“Failure to Prepare is Preparing to Fail.” - John Wooden

SAN JOSE STATE UNIVERSITY
Fall 2017

Business 172B – Portfolio Analysis

Instructor
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Class Days/Hours/Room
MW 0900-1015 BBC 108

Final Exam
Monday, December 18; 0715-0930

Office Hours
MW 1200-1330 and 1500-1700 (BT 850D)
And by appointment (BT 850D)

Required Text
  Chapters 1-21 will be covered on the Mid-Semester Exam; Chapters 22-28 and Appendices A, B, and C will be covered on the Final Exam.

Related Readings
- The Index Card: Why Personal Finance Doesn’t Have To Be Complicated, Helaine Olen and Harold Pollack, Portfolio/Penguin, 2016. This book has a wider preview than this 172B course. But, to increase their financial literacy, everyone should read this book by the time they are 25.

Course Objective
This course considers the development of overall investment portfolios composed of asset classes and specific managed portfolios (that is, considers which asset classes and specific managed portfolios are included in the portfolio and in what proportions) and the management of these portfolios to satisfy the investment requirements and preferences of investors, and changes in market levels. Portfolios which are aligned with the risk tolerances of the investors are developed. The emphasis in this course is on the individual investor. BUS1 172B considers portfolios of securities and builds on BUS172A which considers individual securities.
Mutual funds, exchange traded funds, hedge funds and other investment vehicles are considered. Retirement (tax advantaged) portfolios are considered in addition to investment (taxable) portfolios. Both traditional finance (which is quantitative and analytical) and behavioral finance (which is psychological and emotional) methodologies are considered. The course has an applied orientation – you should be capable individual investors by the end of the course, that is engage in DIY (do it yourself) investing. Overall, the course is intended to provide life skills. You should use these practices for the rest of your life.

In general, the objectives for the course are to:

1. Understand the theory and techniques of portfolio management (there is a significant amount of theory);
2. Be able to apply the theory and techniques to the actual investment world and the current financial literature - this objective is pragmatic;
3. Be able to develop and manage your own investment portfolio.

Among the sub-objectives of the course are to:

1. Be able to read and understand the financial press (specifically the Wall Street Journal).
2. Avoid being fooled or “picked off” by those trying to separate you from your funds.
3. As a “stretch objective,” the course develops a degree of wisdom about the financial markets and investments. Be aware of and have respect for wisdom.

An essential characteristic of good investors is humility. Although Charles Darwin was a biologist not an investor, he famously said, “Ignorance more frequently begets confidence than does knowledge.” In investments, return derives from risk and risk should be approached with humility. The only appropriate response to risk is humility.

Course Comments:
The course does not use a text. Rather it uses class “handouts” which are distributed each class and are the basis for the lectures. Thus, to be successful in the course, you must:

1. Attend each class. (The answer to the question, “how do I do well in the class?” is “show up.”) You have to show up to get the handouts.
2. Study the class handouts – this should be done regularly, not just before the examination.

The Ellis book, *Winning the Loser’s Game*, Seventh Edition, is meant to provide wisdom, not techniques, and is based on the following quote from the appendix (p. XVII): “The core principles of successful investing never change – and never will.” Among the key chapters in “Ellis” are:
My rationale for using class notes rather than a text is based on two reasons: 
1. Being current; 
2. Being pragmatic. 

First, while fundamental investment principles are stationary, investment events and practices change continuously. In this sense, due to the length of the investment publication process, in investments textbooks are obsolete by the time they become available. My handouts change every semester. 

Second, the basis for investment practice is investment theory. While the author has studied, taught and written about investment theory, the “tilt” in this course is toward practice. My comment in this course is that there is nothing in it that I have not practiced in my past and current investment jobs.

**Prerequisites:**
Business 172A (Security Investments) is a prerequisite for this course. Students are also expected to have a good working knowledge of algebra, statistics and accounting.

