FXYI^2 ™ - A Foreign Exchange Yield Investing Index

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Outline

- Motives
- Benchmarks
- FXYI^2
- Construction
- Returns
- Style Analysis
- Style Switching
- Conclusions

Motives

- Extend and enhance alternative asset benchmarks
- Move currency fund style analysis into multi-factor domain
- Make better use of the large body of equities work
- Put currency alternative asset class on a more equal footing with equities ➡ larger allocations?
- Develop models to “beat the market”

Benchmarks

- Three current styles
  - Passive
  - Manager based
  - Transparent/Rule based
- Passive is not considered further
  - Long only
  - Short side is important to alternative asset managers, e.g. CTAs
  - Examples: S&P500, USDX, CRB, GSCI

Manager Based Benchmarks

- Based on weighted actual manager returns
- Manager Universe
  - Size, length in business, etc.
  - Survivorship bias?
- Weighting of returns
  - Equal
  - Assets under management
- Examples
    - Parker, MAR, Barclay, TASS etc.

Rule Based Active Benchmarks

- Explicit rules based on traded instruments and market prices
- Advantages
  - Objective, Repeatable, Transparent
- Examples
  - AFX (former FxDx) by Lequeux & Acar. Three moving averages over 7 FX rates weighted by volume.
  - Barclay Futures Index Currency Sub-Index Barclay Trading Group. One moving average over 6 FX rates equally weighted.
- Based on trend following (until now)

Currency Managers/Traders

- Numerous trading styles
  - Systematic and Discretionary
- Techniques
  - Trend and counter-trend following
  - Yield following
  - Short and long term
- FX Market Anomalies
  - Serial correlation, e.g. trend following
  - Forward rate bias, i.e. uncovered interest rate parity

FXYI2

- Systematic rule based benchmark
- Based on known anomaly - forward rate bias
- Based on major trading style or informational input for systematic traders - yield differential
- Credit where credit is due - FXYI2 is based on the foundation of FxDx/AFX by Lequeux and Acar
- Intended to be a complement to AFX
- Two data inputs
  - Short term interest rates
  - FX rates

Interest Rate Differential

- Choices are: swap, Libor, implied from futures
- Chose implied interest rates for transparency reasons
- Mixed and matched exchanges to create longer time series
- Only used quotes when all exchanges were open
- Exchange pairs
  - LIFFE/LIFFE
  - LIFFE/SIMEX
  - LIFFE/CME
  - SIMEX/SIMEX

FX Rates

- Use CME futures only
  - DEM and Euro
  - Swiss Franc
  - Pound
  - Yen
- Simple to handle - no daily rollovers etc.
- Last exchange to close - no data snooping
- Calculate cross rates using USD based rates
- Check with actual cross rate contract when available

Trading Rules

- Battery of 3 moving averages: 5, 9, & 17 days
- Rule
  - If $YD_t > SMA_n(YD)$
    - long FX rate
  - Else
    - short FX rate
- Position is either -1.00,-0.33,+0.33,+1.00 per FX rate
- Same seven rates as AFX and based on BIS FX volume

