Axioma Risk Monitor

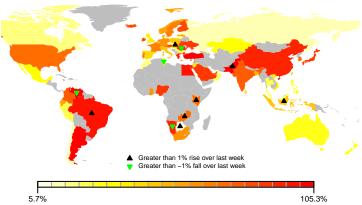
Global Developed Markets - 22 May 2019



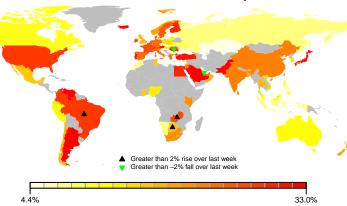
US & Canada: +1 212-991-4500 Europe:

+44 (0)20-7856-2424 +852 8203-2790

1. Global volatility hotspots



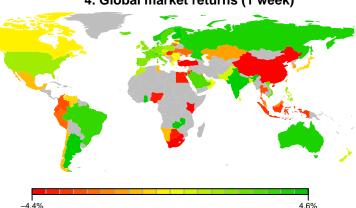




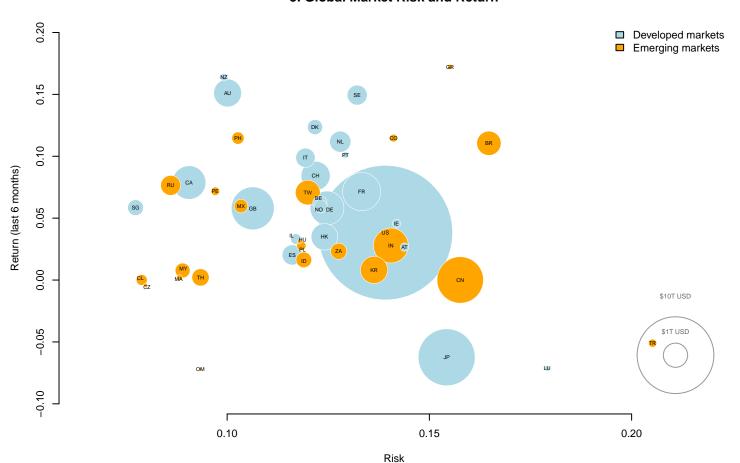
3. Global market returns (6 months)



