portfolio Shares



# Target Total Wealth Holdings

## 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 ( $\phi$ ): 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.