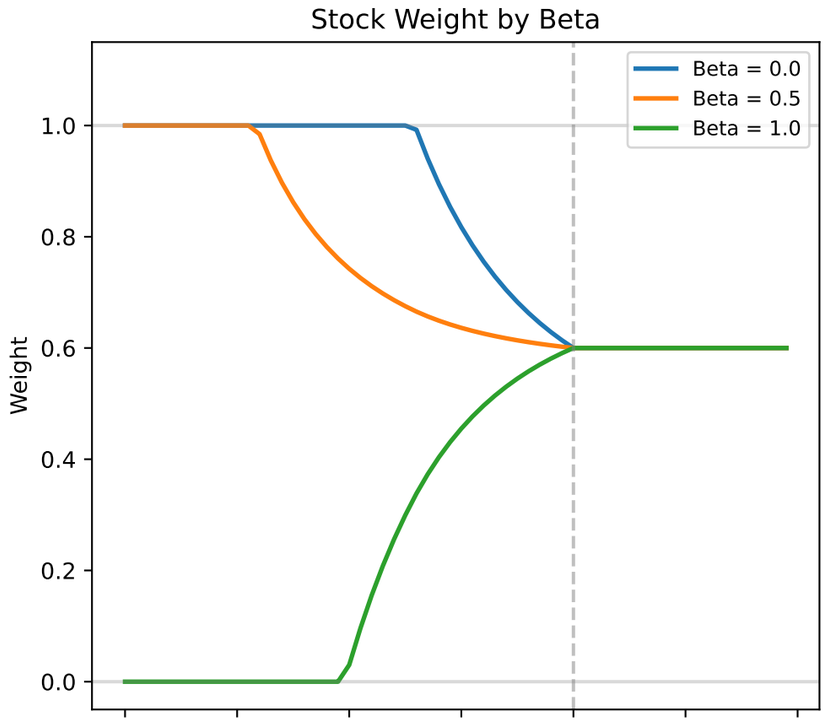
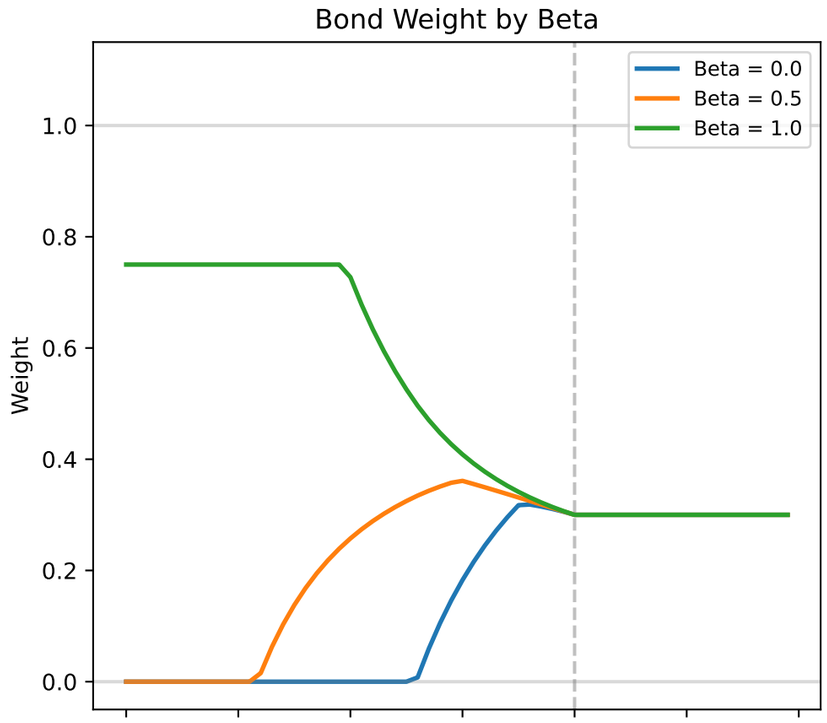
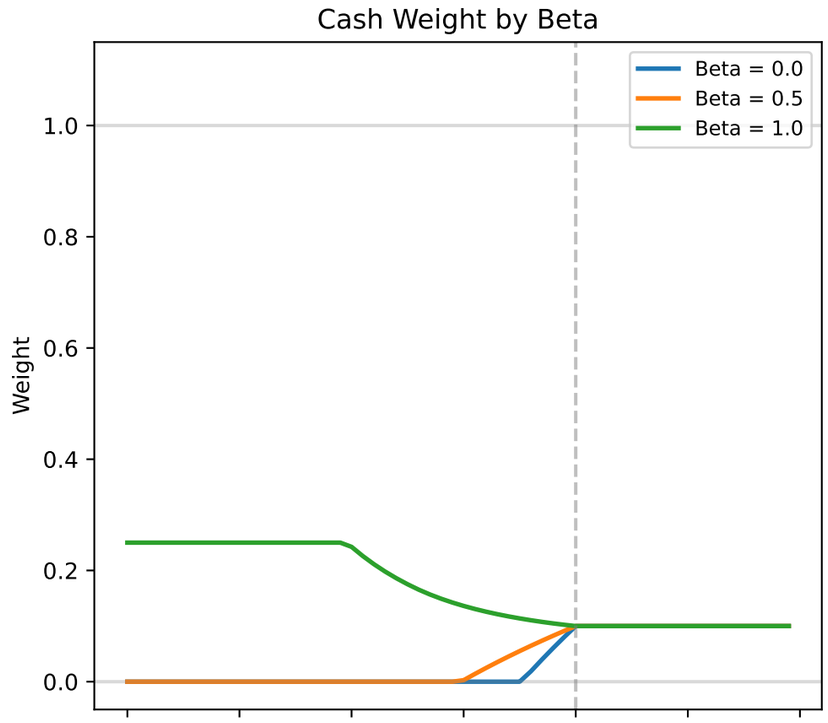
