American Association of Individual Investors
presents the
Financial Planning Workshop

Intro to Computerized Investing

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Agenda

- Introduction
- Top investing websites & useful spreadsheets
- Library resources: Morningstar, S&P and Value Line
- Asset Allocation with ETFs; Robo-advisors
- Stock screening, Analysis, Implementation -- how to get started
- Summary and Final Q&A

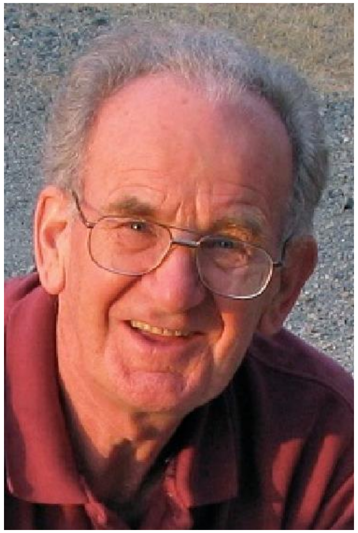
- Extra "Stuff" (on-line)
- References (on-line)

Agenda

- Introduction
  - Webinar Intro
  - The FPW Series
- Top investing websites & useful spreadsheets
- Library resources such as Morningstar, S&P and Value Line
- Asset Allocation, ETFs and Roboadvisors:
- Stock screening, Analysis, Implementation -- how to get started
- Final Q&A

- Extra "Stuff" (on-line)
- References

Welcome to the Financial Planning Workshop Series!!



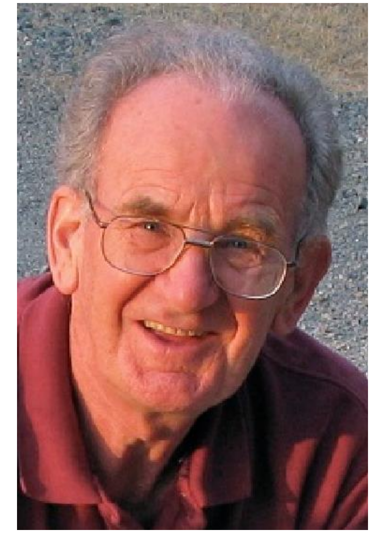
For our web participants we have a few reminders:

- We'll start the WebEx at 6:45 or so – it's started if you see these slides!
- You will be muted when you enter the webinar
- We will have several designated Q&A sessions; Webinar Q&A will be via your chat window
- We are using Voice over IP (your computer) for audio. We'll do a sound check before we start – if you have issues tell us vis chat!
- We will be recording the meeting for reference later
- Trouble?? See the links/info we provided in our earlier emails to you…

These workshops are given at the Los Altos Public Library on the second Wednesday of every month from September 2016 through April 2017. If you're in the area we invite you to stop by and join us in-person. If you're out of area join us via our WebEx session.

AAII Local Chapters
Silicon Valley

Welcome to the Financial Planning Workshop Series!!



Topics Covered in the FPW Series

Completed

- **Fundamentals of Investing**
- **Building a Diversified Portfolio**

Tonight

- **Introduction to Computerized Investing**

Future Sessions

- **Active versus Passive Investing Strategies**
- **Retirement Planning**
- **Managing your Cash Flow in Retirement**
- **Safe Withdrawal Rates from your Retirement Portfolio**
- **Social Security and Medicare**
- **Estate Planning**

Welcome to the Financial Planning Workshop Series!!

Topics Covered in FPW3: Intro to Computerized Investing

- Top investing websites; Some useful spreadsheets
- Library resources: Morningstar, S&P and Value Line
- Asset Allocation w/ETFs; Roboadvisors
- Stock screening, Analysis and Implementation -- how to get started

Agenda

- Introduction
- Top investing websites & useful spreadsheets
- Library resources such as Morningstar, S&P and Value Line and how to use them
- Asset Allocation, ETFs and Roboadvisors: How these work separately & together
- Stock screening, Analysis, Implementation -- how to get started
- Final Q&A

- Extra "Stuff" (on-line)
- References

Top Web Sites

Goal: Introduce you to sites in various areas and let you try them out and explore…

- This is a survey course – not a PhD thesis (in-depth, detailed)

Main resource: CI Newsletter “Best of the Web”

- I will feature my favorite site – and maybe provide a top runner-up
- I put priority on free sites (some have fees if you “go premium”)
- Some “winners” I use in a different area than recommended
- Plenty of other contenders out there…

And away we go….

Top Web Sites

CHARTING & TECHNICAL ANALYSIS

StockCharts.com

EDITORS' CHOICE

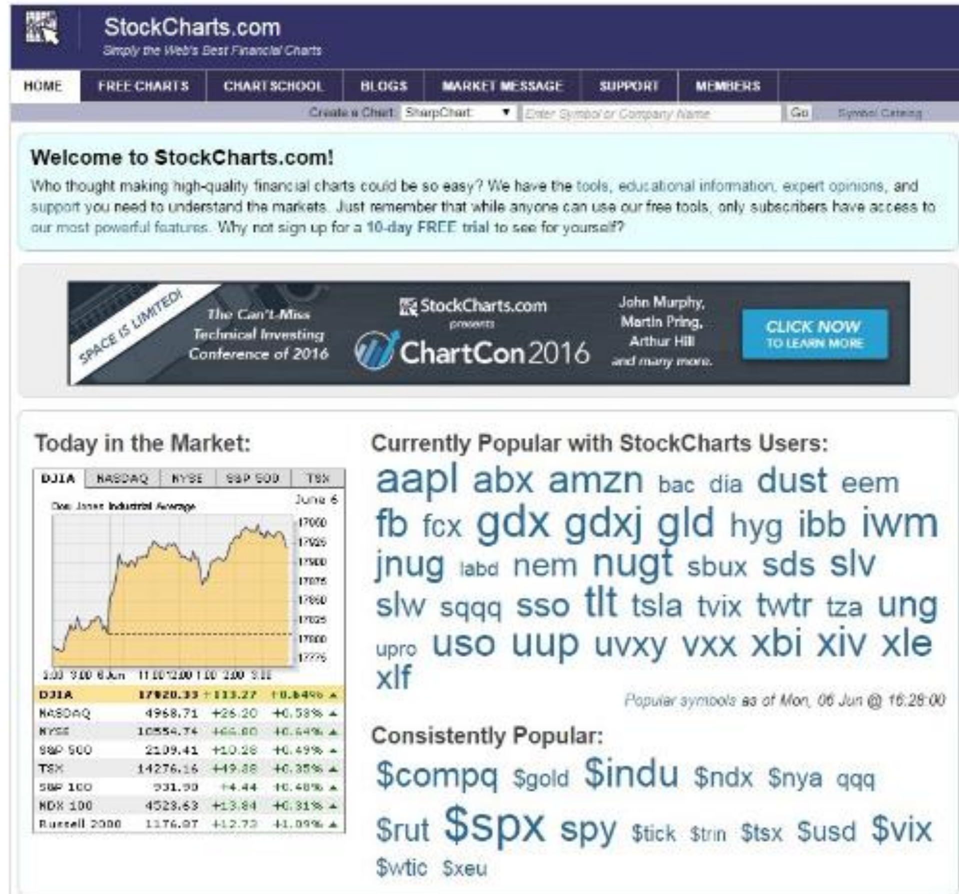
June 18, 2016

Price: Free - $49.95/mo.

($999.95/yr.)

At a Glance:

- Extensive technical analysis/charting educational content
- Broad collection of scans for technical conditions, candlestick/point & figure patterns
- Free real-time BATS data



Top Web Sites

COMPANY NEWS

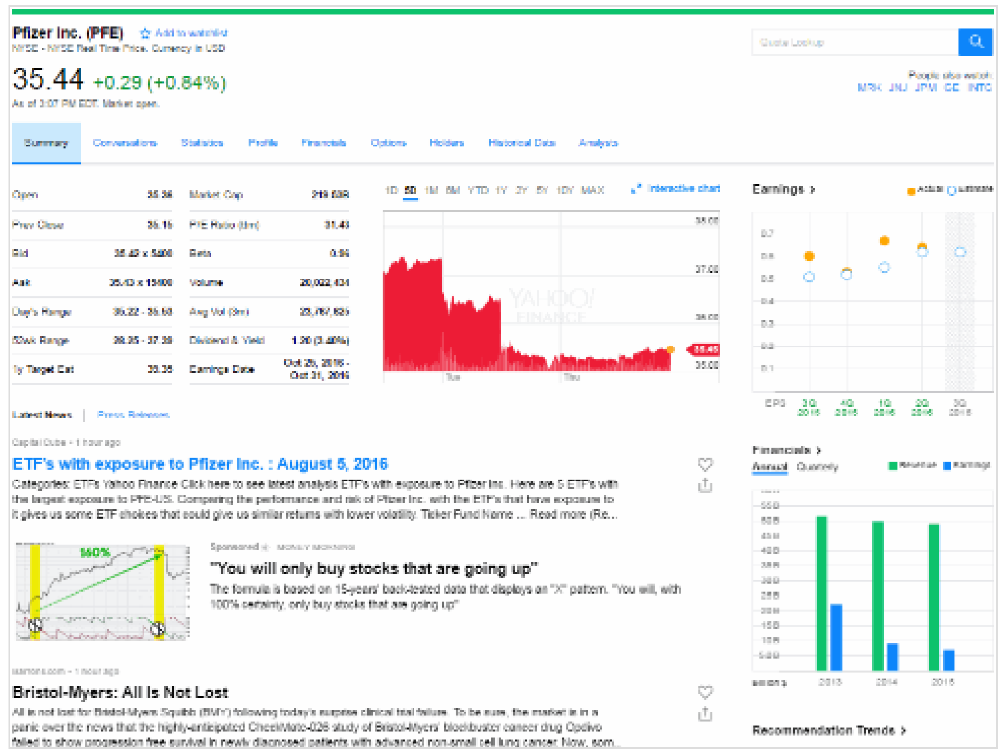
Yahoo Finance

August 20, 2016

Price: Free

At a Glance:

- Robust News and Info section goes beyond headlines and press releases to include company events and message boards
- Offers company statistics, financials, and estimate figures
- Displays comprehensive charts that include earnings, revenue, recommendation trends, and upgrades and downgrades



Top Web Sites

EDITORS' CHOICE

CONFERENCE CALLS & CORPORATE EVENTS

Seeking Alpha

June 18, 2016

Price: Free

At a Glance:

- Provides transcripts of earnings conference calls and major presentations
- Presents recent earnings-driven events
-

Top Movers On Earnings | Earnings Analysis | Earnings News | Earnings Call Transcripts

Top Movers On Earnings

Gainers			Losers		
BOSC	05/31/2016	88%	CJES	05/10/2016	-55%
NSPH	05/16/2016	65%	CFMS	05/12/2016	-53%
TRKK	05/16/2016	64%	PMTS	05/11/2016	-49%
TISA	05/17/2016	57%	CEGMF	05/31/2016	-43%
NM	05/25/2016	51%	LC	05/09/2016	-42%

More Top Movers »

Upcoming Earnings

Symbol	Name	Release Date	Release Time	Email Alerts
EDUC	Educational Development Corporation	06/07/2016	Pre-Market	
SWFT	Swift Transportation Company	06/07/2016	Pre-Market	
PAY	VeriFone Systems, Inc.	06/07/2016	Post-Market	
UQM	UQM Technologies, Inc.	06/07/2016	Post-Market	
VRNT	Verint Systems Inc.	06/07/2016	Post-Market	

More Upcoming Earnings »

Earnings Transcripts

Vince's (VNCE) CEO Brendan Hoffman on Q1 2016 Results - Earnings Call Transcript

Top Web Sites

EDITORS' CHOICE

CONSENSUS ANALYST ESTIMATES

Zacks Investment Research

December 19, 2015

Price: Free - $249/year

At a Glance:

- Comprehensive dataset
- A well-known and trusted name
- Some less commonly used earnings estimates

Detailed Estimates

Enter Symbol

Estimates

Next Report Date	1/25/16	Current Year	2.70
Current Quarter	0.69	Next Year	3.02
Earnings ESP [?]	-5.80%	EPS(TTM)	2.68
EPS Last Quarter	0.58	P/E (F1)	20.10
Last EPS Surprise	15.52%	ABR	1.76

Growth Estimates	MSFT	IND	S&P
Current Qtr (12/2015)	-10.11	NA	NA
Next Qtr (03/2016)	9.68	NA	NA
Current Year (06/2016)	2.80	6.50	5.30
Next Year (06/2017)	11.70	15.10	7.80
Past 5 Years	4.10	9.70	12.20
Next 5 Years	9.10	16.00	NA
PE	20.10	14.90	17.50
PEG Ratio	2.22	0.93	NA

Learn More About Estimate Research

See Brokerage Recommendations

Top Web Sites

ECONOMIC NEWS

MarketWatch

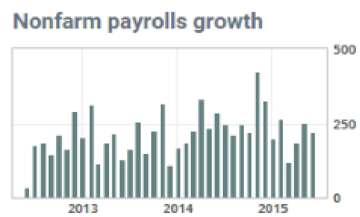
August 20, 2016

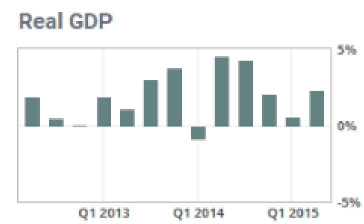
Price: Free

At a Glance:

- Free commentary and analysis
- Content is digestible for individual investors
- Domestically focused articles

Economic Calendar





FORECASTER OF THE MONTH | ECONOMIC PREVIEW | ECONOMIC REPORTS | CAPITOL REPORT

THIS WEEK'S U.S. ECONOMIC REPORTS

TIME (ET)	REPORT	PERIOD	ACTUAL	CONSENSUS FORECAST	PREVIOUS
MONDAY, AUG. 3					
8:30 am	Personal income	June	0.4%	0.3%	0.4%
8:30 am	Consumer spending	June	0.2%	0.3%	0.7%
8:30 am	Core inflation	June	0.1%	0.1%	0.1%
9:45 am	Markit PMI	July	53.8	--	53.8
10 am	ISM	July	52.7%	53.7%	53.5%
10 am	Construction spending	June	0.1%	0.8%	1.8%
2 pm	Senior loan officer survey				
TBA	Motor vehicle sales	July	17.6 mln	17.2 mln	17.1 mln
TUESDAY, AUG. 4					
10 am	Factory orders	June		2.0%	-1.0%
WEDNESDAY, AUG. 5					
8:15 am	ADP employment	July		--	237,000
8:30 am	Trade deficit	June		-$42.8 bln	-$41.9 bln
10 am	ISM manufacturing	July		56.5%	56.0%

FUNDAMENTAL STOCK DATA

Reuters.com

June 18, 2016

Top Web Sites

Price: Free

At a Glance:

- Easy to understand
- Provides valuation ratios that compare a company to its sector and industry
-

GROWTH RATES

	Company	industry	sector
Sales (MRQ) vs Qtr. 1 Yr. Ago	-12.85	-2.80	7.32
Sales (TTM) vs TTM 1 Yr. Ago	7.24	2.84	6.39
Sales - 5 Yr. Growth Rate	29.08	12.11	7.77
EPS (MRQ) vs Qtr. 1 Yr. Ago	-18.39	9.57	357.66
EPS (TTM) vs TTM 1 Yr. Ago	11.12	--	--
EPS - 5 Yr. Growth Rate	33.61	8.27	7.02
Capital Spending - 5 Yr. Growth Rate	40.20	14.89	4.96

FINANCIAL STRENGTH

	Company	industry	sector
Quick Ratio (MRQ)	1.25	1.49	1.93
Current Ratio (MRQ)	1.28	1.82	2.43
LT Debt to Equity (MRQ)	53.18	24.34	10.84
Total Debt to Equity (MRQ)	61.22	151.63	18.25
Interest Coverage (TTM)	--	24.15	30.19

Top Web Sites

MUTUAL FUND & ETF RATINGS & RECOMMENDATIONS

ETF.com

April 16, 2016

Price: Free

At a Glance:

- Does not cover mutual funds, but the depth of ETF information is impressive
- Analysis and rankings are understandable for less-familiar investors
- Free download into Excel

Analysis

The Analysis tab presents proprietary ETF.com metrics for each fund, including our Efficiency, Tradability, and Fit scores, the ETF.com letter grade, the overall Analyst Pick designation, and other measures

ETF Results:

Display:

FUND BASICS | PERFORMANCE | ANALYSIS | FUNDAMENTALS | CLASSIFICATION | TAX | CUSTOM

Ticker	Fund Name	Issuer	Segment	Analyst Pick	Grade	E	T	F
SPY	SPDR S&P 500	SSgA	Equity: U.S. - Large Cap		A	99	98	91
IVV	iShares Core S&P 500	BlackRock	Equity: U.S. - Large Cap		A	100	100	98
VTI	Vanguard Total Stock Market	Vanguard	Equity: U.S. - Total Market		A	100	100	100
EFA	iShares MSCI EAFE	BlackRock	Equity: Developed Markets Ex-U.S. - Total Market		A	95	91	93
VOO	Vanguard S&P 500	Vanguard	Equity: U.S. - Large Cap		A	100	100	98
QQQ	PowerShares QQQ	Invesco PowerShares	Equity: U.S. - Large Cap		A	87	100	65
VWO	Vanguard FTSE Emerging Markets	Vanguard	Equity: Emerging Markets - Total Market		B	75	89	97
AGG	iShares Core U.S. Aggregate Bond	BlackRock	Fixed Income: U.S. - Broad Market Investment Grade		A	96	91	93
GLD	SPDR Gold	SSgA	Commodities: Precious Metals Gold		A	66	100	100
VEA	Vanguard FTSE Developed Markets	Vanguard	Equity: Developed Markets Ex-U.S. - Total Market		A	96	88	95
VNQ	Vanguard REIT	Vanguard	Equity: U.S. Real Estate		A	95	98	92
IWF	iShares Russell 1000 Growth	BlackRock	Equity: U.S. - Large Cap Growth		A	96	98	91
BND	Vanguard Total Bond Market	Vanguard	Fixed Income: U.S. - Broad Market Investment Grade		A	92	91	94
LQD	iShares iBoxx $ Investment Grade Corporate Bond	BlackRock	Fixed Income: U.S. - Corporate Investment Grade		A	93	92	77
IJH	iShares Core S&P Mid Cap	BlackRock	Equity: U.S. - Mid Cap		A	100	88	87
IWD	iShares Russell 1000 Value	BlackRock	Equity: U.S. - Large Cap Value		A	96	99	83
EEM	iShares MSCI Emerging Markets	BlackRock	Equity: Emerging Markets - Total Market		B	66	98	100
IWM	iShares Russell 2000	BlackRock	Equity: U.S. - Small Cap		A	96	99	90
VIG	Vanguard Dividend Appreciation	Vanguard	Equity: U.S. - Total Market		A	98	100	73
VUG	Vanguard Growth	Vanguard	Equity: U.S. - Large Cap Growth		A	99	99	92

Top Web Sites

STOCK SCREENING

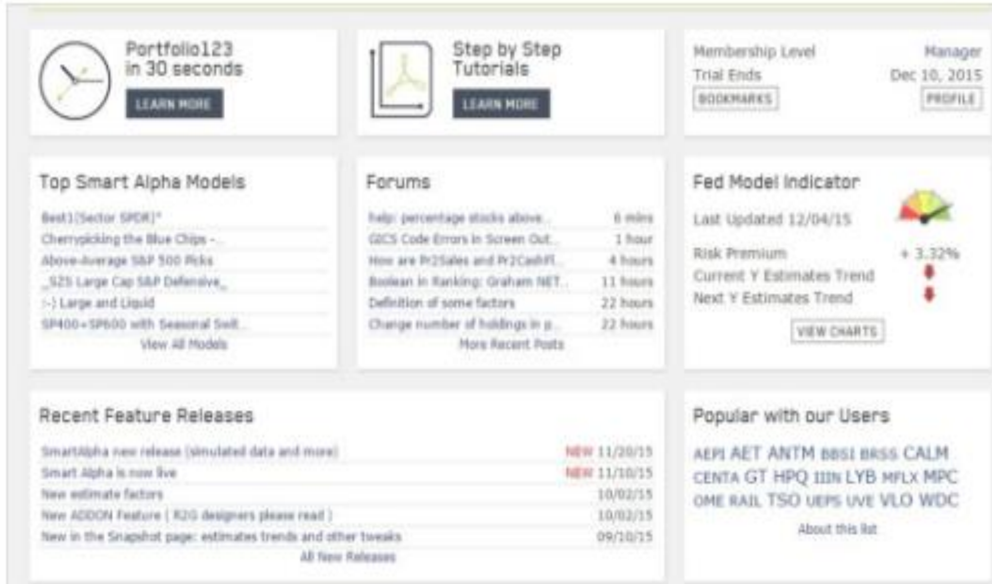
Portfolio 123

December 19, 2015

Price: $348 - $2,388/yr; 15-day trial

At a Glance:

- Backtest screening strategies
- One of the largest libraries of fundamental screening variables and predefined screens
- Create custom screening variables




Q
&
A

Spreadsheets

Goal:

- Introduce you to the types of work that can be done in spreadsheets
  – *(And not bore you to tears with Excel equations…)*
- Each spreadsheet could easily take an hour to explain – we have 15 minutes….(Survey course – not a PhD thesis)

Main resources: CI “Spreadsheet Area”, 2011 Excel Class

- Will present a few examples from CI and from a 2011 AAII-SV class…
- We will look at two “read-only” Google sheets that implement…
  - A simple Stock Portfolio Tracker
  - A simple Mutual Fund Watchlist

And away we go….

