

## Pairs Trading Matrixes

October 13, 2015

Sturdivant & Co. conducts bottom-up fundamental analysis on a wide range of nearly 3,000 large and small cap US equities. Herein we present our exclusive Pairs Trading Matrixes utilizing Polaris, our innovative system for stock selection guidance. (System design overview for Polaris is attached separately.)

Polaris integrates proprietary analytics that are focused on valuation, catalytic and technical properties to rank and characterize stocks. The quantitative scores derived for each stock in our coverage universe can be used to identify pricing disparities among pairs of stocks. An exploitable pricing disparity is indicated by a wide spread between the respective quantitative scores for the long and short component of a pair of stocks selected from the same sector and industry.

Our Pairs Trading Matrixes provide investors with guidance by specifying long/short pair combinations that we find attractive based on the spread in quantitative scores among the components of each pair. A separate matrix for a large cap universe and a small cap universe is provided below in Tables 1 and 2.

The Sturdivant & Co. coverage universe is grouped into 16 economic sectors and approximately 200 different industries. We have identified pair combinations selected from the 10 industries that we believe have the greatest degree of pricing disparity based on our analysis. For each industry from which attractive pairs are identified, we select 1 to 4 long candidates and 1 to 4 short candidates. Consequently, there can be anywhere from 1 to 16 different pair combinations to select from for each industry. As an example, in Table 1 below, we have identified 4 pairs in the Medical/Dental Supplies industry that merit investment consideration, including: (A1) COO-HSIC, (A2) COO-XRAY, (A3) COO-PDCO and (A4) COO-BCR.

**Table 1: Large Cap Pairs Matrix**

LARGE CAP PAIRS (based on 10/09/2015 prices)									
PAIR COMBINATIONS = A1, A2, A3, A4, B1, B2, B3, B4, C1, C2, C3, C4, D1, D2, D3, D4									
INDUSTRY	LONG SIDE of PAIR				SHORT SIDE of PAIR				Number of Pairs
	A	B	C	D	1	2	3	4	
1 MEDICAL-DRUGS	ENDP	UTHR			ZTS				2
2 REIT-EQTY TRUST - RETAIL	EQIX	WPG			REG	FRT	KIM		6
3 MEDICAL/DENTAL-SUPPLIES	COO				HSIC	XRAY	PDCO	BCR	4
4 UTILITY-ELECTRIC POWER	NRG	HE	ITC	PPL	D	PCG			8
5 REIT-EQTY TRUST - OTHER	GLPI	OFC	PGRE	SNH	EXR	AMT	KRC	PDM	16
6 COMPUTER-SOFTWARE	RHT	CRM			ADSK	SWI			4
7 CONSUMER PROD-MISC STAPLES	ENR				KMB				1
8 BEVERAGES-SOFT DRINKS	WWAV				PEP				1
9 INSURANCE-BROKERS	AJG	VR			MMC				2
10 FOOD-MISC/DIVERSIFIED	HAIN	PF	SJM	MJN	SYF				4
TOTAL Number of PAIRS =									<b>48</b>

**Table 2: Small Cap Pairs Matrix**

SMALL CAP PAIRS (based on 10/09/2014 prices)									
PAIR COMBINATIONS = A1, A2, A3, A4, B1, B2, B3, B4, C1, C2, C3, C4, D1, D2, D3, D4									
INDUSTRY	LONG SIDE of PAIR				SHORT SIDE of PAIR				Number of Pairs
	A	B	C	D	1	2	3	4	
1 BLDG-HEAVY CONST	DY				PRIM	GVA	MTZ		3
2 MEDICAL-BIOMED/GENETICS	THRX	RPTP	MNKD	EPZM	LXRX	KITE	MDCO	IART	16
3 MEDICAL-DRUGS	PCRX	TSRD	XNCR		AERI	IRWD	USNA	SPPI	12
4 INTERNET SOFTWARE	SNCR	BNFT	PCTY		CVT	NEWR	CHGG		9
5 COMMUNICATIONS COMPONENTS	GIMD				PGI	KN			2
6 ELEC-MISC COMPONENTS	OLED	PPD			TTMI	OSIS			4
7 OIL & GAS-U S EXPLOR & PROD	FVA	PDCE			RSPP	SYRG	SGY	CRZO	8
8 REIT-EQTY TRUST - RETAIL	RSE				STOR				1
9 MEDICAL SERVICES	PRAH	AMRI			IPCM				2
10 FOOD-MISC/DIVERSIFIED	DMND	CALM			LANC	LNCE	BGS		6
TOTAL Number of PAIRS =									<b>63</b>

