

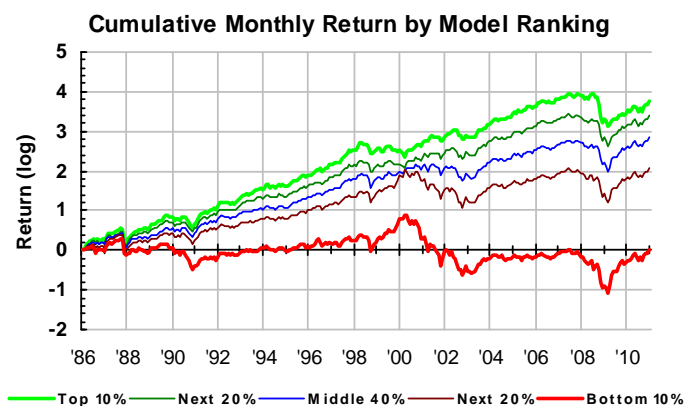
# Combo Model Service



- **Design:** a nonlinear alpha-forecasting model using both fundamental and technical inputs
- **Style:** a balance of value and growth characteristics
- **Suitable for:** bottom-up portfolio strategies and broad coverage, style-diversified equity funds
- **Applications:** 1) Identify buy candidates; 2) Objective backstop to your own analysis; 3) Sell discipline; 4) Input to internal model; 5) Total stock selection system
- **Construction:** innovative integrated return/risk approach incorporates transactions costs and other constraints
- **Track Record:** published rankings since 1986 (see chart)
- **Coverage:** ~5,400 US common stocks and ADRs
- **Delivery:** weekly stock rankings from the model delivered via electronic data files, web screening, FactSet, Baseline, and as hard-copy research reports

The Combo model is a decision-support tool for professional equity investors. A proprietary quantitative system compares each company to its peers on proven measures of business value, growth characteristics, street estimates, and investor behavior. The conclusions from each of those criteria are synthesized into an overall ranking by an analytic framework developed through Columbine Capital's unique *gradient maximization* optimization methodology. The Combo model rankings are expressed in numerical terms and represent each stock's return potential relative to the rest of the market (*alpha*) as far as three years out in the future.

We constrain the Combo model structure to balance the impact of valuation (value) and momentum (growth) factor inputs. This keeps Combo performing in both value- and growth-favoring markets. The optimization process utilizes twenty years of market history data, insuring the model's suitability for a wide variety of investment environments.



**Columbine Capital Services, Inc.** is an independent equity research firm with offices in Colorado Springs, Colorado. Founded in 1976, Columbine Capital has been serving the needs of institutional investors since the earliest days of quantitative investing. Our clients include money managers, investment companies, banks, and hedge funds in the United States, Canada, Australia, and the United Kingdom.

## Combo Model Analytic Factors

Value Factors	Growth Factors	Risk Factors
Book Value to Price	Earnings Change	Beta
Cash Flow to Price	Earnings Growth	Earnings Volatility
Estimated EPS Yield	Earnings Surprise	Market Liquidity
Reported EPS Yield	Estimate Revision	
Return on Equity	Industry Momentum	
	Price Momentum	

For more information, please call +1.719.635.5174 or visit [www.columbinecap.com](http://www.columbinecap.com)

**Columbine Capital Services, Inc. Two N. Cascade Ave., Suite 450, Colorado Springs, CO 80903**

Results are based on monthly rebalancing of equal-weighted portfolios drawn from the *Columbine 1500 Universe*, and are presented gross of transactions costs. Returns include dividends (total return). They are calculated on a time-weighted basis using monthly valuation. Subscription fees for Columbine Capital's services are not included in the performance calculations. **The results reported here are hypothetical and do not represent actual trading using client assets. The performance of past rankings does not assure the profitability or utility of future rankings.**