Spreadsheets: Examples from CI Spreadsheet Area

- Mortgage Refinance Calculator
  - A worksheet that helps you see how refinancing your mortgage could affect your cash flow.
- Retirement Withdrawal Calculator
  - A simple spreadsheet that allows you to input a few estimates and see whether you will have enough savings to last through your retirement years.
- Financial Ratio Analysis Spreadsheet
  - Excel spreadsheet automatically derives financial ratios for company analysis after a simple import of financial statement data from Morningstar.com.
- Deconstructing ROE: DuPont Analysis
  - How to use two formulas created by DuPont to analyze a firm’s return on equity.
- Calculating Intrinsic Stock Value in Excel
  - An easy-to-use spreadsheet that allows you to perform independent analysis to determine a stock’s fair value and see whether it exceeds the market price.
- The Ulcer Index of the AAII Stock Screens
  - Calculating the downside risk of the stock screening methodologies tracked at AAII.com
- Using a Spreadsheet to Construct Moving Averages
  - A spreadsheet from AAII for calculating three types of moving averages and generating buy and sell signals from them
- And many more….

If there’s enough interest in the above, the Chapter will consider running another Excel class series focusing on the above

Spreadsheets: Examples from the 2011 Excel Class

Presentations, spreadsheets below are available on request…

- Class 1: The Basics
  - Download Yahoo! Data, basic Excel functions, Normalizing data, Charting the Equity Curve (EC), Simple statistics (CRR, DD, MDD, Std Dev, MAR, Sharpe)
- Class 2: SMAs and switched ECs
  - Calculating the Simple Moving Average (SMA), Long/Flat decision, the switched EC, adding in money market/bond returns, SMA tolerance bands
- Class 3: ETF Ratios, FundX Score
  - ETF/Asset ratios, applying SMAs to the ratio, FundX scores, timing with FundX
- Class 4: Ranking and Choosing between Multiple Assets
  - Combining multiple assets, rebalancing between assets, Faber5/Ivy Portfolio, ranking and scoring of a variable number of assets in a portfolio

If there's enough interest in the above, the Chapter will consider re-running another Excel class series focusing on the above

Spreadsheets: Google Sheets Portfolio Tracker

- Built by Jaclyn McClellan, CI Editor
- Shared (read only) sheet at link below (can see all the cell equations) https://docs.google.com/spreadsheets/d/1WG_B21_KHkpUwyW5bCrLWkYbevAVF5GxB6PvaCXZGsw/edit#gid=0
- Pulls data directly from Google finance

*Must be a Computerized Investing subscriber to access

PORTFOLIO Today's Date: 11/8/2016

Name	Ticker	Purchase Date	Commission	Purchase Price	Shares Purchased	Total Cost	Average Cost/Share	Market Value	Current Price	Price Open	Intraday High	Intraday Low	Volume (X)	52-Week High	52-Week Low	Price-Earnings Ratio (X)	Earnings Per Share ($ per shr)	Daily Change (%)
Gilead Sciences, Inc.	GILD	5/4/2012	$7.00	$65.70	100	$6,577.00	$65.77	$7,404.00	$74.04	$73.93	$74.65	$73.29	7449578	$109.37	$71.39	6.87	10.78	0.05
Microsoft Corporation	MSFT	3/6/2010	$7.00	$35.20	200	$7,047.00	$35.24	$12,094.00	$60.47	$60.55	$60.78	$60.15	22935355	$61.37	$48.03	28.92	2.09	0.08
Micron Technology, Inc.	MU	6/26/2014	$7.00	$17.62	250	$4,412.00	$17.65	$4,352.50	$17.41	$17.30	$17.55	$17.06	18062694	$18.33	$9.31	#N/A	-0.27	0.2
Jazz Pharmaceuticals plc - Ordinary Shares	JAZZ	3/25/2009	$7.00	$100.06	400	$40,031.00	$100.08	$42,476.00	$106.19	$106.30	$109.11	$103.14	800043	$160.00	$95.80	18.66	5.69	-1.23
Perrigo Company plc Ordinary Shares	PRGO	2/15/2014	$7.00	$93.78	460	$43,145.80	$93.80	$37,076.00	$80.60	$82.53	$83.54	$79.96	2940062	$165.63	$79.72	#N/A	-0.75	-4
Apple Inc.	AAPL	2/16/2014	$7.00	$94.00	35	$3,297.00	$94.20	$3,887.10	$111.06	$110.31	$111.72	$109.70	24254179	$121.81	$89.47	13.42	8.28	0.59

Spreadsheets: Mutual Fund Watcher

- Built by Jaclyn McClellan, CI Editor
- Shared (read only) sheet at link below (can see all the cell equations) https://docs.google.com/spreadsheets/d/12q8H1dxEXocnK_Mjktc3hw3Mdva8GtBOv7fawPan89w/edit#gid=1105633901
- Pulls data directly from Google finance

MUTUAL FUND WATCHLIST

*can only gain access if you're a CI subscriber

Today's Date: 11/8/2016

Ticker	Index	Price	Daily Change ($)	Daily Change (%)
SPX	S&P 500 INDEX	$2,139.56	$8.04	0.38
W5000	Wilshire 5000 Total Market Index (full cap)	$21,224.32	$0.00	0
NDX	NASDAQ 100	$4,804.92	$31.19	0.65

EQUITIES

Ticker	Company	Price	Close Yesterday	NAV Date	One Day Total Return (%)	Four-Week Total Return (%)	Return Year-to-Date (%)	Annual Total Return (%)	3-Year Total Return (%)	5-Year Total Return (%)	Distribution Yield (%)	Expense Ratio (%)	Morningstar "Star" Rating
VFINX	Vanguard 500 Index Fund Investor Class	$197.98	$197.98	11/7/2016	-0.16	-2.9	3.77	1.26	7.77	12.97	1.92	0.16	4.00
PESPX	Dreyfus Mid Cap Index Fund Investor Shares	$35.27	$35.27	11/7/2016	2.09	-1.54	9.04	4.46	7.2	12.15	1.11	0.50	4.00
NAESX	Vanguard Small Capitalization Index Fund Investor Shares	$56.25	$56.25	11/7/2016	0.29	-5.23	4.42	0.06	4.04	11.65	1.43	0.20	4.00
SWISX	Schwab International Index Fund®	$17.42	$17.42	11/7/2016	-0.23	-2.56	0.00	-2.86	-1.26	5.87	2.70	0.19	3.00
VEIEX	Vanguard Emerging Markets Stock Index Fund Investor Shares	$23.90	$23.90	11/7/2016	-0.97	-0.89	15.01	7.38	-1.59	0.5	2.23	0.33	3.00
VFITX	Vanguard Intermediate-Term Treasury Fund Investor Shares	$11.53	$11.53	11/7/2016	0.18	0.14	4.47	4.29	2.91	2.09	1.56	0.20	4.00
VFISX	Vanguard Short-Term Treasury Fund Investor Shares	$10.74	$10.74	11/7/2016	0.09	-0.03	1.67	1.19	0.91	0.72	0.85	0.20	3.00
VTSMX	Vanguard Total Stock Market Index Fund Investor Shares	$53.32	$53.32	11/7/2016	-0.08	-3.33	3.67	0.83	7.03	12.69	1.80	0.16	4.00


Q
&
A

Agenda

- Introduction
- Top investing websites & useful spreadsheets
- **Library resources: Morningstar, S&P and Value Line**
- Asset Allocation, ETFs and Robo-advisors:
- Stock screening, Analysis, Implementation -- how to get started
- Summary and Final Q&A

- Extra "Stuff" (on-line)
- References

Asset Allocation and ETFs – and Robo-Advisors

Goal:

- Tell you how to get to these services here at the library
- Provide an overview of what these tools can do
- This is **NOT** an overview of each tool – that would take hours. If you need that -- go to the appropriate webpage (and/or search Youtube…)

Main resources: Library Webpage, Service Providers

- Morningstar, S&P and ValueLine Topics

And away we go….

Library Resources: Morningstar

Research by A-Z List : M

https://www.sccl.org/Research/A-Z-List?letter=M

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

Marine Science Experiments

Presents experiments in marine science, on topics such as plankton, salinity, marine sediments, whales, and ocean regions.

Mathematics Magazine

Available from JSTOR, *Mathematics Magazine* offers lively, readable, and appealing exposition on a wide range of mathematical topics.

Medici.tv: Concerts, Operas, and Ballets Live and On Demand

At medici.tv, enjoy over 100 live broadcasts a year featuring international concerts, operas, ballets, and more. Additionally, experience over 1,700 videos of past programs and other works:... read more

MedlinePlus

Consumer health information produced by the National Institutes of Health. Features a medical dictionary and encyclopedia, health information in Spanish, information on medications,... read more

Morningstar Investment Research Center

Learn about stocks and mutual funds, and build and analyze your investment portfolio. Also includes access to these popular investment newsletters: Morningstar Mutual Funds, Morningstar Fund Investor, Morningstar Stock Investor, and Morningstar ETF Investor. read less

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Library Resources: Morningstar

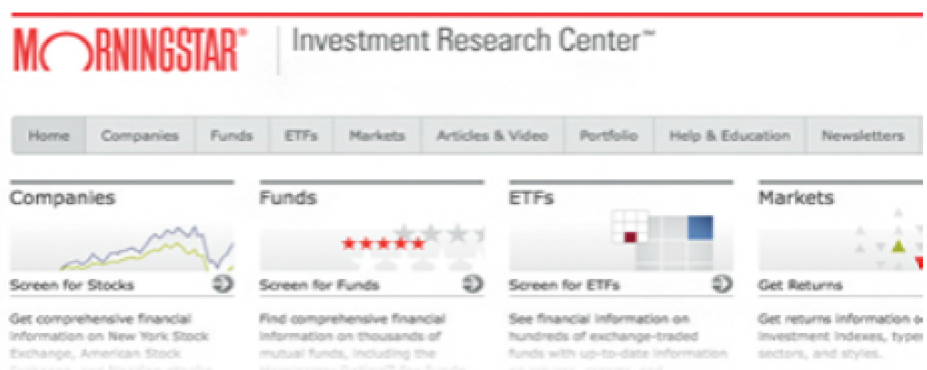
Morningstar® Investment Research Center℠

Integrated research resources for libraries.

- Overview
- Comprehensive Database
- Practical Functionality

Morningstar® Investment Research Center℠ offers public, corporate, and academic libraries real-time access to comprehensive data and independent analysis on thousands of investments, spanning mutual funds, stocks, exchange-traded funds, and closed-end funds. Customized to meet any organization's needs, Investment Research Center serves all levels of investors with a range of dynamic tools and thoughtful perspectives to help them make more informed investment decisions.

Broad Coverage | Exclusive Content | Easy Set-up | Substantial Support



Investment Research Center enables users to get data and analysis on stocks, mutual, exchange-traded, and closed-end funds or obtain data on a particular industry.

Library Resources: Morningstar

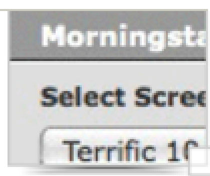
Practical Functionality

Morningstar® Investment Research Center℠ includes popular tools and features designed by Morningstar experts to provide key financial information. Every component of the web-based solution expresses Morningstar's commitment to empowering individuals to understand their investment options and successfully manage their portfolios. With an easy-to-use interface and thorough help and education sections, every investor can quickly learn to use Investment Research Center.

Screening tools: Helping investors narrow the field of available stocks and funds

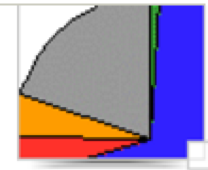
Stock, Fund, and ETF Screeners
Enables patrons to find the best stocks, funds, and ETFs by building screens based on hundreds of financial data points.

Pre-set Morningstar Screens
Helps patrons identify lists of stocks and funds based on a variety of categories developed by Morningstar analysts.

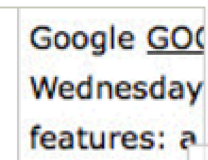


Research tools: Providing portfolio analysis, detailed analyst reports, and market data

Portfolio X-Ray®
Gives patrons an insightful analysis of their portfolios, including asset allocation, sector concentration, and how to adjust for better diversification.



Analyst Reports
Applying extensive research to provide up-to-date analysis on companies and funds, including proprietary data such as fair value estimate and analyst rating.



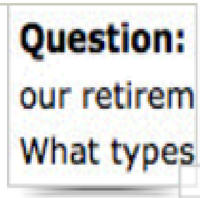
Market Data
Provides index, sector, and industry returns along with quarterly industry reports to help investors make meaningful comparisons.

Library Resources: Morningstar

Articles and Newsletters: Content across a variety of topics including market updates and personal finance along with access to Morningstar publications

Articles and Videos

Keeps patrons updated on industry news, market updates, and top investments while also supplying tips for retirement, college savings, and other personal finance goals.

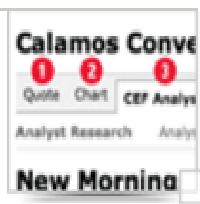


Articles and Newsletters

Displaying content across a variety of topics, including market updates and personal finance along with access to Morningstar publications.

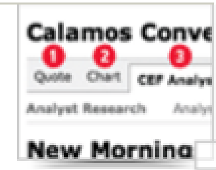
Help and Education

Assistance for librarians and patrons in site navigation, investment terminology, and financial education.



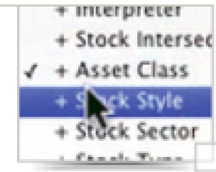
Help and Education

Assistance for librarians and patrons in site navigation, investment terminology, and financial education.



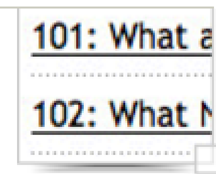
Tutorials

Guides users through database features using a series of videos or a detailed user's manual.



Investing Classroom

Helps new and experienced investors master the skills required to successfully invest.



Glossary and Methodology

Provides clear, concise definitions of financial terms and explains Morningstar's proprietary ratings and measures.

Library Resources: S&P NetAdvantage

NetAdvantage

Introducing the New S&P Capital IQ NetAdvantage

A trusted, sophisticated, user-friendly business reference tool for:

- Academic Libraries
- Public Libraries
- Corporate Libraries and Information Centers

S&P Capital IQ NetAdvantage is a comprehensive source of business and investment information, offering on-line access to S&P Capital IQ independent research, data and commentary on stocks, bonds, funds, and industries.

The NetAdvantage *Advantage*:

- Powerful searching and screening tools to facilitate academic research, job searches, case studies, competitive intelligence, strategic planning, due diligence and M&A activities.
- Private company information - hard-to-find data on over 85,000 companies that are not publicly traded.
- NAICS code searching to identify potential customers, vendors, strategic partners.
- Biographies of thousands of corporate executives and directors.
- Export tools to enable researchers to download data into spreadsheet programs for further analysis

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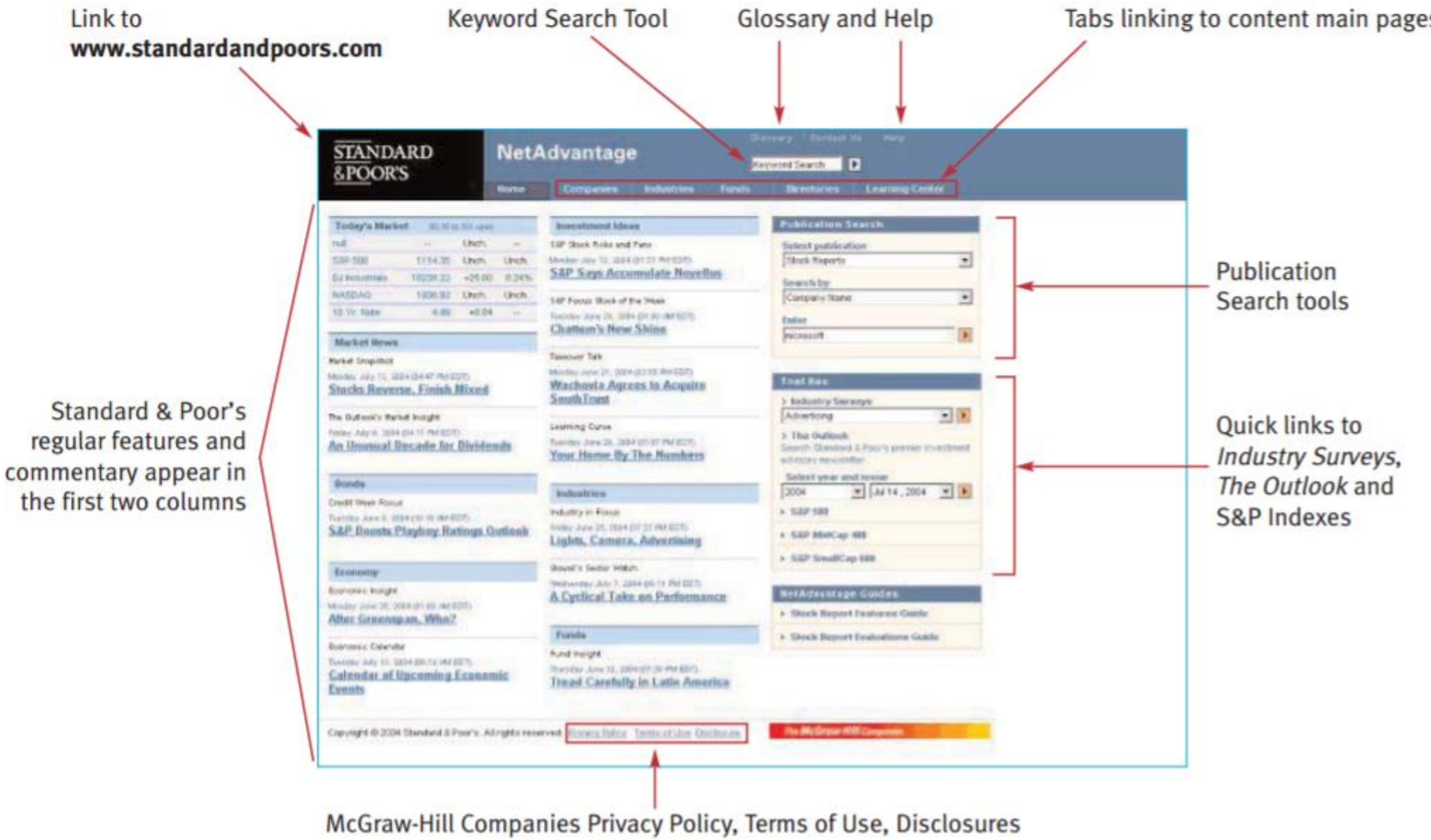
Products in NetAdvantage

