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Theory and Misuse of Just Compensation for Income-Producing Property in Federal Courts: A View from Above the Forest

By William W. Wade, Ph.D.

I. INTRODUCTION: FEDERAL MISCUES FOR TEXAS TO AVOID

The Texas Supreme Court, on May 1, 2015, denied petitions by plaintiffs Mr. & Mrs. Bragg and defendant Edwards Aquifer Authority (EAA) to review an appellate court ruling.[1] This denial let stand the San Antonio Court of Appeals' 2013 decision that the EAA's permit denials for the Braggs' two orchards amounted to a regulatory taking under the standards of the seminal takings case, *Penn Central*.[2] As a result of the Texas Supreme Court's denial, the appellate court's remand to value Braggs' damages for their taken water supply was the remaining issue taken up in the Medina County District Court in 2016.[3]

The Plaintiffs' testimony based just compensation on Braggs' water as a tradable commodity (akin to "Black Gold" for oil in the ground).[4] Defendant EAA based damages for Braggs' foregone water use on the replacement cost of leased water to irrigate their pecan orchards.[5] The difference between the plaintiffs' and defendant's economic loss estimates is nearly $4 million.

The appellate court remanded for valuation of the pecan orchard *land with* and *without* access to Edwards Aquifer water.[6] The Braggs' land was not the taken property right; the original trial court's takings decision relying on *Penn Central* was based on the EAA's reduction in the amount of water the Braggs could withdraw from the Edwards' Aquifer to irrigate their two pecan orchards.[7] The correct valuation method would estimate the present value of reduced farm income, past and future, *with* and *without* access to the claimed Edwards Aquifer water needed for irrigation—not the fair market value (FMV) of land. The appellate court remand direction was an economic error akin to the federal cases that are the subject of this Article.

In February 2016, a Medina County jury awarded Braggs $2.5 million as the difference in appraised value of pecan farmland *with* and *without* access to Edwards Aquifer water, and a final order was entered on May 27, 2016.[8] Throughout the course of the litigation, Mr. and Mrs. Bragg have been growing their orchards to maturity with rented water at limited added cost. Their actual economic losses likely were greatly less than the award, measured as the correct present value of lost income approach.[9] The Medina

1 Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118 (Tex. App.—San Antonio 2013, pet. denied).

2 *Bragg*, 421 S.W.3d at 138-46 (citing Penn Cent. Transp. Co. v. New York City, 438 U.S. 104 (1978)).

3 *Bragg*, 421 S.W.3d at 152-53; Bragg v. Edwards Aquifer Auth., No. 06-11-18170-CV (38th Dist. Ct., Medina County, Tex.).

4 Brief for Plaintiffs, *Bragg*, No. 06-11-118170-CV (Tex. 38th Dist. Ct., Medina County, Tex. Apr. 15, 2010). *See also* William W. Wade, *Liquid Gold or Water for Pecans: Valuation of Edwards Aquifer Water for the Braggs' taken Orchards*, 45 ENVTL. L. REP. L. NEWS & ANALYSIS 10,932 (2015).

5 Post-Trial Brief of Defendants, *Bragg*, No. 06-11-18170-CV (38th Dist. Ct., Medina County, Tex. Apr. 15, 2010).

6 *Bragg*, 421 S.W.3d at 152-53.

7 *Bragg*, No. 06-11-18170-CV, Amended Findings of Fact and Conclusions of Law (38th Dist. Ct., Medina County, Tex. Mar. 11, 2011).

8 *Bragg*, No. 06-11-18170-CV (38th Dist. Ct., Medina County, Tex. May 27, 2016).

9 Opinion of the author after following the case for years.

County court decision reveals that when appellate courts ask the wrong economic questions, responding trial courts reach an incorrect finding.

Where the loss is foregone income, the correct valuation method is that employed by the plaintiff experts in the line of cases discussed in Part III of this Article mostly involving the Department of Housing and Urban Development (HUD): present value of lost income based on the discounted cash flow (DCF) model.

