Living in Retirement: Creating a Plan for Aging

Michael S. Finke, Ph.D., CFP®
Dean and Chief Academic Officer

The American College
The Leader in Financial Services Education

Michael.Finke@theamericancollege.edu
Retirement Living

• Your goal is to get the most out of the retirement years
• What makes retirees happy?
• Source: Health and Retirement Study, 2012
Does Money Make you Happy?

Source: Ho and Finke, 2015
What Do We Know About Spending in Retirement?
What We Spend Right After Retirement

CHANGE IN SPENDING UPON RETIREMENT

Source: Health and Retirement Study; calculations by Tao Guo

Source: Finke & Guo, 2015
Trends in Income Before & After Retirement

Post Retirement Income Falling at 75 Percentile

Source: Health & Retirement Study, 1994 - 20121
How Much Will I Spend in Retirement?

Source: Banerjee, 2015
Spending Falls Faster among Wealthy

<table>
<thead>
<tr>
<th>Preretirement</th>
<th>After 1-2 years</th>
<th>After 3-4 years</th>
<th>After 5-6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>$57,123</td>
<td>$83,147</td>
<td>$77,152</td>
<td>$66,603</td>
</tr>
<tr>
<td>$48,699</td>
<td>$46,382</td>
<td>$71,518</td>
<td>$66,032</td>
</tr>
<tr>
<td>$45,087</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THIRD QUARTILE

HIGHEST QUARTILE

Source: Banerjee, 2015
Entertainment Spending Falls with Age

Top Wealth Quintile

Source: Health and Retirement Study
I would feel uncomfortable spending more than my income in retirement.

Texas Tech Retirement Planning and Living Survey, 2015

Finke, 2016
The thought of my retirement portfolio balance going down over time brings me discomfort, even if the decline in value is a result of spending money on my retirement goals.
Grasshoppers and Ants in Retirement

- Datasets: HRS and CAMS
- Pooled cross-sectional analysis, starts in 2002
## Identifying Grasshoppers and Ants

<table>
<thead>
<tr>
<th>Wealth Rank</th>
<th>Pre-Retirement Spending</th>
<th>Pre-Retirement Income</th>
<th>Retirement Wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ants</td>
<td>G-hoppers</td>
<td>Ants</td>
</tr>
<tr>
<td>80&lt;sup&gt;th&lt;/sup&gt; up to 90&lt;sup&gt;th&lt;/sup&gt; Percentile</td>
<td>$42,040</td>
<td>$83,620</td>
<td>$82,561</td>
</tr>
<tr>
<td>90&lt;sup&gt;th&lt;/sup&gt; Percentile and Up</td>
<td>$57,530</td>
<td>$125,496</td>
<td>$156,238</td>
</tr>
</tbody>
</table>
Grasshoppers and Ants
Spending After Retirement

Source: Guo and Finke, 2015
Impact of a Windfall on Spending
Amount Spent Annually per $1,000 windfall

Extra Annual Spending Per $1,000

Grasshoppers

Extra Annual Spending Per $1,000

Ants
Retirement: Revenge of the Grasshopper?
What Predicts Life Satisfaction In Retirement?
Importance of Health

Retirement Satisfaction

<table>
<thead>
<tr>
<th>Excellent Health</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Poor Health</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Retirement Satisfaction
Importance of Spouse/Partner
Importance of Positive Relationships

![Bar chart showing the importance of positive relationships for Spouse, Kids, Friends, and Family. Positive relationships are indicated by red bars, and negative relationships by green bars.]
A Note on Children

- Have Kids
- Live <10 miles
Happiness and Hours Social Time

Age 65 and older, Gallup 2011

Percent Happy

0 1 2 3 4 5 6 7

40 45 50 55 60 65 70 75
Decline in Social Network

Social inclusion by age and retirement pathway

Source: Borsch-Supan and Schuth, 2013
Wealth and Time Use

Eating/Drinking/Socializing

Minutes Per Day

Middle Wealth
High Wealth

25 Minutes More
Importance of Social Spending
(dining out, vacations, tickets, hobbies, sports, personal care)
Spending Your Nest Egg

Diversified Portfolio

Lifestyle Goal

Spending ($)
The 4% Rule
30-Year Time Horizon

Source: Ibbotson, 1900 - 2014
Assumptions About 4% Rule

- Financial Assets
- Real Spending

Age 65 to Age 95
An International Perspective of Longevity at Age 65

Source: Robine, 2012
Remaining Life Expectancy at Age 65, 1950 - 2009

**Graph:**
- **X-axis:** Year of Reaching Age 65
- **Y-axis:** Years Remaining
- **Legend:**
  - Male (Blue Diamond)
  - Female (Red Circle)

**Source:**

© Political Calculations 2013
Some Perspective on Probabilities

Probability of a 65-year-old living to age 95, based on different mortality tables.

