Last summer, Roger Ibbotson and I were invited to contribute an article for the 40th anniversary edition of *The Journal of Portfolio Management*. Our article, “Dimensions of Popularity,” puts forth a new framework for understanding risk premiums and so-called market anomalies that are inconsistent with the traditional risk-and-return paradigm. When it comes to investing, it all comes down to popularity.

Before looking at investments, let’s consider the traditional concept of popularity. What makes some people more popular than others? Why do some TV shows attract millions of viewers and others only thousands? Why was *Sophia* the most popular baby name for girls in 2014 and *Cadence* only the 100th? Within categories such as people, TV shows, and girls’ names, how does popularity evolve over time and what are the implications of changes in popularity?

I’m going to go out on a limb and suggest that among U.S. states, California is more popular than South Dakota. I recognize that for some, South Dakota is superior, but for our purposes, we are interested in the collective or aggregate popularity of one state versus another state. What makes one state more popular than another? Common answers might be the weather, geography, schools, and the job market. How might we measure a state’s popularity? Measures might include population size, the number of major cities, the number of visitors per year, and survey responses.

For a category and its constituents, popularity is complex. Different factors contribute to popularity, and people use different ways to measure popularity. Disentangling the drivers and measures of popularity isn’t always clean cut. I find it easiest to say that popularity is multifaceted and that there are numerous dimensions to popularity.

The relative popularity of something within its category is inevitably going to change over time. For categories such as clothing styles, TV shows, and music, the popularity of the constituents seems to change quickly. For categories such as places to live and U.S. states, popularity typically changes slowly, and the exact catalyst of change can be hard to predict. This movement in relative popularity is a naturally occurring social phenomenon and visible in countless settings.

It is inevitable that the most popular items will eventually decrease in popularity and the least popular items will increase in popularity. This isn’t to say that the least popular will become the most popular, or vice versa; rather, it is to say that popularity changes.

Being too popular can be a bad thing. At some point, a high level of absolute popularity becomes unsustainable and will result in a decrease in relative popularity. New wave nudges away disco; wide lapels become thin; pleated pants are replaced by flat fronts; the iPhone destroys BlackBerry; downtown areas boom, fall into disrepair, and regeneration begins. Cliché phrases like “what goes up, must come down” and “too much of good thing is a bad thing” seem to reflect somewhat universal phenomena that are consistent with ever-changing popularity dynamics. As more people have moved to California, housing prices, pollution, traffic, brown-outs, and water shortages have increased. On the other hand, a state such as South Dakota...
inevitably becomes more popular. Few could have predicted the impact shale oil would have on South Dakota. There has been a dramatic increase in jobs, economic activity, and housing prices. South Dakota may not be as popular as California in absolute terms, but among states, it has certainly become more popular.

These same dynamics are at work in investing. Strategies that systematically purchase a basket of unpopular investments, as defined by a characteristic or measure (i.e., a dimension of popularity), seem to outperform a basket of popular investments. The root cause is the inevitable reranking along one of the dimensions of popularity and the corresponding increase in an asset’s price that is associated with an increase in popularity. Best of all, this framework seems to explain all of the well-known market premiums and anomalies.

At this point, one might ask what the difference is between a market premium and an anomaly. For decades, academics have attempted to develop models, frameworks, and theories that explain how the capital markets work. Broadly, there are two major camps—equilibrium efficient market and behavioral finance.

**The Equilibrium Camp**

The equilibrium efficient market camp grew out of the 1960s and 1970s. Considerable effort was spent defining different “forms” or levels of market efficiency (strong versus semistrong versus weak), arguing that investors are rational, debating which level of efficiency was most accurate, and unfortunately, discouraging alternative frameworks. Today, it would be impossible to argue for perfect market efficiency, but the risk-and-return paradigm that is synonymous with what we call Modern Portfolio Theory continues to dominate our perception of how and why capital markets function the way they do. Put simply, according to the traditional risk-and-return framework, more risk should come with more return.

