

Securitizing Equity Returns

Northfield's 29th Annual Research Conference

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Questions

- Why do people buy bonds?
- Are equity income funds a good substitute for bonds?
- Do leveraged equity products deliver?

Vanguard Equity Income Fund

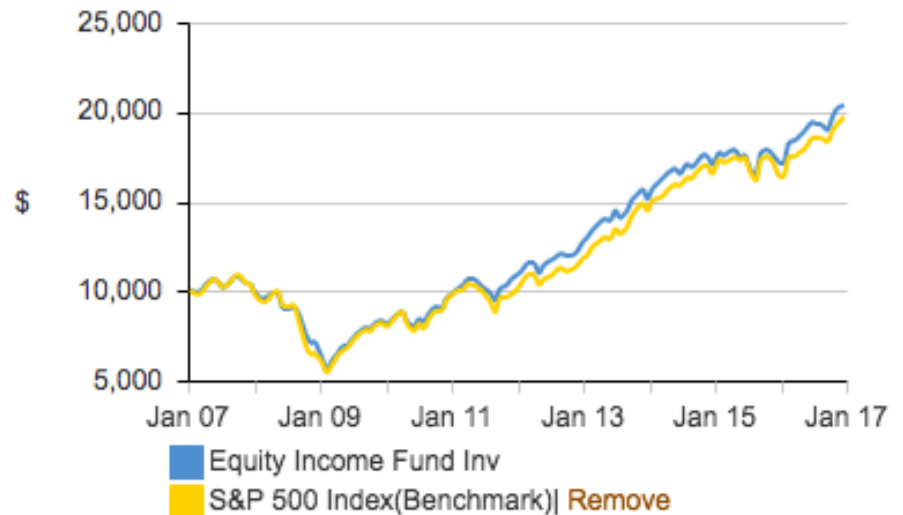
- Beta: .99
- R Squared: 99%
- One of many...

Performance

Growth of \$10,000

Range [1 year](#) | [3 years](#) | [5 years](#) | [10 years](#)

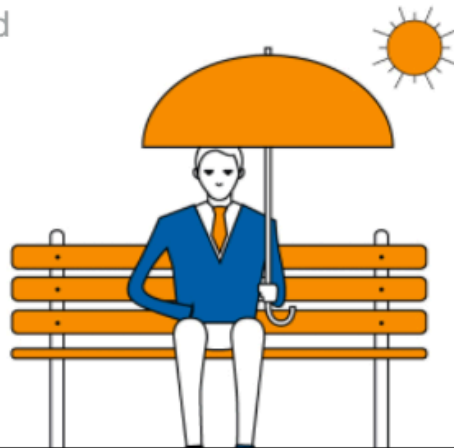
As of 1/31/2017



▼ **ETFs**

Worriers Welcome

Inverse and Leveraged
Inverse ETFs



RUSL RUSS

Daily Russia Bull
and Bear 3x
Shares



LABU LABD

Daily S&P Biotech
Bull & Bear 3x
Shares



▼ **MUTUAL FUNDS**

SPLZ

Daily Consumer
Staples Bear 1x
Shares



▼ **EDUCATION**

TMF | TMV

Direxion Daily 20+ Year
Treasury Bull and Bear 3x
Shares

GASL | GASX

Direxion Daily Natural Gas
Related Bull and Bear 3x
Shares

CHAD

Direxion Daily CSI 300 China
A Share Bear 1x Shares

SPXL | SPXS

Direxion Daily S&P 500 Bull
and Bear 3x Shares

CWEB

Daily CSI China Internet
Index Bull 2x Shares

CURE | SICK

Direxion Daily Healthcare
Bull and Bear 3x Shares

JNUG JDST

Daily Junior Gold
Miners Index Bull
and Bear 3x
Shares



Leveraged Long Products



Security Description

- BANK OF NEW YORK CASH RESERVE
- DREYFUS TREAS PRIME CASH MGMT/INST
- FIDELITY INSTITUTIONAL GOVERNMENT PORTFOLIO
- FIDELITY INSTITUTIONAL GOVERNMENT PORTFOLIO
- GOLDMAN FINL SQ TRSRY INST 468
- GOLDMAN FINL SQ TRSRY INST 506
- S&P 500 INDEX SWAP
- S&P 500 INDEX SWAP
- SPDR S&P500 ETF TRUST

Direxion Daily S&P 500 Bull 2x Shares

FUND SYMBOL	DAILY TARGET	INTRA-DAY INDICATIVE VALUE	BLOOMBERG INDEX
SPUU	200%	SPUU.IV	SPX

Overview

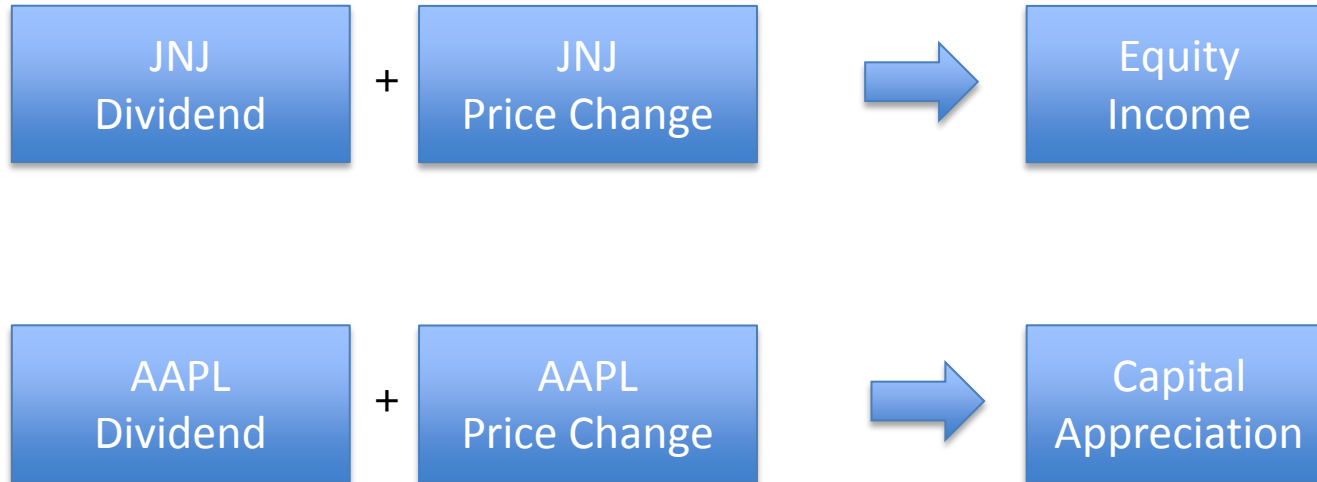
The Direxion Daily S&P 500 Bull 2x Shares seeks daily investment results, before fees and expenses, of 200% of the performance of the S&P 500[®] Index. There is no guarantee the fund will meet its stated investment objective.