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Both</th>
<th>≥1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average American</strong></td>
<td>7%</td>
<td>13%</td>
<td>1%</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Healthy American</strong></td>
<td>20%</td>
<td>29%</td>
<td>6%</td>
<td>43%</td>
</tr>
<tr>
<td><strong>Healthy American in 15 Years</strong></td>
<td>25%</td>
<td>33%</td>
<td>8%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Source: Social Administration 2010 Periodic Life Table, Society of Actuaries 2012 Annuity Mortality Table
Wealthier People Tend to Live Longer

Change in average additional life expectancy (in years) at age 55, by wealth, between cohorts born in 1920 and 1940

Source: Barry Bosworth, Brookings Institution, 2014
When Will My Money Run Out with Safe Investments? Following the 4% Rule

Current Real Treasury Bond Rates
- 5 Year = -0.11%
- 10 Year = 0.22%
- 20 Year = 0.61%
- 30 Year = 0.76%

$40,000 Inflation Adjusted

Inheritance

Real Return Determines When you Will Run Out

Source: Finke, 2015
The Retirement Risk and Spending Tradeoff

- Age
- Savings
- Retirement Spending
- Equities
- Duration Matched TIPS
- Re-Invested Bonds

- Expected Return for Equities
- Expected Return for Bonds
- Equity Premium

ExpectedReturn

Graph showing the relationship between savings, age, and retirement spending with the expected return for equities, duration matched TIPS, and re-invested bonds.
Using Risky Investments in Retirement

Hypothetical Example: 50/50 Chance of -20% or 35% (7.5% Average)

Portfolio Value $:
- $1.2 Million
- $1 Million
- $800,000
- $600,000
- $400,000
- $200,000

Spending = $40,000 Real

Source: Finke, 2015
Returns right after retirement matter the most

Sequence of Returns Risk Over the Lifetime

Source: Calculations by Wade Pfau, 2014
## Examples of Sequence of Return Risk

What is the effect of negative returns and withdrawals?

<table>
<thead>
<tr>
<th>Year</th>
<th>S&amp;P Returns</th>
<th>T-Bill Returns</th>
<th>Withdrawal First of Year</th>
<th>Balance at Beginning of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/31/99</td>
<td></td>
<td>$80,000</td>
<td>$2,000,000</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>-9.03%</td>
<td>5.76%</td>
<td>$82,192</td>
<td>$1,788,358</td>
</tr>
<tr>
<td>2001</td>
<td>-11.85%</td>
<td>3.67%</td>
<td>$85,258</td>
<td>$1,613,681</td>
</tr>
<tr>
<td>2002</td>
<td>-21.97%</td>
<td>1.66%</td>
<td>$86,230</td>
<td>$1,358,160</td>
</tr>
<tr>
<td>2003</td>
<td>28.36%</td>
<td>1.03%</td>
<td>$88,472</td>
<td>$1,461,410</td>
</tr>
<tr>
<td>2004</td>
<td>10.74%</td>
<td>1.23%</td>
<td>$90,179</td>
<td>$1,451,508</td>
</tr>
<tr>
<td>2005</td>
<td>4.83%</td>
<td>3.01%</td>
<td>$92,857</td>
<td>$1,408,902</td>
</tr>
<tr>
<td>2006</td>
<td>15.61%</td>
<td>4.68%</td>
<td>$96,563</td>
<td>$1,448,095</td>
</tr>
<tr>
<td>2007</td>
<td>5.48%</td>
<td>4.64%</td>
<td>$98,571</td>
<td>$1,416,198</td>
</tr>
<tr>
<td>2008</td>
<td>-36.55%</td>
<td>1.59%</td>
<td>$102,790</td>
<td>$1,062,340</td>
</tr>
<tr>
<td>2009</td>
<td>25.94%</td>
<td>0.14%</td>
<td>$103,098</td>
<td>$1,092,060</td>
</tr>
<tr>
<td>2010</td>
<td>14.82%</td>
<td>0.13%</td>
<td>$105,810</td>
<td>$1,062,677</td>
</tr>
<tr>
<td>2011</td>
<td>2.10%</td>
<td>0.03%</td>
<td>$107,534</td>
<td>$962,102</td>
</tr>
<tr>
<td>2012</td>
<td>15.89%</td>
<td>0.05%</td>
<td>$110,685</td>
<td>$923,631</td>
</tr>
<tr>
<td>2013</td>
<td>32.15%</td>
<td>0.07%</td>
<td>$112,445</td>
<td>$954,963</td>
</tr>
<tr>
<td>2014</td>
<td>13.52%</td>
<td>0.05%</td>
<td>$114,222</td>
<td>$901,293</td>
</tr>
<tr>
<td>2015</td>
<td>1.36%</td>
<td>0.21%</td>
<td>$114,119</td>
<td>$790,822</td>
</tr>
</tbody>
</table>