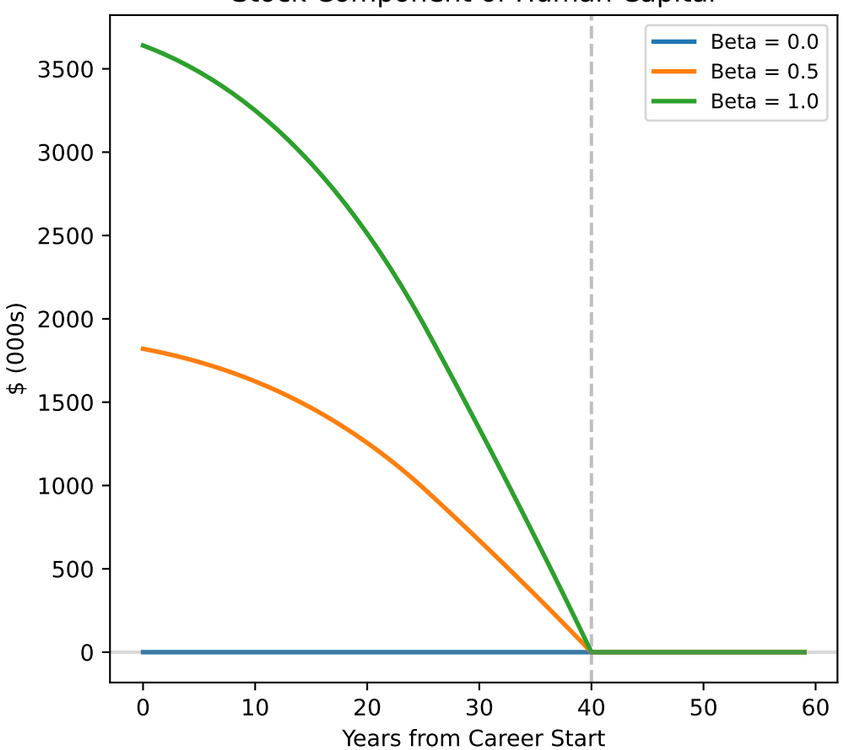
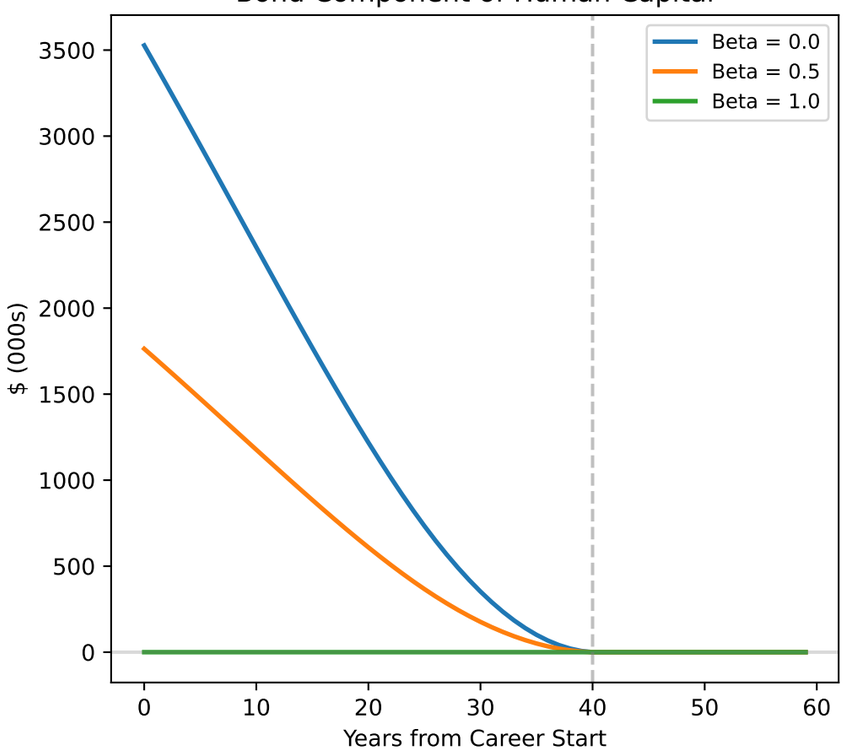
Effect of Stock Beta on Portfolio Allocation