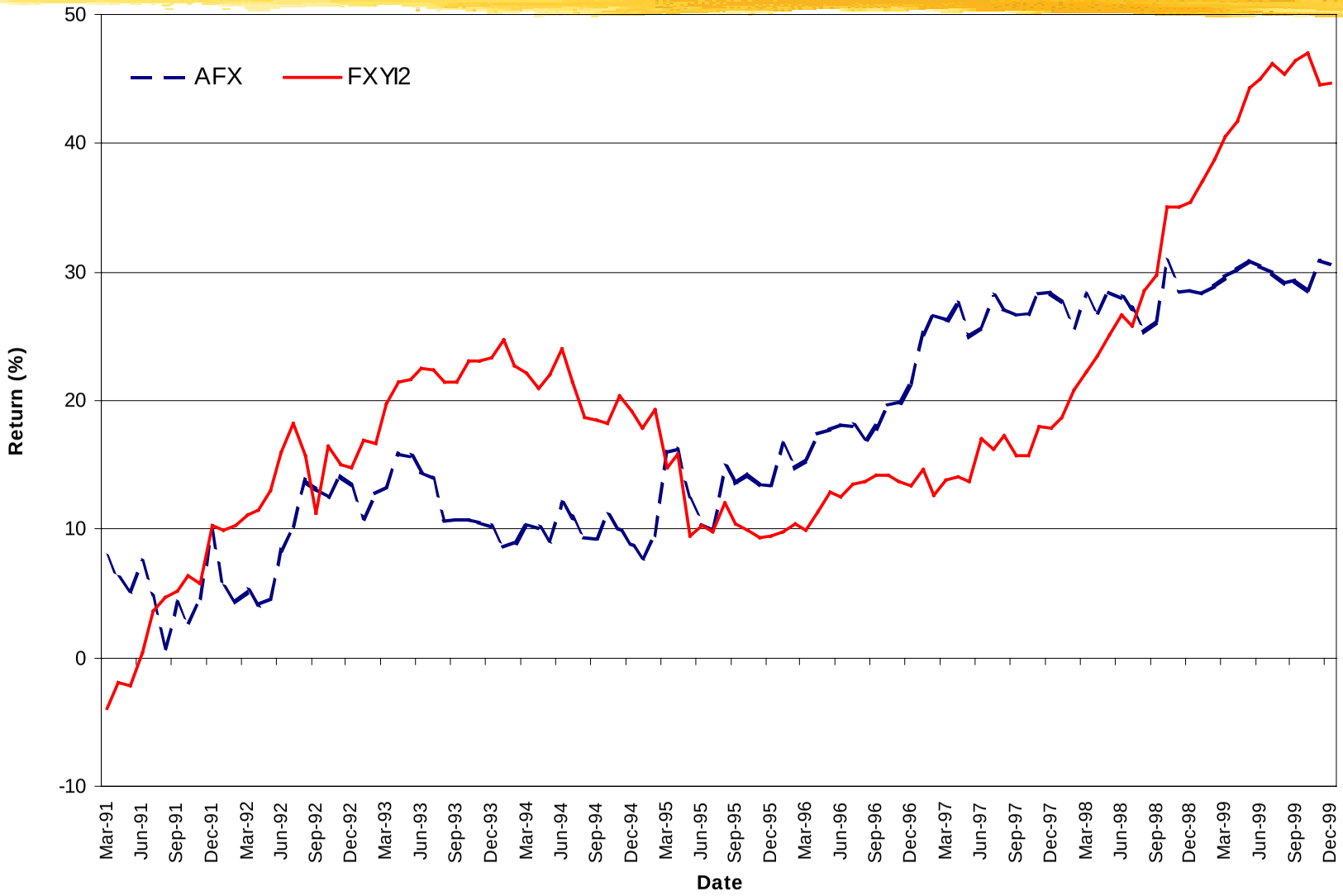
Previous Work

- Lequeux in 1998, *Informative spillovers in the currency markets: A practical approach through exogenous trading rules.*
- Bracker and Morran in 1999, *Tactical currency allocation revisited: Four simple currency trading rules*.

FXYI2 Returns

	FXYI^2	AFX	BFIC
Return %	5.06	3.45	3.80
Volatility %	6.37	7.25	5.16
Sharpe Ratio	0.79	0.48	0.74
Maximum drawdown %	15.3	8.0	6.3
Positive months	60%	49%	61%
Return/MaxDD	0.33	0.43	0.60
P-Value for Return > 0	1.0%	8.0%	1.5%
T-Stat Equal Mean to FXYI2	NA	-0.49	0.45
T-Stat Equal Mean to AFX	-0.49	NA	-0.11

