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WEALTHBALANCER

The most sophisticated long-term personal wealth planning system available to financial services firms

Product Workshop
Northfield WealthBalancer
A Use Case

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Product Workshop
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Outline

- Overview of the product workshop
  - Workshop is based on my June 2021 Newsletter article which is available at https://www.northinfo.com/Documents/998.pdf
  - Combination of slides to set the framework and demo of the application
- Benefits of WealthBalancer
- Review important theoretical concepts discussed during the demonstration
- Show how organizations can customize the WealthBalancer environment for their own business
- Introduce you to our hypothetical investor
- Application demonstration will illustrate how to construct an asset allocation for our hypothetical investor
- Feel free to contact your Northfield representative for more information or me at mike@northinfo.com

WealthBalancer Benefits

- For investors, WealthBalancer provides a personalized wealth building plan and portfolio customized to their specific needs
  - Plan is suitable to their individual risk profile
  - Takes advantage of tax efficient accounts versus taxable accounts
- For an advisor, the advisory process is automated, allowing advisors to:
  - Provide a higher level of customer service to existing clients
  - Frees up time to expand their business with new clients
- For the financial organizations:
  - Automation decreases overhead making their business more profitable
    - For organizations that provide services for retail or smaller accounts, this can make a cost center into a profit center
  - Audit trail for regulatory oversight

Different Functions for Different Organizations

- Full-service advisory firm:
  - In-person meeting with investors to understand their investment objectives, show reports, and discuss different scenarios
  - Firm could provide WealthBalancer online as a tool for investors to enter their personal data and objectives prior to meeting their advisor
- Employer with defined benefit pension:
  - Employees can customize their retirement account based on the universe of possible funds in the retirement scheme (tax advantaged) while taking into consideration outside investments (taxable)
- Robo-advisory or retail investors:
  - Investors can enter their information online to construct a custom asset allocation based on the investment organization's asset mix
  - Mutual fund company, investors can choose the best mix of their funds

Theoretical Review

- Over the course of many years, we have written and presented many times on the theoretical underpinnings of WealthBalancer. In this workshop I want to illustrate how this theory works

- There are a few theoretical topics that need to be discussed which will answer important questions about our investor:

  – What risk can the investor <u>afford</u> to take?

    ▪ Discretionary Wealth Hypothesis (DWH)

    ▪ Life Balance Sheet

  – What risk does the investor <u>want</u> to take?

    ▪ Analytical Hierarchy Process (AHP)

    ▪ In the form of a questionnaire

- Next page provides reference documents that I used while preparing for this topic

References

- "Portfolio Management For Private Taxable Wealth: Basic Concepts and Operations" April 2014, Northfield webinar by Dan diBartolomeo available at https://www.northinfo.com/documents/591.pdf

- "Making "Robo-Investing" Work: Key Requirements", February 2016 by Dan diBartolomeo, Northfield Essay available at https://www.northinfo.com/documents/688.pdf

- "Meeting Client Suitability Requirements in Robo-Investing", June 2016 by Mike Knezevich, Northfield EMEA conference available at https://www.northinfo.com/documents/706.pdf

- "Harry Markowitz & the Discretionary Wealth Hypothesis" by Jarrod Wilcox, The Journal of Portfolio Management, Spring 2003.

- Quant Methods to High Net Worth Investment, Edited by Andrew Rudd and Stephen Satchell, 2014.

  - Chapter 3 is described in "Non-Parametric Methods for Asset Allocation in Private Wealth", June 2014 by Dan diBartolomeo, Northfield Seminar available at https://www.northinfo.com/documents/599.pdf

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Discretionary Wealth Hypothesis (DWH)

- In the Spring 2003 edition of The Journal of Portfolio Management, Jarrod Wilcox wrote a paper called "Harry Markowitz & the Discretionary Wealth Hypothesis"

- Abstract:

*In his 1959 book, **Harry Markowitz showed how return mean and variance combined to determine expected long-term growth rate of capital**. But the maximization of that **growth rate seemed to fit the risk preferences of only a narrow range of aggressive investors** with no concern for shortfalls. This paper **generalizes that goal to both conservative and aggressive investors by mapping the distribution of returns on total wealth to that of returns on discretionary wealth**. It also broadens the definition of risk to include return skew and kurtosis where required, fully encompassing the concept of downside risk. The resulting change in frame of reference extends Markowitz's criterion to many practical investment decisions involving maximizing long run wealth while controlling the probability of shortfalls along the way.*

