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Evolved sectors for a changing economy





Executive summary

Sector investment strategies have been around for decades. However, while corporate business models evolve, the methodologies that determine sector classifications have largely remained consistent. Most classification frameworks are backward-looking, grouping companies with historically similar businesses under a single umbrella. BlackRock's evolved sector approach uses data science techniques to respond to shifts in the fast-changing business landscape.

Technological advancements constantly change the way businesses develop and deliver products and services. Over the past 20 years, companies have revolutionized behaviors—Apple changed communication, Amazon changed commerce and Alphabet changed the way we access information.

Such powerful changes do not happen suddenly. Successful companies evolve over time. Capturing the investment opportunities that these companies present requires capturing the changes driving their successes.

Traditional sector classifications tend to group together companies that share similar characteristics *historically*. A company's changing dynamics and even an economy's changing dynamics may not be captured.

There are three main classification systems that have traditionally defined sectors for investors:

- Global Industry Classification Standard (GICS)
- Industrial Classification Benchmark (ICB)
- Thomson Reuters Business Classification (TRBC)

Each relies on backward-looking product and service inputs and requires that a single company sits in only one sector. As such, GICS, TRBC and ICB may not

comprehensively encompass all the companies that belong in a sector.

We believe that a classification system that uses forward-looking inputs guided by big data analysis, allows companies to sit in more than one sector and allows sector constituents to change more frequently than traditional classifications may result in a more representative view of sectors within the U.S. economy.

BlackRock's evolved sector approach

To address the limitations of traditional sector classifications, BlackRock has applied various data science techniques to help provide a more nuanced and dynamic way to understand similarities between companies. The evolved sector approach uses text analysis, guided by machine learning statistical techniques, to identify the words and/or phrases companies use to describe themselves in publicly available materials such as regulatory filings and earnings reports. Companies are grouped into sectors based on similarities in the language each uses when describing their businesses. As a result, BlackRock's approach produces a classification system that aims to account for both the current and future business drivers of these companies.

Evolving companies - a closer look

A new methodology may help investors better classify these businesses today:

Amazon

- Amazon started as an online retailer selling books, but over time it has expanded to other business with the build out of Amazon Web Services (AWS), the acquisition of Whole Foods and its recent announcement involving the healthcare market.
- Amazon is classified under GICS as a consumer discretionary, rather than also a technology company.

Visa

- Visa is best known for its credit card network but is classified as a technology company under the GICS framework.
- Investors won't find Visa in traditional financial services sector investments even as the company evolves its business in new directions.

Evolved company classifications—a deeper dive

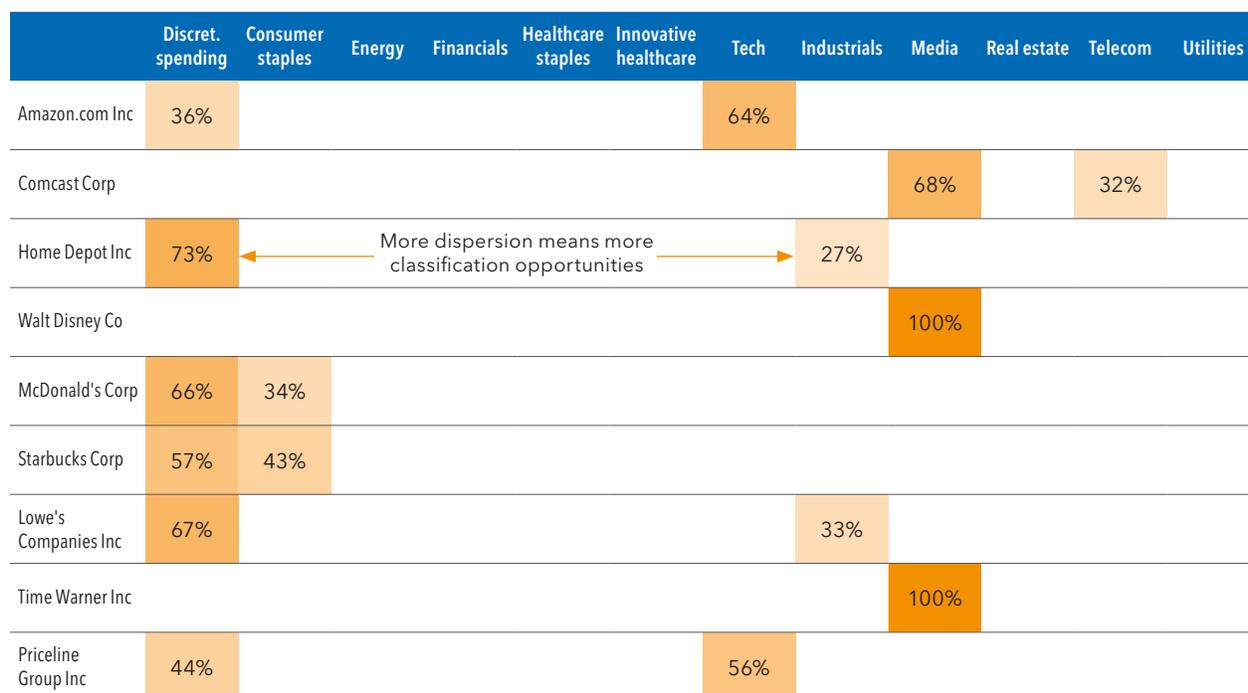
BlackRock’s evolved sector approach assigns companies to sectors using a forward-looking approach enabled by data science techniques, not by revenue or current products. The result is a more nuanced view of each company’s business model, resulting in the possibility of a single company residing in more than one sector.