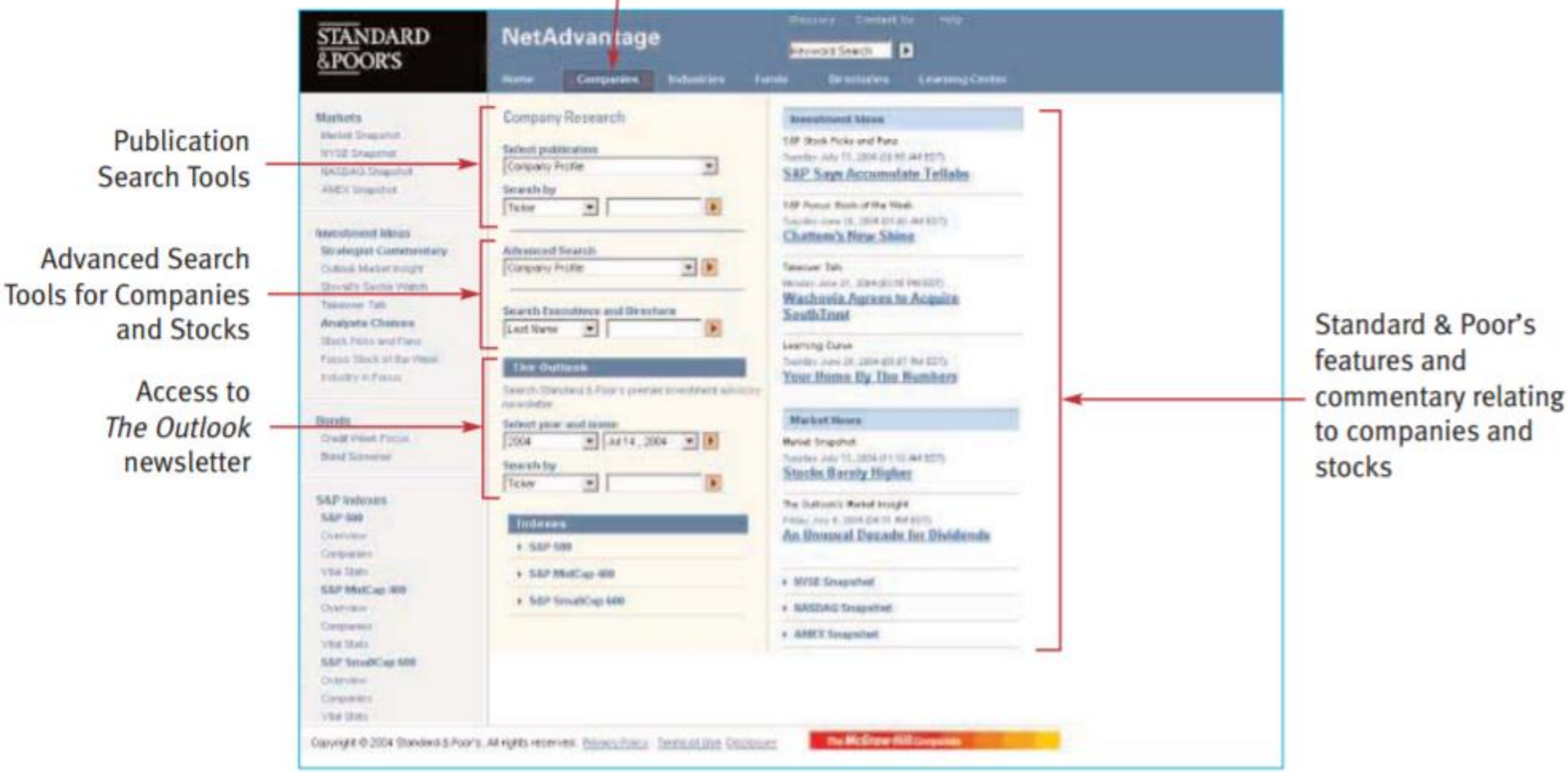
- Stock Reports
- Company Profiles
- Bond Screener
- Corporation Records
- Mutual Fund Reports
- Security Dealers of North America
- Register of Corporations, Directors & Executives
- Industry Surveys
- The Outlook

Library Resources: S&P NetAdvantage



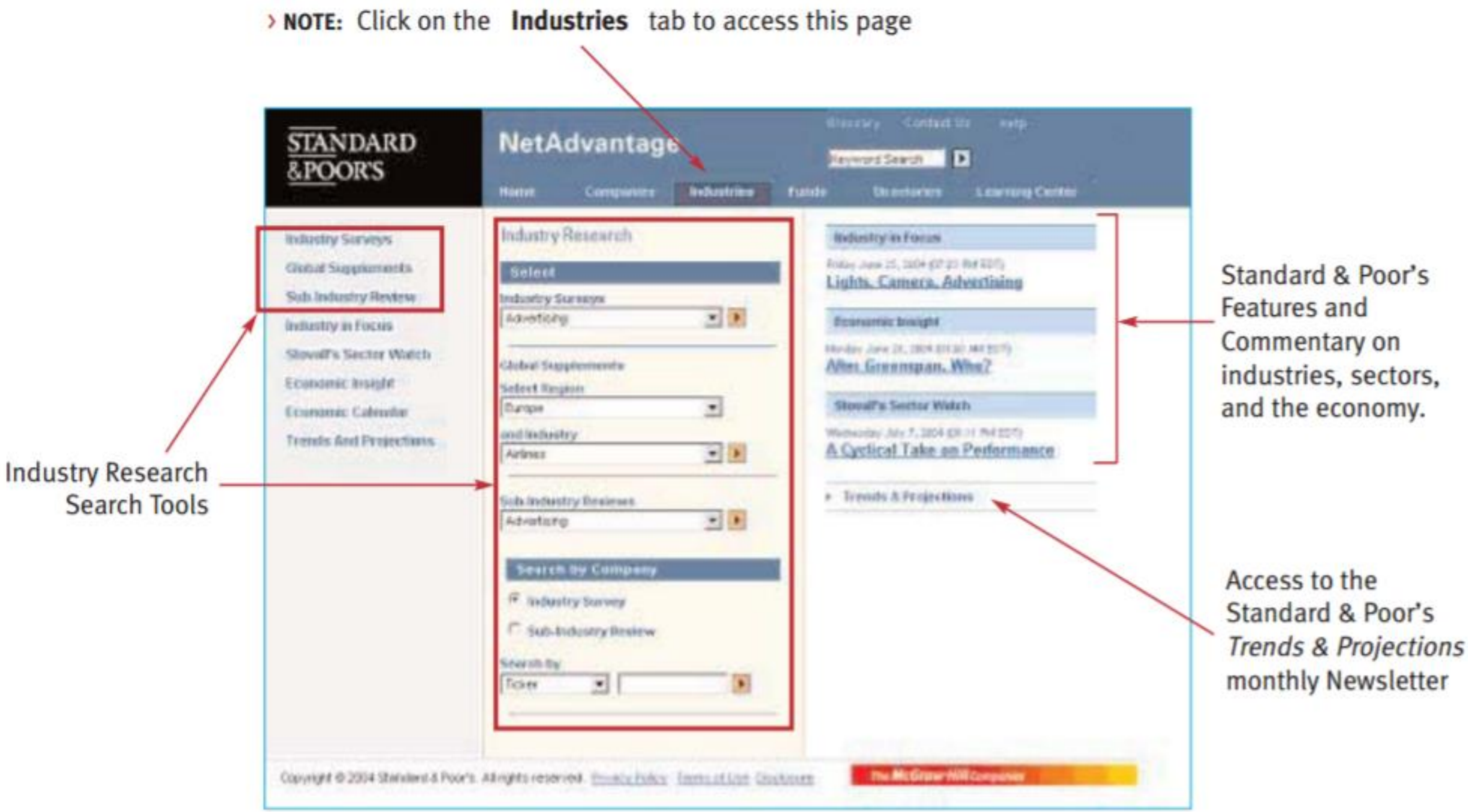
Library Resources: S&P NetAdvantage

› **NOTE:** Click on the **Companies** tab to access this page



Standard & Poor's premium research available in the "Companies" section includes: Stock Reports, Bond Reports, The Register of Corporations, Directors & Executives, Corporation Records, *The Outlook* and Company Profiles.

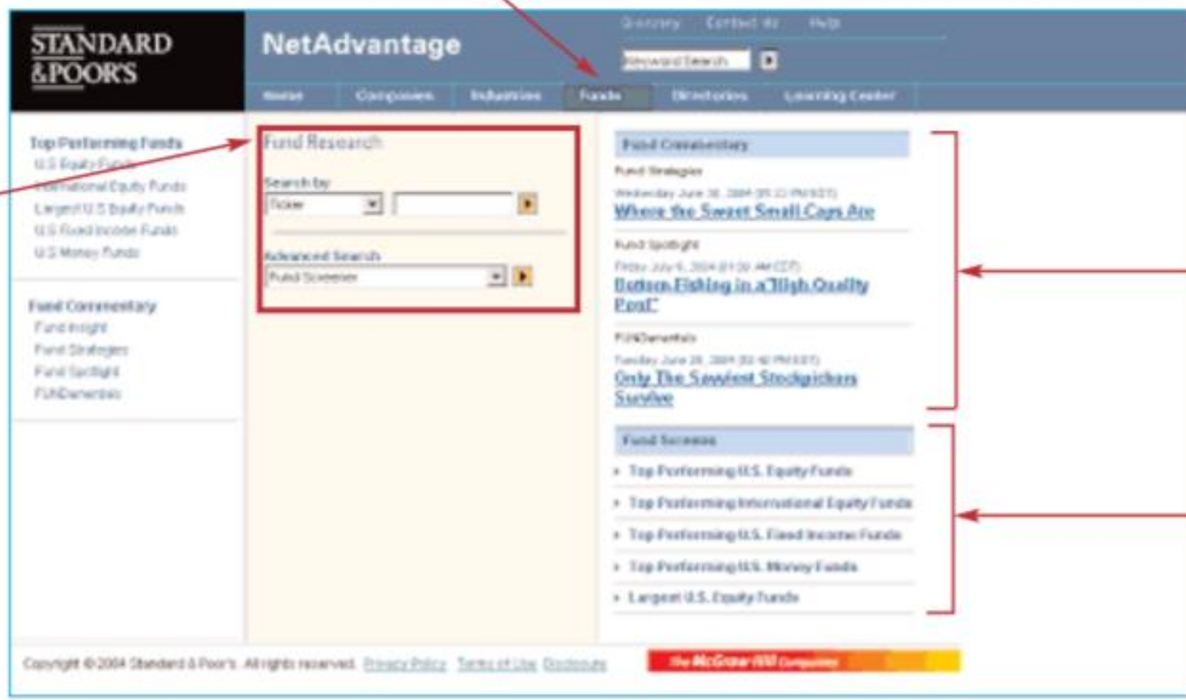
Library Resources: S&P NetAdvantage



Standard & Poor's premium research available in the "Industries" section includes: *Industry Surveys, Industry Surveys: Global Supplements*, Sub-Industry Reviews (*Monthly Investment Reviews*) and *Trends & Projections.*

Library Resources: S&P NetAdvantage

› **NOTE:** Click on the **Funds** tab to access this page



Fund research search tools

Standard & Poor's Features and Commentary on mutual funds.

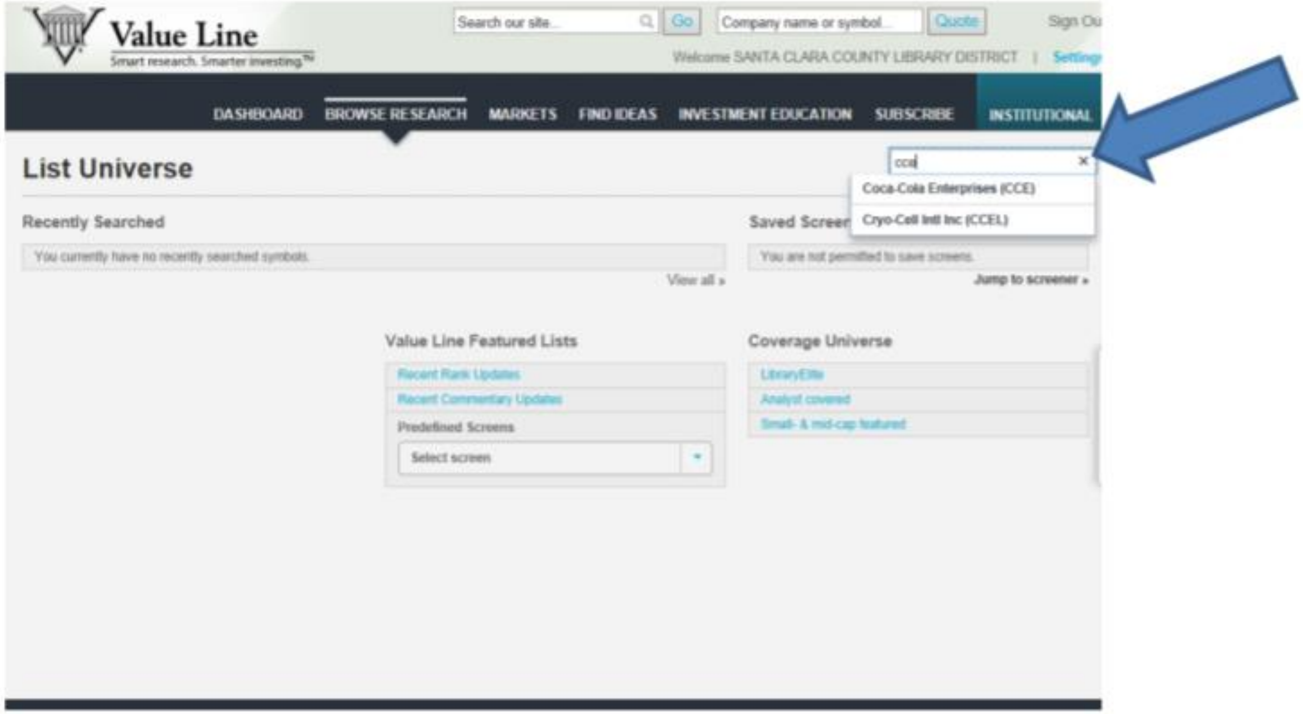
Popular Mutual Fund Screens

Standard & Poor's premium research available in the "Funds" section includes: *Mutual Fund Reports.*

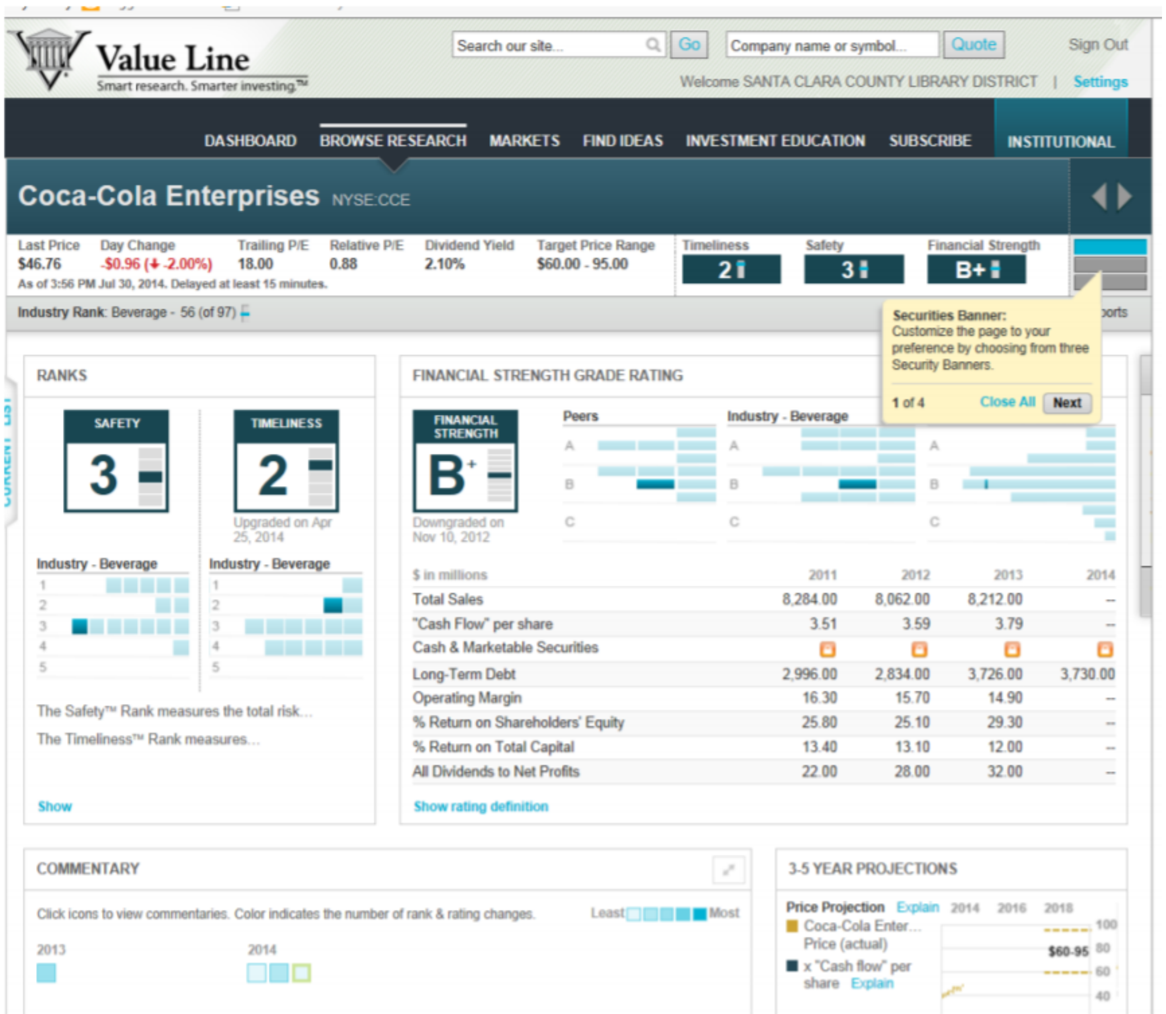
Library Resources: Value Line

How to access Value line 10 year stock reports

1. www.sccl.org
2. Research
3. Adults
4. Business & Money
5. Click on Value line.
6. Click on **Browse Research**
7. Enter ticker symbol
8.

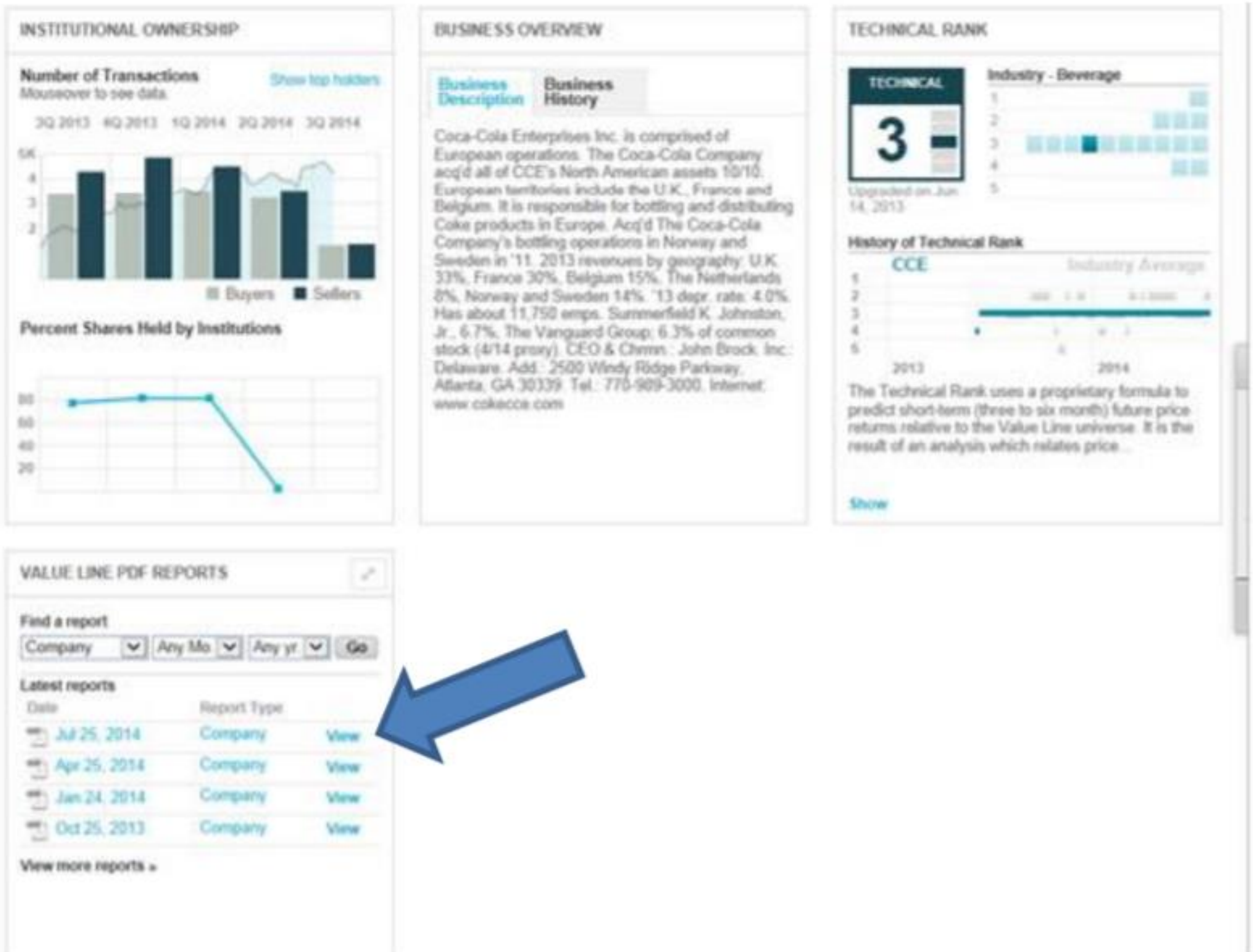


Library Resources: Value Line



Scroll down and look on the left side of the computer screen.