4. Global market returns (1 week)



5. Global Market Risk and Return

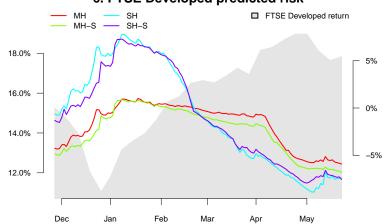




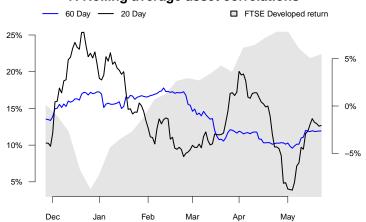
www.axioma.con

US & Canada: +1 212-991-4500 Europe: +44 (0)20-7856-2424 Asia: +852 8203-2790

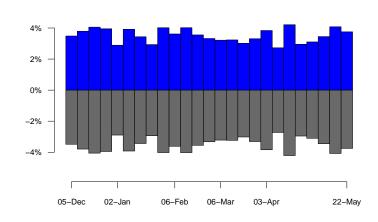
6. FTSE Developed predicted risk



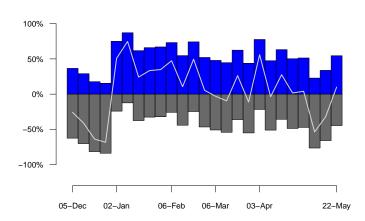
7. Rolling average asset correlations



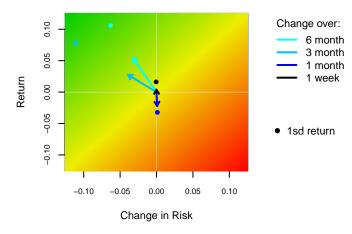
8. Weekly asset return dispersion



9. Weekly asset return proportion up/down



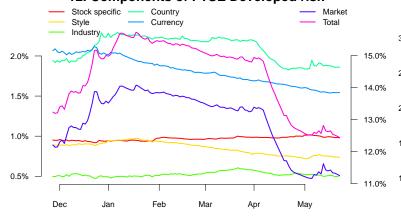
10. Risk Watch - FTSE Developed



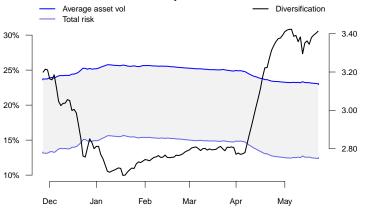
11. Risk change decomposition

	1 week	1 month	3 months	6 months
Factor level				
Initial risk	11.73	11.64	15.62	14.96
Portfolio composition	-0.03	-0.07	0.01	0.05
Stock characteristics	0.02	-0.03	-0.38	-0.18
Stock specific volatility	0.00	0.00	0.00	0.00
Factor volatility	0.03	0.37	-3.28	-2.97
Factor correlations	-0.03	-0.19	-0.24	-0.14
Total change	-0.01	0.08	-3.90	-3.24
Final risk	11.72	11.72	11.72	11.72
Stock level				
Initial risk	11.73	11.64	15.62	14.96
Portfolio composition	-0.03	-0.07	0.01	0.05
Stock volatility	0.02	0.20	-1.59	-1.46
Stock correlations	0.00	-0.04	-2.32	-1.83
Total change	-0.01	0.08	-3.90	-3.24
Final risk	11.72	11.72	11.72	11.72

12. Components of FTSE Developed risk



13. FTSE Developed diversification

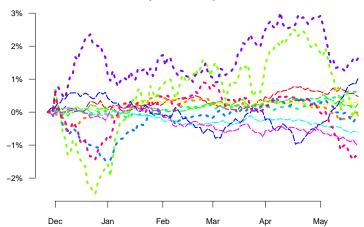


www.axioma.con

US & Canada: +1 212-991-4500 Europe: +44 (0)20-7856-2424

Europe: +44 (0)20–7856–2424 Asia: +852 8203–2790

14. Style factor performance



15. Style factor returns

Profitability Earnings Yield Dividend Yield Market Sensitivity XR Sensitivity Growth Leverage	1w	1m	3m	6m
	-0.18	-0.20	0.03	0.47
	0.18	-0.26	-0.42	-0.03
	0.01	0.09	0.17	0.32
	-0.59	-2.43	-1.42	-0.11
	0.06	-0.10	0.12	0.25
	0.12	0.52	0.56	0.71
	-0.06	-0.33	-0.24	-0.60
MT Momentum	0.39	1.77	1.49	1.01
Size	0.39	-1.16	0.46	1.63
Value	-0.21	-0.46	-0.66	-1.03
Volatility	-0.44	-1.80	-2.16	-1.42
Profitability —— Earnings Yield • •	XR Sensitivity Growth		MT Momentum - Size	