**Professional Background:**
Dr. Jones was the Chief Investment Officer and Executive Vice President of the Guardian Life Insurance in New York City for thirteen years (1991 – 2004). In this capacity, he was responsible for up to approximately $30 billion dollars of stocks, bonds, and real estate for the Guardian Insurance Company general account, the Guardian pension fund, and several mutual funds (He was president of the Guardian Park Avenue Portfolio, a 40 Act family of mutual funds). Currently, Dr. Jones is also Co-Chairman of the Investment Committee of Private Ocean Wealth Management, a high net worth financial advisor.

**Requirements**
Students are required to:
- Understand the material covered in the class lectures.
  - An outline of these course topics is provided as follows. However, the sequence and coverage of these topics is flexible and varies from semester to semester.
- Understand the materials in the class notes (which are provided in class).
- Read the entire book, Winning the Loser’s Game by Charles D. Ellis.
  - Chapters 1-21 will be covered on the Mid-Semester Examination. Chapters 21-26 will be covered on the Final Examination.
- Understand the material in other readings (Tidbits), which are distributed in class.
- It will also be beneficial to selectively read The Wall Street Journal (WSJ) on a daily basis.
- Each class will be divided into three parts: “Administration,” “Tidbits/Lessons”, and “Lecture.”

Grading:

- There will be one mid-semester examination and one final examination. The final exam is comprehensive. Both exams use a Scantron (Form NO. 882-E). Students are responsible for their own Scantrons.
- The exams will be entirely based on class lectures, which are based on material distributed in class; Tidbits, which are also distributed in class; and also the Ellis book.
- There will also be a project. The major project for the course, the “Investment Policy Statement,” is due on the last day of class. A description of the project is attached.
- Practice problems and topics covered are provided before the exams - they will neither be collected nor graded.
- The weights for the final grade are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Semester Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Investment Policy Statement (Project)</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>45%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
A general outline of the topics covered as follows:

**Course Outline**

A. Introduction  
B. History  
C. Securities  
   - Money Markets  
   - Bonds  
   - Stocks  
   - REITs, others  
D. Index Construction  
E. Taxation  
F. Mutual Funds/ETFs  
G. Risk and Return  
H. Investor’s Risk/Return Tradeoff  
   - Risk Tolerance  
I. Efficient Frontier (EF)  
J. Extension of EF to Risk Free Rate  
K. Capital Market Line (CML)  
L. Background for CAPM  
M. CAPM  
N. Efficient Market Hypothesis (EMH)  
O. Asset Location: Investment and Retirement Portfolios  
P. Rebalancing – Asset Reallocation  
Q. Active Management  
R. Performance Measurement  
S. “Last Class”
I. Tidbits
   a. Behavioral Finance
   b. Fear and Greed
   c. TIPS
   d. VIX
   e. Robot investors, et. al.
   f. Financial Literacy
   g. Target Retirement Funds
   h. Rule of 72