This leveraged ETF seeks a return that is 200% the return of its benchmark index for a single day. The fund should not be expected to provide two times the return of the benchmark's cumulative return for periods greater than a day.

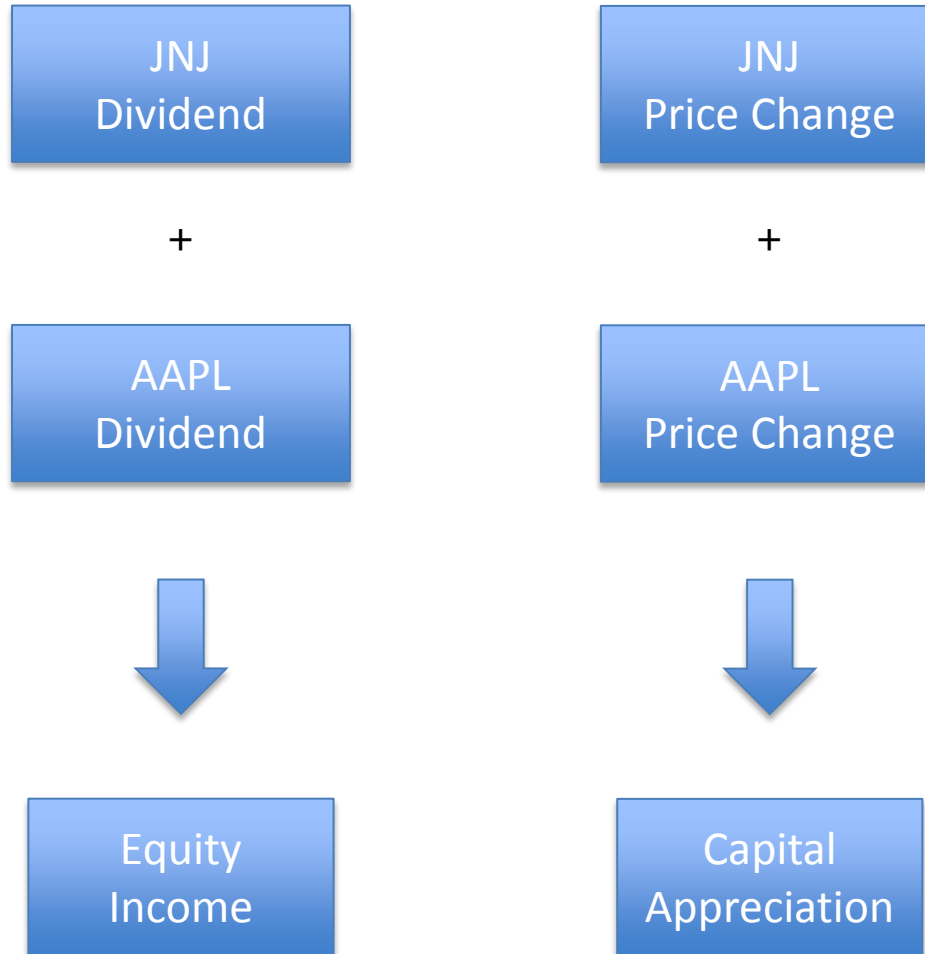
New Product Idea

- Take an S&P 500 Portfolio (Say \$100MM)
- Issue instruments backed by the portfolio:
 - Income Shares (Say \$50MM)
 - Gets fixed annual income payments
 - Gets initial investment back (up to portfolio value) after X years
 - Capital Shares (Say \$50MM)
 - Get the residual dividend income
 - Get all the capital gain or loss after X years