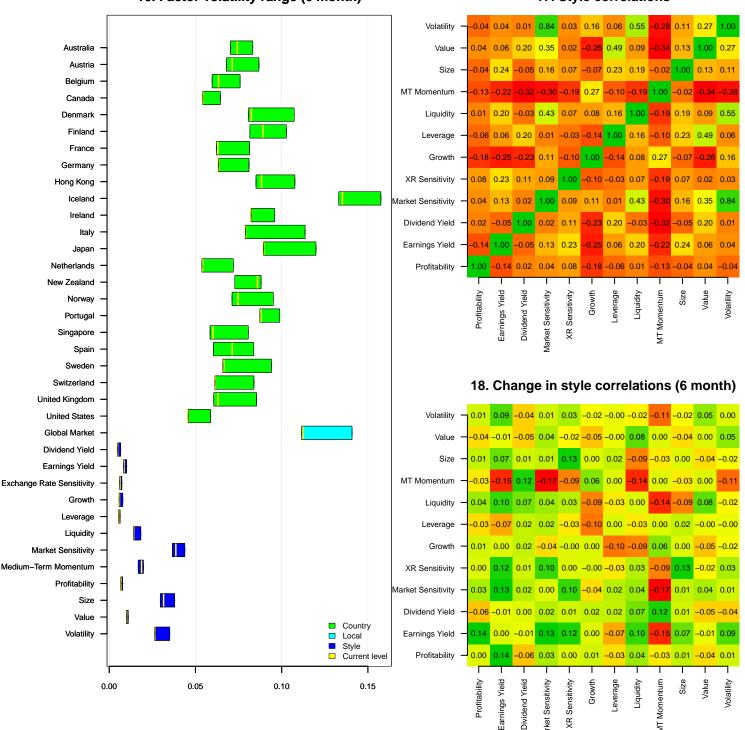
Dividend YieldMarket Sensitivity

- XR Sensitivity -- I
Growth -- S
- Leverage -- N
Liquidity -- N

Size
Value
Volatility

16. Factor volatility range (6 month)

17. Style correlations

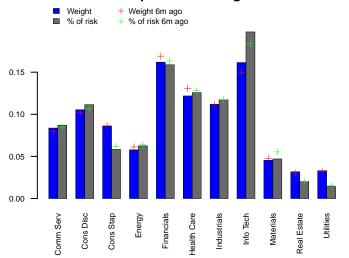


www.axioma.com

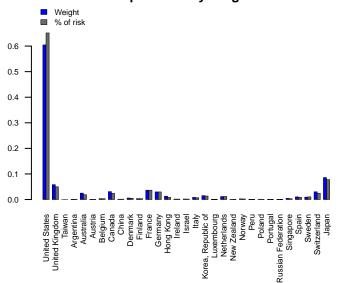
US & Canada: +1 212-991-4500

Europe: +44 (0)20-7856-2424 +852 8203-2790

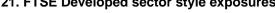
19. FTSE Developed sector weights and % of risk