Problems with both the plaintiffs' and defendant's valuation approaches together with the deficient appellate remand approach have ramifications for future *Penn Central* litigation attendant to *Day* and *Bragg*.[10] A long history of *Penn Central* takings cases reveals that *Penn Central's* famous three-prong test entails a quantitative measurement of plaintiff's severity of economic loss.[11] This begins with a proper economic measurement of losses and subsequent benchmarking of those losses to a denominator value that reveals whether plaintiff's distinct (or reasonable) investment-backed expectations have been frustrated.[12] Plaintiffs' motions throughout the case reveal dissatisfaction with any valuation approach but the tradable value of the water.[13] Defendant's motions reveal that no quantitative *Penn Central* test appears in the proceedings.[14]

In view of the importance of dependable water supplies for Texas, the outcome of the remand valuation is significant to more than the Braggs and EAA. The view from above the trees of federal takings cases where lost income was at stake may be instructive to Texas water policy. Part II of this Article discusses and contrasts the metrics of FMV for real property and the economic valuation of lost earnings with the standard DCF model used in tort or takings cases. The objective is to prepare the reader for a hot air balloon ride skimming the tops of the trees for a view from above the forest of income loss cases in federal courts. Part III examines the plaintiff and government expert valuation methods along with arguments made by counsel in the line of HUD cases that litigated regulatory takings of future earnings in federal courts.[15] These HUD cases either denied or delayed the owners' opportunity to convert their properties from regulated

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10 *See* Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 839–42 (Tex. 2012). *See also* Joseph Belza, A Texas Takings Trap: How the Court in Edwards Aquifer Authority v. Bragg Fell into a Dangerous Pitfall of Takings Jurisprudence, 43 B.C. ENVTL. AFF. L. REV. 211 (2016).

11 Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978). (". . . the Court's decisions have identified several factors that have particular significance. The economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations are, of course, relevant considerations. So, too, is the character of the governmental action.").

12 Economic losses must be measured against the "parcel as a whole." Mayhew v. Town of Sunnyvale, 964 S.W.2d 922, 935-36 (citing *Penn. Cent. Transp. Co.*, 438 U.S. at 130-131. This comparison has come to be known as the "takings fraction," which compares the *with* and *without* regulation values as the numerator to the owner's stake in the entire property as the denominator to evaluate the severity of economic impact. Keystone Bituminous Coal Assn. v. Debenedictis, 480 U.S. 470, 497 (1987).

13 Appellees' Response Brief, Edwards Aquifer Auth. v. Bragg, 421 S.W.3d 118, 118 (Tex. App.—San Antonio 2013, pet. denied) (No. 04-11-00018-CV), 2012 WL 9512073, at *23; *see also* Wade, *supra* note 4 (for details about valuation issues within the Braggs' litigation).

14 Cross-Appellants' Reply Brief, Edwards Aquifer Auth. v. Bragg, 421 S.W.3d at 118 (No. 04-11-00018-CV), 2012 WL 9512071, at *4–8.

15 *See infra* Part III, describing various cases.

low-income housing to market rate rentals. The view from above the forest of these cases sheds light on standard economic approaches consistently applied by plaintiff's expert economists and creative approaches proffered by the government to avoid payment of damages. The Article ultimately suggests that standard valuation approaches will lead to a balancing of private water rights with public needs for Texas water supply management.

II. MEASUREMENT OF INCOME LOSSES FOR LOST INCOME CASES

A. FAIR MARKET VALUES CANNOT PROPERLY MEASURE INCOME LOSSES IN TAKINGS CASES

Federal courts typically rely on *Penn Central Transportation Company v. New York City* to determine whether a regulation prohibiting private uses of property is a taking.[16] That 40-year old decision established the well-known three-prong balancing process to examine factors that govern the decision to pay just compensation for unforeseen regulatory intervention in business.[17] The balancing process has come to be known as the *Penn Central test*.[18]

Other than to point out that it embeds two economic prongs within its evaluation, this Article does not delve into the *Penn Central test*.[19] While the balancing is regarded as an "*ad hoc*, factual inquir[y],"[20] two *Penn Central* prongs entail fact-specific economic analyses that must conform to standard peer-reviewed methods: (1) estimation of economic impact; and (2) evaluation of interference with distinct investment-backed expectations (DIBE).[21]

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16 *Penn. Cent. Transp. Co.*, 438 U.S. at 104.