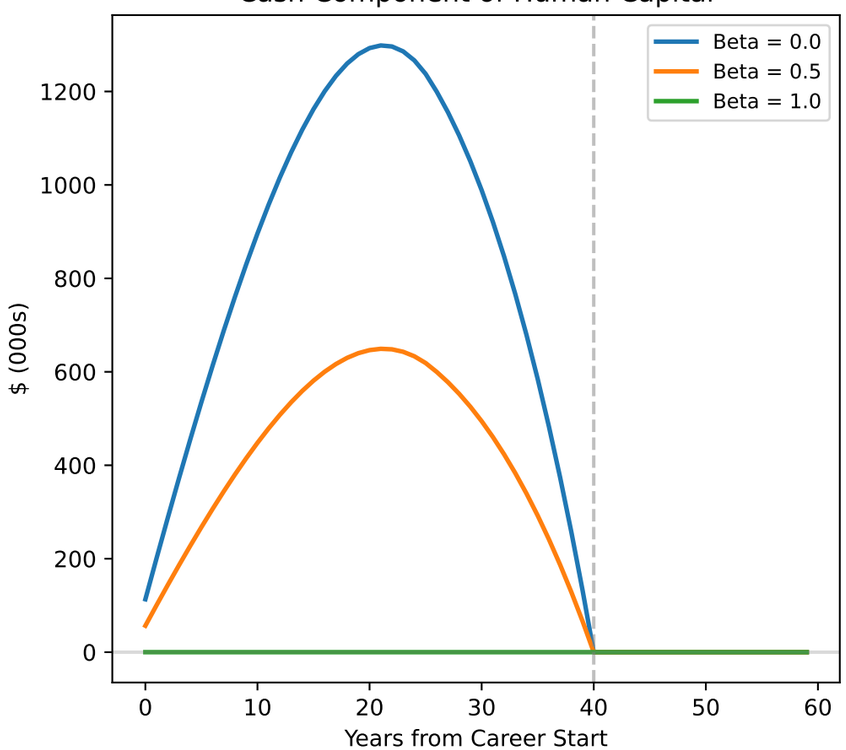




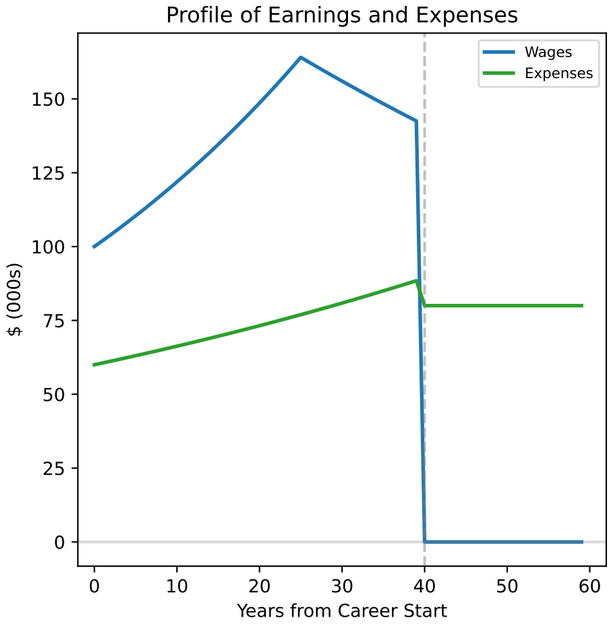


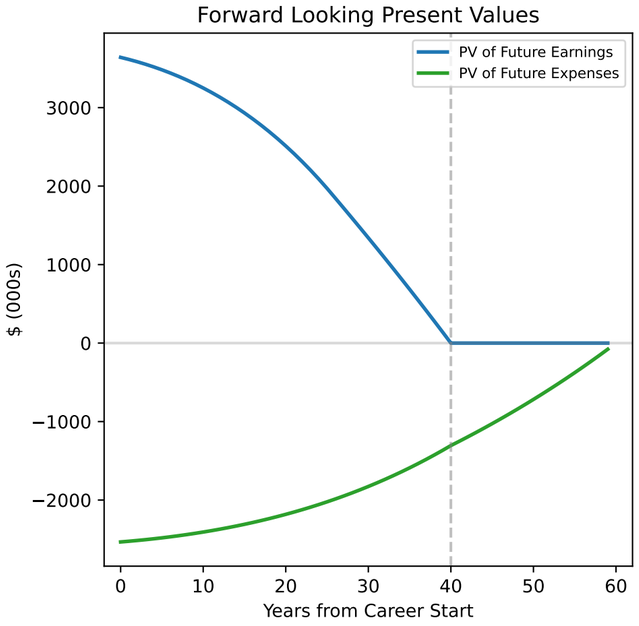