For example, Comcast is classified as consumer discretionary by GICS, but the evolved methodology finds that the company frequently also uses media and telecommunications terms to describe itself.

Figure 3 illustrates companies that are in the GICS consumer discretionary sector, and how many of those same companies can appear in more than one sector under the evolved sector taxonomy (see Figure 3).

The evolved sectors will be rebalanced quarterly; this is more frequent than the rebalancing schedule of traditional classifications, which typically occurs on an annual basis. BlackRock’s taxonomy is designed to be stable and maintain as much continuity in the sector line-up as possible.

Figure 3: How companies in the GICS consumer discretionary sector are classified within the BlackRock evolved sector framework



Source: BlackRock, Bloomberg, as of 2/9/17. For illustrative purposes only. Subject to change.

The above examples are provided for illustrative purposes only and do not represent all companies that may appear in more than one sector.

Company weightings—evolved vs. market cap approach

Traditional sector classification systems allocate 100% of a company's market capitalization to a single sector. The evolved approach is different. A company's total market capitalization is assigned to one or more sectors based on the words and/or phrases they have included in materials used to describe their own businesses. Next, a company's weighting in a particular sector is a function of those words and/or phrases. As a company evolves over time, its sector classification(s) and weightings will change.

If we look again to Amazon as an example, BlackRock's evolved approach assigns roughly 36% of the company's market capitalization to the discretionary spending sector, giving it a portfolio weight smaller than Home Depot's. This is the case even though Amazon's overall market capitalization is largest (see Figure 4).

Figure 4: Top ten constituents in the evolved discretionary spending sector

Discretionary spending		
Security name	Weight %	% of market cap
Home Depot Inc	9.64%	73%
Amazon.com Inc	8.98%	36%
Wal-Mart Stores Inc	7.68%	100%
McDonald's Corp	4.68%	66%
Costco Wholesale	4.35%	100%
Proctor & Gamble	3.66%	35%
Nike Inc	3.07%	73%
Lowe's Companies Inc	2.97%	67%
TJX Companies Inc	2.67%	100%
Starbucks Corp	2.40%	57%

Source: BlackRock, Bloomberg, as of 2/9/17. For illustrative purposes only. Subject to change.



Conclusion

Despite the fact that the economy and the companies in it have continued to evolve, the traditional methods for sector classification have remained relatively unchanged for decades. Traditional classifications tend to group companies with historically similar characteristics into a single sector, often overlooking some of the likely drivers of those companies in the future.

BlackRock's evolved sector approach seeks to provide a more fully representative sector classification framework through the use of data science techniques, including machine learning algorithms and text analysis. Our technology-driven approach can capture a more forward-looking view of companies and redraw the boundaries of the modern economy.

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