50% S&P Allocation, 50% T-Bills, Annual Rebalance, 1% Fees
Simulating Retirement Outcomes

Source: Finke, 2015
The Cone of Retirement Outcomes

Source: Finke, 2015
Financial Assets Today are More Expensive

We’re at $63,694 today!
Equities – Shiller P/E

Avg = 16
$100 Stock Price

$6.25 in Profits
Historically $2.87 Reinvested
$3.38 Dividends

$3.44 in Profits Today
$1.51 Reinvested
$1.95 Dividends
What Does Current P/E Imply?

### Results For S&P 500 From Different Starting Shiller P/Es 1926-2012

<table>
<thead>
<tr>
<th>Starting P/E</th>
<th>Low</th>
<th>High</th>
<th>Avg. Real 10 Yr Return</th>
<th>Worst Real 10 Yr Return</th>
<th>Best Real 10 Yr Return</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.2</td>
<td>9.6</td>
<td>10.3%</td>
<td>4.8%</td>
<td>17.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td></td>
<td>9.6</td>
<td>10.8</td>
<td>10.4%</td>
<td>3.8%</td>
<td>17.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td></td>
<td>10.8</td>
<td>11.9</td>
<td>10.4%</td>
<td>2.8%</td>
<td>15.1%</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td>11.9</td>
<td>13.8</td>
<td>9.1%</td>
<td>1.2%</td>
<td>14.3%</td>
<td>3.8%</td>
</tr>
<tr>
<td></td>
<td>13.8</td>
<td>15.7</td>
<td>8.0%</td>
<td>-0.9%</td>
<td>15.1%</td>
<td>4.6%</td>
</tr>
<tr>
<td></td>
<td>15.7</td>
<td>17.3</td>
<td>5.6%</td>
<td>-2.3%</td>
<td>15.1%</td>
<td>5.0%</td>
</tr>
<tr>
<td></td>
<td>17.3</td>
<td>18.9</td>
<td>5.3%</td>
<td>-3.9%</td>
<td>13.8%</td>
<td>5.1%</td>
</tr>
<tr>
<td></td>
<td>18.9</td>
<td>21.1</td>
<td>3.9%</td>
<td>-3.2%</td>
<td>9.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td><strong>21.1</strong></td>
<td><strong>25.1</strong></td>
<td><strong>0.9%</strong></td>
<td><strong>-4.4%</strong></td>
<td><strong>8.3%</strong></td>
<td><strong>3.8%</strong></td>
</tr>
<tr>
<td></td>
<td>25.1</td>
<td>46.1</td>
<td>0.5%</td>
<td>-6.1%</td>
<td>6.3%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

Source: Asness, 2012
Figure 1: 10-Year Government Bond Yields (%)

Sources: National Central Banks, Haver Analytics
Cost of Real $1 Annuity Income Has Doubled Since 1982

The Cost of $1 of Inflation-Adjusted Income for a 65-Year Old

Month:
- Jan-82
- Jun-87
- Dec-92
- Jun-98
- Nov-03
- May-09
- Nov-14

Source: Blanchett, 2016
Future Return Risk is Real

Source: Blanchett, Finke and Pfau, 2015
When thinking about your retirement assets, which strategy best describes your objective?

- Steady income + growth

Finke, 2017
Loss Aversion with Retirement Investments

How comfortable would you feel about accepting a loss after retirement compared to before retirement?

- 61% Much less
- 20% Slightly less
- 12% No Impact
- 6% Slightly more
- 1% Much more

© Michael Finke, Ph.D.
How would you describe your change in attitude towards risk over the past year?

