

Overview of Barra CNE-6 Factor Definitions

Factor	Calculation Method
LNCAP	Natural logarithm of free-float market capitalization.
MIDCAP	First take the cube of the Size factor exposure, then orthogonalize it to the Size factor using weighted regression, and finally perform outlier removal and standardization.
HBETA	Time-series regression of stock returns r_t against CSI 300 returns R_t . Take the regression coefficient. Regression window is 252 trading days, half-life is 63 trading days. $r_t = \alpha + \beta R_t + e_t$
HSIGMA	In the time-series regression for BETA, take the volatility of the regression residual returns.
DASTD	Volatility of daily returns over the past 252 trading days, half-life is 42 trading days.
CMRA	Cumulative log returns over the past T months (each month contains 21 trading days): $Z(T) = \sum_{\tau=1}^T [\ln(1 + r_\tau)]$ where r_τ is the return in month τ . The cumulative return range is defined as: $CMRA = Z_{max} - Z_{min}$ where $Z_{max} = \max\{Z(T)\}$, $Z_{min} = \min\{Z(T)\}$, for $T = 1, \dots, 12$.
STOM	Sum of stock turnover rates over the past 21 trading days, then take the logarithm: $STOM = \ln(\sum_{t=1}^{21} V_t / S_t)$ where V_t is the trading volume on day t , and S_t is the free-float market cap on day t .
STOQ	Quarterly turnover (T=3 months): $STOQ = \ln((1/T) \sum_{\tau=1}^T \exp(STOM_\tau))$

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STOA	Annual turnover (T=12 months): $STOA = \ln((1/T) \sum_{\tau=1}^T \exp(STOM_{\tau}))$
ATVR	Weighted sum of daily turnover rates, window 252 trading days, half-life 63 trading days.
RSTR	(1) Non-lagged relative strength: half-life exponential weighted sum of log returns, window 252 trading days, half-life 126 trading days. (2) 11-day window, lagged by 11 days, take the equal-weighted average of non-lagged relative strength.
HALPHA	Regression intercept from the BETA calculation.
MLEV	$MLEV = (ME + PE + LD) / ME$ where ME is market cap of previous day, PE and LD are preferred stock and long-term debt of previous fiscal year.
BLEV	$BLEV = (BE + PE + LD) / ME$ where BE is book value of common equity, PE and LD are preferred stock and long-term debt of previous fiscal year.
DTOA	$DTOA = TL / TA$ where TL and TA are total liabilities and total assets of the previous fiscal year.
VSAL	Standard deviation of annual operating income over past 5 fiscal years divided by average annual operating income.
VERN	Standard deviation of annual net profit over past 5 fiscal years divided by average annual net profit.
VFLO	Standard deviation of annual net increase in cash and cash equivalents over past 5 fiscal years divided by average annual net increase.
ABS	(1) Total accruals (Balance Sheet method): $ACCR_BS = NOA_t - NOA_{t-1} - DA_t$ $NOA = (TA - Cash) - (TL - TD)$ where NOA is net operating assets, Cash is cash and equivalents, TA is total

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	assets, TL is total liabilities, TD is total interest-bearing debt, and DA is depreciation and amortization. (2) Divide negative ACCR_BS by total assets TA: $ABS = -ACCR_BS / TA$
ACF	(1) Total accruals (Cash Flow method): $ACCR_CF = Ni_t - (CFO_t + CFI_t) + DA_t$ where Ni is net profit, CFO is net operating cash flow, CFI is net investing cash flow, and DA is depreciation and amortization. (2) Divide negative ACCR_CF by total assets TA: $ACF = -ACCR_CF / TA$
ATO	$ATO = Sales / TA$ where Sales is operating income over past 12 months, TA is total assets of most recent report.
GP	$GP = (Sales - COGS) / TA$ where Sales, COGS, and TA are operating income, cost of goods sold, and total assets of the previous fiscal year.
GPM	$GPM = (Sales - COGS) / Sales$
ROA	$ROA = Earnings / TA$ where Earnings is net profit over past 12 months, TA is total assets of most recent report.
AGRO	Slope of regression of total assets against time over past 5 fiscal years, divided by average total assets, then negated.
IGRO	Slope of regression of shares outstanding against time over past 5 fiscal years, divided by average shares outstanding, then negated.
CXGRO	Slope of regression of capital expenditure against time over past 5 fiscal years, divided by average capital expenditure, then negated.
BTOP	Book value of common equity of most recent report divided by current market cap.

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ETOP	Earnings over past 12 months divided by current market cap.
CETOP	Cash earnings over past 12 months divided by current market cap.
EM	EBIT of previous fiscal year divided by current Enterprise Value (EV).
LTRSTR	(1) Non-lagged long-term relative strength: weighted sum of log returns, window 1040 trading days, half-life 260 trading days. (2) Lagged by 273 trading days, 11-day window equal-weighted average, then negated.
LTHALPHA	(1) Non-lagged long-term historical Alpha: intercept of CAPM regression, window 1040 trading days, half-life 260 trading days. (2) Lagged by 273 trading days, 11-day window equal-weighted average, then negated.
EGRO	Slope of regression of EPS against time over past 5 fiscal years divided by average annual EPS.
SGRO	Slope of regression of annual operating income per share against time over past 5 fiscal years divided by average annual operating income per share.
DTOP	Dividends per share over past 12 months divided by stock price at the end of last month.