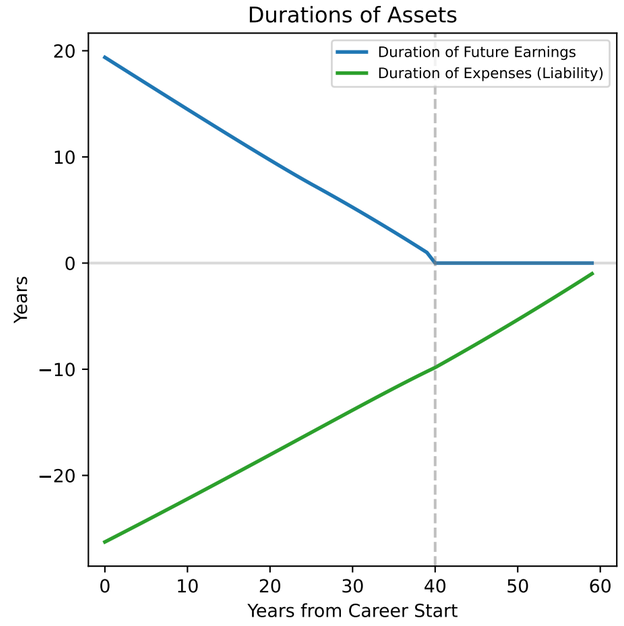


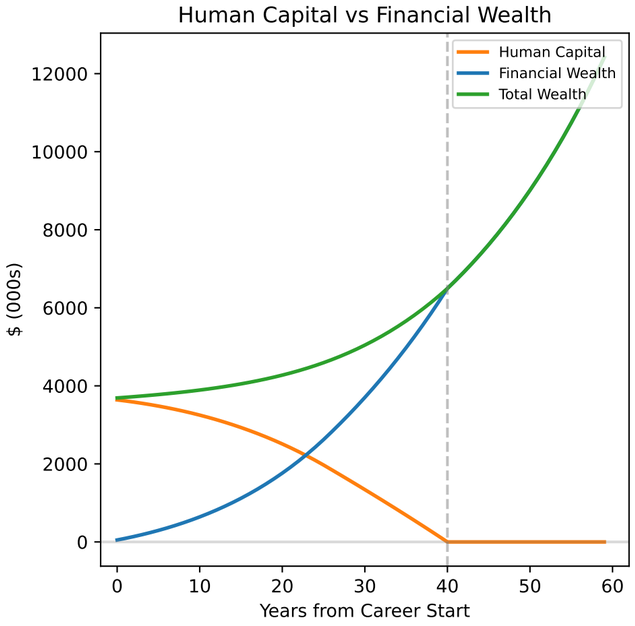


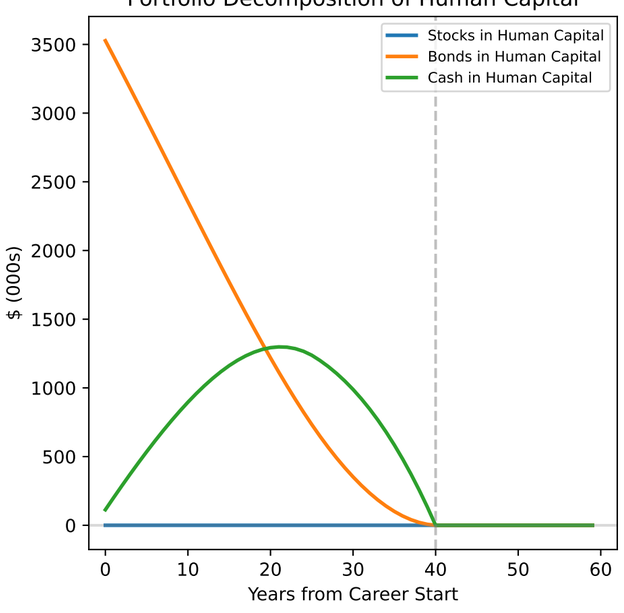
Lifecycle Investment Strategy - Beta = 0.0