AFX Return Comparison

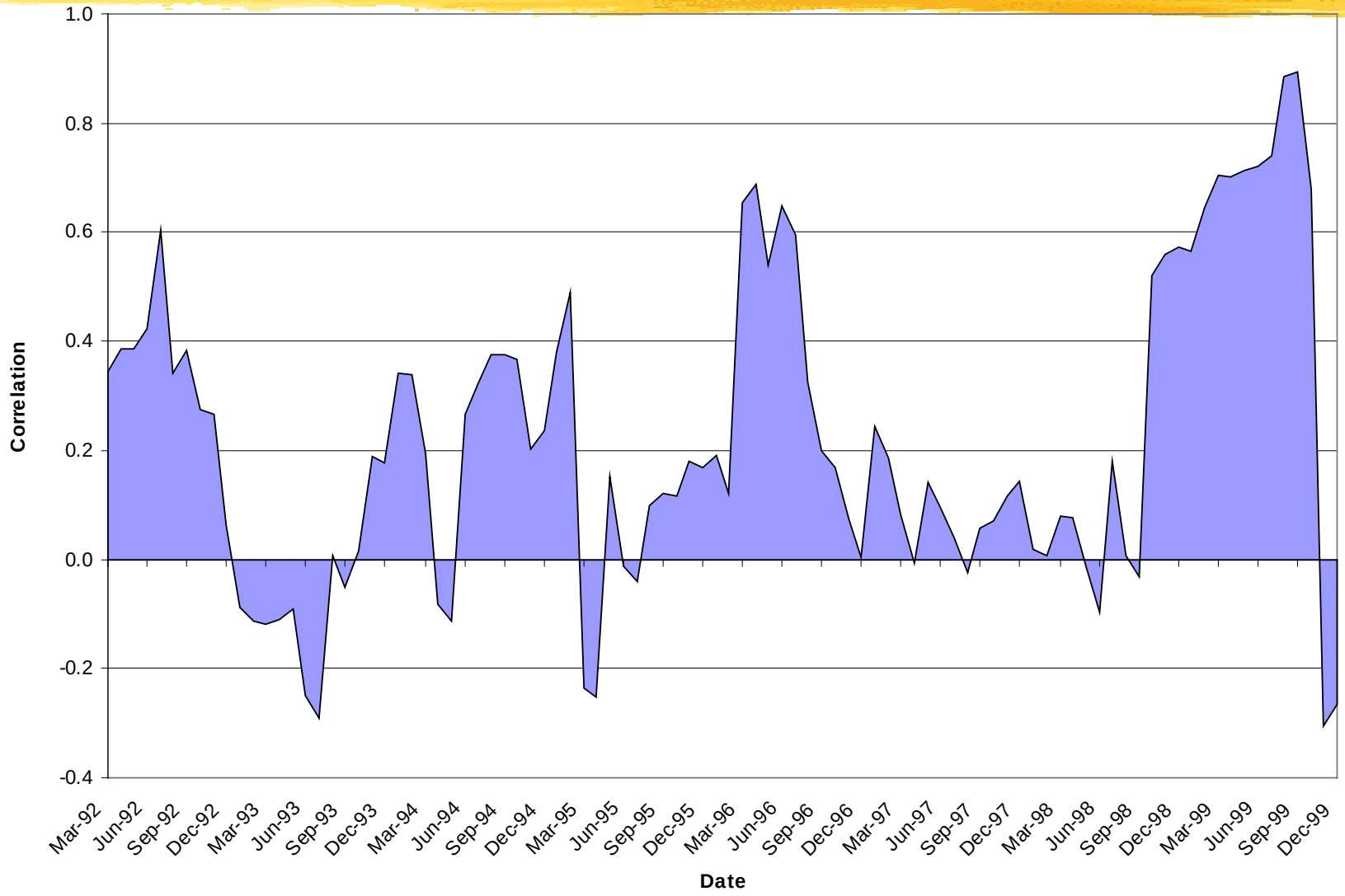


Correlation

	FXYI2	AFX	BFIC
FXYI2	1.00	0.05	0.12
AFX		1.00	0.69
BFIC			1.00

- Very low to no correlation to AFX
- AFX and BFIC have high correlation as expected
- Better picture by looking at rolling correlation

12 Month Rolling Correlation AFX:FXYI2



Applications of FXYI2

- Investment
- Returns based style analysis
- Style switching or rotation

Style Analysis

- Used AFX and FXYI2 as the two factors
- Modified procedure of Sharpe
  - Leverage is needed
  - No "short sales"
- Examined both trend flowing currency traders and non-trend following advisors
- It is known or rumored some of the non-trend following advisors use yield based trading strategies
- Statistically significant factor for trend followers who use yields in modeling
- Non-trend followers were not explained well

