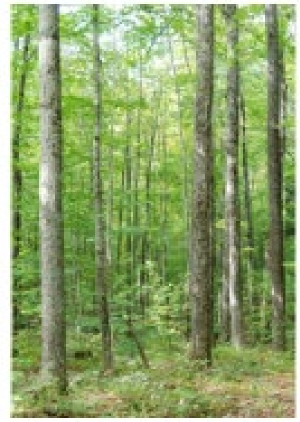
Jim Hourdequin, Managing Director and CEO
The Lyme Timber Company LP
23 South Main St. Hanover NH 03755
www.lymetimber.com

THE LYME TIMBER COMPANY



Damned by Faint Appraisal: The Use and Abuse of Appraisal in Timberland Valuation
UGA Center for Forest Business 2017 Timberland Investment Conference
March 1, 2017

Damned by Faint Appraisal: The Use and Abuse of Appraisal in Timberland Valuation

By Jim Hourdequin, The Lyme Timber Company LP

UGA Center for Forest Business 2017 Timberland Investment Conference

March 1, 2017

Thank you Shelda and thanks to the UGA Center for Forest Business for their good work in putting together this conference. The title of this talk is: "Damned by Faint Appraisal: The Use and Abuse of Appraisal in Timberland Valuation". I am going to touch on a number of different themes, but before I do, I thought I would start by asking the audience a few questions.

First, by show of hands, how many of you have had experience reviewing appraisals of timberland owned by institutional investors?

Next I'd like you to think about the appraised values you've seen relative to your sense of market. One of way to do this is to compare the appraised value for a property to the price set in a subsequent transaction, bid event, or reappraisal. With this in mind, please raise your hand if you've had experience – either direct or indirect - with appraisals that were within 10% - high or low – of a subsequent transaction, bid event, or reappraisal?

Now I am hoping that the answers will get a little more interesting. How many of you have had experience or knowledge of appraisals where the appraised value deviated from a subsequent transaction, bid event, or reappraisal by between 10% and 30% - high or low? How many of you have had experience or knowledge of appraisals that proved to be off by between 30% and 50% - high or low – relative to a subsequent transaction, bid event or reappraisal? And finally, how many of you have had experience with appraisals that proved to be off by greater than 50% - high or low – relative to the outcome of a subsequent transaction, bid event or reappraisal?

So what can we conclude? First, that appraisals are accurate indicators of value *some of the time* – perhaps much of the time. Second, that appraisals are *not always* good indicators of value, and there are times when appraisals can be widely off the mark. Unfortunately, there's no easy way of knowing which scenario applies to a given appraisal, though later in this talk I will suggest some relatively simple tools that can be used to evaluate appraisals and thereby improve valuation.

Now let me begin my presentation with a caveat. I want to be clear at the outset that my goal is not to point fingers at or to blame appraisers. In our experience working with a number of appraiser firms throughout the country, we have found that by and large they are diligent, earnest, and genuinely interested in estimating fair market value.

However, appraisers are often dealing with relatively few comparable sales, incomplete information, tight budgets, and constrained timelines. There's no doubt that appraisers could produce a more complete work product, with fewer limiting and extraordinary conditions, if they are engaged and paid to do so. Appraisers are not clairvoyant, and it should come as no surprise that appraised and market values differ, sometimes by substantial amounts.

If anything, there's work that we as TIMO's can do to improve the appraisal process and thereby more accurately represent fair value to our investors.

This is particularly important as our asset class matures and investors can no longer rely on the rising tide of timberland values that occurred from the mid 1990's to the mid 2000's. As I will discuss at the end of the talk, it will also become more important if we are to pursue new timberland investment models such as open ended private funds.

At the end of the talk, I'm going to suggest some alternatives to the reliance on appraisal as the primary source of valuation, but even in the context of alternative approaches, there is no question that independent, third-party appraisals play a critical role in timberland valuation, and therefore it makes sense to start by addressing some of the ways in which the appraisal process can be improved.