II. Data

III. Exam: Questions and Prep
Course Topics*

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TOPICS</th>
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<tbody>
<tr>
<td>1</td>
<td>“Class One”</td>
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<tr>
<td>2</td>
<td>Risk(second moment)/Return (Variance) (first moment)/Correlations (covariances)/Diversification</td>
</tr>
<tr>
<td>3</td>
<td>Skewness (third moment) and (fourth movement)</td>
</tr>
<tr>
<td>4</td>
<td>History</td>
</tr>
<tr>
<td>5</td>
<td>Security Indexes</td>
</tr>
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<td>6</td>
<td>Investment Taxation</td>
</tr>
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<td>7</td>
<td>Money Market Instruments</td>
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<td>8</td>
<td>Common Stock</td>
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<tr>
<td>9</td>
<td>Bonds</td>
</tr>
<tr>
<td>10</td>
<td>Efficient Frontiers (EF); Mean/Variance Optimization (MVO) and Modern Portfolio (MPT) (Asset Allocation)</td>
</tr>
<tr>
<td>11</td>
<td>An Investor’s Risk/Return Trade-off</td>
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<td>12</td>
<td>The Combination of the Investor and the Markets</td>
</tr>
<tr>
<td>13</td>
<td>Risk Tolerance Tests</td>
</tr>
<tr>
<td>14</td>
<td>The Nature of Risk Tolerance: Quantitative and Qualitative</td>
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<tr>
<td>15</td>
<td>Recommended Asset Allocations</td>
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<tr>
<td>16</td>
<td>Extension of Efficient Frontier to Risk Free Assets: The Capital Market Line (CML)</td>
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<tr>
<td>17</td>
<td>The Separation Theorem</td>
</tr>
<tr>
<td>18</td>
<td>Background for CAPM: Risk Analysis</td>
</tr>
<tr>
<td>19</td>
<td>Capital Asset Pricing Model (CAPM)</td>
</tr>
<tr>
<td>20</td>
<td>Alpha</td>
</tr>
<tr>
<td>21</td>
<td>Beta</td>
</tr>
<tr>
<td>22</td>
<td>Synthesis of CAPM</td>
</tr>
</tbody>
</table>
| 23     | Morningstar Mutual Fund Summaries (Morningstar Fund Investor) and ETF Summaries (Morningstar ETF Investor)  
  - Morningstar “1-pagers” and Morningstar “1-liners” |
| 24     | Morningstar ETF Fund Summaries, Morningstar ETF Investor Summaries |
| 25     | Risk Tolerance Tests |
| 26 | Efficient Market Hypothesis (EMH) |
| 27 | Investment Strategies (Active/Passive) |
| 28 | Active Management |
| 29 | Davis Fund Interview |
| 30 | Investment/Retirement Vehicles (Asset Location) |
| 31 | Investment Vehicles: MF/CEF/ETF |
| 32 | Retirement Vehicles: IRA/Roth IRA/ 401 (k)/ Roth 401 (k) |
| 33 | Annuities: Fixed and Variable |
| 34 | Other Investment Vehicles: SMAs, Hedge Funds, Private Equity, Venture Capital, etc. |
| 35 | Investment Strategies II/ Investment Policy-Role of Liabilities |
| 36 | Investment Policy Statement (Charles Ellis, Ch. 13) |
| 37 | Asset Reallocation (Portfolio Rebalancing) : Tactical/Dynamic Asset Allocation |
| 38 | Portfolio Evaluation (Attribution Analysis) |
| 39 | International Investments |
| 40 | Behavioral Finance |
| 41 | Daniel Kahneman Lecture (Behavioral Finance) |
| 42 | The Sales Process: Registered Representatives and Investment Advisors |
| 43 | “Parting Shots” |

* Variations in this schedule occur.

Note: The Presentation Handouts are subject to continual change-they are a “permanent work in progress.”
It is November 2027. You have worked hard for the last ten years and have been successful. To celebrate your hard work and success, you have decided to “take a year off” and drink wine in the south of France, ski in Argentina, scuba dive in Belize, or go to any other place in the world you would like. You do not want to be bothered with managing your considerable investment portfolio immediately prior to and during this year. You have selected a financial advisor whom you believe is competent and ethical. But you do not want to give this advisor “carte blanche” with your investments. Rather, since you are an intelligent investor as a result of Bus. 172A and 172B at San Jose State University, you want to provide this advisor with explicit instructions on how they should manage your investments during this period.

These specific instructions represent an IPS (Investment Policy Statement). This IPS should be based on your individual characteristics, both personal and financial, and your understanding of the financial markets and how the various asset classes relate to your investment requirements. This is a good opportunity to improve, not just maintain, your portfolio. But remember, you don’t want to harm your entire portfolio during this year. The various aspects of your IPS are summarized below.

The attached figures provide an example, not a required submission.
IPS Outline

An overview of the IPS in terms of items in the project description is as follows:

1. Executive Summary – Appendix A (p. 13)
2. Macro Asset Allocation (and Overview)
   - Figure 2 (p. 19)
3. Micro Asset Allocation
   - Figure 3 (p. 20)
4. Specific Funds
   - Figure 4 (P. 21)
5. MF/ETF Data (p. 23)
6. IPS Executive Summary
   - Figure 6 (P. 24)
Investment Policy Statement (IPS) Outline

Introduction:

Provide an executive summary to your financial advisor describing the nature their assignment. See Appendix A for the topics you wish treated. See Appendix B for the desired asset classes you wish to be included.