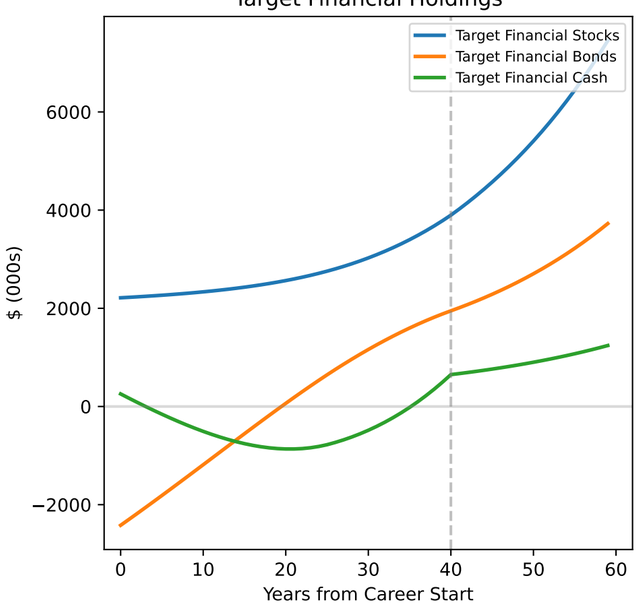


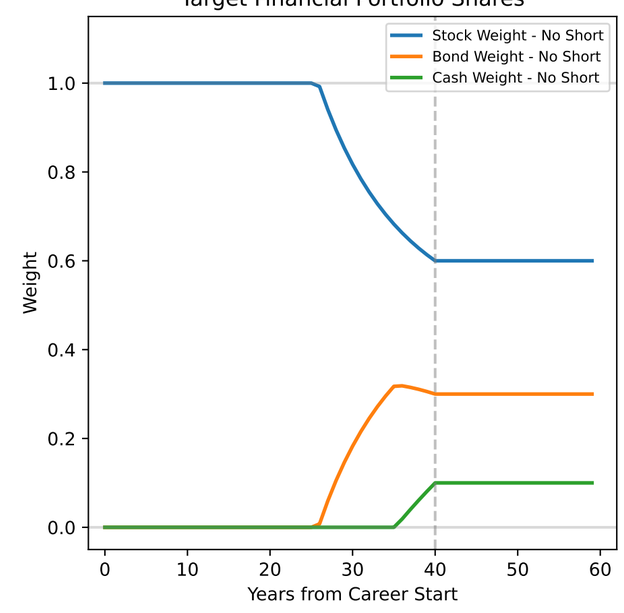


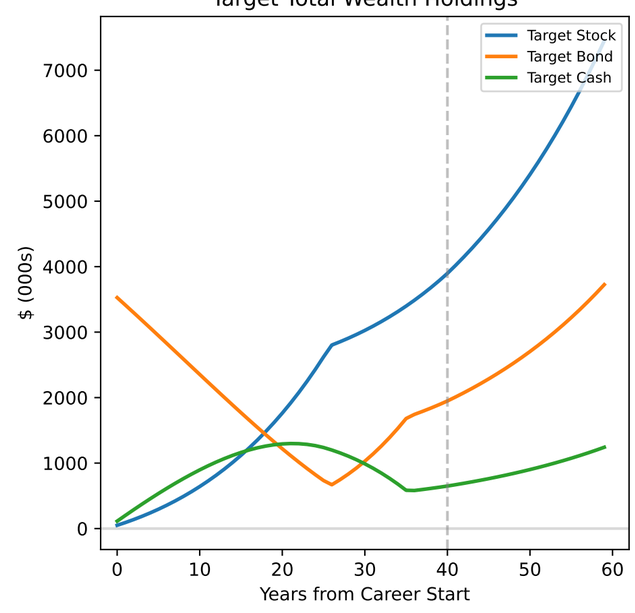












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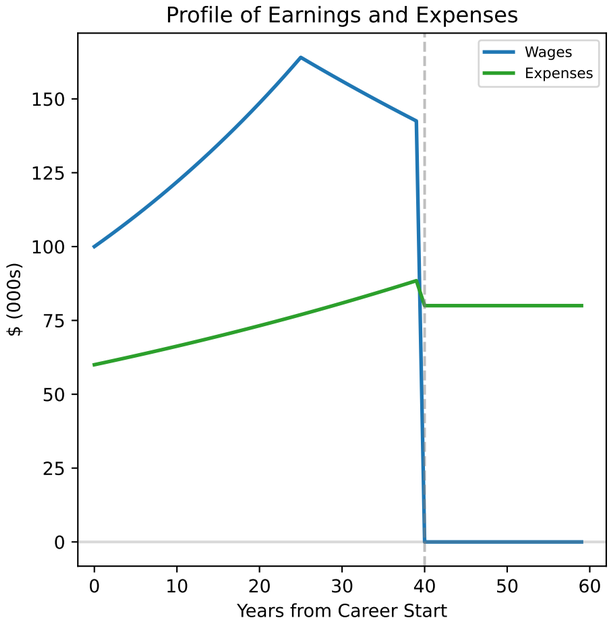
