

FACTSHEET - AS OF 12-Sep-2024

CPML Index

DESCRIPTION

The CPML index ("CP Machine Learning Index") runs a model which utilizes input variables from broad factor categories to score stocks globally in a cross-section, and creates an aggregate score output by recently developed machine learning models (utilizing gradient boosted trees and neural networks) from those variables. These machine learning approaches generally are good at prediction for linear and non-linear relationships between a given input and what is being predicted (here it is future expected returns for individual stocks), and typically are effective at finding interactions between different input variables and what is being predicted.

Variables are included from broad factor categories such as value (including ratios such as price to sales, operational cash flow to enterprise value, price to book adjusted for intangibles, etc.), momentum (including recent 2-6 month cross sectional momentum, 7-12 month momentum, ratios of price to moving averages across short and long-term time frames, short term reversal, seasonality, etc.), sentiment (including analyst expectation changes of earnings and revenue growth, the ratio of stock price to analyst targets, and various short interest measures), and quality (such as profitability ratios), and stability (such as total stock volatility).

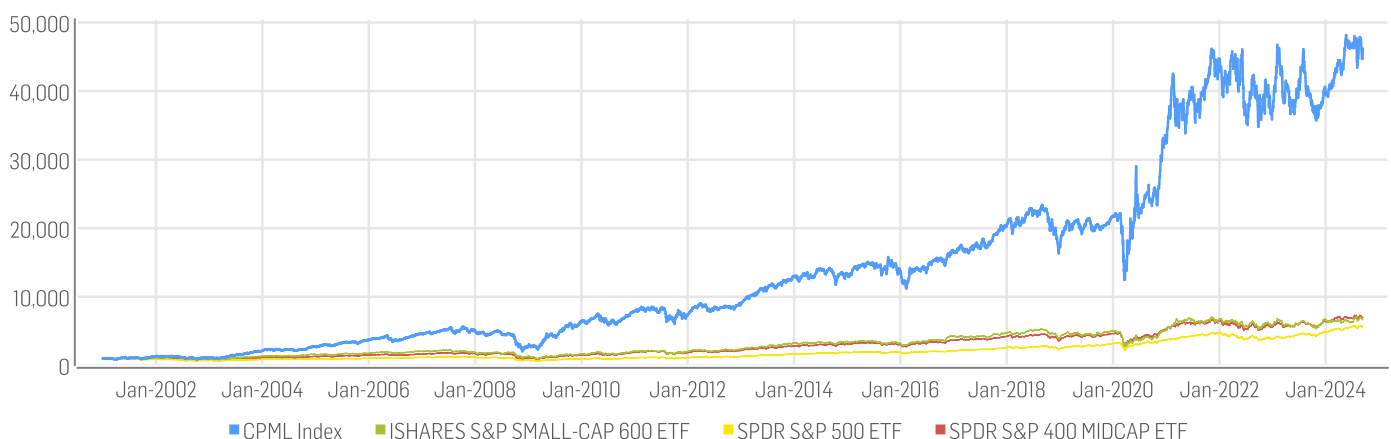
After aggregate scores are generated by the machine learning model, a desired output portfolio is created that abides by constraints of having no more than 35% of stocks in any one sector.

An annual performance deduction (imputed daily) of 2% is included to factor in an estimation of implementation costs. Please note that the index chart as well as all return and risk statistics in this document show hypothetical performance, which is based on a model that does not represent the results of actual trading. See the guideline for the composition, calculation, and maintenance of the index, including the use of any backtest.

CHARACTERISTICS

ISIN / WKN	DE000SLOKBM6 / SLOKBM	Base Value / Base Date	1000 Points / 01.01.2001
Bloomberg / Reuters	CPML Index/ .CPML	Last Price	46207.14
Index Calculator	Solactive AG	52W High	48127.25
Index Type	Net Total Return	52W Low	35709.15
Index Currency	USD	Calculation	9:30am to 4:50pm (EST), every 15 seconds
Index Members	50	History	Available daily back to 01.01.2001