Investment Policy Statement

Provide the following background information on your financial and personal statements as of November 2027.

I. Individual Characteristics (as of November 2027)
   A. Financial

   Provide a balance sheet (B/S) of your financial assets (both your investment and retirement financial assets), your real assets; and your liabilities. This balance sheet represents a projection of your balance sheet as of May 2027. Be optimistic, but realistic in your projections. The allocation of assets in this IPS should apply to the investment and retirement financial assets in this B/S. To repeat, specify the amount and composition of your investment and retirement assets as of November 2027.

   In addition, to help you determine the accumulation of your assets, provide a projected income statement (I/S) at the end of this period. What is your overall income and what are your sources of income at this time? What is your discretionary income? What fraction of your discretionary income do you plan to save (your savings rate)? It is these savings which will permit your portfolios to grow (in addition to the organic growth in the portfolio).

   Fig. 1 provides examples of B/S and I/S.

   Figs. 2, 3 and 4 provide an example of an IPS. The numbers in Fig 2 represent the aggregate percent of Total Investment and/or Retirement Assets represented by this asset type. The numbers in Fig. 2 are aggregates of the numbers in Figs. 3 and 4. Thus, the bottom line (total) for each of Total Investment and Retirement Account should be 100%. An example at the detailed portfolio is provided in Figs. 3 and 4.
Provide a brief executive summary as shown below.

I. Describe your personal investment philosophy, including the following:
   a. Risk tolerance (1-10)/Overall risk
   b. Expenses
   c. Diversification
   d. Active/Passive
   e. Retirement/Investment portfolios
   f. Turnover: Tactical/Strategic portfolios

II. Describe how your overall investment portfolio and how it is consistent with your personal investment philosophy.
Appendix B

Portfolio*

- Stocks
  - U.S.
  - International
    - Developed Countries
    - Emerging Countries

- Bonds
  - U.S.
    - Taxable (Retirement Accounts)
    - Tax Exempt (Municipals) (Investment Account)

- Other
  - Real Estate (REITs)
  - TIPS
  - Commodities
  - Liquid Alts**
  - Other

* These asset classes may be provided in mutual funds (MFs) and/or exchange traded funds (ETFs).
** Hedge funds strategies in a mutual fund structure (which are liquid), often using long-short strategies and use derivatives.
Figure 1
Financial Statements

Income Statement (I/S)

Gross Income (Assume all investment income is reinvested).

After-Tax Income (Use 35% Income Tax Rate)

Expenditures

Savings

Savings Rate (equals savings divided by after-tax income)

Annual Contributions to Savings Accounts

• Retirement Accounts - maximum amounts which can be invested.
  o $18,000/yr. for 401(k)
  o $5,500/yr. for IRA

• Investment Account - No limit on the amount which can be invested:
  o “Serious Money” (Large)
    ▪ Mutual Funds/ETFs, etc.
  o Hobby Account (Small)
    ▪ Stocks, Options, Lottery Tickets, etc.

Balance Sheet (B/S)

A. Financial Assets

a. Investment Account (“Non-qualified”; “Taxable”) **
  i. Cash/Emergency Funds
  ii. Short Term Assets
  iii. Long Term Assets
  iv. Total Assets

b. Retirement Account (“Qualified;” “Tax Advantaged”) **
  i. 401(k)
  ii. IRA
  iii. Other (Profit Sharing/ SEPs, etc.)
  iv. Total
B. **Real Assets**
   a. House: Primary Residence
   b. Houses: Other
      i. Vacation
      ii. Rental
   c. Automobiles
   d. Other Toys (Boats, etc.)

