Quantitative Corporate Bond Portfolio Management: A Structured (Factor) Approach

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Spängler IQAM Investment Talk

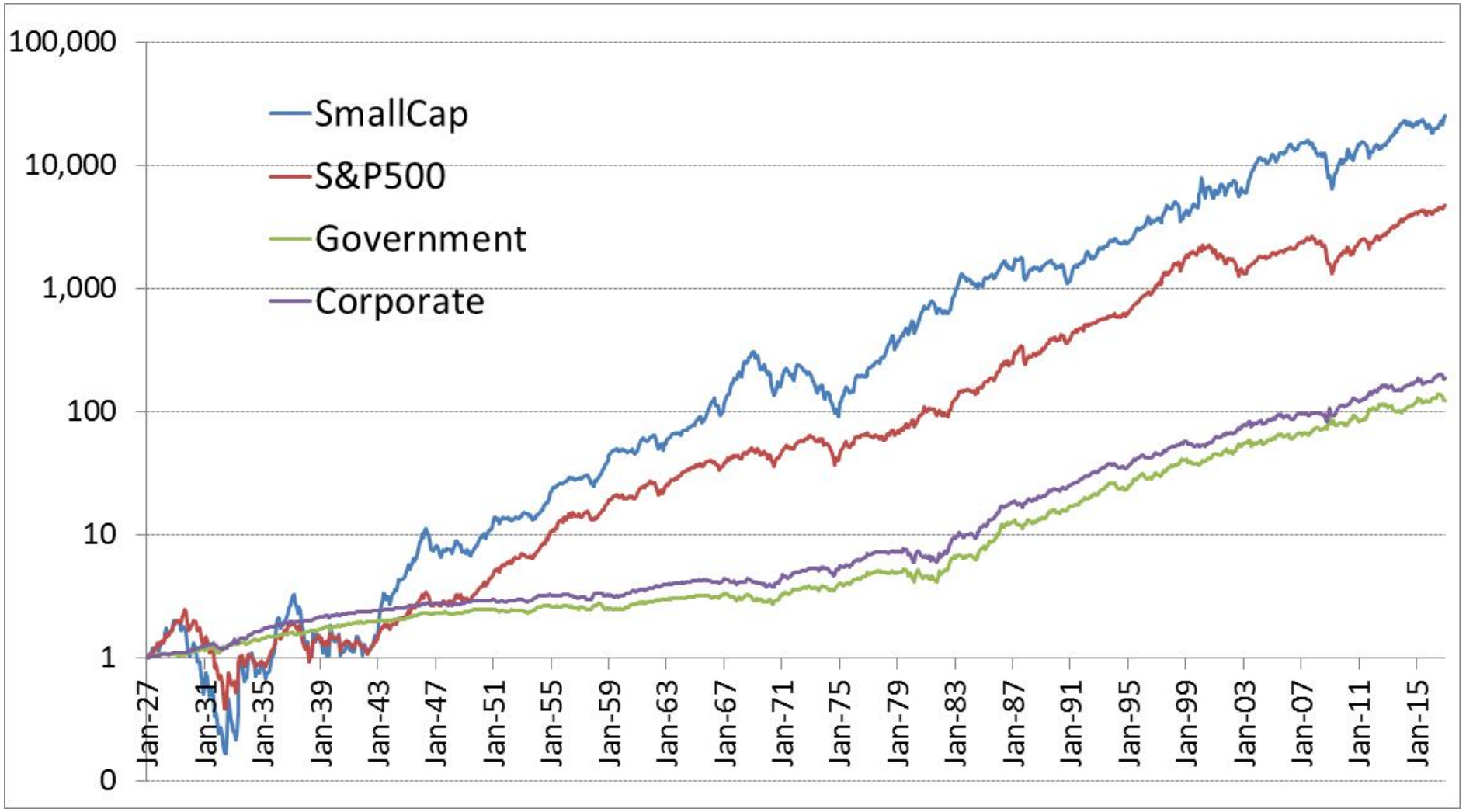
WU Vienna

UNIL | Université de Lausanne

swiss:finance:institute

Why this talk now?