When speaking of risk in this context we’re thinking of it in terms of the capital asset pricing model, or CAPM, in which the expected return of an asset should be proportional to its variance and correlation with the market. A stock with high variance and relatively high correlation with the market should have a higher expected return than a correlated stock with lower variance. Likewise—and this is an important subtlety—a stock with high variance but low correlation with the market should be expected to have lower returns than its highly correlated counterpart. This is because the stock with the lower correlation will do relatively well when the market is doing badly—it will “pay off” when needed most.

Historical data suggest that for a number of the major asset classes, higher risk comes hand in hand with higher returns, thus supporting the equilibrium efficient market camp. **EXHIBIT 1** shows the standard Ibbotson Stocks, Bonds, Bills, and Inflation chart displaying the growth of $1

**Higher Risk, Lower Popularity, Higher Returns** In keeping with CAPM, Ibbotson’s classic Stocks, Bonds, Bills, and Inflation chart clearly shows the risk premium. If we go one step further and assume that more risk is unpopular and less risk is popular, we see that that less-popular asset classes earned the best returns.

<table>
<thead>
<tr>
<th>Geometric Mean (%)</th>
<th>Arithmetic Mean (%)</th>
<th>Standard Deviation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Stocks</td>
<td>10.1</td>
<td>12.1</td>
</tr>
<tr>
<td>Small Stocks</td>
<td>12.2</td>
<td>16.7</td>
</tr>
<tr>
<td>Corporate Bonds</td>
<td>6.1</td>
<td>6.4</td>
</tr>
<tr>
<td>Government Bonds</td>
<td>5.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Treasury Bills</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Inflation</td>
<td>2.9</td>
<td>3.0</td>
</tr>
</tbody>
</table>

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Government bonds provided a duration premium over Treasury bonds, large stocks an equity premium over bonds, and small stocks a size premium over large stocks. All of these premiums came with more risk; thus, it would be appropriate to characterize them as “risk” premiums.

Corporate bonds provided a credit premium over government bonds, another example of trading risk for return. From a CAPM-type perspective in which expected return is a linear function of market risk, each premium is directionally consistent with the risk-and-return paradigm. If we assume that “more risk” is unpopular and “less risk” is popular, we see that less-popular asset classes earned the best returns. As such, efficient market theory is consistent with our popularity framework.

From a total debt-issuance perspective, Treasury bills have been more popular than government bonds. Similarly, from a market-capitalization perspective, large-cap stocks have been more popular than small-cap stocks.

While harder to measure, during the history depicted in the SBBI chart, equity investing has been substantially democratized—with the creation of the first modern mutual fund in the 1920s, steady decreases in trading costs, the first index funds in the 1970s, and more recently the advent of exchange-traded funds. This democratization has increased equity investing’s relative popularity. An increase in its popularity seems to have corresponded with a substantial return premium over bonds.

### The Behavioral Camp

The more-risk, more-return paradigm seems to hold among asset classes, but it doesn’t necessarily hold at the security level and subasset-class levels. By the 1990s, strong-form market efficiency was no longer in vogue; the work of behavioral economists such as Richard Thaler, Daniel Kahneman, and Robert Shiller was gaining followers, and there were a growing number of documented “premiums” that seemed to be realized at lower (not higher) risk levels and, thus, were characterized as “market anomalies.”

Perhaps the first and best known anomaly in which a premium was accompanied with low risk was the “value premium,” in which value stocks seemed to produce higher returns than growth stocks at lower realized risk levels. Borrowing from the 2014 Ibbotson SBBI Classic Yearbook, the table in **Exhibit 2** highlights the Fama-French small-growth and small-value indexes. It shows that the small-value index had a better return and a lower standard deviation than the small-growth index.

More recently, documented anomalies include low volatility, low beta, and low liquidity (as measured by turnover or the Amihud measure of liquidity). Each of the premiums corresponds with lower realized risk.

**Exhibit 3** borrows from the 2014 Ibbotson SBBI Classic Yearbook. Monthly data for the largest 3,500 U.S. stocks by capitalization from 1972 to 2014 are used to form four annually rebalanced quartiles of stocks. The quartiles are based on turnover rate (number of shares traded during the year divided by the number of shares outstanding for the stock). Notice that similar to the value premium anomaly, the quartiles of less-liquid stocks had higher returns with lower risk.

