"Professor's Comments"

(For the December 2008 Moody's/REAL Index returns.)

This is a periodic commentary which will generally be posted monthly on the "RealIndices" web site, offering the perspective on the indexes of Professor David Geltner (or occasional guest commentators). Geltner was a leader of the team at MIT that developed the methodology for the Moody's/REAL Indexes.

Closing Out 2008…

With this February report of the Moody's/REAL CPPI we bring a close to 2008 in our monthly and quarterly indexes. The price decline tracked by the indexes during 2008 was of historic proportions. The monthly all-property index dropped almost 15% during the year, including 2.2% in December, bringing the index down more than 16% below its peak in late 2007. Each quarter in 2008 was unique: The first quarter continued a volatile plateau that characterized the first stage of the market turning point as buyers and sellers pulled apart and trading volume plummeted; the second quarter was a collapse of more than 9% in transaction prices as the market finally realized a necessary correction of 2006-07's excesses; the third quarter was a hopeful pause in the downturn as the market looked to dodge further bullets; and then the fourth quarter saw another huge drop of almost 8% as both liquidity and fundamentals tanked as the global economy "fell off a cliff" (Warren Buffet's words). I wish I could say we have reached a bottom, but personally I'd bet 2009 will be at least as bad as 2008. And this raises an interesting point about the nature of the commercial property markets, which I would like to discuss in this month's commentary…

Sluggish Prices:

We all learned about the Random Walk Model of stock prices, and how strong is the incentive for asset markets to reflect all publicly available information as quickly as possible in their current prices. This is supposed to make it difficult to predict where prices are going, difficult to make a statement like I just made, that after a very bad year we're almost surely going to experience another very bad year. Why don't property market prices already reflect this expectation? Why are (at least a few) people buying at today's prices if these prices don't already incorporate a further down move that almost everyone expects will happen? Why is it much more difficult for me to say these kinds of things about the stock market than it is for the private property market?

When commercial property markets first began to be systematically tracked, by appraisal-based indexes such as the NCREIF Index in the U.S. and the IPD Index in the U.K., the degree of sluggishness and inertia in these indexes was startling to academics used to looking at stock market indexes. Many academics (including myself) tended to blame the appraisal and index construction process for the inertia we saw in the indexes. We had a lot of faith in the efficiency of the asset market.

I still think there is much truth in that perspective. The NPI did not turn down until the second quarter of 2008, and did not turn significantly down (gross of the NPI's practice

of subtracting capital expenditures from the value changes in that index's capital returns) until the fourth quarter. The NPI's drastic 9.5% fall in 4Q08 was actually "only" 8.1% on an equally-weighted cash flow basis without subtracting capex, the way to define the NPI for better comparability to the CPPI. And this result likely reflects to some degree the seasonality in the NPI, as traditional fourth-quarter updating of appraisals coincided with what was probably the most obvious and drastic negative news about markets and fundamentals since the inception of the NPI. Even being conservative, appraisers updating earlier valuations (which might have dated from two to four quarters earlier) could not ignore the magnitude of the crisis now facing the economy and the property market by the fourth quarter. And open-end funds in particular had major incentives to attempt to fully recognize the market drop in their marks-to-market as they face queues of investors waiting to cash out at the funds' NAVs. In effect, the NPI "caught up" to some degree in the fourth quarter with what had been happening over the previous year, finally recognizing at least the correction that the CPPI had priced by the second quarter of last year.

Nevertheless, and more importantly, we see that even good contemporaneous transactions price based indexes such as the Moody's/REAL can display considerable inertia, echoing at least to some degree the famous findings of economists Karl Case and Robert Shiller regarding housing markets. The mere fact that commercial property market transactions occur between experienced investment professionals for purely business purposes rather than the mixed consumption-and-investment motivations of homebuyers with much less investment trading experience is apparently not sufficient to eliminate all inertia in asset market prices. And there may be some reason to believe that inertia is particularly strong during sharp downturns such as we are presently experiencing. How can we explain this, and what are the likely implications?

Informational Efficiency and Loss Aversion Behavior:

The first key point has to do with informational efficiency, that is, the speed with which the private property asset market is able to reflect all relevant currently available information in its actual transaction prices. Informational efficiency is what underlies the random walk nature of stock prices. While there may be broad consensus that the commercial real estate market is headed down, it is never clear what that means in terms of the current value of any given real property. Because properties trade as whole assets each of which is unique, it is difficult to say for certain that a given price for a given property is too high, even given a strong and obvious downward direction in the market in which that asset trades.