The Building Blocks - Now



The Building Blocks – Proposed

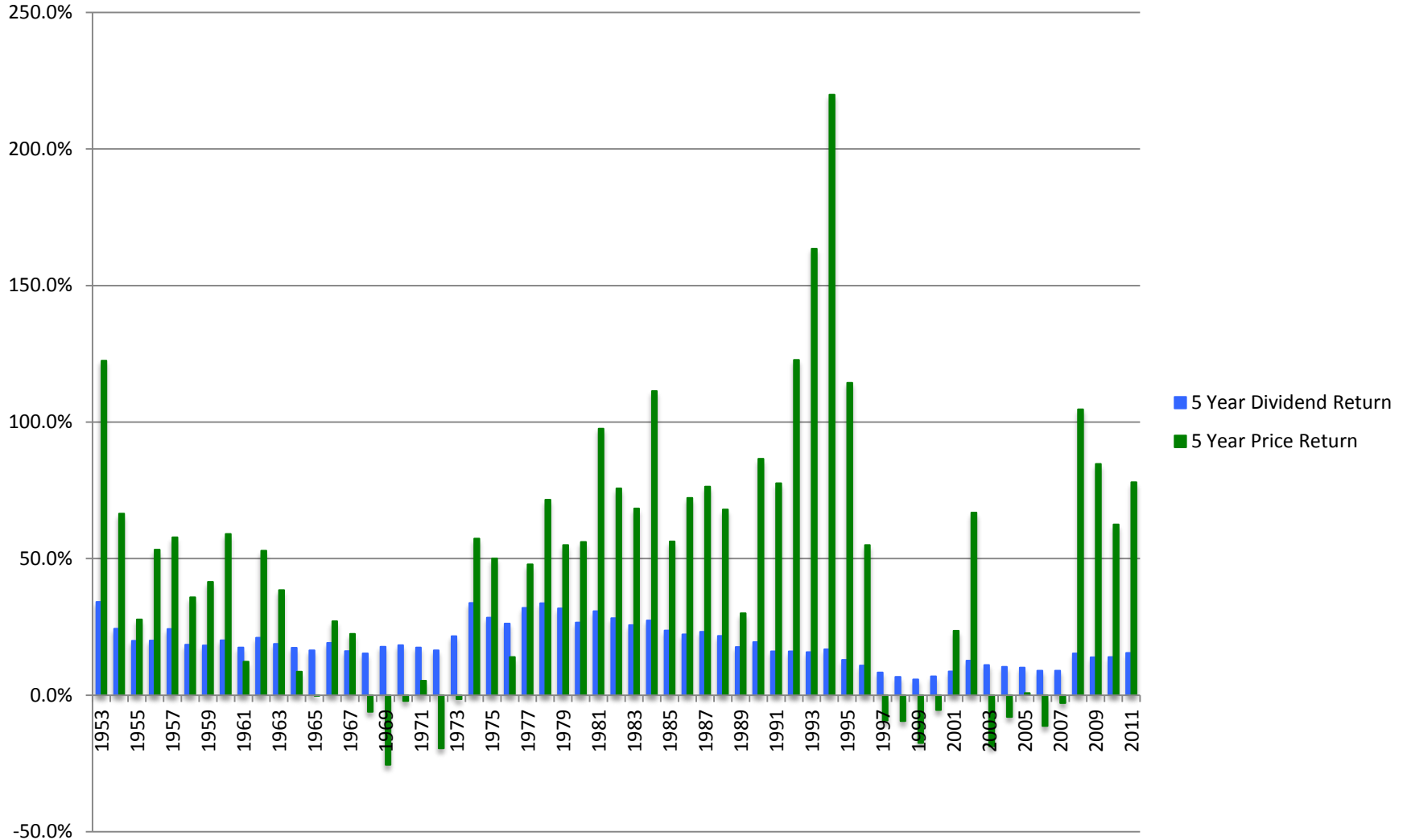


Equity Returns

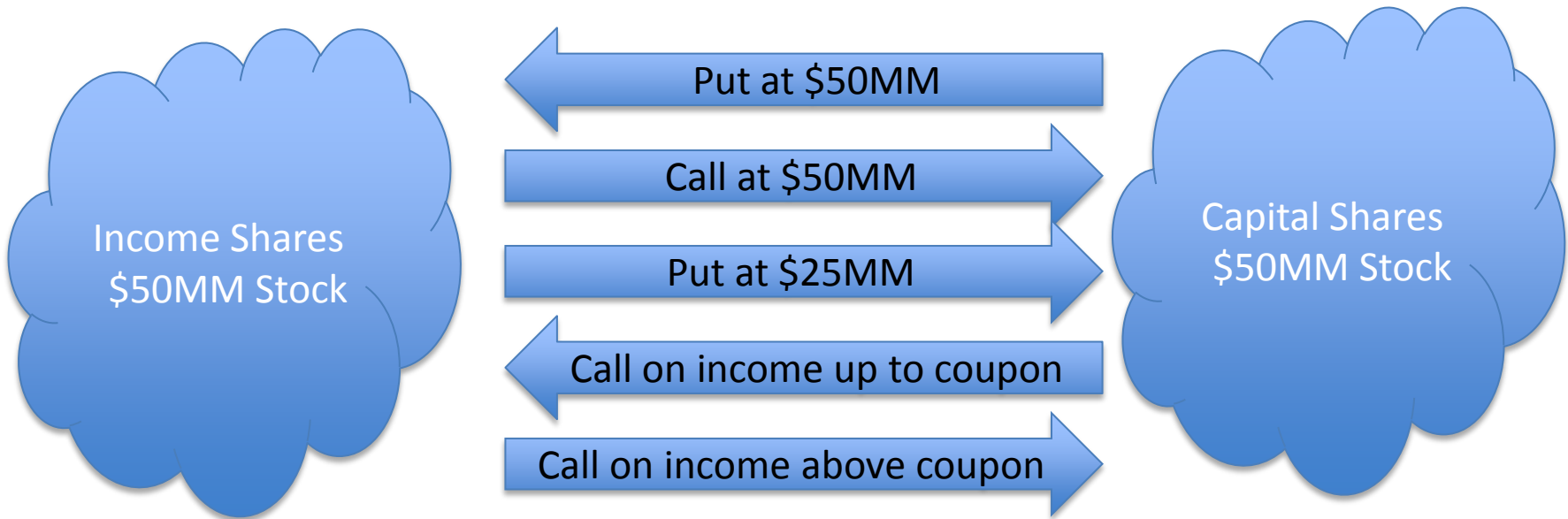
- Dividend Return:
 - 5 year average: 18.8 Standard Deviation: 7.3
 - # of times 5 year income < Year 0 dividend x 5: 2
 - 2008-2012, 2009-2013
- Capital Appreciation:
 - 5 year average: 46.8 Standard Deviation: 48.4
 - # of times 5 year price return < 0: 14

(1953 – 2016; S&P 500)