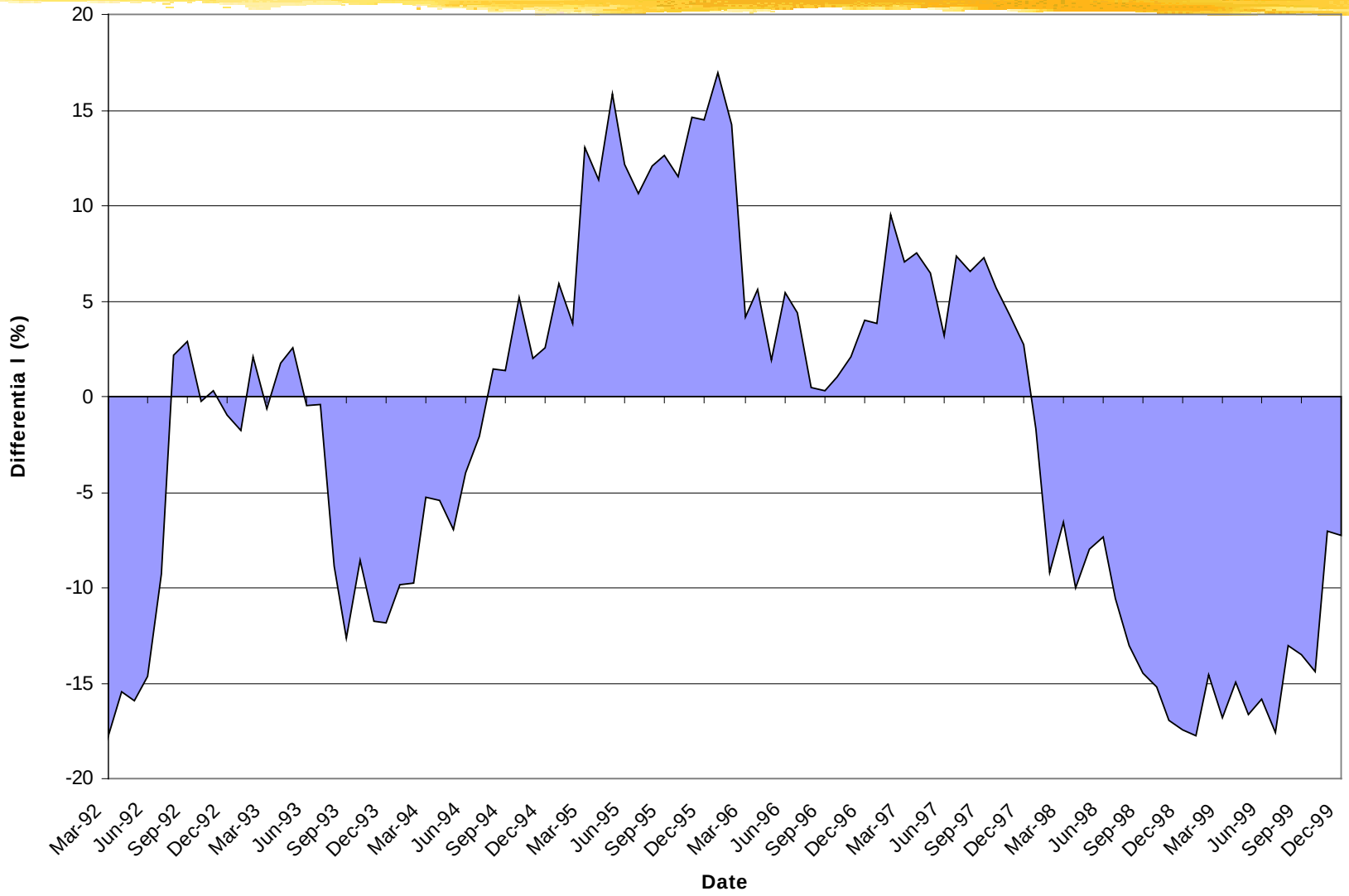
Style Analysis Failure?

- Too discrete
  - Fixed allocations
  - Fixed positions
- Not the right instruments
  - Leave out AUD, NZD, CAD and others
  - Too many European cross rates?
- Look at components of FXYI2 to answer this question?

Style Switching

- Based on the simple principle that trend following sometimes doesn't work
- Do yield strategies outperform at these times?
- Look at the return differential between AFX and FXYI2