In Tables 3 and 4 below we provide output from the Polaris analysis for the stocks in each of the matrixes (large cap and small cap, respectively). The stocks in each matrix are grouped first by sector, then industry. The overall attractiveness of a stock is indicated by the Polaris Score, or PSCORE, whereby long candidates will have a positive PSCORE and short candidates will have a negative PSCORE. The PSCORE is a proprietary factor that is based on our analysis of each stock's valuation, technical and catalytic properties. The difference in PSCORES between the long and short candidates of a pair is the metric that we use as an indication of pricing disparity, otherwise referred to as the spread. Descriptions for the column headings in Tables 3 and 4 are as follows:

**COLUMN HEADINGS**

XSECTOR – Sector Identification Number used in master database (1 thru 16)\*\*

DCOORD – Dimensional Coordinate used to characterize stocks in Polaris framework (1 thru 8)

**PSCORE – Polaris Score, (+) value is favorable, (-) value is unfavorable, (0) value is neutral**

VTCAVG – Average calculated from VSCORE, TSCORE and CSCORE

VSCORE – Valuation Score, (+) value is favorable, (-) value is unfavorable, (0) value is neutral

TSCORE – Technical Score, (+) value is favorable, (-) value is unfavorable, (0) value is neutral

CSCORE – Catalytic Score, (+) value is favorable, (-) value is unfavorable, (0) value is neutral

**\*\*Sector Identification Numbers**

- |                          |                       |                          |                      |
|--------------------------|-----------------------|--------------------------|----------------------|
| 1 Consumer Staples       | 5 Autos/Tires/Trucks  | 9 Conglomerates          | 13 Finance           |
| 2 Consumer Discretionary | 6 Basic Materials     | 10 Computer & Technology | 14 Utilities         |
| 3 Retail/Wholesale       | 7 Industrial Products | 11 Aerospace             | 15 Transportation    |
| 4 Medical                | 8 Construction        | 12 Oils/Energy           | 16 Business Services |

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Table 3: Large Cap Pairs – Polaris Output (10/09/2015)