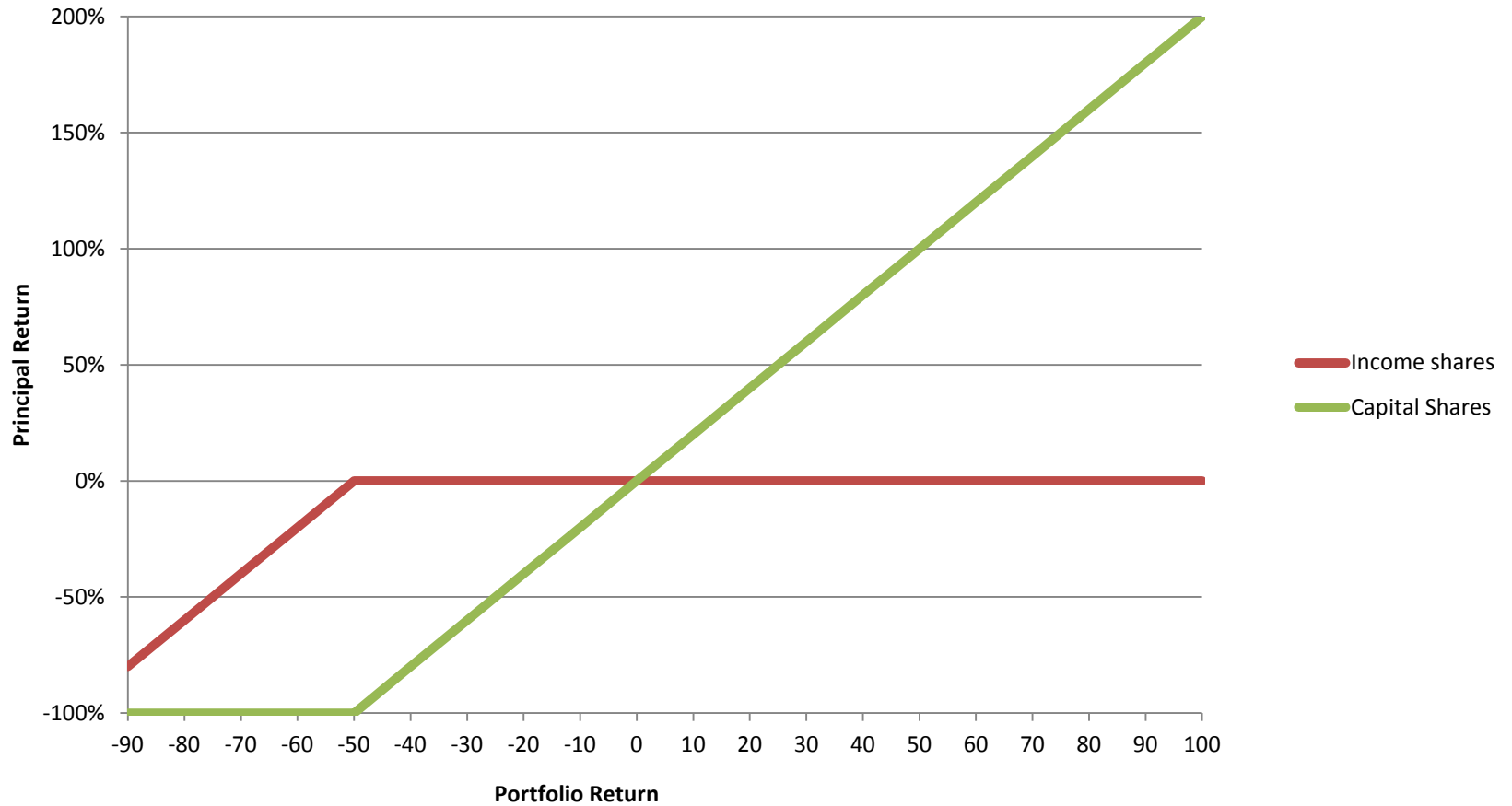
Equity Returns Decomposed



Option View



Payoff At Expiration



Options

- 5 Year European Call, 15% volatility, 0% interest rates:
- Call = Put = 13% of portfolio value
- Value would change over time
- Value would change based on underlying market value

Source: <http://www.eriesi.com/blackscholes>

The Merton Model

- From www.breakingdownfinance.com:

MERTON CREDIT RISK MODEL

Merton developed a structural model based on the [Black Scholes option pricing model](#). This model can both be used for equity valuation and credit risk management. The intuition behind the use of option pricing for equity valuation in the Merton model is simple. Equity holders are the residual owners of a company. The value of the assets above debt K , will be paid out to them. Therefore, Merton argues that equity holders have a call option on the company's assets with strike price K . If the value of assets is larger than K , then they get $V_T - K$. If not, then they get nothing. In contrast, the bondholders are argued to own a zero-coupon bond with par value of K . They retrieve the value of K when the assets are worth more. If the assets are worth less, then they receive only the asset value V_T . Bondholders are thus short a put option.