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Slide 8

Optimal Market Portfolio
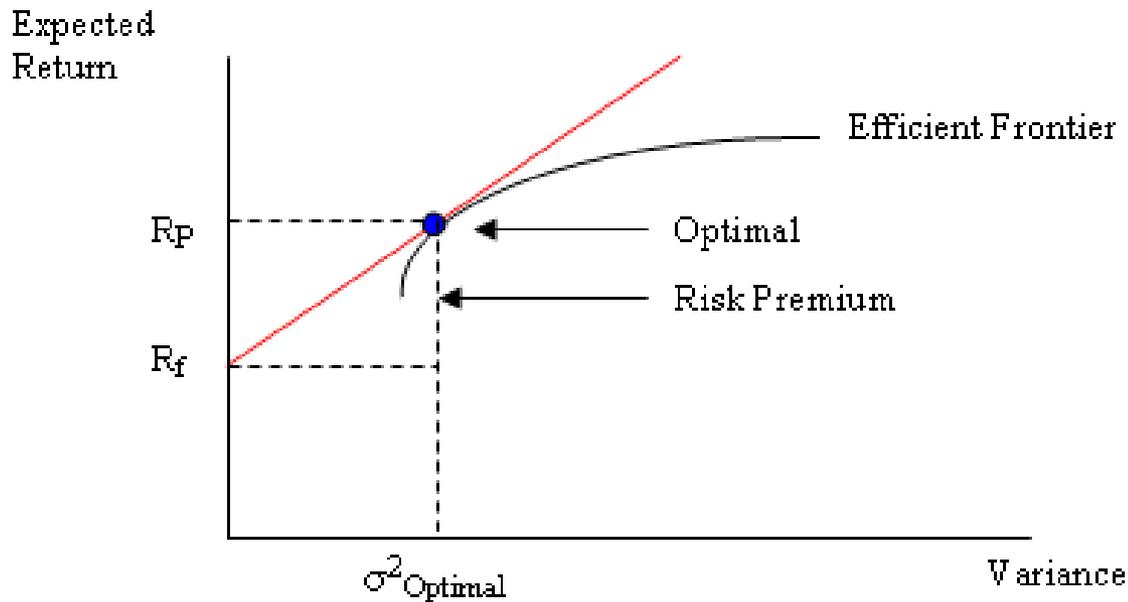
- Market portfolio is an aggregation of all investors' optimal portfolios
- Does this represent an individual's optimal portfolio? Slope/Risk Aversion?

DWH and the Life Balance Sheet

- A Live Balance Sheet is an aggregate representation of the client's discretionary wealth incorporating future expectations and obligation

- Assets include savings, current portfolio assets (both financial and non-financial), and the discounted value of expected assets

- Liabilities include current debt and the discounted future value of debts and objectives (retirement)

Investor's Discretionary Wealth =

Assets – Liabilities

Client Name

Life Balance Sheet

Assets	Amount	Liabilities	Amount
CURRENT ASSETS		**CURRENT LIABILITIES**	
Cash		Mortgage	
Fixed Assets		Other Debt	
EXPECTED ASSETS		**EXPECTED LIABILITIES**	
Inheritance		College Education	
Buyouts		Second Home	
TOTALS		**TOTALS**	

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DWH and Utility

- The Life Balance Sheet determines the discretionary wealth of the investor, from which we can estimate the individualized risk aversion parameter λ^* :

$$\lambda^* = A / (2 * (A-L))$$

  - $\lambda^* =$ optimal value of risk aversion
  - A = the total assets on the life balance sheet
  - L = the total liabilities on the life balance sheet

- Fits within the Mean-Variance optimization, but is specific to the individual investor ability to afford risk
- Problem: DWH is purely a financial solution. Just because someone can afford to take risk does not mean they want to (i.e. wealth preservation)

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Analytical Hierarchy Process (AHP)

- AHP is a structured technique for organizing and analyzing complex decisions, based on mathematics and psychology. It was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since then. –Wikipedia

- Northfield has pioneered the use of AHP in wealth management to measure an investor's preference for risk

- Why its important?
  - Assume two investors with the same discretionary wealth
  - Both investors are financially capable of taking the same risk
  - But what if their preference for risk is different?

- **AHP takes qualitative information using a questionnaire about the investor's risk preference and then mathematically transforms those preferences into an asset allocation**

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Differentiating Risk Capacity to Preference

- We can measure the investor's financial capacity to afford risk using DWH and the investor's preference for risk using AHP

- How do we weight each of these inputs?
  - Weights can be dependent on any criteria
    - Let's take age for example:
      - Older investors may be wealthier which means they can afford to take more risk according to DWH
      - However, investors closer to retirement prefer less risk.
      - In this situation we could apply a greater weight to AHP.
  - Weights could also be dependent on the investable universe and the objectives of the investor or investment organization
    - Northfield works with the financial organization to formulate the specific weights best suitable for their situation

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Financial Organization Inputs

Each organization can customize their environment:

- Define investable universe:
  - Generic asset classes for an asset allocation
  - Financial products such as mutual funds and/or ETFs
  - Funds available to pensioners
- Questions and allowable responses for AHP questionnaire
  - Behavioral Economist to create a complex questionnaire
- Asset class assumptions such as asset returns and tax rates
- Savings and inflation rates
- Discount rates for likelihood of event occurrences
- Investor's life expectancy – actuarial questionnaire
- User entitlements as defined by user type (i.e. client, advisor, research)

Hypothetical Investor

- Background information:
  - Linda Summer is a 59-year-old divorcee.
  - Her current salary is just over $216,000 per annum.
  - Linda owns her home and an investment property.
  - She saves 5% of her salary.
  - Her expected expiration date is in 2052 at the age of 90.
- Objectives:
  - Prior to retirement, perhaps in 2025, she would like to buy a vacation home in Italy. She plans to spend up to $1M.
  - She is very adamant that she will retire in 2030 at the age 68 drawing an annual income of $100,000.
  - Education is important to Linda. She has a 6-year-old grandson for whom she would like to help pay college expenses expected to start in 2033.

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