Library Resources: Value Line



When you scroll down look for the text with the blue arrow pointing at it, on the left side of the screen. When you click on one of these 3 options, the report will load.

Library Resources: Value Line

11. The chart will load

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	© VALUE LINE PUB. LLC	17-19
1.22	1.54	1.80	1.94	1.78	1.81	1.96	2.36	2.82	3.57	4.39	4.69	5.38	7.07	7.59	8.02	8.65	9.60	Sales per sh A	12.90
.22	.29	.44	.52	.48	.50	.56	.73	.85	1.09	1.37	1.53	1.75	2.32	2.65	2.91	3.15	3.45	"Cash Flow" per sh	4.55
.16	.22	.35	.46	.39	.43	.50	.68	.80	1.01	1.30	1.44	1.67	2.22	2.46	2.68	2.92	3.20	Earnings per sh AB	4.25
--	--	--	--	--	--	--	--	--	--	--	.05	.20	.20	.24	.30	.48	.56	Div'ds Decl'd per sh E	.80
.06	.06	.05	.06	.05	.06	.04	.04	.05	.06	.05	.11	.05	.09	.13	.14	.15	.15	Cap'l Spending per sh	.15


Q
&
A

Agenda

- Introduction
- Top investing websites & useful spreadsheets
- Library resources such as Morningstar, S&P and Value Line
- **Asset Allocation, ETFs and Robo-advisors:**
- Stock screening, Analysis, Implementation -- how to get started
- Summary and Final Q&A

- Extra "Stuff" (on-line)
- References

Asset Allocation and ETFs – and Robo-Advisors

Goal:

- Introduce a powerful freeware portfolio tool
- Provide an overview, with the good and the bad, about Robos
- A very brief treatment of both topics – hopefully enough to get you excited to investigate on your own…

Main resources: Portfolio Visualizer, Journal/CI Robo Articles

- Portfolio Visualizer: Some background and capability overview
- PV: Asset/ETF backtest of 3 well-known allocation schemes
- Summaries of 4 AAII Journal/CI newsletter articles on Robos
- Direct Indexing tax harvesting (Wealthfront)

And away we go….

Asset Allocation & ETFs: Portfolio Visualizer

Portfolio Visualizer | Examples | FAQ | Contact | Tools ▾ | Register | Login

About Portfolio Visualizer

Portfolio Visualizer is an online software platform focusing on quantitative, factor based investing tools. Portfolio Visualizer offers a growing set of tools including:

- Portfolio analysis tools for asset class allocation and portfolio backtesting
- Monte Carlo simulation to test long-term expected portfolio growth and survival
- Mean variance optimization and efficient frontier visualization
- Asset analysis tools for asset correlations, factor analysis and performance attribution
- Tools for testing tactical asset allocation models based on moving averages, momentum, market valuation and volatility targeting

About Silicon Cloud Technologies

Silicon Cloud Technologies, LLC is an Austin, TX based software company founded in 2013. Silicon Cloud Technologies, LLC specializes in software solutions for investment research and analysis, portfolio management and financial planning. You can contact us regarding custom software and data analytics projects. Portfolio Visualizer was developed by Silicon Cloud Technologies, LLC and launched in August, 2013.

Free tool located at
www.portfoliovisualizer.com

Backtest Portfolio Asset Class Allocation

This online portfolio backtesting tool allows you to construct a portfolio based on the selected asset class allocation to analyze and backtest portfolio returns, risk characteristics (Sharpe ratio, Sortino ratio), standard deviation, annual returns and rolling returns. The results include a visualization of the portfolio growth chart and rolling returns, CAGR, standard deviation, annual returns and inflation adjusted returns. An annual contribution or withdrawal amount, which is automatically inflation adjusted, can be applied in addition to annual rebalancing. You can also compare the given portfolio allocation against multiple lazy portfolios in the advanced mode. If only one portfolio is specified the annual returns will include the annual asset class returns for the selections, otherwise the annual returns are shown for each portfolio. You can also use the portfolio backtesting tool to build a portfolio based on specific mutual funds, ETFs and stocks and use associated returns for comparison.

Contribute/withdraw fixed amount; withdraw fixed %

No or annual rebalance

SP4/5/600 or ETF/MF

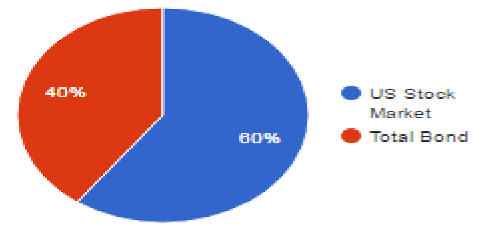
Mode	Advanced		
Start Year	1972		
End Year	2015		
Initial Amount	$ 10000 .00		
Annual Adjustment	None		
Rebalancing	Rebalance annually		
Benchmark	None		
Asset Allocation	Custom	Custom	Custom
US Stock Market	%	%	%
Large Cap Value	%	%	%
Large Cap Blend	%	%	%
Large Cap Growth	%	%	%
Mid Cap Value	%	%	%
Mid Cap Blend	%	%	%
Mid Cap Growth	%	%	%

Portfolio 1

Asset Class	Allocation
US Stock Market	60.00%
Total Bond	40.00%

Asset allocation saved as 'Classic 60-40'. Manage saved models »

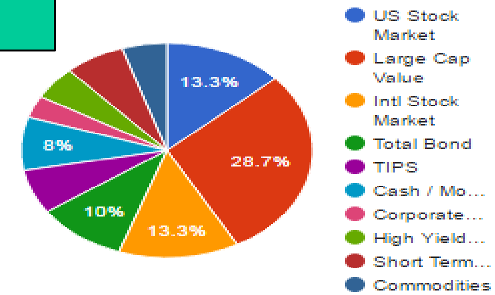
60/40 Stock Bond



Portfolio 2

Asset Class	Allocation
US Stock Market	13.33%
Large Cap Value	28.67%
Intl Stock Market	13.33%
Total Bond	10.00%
TIPS	6.67%
Cash / Money Market	8.00%
Corporate Bonds	3.33%
High Yield Bond	5.00%
Short Term Inv Grade	6.67%
Commodities	5.00%

Asset allocation saved as 'Benz Retirement'. Manage saved models »

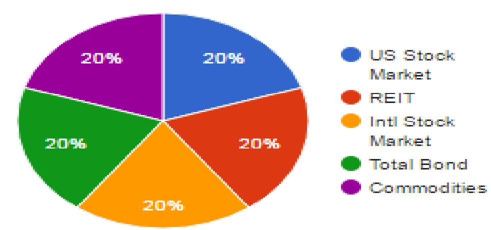


Benz/Morningstar

Portfolio 3

Asset Class	Allocation
US Stock Market	20.00%
REIT	20.00%
Intl Stock Market	20.00%
Total Bond	20.00%
Commodities	20.00%

Asset allocation saved as 'Faber 5'. Manage saved models »



Faber 5

Portfolio Returns

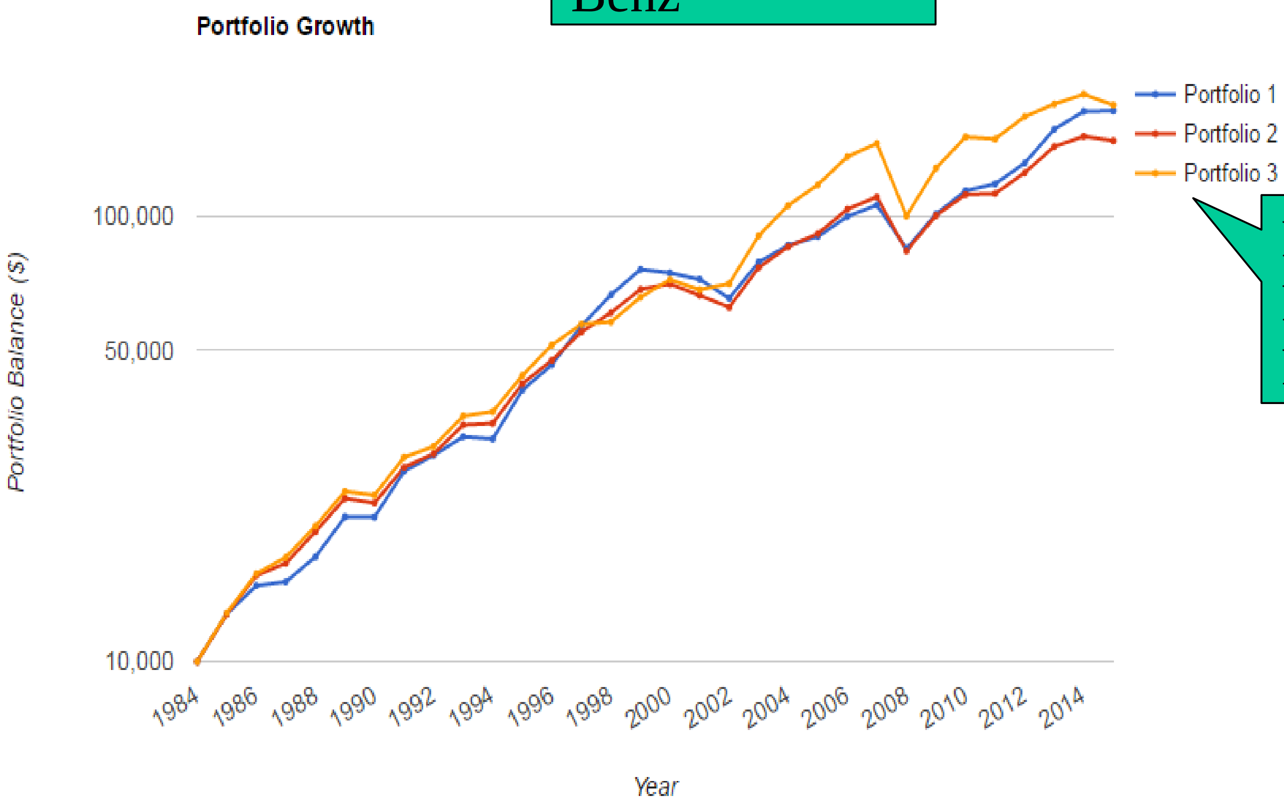
Benz | 60/40 | 60/40 | 60/40

#	Initial Balance	Final Balance	CAGR	Std.Dev.	Best Year	Worst Year	Max. Drawdown	Sharpe Ratio	Sortino Ratio	US Mkt Correlation	Intl Mkt Correlation
1	$10,000	$172,894	9.63%	11.22%	28.75%	-20.20%	-20.20%	0.61	1.30	0.98	0.67
2	$10,000	$148,088	9.08%	10.85%	27.74%	-24.40%	-24.40%	0.58	1.09	0.92	0.84
3	$10,000	$178,020	9.73%	12.23%	28.56%	-31.29%	-31.29%	0.58	1.06	0.79	0.82

Faber 5

YEARLY basis Benz

Faber 5



PF1 60/40
PF2 Benz
PF3 Faber5

Portfolio Return | Annual Returns | Rolling Returns

Year	Inflation	US Stock Market	Total Bond	Large Cap Value	Intl Stock Market	TIPS	Cash / Money Market	Corporate Bonds	High Yield Bond	Short Term Inv Grade	Commodities	REIT	PF #1 Return	PF #1 Inflation Adjusted Return	PF #1 Year End Balance	PF #2 Return	PF #2 Inflation Adjusted Return	PF #2 Year End Balance	PF #3 Return	PF #3 Inflation Adjusted Return	PF #3 Year End Balance
1985	3.80%	31.95%	22.11%	31.22%	56.87%	8.68%	7.72%	24.10%	21.78%	14.90%	13.03%	18.85%	28.01%	23.33%	$12,801	27.74%	23.06%	$12,774	28.56%	23.86%	$12,856
1986	1.10%	15.88%	15.26%	19.75%	68.33%	21.96%	6.16%	16.50%	16.86%	11.40%	-6.19%	18.95%	15.63%	14.37%	$14,803	22.21%	20.88%	$15,611	22.45%	21.11%	$15,742
1987	4.43%	1.51%	2.76%	0.29%	26.45%	8.18%	5.47%	2.60%	2.65%	4.46%	17.91%	-3.80%	2.01%	-2.32%	$15,100	6.48%	1.96%	$16,623	8.97%	4.34%	$17,153
1988	4.42%	17.78%	7.89%	22.94%	29.99%	18.66%	6.35%	9.20%	13.55%	6.95%	18.50%	13.26%	13.82%	9.01%	$17,187	17.86%	12.87%	$19,592	17.48%	12.51%	$20,152
1989	4.65%	28.66%	14.53%	24.94%	18.58%	5.89%	8.37%	14.10%	1.89%	11.45%	27.72%	8.57%	23.01%	17.54%	$21,142	18.68%	13.40%	$23,251	19.61%	14.30%	$24,105
1990	6.11%	-6.18%	8.96%	-8.29%	-21.54%	5.99%	7.81%	7.10%	-5.85%	9.23%	25.13%	-15.58%	-0.12%	-5.88%	$21,116	-2.34%	-7.96%	$22,708	-1.84%	-7.49%	$23,661
2010	1.50%	17.09%	6.42%	14.28%	11.12%	6.17%	0.12%	9.00%	12.40%	5.21%	24.13%	28.30%	12.82%	11.15%	$114,285	11.39%	9.75%	$112,059	17.41%	15.68%	$150,933
2011	2.96%	0.96%	7.56%	1.00%	-14.56%	13.24%	0.04%	7.94%	7.13%	1.93%	-7.56%	8.47%	3.60%	0.62%	$118,400	0.49%	-2.40%	$112,605	-1.03%	-3.87%	$149,384
2012	1.74%	16.25%	4.05%	15.00%	18.14%	6.78%	0.06%	11.39%	14.36%	4.52%	5.31%	17.53%	11.37%	9.47%	$131,862	11.41%	9.51%	$125,455	12.26%	10.34%	$167,693
2013	1.50%	33.35%	-2.26%	32.85%	15.04%	-8.92%	0.02%	-1.79%	4.54%	0.97%	-14.81%	2.31%	19.11%	17.35%	$157,055	14.54%	12.85%	$143,697	6.73%	5.15%	$178,972
2014	0.76%	12.43%	5.76%	13.05%	-4.24%	3.83%	0.02%	7.45%	4.58%	1.76%	-18.06%	30.13%	9.76%	8.93%	$172,387	5.36%	4.56%	$151,396	5.20%	4.41%	$188,286
2015	0.73%	0.29%	0.30%	-1.03%	-4.37%	-1.83%	0.02%	0.93%	-1.39%	1.03%	-25.70%	2.22%	0.29%	-0.43%	$172,894	-2.18%	-2.89%	$148,088	-5.45%	-6.14%	$178,020

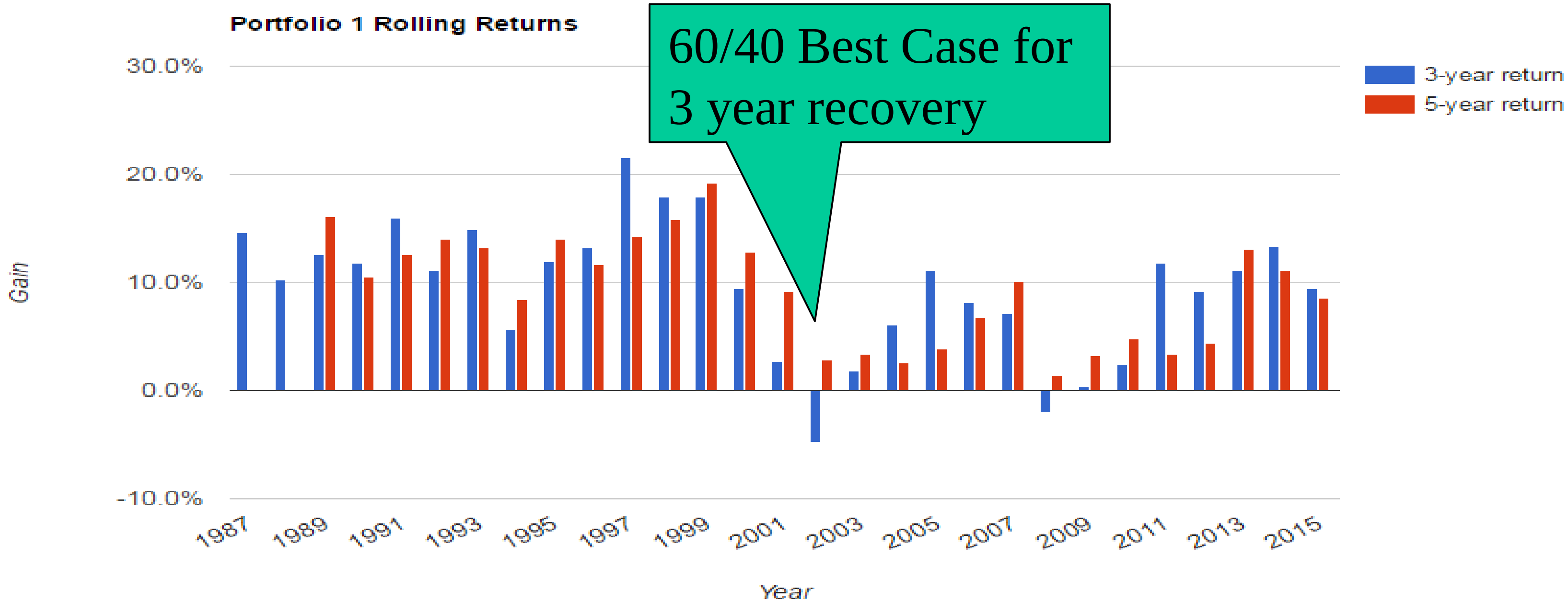
Inflation

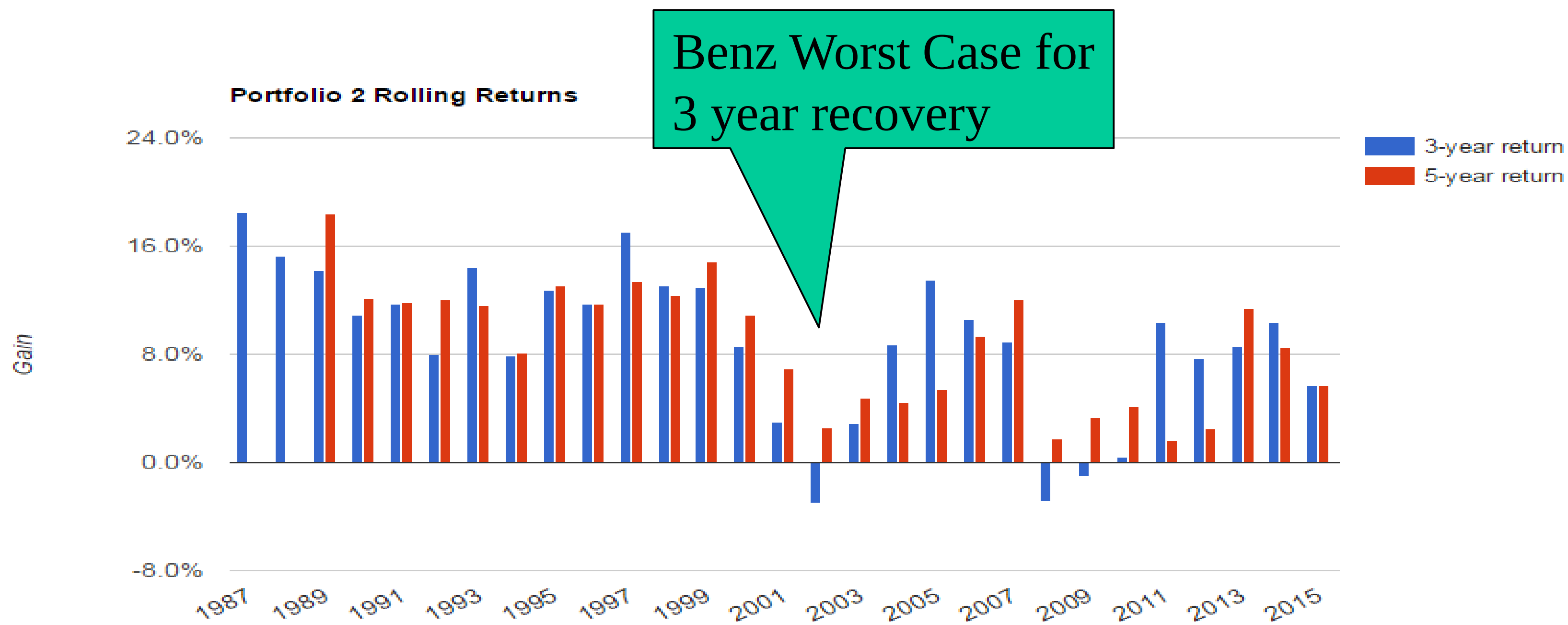
Asset class returns

60/40

Benz

Faber5


Portfolio 1 Rolling Returns
60/40 Best Case for 3 year recovery
3-year return
5-year return
30.0%
20.0%
10.0%
0.0%
-10.0%
Gain
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
Year