17 *Id.* at 124. *Lingle v. Chevron* more recently reaffirmed the *Penn Central* three-prong test as its "'polestar'—the principal guidelines—for resolving regulatory takings claims." 544 U.S. 528, 539 (2005) (unanimous decision) (citing Palazzolo v. Rhode Island, 533 U.S. 606, 617–18 (2001) (O'Connor, J., concurring)).

18 *Id. See also* Belza, *supra* note 10 (discussing the original trial court's evaluation of the *Penn Central* test).

19 Thousands of words by hundreds of litigators, judges and scholars including the author have sought to explicate the *Penn Central* test. *See, e.g.*, William W. Wade, *Temporary Takings, Tahoe Sierra and The Denominator Problem*, 43 ENVTL. L. REP. NEWS & ANALYSIS 10189 (2013).

20 *Penn Cent. Transp. Co.*, 438 U.S. at 124.

21 *See generally Penn Cent. Transp. Co.*, 438 U.S. at 124. While clearly *Penn Central* had a benchmark of reasonable financial returns in mind, for no discernible legal or linguistic purpose, Justice Rehnquist changed "distinct" to "reasonable" the year following *Penn Central* in *Kaiser Aetna v. United States*, 444 U.S. 164, 175 (1979). This change has confounded subsequent courts' views of reasonable financial expectations with plaintiffs' reasonable notice of regulatory prohibitions. *E.g.*, Cienega Gardens v. United States, 503 F.3d 1266, 1289 (Fed. Cir. 2007) ("The plaintiffs could not reasonably have expected the change in regulatory approach."). Conversion of *Penn Central's* distinct investment-backed expectations to reasonable notice of rules eviscerated the evaluation of severity of economic impact. Investment-backed expectations, whether "distinct" or "reasonable" must be shown to

Courts that have transubstantiated DIBE into reasonable notice of regulatory intervention nonetheless have adopted economic tests in search of the measure of the severity of the economic impact.[22]

B. Development of Legal Practice Compared to Economic Practice

Economic losses in regulatory taking cases are calculated to evaluate the *Penn Central* economic prongs and determine just compensation. The Supreme Court ruled over 90 years ago that just compensation must provide the "full and perfect equivalent" in money of the impairment to plaintiff's property.[23] This is best expressed by the Court in *United States v. Miller*:

The Fifth Amendment of the Constitution provides that private property shall not be taken for public use without just compensation. Such compensation means the full and perfect equivalent in money of the property taken. The owner is to be put in as good position pecuniarily as he would have occupied if his property had not been taken.[24]

In takings cases involving an income-producing going concern, which has suffered an economic loss as a result of restrictions imposed upon the use of the property, the relevant property right to evaluate is the lost income. Just compensation depends on an assessment of the change in net operating income (NOI) of the business. Just compensation must restore the claimant to the economic position he *anticipated* prior to the disruption.

While economic practice has settled on how to estimate and determine lost income, decisions in the Federal Circuit Court that are discussed in this Article appear to have recast the language of the Fifth Amendment: "Nor Shall Private Property Be Taken for Public Use Without *Just Compensation*"[25] into: "Nor Shall Private Property Be Taken for

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be frustrated to establish a regulatory taking; *i.e.*, returns must be demonstrated to erode economic viability of the investment in the whole property after imposition of the unanticipated change in regulations.