C. **Liabilities**
   a. **Loans on Assets** (Collateralized Debt)
      i. Mortgage(s)
      ii. Car Loans
      iii. Loans on Other Toys
   b. **Uncollateralized Debt**
      i. Credit Cards
      ii. Other

D. **Equity (Net Worth) (E=A-L)**
   **It is the total of the Investment Account and the Retirement Account which will be allocated in this Investment Policy Statement.**
Investment Instructions

A. Asset Allocation
   a. Provide the following asset allocations for each of your Retirement Portfolio (Qualified) and your Investment Portfolio (Non-Qualified):
      i. **Macro Asset Allocation** (total of Investment and Retirement Portfolios):
         Stocks/Bonds / Cash/ Alternative Assets (e.g. 60%/30%/10%/0%) (see Fig.2)
      ii. **Micro Asset Allocation**: Subcategories of Stocks/Bonds/Cash/Alternative Assets (see Fig. 3)
      iii. **Other** (See Fig. 4)
         - Mix of Active vs. Passive Investments
         - Alternative Assets: Hedge Funds, Private Equity, Commercial Real Estate
         - Expense ratio for each investment vehicle.
   c. Figs. 2, 3 and 4 provide an example of an IPS. The numbers in Fig. 2 represent the total of Investments and/or Retirement Assets represented by each asset class. Thus, the bottom line (total) for each of Total Investment and Retirement Assets should be the sum across all asset classes. More detailed examples are provided in Figs. 3 and 4.
   d. For Figs. 3 and 4, specific, individual investment vehicles (mutual funds and, ETFs.) must be specified. Their asset class, whether they are active or passive, and expense ratios must also be specified. Most of this information is provided in class handouts. This section is the core of the IPS.

B. General Topics
   a. For the asset classes above specify:
      i. Use of Active vs. Passive Strategies (Active, Passive and Core/Satellite Strategies)
      ii. Use of specific investment vehicles for each asset class.
- Individual Securities (do not use Individual Securities)/ Mutual Funds / ETFs/ Separately Managed Accounts

iii. Expense ratios

C. Changes in Asset Allocation
   a. Specify the conditions under which you would want your portfolio rebalanced:
      i. Strategic: Change in long term macro asset allocation.
      ii. Tactical: Short term changes around initial policy portfolio due to market changes.

D. Comments
   a. Provide 2-3 sentences on why you chose each Mutual Fund and ETF.
   b. Provide a table with the key data for the MFs and ETFs used, as shown in Fig. 5
   c. Remember that for bonds:
      i. Municipals (also called Tax Exempts (TEs)) belong in the Investment Account.
      ii. Taxable Bonds belong in the Retirement Account.
   d. Comment on the degree of “Home Country Bias,” if any, in your holistic stock portfolio; provide a table. Why have you adopted this policy?
   e. Comment on the overall level of expenses of your portfolio (the aggregate expense ratio).

E. The Big Picture
   a. Fig. 6 provides the “big picture” of your I.P.S., that is an IPS Executive Summary; your submission should reflect this big picture.

Include Figs. 1 – 6 in your submission.
A. Macro Asset Allocation

<table>
<thead>
<tr>
<th></th>
<th>Total (Holistic Portfolio)</th>
<th>Investment Portfolio (80%)</th>
<th>Retirement Portfolio (20%)</th>
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<tr>
<td></td>
<td>Total</td>
<td>Passive</td>
<td>Active</td>
</tr>
<tr>
<td>Stocks</td>
<td>65%</td>
<td>45%</td>
<td>20%</td>
</tr>
<tr>
<td>Bonds</td>
<td>23%</td>
<td>15%</td>
<td>8%</td>
</tr>
<tr>
<td>Cash</td>
<td>2%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>5%</td>
<td>5%</td>
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<tr>
<td>Total</td>
<td>100%</td>
<td>67%</td>
<td>33%</td>
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(1) The Numbers in this table are for illustration only
(2) The % are relative to the whole portfolio.