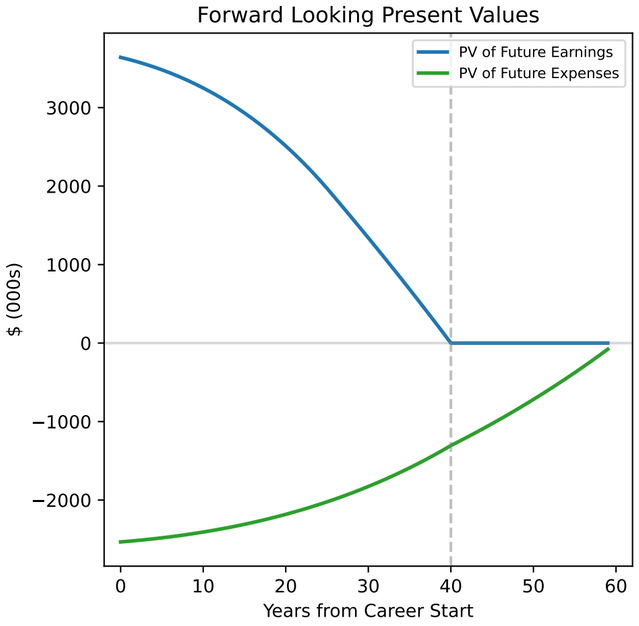
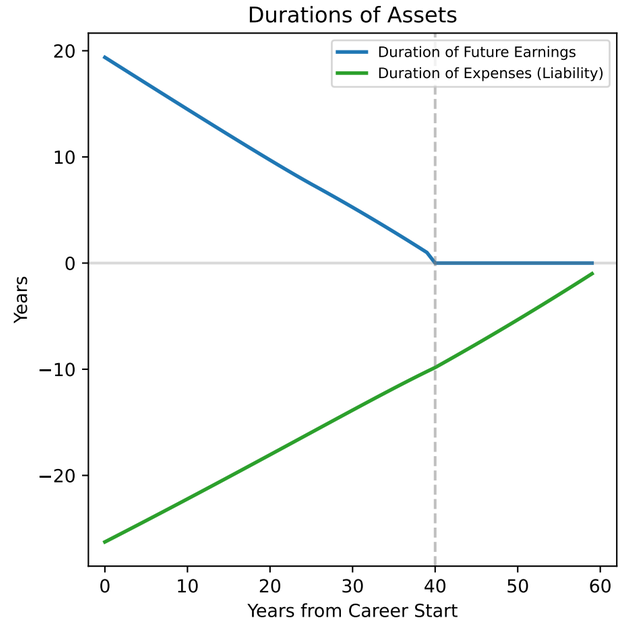
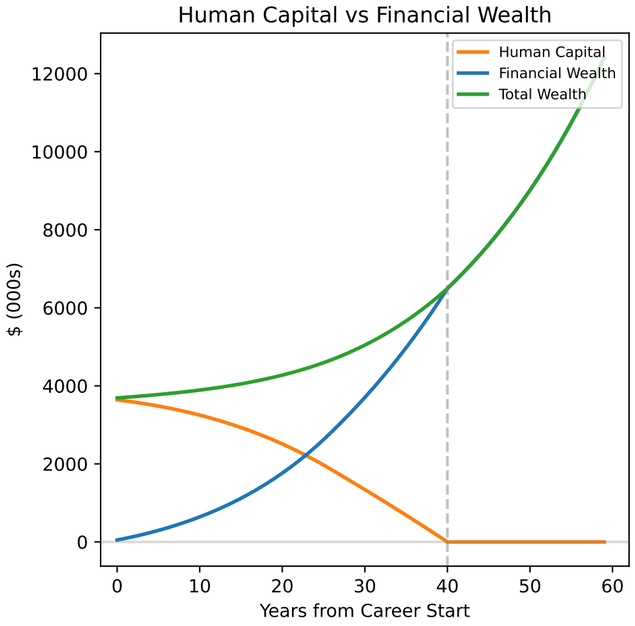
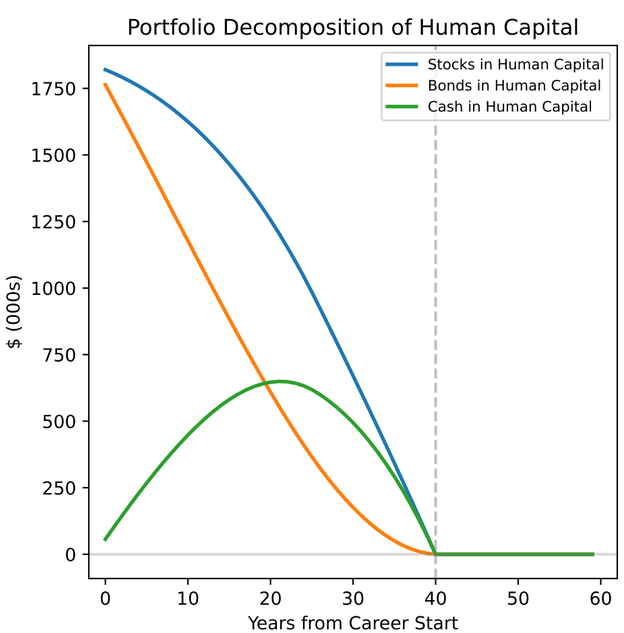
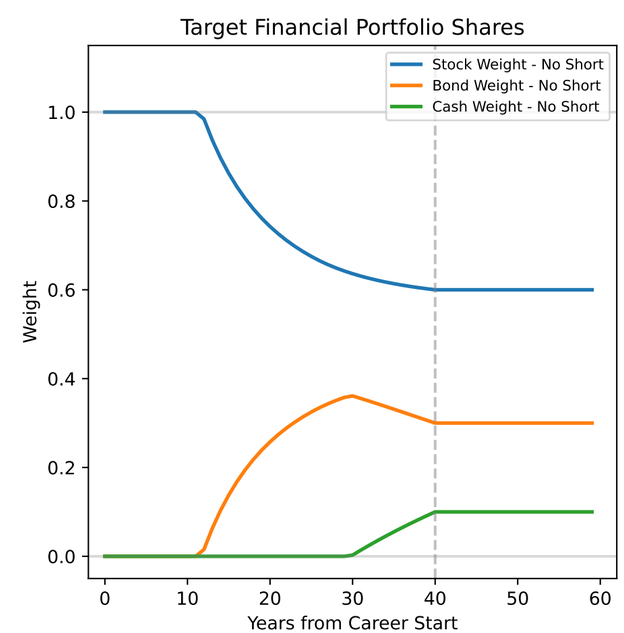




