BrandLoyalties, Inc.
Data Usage Example

When analyzing or back-testing a new alternative data set, it is often useful to have a simple set of "Proof-of-Concept" models based on that data set as a reference point.

With that in mind, we have constructed a number of indexes that use our metrics in a stand-alone manner and utilize a very simple rule book. These indexes (and their recent performance data) are shown in a table near the top of our BrandLoyalties.com home page under the heading "Examples of BrandLoyalties.com Metrics in 'Smart Beta' Indices (Proforma Performance)". Links to corresponding daily index values and Fact Sheets are also provided.

The indexes share a simple basic set of investment rules:

(1) The constituent equities are included in the BrandLoyalties coverage of US listed equities and have a mean daily on-line brand name citation rate that is greater than three times the standard deviation of their daily citation rates (i.e., they are included in our daily metrics files);

(2) The constituents generally have mid and large market capitalizations (>= $2 billion);

(3) The long-only "portfolio" behind each index is completely rebalanced and reconstituted quarterly to equal valuations.

The performance of those indexes through the second quarter of 2021 is shown in the following table:

BrandLoyalties Index Performance

Index Description	Index Group	3 Months Return Through 2Q-2021	Year to Date Return Through 2Q-2021	12 Months Return Through 2Q-2021	36 Months Annualized Return Through 2Q-2021	60 Months Annualized Return Through 2Q-2021	Annualized Return 2008 Through 2Q-2021	Excess Return 2008 Through 2Q-2021
Large Caps Index	Capitalization Tranches	7.01%	17.34%	52.87%	23.69%	24.87%	17.39%	6.75%
Mid and Large Caps Index	Capitalization Tranches	4.20%	19.90%	63.45%	22.89%	25.16%	17.72%	7.18%
Consumer Discretionary Index	Broad Consumer Indices	3.32%	23.02%	95.42%	30.36%	28.55%	20.82%	10.28%
Consumer Staples Index	Broad Consumer Indices	0.40%	18.13%	49.71%	21.10%	18.56%	16.20%	5.66%
Consumer Goods Index	Broad Consumer Indices	4.52%	20.67%	87.10%	28.75%	27.99%	20.35%	9.80%
Consumer Services Index	Broad Consumer Indices	6.57%	15.93%	72.20%	21.63%	24.71%	15.94%	5.40%
Retail Index	Consumer Sector Indices	5.33%	29.26%	100.32%	40.14%	29.90%	20.98%	10.44%
Apparel Index	Consumer Sector Indices	3.83%	20.15%	86.32%	16.74%	18.71%	17.98%	7.44%
Food Index	Consumer Sector Indices	2.81%	15.39%	37.46%	20.04%	16.41%	15.31%	4.77%
Dining Index	Consumer Sector Indices	3.68%	15.92%	59.29%	18.39%	19.57%	16.09%	5.54%
Hospitality Index	Consumer Sector Indices	7.79%	21.87%	81.80%	18.79%	22.39%	16.61%	6.07%
Travel Index	Consumer Sector Indices	-0.16%	19.46%	76.48%	13.19%	17.29%	16.45%	5.90%
Technology Index	Consumer Sector Indices	8.38%	18.81%	88.51%	42.20%	39.67%	16.69%	6.15%
Lifestyle Index	Consumer Sector Indices	3.82%	26.68%	108.03%	31.88%	27.92%	20.87%	10.32%
Guilty Pleasures Index	Consumer Sector Indices	4.99%	19.41%	93.63%	32.80%	31.31%	20.71%	10.16%
i-Biz Index	Consumer Sector Indices	10.39%	18.16%	85.11%	32.04%	35.04%	22.52%	11.98%
Self-Sustaining Demand Index	Consumer Sector Indices	6.30%	14.30%	45.02%	22.51%	23.21%	15.88%	5.34%
Revenue Prediction Index	Consumer Sector Indices	3.73%	21.92%	84.34%	26.27%	25.68%	18.88%	8.33%

We provide three different sets of indexes, each using various subsets of our covered equities:

(1) Two capitalization based tranches – "Large Caps" (covered equities with market cap > $10 billion) and "Mid and Large Caps" (covered equities with market cap > $2 billion). In each case the equities chosen for each quarter's portfolio are the 20% with the greatest trailing quarter-end citation share growth (i.e., our "Percentile Ranking" metric is <= 20);

(2) Four broad consumer indexes based on the traditional discretionary/staples and goods/services classification splits – "Consumer Discretionary", "Consumer Staples", "Consumer Goods", and "Consumer Services". The covered equities included in each of those indexes have market cap > $2 billion, are selected based on MSCI's GICS® coding for the equities (the GICS codes included in each of the indexes are documented in Appendix A of this paper -- providing a fundamental causal reason to focus on those equites) and are constituted from only the 25 equities within each grouping with the best trailing quarter citation share growth (i.e., the 25 with the best/lowest quarter-end BrandLoyalties "Percentile Ranking" metrics);

(3) A number of narrower consumer sector specific indexes, including "Retail", "Apparel", "Technology", "Hospitality", and etc. Again the equities included in each of those indexes have market cap > $2 billion, are selected based on MSCI's GICS coding for the equities (with the GICS codes included in each of the indexes documented in Appendix A of this paper) and are constituted from only the 25 equities within each grouping with the best trailing quarter citation share growth (i.e., the 25 with the best/lowest quarter-end BrandLoyalties "Percentile Ranking" metrics).

An exception to the GICS based selection criteria within this third sector-oriented set of indexes is our e-commerce "i-Biz" index, where the GICS coding scheme is not specific enough to fully or exclusively identify e-commerce companies, and individual equities must be selected based on third-party research. This "universe" of third-party chosen e-commerce equities is shown in Appendix A of this paper. The quarterly constituents for this index are those 25 equities within that third-party e-commerce universe that have the best trailing quarter citation share growth (i.e., the 25 with the best/lowest quarter-end BrandLoyalties "Percentile Ranking" metrics).

The indexes shown on our Home Page demonstrate the **minimum** excess returns that can be obtained from relatively unsophisticated and stand-alone use of our data. We expect that any of our clients are capable of devising more sophisticated methodologies that better utilize our data in concert with other data sets to generate materially improved excess returns on the **long portions** of their managed portfolios *(**Note**: Please see the discussion below the second graph below on Page 4 for why market neutral or beta neutral hedges are difficult to construct from our data alone)*.

Our Metrics

The BrandLoyalties metrics have been specifically designed with quantitative/systematic portfolio models in mind. Most of the metrics can be used to provide straight forward "buy/sell" signals. And for the purposes of building a prototyping portfolio model similar to our "Proof-of-Concept" Indexes only four of the fields in a BrandLoyalties data set are required:

– Date of observation;

– Ticker symbol used as corporate identifier;

– The percentile ranking (0-100, to four decimal places) of the citation share growth of the brand names for each equity on that given day (lower percentile rankings are better);
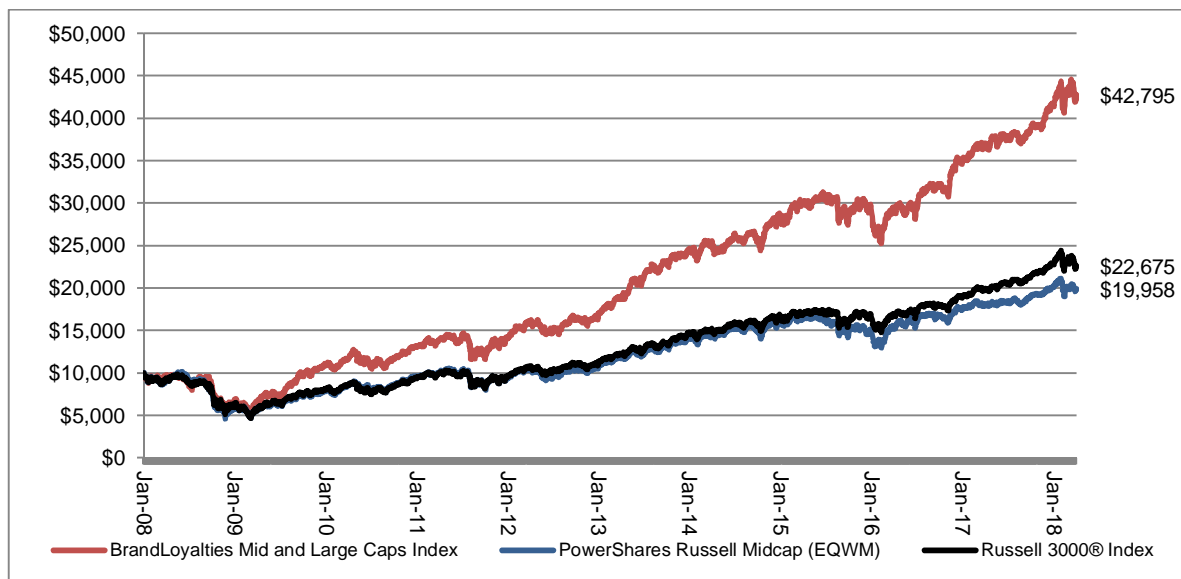
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– Optimal correlation coefficient between the equity's citation share growth percentile rankings and the adjusted closing equity price (higher correlation coefficients are better).

