CAS Working Paper Disclaimer
Working papers are preliminary works in progress that are posted to stimulate discussion and critical comment. The analysis and conclusions set forth are those of the authors. The CAS does not endorse, approve, certify or warrant this material for any purpose, nor does it exercise editorial control over materials posted in this section of the Web Site. Evaluation of the material is the sole responsibility of the user. The CAS, its employees, and agents assume no responsibility for, and expressly disclaim all liability for, any consequences resulting from the use of the information herein.

A Conceptual Proposal to Use Appraisal Value as a Supplementary Basis for Financial Valuation

By Neil Bodoff, FCAS, MAAA

August 3, 2009

Introduction

One of the central questions of finance is how one should measure, quantify, and record in financial statements the uncertain values of assets and liabilities. This paper describes a conceptual proposal that addresses some of the issues that arise in this debate.

Background

One of the overarching trends during recent decades has been the ascendancy of the financial economics or “market price” method for valuation. According to this approach, the only true value of an asset or liability is the value that arises in the open market when buyers and sellers agree on price. As a result, there has been a significant shift away from previous methods of valuation towards the use of market price. The financial crisis of 2008, however, has highlighted the need to reevaluate this framework.

We first explore the conceptual bases for using market price and examine their implications; then we propose an alternative valuation methodology to complement market price.

Market Price Valuation Rooted in the Efficient Markets Hypothesis

The market price approach rests partly on the foundation of the “efficient markets hypothesis”, which states that all known information has been incorporated or “priced into” the market price; thus, the market becomes some form of supremely intelligent force that always reflects the “true price” at any moment. According to this theory, one should always value assets and

The CAS is not responsible for statements or opinions expressed in this working paper.
This paper has not been peer reviewed by any CAS Committee.

liabilities at market price; whether one is seeking to actually sell an asset in the market or not is irrelevant, because the cogency of the argument derives from the inherent correctness and accuracy of the market price.

Although the efficient markets hypothesis has a noble pedigree, reality has stubbornly refused to conform to its predictions. One known problem is that market prices show an inordinate amount of volatility relative to new information. If the market price truly reflected the inherently correct value at any single point in time, it would be unlikely that the market price would greatly change from moment to moment in the absence of new real information; yet such pronounced volatility is a known trait of market prices. Another known problem is the formation of bubbles, manias, and panics. All of these phenomena are temporary situations in which the market price distorts information and unhinges itself from the underlying economic value, with painful consequences when the market price corrects.

Therefore, in this paper, we shall reject the idea that the market price at every moment in time reflects some form of true or inherently correct price.

Market Price Valuation Rooted in No Arbitrage Pricing

The use of market price, however, does not derive solely from the efficient markets hypothesis. In fact, a very different conceptual framework also demands the use of market price: “no arbitrage pricing”. No arbitrage pricing, however, does not necessarily ascribe perfect knowledge to the market; the market price is not an inherently correct or normative price. Rather, no arbitrage pricing requires that one use market price simply because market price reflects reality: this is the price at which one can (and should and must) sell or “realize the value of” an asset. No arbitrage pricing simply acknowledges that the dollar amount that one can actually obtain is rooted in the current market price. Therefore the cogency of this argument seems to derive from the supposition that one seeks to immediately sell or realize the value of something; but if one were able and willing to hold an asset and not sell at the current market

price, then this behavior would blunt the logic and applicability of using market price for valuation.

Traits of Market Price

As we have noted, in some situations using market price is compelling, whereas in other situations using market price seems less compelling. This duality arises because the market price has traits that make it very useful but simultaneously has characteristics that make it subject to biases and distortions.

One trait of market price is that it usually arises from the interactions of many buyers and sellers. This trait can be positive, because information is often diffuse; price thus reflects the aggregation of information from many sources. This same trait, however, can also be a weakness; the large number of participants in the market may allow non-expert actors to influence the market price, which can lead to positive and negative bubbles.

A second trait of market price is that it reflects the immediate behavior of participants in the market but is not necessarily stable or robust across time. For example, the market price may reflect the behavior of actors known as distressed sellers, who are forced by external circumstances to sell, resulting in an unusually low current market price. But once the force of distressed selling ebbs from the market, the market price may rebound significantly; thus the current market price may reflect a distorted view of likely future prices. The current price, reflecting the exigencies of the moment, may serve as a poor guide to likely prices in the very near future.

Appraisal Value: An Alternative to Market Price

The known weaknesses of market price imply that it is insufficient as the sole basis of valuation. Moreover, the specific drawbacks of market price point towards a potential remedy: to supplement the valuation of any asset or liability by looking not only at the market price but

also at the "appraisal value". What is the appraisal value? We define appraisal value as the value, as estimated by independent experts, of the sale price from a knowledgeable, non-distressed seller to a knowledgeable, non-euphoric buyer. We underscore the importance of "independent" and "experts".