22 *See* Wade, *supra* note 19, which addresses these tests. *See also* CCA Assocs. v. United States, 75 Fed. Cl. 170, 195 (2007), *vacated in part*, 284 Fed. Appx. 810 (2008). [hereinafter *CCA I*]("Conceptually, courts have employed three different methods of measuring economic impact . . . . One method measures the value taken from the property by regulatory action against the overall initial value. *See* Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 497 (1987) (When considering *Penn Central's* economic impact factor, a court must "compare the value that has been taken from the property with the value that remains in the property."). A second measure looks to the claimant's ability to recoup its capital. *See* Florida Rock Indus., Inc. v. United States, 791 F.2d 893, 905 (Fed. Cir. 1986) ("In determining whether a taking is categorical, 'the owner's opportunity to recoup its investment or better, subject to the regulation, cannot be ignored."). The third method examines a claimant's return on equity under a given regulatory regime in comparison to the return on equity that would be received but for the alleged taking. *See Penn Cent. Transp. Co.*, 438 U.S. at 129 ("capable of earning a reasonable return."); *Cienega VIII*, 331 F.3d at 1342-43. The *Keystone Bituminous* method, while often used, is an erroneous comparison of two values with no determinative denominator for a benchmark.

23 Seaboard Air Line Ry. Co. v. United States, 261 U.S. 299, 304 (1923).

24 United States v. Miller, 317 U.S. 369, 373 (1943).

25 U.S. Const. amend. V. (emphasis added).

Public Use Without *Fair Market Value*. . ." This confusion with appraising FMVs of real property, when lost income is at stake, instead of estimating just compensation, has been going on for some time. The author's rephrasing above is inspired by an award-winning 1973 article by Professor Gideon Kanner.[26] After a typically Kanner-esque learned discussion of issues linked to property market values as the basis for just compensation, Kanner might be said to have tossed in the towel:

One must deal with American rules of just compensation as they exist, bearing in mind, perhaps, Justice Holmes' admonition: 'The life of the law has not been logic; it has been experience.' And the American experience has tended to build on the concept of 'fair market value' as a measure of just compensation.[27]

In contrast to the law, the fabric of economics has accumulated over decades by logic and empirical testing. Economic practice is clear about how to measure just compensation; property FMVs may be considered to apply only to those situations where the real property is condemned, or taken in some fashion, AND its *current* trading value is the relevant measure.[28] Yet, recurrently courts and counsel have relied on FMVs where future income losses are the issue. The issue in *Penn Central*, which remains the "'polestar' . . . for resolving regulatory takings claims,"[29] was the lost future income from foregone development of the commercial office building.[30] I am baffled as to why legal professionals and jurists would rely on a static measure of current property value where the value of future uses is at stake.

The standard for whether a compensable taking has "occurred is a question of law . . . based on factual determinations."[31] Empirical analysis reliant on standard economic methods should govern interpretations of the law. Interpretations of the law should not

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26 Gideon Kanner, *Condemnation Blight: Just How Just Is Just Compensation?*, 48 NOTRE DAME L. REV. 765, 770 (1973). The article received the 1973 Shattuck Prize from the American Institute of Real Estate Appraisers (AIREA) (now the Appraisal Institute).

27 *Id.* at 773 (quoting O. W. HOLMES, JR., THE COMMON LAW 1 (1881)).

28 *See, e.g.*, JAMES C. VAN HORNE, FINANCIAL MANAGEMENT & POLICY, ch. 20 (Prentice Hall, 12th ed. 2001); APPRAISAL INST., THE APPRAISAL OF REAL ESTATE, ch. 20 (12th ed. 2001); SHANNON PRATT ETAL, VALUING A BUSINESS ch. 9 (McGraw-Hill, 4th ed. 2000); PATRICK A. GAUGHAN, MEASURING BUSINESS INTERRUPTION LOSSES AND COMMERCIAL DAMAGES (Wiley, 2nd ed. 2009). These, and other similar texts, define and illustrate financial valuation methods.

29 Lingle v. Chevron U.S.A. Inc., 544 U.S. 528, 539 (2005) (citing Palazzolo v. Rhode Island, 533 U.S. 606, 632-34 (2001) (O'Connor, J., concurring)).