Portfolio 2 Rolling Returns
Benz Worst Case for 3 year recovery
3-year return
5-year return
24.0%
16.0%
8.0%
0.0%
-8.0%
Gain
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015

60/40 60/40 60/40 60/40

Faber 5

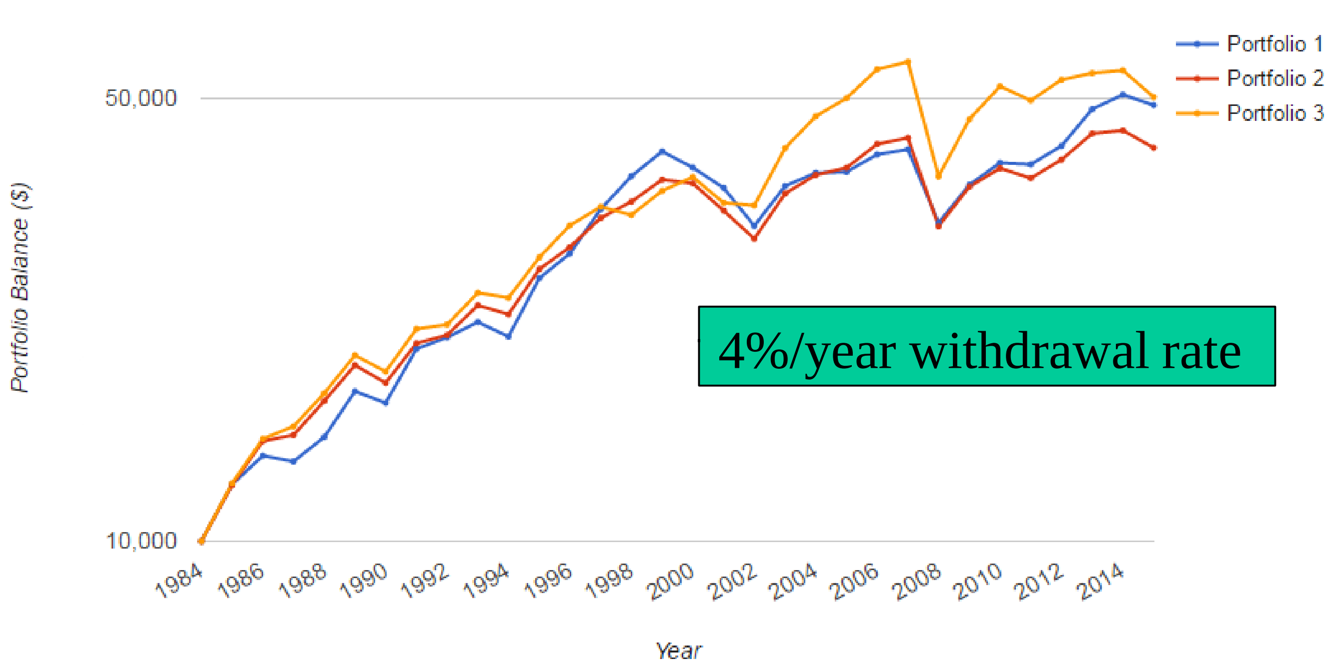
Portfolio Returns

#	Initial Balance	Final Balance	CAGR	IRR	Std.Dev.	Best Year	Worst Year	Max. Drawdown	Sharpe Ratio	Sortino Ratio	US Mkt Correlation	Intl Mkt Correlation
1	$10,000	$48,774	5.24%	11.09%	11.22%	28.75%	-20.20%	-20.20% (-23.69%)	0.61	1.30	0.98	0.67
2	$10,000	$41,776	4.72%	10.97%	10.85%	27.74%	-24.40%	-24.40% (-27.42%)	0.58	1.09	0.92	0.84
3	$10,000	$50,220	5.34%	11.67%	12.23%	28.56%	-31.29%	-31.29% (-34.04%)	0.58	1.06	0.79	0.82

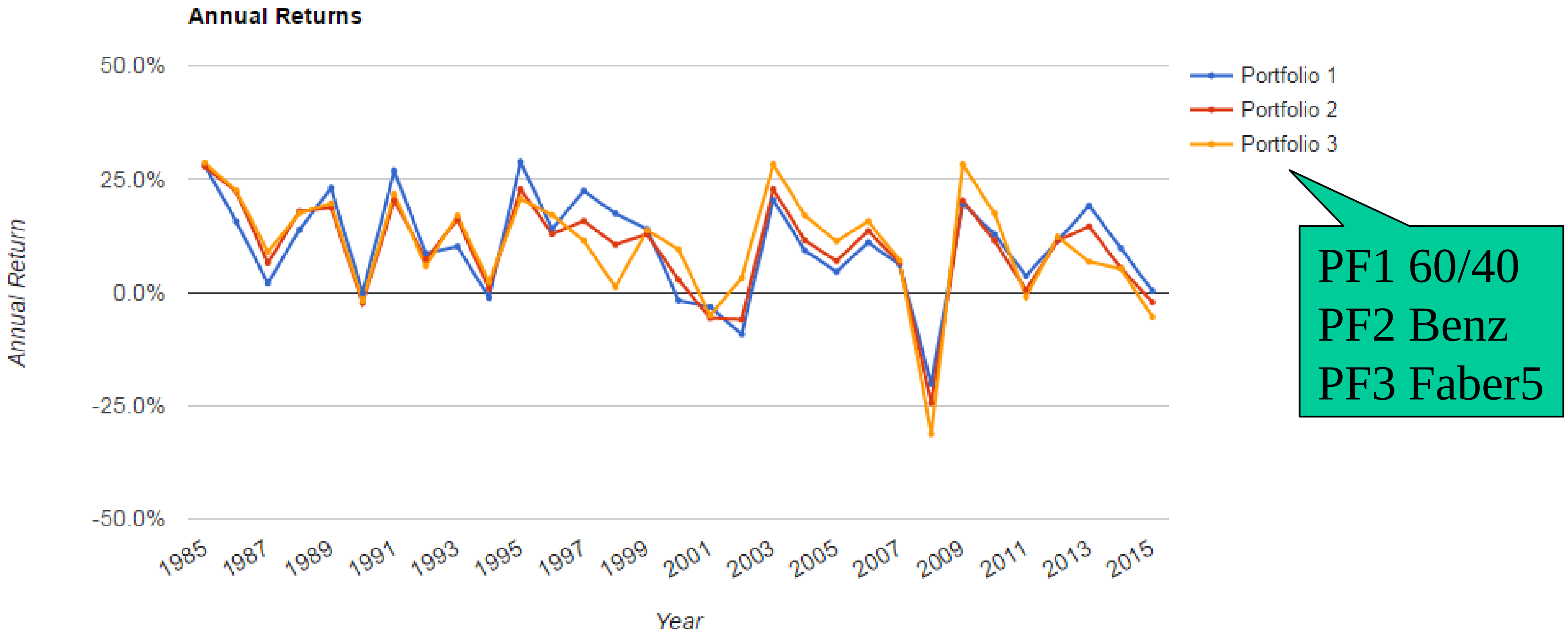
* The number in parenthesis shows the calculated value taking into account the percentage based periodic withdrawals.

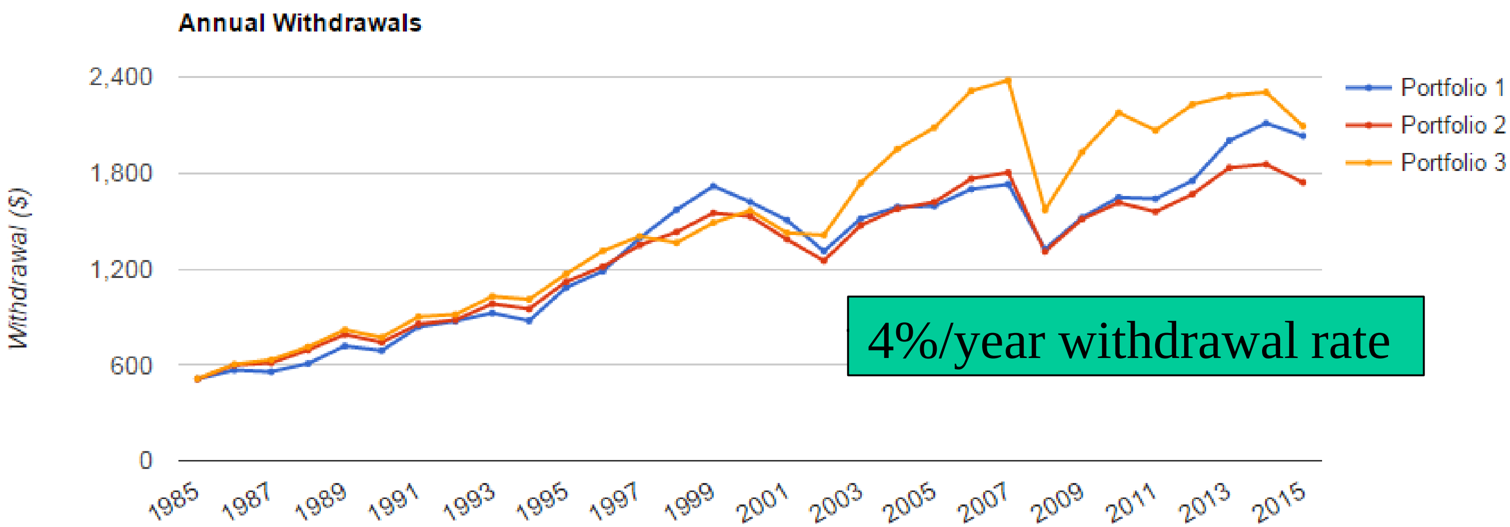
Faber 5 Benz Faber 5

Portfolio Growth



PF1 60/40
PF2 Benz
PF3 Faber5


Annual Returns
50.0%
25.0%
0.0%
-25.0%
-50.0%
Annual Return
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
Year
Portfolio 1
Portfolio 2
Portfolio 3
PF1 60/40
PF2 Benz
PF3 Faber5


Annual Withdrawals
2,400
1,800
1,200
600
0
Withdrawal ($)
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
Portfolio 1
Portfolio 2
Portfolio 3
4%/year withdrawal rate

Portfolio Return | Annual Returns | Rolling Returns

4%/year withdrawal rate

Year	Inflation	US Stock Market	Total Bond	Large Cap Value	Intl Stock Market	TIPS	Cash / Money Market	Corporate Bonds	High Yield Bond	Short Term Inv Grade	Commodities	REIT	PF #1 Return	PF #1 Inflation Adjusted Return	PF #1 Annual Adjustment	PF #1 Year End Balance	PF #2 Return	PF #2 Inflation Adjusted Return	PF #2 Annual Adjustment	PF #2 Year End Balance	PF #3 Return	PF #3 Inflation Adjusted Return	PF #3 Annual Adjustment	PF #3 Year End Balance
1985	3.80%	31.95%	22.11%	31.22%	56.87%	8.68%	7.72%	24.10%	21.78%	14.90%	13.03%	18.85%	28.01%	23.33%	$-512	$12,289	27.74%	23.06%	$-511	$12,263	28.56%	23.86%	$-514	$12,342
1986	1.10%	15.88%	15.26%	19.75%	68.33%	21.96%	6.16%	16.50%	16.86%	11.40%	-6.19%	18.95%	15.63%	14.37%	$-568	$13,642	22.21%	20.88%	$-599	$14,387	22.45%	21.11%	$-604	$14,508
1987	4.43%	1.51%	2.76%	0.29%	26.45%	8.18%	5.47%	2.60%	2.65%	4.46%	17.91%	-3.80%	2.01%	-2.32%	$-557	$13,360	6.48%	1.96%	$-613	$14,707	8.97%	4.34%	$-632	$15,176
1988	4.42%	17.78%	7.89%	22.94%	29.99%	18.66%	6.35%	9.20%	13.55%	6.95%	18.50%	13.26%	13.82%	9.01%	$-608	$14,598	17.86%	12.87%	$-693	$16,640	17.48%	12.51%	$-713	$17,116
1989	4.65%	28.66%	14.53%	24.94%	18.58%	5.89%	8.37%	14.10%	1.89%	11.45%	27.72%	8.57%	23.01%	17.54%	$-718	$17,239	18.68%	13.40%	$-790	$18,958	19.61%	14.30%	$-819	$19,654
1990	6.11%	-6.18%	8.96%	-8.29%	-21.54%	5.99%	7.81%	7.10%	-5.85%	9.23%	25.13%	-15.58%	-0.12%	-5.88%	$-689	$16,529	-2.34%	-7.96%	$-741	$17,775	-1.84%	-7.49%	$-772	$18,521
2010	1.50%	17.09%	6.42%	14.28%	11.12%	6.17%	0.12%	9.00%	12.40%	5.21%	24.13%	28.30%	12.82%	11.15%	$-1,648	$39,541	11.39%	9.75%	$-1,615	$38,770	17.41%	15.68%	$-2,176	$52,220
2011	2.96%	0.96%	7.56%	1.00%	-14.56%	13.24%	0.04%	7.94%	7.13%	1.93%	-7.56%	8.47%	3.60%	0.62%	$-1,639	$39,325	0.49%	-2.40%	$-1,558	$37,401	-1.03%	-3.87%	$-2,067	$49,617
2012	1.74%	16.25%	4.05%	15.00%	18.14%	6.78%	0.06%	11.39%	14.36%	4.52%	5.31%	17.53%	11.37%	9.47%	$-1,752	$42,045	11.41%	9.51%	$-1,667	$40,002	12.26%	10.34%	$-2,228	$53,470
2013	1.50%	33.35%	-2.26%	32.85%	15.04%	-8.92%	0.02%	-1.79%	4.54%	0.97%	-14.81%	2.31%	19.11%	17.35%	$-2,003	$48,075	14.54%	12.85%	$-1,833	$43,986	6.73%	5.15%	$-2,283	$54,784
2014	0.76%	12.43%	5.76%	13.05%	-4.24%	3.83%	0.02%	7.45%	4.58%	1.76%	-18.06%	30.13%	9.76%	8.93%	$-2,111	$50,657	5.36%	4.56%	$-1,854	$44,489	5.20%	4.41%	$-2,305	$55,329
2015	0.73%	0.29%	0.30%	-1.03%	-4.37%	-1.83%	0.02%	0.93%	-1.39%	1.03%	-25.70%	2.22%	0.29%	-0.43%	$-2,032	$48,774	-2.18%	-2.89%	$-1,741	$41,776	-5.45%	-6.14%	$-2,093	$50,220

PF1 60/40 Withdrawal: 23.7% MDD ‘99-’03
PF2 Benz Withdrawal: 27.4% MDD ’07-‘08
PF3 Faber5 Withdrawal: 34% MDD ‘07-’08


Q
&
A

Robos: Basics & Pitfalls

Matthew Bajowski

- **What are Robos??**
  - Robo-advisers are online wealth management services that provide automated portfolio management and advice…. Their goal is to make investing easier for those who don't want to actively manage their own portfolios.
  - The term is loosely applied to a wide range of online investment services
  - They tend to "bucket" investors based on risk/reward assumptions as opposed to creating a customized risk/reward profile
  - Much of the decision-making process that robo-advisers use, comes from the concepts of modern portfolio theory (MPT)

- **Weaknesses:**
  - ***Lack of Personal Investment Advice***: Many robo services ask a series of questions (usually no more than 10) in order to generate a risk/return profile.
  - ***Robos May Not Act in the Client's Best Interest:*** Human financial advisers who are programming….each robo uses different "rebalancing bands" ….. robo-advisers use affiliated brokers, custodians, clearing firms….
  - ***Robos Don't Necessarily Cut Costs:*** Some robos collect no direct fees… but often receive other forms of compensation…. example, robos may not charge a commission… but the investor must still pay the (ETFs) or MF expense ratios

Robos: Why Use One??

Wes Gray

A good fit for small investors…..

- **Robos Leverage Technology**
  - Managing a portfolio costs labor, so traditional advisers don't work with the smallest clients… maintain a $1 million minimum for separately managed accounts
  - By leveraging technology, and simplifying the menu of services, robos can take advantage of MPT… to offer world-class asset management for a fraction of the cost
- **Robos Systematize Discipline**
  - The hardest parts of investing is adhering to an investment plan
  - Since they are automated, robos can save investors from… their own emotions
- **Robos Save Time**
  - Instead of spending hours every month studying a portfolio, preparing a list of trades, and executing those trades, investors simply rely on a robo-adviser
- **Robos Eliminate Pushy Salesmen**
  - Goodbye to your suit-wearing adviser trying to upsell you into overpriced products

Robos: 3 Reasons to Embrace the Technology

Sharon Mallory

An RIA's view…..

- **Less Risk:**
  - Technology to "assist" with investment selection is nothing new …. no portfolio that is being actively managed should see declines in the 20% to 30% range—and that includes those that are managed by robo-technology!
- **Tax Efficiency:**
  - Tax efficiency is typically implemented via tax-loss harvesting… harvests previously unrecognized investment losses to offset taxes due on your other gains and income.
- **Lower Cost:**
  - Firms that can't afford to hire an entire investment team, or a CFA, robo-technology has leveled the playing field…. Passing the cost savings on to investors allows more investors with less assets to better afford advisory services

What Do Robos Offer?

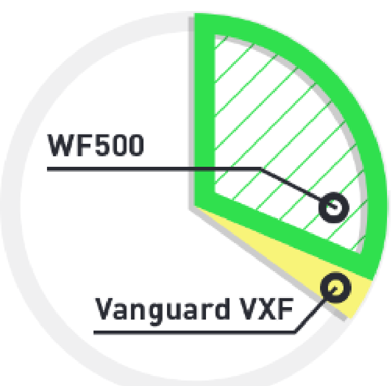
Jaclyn McClellan

	Features	Port-folio Review	Secur-ities	Tax Guid-ance	Retire-ment Withd-rawal Guid-ance	Mana-ger of Money	Staff Commun-ication	Licen-sing Require-ments	Fees	Mini-mum Account Size
Betterment	financial advising, broker/ dealer	✓	ETFs	✓	✓	firm	phone, email, app	none	0.15%-0.35% of AUM	none
Wealthfront	Investment mgmt and advice	✓	ETFs			firm	website, phone, app	none	0.25% for >$10k	$5,000

Wealthfront Direct Indexing

SINGLE U.S. STOCK ETF

INDEX REPLACEMENT



Whoa... Will Wealthfront really buy up to 1,000 individual stocks on my behalf?

That's right. We're able to do it because we are the largest automated investment service. Our software algorithms are able to efficiently trade and tax-loss harvest all of the hundreds of stocks we buy on your behalf commission-free – something that is incredibly challenging and expensive to do in any other way.

As a result, we're able to bring a service that has normally only been available to investors with $5 million or more to investors like you.

What's more, with the added tax-loss harvesting opportunities of individual stocks, our research shows that incorporating Tax-Optimized Direct Indexing into your Wealthfront portfolio could potentially add an average of 2.03% to your annual after-tax returns. Read Our White Paper.