Quick look at history

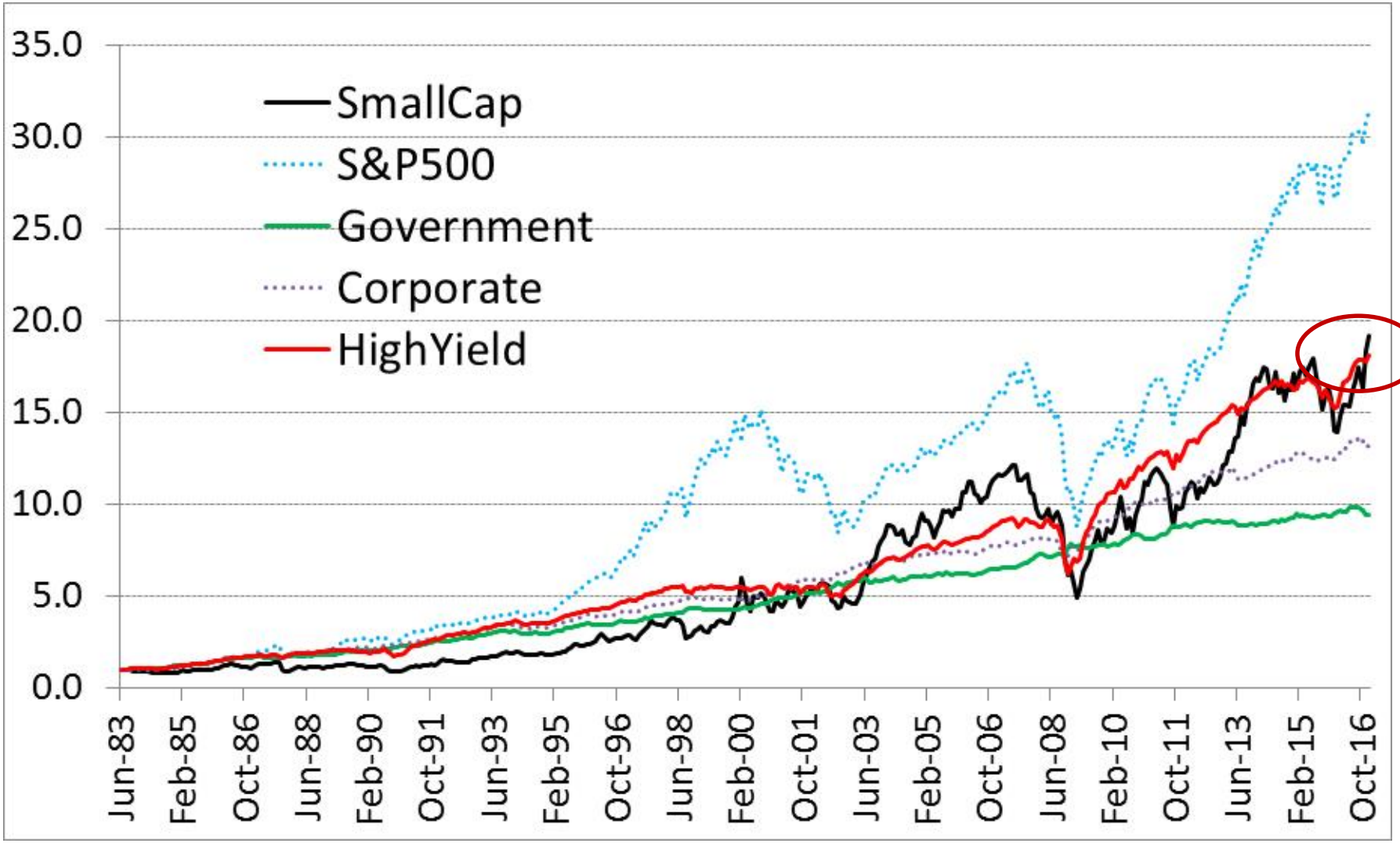


Quick look at history …

Over 1927 to 2016

	Mean	**StDev**	**Sharpe**
S&P500	7.8%	19.0%	0.41
Small-cap	12.3%	31.3%	0.39
Government	2.3%	8.5%	0.27
Corporate	2.7%	7.6%	0.35

More recent history



HighYield looks pretty good

Recent history ...

Over 1983 to 2016

	Mean	StDev	Sharpe
S&P500	7.8%	14.9%	0.52
Small-cap	7.3%	20.7%	0.35
Government	3.1%	4.5%	0.70
Corporate	4.2%	5.6%	0.74
High Yield	5.3%	8.4%	0.63

HighYield is high yield for a reason!

Factors in bonds

We know about style investing in stocks

- Size, Value, Profitability, Investment, Momentum, …

Do similar styles/factors exist in bonds?

If so, how to construct these factors?

