

Global Value Investing: A Multi-Strategy Perspective

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“Value Everywhere”

- **Value investing is universal - it generally works over time**

- **Examples**

 - Security selection: stocks and bonds

 - Country allocation: stocks, bonds, currencies

 - Market timing

 - Commodities

 - Other types of strategies: xyz arbitrage

Multi Strategy Perspective

- **Global investment strategies have exposures to multiple value factors**
- **From a portfolio perspective, we need to understand**
 - The correlations among different value strategies
 - The common risk factors affecting value strategies

What is Value?

- **Different strategies/markets have different value factors**
- **Different investors use different metrics**

- **Our definitions**

Simple

Market data – no DCF

Income/Yield/B2P

Strategies - Factors

- **Global equity (Developed market country) – B2P**
- **Global equity (Emerging market country) – B2P**
- **Stock selection (R1000, R2000, Japan, Germany) – B2P**
- **Global bond – Slope (10Y yield less short-term rate)**
- **Global currency – Interest rate differential (carry)**

Value-added from Value Factors

- **Monthly dollar-neutral portfolios**
- **Portfolio weights proportional to demeaned factors**
- **Monthly value-added given by**

$$\alpha_t = \kappa \sum_{i=1}^N f_{i,t} r_{i,t}$$

- **The constant is used to scale volatility of alpha**

Value Strategies

Value works

	TOP-DOWN				BOTTOM-UP			
	INTDIFF	SLOPE	B2P (DM)	B2P (EM)	B2P (R1000)	B2P (R2000)	B2P (JAPAN)	B2P (GERMANY)
Avg Excess Ret	0.68%	0.54%	0.82%	0.57%	0.59%	0.72%	1.37%	0.37%
Stdev	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
IR	0.68	0.54	0.82	0.57	0.59	0.72	1.37	0.37
Skewness	-0.49	-0.17	1.05	1.83	0.25	0.24	2.47	0.17
Kurtosis	3.75	10.58	3.97	12.68	2.44	5.18	18.12	2.99

- **Annual IR varies from 0.4 to 1.3**
- **Top-down strategies are just as good as bottom-up stock selection strategies**

Value Strategies

Correlations

	INTDIFF	SLOPE	B2P (DM)	B2P (EM)	B2P (R1000)	B2P (R2000)	B2P (JAPAN)	B2P (GERMANY)
INTDIFF	1.00							
SLOPE	0.02	1.00						
B2P (DM)	-0.05	-0.20	1.00					
B2P (EM)	-0.02	0.00	0.20	1.00				
B2P (R1000)	-0.04	-0.04	0.19	0.14	1.00			
B2P (R2000)	0.02	-0.01	0.14	0.14	0.53	1.00		
B2P (JAPAN)	0.07	0.00	0.05	0.32	0.15	0.20	1.00	
B2P (GERMANY)	0.11	0.17	0.07	0.04	0.21	0.07	0.09	1.00

- **Correlations are generally low**
- **They are all positive for B2P**
- **Slope and carry have no correlation with other strategies**

Risk Exposures

Alpha or Risk

- Value-add have market exposures
- Dollar neutral is not necessarily market neutral
- Correlation – the results of common factor exposure?
- When does the strategy work and doesn't work?

	MSCI World	WGBI	R1V - R1G	R1 - R2	CHG VIX	CHG BAA SPD
MSCI World	1.00					
WGBI	0.24	1.00				
R1V - R1G	-0.31	0.00	1.00			
R1 - R2	-0.05	0.14	0.11	1.00		
CHG VIX	-0.51	0.17	0.19	0.20	1.00	
CHG BAA SPD	-0.14	0.44	0.09	0.30	0.28	1.00
Standard Deviation	4.13%	2.01%	2.98%	3.13%	4.49%	0.17%