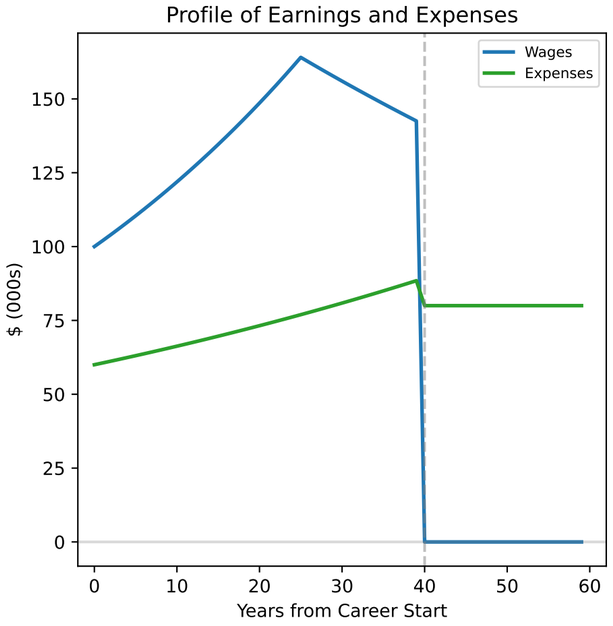


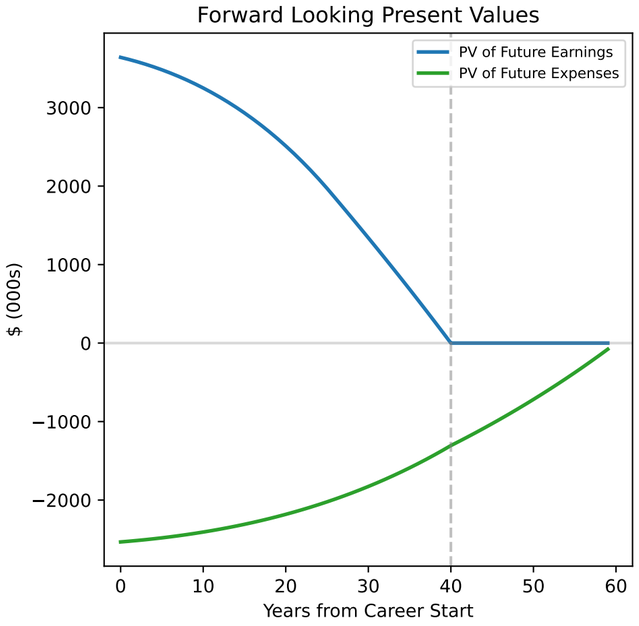


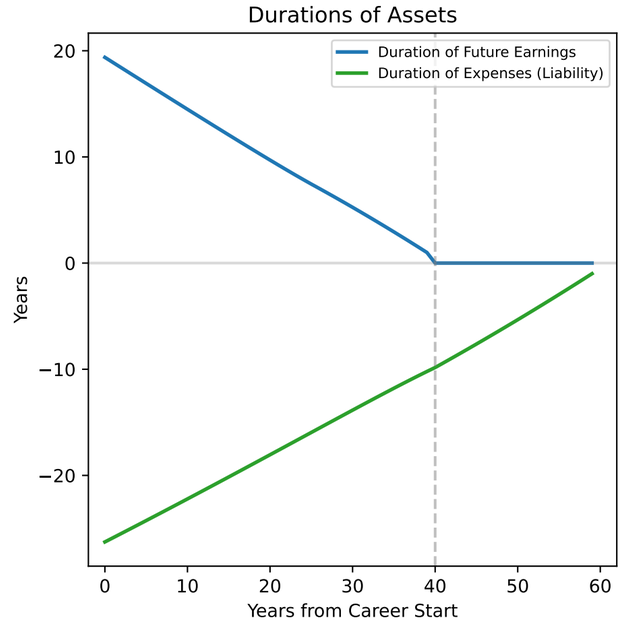


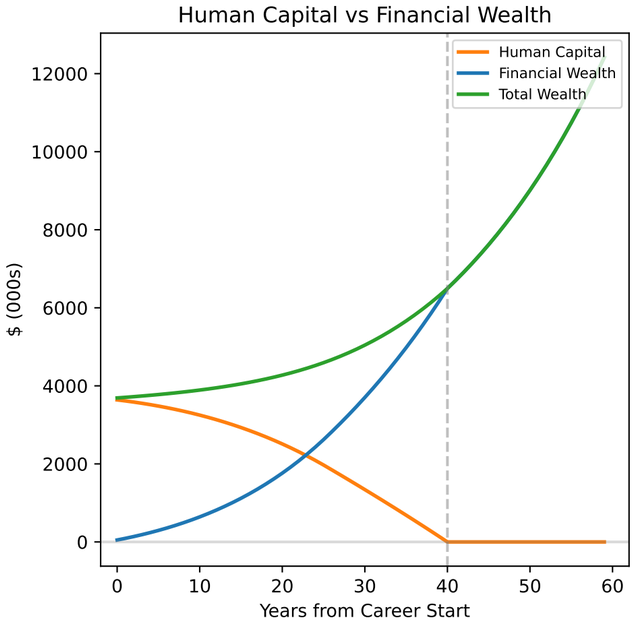


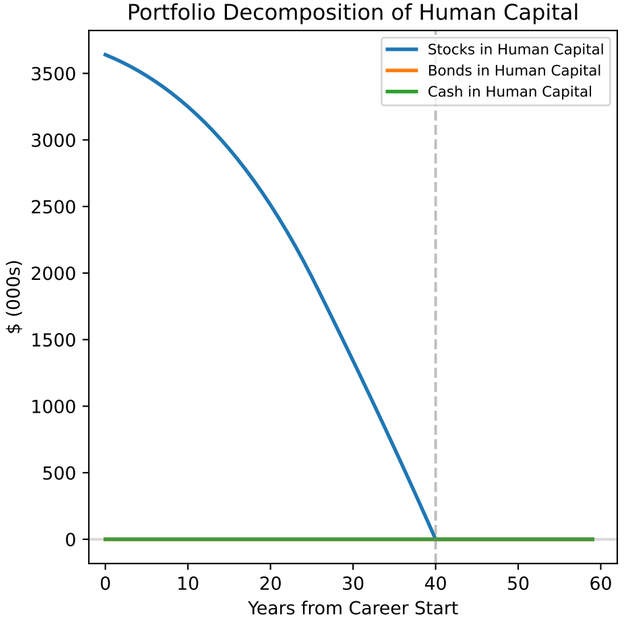
Lifecycle Investment Strategy - Beta = 1.0

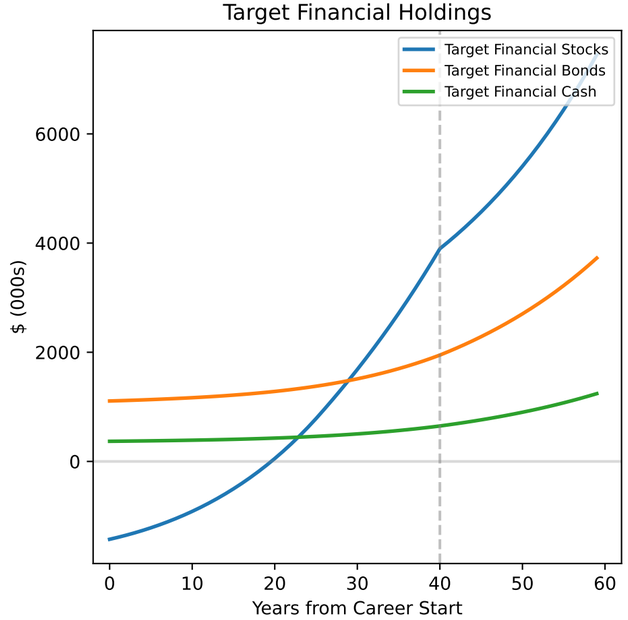


