

## CRSP'S MISSION

CRSP is dedicated to excellence in providing enriched and accessible data products and solutions which provide a basis for scholarly achievement, innovative research, and sound investment decisions.

Consistent with the research reputation of Chicago Booth, CRSP seeks to encourage the dissemination of knowledge and expansion of the frontier of financial research in a professional environment committed to mutual respect and teamwork.

**CRSP**<sup>®</sup> **INDEXES**<sub>LLC</sub>



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**CRSP**<sup>®</sup><sub>LLC</sub> | Center for Research in Security Prices, LLC  
An Affiliate of the University of Chicago Booth School of Business

## ABOUT CRSP

As an affiliate of The University of Chicago Booth School of Business, the Center for Research in Security Prices LLC (CRSP) has been driving financial innovation since its founding in 1960. CRSP provides market participants with the world's first and most comprehensive resource for historical security prices and returns information, offering data of the highest integrity and transparency to ensure the strongest foundation for economic forecasting, stock market research and financial analysis conducted by academic organizations, investment banks, brokerage firms, corporations and government agencies. CRSP data has led to the transformation of the world of finance, illuminating the benefits of investments in equities, providing understanding of factors such as value, size and momentum, exploring the benefits of passive investing vs. active management, and contributing to the ongoing improvement of investor outcomes and the development of the modern financial ecosystem and investment industry.

## ABOUT THE CRSP INVESTABLE INDEXES

CRSP Investable Indexes blend the advancements in academic research with industry practice under the premise that an index must reflect the way that money managers actually invest.

CRSP has been producing indexes since 1966, helping academics and practitioners understand and research the trends in the financial markets. Drawing on its expertise, CRSP designed CRSP Investable Indexes to be efficient, transparent and representative benchmarks for corresponding market segments.

Launched in 2011, CRSP Investable indexes are modern benchmarks that are suitable for tracking different segments of the US market, including Large and Small capitalization stocks, Value and Growth styles, as well as Industry Sectors.

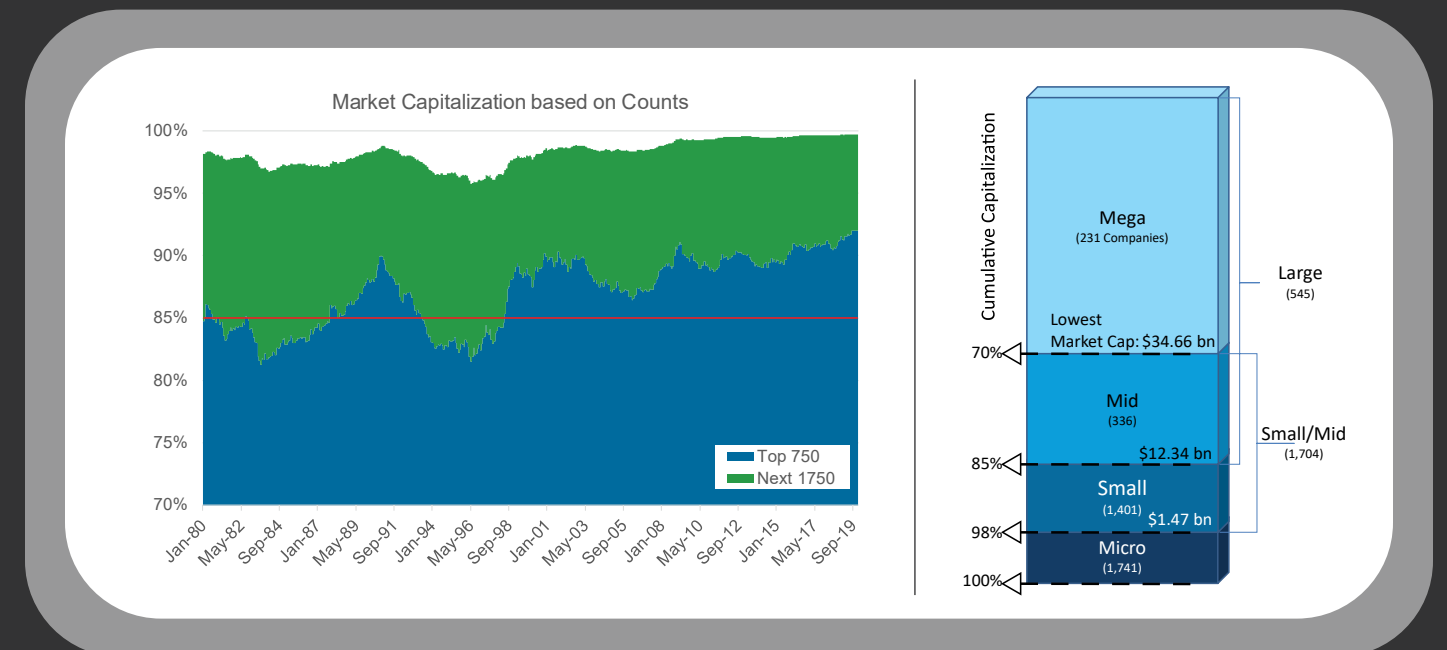
CRSP Investable Indexes have over \$1.5 trillion dollars of tracking assets.