Age

- 65+
- 55-64
- 45-54
- 35-44
- <35

- **Less risk tolerant**
- **More risk tolerant**
- **Unchanged**
Low Return Retirement Portfolio Choices

1) Take more risk and hope for the best
2) Spend a lot less (safe = 2.75%)
3) Start out conservative but be flexible if returns rise
4) Maximize net expected return on retirement investments
   › Strategic Roth conversion
   › Delay claiming Social Security
5) Find ways to increase income from safe assets
Annuitization = Same Safe Income at Lower Price

Cost of Buying $100,000 Income at 65
Mortality Weighted Cost of Buying Income

Difference = Annuity Efficiency

Source: Finke, 2015
Assumes 4% Corporate Bond Rate and 2012 Society of Actuaries and American Academy of Actuaries Mortality Table
Bonds vs. Annuitization

Source: Pfau, 2016
Retirement Asset Optimization

Source: Finke, 2016

Provide a higher guaranteed income than traditional bonds (actuarial bonds)

Traditional Portfolio: Stocks and Bonds

Bonds, Annuities and Stocks

PERCENT OF ASSETS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Stocks
Annuity
Bonds

Source: Finke, 2016
Retirement Income Frontier

Downside Retirement Cost vs. Average Retirement Cost

55-year old couple with a 10-year deferral period and 10-year period certain

Current Dollars (Nest Egg) Required to Fund Retirement (90th Percentile) = Risk

Note: Percentages in chart represent stock allocation for “Stocks/Bonds Only” asset allocations.
Source: Finke and Pfau’s Northwestern Mutual Whitepaper, 2014
# Cannex Annual Income Quotes for 65 Year Old Couple (Joint) Cash Refund Option at $100,000

<table>
<thead>
<tr>
<th>Financial Institution</th>
<th>Annual Income</th>
<th>Annual Taxable Portion</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Lincoln National Life Insurance Company</td>
<td>$5,254.59</td>
<td>$1,529.09</td>
</tr>
<tr>
<td>Integrity Life Insurance Company (W&amp;S)</td>
<td>$5,230.59</td>
<td>$1,506.41</td>
</tr>
<tr>
<td>Forethought Life Insurance Company - A Global Atlantic Company</td>
<td>$5,178.74</td>
<td>$1,450.05</td>
</tr>
<tr>
<td>New York Life Insurance and Annuity Corporation</td>
<td>$5,110.97</td>
<td>$1,425.96</td>
</tr>
<tr>
<td>Nationwide Life Insurance Company</td>
<td>$5,086.97</td>
<td>$1,361.48</td>
</tr>
<tr>
<td>Principal Financial Group</td>
<td>$5,080.75</td>
<td>$1,392.13</td>
</tr>
</tbody>
</table>
Cost of Bond Ladder Income vs. Annuity

Immediate Annuity with cash refund = $22.33
Immediate Annuity = $18.87

5% Failure = $25.07
33.2% Failure
Funding Late Life Retirement Income with a DIA

Inflation Adjusted 4% Rule Income

Fund from investments before DIA

DIA Income

Fund from investment if no DIA

Fund from investment with DIA

-$-

$20,000

$40,000

$60,000

$80,000

$100,000

$120,000

65 70 75 80 85 90 95 100 105 110
Making DIs More Efficient: The QLAC

• Qualified Longevity Annuity Contract
• Use up to $125,000 (or 25%) of IRA assets to purchase a DIA
• Avoid RMDs on $125k, taxed on income when DIA begins
• Assets within DIA wrapper grow tax free between 70.5 and when the income begins
Asset Depletion in Simulated Lifetimes

Percentage of Simulation Where Client Runs Out of Money

Equity Allocation

No QLAC

QLAC

50% Decrease in Failure Rate
What Happens When Assets Are Depleted?

Age

With DIA

No DIA

Constant Real Spending

Social Security

Age

$
## Benefit of Automating Late Life Income

**Figure 2. Prevalence of Dementia in North America**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-64</td>
<td>0.8%</td>
</tr>
<tr>
<td>65-69</td>
<td>1.7%</td>
</tr>
<tr>
<td>70-74</td>
<td>3.3%</td>
</tr>
<tr>
<td>75-79</td>
<td>6.5%</td>
</tr>
<tr>
<td>80-84</td>
<td>12.8%</td>
</tr>
<tr>
<td>85+</td>
<td>30.1%</td>
</tr>
</tbody>
</table>

*Source: Ferri et al, 2006.*
Financial Literacy and Confidence

Source: Finke, Howe and Huston, 2013
QUESTIONS/COMMENTS

MICHAEL S. FINKE, PH.D., CFP®

Michael.Finke@theamericancollege.edu
@finkeonfinance