***

I've put together a list of six "red flags" we've observed in reviewing appraisals, both appraisals we've obtained on properties in our portfolio and appraisals that we've received in our transaction work.

One additional caveat is that our portfolio is heavily tilted towards some of the less liquid and more challenging markets for timberland appraisal. We own timberlands in Northern California, the Lake States, Appalachia, and the Northeast, and many of our properties are subject to conservation restrictions. We've had less experience in the more liquid core southern pine and pacific northwest markets. So it's entirely possible that the issues that I am going to identify are less significant, and perhaps substantially less significant, in these geographies.

But in speaking to a number of appraisers from throughout the country in advance of this presentation, I did get broad agreement that to varying degrees these challenges exist across all markets.

Finally, I need to make note that all of my comments are directed towards large institutional grade properties where there are cash flows and ongoing operations. By that I mean properties that have valuations of at least $25 million, with an emphasis on properties in the $40-$100 million range. These comments are really not relevant to smaller timberland tracts.

So without further delay, here are the six "red flags" we've observed in some, though certainly not all, appraisals we've reviewed over the years.

Six "Red Flags" that could indicate a disconnect between appraised value and market value

1. An overreliance on comparable sales methodologies in markets with few comps
2. Inadequate consideration for the results of sale processes initiated by owner
3. Mismatches between inventory log specifications and market log specifications
4. Projected income and expenses that bear no resemblance to historical income and expenses
5. Aggressive real price appreciation not supported by historical data
6. Application of monolithic, or nearly monolithic, discount rates to cash flows

Again, in many cases, we see appraisals that are thoughtful and avoid most or all of these pitfalls, but we've also seen each of these red flags multiple times, and each item can be the cause of a material deviation between appraisal and market value.

I'll briefly dig into each of these five areas, beginning with **#1: an overreliance on comparable sale methodologies in markets with few comps**. This may be an issue that is most relevant to hardwood and other less liquid markets, and it presents a real challenge for the appraiser. In some of these markets, there simply have not been many transactions in recent years. Therefore, of necessity, the appraiser must dig further back in time, and include in their comp grids properties that are substantially different in size, and in locations that are distant from the subject property.

We've seen appraisals for 100,000+ acre properties that include 15,000 acre comps, and we've seen comparable sales that go back as far as 10 years from the date of appraisal. The appraiser must then use both qualitative and quantitative adjustments to arrive at a reasonable value for the subject property.

There's nothing the appraiser can do about this – some markets are simply not very liquid, or haven't been very liquid in many years, but when these circumstances arise, one can reasonably question the utility, and therefore the weighting, that is given to the comparable sale approach.

Red Flag **#2 is inadequate consideration for the results of sale processes initiated by the property owner as well as bona fide offers received by the owner**. Like Red Flag #1, this has been a challenge in some of the less liquid hardwood markets.

We did a quick analysis of hardwood properties that were offered for sale – either privately or through an orchestrated bid process - in 2015 and 2016. We came up with a total of 24 properties offered for sale, out of which only 8 sale transactions occurred. On fully two thirds of the properties offered for sale, the seller elected not to proceed with the sale process, or the sale process was delayed. In some cases, the seller elected not to proceed with a sale because the offer prices were below appraised value.

While it is of course any seller's right to pull a property offered for sale off the market – what is often referred to as a "no-sale" – it would seem that the results of a listing or sale process should be somehow reflected in a future appraisal.

When you think about it, it makes no sense for an appraisal not to consider bona fide offers presented on a property. The only reason we rely on appraisals in the first place is that it's not practical to expose properties to the market and receive bids from prospective buyers on a regular basis. We don't commission an appraisal to determine the share price or enterprise value of Apple, or GE, or Weyerhaeuser. We simply go to the ticker and see where the bids are coming in. In the absence of a ticker, we rely on the appraisal as the next best thing. However, in circumstances where we have bona fide offers from capable buyers, it would seem that these should at least be considered.