30 Through failure of plaintiff's counsel to introduce evidence of the financial effect of the foreclosed UGP lease income from the intended office building in the airspace over Grand Central Terminal, the *Penn Central* majority assumed mistakenly that Grand Central Terminal was earning a reasonable profit, even though the property was in bankruptcy. Overlooking the income from the planned office building of Penn Central's bundle of property rights resulted in the whole edifice becoming a burden on New York taxpayers. *Cf. Penn Cent. Transp. Co.*, 438 U. S. at 141 (Rehnquist, J., dissenting) (noting that "Penn Central was in a precarious financial condition" at the time Grand Central was designated as a landmark and emphasizing the amount of rental payments Penn Central would have received from UGP).

31 Bass Enters. Prod. Co. v. United States, 381 F.3d 1360, 1365 (Fed. Cir. 2004).

govern the applied economic analysis, which should be governed by the expert's choice of valuation tools appropriate for the fact at issue.

C. Just Compensation and Measurement of Damages are Well-Defined by Law and Economic Theory

Real property transactions make the most sense when valued from the perspective of buyers and sellers. Damages based on before and after appraisals of the change in FMV of real property are reasonable where property transfers are at issue. Before and after appraisals are irrelevant for a plaintiff in a taking case who has lost income from proscribed use of the property. The plaintiff's factual basis for that expected income matters to the estimation of just compensation for lost use of the property, not an average property value, or data from recent property market sales selected by an appraiser for income capitalization.

While appraisal approaches may accurately measure a change in market value for real property, they are a blunt tool to measure future economic losses. The change in FMV is aimed at the wrong target, real property, in lieu of the future income stream from the use of the property.

Where lost opportunity is the issue, just compensation is determined with an estimate of future economic losses.[32] The end result of an assessment of lost income is the present value monetary amount that would replace the cash flows that the property owner would have received in the absence of the intervening prohibition.[33] Like legal precedent, expert testimony involving income losses requires adherence to theory established in the economic and valuation literature and standard practice; *i.e.*, it must entail the application of reliable principles and methods to vetted data.[34] Standard economic methods exist to measure correctly and evaluate lost earnings in business and legal settings.

The basic economic methods used to measure damages for lost earnings are presented in a variety of text books and journal articles,[35] and taught in college and graduate school finance classes. Economic losses are generally determined by computing the present value of *future cash flows*. The focus on *future cash flows* parts company with before and after appraisals governed by Uniform Standards of Professional Appraisal Practice (USPAP) rules, which dictate reliance on current market conditions, including data up to three years prior to the effective date of the appraisal.[36] To estimate future

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32 Michael Rikon, Valuing Real Property in Eminent Domain, Am. Bar Ass'n, http://apps.americanbar.org/dch/thedl.cfm?filename=/RP231000/newsletterpubs/ValuingPropertyEminentDomain1.doc (last visited Mar. 14, 2016).

33 *See generally* Robert M. Lloyd, Discounting Lost Profits in Business Litigation: What Every Lawyer and Judge Needs to Know, 9 Tenn. J. Bus. L. 9 (2007).

34 *See* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993).

35 *See generally* Van Horne et al., *supra* note 28.

36 Appraisal Standards Bd., Unif. Standards of Prof'l Appraisal Practice § 1-5 (The Appraisal Found., 2016-2017 ed.), http://www.uspap.org/#1 [hereinafter Unif. Standards of Prof'l Appraisal Practice]. Standards Rule 1-4 directs valuation by Income Approach to rely on currently available information on rental rates, costs and cap rates. Income Statement projections are required to rely on "historical information and trends, current supply and demand factors affecting such trends, and anticipated events such as competition from developments under construction."

cash flows, the expert economist uses appropriate analytic techniques that have been tested in actual situations and peer reviewed.[37]

Unlike appraisers, economists in court settings often can rely on *ex post* data and information available at the time of trial. A much-cited 1992 article by Taurman and Bodington concludes after an exhaustive survey of temporal aspects of valuation, "[t]he historical trend in damages law is toward more detailed inquiry into the particulars of a plaintiff's loss."[38] They wrap up their article by saying "[i]n the hands of juries, the allure of hindsight can be expected to be strong."[39]

FMV, by definition, is measured *ex ante*, and excludes information available from the date of taking to the date of trial.[40] Trial dates in typical federal courts occur years after the taking. Income losses from the date of taking can be estimated *ex post* and benchmarked to the date of taking as the valuation date.