- From bonds, stocks, both …

Bond factors from bonds

Houweling and Zundert (2017) [Robeco] construct factors using bond characteristics

- Size
- Low-Risk (maturity, rating)
- Value (maturity, rating, 3-month change in spread)
- Momentum (6-month return on bond)

Bond factors from bonds …

Long-short alphas of 1-2% on investment grade bonds and 5-8% on junk bonds

Long-only Sharpe ratios of 0.2-0.3 on investment grade and 0.4-0.6 on junk

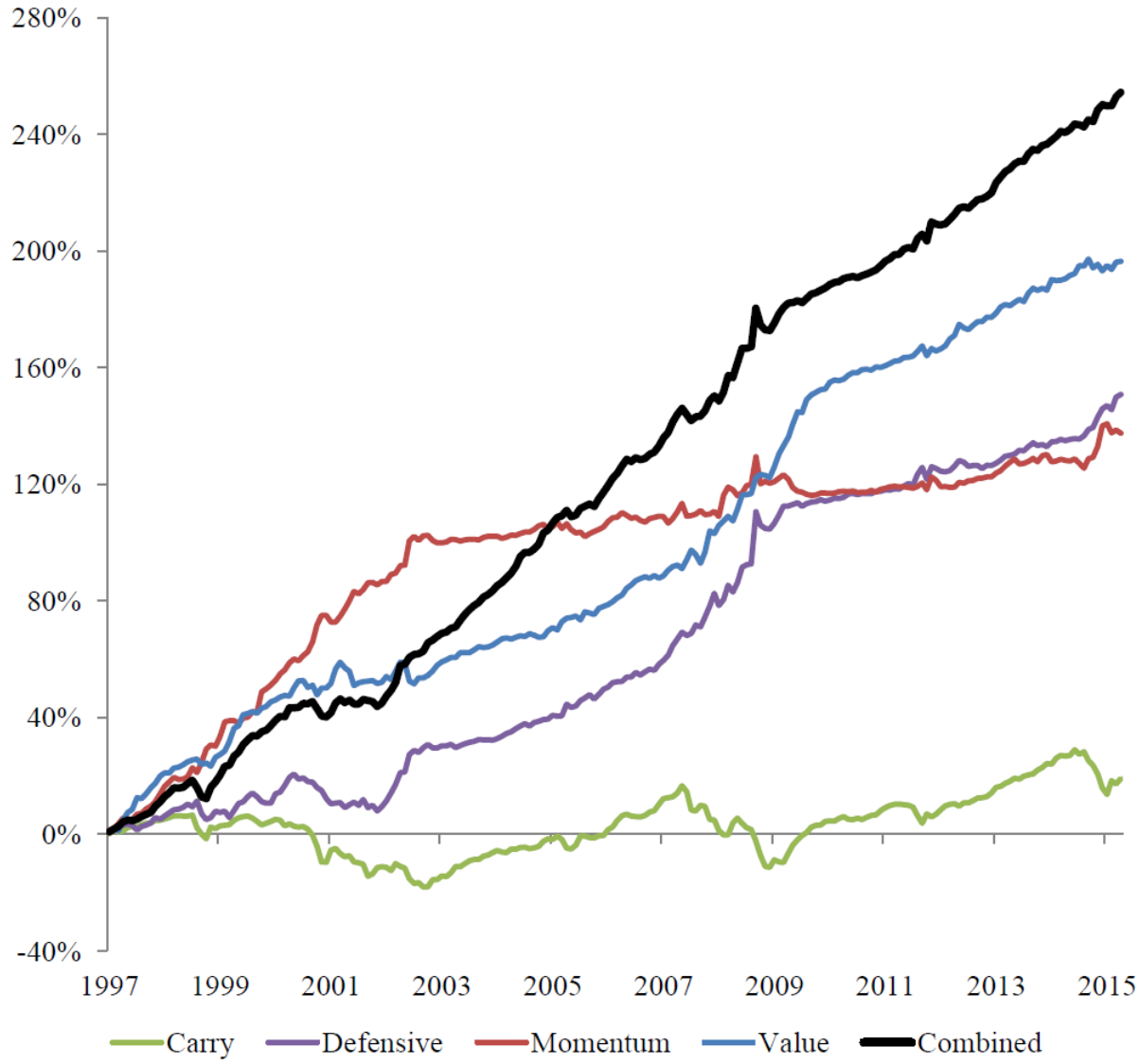
Results robust to transaction costs and liquid bonds

Bond factors from bonds/stocks

Israel, Palhares, and Richardson (2016) [AQR] construct factors using bond and stock characteristics

- Carry (spread from bonds)
- Value (duration, rating, volatility from bonds)
- Momentum (6-month return on bond and stocks)
- Defensive (duration from bonds, leverage and profitability from stocks)