HISTORICAL TOTAL RETURN PERFORMANCE



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ANNUAL PERFORMANCE

	2001	2002	2003	2004	2005	2006	2007	2008
CPML Index	29.65%	-16.73%	96.55%	31.18%	31.14%	25.89%	11.80%	-45.63%
ISHARES S&P SMALL-CAP 600 ETF	11.43%	-14.25%	39.09%	22.16%	5.67%	18.91%	-6.03%	-29.74%
SPDR S&P 500 ETF	-12.09%	-21.95%	27.56%	10.07%	4.28%	15.21%	4.57%	-37.25%
SPDR S&P 400 MIDCAP ETF	-1.10%	-14.74%	34.90%	15.56%	12.16%	9.58%	6.85%	-36.71%
Excess (vs. ISHARES S&P SMALL-CAP 600 ETF)	18.22%	-2.48%	57.46%	9.02%	25.47%	6.98%	17.83%	-15.89%
	2009	2010	2011	2012	2013	2014	2015	2016
CPML Index	124.14%	25.42%	-7.46%	22.69%	46.30%	2.57%	2.38%	20.18%
ISHARES S&P SMALL-CAP 600 ETF	21.68%	24.23%	-2.03%	17.57%	38.79%	7.09%	-7.32%	30.69%
SPDR S&P 500 ETF	25.49%	14.39%	1.26%	15.23%	31.52%	12.81%	0.61%	11.28%
SPDR S&P 400 MIDCAP ETF	36.97%	25.90%	-2.43%	17.40%	32.59%	9.01%	-2.89%	19.95%
Excess (vs. ISHARES S&P SMALL-CAP 600 ETF)	102.46%	1.19%	-5.43%	5.12%	7.51%	-4.52%	9.70%	-10.51%
	2017	2018	2019	2020	2021	2022	2023	YTD
CPML Index	22.58%	-13.60%	24.67%	50.61%	35.77%	-16.01%	7.67%	14.99%
ISHARES S&P SMALL-CAP 600 ETF	10.85%	-13.24%	23.46%	2.18%	29.92%	-11.72%	14.14%	0.42%
SPDR S&P 500 ETF	21.00%	-5.11%	30.49%	17.68%	28.22%	-18.57%	25.61%	18.15%
SPDR S&P 400 MIDCAP ETF	15.49%	-11.62%	25.25%	13.01%	24.16%	-13.64%	15.63%	8.02%
Excess (vs. ISHARES S&P SMALL-CAP 600 ETF)	11.73%	-0.36%	1.21%	48.43%	5.85%	-4.29%	-6.47%	14.57%

TOP COMPONENTS AS OF SEPTEMBER 12, 2024

Ticker	Currency	Country	Company	Index Weight (%)
RGA	USD	US	REINSURANCE GROUP OF AMERICA	2.07%
COST	USD	US	COSTCO WHOLESALE CORP	2.15%
WMT	USD	US	WALMART INC	2.38%
MCY	USD	US	MERCURY GENERAL CORP	2.23%
PSTG	USD	US	PURE STORAGE INC - CLASS A	1.54%
TRGP	USD	US	TARGA RESOURCES CORP	2.28%
SSRM	USD	CA	SSR MINING INC	2.62%
USM	USD	US	US CELLULAR CORP	2.11%
DKS	USD	US	DICKS SPORTING GOODS INC	1.89%
CAH	USD	US	CARDINAL HEALTH INC	2.20%

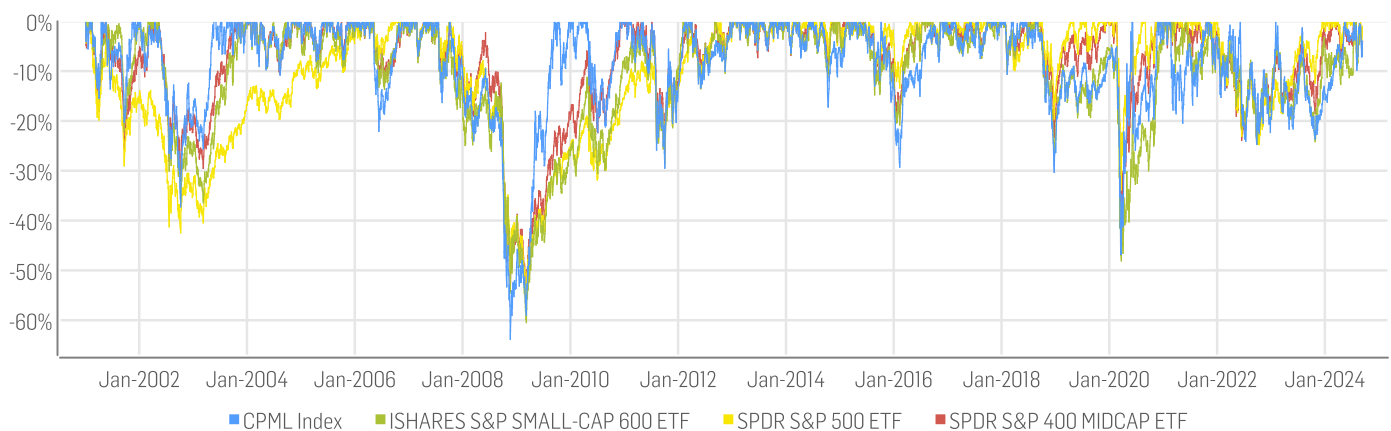
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RISK: ANNUAL MAXIMUM DRAWDOWN (MDD) AND RELATIVE RISK