20. FTSE Developed country weights and % of risk

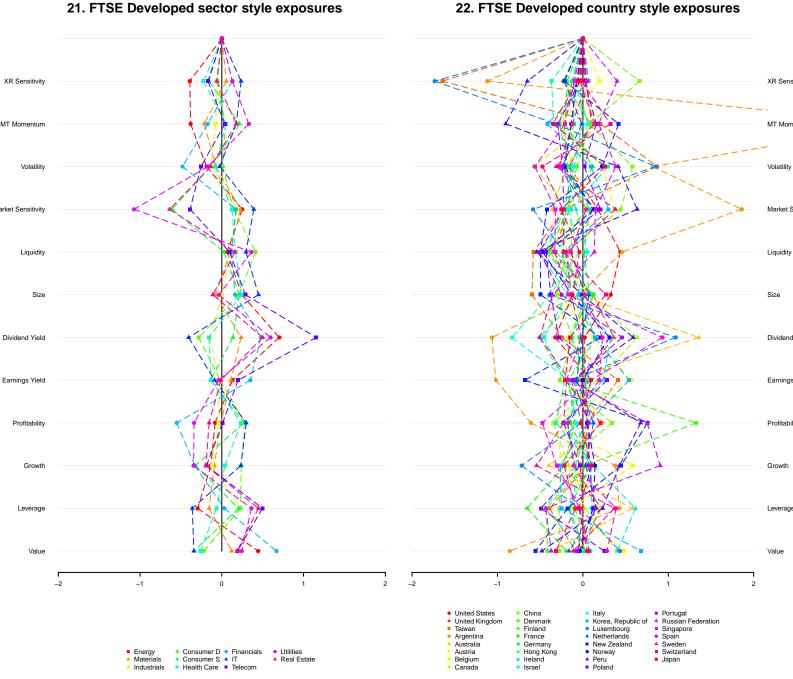


21. FTSE Developed sector style exposures



• Consumer D • Financials
▲ Consumer S ▲ IT
■ Health Care ■ Telecom

UtilitiesReal Estate

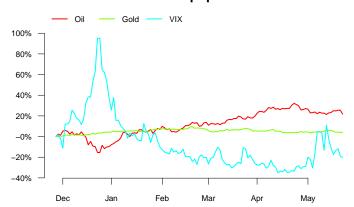


www.axioma.com

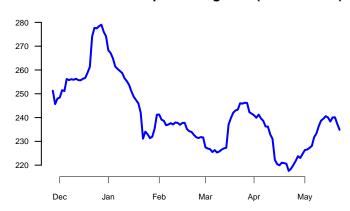
US & Canada: +1 212-991-4500 Europe: +44 (0)20-7856-2424 Asia: +852 8203-2790

23. Returns for popular benchmarks

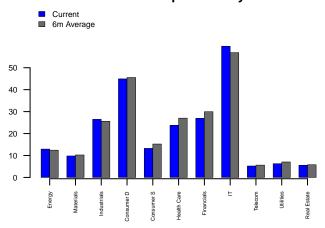
24. Returns for popular indicators



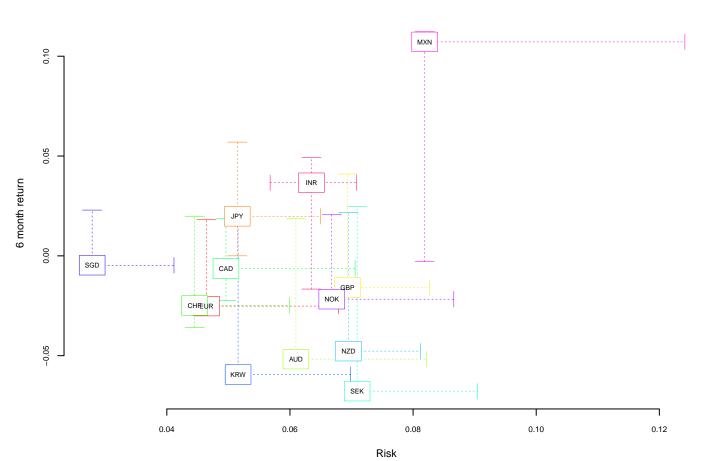
25. FTSE Developed rolling ADV (USD billions)



26. FTSE Developed ADV by sector



27. Currency risk and return vs USD





US & Canada: +1 212-991-4500 Europe: +44 (0)20-7856-2424

+852 8203-2790

Explanatory notes

1. Global volatility hotspots

Volatility for global markets measured by the Axioma World short horizon fundamental model based on Axioma model estimation universe (USD perspective).

2. Global correlation hotspots

Average asset correlation for global markets measured using the Axioma World short horizon fundamental model based on Axioma model estimation universe (USD perspective).

3. Global market returns (6 months)

Total market return in local currency over the last 6 months based on the Axioma estimation universe.

4. Global market returns (1 week)

Total market return in local currency over the last week based on the Axioma estimation universe

5. Global market risk and return

Total return over the last 6 months vs current market volatility estimated by Axioma short horizon world model, based on the Axioma estimation universe. Circle size represents market cap.

6. FTSE Developed predicted risk

Forecast risk estimate for the FTSE Developed measured by the four Axioma World model variants. MH = medium horizon, SH = short, -S = statistical model. Right hand axis shows FTSE Developed return.

7. Rolling average asset correlations

Average correlation amongst FTSE Developed stocks over trailing 20 and 60 day window. Right hand axis shows FTSE Developed return.

8. Weekly asset return dispersion

Cross sectional volatility of weekly asset returns over FTSE Developed stocks.

9. Weekly asset return proportion up/down

Weekly count of number of stocks with positive returns vs number of stocks with negative returns for FTSE Developed stocks.

10. Risk watch - FTSE Developed

Change in FTSE Developed risk vs total return over indicated period. Risk is measured by Axioma short horizon World model. A one standard deviation move based on risk forecast at the time is indicated by the colored dot.