Bond factors from bonds and stocks …



Sharpe ratio of 2 for combined strategy

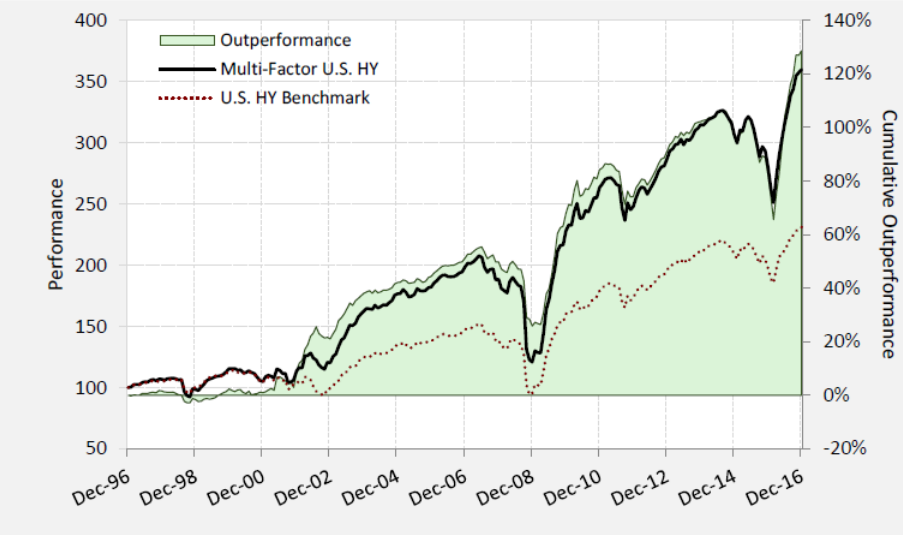
Bond factors from stocks

Bektić, Wenzler, Wegener, Schiereck, and Spielmann (2017) [Deka] construct factors using only stock characteristics

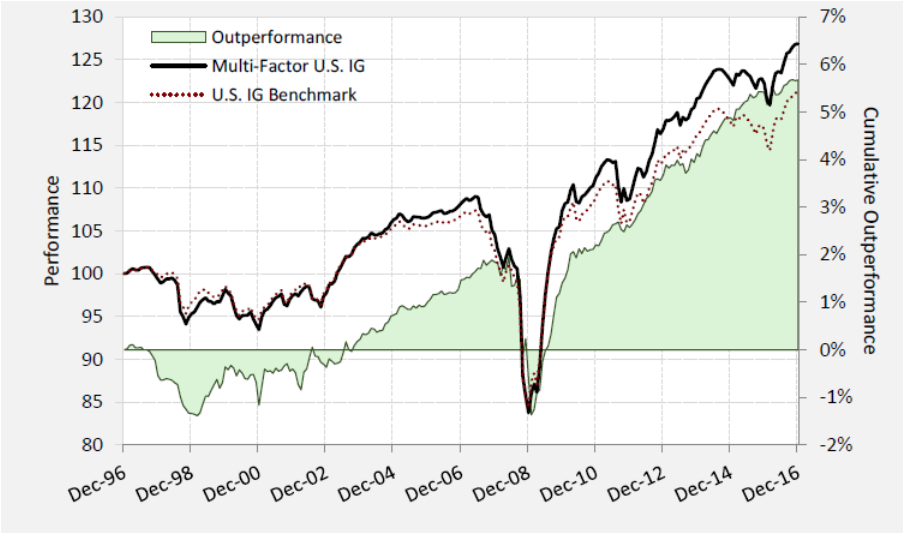
- Size, value, profitability, investment

Bond factors from stocks …

High yield



Investment grade



Our study

Chordia, Goyal, Nozawa, Subrahmanyam, and Tong (2017) consider a laundry list of factors from stocks and bonds