Risk Exposures

Multivariate Regression

	INTDIFF	SLOPE	B2P (DM)	B2P (EM)	B2P (R1000)	B2P (R2000)	B2P (Japan)	B2P (Germany)
α	0.07% (3.40)	0.03% (1.82)	0.03% (2.03)	0.05% (2.20)	0.04% (2.22)	0.04% (2.26)	0.10% (4.54)	0.03% (1.30)
MSCI World	0.005 (0.90)	-0.008 (-1.40)	-0.002 (-0.58)	-0.008 (-0.98)	-0.005 (-0.80)	0.003 (0.54)	0.008 (1.01)	0.011 (1.38)
WGBI	-0.026 (-2.44)	0.025 (2.31)	0.007 (0.99)	0.001 (0.09)	0.004 (0.36)	0.011 (1.10)	0.010 (0.77)	-0.014 (-1.11)
R1V - R1G	0.004 (0.68)	-0.001 (-0.20)	0.010 (2.51)	0.020 (3.05)	0.044 (7.56)	0.055 (10.41)	0.019 (2.83)	0.013 (1.93)
R1 - R2	-0.001 (-0.24)	0.010 (1.65)	-0.010 (-2.64)	-0.005 (-0.79)	0.004 (0.71)	0.001 (0.14)	0.007 (1.14)	0.009 (1.36)
CHG VIX	-0.013 (-2.65)	-0.008 (-1.68)	-0.001 (-0.28)	-0.026 (-3.60)	-0.009 (-1.38)	0.004 (0.73)	0.002 (0.23)	0.005 (0.74)
CHG BAA SPD	0.004 (0.03)	0.098 (0.78)	-0.073 (-0.87)	0.036 (0.22)	-0.497 (-3.51)	-0.127 (-0.98)	-0.008 (-0.05)	-0.003 (-0.02)

- Most residual alphas are still significant
- Carry trade is vulnerable to volatility shocks
- Slope trade does well if the bond market rallies
- All B2P strategies depends on value premium
- Spread widening have negative impact on B2

Risk Exposures

Alpha Impact of One-Sigma

	INTDIFF	SLOPE	B2P (DM)	B2P (EM)	B2P (R1000)	B2P (R2000)	B2P (Japan)	B2P (Germany)
α	0.07%	0.03%	0.03%	0.05%	0.04%	0.04%	0.10%	0.03%
MSCI World	0.02%	-0.03%	-0.01%	-0.03%	-0.02%	0.01%	0.03%	0.04%
WGBI	-0.05%	0.05%	0.01%	0.00%	0.01%	0.02%	0.02%	-0.03%
R1V - R1G	0.01%	0.00%	0.03%	0.06%	0.13%	0.16%	0.06%	0.04%
R1 - R2	0.00%	0.03%	-0.03%	-0.02%	0.01%	0.00%	0.02%	0.03%
CHG in VIX	-0.06%	-0.04%	0.00%	-0.12%	-0.04%	0.02%	0.01%	0.02%
CHG in BAA SPD	0.00%	0.02%	-0.01%	0.01%	-0.08%	-0.02%	0.00%	0.00%

- In most cases, a two-sigma event in a risk factor will cause monthly alpha to be wiped out
- If VIX goes from 20% to 80% (300% increase), the impact on carry trade would be close to -4% with an annual risk of 1%

Diversification Helps

- **Global Macro: Carry trade, Slope, B2P(DM)**
- **Multi-Alpha: All eight strategies**
- **Risk Parity allocation**

	Multi Strategy	
	Global Macro	Multi Alpha
Avg Ret	1.12%	1.50%
Stdev	1.00%	1.00%
IR	1.12	1.50
Skewness	0.45	0.41
Kurtosis	2.36	1.65

Risk Exposures

- Residual alphas are more robust
- Factors that are still significant: value premium and VIX

	Global Macro		Multi Alpha	
α	0.09% (4.81)		0.11% (5.71)	
MSCI World	-0.005 (-0.82)	-0.02%	-0.002 (-0.26)	-0.01%
WGBI	0.008 (0.80)	0.02%	0.013 (1.19)	0.03%
R1V - R1G	0.013 (2.07)	0.04%	0.046 (7.89)	0.14%
R1 - R2	-0.005 (-0.88)	-0.02%	0.005 (0.81)	0.01%
CHG in VIX	-0.015 (-3.00)	-0.07%	-0.013 (-2.07)	-0.06%
CHG in BAA SPD	-0.008 (-0.06)	0.00%	-0.219 (-1.54)	-0.04%

Summary

- **A lot has happened since the research presented here was done**
- **The market events in 2007 and 2008 validated our findings**
- **Lessons**
 - Volatility hedging
 - Risk monitoring
 - Diversifying factors/strategies
 - Factor timing
- **The future of value investing**