11. Risk change decomposition

Breakdown of the causes of change in FTSE Developed risk over 1 week, 1 month, 3 months and 6 months. For more details contact your Axioma representative.

12. Components of FTSE Developed risk

FTSE Developed stock specific risk and risk from industry, measured daily over the last 6 months using Axioma medium horizon model. Does not include covariance between industry and style

13. FTSE Developed diversification

Diversification is measured as the ratio of weighted average asset variance to total FTSE Developed variance, measured by the Axioma medium horizon World model.

14. Style factor performance

Cumulative performance of the Axioma World fundamental model style factors over the last 6 months

15. Style factor returns

Return of the Axioma World fundamental model style factors over the last 1 week, 1 month, 3 months and 6 months.

16. Factor volatility range

The range in volatility for style and industry factors in the World medium horizon fundamental model over the last 6 months. Current volatility is indicated by the yellow line.

17. Style correlations

Correlations between style factors from the World medium horizon fundamental model

18. Change in style correlations (6 month)

The change in correlation between style factors from the World medium horizon fundamental model over the last 6 months.

19. FTSE Developed sector weights and % of risk

The weight and contribution to risk of top level sectors in the FTSE Developed index. Risk is measured using the Axioma medium horizon fundamental model.

20. FTSE Developed country weights and % of risk

The weight and contribution to risk of countries in the FTSE Developed index. Risk is measured using the Axioma medium horizon fundamental model.

21. FTSE Developed sector style exposures

The weighted average exposure to Axioma World style factors for top level sectors in the FTSE Developed index.

22. FTSE Developed country style exposures

The weighted average exposure to Axioma World country factors for top level sectors in the FTSE Developed index.

23. Returns for popular benchmarks Cumulative returns in local currency over the last 6 months for popular global equity benchmarks as measured by a corresponding ETF. Each of these benchmarks are registered trademarks of their respective

24. Returns for popular indicators Cumulative returns over the last 6 months for WTI, spot gold and VIX. VIX is a registered trademark of the Chicago Board Options Exchange.

25. FTSE Developed rolling ADV (USD billions)

Daily sum of 20-day average USD daily trading value for assets in FTSE Developed.

26. FTSE Developed ADV by sector

Current and 6 month average 20-day average USD daily trading value for assets in FTSE Developed, split by top level sector.

27. Currency risk and return vs USD

Currency volatility and 6-month return vs USD. Dotted lines show range in return and volatility over the last 6 months.

Country legend

AT=Austria, AU=Australia, BE=Belgium, BR=Brazil, CA=Canada, CH=Switzerland, CL=Chile, CN=China, CO=Colombia, CZ=Czech Republic, DE=Germany, DK=Denmark, ES=Spain, FR=France GB=United Kingdom,GR=Greece,HK=Hong Kong,HU=Hungary,ID=Indonesia,IE=Ireland,IL=Israel,IN=India,IT=Italy,JP=Japan,KR=Korea,LU=Luxembourg,MA=Morocco,MX=Mexico MY=Malaysia,NL=Netherlands,NO=Norway,NZ=New Zealand,OM=Oman,PE=Peru,PH=Philippines,PL=Poland,PT=Portugal,RU=Russian Federation,SE=Sweden,SG=Singapore TH=Thailand,TR=Turkey,TW=Taiwan,US=United States,ZA=South Africa

Disclaimer

The information contained in this analysis is the proprietary property of Axioma Inc., is provided solely for informational purposes, and has been compiled or arrived at based upon information obtained from sources believed to be reliable and in good faith, but is not guaranteed as being accurate. Axioma Inc. is not, and does not represent itself to be, an investment advisor and the information provided by Axioma Inc. in this analysis does not constitute nor should be taken to constitute investment advice. The "[Axioma]" symbol and "Flexible is Better" are trademarks and service marks of Axioma Inc. Copyright 2012, All rights reserved.