Return Differential



Dynamic Currency Allocation

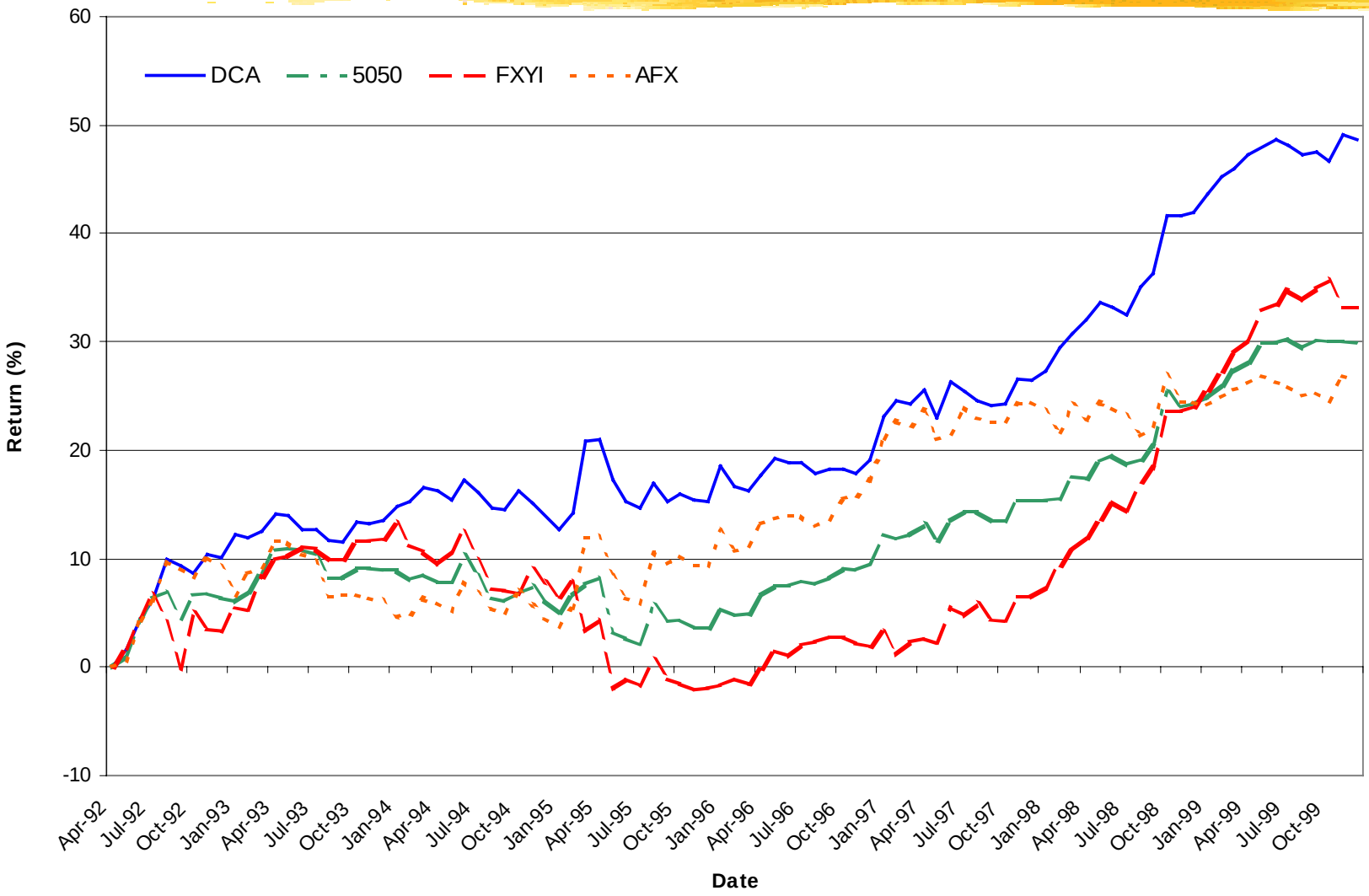
- Exploit the return differential
- Use a simple rule to switch between assets
- Moving average of the return differential
- Rule
  - If $RD_t > SMA_n(RD)$
    - long AFX
  - Else
    - long FXYI2
- Compare to fixed 50/50 and individual components

Style Switching Results

	FXYI[2]	AFX	50/50	DCA
Return %	4.37	3.55	3.96	6.48
Volatility %	6.34	6.25	4.74	5.67
Sharpe Ratio	0.69	0.57	0.83	1.14
Maximum Drawdown	15.3	8.0	8.83	6.32
Positive Months	58%	51%	62%	54%
Return/MaxDD	0.28	0.44	0.45	1.02

- Superior return and risk adjusted returns
- Does not account for switching costs

Comparison of Simple Portfolios



Summary

- Developed another transparent rule based benchmark for currency advisors
- Based on widely use technique - yield differentials
- Positive returns but high risk
- Extends single factor style analysis into the multi-factor domain
- Needs more investigation to see if FXYI2 will help in style analysis
- Can be used to profitably develop style switching techniques.