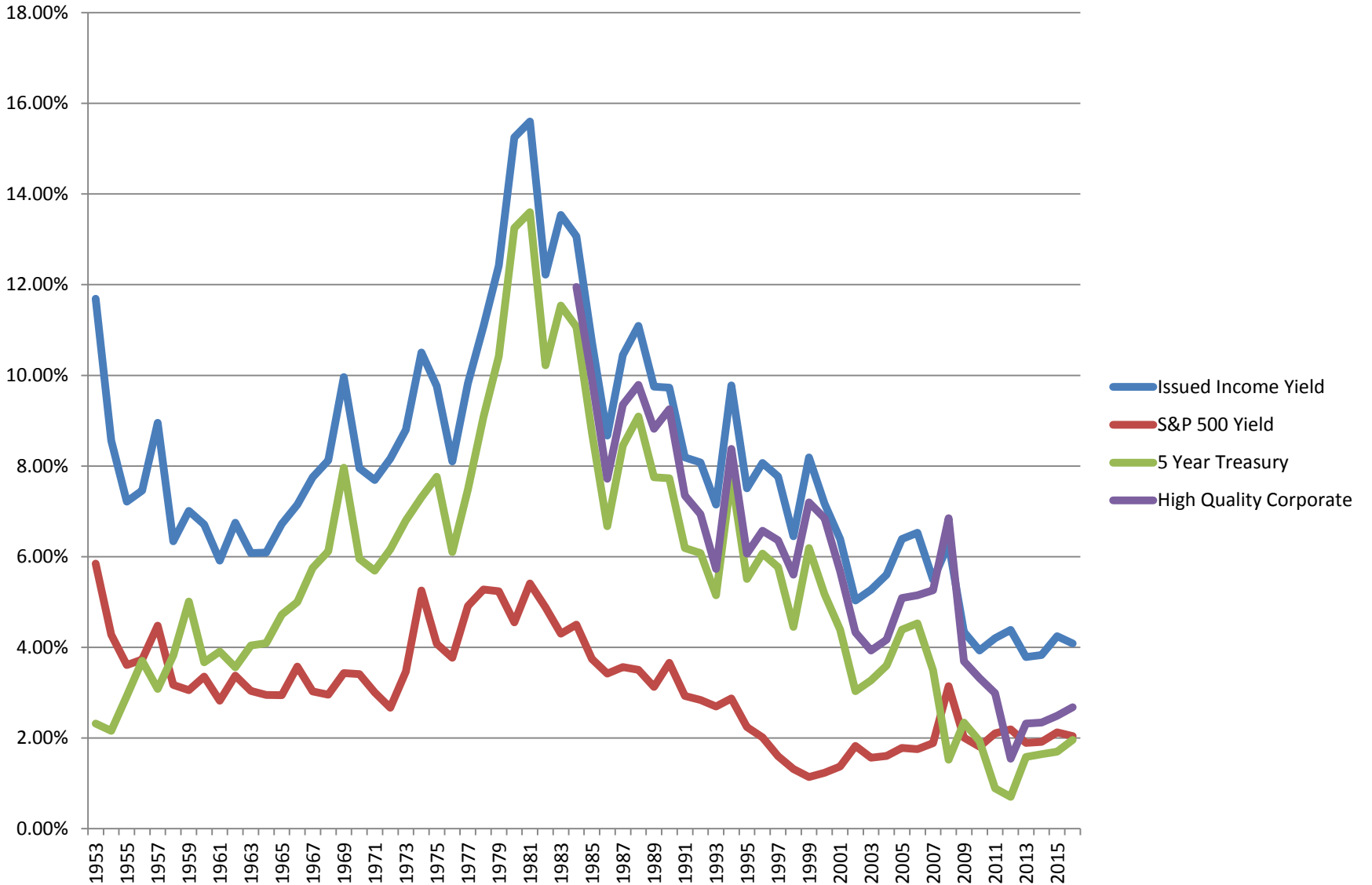
Decisions and an Example

- Portfolio (S&P 500)
- Income shares yield (Greater of 2 x S&P 500 yield , 5 Year Treasury + 200 bp's)
- Income/Capital issuance allocation (Based on 100% of Y0 dividend and issuance yield; never more than 50%)
- Time Period (5 Years)

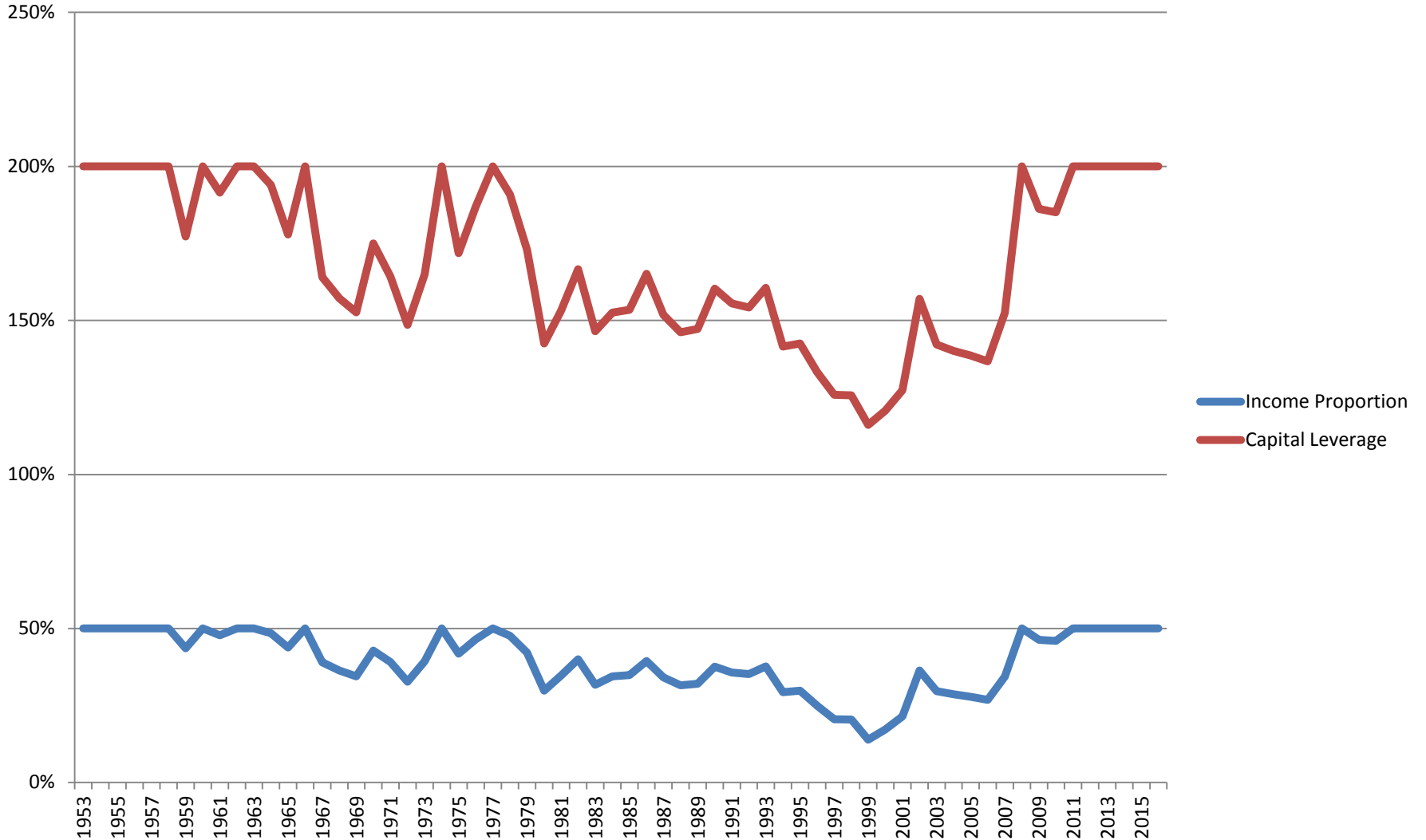
Setting Issuing Yield

- Price income shares relative to bond alternatives
- “Twice the S&P 500’s yield”
- $\text{Max}(5 \text{ year Treasury} + 200, 2 \times \text{S\&P 500 yield})$
- Assume current dividend
- Implies income share allocation and capital share leverage
- Market will correct prices at issuance

Various Yields



Income Proportion and Capital Leverage (Offering Yield: Max(5yr +200, 2x S&P))