## ADVANCING INNOVATION

CRSP draws on its academic and industry expertise to ensure that its investable indexes incorporate the most modern and forward-thinking approaches. Among the many results of this process are index innovations intended to ensure the most comprehensive and inclusive methodology for index composition, including the employment of our Cumulative Market Capitalization metrics and Multi-Factor Style models.

## CUMULATIVE MARKET CAPITALIZATION FOR CAP BREAKPOINTS

CRSP utilizes its cumulative market capitalization method to construct and define breakpoints for cap-based indexes. Cumulative capitalization method, unlike a more basic fixed-count approach (100 stocks, 500s stocks, etc.), delivers consistent exposure to “size” without any sensitivity to a specific time or market. Exhibit [#1] shows how the percent of market capitalization for fixed-count portfolios fluctuate and, as a result, the amount of market risk in a portfolio with fixed number of stocks also varies over time. Furthermore, as seen from the chart, a fixed-count portfolio accounts for a larger fraction of total market risk today than it did in the past. CRSP believes that fixed-count benchmarks are not ideal for performance evaluation or for the construction of “policy portfolios” in asset allocation.



CRSP cumulative capitalization does not fix the number of stocks in the different cap segments. The resulting indexes are much more suitable for use in policy portfolios and contribute to ease of use for the asset allocator due to consistent exposure to “size.”

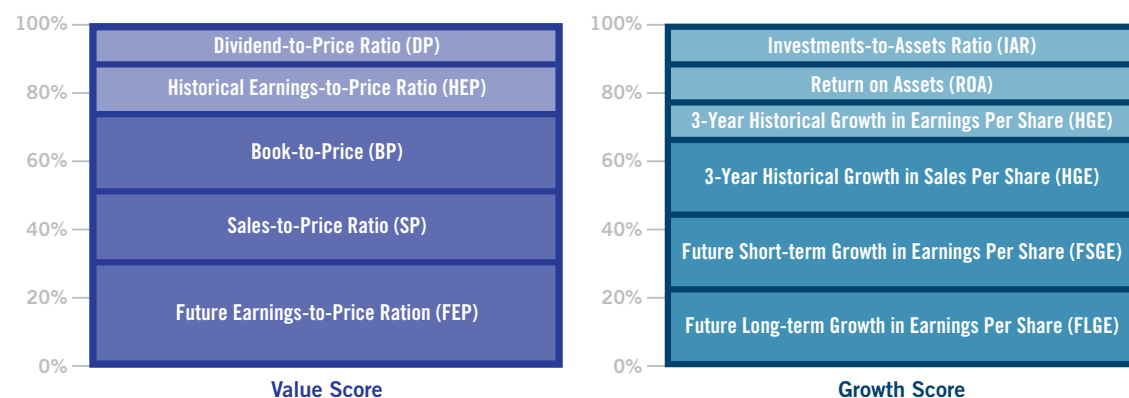
# MULTI-FACTOR MODEL FOR VALUE AND GROWTH

CRSP value and growth dimensions are defined using multiple factors for each security. The use of these multiple factors follows current academic thought and fund manager behavior, in that they look at multiple data points simultaneously when generating their investment strategies. This ultimately allows for better estimation of the true, unobservable “value” or “growth” of a firm.