	COMPANY	SECTOR	TICKER	PRICE	DIV YLD	DCOORD	PSCORE	VTCAVG	VSCORE	TSCORE	CSCORE	MKT CAP
<b>Consumer Staples</b>												
<b>BEVERAGES-SOFT DRINKS</b>												
A	WhiteWave Foods	1	WWAV	43.82	0.00	3.00	1.48	0.20	-1.24	0.83	1.00	7701.76
1	Pepsico Inc	1	PEP	99.47	2.83	8.00	-1.62	-0.83	-0.36	-1.03	-1.11	146120.73
<b>CONSUMER PROD-MISC STAPLES</b>												
A	Energizer Hldgs	1	ENR	42.26	2.37	1.00	1.64	1.21	2.53	0.30	0.78	2628.28
1	Kimberly Clark	1	KMB	114.73	3.07	6.00	-1.57	-0.27	0.22	-0.47	-0.56	41793.27
<b>FOOD-MISC/DIVERSIFIED</b>												
A	Hain Celestial	1	HAIN	54.12	0.00	1.00	1.59	0.49	0.14	0.30	1.04	5553.31
B	Pinnacle Foods	1	PF	43.26	2.36	3.00	1.48	0.85	-0.81	2.20	1.14	5043.55
C	Smucker Jm	1	SJM	118.09	2.27	3.00	1.48	0.11	-0.55	0.23	0.64	14131.24
D	Mead Johnson Nu	1	MJN	72.03	2.29	1.00	1.43	0.60	1.06	0.61	0.13	14603.29
1	Sysco Corp	1	SYU	40.93	2.93	8.00	-1.46	-0.59	-0.55	-0.85	-0.38	24398.62
<b>Medical</b>												
<b>MEDICAL-DRUGS</b>												
A	Endo Intl Plc	4	ENDP	64.27	0.00	3.00	1.54	0.78	-0.24	0.95	1.63	14550.60
B	Utd Therapeutic	4	UTHR	123.59	0.00	1.00	1.43	0.86	1.41	1.02	0.16	5628.29
1	Zoetis Inc	4	ZTS	42.80	0.78	8.00	-1.67	-0.89	-1.25	-0.89	-0.53	21354.80
<b>MEDICAL/DENTAL-SUPPLIES</b>												
A	Cooper Cos	4	COO	137.62	0.04	1.00	1.59	0.82	0.41	1.45	0.59	6690.26
4	Bard C R Inc	4	BCR	186.71	0.51	8.00	-1.62	-0.63	-0.21	-1.06	-0.64	13853.70
3	Patterson Cos	4	PDCO	46.77	1.88	8.00	-1.62	-1.25	-0.39	-2.57	-0.77	4828.91
2	Dentsply Intl	4	XRAY	56.51	0.51	8.00	-1.67	-1.22	-0.80	-2.03	-0.81	7900.89
1	Henry Schein In	4	HSIC	141.70	0.00	8.00	-1.67	-1.37	-1.07	-2.39	-0.63	11817.36
<b>Computer and Technology</b>												
<b>COMPUTER-SOFTWARE</b>												
A	Red Hat Inc	10	RHT	76.48	0.00	3.00	1.54	1.00	-0.16	0.48	2.67	14032.78
B	Salesforce.Com	10	CRM	75.25	0.00	3.00	1.32	0.15	-0.14	0.53	0.07	49330.59
2	Solarwinds Inc	10	SWI	47.49	0.00	6.00	-1.36	-1.46	0.11	-4.37	-0.12	3637.88
1	Autodesk Inc	10	ADSK	51.57	0.00	8.00	-1.67	-2.13	-0.56	-0.53	-5.32	11665.08
<b>Finance</b>												
<b>INSURANCE-BROKERS</b>												
A	Gallagher Arthu	13	AJG	42.56	3.48	3.00	1.54	0.44	-0.43	1.02	0.75	7426.72
B	Validus Holding	13	VR	44.22	2.89	1.00	1.43	0.42	0.48	0.50	0.26	3659.47
1	Marsh & McLennan	13	MMC	53.44	2.32	6.00	-1.57	-0.42	0.34	-1.13	-0.48	28322.83
<b>REIT-EQTY TRUST - OTHER</b>												
A	Gaming And Leis	13	GLPI	30.98	7.04	1.00	1.64	0.99	1.16	1.14	0.69	3547.80
B	Corp Office Pty	13	OFC	22.24	4.95	1.00	1.59	0.43	0.23	0.48	0.57	2102.32
C	Paramount Group	13	PGRE	17.45	1.86	3.00	1.48	1.71	-1.23	2.26	4.11	3701.35
D	Senior Housing	13	SNH	16.97	9.19	1.00	1.43	0.85	1.42	0.60	0.53	4028.66
4	Piedmont Office	13	PDM	18.68	4.50	8.00	-1.41	-0.49	-0.31	-0.95	-0.22	2826.55
3	Kilroy Realty	13	KRC	68.53	2.04	8.00	-1.46	-0.62	-1.18	-0.61	-0.08	6318.95
2	Amer Tower Corp	13	AMT	94.94	1.94	6.00	-1.52	-0.34	0.49	-0.88	-0.63	40186.11
1	Extra Space Stg	13	EXR	77.10	3.06	8.00	-1.62	-2.29	-0.27	-6.15	-0.47	10389.38
<b>REIT-EQTY TRUST - RETAIL</b>												
A	Equinix Inc	13	EQIX	269.88	2.50	1.00	1.64	2.22	0.70	0.49	5.47	15371.83
B	Wp Glimcher Inc	13	WPG	12.25	8.16	1.00	1.64	1.40	2.08	1.19	0.95	2269.96
3	Kimco Realty Co	13	KIM	25.45	3.77	6.00	-1.57	-0.54	0.36	-0.75	-1.24	10514.29
2	Fed Rlty Inv	13	FRT	142.03	2.65	8.00	-1.67	-1.04	-1.08	-0.91	-1.12	9817.97
1	Regency Ctrs Cp	13	REG	64.99	2.99	8.00	-1.67	-1.07	-1.21	-1.03	-0.96	6119.26
<b>Utilities</b>												
<b>UTILITY-ELECTRIC POWER</b>												
A	Nrg Energy Inc	14	NRG	15.46	3.75	1.00	1.59	0.64	0.30	1.14	0.47	5111.93
B	Hawaiian Elec	14	HE	29.72	4.17	3.00	1.54	0.42	-0.45	0.80	0.91	3193.62
C	Ite Holdings Cp	14	ITC	32.47	2.31	1.00	1.43	0.49	1.08	0.39	0.00	5070.00
D	Ppl Corp	14	PPL	33.03	4.57	1.00	1.38	0.21	0.05	0.56	0.03	22129.11
2	Pg&E Corp	14	PCG	52.50	3.47	6.00	-1.57	-0.47	0.26	-0.49	-1.18	25681.22
1	Dominion Res Va	14	D	71.02	3.65	8.00	-1.67	-1.08	-0.65	-0.77	-1.83	42208.75