Q
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A

Agenda

- Introduction
- Top investing websites & useful spreadsheets
- Library resources such as Morningstar, S&P and Value Line
- Asset Allocation, ETFs and Robo-advisors:
- **Stock screening, Analysis, Implementation -- how to get started**
- Summary and Final Q&A

- Extra "Stuff" (on-line)
- References

Stock Screening and Implementation

Goal:

- Introduce a simple stock screen and illustrate implementation
- An in-depth version of this took 90 minutes – we have 30 minutes
  - (Survey course – not a PhD thesis)

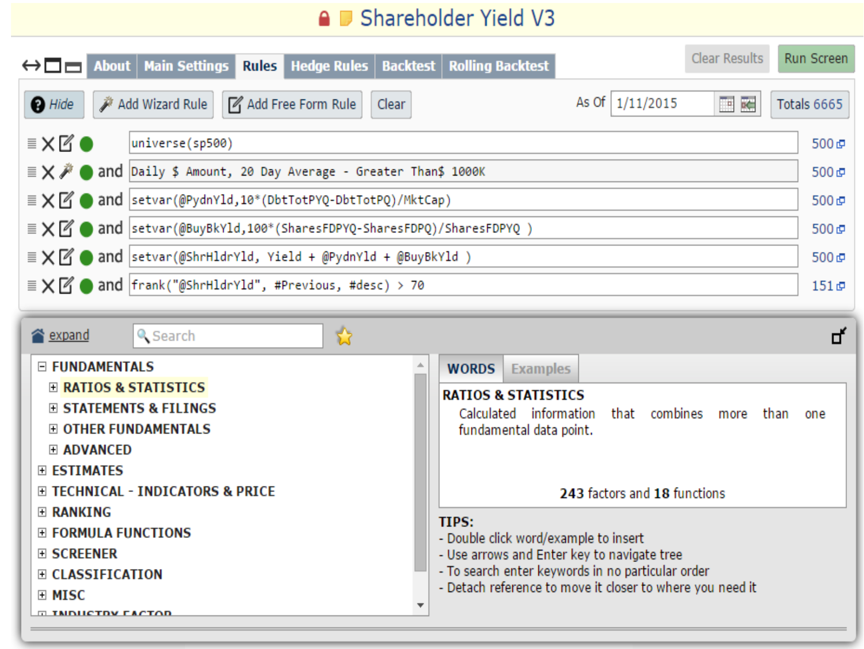
Main resources: SYLD book, Portfolio123/Stock Investor Pro

- Introductory comments on screeners and backtesters
- The Shareholder Yield (SYLD) screen and backtest
- Implementation problems and solutions

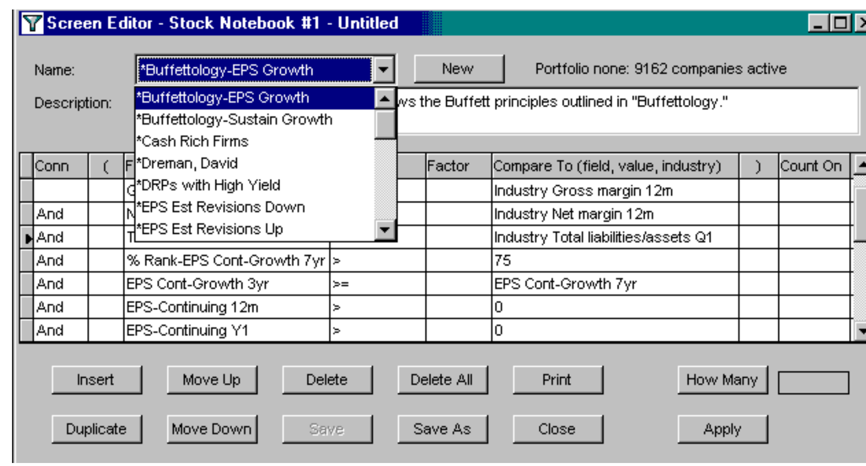
And away we go….

Introductory Comments

- Which stock screener is used??
  - Stock Investor Pro (SIPro), Portfolio123 (P123) are ones I use
  - Can build this screen in Stock Investor Pro (I have!)
  - Many free screeners out there (be aware of data issues)

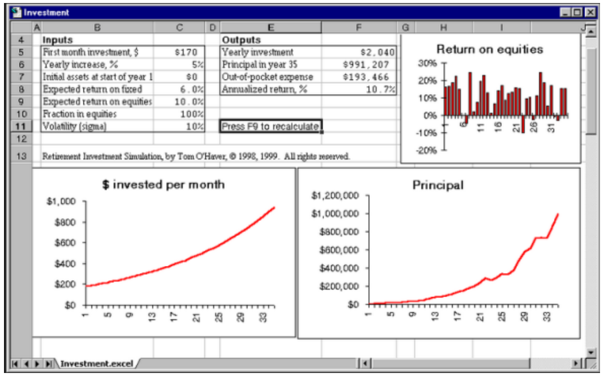


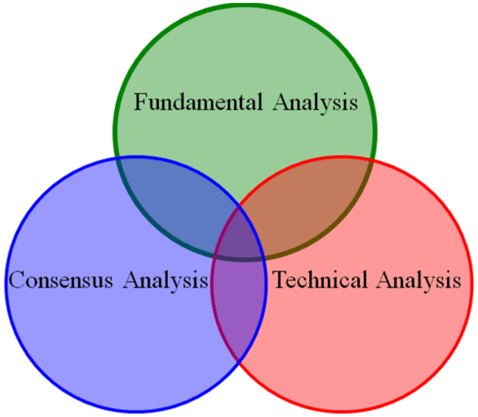
- Do you need to have a back-testing tool?
  - No, unless you want to do analysis similar to what you'll see here
  - If you want to do back-testing I use P123. (There are some free back-testing tools out there – be aware of data issues)



Introductory Comments

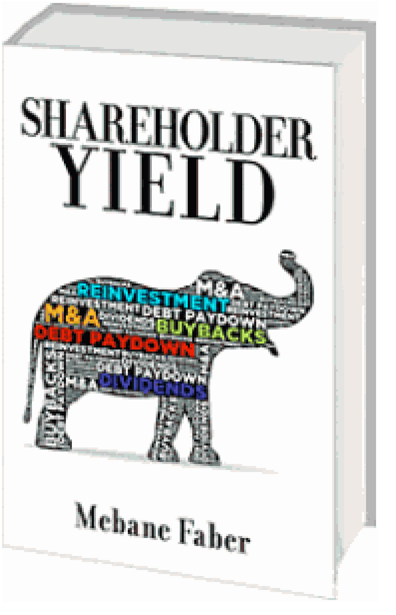
- What other tools do I need??
  - An Excel-like spreadsheet is handy – especially if you want to implement the volatility control
  - Feel free to write code if so inclined…
- How much time does this take??
  - Analysis can take considerable time (I like this part so I'm OK with spending the time)
  - Implementation should be a small amount of time. You have some control over this -- we'll talk more about this later…
- Should I do more with the screen results?
  - AAII recommends further analysis
  - If you plan to do more analysis you can double the number of stocks in the screen (e.g., 50 instead of 25) and focus on picking the top 25
  - If you do take "raw" screen results do sanity checking for acquisitions, sudden price dives or spikes, etc.





Shareholder Yield

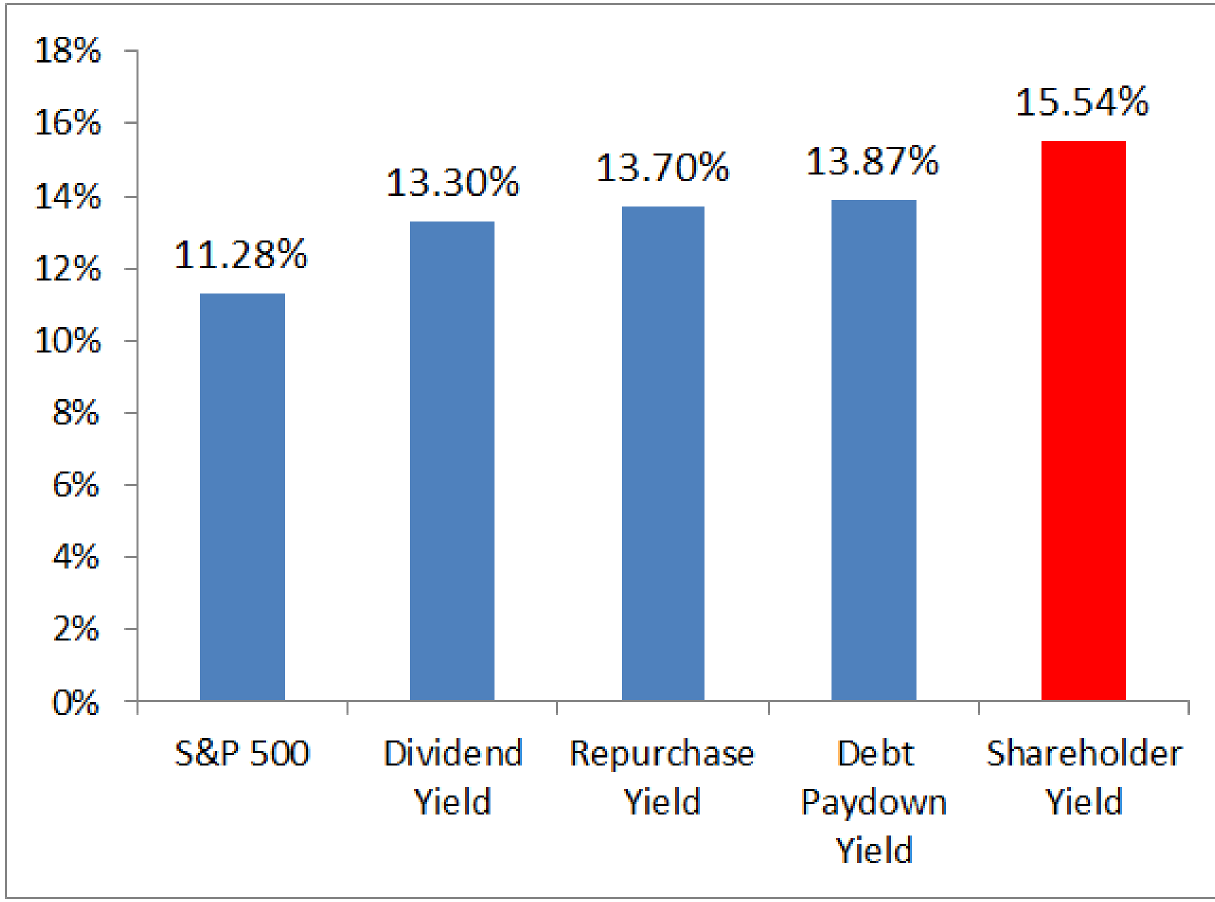
- Based on AAII-SV event in May 2013 by Meb Faber on his book <u>Shareholder Yield</u>
  - Free e-book at Amazon (occasionally)
- Key points
  - SY = DY + BBY + PDY
    - Shareholder Yield = Dividend Yield + BuyBack Yield + PayDown Yield
  - BuyBack Yield: Net share buybacks (measured over the last year)
  - PayDown Yield: Net pay down of debt (Total debt reduction over the last year)
  - All 3 terms are the real return to shareholders
  - SY has done well over time – see next slide
  - Compare SYLD ETF to **<u>PKW, PFM</u>** ETFs
    - For foreign stocks see the FYLD ETF



Shareholder Yield

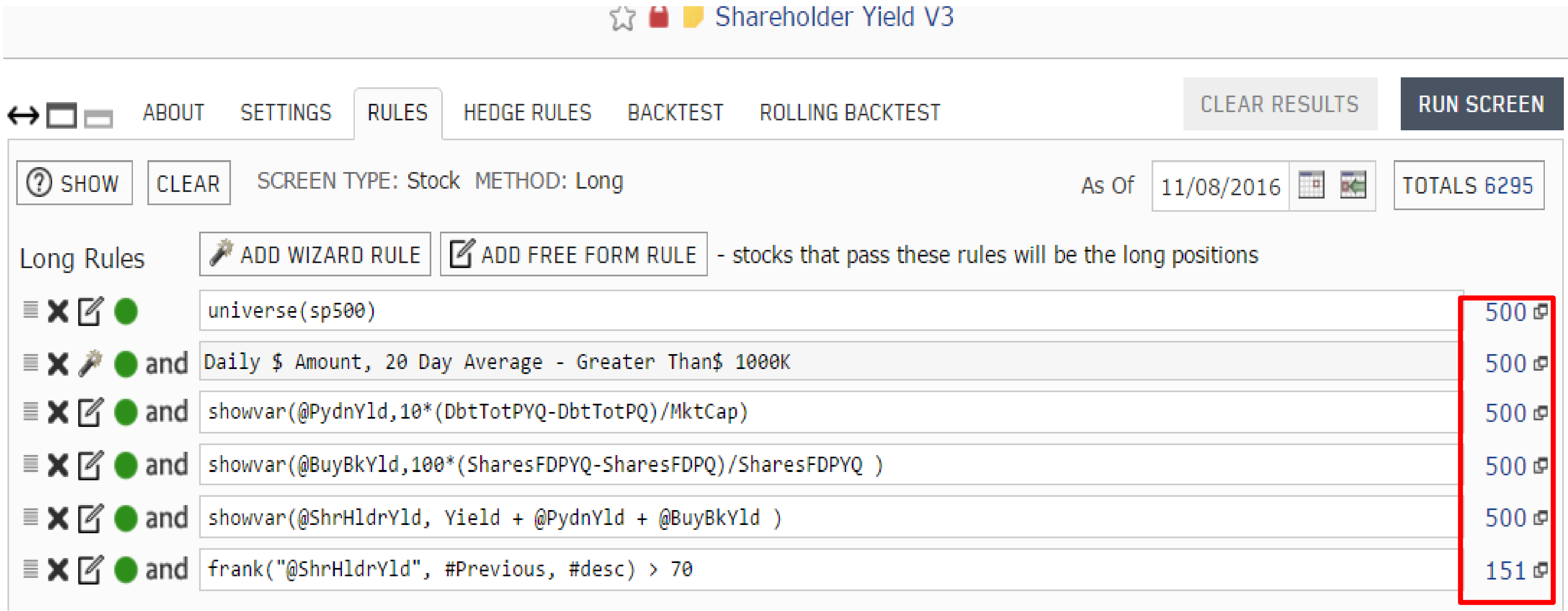
- Back-test takes top 25% of S&P500 stocks yearly (by each measure)
- Market cap-weights used within each strategy

A simple yearly rebal, mkt cap weighted, of various yield strategies below.



– **Various Measures of Cash Flow Yields, 1982-2010.**

Shareholder Yield at Portfolio123



- Terms: (some, not all)
  - Setvar = “set variable”; frank = “rank on ShrHldrYld descending order”
  - DbtTotPYQ = “Total Debt Previous Year Quarter”;
  - SharesFDPYQ = “Common Shares Fully Diluted Previous Year Quarter”

Shareholder Yield (V3): Current Stocks

Rank data as of 11/08/16, Report: Screen Factors

No	Ticker		Name	Last	MktCap	@PydnYld	@BuyBkYld	@ShrHldrYld	DbtTotPYQ	DbtTotPQ	SharesFDPYQ	SharesFDPQ	Yield
1	NAVI	[5D] [1Y]	Navient Corp	13.46	4,078.38	22.32	12.53	39.61	131,109.00	122,007.00	375.00	328.00	4.75
2	HRB	[5D] [1Y]	Block (H&R) Inc	22.14	4,850.72	-2.05	18.91	20.83	506.00	1,502.75	275.77	223.62	3.97
3	GE	[5D] [1Y]	General Electric Co	29.42	260,260.78	5.19	9.29	17.61	291,387.00	156,435.00	10,103.00	9,164.00	3.13
4	PWR	[5D] [1Y]	Quanta Services Inc.	29.00	4,381.03	-0.13	17.37	17.25	350.56	406.72	188.96	156.13	0.00
5	AAL	[5D] [1Y]	American Airlines Group Inc	41.70	21,649.01	-1.06	16.85	16.75	20,561.00	22,846.00	680.74	566.04	0.96
6	HPQ	[5D] [1Y]	HP Inc	15.28	26,142.18	7.16	5.31	15.72	25,502.00	6,772.00	1,828.00	1,731.00	3.25
7	MSI	[5D] [1Y]	Motorola Solutions Inc	78.56	13,038.05	-0.49	13.16	15.06	4,390.00	5,033.00	201.30	174.80	2.39
8	AMP	[5D] [1Y]	Ameriprise Financial Inc	90.73	14,380.34	3.99	6.90	14.20	11,145.00	5,401.00	182.70	170.10	3.31
9	QRVO	[5D] [1Y]	Qorvo Inc	50.96	6,513.55	-1.40	15.41	14.01	75.00	988.37	150.78	127.54	0.00
10	HOG	[5D] [1Y]	Harley-Davidson Inc.	57.00	10,076.06	-0.12	11.36	13.69	6,936.11	7,061.32	204.58	181.34	2.46
11	MAC	[5D] [1Y]	Macerich Co (The)	68.49	9,852.56	1.94	7.48	13.57	6,826.16	4,912.51	158.63	146.77	4.15
12	TEL	[5D] [1Y]	TE Connectivity Ltd	65.35	23,217.61	-0.06	10.86	13.07	3,903.00	4,036.00	405.00	361.00	2.26
13	AIG	[5D] [1Y]	American International Group Inc	59.50	62,051.90	-0.54	10.87	12.48	32,736.00	36,101.00	1,279.07	1,140.05	2.15
14	JWN	[5D] [1Y]	Nordstrom Inc.	52.05	9,020.26	0.39	9.20	12.44	3,141.00	2,786.00	193.50	175.70	2.84
15	GILD	[5D] [1Y]	Gilead Sciences Inc	74.04	98,547.24	0.01	9.85	12.40	22,225.00	22,127.00	1,503.00	1,355.00	2.54
16	UAL	[5D] [1Y]	United Continental Holdings Inc	59.31	18,855.01	0.37	11.97	12.34	12,121.00	11,415.00	376.00	331.00	0.00
17	LYB	[5D] [1Y]	LyondellBasell Industries NV	78.95	32,303.65	-0.24	8.21	12.27	8,318.00	9,105.00	463.00	425.00	4.31
18	CTL	[5D] [1Y]	CenturyLink Inc	24.16	13,208.03	0.60	2.66	12.21	20,414.00	19,616.00	555.16	540.38	8.94
19	BBY	[5D] [1Y]	Best Buy Co Inc	37.99	12,042.83	0.19	7.69	12.01	1,609.00	1,378.00	353.90	326.70	4.13
20	M	[5D] [1Y]	Macy's Inc	37.87	11,681.68	-0.32	8.06	11.74	7,264.00	7,632.00	341.00	313.50	3.99
21	KSS	[5D] [1Y]	Kohl's Corp	43.97	7,914.60	0.45	6.60	11.60	5,046.00	4,690.00	197.00	184.00	4.55
22	PBI	[5D] [1Y]	Pitney Bowes Inc.	14.66	2,721.44	-0.37	6.30	11.04	2,992.15	3,093.82	201.02	188.36	5.12
23	WFM	[5D] [1Y]	Whole Foods Market Inc	28.89	9,195.69	-1.07	9.80	10.67	65.00	1,052.00	356.10	321.20	1.94
24	BA	[5D] [1Y]	Boeing Co	142.20	88,016.11	-0.23	7.63	10.47	9,016.00	11,015.00	687.80	635.30	3.07
25	SYMC	[5D] [1Y]	Symantec Corp	24.71	15,402.93	-0.95	9.75	10.02	1,740.00	3,204.00	687.00	620.00	1.21

Shareholder Yield (V3.1): Back-Test

Save

Shareholder Yield V3

ABOUT SETTINGS RULES HEDGE RULES BACKTEST ROLLING BACKTEST

CLEAR RESULTS RE-RUN BACKTEST

Price	Next Open		
Rank Tolerance	0.0	Max Pos % (0-100)	0.0
Slippage %	0.0	Carry Cost %	0.0
Long Weight %	100.0		