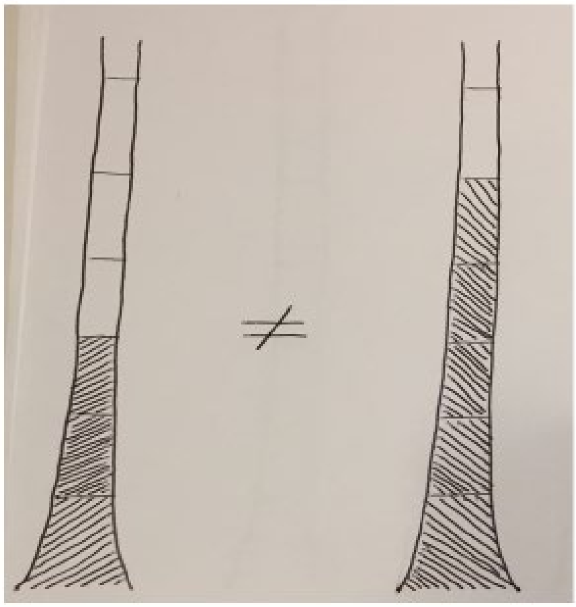
Indeed, there is a USPAP – or Uniform Standard for Professional Appraisal Practices - standard that requires the appraiser to "analyze (1) all agreements of sale, options, or listings of the subject property".

Unfortunately, this does not seem to happen with any regularity. I can tell you that in the 30+ appraisal assignments we have commissioned over the past 10 years, we have only been asked to disclose whether we had received offers or listed the property for sale a few times, and this only occurred in recent years following our discussion with appraisers about this very issue. In the interest of better valuation and transparency, we as TIMOs should be volunteering this information, and when not volunteered, appraisers should be asking for it, and noting in the appraisal whether the information was provided.

On to Red Flag **#3: Mismatches between inventory sawtimber specifications and prevailing market stumpage specifications**. For those of you more familiar with southern pine, you can appreciate that there can be regional differences in the small end specifications for sawtimber and chip n' saw products. In hardwoods, where unit prices within a single tree for sawtimber, pallet grade logs, and pulpwood can differ significantly – sometimes by orders of magnitude –, there is an even greater need for the inventory to be calibrated to the local markets.

The mismatch I refer to can best illustrated with a diagram that I put together on the plane yesterday – please excuse the paper napkin drawing. In each picture, the shading represents the portion of the tree that is classified as sawtimber. The tree on the left represents the grading that is used by mills and others who buy standing timber. In hardwood, they typically consider grade sawtimber to include all 2 clear face and better logs down to a 12" inside bark diameter. That might mean 24 feet of grade sawtimber, or three 8 foot sections, in an 18" DBH tree.

Mismatches between inventory log specifications and market log specifications



The Lyme Timber Company

On the right, we have the grading that is often used by timberland owners for their inventories and appraisals. In our experience, there is wide variation in the log specifications used in these inventories, but rarely do the sawlog specifications line up with prevailing stumpage market specifications – those used by mills and other stumpage buyers. Sometimes the inventory specification will include zero and 1 clear face wood, and inventory specifications often include volume down to a smaller tip diameter – sometimes as low as 9.5” inside bark – that is well below the 12” cutoff used by most mills and other stumpage buyers.

The mismatch between the stumpage market specs on the left and the inventory specs on the right present a real challenge to the appraiser. In some cases, it’s possible to drill into the data and isolate the portion of the inventory volume that reflects market grade specs; however, in other cases, this is not possible, and it is necessary to make assumptions as to what portion of the inventory will be sold as grade sawtimber. In our experience, some appraisers have made reasonable efforts to do this; however, in other cases, no consideration is given, and the unit prices that mills pay for the product on the left is applied to the inventory volumes on the right. It’s like going to the butcher to buy two pounds of steak and two pounds of hamburger, and being charged for 4 pounds of steak. The bottom line here is that we need to match apples with apples, and the appraiser needs to assess whether the inventory specification comports with the market specification.