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Table 4: Small Cap Pairs – Polaris Output (10/09/2015)

	COMPANY	X SECTOR	TICKER	PRICE	DIV YLD	DCOORD	PSCORE	VTCAVG	VSCORE	TSCORE	CSCORE	MKT CAP
<b>Consumer Staples</b>												
<b>FOOD-MISC/DIVERSIFIED</b>												
A	Diamond Foods	1	DMND	32.03	0.00	1.00	1.61	1.35	0.00	1.26	2.79	1008.72
B	Cal-Maine Foods	1	CALM	55.70	2.28	3.00	1.35	0.43	-0.39	1.57	0.10	2701.34
3	B&G Foods ClA	1	BGS	36.91	3.79	6.00	-1.37	-0.13	0.24	-0.37	-0.26	2139.93
2	Snyders-Lance	1	LNCE	36.18	1.77	8.00	-1.47	-0.57	-0.94	-0.63	-0.14	2557.06
1	Lancaster Colon	1	LANC	101.62	1.81	8.00	-1.63	-0.80	-0.58	-1.31	-0.52	2780.32
<b>Medical</b>												
<b>MEDICAL SERVICES</b>												
A	Pra Health Sci	4	PRAH	38.73	0.00	1.00	1.67	1.62	0.65	2.10	2.10	2330.19
B	Albany Mol Rsch	4	AMRI	17.28	0.00	3.00	0.71	0.36	-0.26	0.45	0.88	613.41
1	Ipc The Hospitl	4	IPCM	79.25	0.00	8.00	-1.63	-0.48	-0.22	-0.84	-0.39	1380.22
<b>MEDICAL-BIOMED/GENETICS</b>												
A	Theravance Inc	4	THRX	8.64	11.57	1.00	1.67	1.25	1.48	1.20	1.06	1011.99
B	Raptor Pharmact	4	RPTP	5.99	0.00	1.00	1.61	0.72	0.32	1.02	0.82	506.92
C	Mannkind Corp	4	MNKD	3.05	0.00	1.00	1.61	0.44	0.12	0.54	0.65	1265.01
D	Epizyme Inc	4	EPZM	13.66	0.00	3.00	1.56	0.70	-0.35	1.56	0.88	564.57
4	Integra Lifesci	4	IART	58.79	0.00	6.00	-1.58	-0.36	0.37	-0.68	-0.76	2143.66
3	Medicines Co	4	MDCO	34.88	0.00	8.00	-1.63	-0.81	-0.29	-0.93	-1.21	2328.87
2	Kite Pharma Inc	4	KITE	63.33	0.00	8.00	-1.69	-0.85	-1.01	-0.66	-0.89	2769.74
1	Lexicon Pharma	4	LXRX	11.59	0.00	8.00	-1.69	-1.33	-1.90	-0.85	-1.23	1200.88
<b>MEDICAL-DRUGS</b>												
A	Pacira Pharmact	4	PCRX	42.18	0.00	1.00	1.67	0.87	1.24	0.61	0.76	1545.77
B	Tesaro Inc	4	TSRO	45.96	0.00	1.00	1.61	0.77	0.12	0.97	1.23	1839.59
C	Xencor Inc	4	XNCR	12.28	0.00	3.00	1.51	1.06	-0.60	0.64	3.13	497.00
4	Spectrum Pharma	4	SPPI	6.20	0.00	8.00	-1.42	-0.41	-0.27	-0.80	-0.16	417.33
3	Usana Hlth Sci	4	USNA	128.04	0.00	8.00	-1.63	-0.33	-0.03	-0.58	-0.38	1639.55
2	Ironwood Pharma	4	IRWD	11.36	0.00	8.00	-1.63	-0.74	-0.28	-1.27	-0.67	1619.64
1	Aerie Pharmact	4	AERI	18.87	0.00	8.00	-1.69	-0.89	-1.33	-0.59	-0.73	484.81
<b>Construction</b>												
<b>BLDG-HEAVY CONST</b>												