The following table contains the first several records in a BrandLoyalties data set for the closing market date for the last quarter of 2017:

Date	Equity Symbol	Percentile Ranking	Best Price Correlation	Optimal Correlation Lag	% Change YOY	Slope Last 91 Days
12/29/2017	AAL	67.8500	0.0883	136	5.32	-0.571
12/29/2017	AAN	19.6100	0.0208	247	-3.59	0.564
12/29/2017	AAP	7.1600	0.7537	244	5.47	0.984
12/29/2017	AAPL	23.5675	0.6353	44	5.55	0.114
12/29/2017	AAWW	8.6709	0.5026	246	-7.90	0.852
12/29/2017	ABB	81.4662	0.0621	82	-10.00	-1.334
12/29/2017	ABBV	29.5400	0.3671	244	8.38	0.317
12/29/2017	ABCD	10.0000	0.4714	29	-3.50	0.855
12/29/2017	ABCW	69.7500	0.3405	170	-6.18	-0.590
12/29/2017	ABG	93.7900	0.8100	78	-10.00	-1.147
12/29/2017	ABM	33.7157	0.0164	86	-6.12	0.745
12/29/2017	ABT	36.2600	0.4869	233	5.26	0.093
12/29/2017	ABTL	43.4200	0.3855	139	-0.09	-0.215
12/29/2017	ACAD	59.4365	0.7185	39	-10.00	-0.818
12/29/2017	ACAT	61.7425	0.4295	200	-4.30	-0.574
12/29/2017	ACCO	38.3900	0.5210	117	-10.00	-0.046

The application of the "Proof-of-Concept" Indexes rule book to this initial portion of the data set would result in the ticker AAP being included in the quarterly portfolio, while all of the other tickers would be excluded by virtue of low capitalization (AAWW and ABCD), low price correlation (AAN) or percentile rankings outside of the top quintile. On a proforma basis such a portfolio would perform as follows:

Performance chart (Jan-08 to Jan-18):
- BrandLoyalties Mid and Large Caps Index: $42,795
- PowerShares Russell Midcap (EQWM): $19,958
- Russell 3000® Index: $22,675
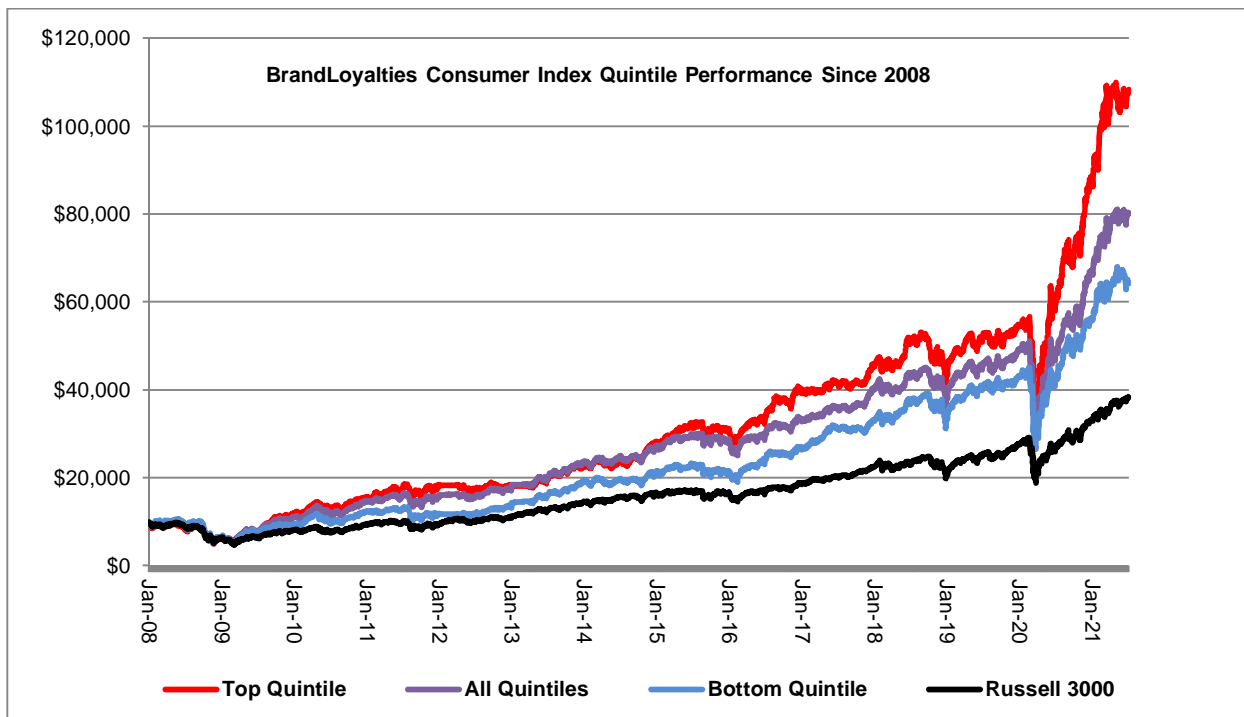
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At any given time applying the above selection criteria to the ~2500 equities in the BrandLoyalties US "universe" will result in an equally weighted portfolio containing between 90 and 100 constituents. In the specific example cited above, the reconstituted and rebalanced 1Q-2018 portfolio would have 94 equally weighted constituents at the beginning of the quarter.

Building portfolios with more constituents can be accomplished by relaxing the capitalization criteria, removing the correlation requirements or including equities below the top quintile – which should generally be applied in that order. One or more of these steps may be necessary when building GICS based thematic portfolios that are compliant with RIC concentration standards.

The "Proof-of-Concept" Indexes shown on the BrandLoyalties.com home page have been reconstituted and rebalanced on a quarterly basis. More active traders will find that the alpha in the metrics provided by BrandLoyalties is best realized during the first 30 days after publication. In general shorter holds results in better performance, and a portfolio manager will need to carefully weigh the frequency of reconstitutions based on his or her effective trading costs.

The performance of top and bottom BrandLoyalties quintiles on a proforma basis using more aggressive monthly reconstitutions can be charted as follows:

BrandLoyalties Consumer Index Quintile Performance Since 2008

Legend: Top Quintile, All Quintiles, Bottom Quintile, Russell 3000

The above graph also demonstrates the difficulty in constructing market neutral or beta neutral hedges using only our data and our coverage universe. Our entire coverage universe has a positive alpha bias. Even the bottom quintile of our universe outperforms the Russell 3000®. Our clients have told us that shorting using equities in our coverage is a challenge for this simple reason, and they were better off shorting the market less our coverage.

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There is a simple, fundamental, causal reason for this positive alpha bias. Only companies with brands that are being embraced by consumers will have a web "luminosity" robust enough to generate the statistically significant signals required to be included in our coverage.