Furthermore, unlike trading shares in the stock market, trading property assets gives operational management control over the asset. Buyers who believe they can add value by exercising such control may rationally be willing to pay a premium to obtain it. In some sense, any given property purchase may represent a mini "takeover bid", the type of thing for which stock prices are regularly bid up over their pre-existing market prices. In a sharp downturn, buyers believing they can add value, or who otherwise are under some pressure to place capital into the property market, may represent a larger proportion of all

those who successfully close transactions than is the case during more normal times in the marketplace.

The above two points feed into a phenomenon that is a prominent part of the new fusion of economics and psychology that is referred to as behavioral economics. The phenomenon in question is known as "loss aversion", and a famous study by Professors David Genesove and Christopher Mayer indicates that it plays a role in housing markets. As defined in behavioral economics, "loss aversion" refers to the tendency for people to more strongly prefer avoiding losses than acquiring gains. Studies show that loss aversion can interact with "endowments", causing potential sellers to require a higher price to sell something they already own than potential buyers will be willing to pay to acquire something they don't yet own (all else being equal). In property markets the loss aversion phenomenon can cause potential sellers to avoid selling properties at what they perceive is a loss or at a price below some quantified reference point of value (such as the previous acquisition price, or the outstanding loan balance, or a recent appraised value).

According to the new economic theories, loss aversion reflects deep-seated psychological behavior that differs from the classical model of "rational" behavior in a business context (e.g., differs from profit-maximization). In the Genesove-Mayer study, when market prices fell in the Boston condo market, potential sellers actually *increased* the price they would otherwise have asked for their properties, *provided* they had paid a price above the expected value in the current market. The implication is behavior that is sub-optimal from the perspective of pure profit-maximization, as potential sales at good prices (given the current market) were lost.

We can't yet say for certain that loss aversion has been playing a major role in the commercial property markets since the downturn began. There is widespread clinical evidence that loss aversion behavior tends to weaken as sellers become more experienced, or if they are dealing in a more purely business role, trading goods not for their own usage or long-term possession. The mere existence of loss aversion in housing markets does not necessarily imply that it would exist or be important in commercial or investment property markets. But there is some academic research that strongly suggests that at least some sort of loss aversion behavior probably exists in at least some corners of the commercial property market. For example, a so-called "disposition effect" of selling "winners", which is an aspect of loss aversion, was documented among NCREIF properties by Fisher *et al* in their 2004 article of NCREIF property sales, and among REIT-held properties in a recent RERI-sponsored study by Crane and Hartzell.

Implications for the Market

In a down market loss aversion obviously results in a drop in volume of consummated transactions. Sellers trade off liquidity for loss aversion, as long as they can. Price noise resulting from the aforementioned lack of informational efficiency, combined with a few eager buyers, allows a few sales transactions to occur, but their prices do not fully reflect the magnitude of the drop in the fundamental market value, the value toward which there is a consensus that the realized transaction prices must eventually move. What will finally

trigger such a realization in the contemporaneous transaction prices is the advent of "distressed sales", sellers who can no longer indulge in loss aversion behavior.

The U.S. commercial property market entered the current crisis in relatively good shape in its fundamentals, compared to housing and compared to the previous major commercial property downturn in the early 1990s. Vacancies were low, rental markets were strong, and there was relatively little over-building. This has enabled loss aversion to persist longer than it otherwise could have. Commercial loan delinquencies were still quite rare and distressed sales were largely absent in the commercial markets through the end of 2008.[*] Alas, it is clear that this will no longer be the case as 2009 unfolds. This is why in the current environment I feel confident in predicting for 2009 the direction and indeed to a considerable degree the magnitude of even a good transaction price index like the CPPI, an index that does indeed well track the contemporaneous movements in the actually realized transaction prices. Alas, my prediction isn't pretty.[†]

-David Geltner, February 2009.

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[*] The Case-Shiller repeat-sales index of housing prices did not start to really plummet until late 2007 when distressed sales began to significantly occur in housing, even though the housing market had peaked in early 2006. The peak month in the Case-Shiller 10-cities composite index was June 2006 and as of five quarters later in September 2007 the index was down only 6%. Then distressed sales began to kick in, and in the subsequent four quarters through September 2008 the Case-Shiller 10-city composite lost another 18.5%. Considering this record, the drop in the CPPI has arguably been more precipitous than the housing index considering that unlike housing distressed selling had not yet kicked in in the commercial market by December 2008.

[†] Oh alright what the heck, I'll go on record quantitatively: my prediction is the monthly CPPI drops another 15% in 2009. If by the end of 2009 we're still struggling to find a way out of the recession then the CPPI drop could be steeper than that and/or could continue into 2010.