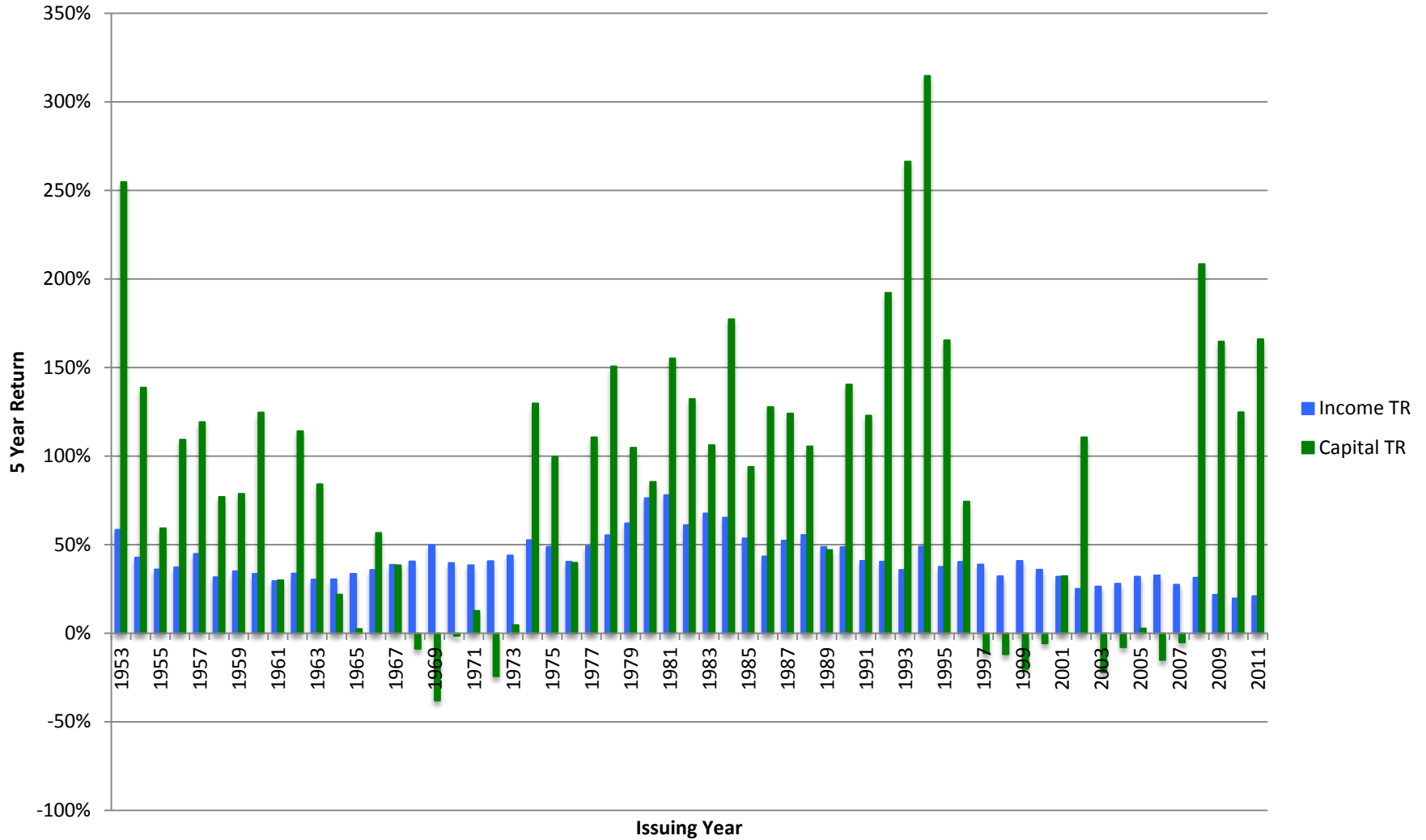


Portfolio Returns

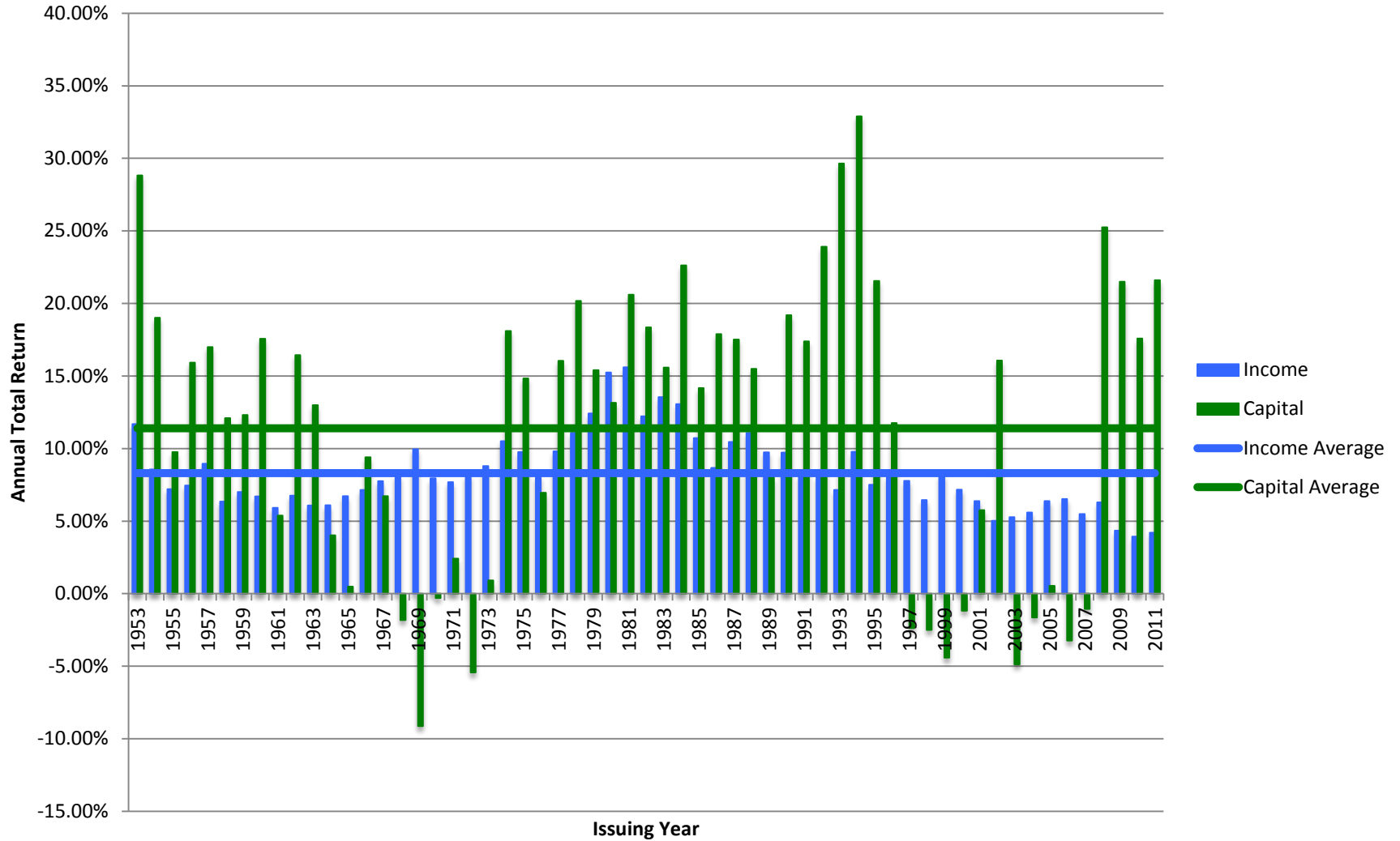
- Income Shares:
 - 5 year average: 41.6 Standard Deviation: 12.8
 - # of coupon defaults: 0
 - # of capital defaults: 0
- Capital Shares
 - 5 year average: 85.3 Standard Deviation: 79.2
 - # of times return < 0: 12