A	Dycom Inds	8	DY	78.29	0.00	3.00	1.30	-0.12	-1.53	0.89	0.27	2602.05
3	Mastec Inc	8	MTZ	18.96	0.00	8.00	-1.63	-0.64	-0.64	-0.65	-0.63	1513.77
2	Granite Constru	8	GVA	33.30	1.56	8.00	-1.63	-0.87	-0.19	-1.85	-0.56	1311.29
1	Primoris Servcs	8	PRIM	21.33	1.03	8.00	-1.69	-1.05	-0.88	-1.12	-1.16	1102.25
<b>Computer and Technology</b>												
<b>COMMUNICATIONS COMPONENTS</b>												
A	Gigamon Inc	10	GIMD	20.42	0.00	1.00	1.67	0.91	0.26	1.87	0.61	684.40
2	Knowles Corp	10	KN	21.23	0.00	6.00	-0.73	-0.42	0.17	-0.35	-1.08	1875.97
1	Premiere Global	10	PGI	13.78	0.00	8.00	-1.69	-1.80	-0.41	-3.93	-1.05	644.27
<b>ELEC-MISC COMPONENTS</b>												
A	Univl Display	10	OLED	39.83	0.00	1.00	1.67	0.57	0.47	0.90	0.35	1850.26
2	Osi Systems Inc	10	OSIS	82.71	0.00	6.00	-1.37	-0.42	0.04	-1.02	-0.29	1634.27
1	Ttm Technologie	10	TTMI	6.88	0.00	8.00	-1.63	-1.55	-0.06	-0.92	-3.68	681.98
<b>INTERNET SOFTWARE</b>												
A	Synchronoss Tec	10	SNCR	35.90	0.00	1.00	1.67	0.84	0.57	1.19	0.76	1574.68
B	Benefitfocus	10	BNFT	30.97	0.00	3.00	1.51	0.97	-0.58	2.49	0.98	889.55
C	Paylocity Hldg	10	PCTY	31.99	0.00	3.00	1.51	0.45	-1.16	1.96	0.54	1621.99
3	Chegg Inc	10	CHGG	7.26	0.00	6.00	-1.37	-0.73	0.01	-2.05	-0.16	636.38
2	New Relic Inc	10	NEWR	39.44	0.00	8.00	-1.47	-2.06	-1.74	-4.37	-0.06	1872.89
1	Cvent Inc	10	CVT	32.49	0.00	8.00	-1.69	-0.79	-0.64	-0.63	-1.10	1352.46
<b>Oils-Energy</b>												
<b>OIL &amp; GAS-U S EXPLD &amp; PROD</b>												
A	Penn Virginia	12	PVA	1.05	0.00	1.00	1.61	0.55	0.24	0.83	0.58	75.26
B	Pdc Energy Inc	12	PDCE	57.65	0.00	3.00	1.51	0.28	-1.03	1.17	0.70	2311.76
4	Carrizo Oil&Gas	12	CRZO	42.50	0.00	8.00	-1.42	-0.62	-0.76	-1.04	-0.05	2208.47
3	Stone Energy Cp	12	SGY	8.61	0.00	8.00	-1.42	-0.79	-0.08	-1.94	-0.35	492.92
2	Synergy Res Cp	12	SYRG	11.90	0.00	8.00	-1.63	-0.87	-0.77	-0.78	-1.06	1249.80
1	Rsp Permian Inc	12	RSPP	26.70	0.00	8.00	-1.69	-1.98	-1.65	-3.04	-1.26	2430.23
<b>Finance</b>												
<b>REIT-EQTY TRUST - RETAIL</b>												
A	Rouse Properts	13	RSE	16.83	4.28	3.00	1.51	-0.28	-1.69	0.43	0.43	976.24
1	Store Capital	13	STOR	21.62	5.00	8.00	-1.69	-1.31	-0.64	-1.18	-2.10	2742.69

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