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ARTICLE

Pricing Fine Wines and Common Stocks

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Elroy Dimson and Bradford Cornell recently shared their insights into asset pricing in two different markets. Dimson analyzed the interaction between consumption and ownership values in the pricing of fine wines, and demonstrated that investing in wine carries a quantifiable emotional benefit. Cornell described the complex institutional arrangements that underlie the modern equity market, and concluded that final investors do not set the prices of common stocks. This article explores the implications of their studies for a realistic behavioral approach to asset pricing.

Old wines, works of fine art, first editions, and rare stamps are sometimes called emotional assets. Owning them confers non-pecuniary benefits that might be described as psychic returns. This is not merely a metaphor; in the special case of wine, the psychic return can be quantified. Behavioral finance tells us that investing in financial assets also engages human emotions. But does behavioral theory reflect the way stocks are *actually* priced in the organizationally complex world of modern investing? Is our knowledge of capital market dynamics truly enhanced by studying individual investors' cognitive errors and psychological motivations?

The pricing of old wines and common stocks were among many topics explored at Research Affiliates' 2014 Advisory Panel meeting.[1] Elroy Dimson spoke about "Wine as an Investment" and Bradford Cornell discussed "The Machinery of Asset Pricing." Their perspectives on pricing are as different as the markets they study. My goal in this short article is not merely to juxtapose Dimson and Cornell's analyses, but to probe the implications of their findings for a behavioral approach to the valuation puzzle.

Wine as an Investment

Looking at paintings doesn't wear them out, reading books doesn't deplete their store of language, and cataloguing stamps doesn't detract from their distinctiveness. But wine can be consumed. Accordingly, in modeling the price dynamics of wine, Dimson and his fellow researchers took into account its dual nature as a consumer product—indeed, in the case of high-quality wines, a luxury item—and a collectible. (It is the dichotomy between wine's consumption and ownership values that makes it possible to estimate the psychic return.) Their model postulates that the fundamental value of a wine is the highest of its immediate consumption value; the present value of consumption at maturity plus the non-financial dividends received up to consumption; and the present value of lifelong ownership.

Dimson and his colleagues' research objective was to model the effect of aging on wine prices. In pursuing that objective, they did exemplary work in the economic history of wine. From first-hand documents, they meticulously assembled a unique database of historical prices from the end of 1899 to the end of 2012 for five first-growth Bordeaux wines by chateau, vintage year, sale year, and transaction type (dealer or auction). They also used records of annual production yield to estimate the effect of supply on prices, and records of temperature during the growing season and rainfall during the harvest season to distinguish high- from low-quality vintages.

In aggregate, the Dimson team estimated that the hypothetical annualized real return, net of insurance and storage costs, from 1900 to 2012 was 4.1%. They also found that the prices of low- and high-quality wines follow different paths. The price of a low-quality wine initially falls until the present value of ownership exceeds the value of consumption; then the price starts rising with age. The price of a high-quality wine rises strongly until the wine matures, then stabilizes, and rises again when the wine's value as a collectible becomes dominant. The psychic return on wines that are well past maturity is approximately equal to their underperformance vis-à-vis high-quality wines that are still maturing. In other words, the pleasure of ownership lowers the investor's required financial return. The researchers estimate that, over the prolonged measurement period, the psychic return was about 0.7% *per annum*.

The Machinery of Asset Pricing

Wine investors are likely to be wealthy individuals who personally select the wines they want, decide what price they're willing to pay, and store their acquisitions in a private wine cellar. In the language of neoclassical finance theory, individual investors strive to make intertemporal utility-maximizing choices using a discount rate that balances immediate and deferred consumption. In the standard model, prices are set by final consumers or investors. This theory eminently applies to the market for collectible wines.

Cornell argues, however, that the standard model does *not* fit the modern securities investment environment. On the basis of high-level research, he and his co-author, Jason Hsu, state that final investors do not set the prices of financial assets. Instead, acknowledging (whether openly or tacitly) that they have neither the information nor the training to identify mispriced stocks, asset owners delegate decision-making to investment professionals, either by buying managed funds or by engaging financial advisors. *Investment professionals are the marginal price-setters.*

Moreover, investment professionals don't use a utility-maximizing model for asset pricing; they overwhelmingly use simpler discounted cash flow techniques to estimate fundamental values. There is evidence that, in an attempt to set themselves apart, advisors expend considerably greater effort developing cash flow projections than selecting the proper discount rate. Nonetheless, the cross-section of expected returns is determined by the marginal investors' discount rates; and those discount rates, in turn, are determined by the marginal investors' models. There is, consequently, a feedback loop, via discount rates, between asset pricing theory and the prices of financial assets. Cornell says that the implications of this feedback loop remain to be explored.