(1953 – 2011; S&P 500; basic strategy)

5 Year Returns



Annual Returns



The Income Shares

- Income covered by a diversified portfolio of companies
- Margin of safety
- Typically growing dividends
- Not truly guaranteed but significant downside protection
- Could add put insurance for complete protection

The Capital Shares

- Truly levered equity returns over 5 years
- No futures (No roll risk)
- No swaps (No credit risk; no transaction fees)
- No margin (No financing costs)
- No trading (No commissions)

During The Life of the Tranche

- No trading
- No rebalancing nor reinvestment
- Annual payments to Income shareholders
- No guaranteed liquidity

BUT:

- Each piece can be priced
- Could make a market
- Pricing should be good: $\text{Income} + \text{Capital} = \text{Portfolio}$

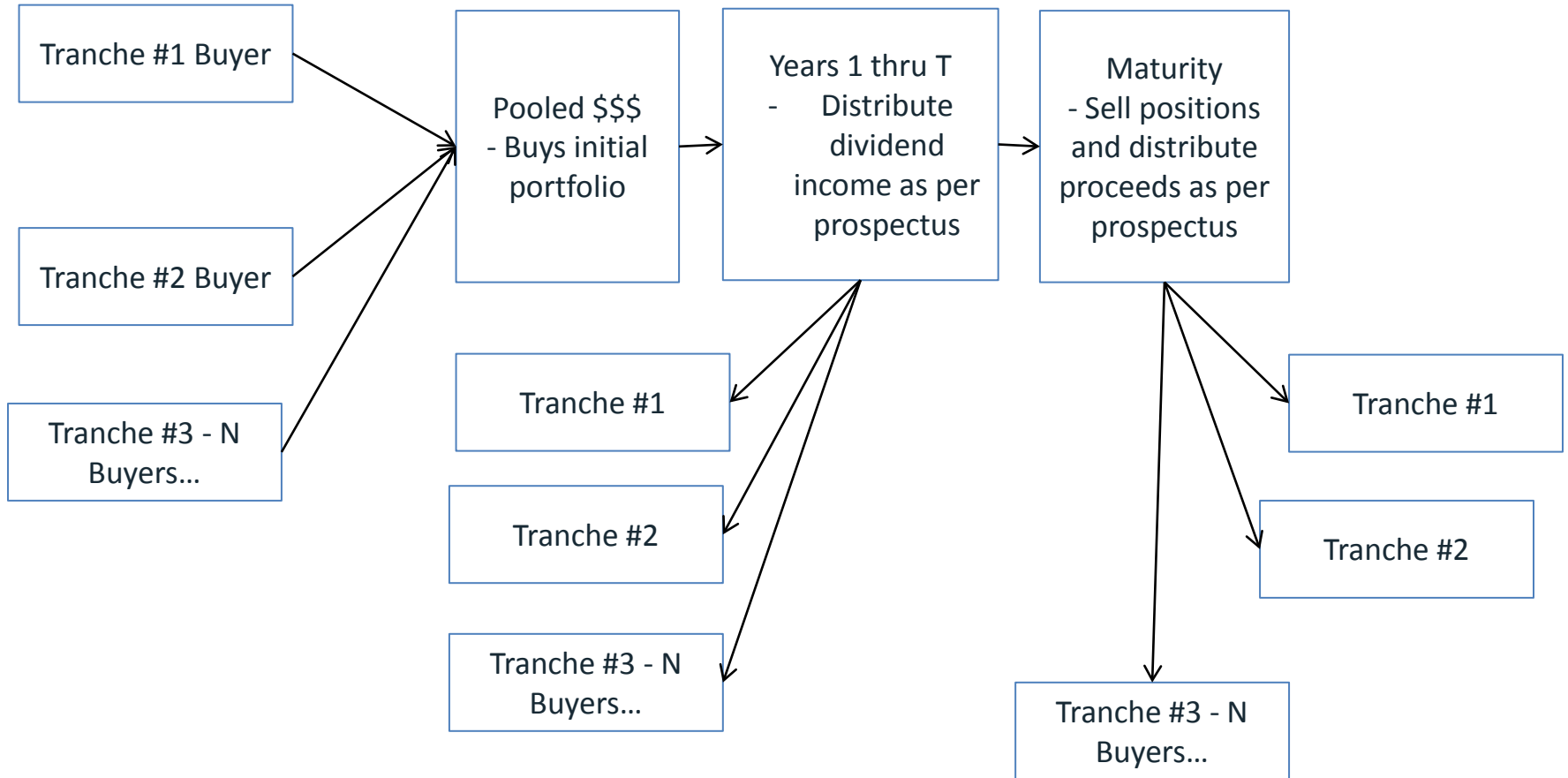
Fund Operation

- Custodian does all the work
 - Holds stocks
 - Receives stock dividends
 - Distributes annual cash payments to Income shares
 - Handles M&A activity
 - Liquidates at maturity
 - Distributes to shareholders