Given that these premiums come with lower risk, they are often thought of as anomalies because they are not consistent with the traditional more-risk, more-return paradigm.

In the case of the value premium, in which value is typically thought of as stocks with lower-than-normal price/book values, suggesting some sort of distress, one might argue that there is an increased risk of bankruptcy, which while highly unlikely would be a catastrophic event—greater than the volatility one might associate with growth stocks. While I don’t particularly like this explanation, it’s possible that eventually the value premium will be accompanied with greater risk.

The astute reader at this point might note the apparent inconsistency in the popularity framework related to the idea of “high risk” being “bad” or “unpopular,” yet the apparent desirable characteristic of low volatility or low beta being the better returning characteristic on that particular dimension of popularity. That is, on the surface, the low-vol and low-beta anomalies that have been documented would appear to be unexplained by the theory of popularity.

Looking deeper, however, an explanation that seems to square with it comes from Fischer Black: the theory of leverage aversion. Recently, Black’s theory of leverage aversion has been dusted off by Asness, Frazzini, and Petersen as an explanation for why risk parity may work. According to the theory of leverage aversion, costs and restrictions...
The Liquidity Premium

The quartiles of less-liquid stocks had higher returns with lower risk than the quartiles of more-liquid stocks.

We have not identified all of the different characteristics (or dimensions of popularity) that could affect an asset’s price. The world of finance has identified the big characteristics that go hand in hand with the premiums and anomalies I have been discussing. We are often asked why these premiums don’t disappear upon discovery. These major premiums and anomalies seem to be related to near-permanent or systematic investor preferences: Risk is unpopular; small (by dollar votes) is unpopular; value is beaten down, distressed, and out of favor, and, dare I say, unpopular; credit risk representing an increased possibility of a default is unpopular; the instability to sell a less-liquid investment without a significant price reduction is unpopular; etc.

It is hard to see these preferences changing, and if they did reverse for some reason, the popularity framework would still work.

Momentum is different; it is clearly linked to rapid changes in popularity, but it doesn’t seem to be attached to a near-permanent investor preference like the examples above. Like mushrooms that have been shown to produce their own micro-winds, once a catalyst causes momentum of some sort to start, a series of actions from the herd seems to be triggered.

I have two different ways of trying to explain momentum using popularity, neither of which is at odds with one another, nor are they necessarily mutually exclusive.

**Explanation 1:** In contrast to the characteristics associated with the well-known premiums and anomalies that seem to be attached to near-permanent investor preferences (stationary attitudes around what is good or bad), there are unknown or less-well-known and short-lived characteristics that are more akin to a “fad,” in which there is a rapid change in popularity—typically a dramatic increase in popularity followed by a rapid decrease (or crash) in popularity. Presumably, this rapid change in popularity is related to a variety of different characteristics or dimensions of popularity that are likely transitory in nature.

**Explanation 2:** It is possible that momentum is still related to one of the more permanent premiums or anomalies, but rather than a slow, steady movement or change along one of the dimensions of popularity (something Fama and French call migration as it relates to movement along the size and value spectrum), there is a change in the rate of movement or migration.

### Popularity as a Framework

The idea of investing in so-called unpopular securities isn’t new. Likewise, the idea that within any given category of things—people, actors, songs, fashion, pets, and investments—that some items are more popular than others is clearly not new. A wider range of contrarian investment approaches has been around for a long time. As Roger and I point out in our paper, more than 80 years ago in *Security Analyst*, Ben Graham and David Dodd (1934) wrote:

> “[The market is not a weighing machine, in which the value of each issue is registered by an exact and impersonal mechanism, in accordance with its specific qualities. Rather we should say that the market is a voting machine, wherein countless individuals register choices which are partly the product of reason and partly the product of emotion.”

What I believe is new is coalescing this into a very simple and intuitive framework that can simultaneously explain what may drive or cause these numerous premiums and anomalies. Furthermore, it requires almost no assumptions and seems to fit nicely with both efficient market theory and behavioral finance. I’ll admit, finding such a simple explanation is nice, but given the fickle nature of popularity and our inability to fully understand what drives popularity, there is still much work to be done.

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**Strategies**

*April/May 2015*

David Dodd

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