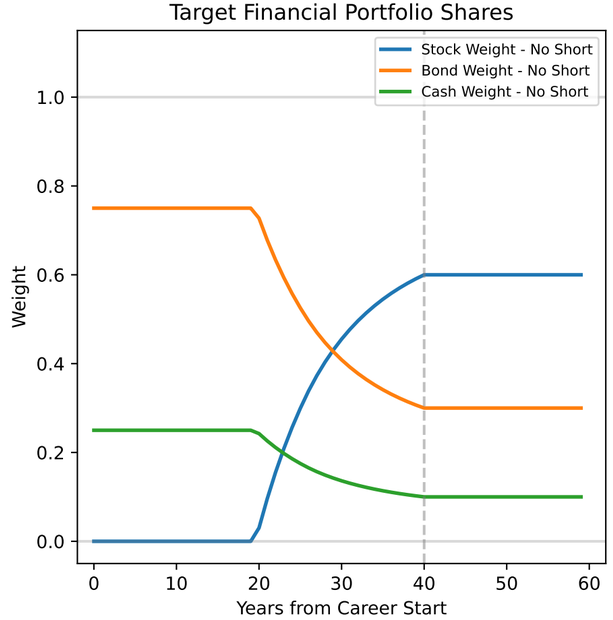












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Lifecycle Investment Strategy Parameters
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Age Parameters:
  - Career Start: 25
  - Retirement Age: 65
  - Planning Horizon: 85

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.
```