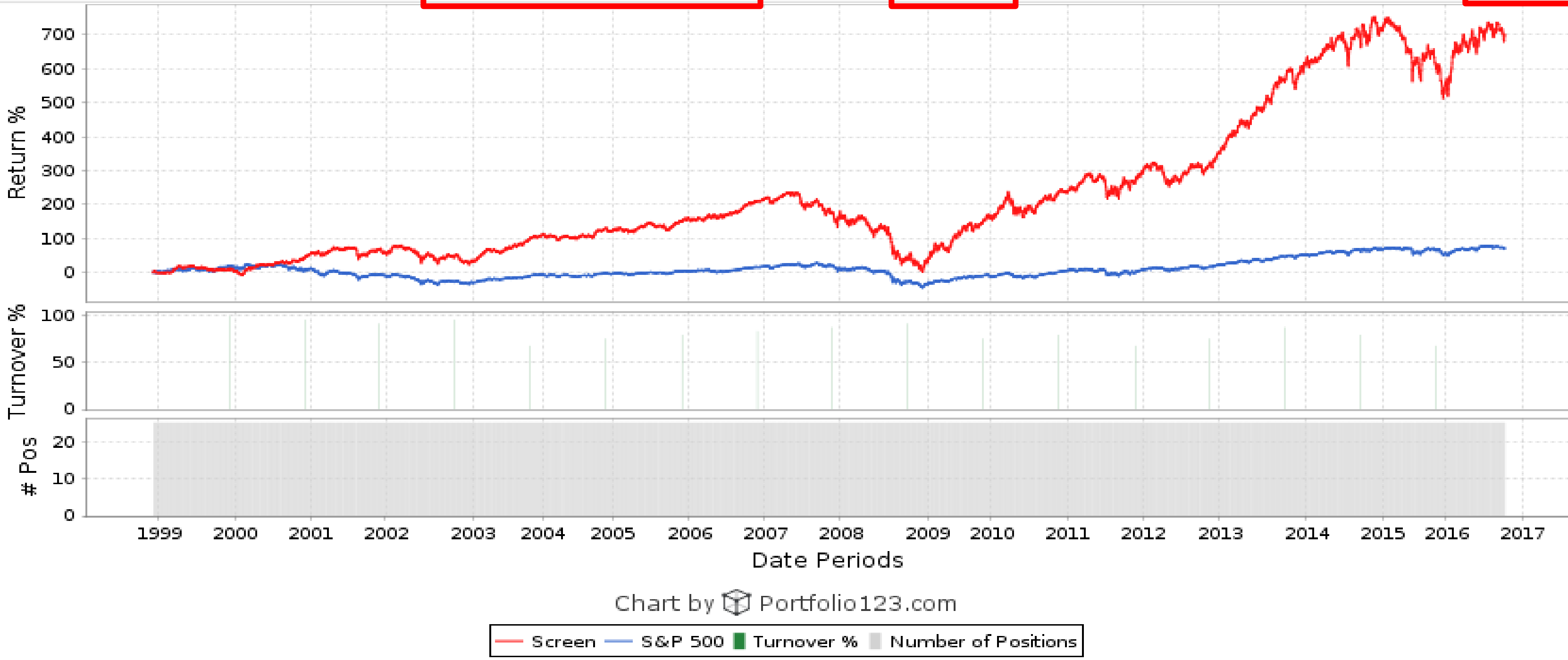
01/02/1999 - 11/08/2016

Rebalance Frequency	1 Year
Risk Statistics Period	Daily

Save Log

Statistics

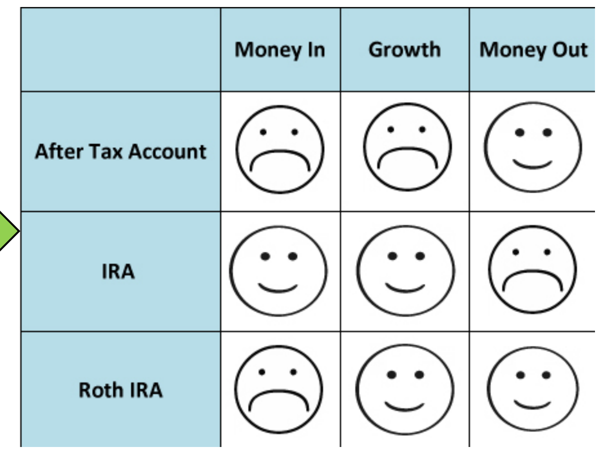
	Total Return	Annualized Return	Max Drawdown	Risk Statistics (DAILY Period) Sharpe	Sortino	StdDev	CorrelBench	R-Squared	Beta	Alpha
Screen	702.44%	12.38%	-69.84%	0.59	0.82	21.66%	0.73	0.54	0.82	10.22%
S&P 500	73.40%	3.13%	-57.00%	0.19	0.27	19.40%	-	-	-	-



Running the Screen

- SYLD screen shown is run annually

- For a "Buy and Hold" Strategy…
  - Run near the screen's anniversary date – 1 day's work per year!!
  - In taxable accounts, sell dates are offset to minimize taxes (long vs. short term gains). Over time this may get messy…



- Hesitant?? Start off small.
  - Nothing wrong with paper trading
  - Commissions insignificant as you scale up

Doing the Trades: Problems and Solutions

- A major objection to screening is the amount, and costs, of trading
  - One 25-stock screen rotated annually results in 50 trades/year
  - Assume 1 timing-event per year and you're up to 100 trades/year
  - Monthly volatility adjustments can add another 100-200 trades/year
  - High costs in terms of time and $$$

- Ways to address this problem
  - Find a lower-cost brokerage, negotiate fees with broker
  - Wrap accounts
  - Brokerages aimed at this market segment *(next slide…)*

Doing the Trades: Folio Investing®

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- Tiny Titans 101
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- BetterInvesting Top 100
- MarketGlide Target Date Folios
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Customize any motif, or build your own from scratch. Easily add stocks, delete stocks, or change their weightings.

	Weighting
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Home Depot Inc.	27.6%
Lowe's Cos.	23.7%
Lumber Liquidators Holdings Inc.	2.1%

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Investing Made Social

What do you think about this motif?

BULL CASE (46%)

Large oil spills, such as the one caused by the Deepwater Horizon explosion in 2010, can lead to delays in new exploration, or extensions of existing prohibitions.

BEAR CASE (38%)

The moratorium on drilling in the Outer Continental shelf is due to expire at the end of 2012. This would open up an area with estimated reserves between 67 and 115 billion barrels for exploration

NAME	INDEX
Biotech Breakthroughs Created By: Motif Investing	2321 (↑ 1.63%)
Cleantech Everywhere Created By: Motif Investing	2268 (↑ 0.28%)
Chinese Solar Created By: Motif Investing	1682 (↓ 0.68%)
Dividend Stars Created By: Motif Investing	1174 (↑ 0.96%)
3D Printing Created By: Motif Investing	1246 (↑ 1.06%)


Q
&
A

Agenda

- Introduction
- Top investing websites & useful spreadsheets
- Library resources such as Morningstar, S&P and Value Line
- Asset Allocation, ETFs and Roboadvisors
- Stock screening, Analysis, Implementation -- how to get started
- Summary and Final Q&A

- Extra "Stuff" (on-line)
- References

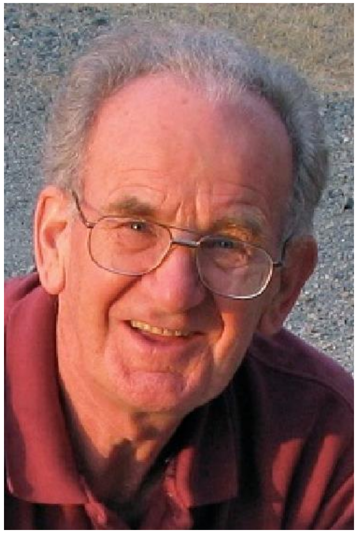
Summary

- Introduction:
  - A bit about the FPW Series
- Top investing websites & useful spreadsheets
  - Select websites and a few example spreadsheets
- Library resources such as Morningstar, S&P and Value Line
  - Free "Brand Name" advice for you to use
- Asset Allocation w/ETFs; Robo-advisors
  - Freeware tool for asset allocation; A basic understanding of Robos
- Stock screening, Analysis, Implementation -- how to get started
  - The basics of screening – and how you can implement screens

And one more thing….

AAII Local Chapters
Silicon Valley

Next Month in the Financial Planning Workshop Series…



Completed

- **Fundamentals of Investing**
- **Building a Diversified Portfolio**
- **Introduction to Computerized Investing**

Next Month

- **Active versus Passive Investing Strategies**

Future Sessions

- **Retirement Planning**
- **Managing your Cash Flow in Retirement**
- **Safe Withdrawal Rates from your Retirement Portfolio**
- **Social Security and Medicare**
- **Estate Planning**


Q
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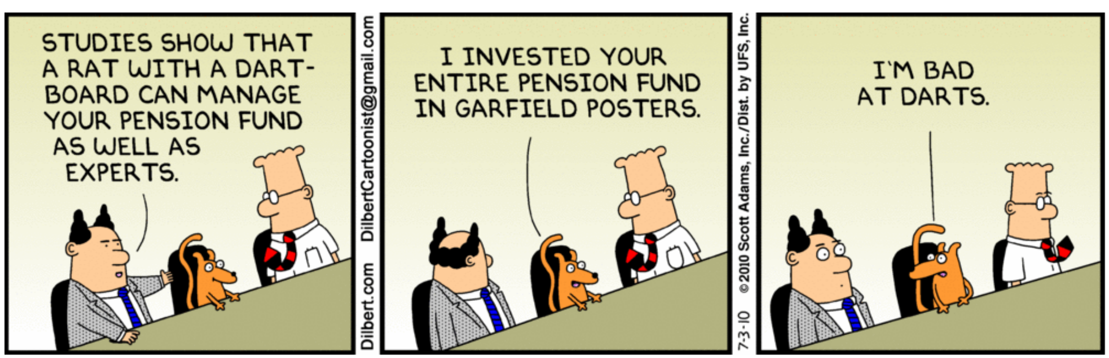
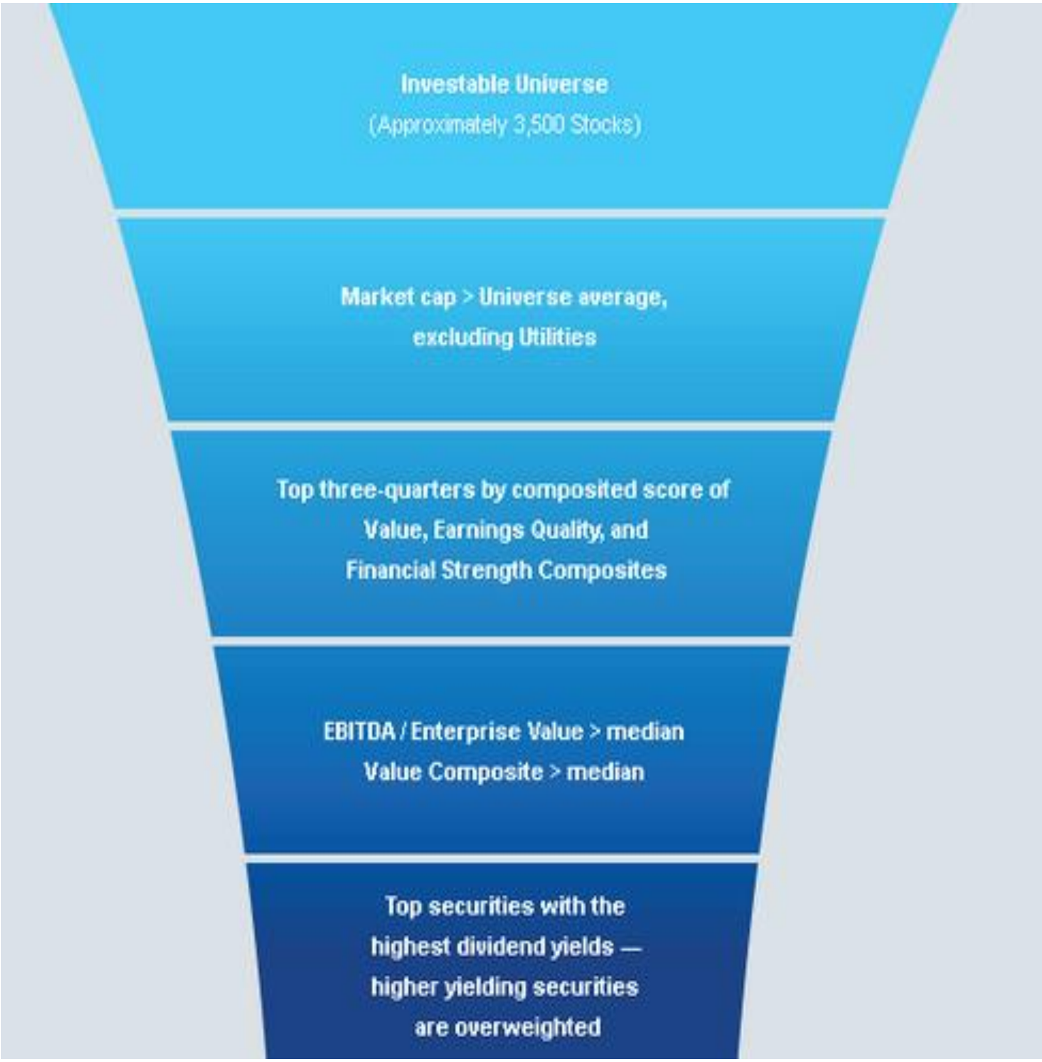

STUDIES SHOW THAT A RAT WITH A DART-BOARD CAN MANAGE YOUR PENSION FUND AS WELL AS EXPERTS.
Dilbert.com DilbertCartoonist@gmail.com
I INVESTED YOUR ENTIRE PENSION FUND IN GARFIELD POSTERS.
7-3-10 ©2010 Scott Adams, Inc./Dist. by UFS, Inc.
I'M BAD AT DARTS.

Extra "Stuff": More Web Sites



Top Web Sites

CI EDITORS' CHOICE

CHARTING & TECHNICAL ANALYSIS

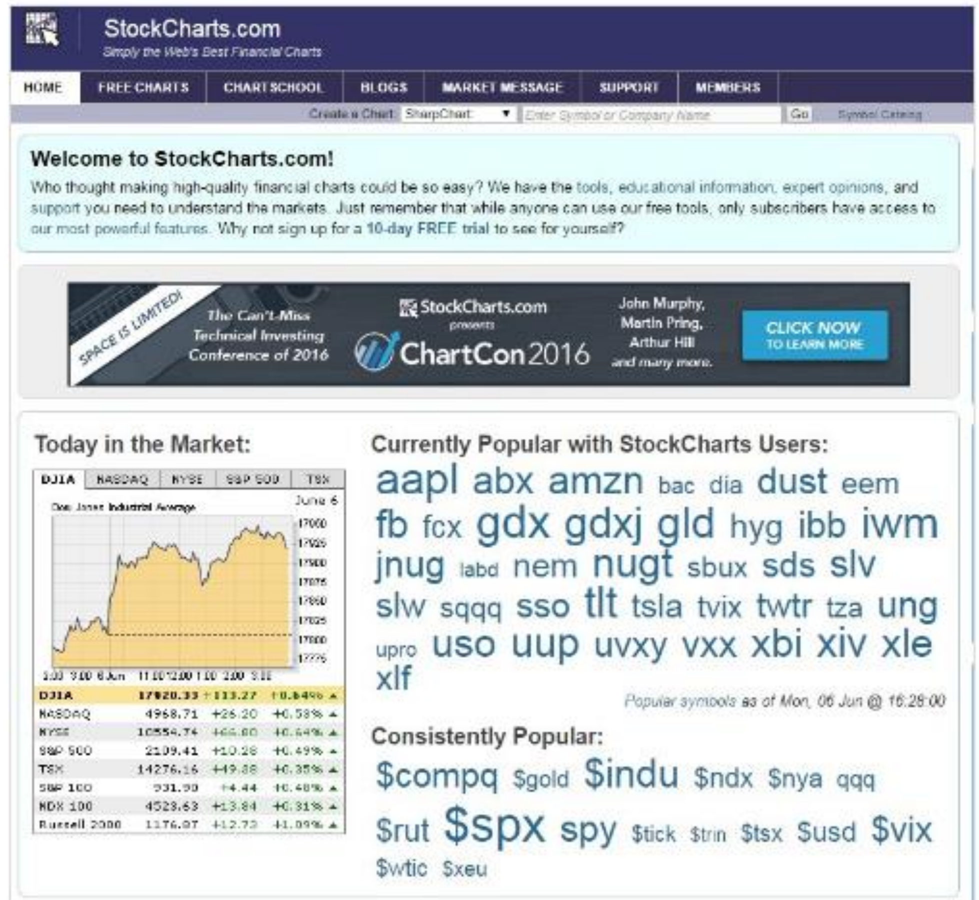
StockCharts.com

June 18, 2016

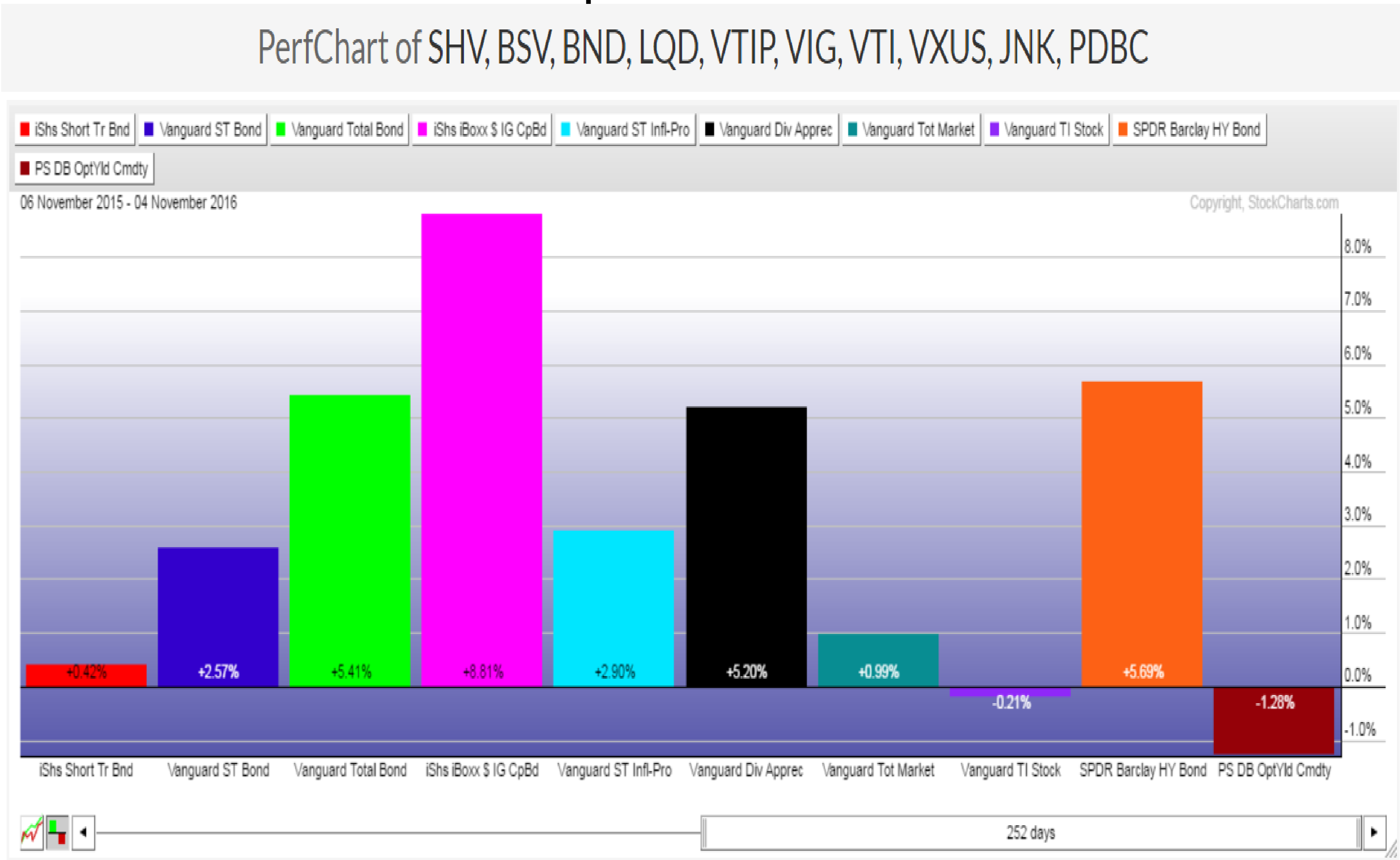
Price: Free - $49.95/mo. ($999.95/yr.)