B. Overview

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<th>Total</th>
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<th>Retirement</th>
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<td>Passive</td>
<td>67%</td>
<td>60%</td>
<td>7%</td>
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<td>Active</td>
<td>33%</td>
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<td>Total</td>
<td>100%</td>
<td>80%</td>
<td>20%</td>
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</table>
Figure 3
Micro Asset Allocation*

<table>
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<th>Total (Holistic)</th>
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<tr>
<td></td>
<td>Passive</td>
<td>Active</td>
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</table>

I. Stocks
   A. U.S.
      - Morningstar 3x3 Cell
      - Sector
   B. International
      - Developed Country
      - Emerging Market

II. Bonds
   A. U.S.
      - Investment Grade
      - High Yield Bonds
      - International
      - Tax Exempt
   B. International

III. Cash (Money Market Mutual Funds, T-Bills, CDs, etc.)

IV. Other

V. Inflation Protected Assets
   - TIPS
   - Commodities
   - Other

VI. Alternative Assets
   - Hedge Funds
   - Private Equity
   - Commercial Real Estate

* This figure does not specify mutual funds or ETFs; your IPS should specify MFs and ETFs and their annual expenses as in Fig. 4.

Notes:
1. Overall portfolio - do first
2. Core portfolio
3. Satellite portfolio
4. Taxable Portfolio (non-qualified)
5. Tax advantaged portfolio (qualified): tax exempt or tax deferred.
### Figure 4
(1), (2), (3), and (4)

#### Specific Funds

<table>
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<tr>
<th></th>
<th>Total (Holistic) (TP)(1)(2)</th>
<th>Investment (IP)</th>
<th>Retirement (RP)</th>
<th>Annual Fees (%)</th>
<th>Ticker Symbols</th>
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<td><strong>Stock</strong></td>
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<td></td>
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<td>U.S.</td>
<td>32.5%</td>
<td>22.5%</td>
<td>10%</td>
<td>31.5%</td>
<td>22.5%</td>
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<td>Total U.S. (Index)</td>
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<td>22.5%</td>
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<td>22.5%</td>
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<tr>
<td>Active LV</td>
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<td>4.5%</td>
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<tr>
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<td>5.5%</td>
<td>4.5%</td>
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<td><strong>Int.</strong></td>
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<td>5.5%</td>
<td>4.5%</td>
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<td><strong>Bonds</strong></td>
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<td>Total Bond Mkt. (Index)</td>
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<td>15%</td>
<td>8%</td>
<td>10%</td>
<td>8%</td>
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<tr>
<td>Pimco Active Bond</td>
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<td>0</td>
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<td>CA Muni</td>
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<td>10%</td>
<td>8%</td>
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<tr>
<td><strong>Cash</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>2%</td>
<td>2%</td>
<td>0</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TIPS</td>
<td>10%</td>
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</tr>
<tr>
<td>Commodities</td>
<td>3%</td>
<td>0</td>
<td>5%</td>
<td>3%</td>
<td>0</td>
</tr>
<tr>
<td>Comm. R.E.</td>
<td>2%</td>
<td>0</td>
<td>2%</td>
<td>2%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>67%</td>
<td>33%</td>
<td>80%</td>
<td>55%</td>
</tr>
</tbody>
</table>
(1) Begin with Total (Holistic)(TP) and then disaggregate into Investment (IP) and Retirement (RP).
(2) This example assumes that the mix of IP and RP is 80%/20% as in Figure 2.
(3) The Total Portfolio is 67% passive and 33% active.
(4) The numbers in this table refer to the % of the Total Portfolio (TP). For specific MF and ETFs their ticker symbols, and expense ratios should be provided.
Figure 5
MF/ETF Data

**Mutual Funds**
- Name (and Ticker Symbol)
- Cell in 3x3 Matrix (e.g. LB or SV)
- Load or NL
- Expense Ratio
- Alpha
- Beta
- R²
- Sharpe Ratio

**ETFs**
- Name (and Ticker Symbol)
- Cell in 3x3 Matrix
- Beta
- Expense Ratio
- Total Assets
- Daily Volume
- Inception Date
Figure 6
IPS Executive Summary

RT Score (1-10)

Macro Asset Allocation: Stock/Bond/Other

Micro Asset Allocation

Investment Portfolio/Retirement Portfolio

Active/Passive

Home Country Bias: U.S. Stock/International Stock

Provide a short comment (e.g. three sentences) about the role of each asset (twelve of more) in the portfolio.