	2001	2002	2003	2004	2005	2006	2007	2008
CPML Index MDD	-20.27%	-37.24%	-11.85%	-10.81%	-7.96%	-22.10%	-16.30%	-60.01%
ISHARES S&P SMALL-CAP 600 ETF MDD	-21.96%	-36.49%	-16.21%	-9.53%	-10.32%	-13.63%	-17.62%	-48.00%
SPDR S&P 500 ETF MDD	-29.01%	-33.13%	-13.73%	-7.73%	-7.07%	-7.59%	-9.92%	-47.37%
SPDR S&P 400 MIDCAP ETF MDD	-25.55%	-32.10%	-13.28%	-10.56%	-8.05%	-12.60%	-11.13%	-53.15%
	2009	2010	2011	2012	2013	2014	2015	2016
CPML Index MDD	-24.38%	-22.26%	-29.48%	-13.39%	-5.81%	-17.23%	-16.21%	-18.03%
ISHARES S&P SMALL-CAP 600 ETF MDD	-35.01%	-21.74%	-26.91%	-13.55%	-5.12%	-11.22%	-14.78%	-9.84%
SPDR S&P 500 ETF MDD	-27.13%	-15.82%	-18.85%	-9.69%	-5.70%	-7.40%	-11.99%	-9.19%
SPDR S&P 400 MIDCAP ETF MDD	-27.49%	-17.43%	-26.29%	-11.12%	-7.29%	-10.61%	-12.55%	-10.09%
	2017	2018	2019	2020	2021	2022	2023	2024
CPML Index MDD	-7.45%	-30.32%	-10.12%	-43.88%	-20.43%	-24.55%	-23.62%	-9.81%
ISHARES S&P SMALL-CAP 600 ETF MDD	-7.29%	-27.95%	-11.61%	-45.48%	-12.78%	-22.47%	-22.21%	-8.87%
SPDR S&P 500 ETF MDD	-2.74%	-19.60%	-6.62%	-33.83%	-5.21%	-24.76%	-10.07%	-8.41%
SPDR S&P 400 MIDCAP ETF MDD	-5.53%	-23.33%	-8.56%	-42.30%	-8.51%	-22.71%	-14.50%	-7.92%
	2001	2002	2003	2004	2005	2006	2007	2008
CPML Index Beta (vs. ISHARES S&P SMALL-CAP 600 ETF)	0.99	1.03	1.02	0.81	0.79	0.86	0.80	0.86
CPML Index Beta (vs. SPDR S&P 500 ETF)	0.91	1.00	1.05	1.13	1.06	1.34	1.07	0.99
CPML Index Beta (vs. SPDR S&P 400 MIDCAP ETF)	0.91	1.05	1.16	1.00	1.00	1.03	1.04	0.90
	2009	2010	2011	2012	2013	2014	2015	2016
CPML Index Beta (vs. ISHARES S&P SMALL-CAP 600 ETF)	0.97	0.92	0.94	0.79	0.88	0.97	1.03	0.93
CPML Index Beta (vs. SPDR S&P 500 ETF)	1.33	1.24	1.33	1.07	1.09	1.24	0.98	1.25
CPML Index Beta (vs. SPDR S&P 400 MIDCAP ETF)	1.16	1.11	1.09	0.91	0.91	1.13	1.07	1.09
	2017	2018	2019	2020	2021	2022	2023	2024
CPML Index Beta (vs. ISHARES S&P SMALL-CAP 600 ETF)	0.80	1.01	0.76	1.05	0.79	1.19	0.86	0.61
CPML Index Beta (vs. SPDR S&P 500 ETF)	1.56	1.01	1.05	1.30	1.49	1.14	1.38	1.04
CPML Index Beta (vs. SPDR S&P 400 MIDCAP ETF)	1.13	1.10	0.92	1.17	1.18	1.12	1.08	0.89

SINCE INCEPTION MAXIMUM DRAWDOWN



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KEY STATISTICS

Total Return	Compounded Annual	Historical Volatility	Historical Beta (S&P 500)	Historical Beta (Small CAP 600)	Maximum Drawdown	Sharpe Ratio*
CPML Index	17.55%	25.99%	93.12%	113.69%	-63.83%	0.68
ISHARES S&P SMALL-CAP 600 ETF	8.38%	24.08%			-60.47%	0.35
SPDR S&P 500 ETF	7.68%	19.28%			-55.58%	0.40
SPDR S&P 400 MIDCAP ETF	8.57%	22.04%			-55.59%	0.39

