



## NatEquity Knowledge Base

### December 3, 2020 – SEC Clarifies the Need to Apply Sound and Consistent Valuation Methodology for GAAP Determination of Net Present Value

Marking assets to fair value has for too long been a topic relegated to accounting journals and academic papers. Auditors have had to deal with clients who often go to great lengths to produce their most favorable valuation rather than a timely correct valuation. That manipulable process mispriced trillions<sup>i</sup> of mortgage assets in the 2008 financial crisis and took years to recover. Mispricing began to change in 2014 when level 1, 2 and level 3 assets were required to be market to fair value for GAAP financial statements under ASC§820<sup>ii</sup>. Community bankers argued successfully to exempt mortgages and selected other real estate assets from this rule until 2020. In 2018 strong lobbying produced Financial Accounting Standard FAS 2018-13<sup>iii</sup>, that “simplified” reporting by allowing companies to not disclose the method by which they valued assets if it might disclose proprietary valuation methodology. This reversal of transparency was corrected on December 3, 2020 when the SEC published Rule 2a-5<sup>iv</sup>, the SEC’s first comprehensive ruling on valuation in 50-years. This rule directs companies to apply ASC§820 and gives the SEC the authority to enforce consistent fair value methodologies used by reporting companies filing GAAP financial statements. The SEC makes it clear that fair value is “net asset value” and the valuation methodology must be sound and consistently applied.

Assets and liabilities are categorized in a three-tier structure: Levels 1, 2 and 3. Level 1 are quoted market prices for individual assets and liabilities in active markets. Level 2 are observable market-based inputs other than level 1 quoted prices or unobservable inputs that are corroborated by market data. Level 3 is where the value is depended upon an “unknowable” future event. For decades managers have argued in favor of level 2 rather than level 3 classification. Arguably this is because of the complexity or inability to find data to consistently and repeatably apply to a level 3 valuation methodology.

A successful level 3 determination of net asset value is the discounted net present value of the asset’s future cash flows. The more accurately this future cash flow stream can be consistently predicted, the low the discount rate used to NPV the value of the building, mortgage or derivatives portfolio. Pre-COVID you could imagine a class A commercial building with numerous triple A tenants having a consistent valuation deriving from a low discount rate that would enhance the assets present value.

Mortgage portfolios present unique challenges. For conventional mortgages, a dip in interest rates may cause mortgagees to refinance, thereby accelerating cash flows and altering the portfolio’s value. Insight into the future, like the Fed stating it will hold interest rates low, gives the valuation team “inferences” to apply to the valuation methodology. However, a post-COVID flurry of foreclosures or lease terminations can impose “unknowable” events that may offer no precedent.

Private reverse mortgages not protected by the Federal Governments guarantee are the most troubling to value under the GAAP and now SEC rules effective in 2022. Seniors who takeout a

reverse mortgage usually do so to age in place and not move until some terminal event. Predicting move-out in these longevity dependent assets pools requires tools that are both accurate and part of a repeatable valuation methodology.

NatEquity is a senior home equity access company that has the exclusive rights to a predictive morbidity and mortality tool, the Longevity Cost Calculator (LCC), used in a repeatable methodology that was first presented to the SEC in 2009<sup>v</sup>. In 2011, the methodology was published in a peer reviewed journal<sup>vi</sup> that has been cited in more than 75 academic papers worldwide. The LCC is a complex set of algorithms that use 76 questions to generate more than 30 million co-dependent variables which are organized in a Grade of Membership (GoM) classification system. This model has been replicated and shown to be more than 96% accurate in predicting the morbidity and mortality of individual seniors over the age of 65<sup>vii</sup>. Each senior's GoM scores and expected mortality are then pitted against the subject's three medical records life expectancy analyze. Applying Bayesian Inference<sup>ix</sup> the LCC is shown to be the most accurate predictor of contract maturity<sup>x</sup>. This allows NatEquity to use a lower discount rate in determining the net present value of now predictable future portfolio cash flows – the GAAP measure of net present value.