Traits of Appraisal Value

Appraisal value is the polar opposite of market price. Whereas market price derives from the interactions of many diffuse players, appraisal value derives from only a handful of individuals. Whereas market price might reflect the views of many non-experts who are not fully informed of all the underlying details of an asset or liability, appraisal value must only be calculated by experts with sufficient access to data and sufficient time to painstakingly inspect all the underlying details of the situation. Whereas market price reflects distressed sales and all other exigencies of the moment, appraisal value seeks to understand price based on a "stable environment" free of dislocation from positive or negative bubbles.

Based on this discussion, we conclude that many traditional valuation methods share a common conceptual basis rooted in appraisal value. Some examples are the valuation of real estate; appraisals of fine art, wine, antiques, and collectibles; independent research analysts' estimates of equity prices; and actuarial valuation of insurance liabilities.

Because several traits of appraisal value are the inverse of market value, it is logical that the situations in which market value performs poorly are exactly the situations in which appraisal value performs well, and vice versa. Some situations that would likely accentuate the utility of an appraisal value methodology would be:

1. Valuations during periods of market euphoria (bubbles) and periods of market depression (panics).
2. Valuations of complex assets and liabilities whose workings are opaque to the market.
3. Valuations of opaque conglomerate firms with many subsidiaries.

Proposal

Market price is an important indicator for valuation purposes, but it is not perfect; there are times when market value provides an inaccurate and distorted view of value. Appraisal value also is an important and legitimate approach to valuation, but it too is imperfect; there are times when appraisal value provides an inaccurate picture of value. Moreover, the availability of two different valuation bases could create an irresistible temptation to adopt one basis during good times and then to switch the valuation method when conditions deteriorate. We therefore propose that financial valuation should always incorporate and disclose both bases for valuation: the market price and the appraisal value. This proposal implies that there would be no single number for "the value" of anything; rather, all assets and liabilities have various facets of value and therefore manifest at all times both a market price and an appraisal value. Of course, for many assets and liabilities during many time periods, the market price and the appraisal value ought to be similar. But the gap between market price and appraisal value could be significant and telling during certain time periods for certain types of assets. Recording both the market price and the appraisal value would allow one to investigate the absolute magnitude of the difference between market price and appraisal value; to analyze how the spread between market price and appraisal value expands or contracts over time; and to measure how the spread between market price and appraisal value compares and contrasts across various types of assets and liabilities.

When consistently recording both market price and appraisal value, one needs to make only a single choice: which basis of valuation to embrace for decision making purposes. This choice could depend on several factors, ranging from the condition of the market, to the type of asset, to the job description of the particular person making the decision. Some possible choices are:

- Embrace market value until there is a "very large" gap between market price and appraisal value; market value significantly more than appraisal value could signal

a bubble, and market value significantly less than appraisal value could signal a distressed market.

- Market traders might focus exclusively on market value, whereas regulators might use appraisal value when deciding upon regulatory action.
- Regulators might choose to embrace market value for certain assets such as equities while simultaneously choosing appraisal value for other more opaque, complex, and illiquid assets and liabilities.

While there are numerous possible approaches, they would all benefit from the information supplied by a multifaceted valuation framework that records both market price and appraisal value.

Ramifications

The financial crisis of 2008 exposed some of the weaknesses of mark to market valuation, especially with respect to triggering regulatory intervention; it also showed the possible utility of basing regulatory action upon valuations derived from appraisal value rather than market price. In this crisis, we had a situation in which distressed selling drove down the market price; valuations based on market price then transmitted these asset price declines to other non-selling institutions that held similar assets; this deterioration in recorded asset valuations reduced the recorded value of equity, which then triggered the regulatory response that these institutions had insufficient equity capital, leading to further distressed selling of assets, leading to further depressing the market price of assets, thus completing an endless loop. Had regulators evaluated the capital adequacy of firms by focusing to a greater degree on appraisal value, then firms would not have been required to sell assets into a distressed market. In fact, this is (eventually) what regulators implicitly did: the Fed decided that capital adequacy would be calculated (albeit in a controlled, uniformly applied “stress test”) based on the appraisal value of complex, opaque assets and liabilities. We also note that different groups could simultaneously take different approaches to valuation: market traders could use their own

views of the value of the firm, while regulators could give less weight to distressed market prices and more weight to appraisal value when deciding if regulatory intervention was needed.

Summary

In this paper we argue that there is no such thing as "the value" of anything; rather, there are various metrics that describe different perspectives of value. We propose that one should always measure and record two key perspectives of valuation: "market price" and "appraisal value". Both market price and appraisal value are imperfect measures of value with known weaknesses, but each has significant strengths that complement each other when used in concert.

One essential requirement of appraisal value is that it should be calculated by "experts" who have the knowledge, time, and access to data in order to delve into the underlying details of the valuation. A second key requirement is that the appraisal value should be calculated by experts who are "independent" of all parties who have vested interests in the appraisal.

Consistently disclosing the complementary perspectives of market price and appraisal value will provide a broader perspective on value and will thereby help firms, investors, regulators, and taxpayers all achieve better outcomes.

References

Shiller, Robert J., *Irrational Exuberance*, Second Edition, 2005.

Send comments to neil.bodoff@willis.com and neil_bodoff@yahoo.com