- Many stock factors do not work but some stock and bond factors do

Our factors – Long only and all bonds

Over 1983 to 2014

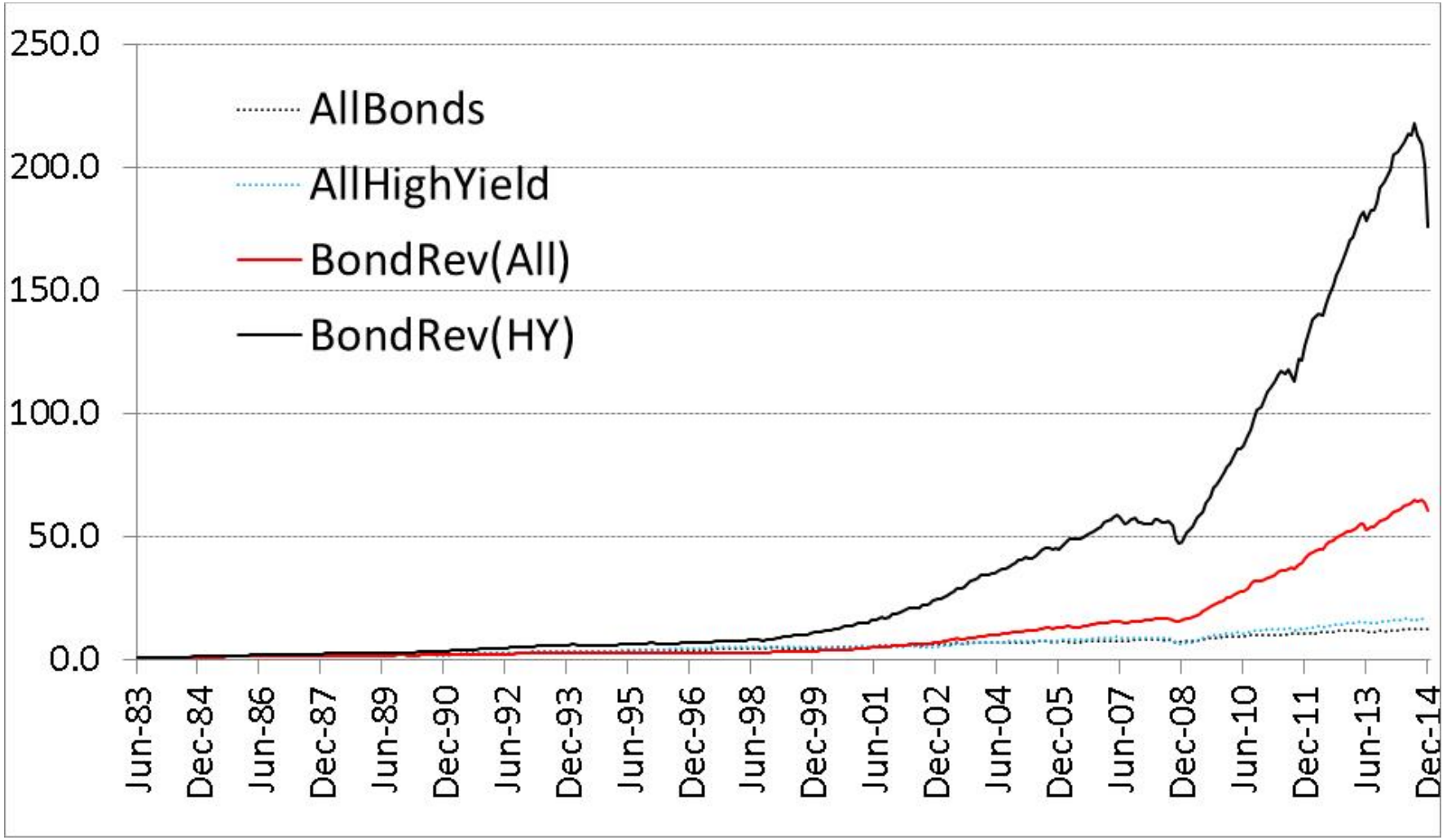
	Mean	StDev	Sharpe
Corporate	4.3%	5.7%	0.75
High Yield	5.3%	8.5%	0.62
Stock Factors			
– Momentum	6.9%	4.8%	1.45
– Reversal	9.4%	5.2%	1.82
– Profitability	7.6%	5.0%	1.54
– Investment	6.6%	4.6%	1.42
Bond Factors			
– Momentum	8.7%	7.5%	1.16
– Reversal	13.3%	6.5%	2.05

Our factors – Long only and HY bonds

Over 1983 to 2014

	Mean	StDev	Sharpe
Corporate	4.3%	5.7%	0.75
High Yield	5.3%	8.5%	0.62
Stock Factors			
– Momentum	9.9%	5.6%	1.77
– Reversal	13.1%	6.1%	2.15
– Profitability	11.0%	10.2%	1.08
– Investment	8.5%	5.9%	1.43
Bond Factors			
– Momentum	15.8%	19.1%	0.83
– Reversal	16.9%	7.3%	2.33

Who wants to be a millionaire?



Other considerations

- Long-Short portfolios
  - Have little exposure to market factors but good alphas
- Transaction costs
  - Turnover of bond reversal portfolios is high but returns robust to trading costs
  - Lower drawdowns than the aggregate HY return
- Our factor premia are on top of the term premium and default premium

Bottomline

Traditional view

- Stocks give equity premium
- Government bonds give term premium
- Corporate bonds give default premium

New and improved view

- Factors give factor premia

Traditional bonds portfolios can benefit from focusing on factors (instead of just duration and rating)

References

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