This author was invited to present the Longevity Cost Calculator to the SEC in 2009, present at the Sixth International Longevity Risk and Capital Markets Solutions Conference in Sydney in 2010 and was a co-author in 2011 of the peer reviewed and published paper entitled *Longevity Risk in Fair Valuing Level-Three Assets in Securitized Portfolios*<sup>xi</sup>. Watching the misapplication of predicting mortality and thus mispricing of longevity dependent assets over this last decade has been trying. SEC Rule 2a-5, is effective for financial periods after December 31, 2021. The SEC has given filers one year to adjust practices. During that period the AICPA and IFRS are revising audit standards to clear up any ambiguities leading to non-compliant financial reporting. The SEC's December 3<sup>rd</sup> ruling, as it becomes implemented, should cleanup the valuation gamesmanship by reporting entities subject to SEC/PCOB oversight. For companies like NatEquity with respected valuation methodologies, this opens new avenues to securitize assets in markets subject to GAAP, SEC and NAIC oversight.

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<sup>i</sup> Moral Hazard and Mispricing Systemic Risk in the Lead-Up to the 2007 Subprime Mortgage Crisis in the United States, Georgi Rusinov, University of Cambridge, 2016, Illinois Wesleyan University Press, Vol 12 | Issue 1. Print

<sup>ii</sup> *Fair Value Measurement* (Topic 820), Financial Accounting Standards Board, 2011.

<sup>iii</sup> *Fair Value Measurement* (Topic 820), No.2018-13, Disclosure Framework, Financial Accounting Standards Board, 2018

<sup>iv</sup> *Good Faith Determination of Fair Value*, Securities and Exchange Commission, 17CFR Parts 210 and 270, 12/3/2020

<sup>v</sup> [www.NatEquity.com/Press/](http://www.NatEquity.com/Press/) November 2, 2009. Washington D.C. Testimony before the SEC

<sup>vi</sup> <http://link.springer.com/article/10.1057/gpp.2011.25> *Longevity Risk in Fair Valuing Level-Three Assets in Securitized Portfolios*, Peter Macrae Mazonas, Patrick John Eric Stallard, Lynford Graham, the Geneva Papers (2011) 36, 516-543. Doi: 10.1057 / gpp 2011.25. <http://www.palgrave-journals.com/gpp/journal/v36/n4/abs/gpp201125a.html> Copies available upon request.

<sup>vii</sup> <https://scholars.duke.edu/display/pub800091> Stallard, E., 2007. Trajectories of Morbidity, Disability, and Mortality among the U.S. Elderly Population: Evidence from the 1984-1999 NLTCs. *North American Actuarial Journal* 11(3):16–53. <http://www.soa.org/library/journals/north-american-actuarial-journal/2007/july/naaj0703-2.pdf>

<sup>viii</sup> <https://www.ncbi.nlm.nih.gov/pubmed/24064468>

*A New Algorithm for Predicting Time to Disease Endpoints in Alzheimer's Disease Patients*, Qolamreza R. Razlighi, Eric Stallard, Jason Brandt, Deborah Blacker, Marilyn Albert, Nikolas Scarmeas, Bruce Kinoshian, Anatolii I. Yashin and Yaakov Stern, *Journal of Alzheimer's Disease* 38 (2014) 661-668 DOI 10.3233/JAD-131142 IOS Press.

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*Personalized predictive modeling for patients with Alzheimer's disease using an extension of Sullivan's life table model*, E. Stallard, B Kinosian and Y Stern, *Alzheimer's Research & Therapy* (2017) 9:75.

<sup>ix</sup> [https://en.wikipedia.org/wiki/Bayesian\\_inference](https://en.wikipedia.org/wiki/Bayesian_inference) For readers not familiar with Thomas Bayes' theorem from 1750s, I recommend the New York Times Article referenced below and two recent books: *The Signal and the Noise*, Nate Silver, Penguin Press, 2012; and *The Theory That Would Not Die: How Bayes' Rule Cracked the Enigma Code, Hunted Down Russian Submarines, and Emerged Triumphant from Two Centuries of Controversy*, Sharon Bertsch McGrayne, Yale University Press, 2011. Also: *The Odds, Continually Updated*, F. D. Flam, New York Times, September 29, 2014.

<sup>x</sup> Ibid. *Longevity Risk in Fair Valuing Level-Three Assets in Securitized Portfolios*

<sup>xi</sup> Ibid. *Longevity Risk in Fair Valuing Level-Three Assets in Securitized Portfolios*