This brings me to Red Flag **#4: Projected income and expenses that bear little or no resemblance to historical income and expenses**. We often see appraisals where the year 1 cash flow is dramatically higher than the cash flow realized by the current owner in recent years. Sometimes we see appraisals that project

5% percent out-of-the gates yields on properties that are generating almost no current income, and for us this is a red flag.

One of the reasons for this disconnect is the prevailing view that current income is not necessarily an indicator of value. After all, trees grow and low levels of current income or EBITDDA may simply reflect the owner's decision to defer harvests to the future. Similarly, high levels of current income or EBITDDA may reflect excess harvesting and therefore the associated cash flow cannot be capitalized.

While these factors are true, we still believe that an analysis of recent cash flows is critical to calibrating future cash flow forecasts. Sometimes low levels of recent income reflect the deliberate decision of the owner to forego income and store value on the stump, in other cases, however, lower levels of recent income reflect market limitations within a wood basket or operational constraints. Further, on large properties, it is rarely possible to turn on a dime, and it can take multiple years and sometimes higher management costs to ramp up harvesting operations on a property that has been lightly harvested in recent years.

The lack of calibration of forecast cash flows with historical cash flows puts timberland appraisal and valuation at odds with appraisals in other asset classes like commercial real estate. In commercial real estate, the appraiser's income approach is largely based on the capitalization of net income, and the appraiser is given historical and current rent rolls, CAM charges, and management expenses. In timberland appraisal, however, we are generally not asked to provide detailed historical cash flows to the appaiser. Only limited information is asked for– property taxes, lease income, and in some cases unit prices for timber. Curiously, some appraisers will base current market timber prices on stumpage surveys rather than actual realized prices on the subject property. That's like basing rental rates for an office building on the rental rates realized on buildings down the street. While an emphasis on the broader market may be appropriate for small properties with very little activity, it makes far less sense for larger properties with ongoing operations.

One could make a strong argument that the first three columns of any cash flow forecast include the past three years of actual cash flow. If nothing else, this would allow the user of the appraisal to judge how realistic the projections are relative to the historical performance.

The next red flag, **#6, is aggressive real price appreciation assumptions**: we sometimes see appraisals with real price appreciation assumptions that range from 1/2 percent to 3-4 percent. However, even in falling markets such as we experienced from 2007 to 2011, we have never seen forecasts indicating price depreciation. This could reflect the biases of some of the industry forecasters, but nonetheless it presents a real challenge.

The evidence is that price cycles, at least in the US, tend to be drawn out over long periods, and therefore one of the best predictors of continued price appreciation or depreciation is price moments in the immediate prior years. This is yet another reason why an analysis of activity on the subject property in the years just prior to appraisal is so important - if the appraiser is forecasting real price appreciation going forward, you should expect that at least some of the time there is evidence of that appreciation in the historical cash flows.

Let me share a side note on the appropriateness of real price appreciation in the context of increased harvest levels. We sometimes see aggressive real price appreciation assumptions alongside forecasts indicating substantial increases in harvest volume. This ignores that most basic concept from Econ 101 that increased supply puts downward pressure on price.

Now, for the **sixth and final red flag: Application of monolithic, or nearly monolithic, discount rates to projected cash flows**. According to Sewall's most recent investor survey, average discount rates for timberland range from 5.0%-6.0% real depending on the region. However, the range of discount rates varied widely from region to region, with discount rates for US South timberland in the 4.5% to 6% range and discount rates for Appalachia in the 5.5% to 7.5% range.

