



SOCIETY OF ACTUARIES

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# Current Issues and Trends

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## The Sunshine Variable vs. The Werewolf Factor

**A**stronomical factors and their proponent newsletters and Web sites always seemed best suited to late-night infomercials, along with their commodity-trading strategy counterparts. However, certain facets of this black-sheep branch of investing have received some legitimate academic backing.

It seems to be a popular topic at the University of Michigan these days, spawning two working papers—"Lunar Cycle Effects in Stock Returns" by Ilia Dichev and Troy Janes, and "Are Investors Moonstruck?: Lunar Phases and Stock Returns," by Kathy Yuan, Lu Zheng and Qiaoqiao Zhu.

The first paper finds that stock returns in the 15 days around the new moon are double the stock returns in the 15 days around the full moon. The authors found this to be true in all major U.S. indexes over the past 100 years and for nearly all of the major indexes in 24 other countries over the last 30 years. The second paper reaches similar conclusions based on data from 48 countries. It finds the anomaly to be independent of other calendar effects (i.e., January effect, day-of-week effect, calendar month effect).

This leads Dichev and Janes to conjecture that human behavior is influenced by "moon madness" and investors shun stocks around the full moon, even though psychological studies have established no causal link to date. They propose that this might be because such studies have focused on societal fringe elements, exhibiting extreme behaviors, rather than the minor lunacies of the masses. In contrast, medical studies have found a direct linkage between mood and external environment when it comes to the weather. Sunlight, or the lack of it, has a direct impact on human mood and behavior. This is the subject of another recent paper from well-known behavioral finance authors

David Hirshleifer of Ohio State University and Tyler Shumway of the University of Michigan titled "Good Day Sunshine: Stock Returns and the Weather." Hirshleifer and Shumway examined stock returns at 26 stock exchanges internationally from 1982-1997 to find any differences between behavior on days with morning sunshine versus morning cloudiness. They found a strong and direct correlation between positive stock returns and the prevalence of sunshine, and they discovered that after controlling for sunshine, other weather phenomena are irrelevant.

We figure that because we're based in Chicago, we have a distinct advantage in knowing what will happen in the market in a day or two, as our weather subsequently moves east to New York. (This is tongue-in-cheek, folks. We won't be adding any werewolf or sunshine factors to our model any time soon!) ☼

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