At a Glance:

- Extensive technical analysis/charting educational content
- Broad collection of scans for technical conditions, candlestick/point & figure patterns
- Free real-time BATS data



Top Web Sites



stockcharts.com/freecharts/perf.php?SHV,BSV, BND,LQD,VTIP,VIG,VTI,VXUS,JNK,PDBC

Top Web Sites

COMPANY NEWS

Finviz

August 20, 2016

EDITORS' CHOICE

Price: Free

At a Glance:

- Simple interface
- Wide range of news sources in one place
-

Aug-05-16	01:56PM	ETFs with exposure to Pfizer Inc. : August 5, 2016
	01:49PM	Bristol-Myers: All Is Not Lost at Barrons.com
	12:01PM	Bristol-Myers Squibb's Loss Is "A Big Win" For Merck at Barrons.com
	11:21AM	Dow 30 Stock Roundup: Merck & Pfizer Earnings Impress; Exxon & Chevron Disappoint
	11:15AM	Today's Top 5 Stock Picks: Dividends, Value and Oil at Barrons.com
	11:03AM	Bristol-Myers Squibb: A $4 Billion Disaster at Barrons.com
	09:00AM	Raise Cash In A Rich Market at Forbes
	12:11AM	[$$] Business Groups Sue U.S. Government Over Tax-Inversion Rules at The Wall Street Journal
Aug-04-16	05:24PM	[$$] U.S. Government Sued Over Tax-Inversion Rules at The Wall Street Journal
	04:50PM	Business groups sue U.S. over tax-inversion rules at MarketWatch
	01:44PM	Pfizer (PFE) Stock Down as Credit Suisse Raises Estimates
	01:25PM	[$$] Jeremy Corbyn pledges £500bn investment programme at Financial Times
	01:23PM	Gabelli Funds Comments on Pfizer Inc.
	01:05PM	Gabelli Dividend Growth Fund 2nd Quarter Commentary
	01:03PM	Allergan's cash-use plan, pipeline could add to share run
	12:35PM	Breakup Or Bust: Can Pfizer Stand Alone? at Barrons.com
	09:05AM	Post Earnings Coverage as Pfizer Beats Market Expectation
	08:19AM	Pfizer Inc. breached its 50 day moving average in a Bearish Manner : PFE-US : August 4, 2016
	02:45AM	Trust Us, We're Scientists at Bloomberg
Aug-03-16	03:39PM	A Look at Mallinckrodts Operating Segments
	03:18PM	Stocks Stay Positive As Oil Surges; Apple, Disney Lead Dow, Pfizer Lags
	03:01PM	4 Big Stocks to Add to Your Buy List -- Plus 3 to Avoid
	02:37PM	Stock Indexes Stay Calm; Paycom Leaps, Pfizer Fumbles
	12:22PM	Pharma ETFs Soaring on Solid Q2 Earnings
	12:09PM	Pfizer: Can New Drugs Growth Eliminate the Need for a Split-up?
	11:08AM	US Market Indexes Continue to Drop
	11:05AM	Why a Trump presidency could be scary for Ireland at CNBC
	10:18AM	US STOCKS-Wall St opens little changed
	09:55AM	Pfizer: Five Years is a Long Time to Wait for Nothing at Barrons.com
	07:14AM	Wall Street wants answers on a potential Pfizer split, but Pfizer wont give one yet at MarketWatch
	01:30AM	Novartis pill gets U.S. breakthrough designation in breast cancer Reuters
	12:38AM	[$$] Pfizers Results Beat Expectations at The Wall Street Journal
	12:37AM	[$$] Biogen Draws Takeover Interest From Rival Drugmakers at The Wall Street Journal

CONSENSUS ANALYST ESTIMATES

Estimize.com

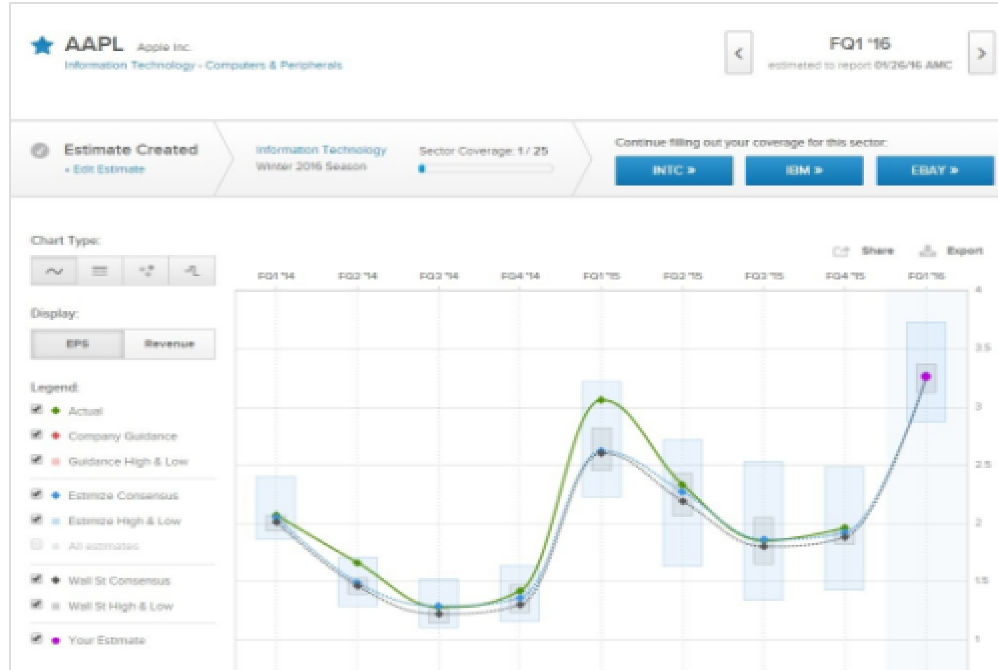
December 19, 2015

Top Web Sites

Price: Free

At a Glance:

- Quarterly earnings and revenue estimates by Wall Street analysts and users
- Graphical illustrations of consensus earnings estimates
- Compares recent earnings estimates to actual results



Estimize.com describes itself as an open financial estimates platform that facilitates the aggregation of fundamental estimates from independent, buy-side and sell-side analysts, along with those of private investors and students. The service's goal is to provide more "more accurate and more representative view of expectations" by including estimates from a diverse community of individuals. According to the site, 14,735 analysts contribute to Estimize, resulting in coverage of more than 1,500 stocks each quarter.

Top Web Sites

CONSENSUS ANALYST ESTIMATES

Morningstar.com

December 19, 2015

Price: Free

At a Glance:

- Traditional table view of earnings estimates
- Data offered for current fiscal year and next
- Recent changes in consensus estimates also shown

Caterpillar Inc CAT | ★★★

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Valuation · **Wall Street Estimates**

Annual Earnings Estimates CAT

	12/2015		12/2016	
	USD	Growth %	USD	Growth %
High	4.60	-5.0	4.00	-13.0
Low	4.23	-12.7	3.51	-17.0
Mean	4.47	-7.7	3.73	-16.6
Median	4.54	-6.2	3.74	-17.6
30 Days Ago	4.55	-6.0	3.74	-17.8
60 Days Ago	4.63	-4.4	4.15	-10.4
90 Days Ago	4.83	-0.3	4.73	-2.1
Number of Estimates		6		6

Data as of 11/30/2015

Analyst Ratings CAT

Five-Year Growth Forecast	Industry Avg
0.1%	—

Average Rating	Last Month	Industry Avg	S&P 500 Avg
3.5	—	—	—

Rating Scale: 5=Buy, 1=Sell

Total Number of Analysts:

Buy	2
Outperform	0
Hold	6
Underperform	0
Sell	0

Data as of 11/30/2015

0 3 6 9

Source: Morningstar Consensus Estimate data

Top Web Sites

RETIREMENT PLANNING

Bankrate Retirement Planning Resources

February 20, 2016

Price: Free

At a Glance:

- A large number of retirement planning calculators
- Useful articles on retirement planning
- Retirement planning blog

RETIREMENT

Print Subscribe

Retirement Calculator Center

Whether just starting to plan for retirement or nearing the age of required minimum distributions, these free retirement calculators are here to help. Choose the appropriate calculator below to compare saving in a 401(k) account vs. a Roth IRA, determine the impact of changing your payroll deductions, estimate your Social Security benefits, and more, as you figure what it takes to save toward a secure retirement.

Top retirement calculators:

- 401(k) calculator
- Roth IRA calculator
- IRA required minimum distribution
- Retirement income calculator
- Traditional IRA calculator
- 401(k) contribution calculator
- 72(t) calculator: Early withdrawals from retirement accounts

Other retirement calculators:

- 401(k) or Roth IRA calculator
- 401(k) savings calculator
- 401(k) savings with profit sharing
- 401(k) and Roth contribution calculator
- 403(b) savings calculator
- 457 savings calculator
- 72(t) distributions: Impact on retirement fund balances
- Beneficiary required minimum distribution
- Convert IRA to Roth calculator
- How much life insurance do I need?
- How much money can I save in my 401(k) plan?

Top Web Sites

STOCK VALUATION

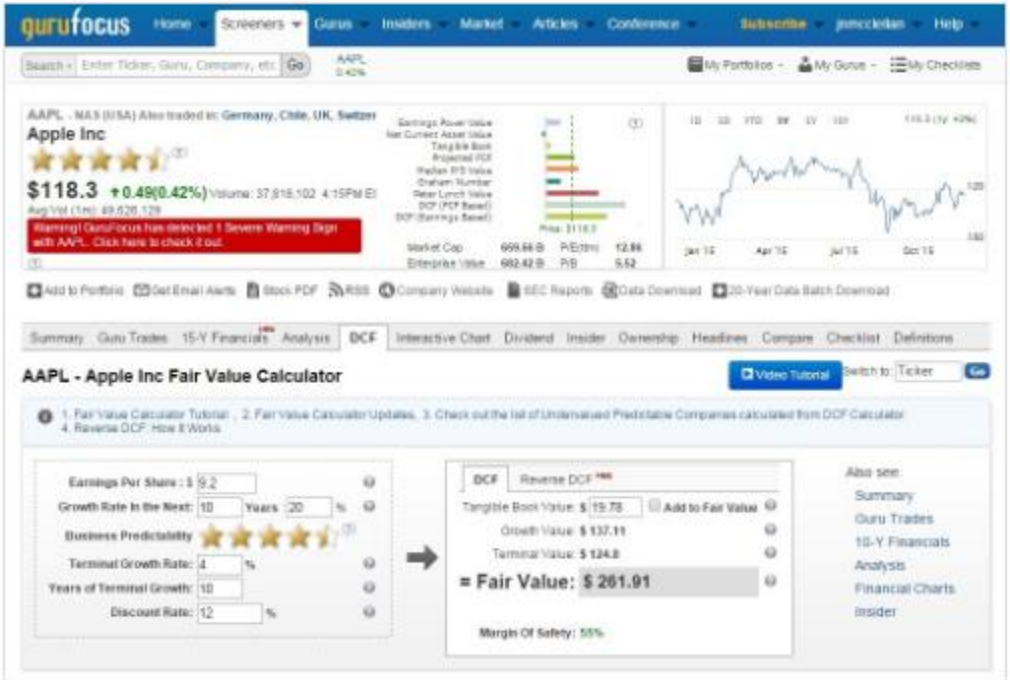
GuruFocus

December 19, 2015

Price: Free - $349/year; 7-day trial

At a Glance:

- Visually intriguing valuation presentation
- Wide range of tutorials available on how to use the site
- Fair amount of features for free membership



Top Web Sites

TAX RESOURCES

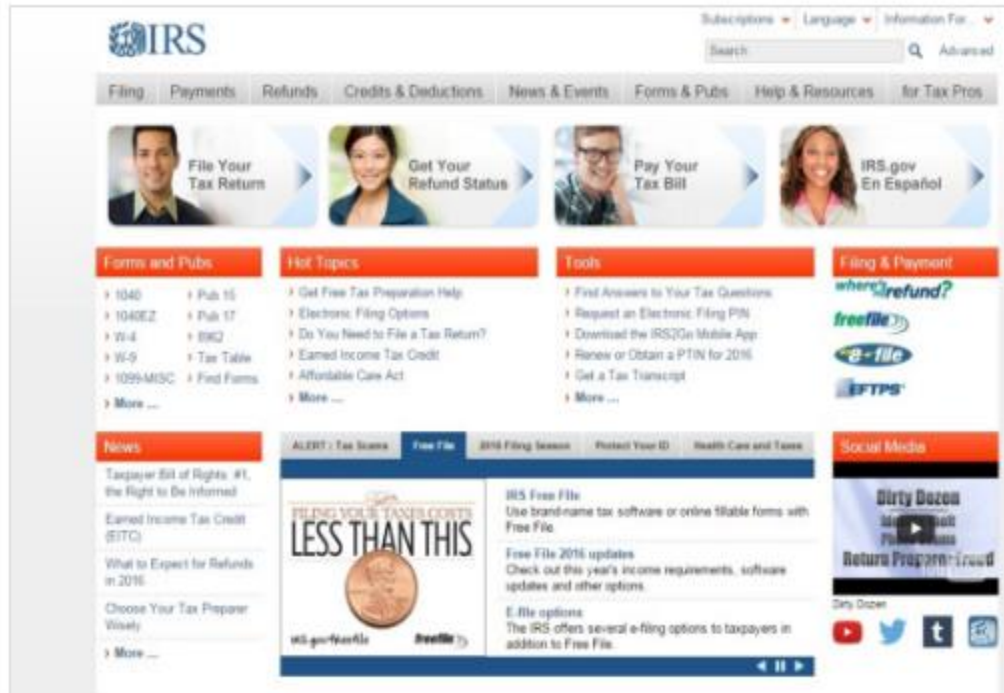
Internal Revenue Service

February 20, 2016

Price: Free

At a Glance:

- Comprehensive resources for users
- Authoritative source for answers to tax questions
- Could be overwhelming for people without knowledge of IRS-speak



Top Web Sites

PERSONAL FINANCE

Kiplinger

February 20, 2016

Price: Free

At a Glance:

- Wide range of personal finance topics
- Economic outlooks and model portfolios
-

Top Web Sites

MUTUAL FUND & ETF RATINGS & RECOMMENDATIONS

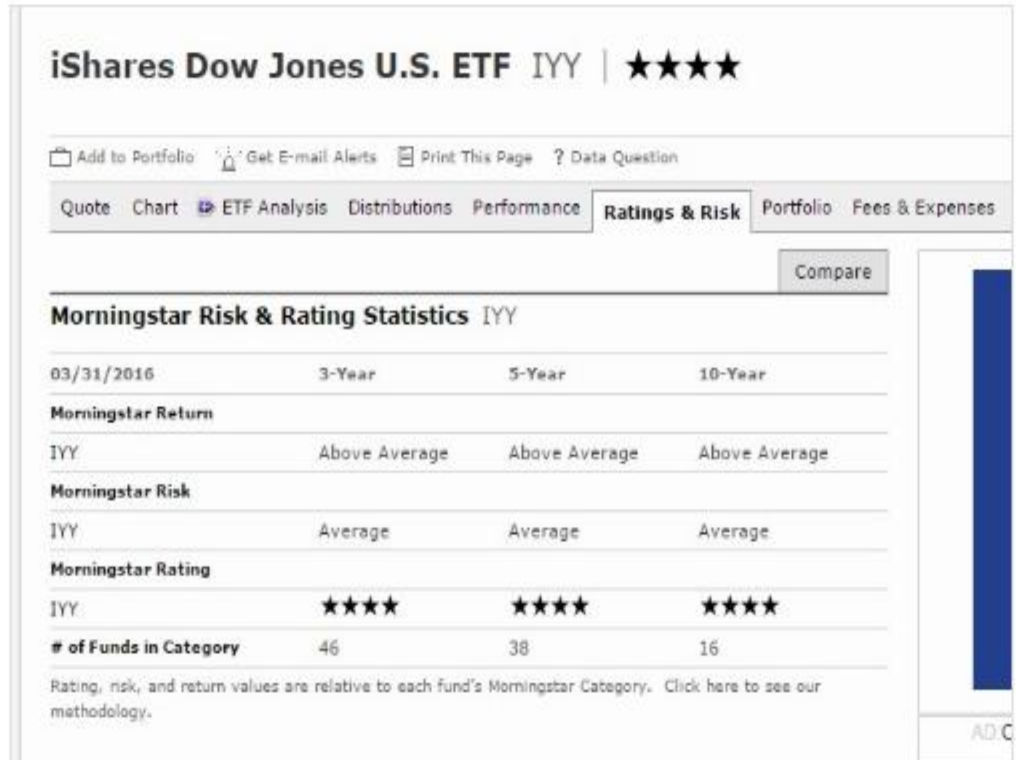
Morningstar.com

April 16, 2016

Price: Free - $199/yr.

At a Glance:

- Breadth and depth of information
- Dependable brand name
- Fair market value for many funds



03/31/2016	3-Year	5-Year	10-Year
Morningstar Return			
IYY	Above Average	Above Average	Above Average
Morningstar Risk			
IYY	Average	Average	Average
Morningstar Rating			
IYY	★★★★	★★★★	★★★★
# of Funds in Category	46	38	16

Rating, risk, and return values are relative to each fund's Morningstar Category. Click here to see our methodology.

PORTFOLIO TRACKING, ANALYSIS & OPTIMIZATION

Portfolio Monkey

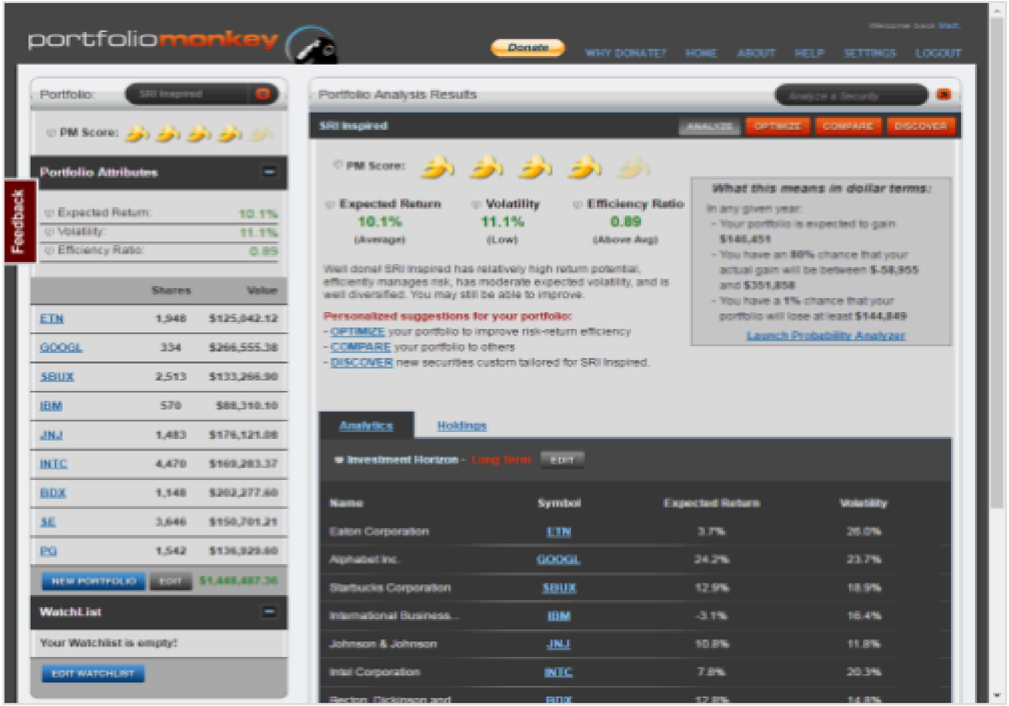
October 15, 2016

Top Web Sites

Price: Free

At a Glance:

- Free services rival a paid professional service
- Ability to compare two different portfolios side-by-side
- Altruistic mission to educate investors as a social venture



Once the portfolio has been created, an overall quantitative score, called a ‘banana’ rating, is given to your portfolio, as well as an expected return, volatility and an efficiency ratio (expected return divided by volatility). The banana rating is based on how well the portfolio scores in four categories: return potential, riskiness, diversification, and how optimized it is. …. The site shows you how to optimize your portfolio, such as suggesting how many shares to buy or sell of each holding in order to reach an optimal level of expected performance while minimizing volatility. ….

Reference Material

Web Sites, Tools, Data Sources, etc.

- General information
  - http://www.aaii.com articles, spreadsheets, portfolios, etc.
  - http://finance.yahoo.com/?u great general site
- Blogs
  - http://www.hussmanfunds.com blog, economic financial studies
  - http://www.ritholtz.com/blog/ Famous financier blog
  - http://www.johnmauldin.com/ Another famous financier
- Data, reference sites
  - http://www.investorwords.com/ investment dictionary
  - http://www.standardandpoors.com/home/en/us S&P site
  - http://www.wikiposit.org/w great free financial data
  - http://www.calculatedriskblog.com/ the best pure economic charting site
  - http://research.stlouisfed.org/fred2/series/STLFSI/downloaddata?cid=98 FRED – Fed data
  - http://www.pinnacledata.com/index.html http://quotes-plus.com/joomla/; http://www.fasttrack.net/ data sources (fees)
- Brokerages: Proprietary information, tools, etc.
  - https://www.schwab.com/ https://us.etrade.com/e/t/home https://www.fidelity.com
  - https://www.folioinvesting.com www.motifinvesting.com

Web Sites, Tools, Data Sources, etc.

- Tools
  - http://www.assetcorrelation.com/ Generates correlations across instruments
  - http://stockcharts.com/ Draw complex charts
  - http://www.google.com/ Can find anything
  - http://sumgrowth.com/ momentum & timing site (fees after trial period)
  - https://www.vectorvest.com/vvlogin/login.aspx back testing tool (fees)
  - http://www.portfolio123.com/ back testing toll (fees)
  - http://www.qmatix.com/XLQ.htm (good Excel plug-in for Yahoo! Data, SIPro)
  - Excel, Visual Basic: do a lot of hacking with this tool
  - SIPro: best reasonably priced stock screener out there
- Economics, Finance sites
  - http://advisorperspectives.com/dshort/ mix of economic and market, very understandable, lots of fun charts
  - http://www.businesscycle.com/ ECRI – famous economic forecaster, downloadable info
  - http://gfs.eiu.com/about/ monthly economic forecast (free – I think)
- Quant sites (mostly blogs)
  - http://cssanalytics.wordpress.com/ Lots of algs, models, ideas
  - http://www.cxoadvisory.com/ Lots of algs, models, economic forecasts, etc
  - http://www.mebanefaber.com/ Faber' blog; some algs, lots of good reading references, ideas
  - http://marketsci.wordpress.com/ Lots of algs, models, ideas
  - http://boards.fool.com/mechanical-investing-100093.aspx board with lots of ideas, algs