But given the lack of liquidity in some of these markets it's really hard to know what discount rates are actually being applied by buyers. Despite this uncertainty, we almost never see appraisals with discount rates above 5.5%, and some appraisals use discount rates as low as 3%. Appraisers have various ways of determining discount rates – some appraisals describe an exhaustive CAPM approach while others simply determine one without much explanation.

But rarely is there much consideration for the specific risk factors of a given property. For example, it should stand to reason that a forecast projecting a substantial increase in harvesting income relative to historical levels should carry greater risk than a steady state forecast on property with a history of cash flows through a range of market conditions. Similarly, a cash flow with significant retail land sales, conservation sales, or carbon credit sales should receive a higher discount rate than a property whose income is derived primarily from recurring harvest operations.

<u>Conclusion</u>

I've just discussed some of the opportunities for improvement in appraisal; but the real onus is on us as users of appraisals to improve the process and thereby provide better estimates of value to our investors. This brings me to some concluding thoughts on things that we as timberland investors, can do to improve the appraisal process and thereby improve fair value reporting to investors.

Suggestions for TIMOs and investors who commission appraisals

1. Disclosure, disclosure, disclosure
2. Use "best in class" appraisers who (by and large) avoid the pitfalls described earlier
3. More expansive (and therefore more expensive) appraisal assignments
4. Incorporation of income oriented metrics to put valuation in context
5. Obtain appraisals, but do not rely on them exclusively for valuation

The first recommendation is disclosure. If the objective is to assist the appraiser in developing as accurate an opinion of value as possible, then it follows that more information is better and can only help the appraisal process. We can help appraisers do their job by providing them with exhaustive and detailed information – historical financial statements, operating expenses, offer prices, unit prices, etc.

Second, we should use "best in class appraisers". There are many really excellent appraisal firms out there, and they can do a very good job of appraising properties if given sufficient information and time. Many of them are represented at this conference.

Third, we need to consider more expansive appraisal assignments. The old saying: you get what you pay for applies. When you consider the amount of money we spend on due diligence before buying a property – sometimes hundreds of thousands of dollars, and compare that to the $5-10,000 cost of an appraisal, it should come as no surprise that the appraiser must condition his or her report with extraordinary assumptions and limiting conditions, some of which may be the very source of discrepancy between appraised and market value.

Fourth, our industry would be well served by some of the simple income oriented metrics that are commonly used in other industries to calibrate valuation. We find it very helpful to think in terms of EBITDA multiples or EBITDDA yields. When an appraisal user sees an EBITDDA multiple of 50x last year's cash flow - or stated another way, a 2% current income yield - they had better have confidence in the growth potential of that forest. After all, the valuation implies a multiple that is greater than that of Apple, Google, and Facebook, and a current income yield that is well below the yield of the safe and highly liquid 10-year treasury bond. In these situations, investors would do well to drill into all of the assumptions that underlie the forecasted cash flows and appraised valuation.

Fifth, we should consider using appraisals as a component of valuation, but not the sole source of valuation in our fair value reporting to investors. Some TIMOs base valuations on a combination of internal DCF models and external appraisals. We report appraised value in our commentaries, but in circumstances where we believe the appraised value is high relative to our internal valuation, we apply a weighting to each and use the reconciled value in fair value reporting. In many respects this liberates us from making sell vs. hold decisions on the basis of appraisal, and it also allows us to formulate our own views of value independently of the appraisal.

An extension of this approach could be the formation of independent valuation committees to reconcile multiple appraisals, or differences between external and internal appraised values.

***

Let me wrap up by saying that investors are now faced with more choices on how to invest in timberland - pure play public REITs, direct investments, separate accounts, closed-end funds, funds that target secondary interests in timberland, and most recently open ended funds. The challenge facing private timberland investment, and particularly new models of private timberland investment such as open ended fund structures, is valuation. If these private structures are going to evolve and compete effectively with the public strategies and direct investments, TIMO's and appraisers need to continually strive to improve appraisal and valuation transparency.