The weights selected for each individual factor are the result of a process designed to select investments that behave like those “value” and “growth” managers would choose, while limiting portfolio turnover and the obvious transaction costs incurred. In contrast to many existing index providers, CRSP found that not all factors are created equal. On the value side, earnings metrics have a plurality of the weight. For growth, historical sales trends and analyst estimates proved most important.

# TRUSTED SOLUTIONS TO MAKE SOUND INVESTMENT DECISIONS

CRSP Investable Indexes are designed to best represent designated segments of the market. Similar index products such as capitalization-based indexes and value and growth style indexes are usually separated by ‘breakpoints’. However, in reality, the styles and sizes of securities at or near breakpoints are often arbitrary, or not clear. Consequently, strictly enforcing investment rules based on breakpoints may both coerce securities into categories when they do not show strong characteristics, as well as cause additional transaction costs introduced by the traffic across the breakpoints. Further, indexes constructed with rigid breakpoints are less representative of a market and can be costly to track. The CRSP Investable Indexes mitigate these problems through its innovative banding and migration features, resulting in indexes that are representative of the market segment, reflecting the way actual money managers invest.



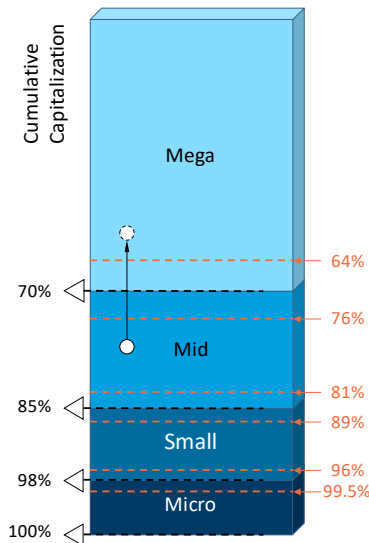
*“It’s important that the new CRSP indexes don’t deviate too much from common practice, because we are trying to make something that is practical.”*

**John C. Heaton**  
**Joseph L. Gidwitz Professor of Finance**

# BANDING AND PACKETING

CRSP uses banding and packeting for its cap and style indexes. Based on test results, CRSP assigns different band sizes around breakpoints for its mega-, mid-, small- and micro-cap indexes.

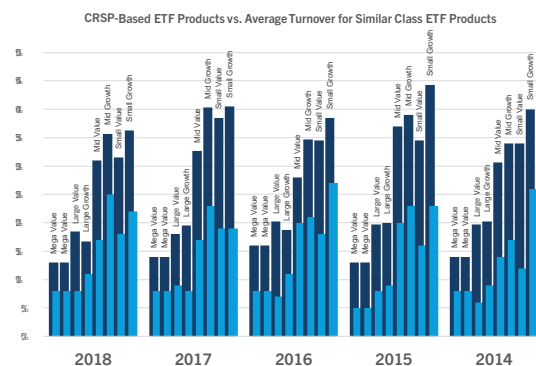
Similarly, CRSP also employs bands and packeting for style transitions, requiring a security to have a clear signal before migrating it to a different cap category.



A Mid-Cap company's new Market Capitalization would need to cross 64% band in order for 1/2 of its market capitalization to be assigned to Mega Cap

# LOW TURNOVER

Banding and packeting rules ensure that indexes retain proportionate representation of securities market segments while minimizing the costly turnover by up to 50% as compared to the turnover of products based on comparable indexes.



# TRANSITIONAL RECONSTITUTION

To better align index methodology with the investment community's best practices, such as gradual sale or purchase of securities, and maximize cost efficiency, CRSP utilizes a five-day transitional reconstitution that moves 20% of the change in holdings each day from the current index to the new target index's holdings as computed on ranking day.

*“The most important characteristic of indexes tracking the market’s subsectors—in essence, sectors created and defined by managers – should be that they accurately reflect the thought processes of active management.”*

**Gus Sauter**  
Former Vanguard Chief Investment Officer