Appendix A

List of GICS$^®$ Codes or Tickers Used to Select Equities for BrandLoyalties Indexes

Consumer Discretionary:	50201030	25201020
20302010	50201040	25201030
25102010	50202010	25201040
25102020	50202020	25201050
25201010	50203010	25202010
25201020		25203010
25201030	Consumer Staples:	25203020
25201040	25101010	25203030
25201050	25101020	25301010
25202010	25203020	25301020
25203010	25203030	25301030
25203020	25302010	25301040
25301010	25503020	25302010
25301020	25504010	25502020
25301030	25504030	25503010
25301040	25504060	25503020
25502020	30101010	25504010
25503010	30101020	25504020
25503020	30101030	25504030
25504010	30101040	25504040
25504020	30201010	25504050
25504030	30201020	25504060
25504040	30201030	30101010
25504050	30202010	30101020
25504060	30202030	30101030
30101010	30203010	30101040
30101020	30301010	30201010
30101030	30302010	30201020
30101040		30201030
30201010	Consumer Goods:	30202030
30201020	25101010	30203010
30201030	25101020	30301010
45102030	25102010	30302010
45202010	25102020	45102030
50102010	25201010	45202010

50102010	20106020	45102030
50201030	25203010	45103010
50201040	25203020	45103020
50202010	25203030	45201020
50202020	25503010	45202010
50203010	25503020	45202030
	25504010	45203010
Consumer Services:	25504030	45203015
20302010		45203020
25301010	Hospitality:	45203030
25301020	25301010	45301010
25301030	25301020	45301020
25301040	25301030	50101010
25302010	25301040	50101020
25302020		50102010
45102010	Travel:	50201020
45102020	20302010	50201030
45102030	25301010	50202020
45103010	25301020	50203010
45103020	25301030	
45202010	25301040	Lifestyle:
50101010		20302010
50101020	Food:	25102010
50102010	25301040	25102020
50201010	30101010	25201010
50201020	30101020	25201020
50201030	30101030	25201030
50201040	30101040	25201040
50202010	30201010	25201050
50202020	30201020	25202010
50203010	30201030	25203010
	30202010	25203020
Retail:	30202030	25301010
25301040	30203010	25301020
25502020		25301030
25503010	Dining:	25301040
25503020	25301010	25302020
25504010	25301020	25502020
25504020	25301030	25503010
25504030	25301040	25504010
25504040		25504020
25504050	Technology:	25504040
25504060	25201010	25504050
30101010	25302010	25504060
30101030	25502020	30201010
30101040	25504020	30201020
	25504030	30203010
Apparel:	45102010	30301010
15104010	45102020	30302010

45102030	45203015	EBAY:US
45202010	45203030	EIGI:US
50202010	45301020	EPAM:US
50202020	50101020	EXPE:US
50203010	50201020	FB:US
	50201030	FTCH:US
Guilty Pleasures:	50202010	GDDY:US
15101010	50202020	GOOG:US
20107010	50203010	GRPN:US
20201070		GRUB:US
20201080	Self Sustaining Demand:	JCOM:US
20302010	25302010	JD:US
25101010	25502020	LYFT:US
25102010	30101010	MTCH:US
25102020	30101020	NFLX:US
25201010	30101030	NOW:US
25201020	30101040	NTES:US
25201030	30202030	OSTK:US
25202010	35101020	OZON:US
25203010	35103010	PDD:US
25301010	35201010	PINS:US
25301020	35202010	PYPL:US
25301030	35203010	RKUNY:US
25301040	45102010	RXT:US
25302020	45102030	SABR:US
25401020	45201020	SE:US
25401025	45202010	SFIX:US
25401030	45203030	SHOP:US
25501010	50101020	SINA:US
25502010	50201030	SNAP:US
25502020	50202020	SOHU:US
25503010	50203010	SPOT:US
25504010		SQ:US
25504020	iBiz Index Tickers Used:	TCEHY:US
25504040	ADBE:US	TCOM:US
25504050	AKAM:US	TRIP:US
25504060	AMZN:US	TWLO:US
30201010	ANGI:US	TWTR:US
30201020	BABA:US	UBER:US
30201030	BIDU:US	VRM:US
30203010	BKNG:US	VRSN:US
40201030	CHWY:US	W:US
45101010	CPRT:US	WDAY:US
45103010	CRM:US	YELP:US
45103020	CVNA:US	YNDX:US
45103030	DBX:US	ZG:US
45202010	DOCU:US	ZNGA:US