A More Generalized Product

- Underlying Portfolio
- Number of Tranches
- Maturity date or length
- For Each Tranche:
 - Priority
 - \$\$\$ Raised
 - Fixed Yield
 - Yield Upside – expressed as a % of the residual dividends paid annually (Dividend growth)
 - Principal Upside – expressed as a % of the residual market value of the portfolio at maturity

Generalized Flowchart



Regulatory and History

- Regulatory issues would depend on structure
- History:
 - Dual purpose funds
 - Primes and Scores(Americus Trust); Split Capital Funds; Super Units and Shares
- Tax treatment:
 - Dividends
 - Capital gain

Taxes

- Income Shares are getting dividend income
- Capital Shares are getting long term capital gains

Today's Tranche

- March 13th, 2017
 - S&P 500 Yield: 1.98%
 - 5 Year Bond Yield: 2.12%
 - 5 Year AAA: 2.24%
- Issue \$100MM Tranche 50/50 split
 - Income shares: 3.94% annual income and mature on 3/13/22
 - Capital shares: claim all residual income at maturity and all the capital gain/loss

Possible Structures

- CLO-like
- ETF
- Closed End Fund
- LP/GP
- UIT

Possible ETF Structure

- During the life of the tranche
- Creators:
 - Show up with published cash % and share positions and gets back $X\%$ B shares and $100-X\%$ C shares
- Redeemers:
 - Show up with $X\%$ B shares and $100-X\%$ C shares and get back cash and individual share positions

Variations

- Income/Capital allocation
- Time horizon
- Income level
- All style spaces: large, mid, small, growth, core, value, international, U.S., global
- “Alpha” layer

Potential Buyers

- Income Shares:
 - Retirees, income replacement funds, annuity providers, endowments, conservative investors, HNW and family office
- Capital Shares
 - Young people, life cycle funds, aggressive investors

Rough Update Through 3/10/2017

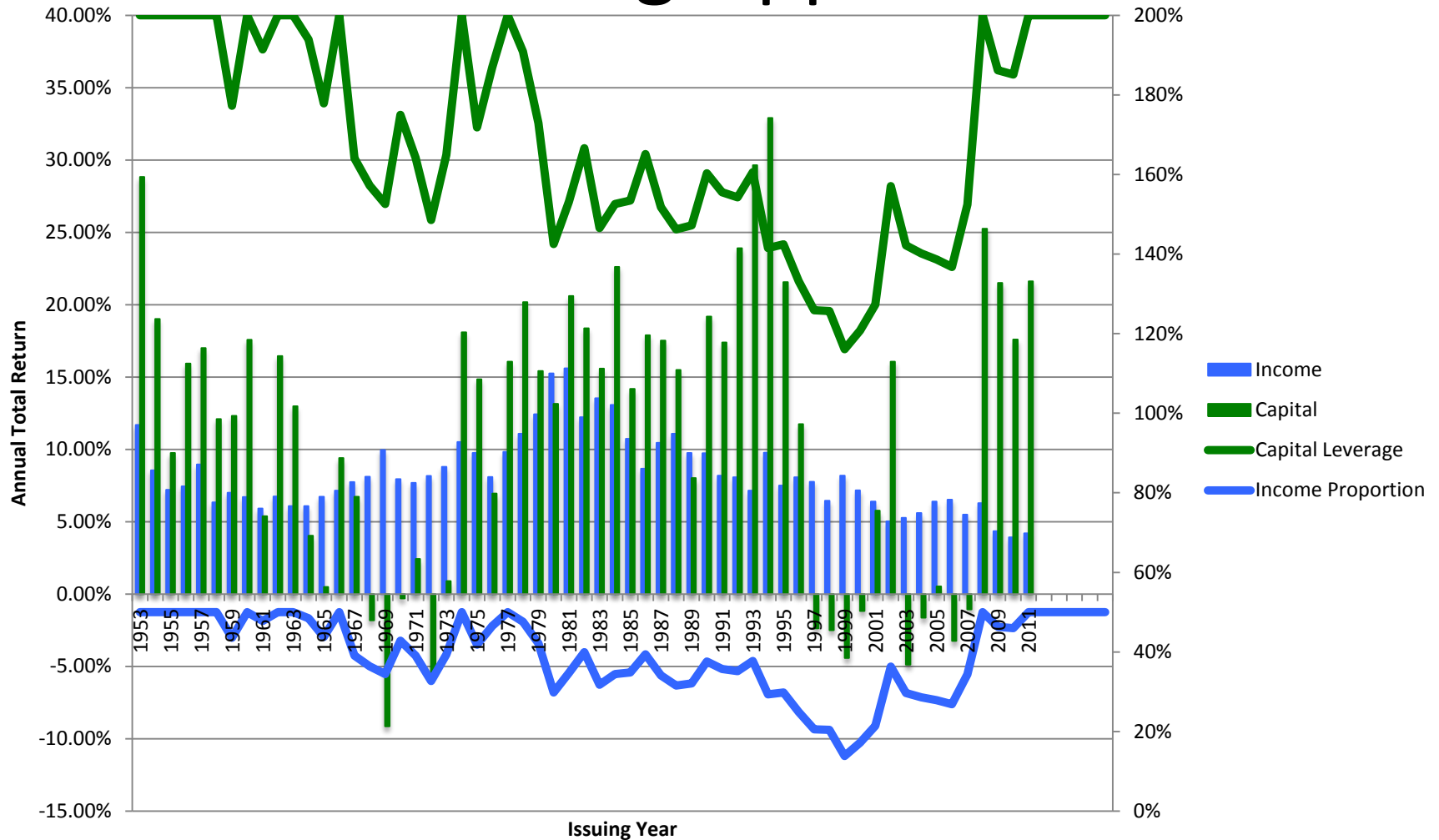
Tranche	Income TR	Income Annual	Capital TR	S&P Price	S&P Yield
2012	17.5%	4.4%	138%	66.4%	2.19%
2013	11.4%	3.8%	59%	28.4%	1.89%
2014	7.7%	3.8%	31%	15.2%	1.92%
2015	4.2%	4.2%	32%	16.1%	2.12%
2016			12%	6.0%	2.04%

Conclusion

- Revolutionary product
- Disaggregates a portfolio's return into:
 - A true equity income piece (As bond-like as possible)
 - A true levered equity portfolio
- Delivers what investors want

Appendix

Market Timing Opportunities?



Appendix

Market Timing Opportunities?