Delegating discretionary authority does not lead to a clear-cut principal-agent relationship; investment committees, consultants, regulators, and, in some cases, layers of distributors have roles to play. Investment committees, which are prone to small-group politicking, retain consultants to share the liability for their decisions, and the consultants have their own business objectives. Regulators, always playing catch-up, attempt to protect the investing public and their own bureaucracy by enforcing an ever-expanding set of detailed requirements. Distributors may be concerned as much about a product's fee structure as its suitability for individual clients. In short, the modern financial services industry is a complex ecosystem. The volume (in both senses: quantity and loudness) of hot financial information is a further complication; media personalities don't understand investing, and they are driven by the very-short-term news cycle to focus on what's trending.

If the asset owners are dissatisfied with the professionals' performance, they terminate the relationship, typically after three years. In consequence, investment professionals' recommendations and actions may not be fully aligned with their clients' true long-term interests. In order to maintain a steady (or, better yet, steadily growing) stream of advisory fees, investment professionals are

financially incentivized to focus on short-term performance relative to a benchmark. This compensation structure does not make it easier to manage clients' portfolios in view of rational long-term objectives.

Grounded in psychology and experimental economics, behavioral finance purports to shed light on investors' actual decision-making processes, which are susceptible to cognitive error and influenced by non-financial needs and desires. Thus, like neoclassical finance, behavioral finance crucially assumes that investment decisions are made by the ultimate consumers—individual investors. This presupposition does not reflect the reality of asset pricing in the complex investment ecosystem.

Letting the Ideas Breathe

What are we to make of these studies?

Clearly, Dimson's findings offer us a realistic idea of the very-long-term rate of return earned by wine collectors in the past, and, to that extent, it helps us situate wine among other investible assets. In addition, by translating the pleasure of owning fine wines into concrete financial terms, it gives objective economic support to the psychological notion that investors—or at least collectors—are motivated in part by non-financial considerations. At the turn of the 20th century, Thorstein Veblen described the symbolic rewards of conspicuous consumption: asserting one's social standing, belonging to a community of connoisseurs, exhibiting refined tastes, and demonstrating expertise in an inessential, unproductive, time-consuming activity.[2] For the present purpose, we only have to acknowledge that wine is an emotional asset and that wine investors implicitly seek to maximize their intertemporal utility by deciding if and when to open a bottle.

Cornell's conclusions are more disconcerting. There is no doubt that stock prices exhibit short-term momentum and long-term mean reversion. Behavioral finance seemed to have given a reasonable account of these phenomena in psychological terms. For instance, overconfidence, optimism, and social validation make sense of the herding by which individuals become collectives—sometimes, indeed, flash mobs—and create bubbles. But Cornell's description of the modern institutional arrangements under which financial assets are actually priced throws into question both the applicability of individual psychology and any facile transition to aggregate behavior. The market might be a construct, like "the law," or an institution, like "a court of law," but it is not a person, and we can ascribe intentionality, rationality, and feeling to the market only by analogy, as though it were a quasi-person.

It would be a step in the right direction to suggest that, because discount rates vary over time, those who use discount rate models to set prices must be susceptible to mood swings. This observation re-centers the study of emotion in investment decision-making on the behavior of investment professionals, where John Coates, David Tuckett, and Richard J. Taffler have led the way. Portfolio managers and traders buy, hold, and sell securities not only under conditions of uncertainty and rapid change but also under pressure from all sides—regulators, employers, competitors, and their peers within the same organization, as well as their clients, the final investors. From now on, any behavioral theory of finance that does not take into account the institutional setting will be interesting, no doubt, but pretty much irrelevant. We can do better than armchair psychology.

Endnotes

1. See Chris Brightman's account, "What We Know That Ain't So" (Research Affiliates, June 2014).

2. Full disclosure: I spend a great deal of time on the archetype of unproductive activity, reading philosophy, often while sipping wine.

Further Reading

Coates, John. 2012. *The Hour Between Dog and Wolf: Risk Taking, Gut Feelings, and the Biology of Boom and Bust.* New York: Penguin Press.

Cornell, Bradford, and Jason Hsu. 2014. "The Machinery of Asset Pricing and Its Implications."

Dimson, Elroy, Peter L. Rousseau, and Christophe Spaenjers. 2014. "The Price of Wine."

Tuckett, David, and Richard J. Taffler. 2012. *Fund Management: An Emotional Finance Perspective*. Charlottesville, VA: Research Foundation of CFA Institute.

Veblen, Thorstein. 2009. *The Theory of the Leisure Class*. Oxford, U.K.: Oxford University Press (Oxford World's Classics).

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