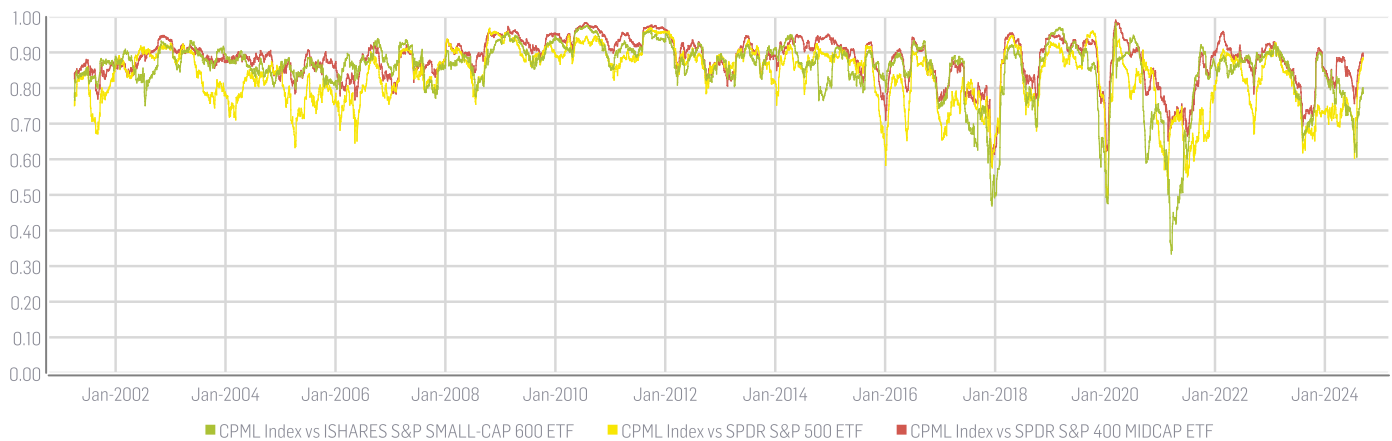
* Up to 31 December 2021, ex-post Sharpe ratios use as input for the risk free rate term the London Inter-Bank Offered rates in the respective currencies of the index and at a term equal to the observation period. From 3 January 2022 onwards, Sharpe ratios will be / are calculated using as reference risk free rate input the overnight replacement rate for these currencies, namely SONIA (for GBP), SOFR (for USD) and EURIBOR Overnight (for EUR).

KEY STATISTICS (FROM THE LAST 5 YEARS)

Total Return	Compounded Annual	Historical Volatility	Historical Beta (S&P 500)	Historical Beta (Small CAP 600)	Maximum Drawdown	Sharpe Ratio*
CPML Index	17.65%	33.17%	97.11%	125.65%	-43.88%	0.53
ISHARES S&P SMALL-CAP 600 ETF	7.13%	27.96%			-45.48%	0.26
SPDR S&P 500 ETF	14.41%	21.00%			-33.83%	0.69
SPDR S&P 400 MIDCAP ETF	9.77%	25.49%			-42.30%	0.38

* Up to 31 December 2021, ex-post Sharpe ratios use as input for the risk free rate term the London Inter-Bank Offered rates in the respective currencies of the index and at a term equal to the observation period. From 3 January 2022 onwards, Sharpe ratios will be / are calculated using as reference risk free rate input the overnight replacement rate for these currencies, namely SONIA (for GBP), SOFR (for USD) and EURIBOR Overnight (for EUR).

ROLLING 63 TRADING DAY CORRELATION



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Please note that the index chart as well as all return and risk statistics in this document show hypothetical performance, which is based on a model that does not represent the results of actual trading. See the guideline for the composition, calculation, and maintenance of the index, including the use of any backtest.

The index is launched on 01-Jan-2001. All information, including index levels, provided for any date or time period prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same or fundamentally the same methodology that was in effect when the index was launched. A back-test calculation means that no actual investment which allowed a tracking of the performance of the Index was possible at any time during the period of the back-test calculation and that as a result any comparison is purely hypothetical. The methodology and the model used for the calculation and back-test calculation of the Index were developed with the advantage of hindsight. In reality, it is not possible to invest with the advantage of hindsight and therefore this performance comparison is purely theoretical.

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