Economists have established widely-accepted DCF economic loss models for valuing lost cash flows. Standard financial evaluation criteria that compare the returns to the owner's investment have been in use over 100 years.[41] *Daubert* standards expect no less than that the expert use the appropriate analytic, peer-reviewed techniques that have undergone testing in actual situations.[42] Expert opinion in a tort or taking case is guided by the correct theories from the expert's discipline. Where income losses are the issue, permanently or temporarily, due to a tort or take, cash flows must be measured with and without the loss-causing disruption.

Appraisers and economists use one similar concept, but with different data sets. Appraisers typically capitalize income based on a single current year, or an average of selected past years, as a way to estimate FMV of the property based on current market conditions.[43] Economists compute the present value of estimated future cash flows to estimate the value of the asset based on expected outcomes.[44] Different data sets distin-

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37 I like the language from a 2009 6th Circuit decision that an expert must "employ in the court room the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." Best v. Lowe's Horne Ctrs., 563 F.3d 171, 177 (6th Cir. 2009) (internal quotation marks omitted) (quoting Kumho Tire Co. v. Carmichael, 526 U.S. 137, 152 (1999).)

38 John D. Taurman & Jeffrey C. Bodington, *Measuring Damage to a Firm's Profitability: Ex Ante or Ex Post?*, 37 ANTITRUST BULL. 57, 105 (1992).

39 *Id.* at 106.

40 *Cf.* UNIF. STANDARDS OF PROF'L APPRAISAL PRACTICE, supra note 36 (unusual circumstances that dictate a "prospective" valuation).

41 "[T]he principles of modern valuation were developed by Irving Fisher in two books that he published – *The Rate of Interest* in 1907 and *The Theory of Interest* in 1930." Aswath Damodaran, *Valuation Approaches and Metrics: A Survey of the Theory and Evidence*, STERN SCH. OF BUS. 5-6 (2006) (citing I. FISHER, THE RATE OF INTEREST (Macmillan, New York 1907); I. FISHER, THE THEORY OF INTEREST (Macmillan, New York 1930)).

42 Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 592-93 (1993). *See also* FED. R. EVID. 702.

43 *Income Capitalization Approach*, PROPEX.COM, http://www.propex.com/C_g_inc.htm (last visited Feb. 28, 2016).

44 Expected Future Cash Flows, thefreedictionary.com, http://financial-dictionary.thefreedictionary.com/Expectedûture©ashÎows (last visited Feb. 28, 2016).

guish the results of these two professional approaches. The different data sets reveal that resultant FMV estimates do not measure input data that can determine future losses.

D. Economic Theory, Common Sense, and Supreme Court Precedent Dictate Measurement of Income Losses

First year law students learn that real property is characterized as a bundle of sticks, the sticks representing various rights that accompany ownership, such as the right to sell the property, use it or exclude others from it.[45] So far, so good. Clearly, appraising the FMV of the entire bundle misses the mark when the stick that defines value is the loss of cash flows from the use of the property. That stick is the basis for the value of the bundle for an income producing property.[46]

The theoretically-preferred way to value losses for a taking of income producing property is to calculate the change in net operating income using a cash flow model. Claimant's loss is the future cash flows from the use of the real property that result from the taking. Common sense and a number of case decisions point out that tangible asset (real property) values can increase or decrease in value during the period of loss from a taking for a number of reasons unrelated to the cause of the lost income.[47]

Long ago, the Supreme Court decided three cases that confirm that lost earnings are what matter when an event interrupts an income-producing business operation. Justice Reed called attention to the problem with FMVs as the basis for compensation in the 1951 *Pewee Coal* case: "Market value, despite its difficulties, provides a fairly acceptable test for just compensation **when the property is taken absolutely**. But in the temporary taking of operating properties, market value is too uncertain a measure to have any practical significance."[48] The Court ruled in CCA *Associates,* citing *Peewee Coal*, "the better measure [for temporary possession of a business enterprise] is the operating losses suffered during the temporary period of government control."[49] *Kimball Laundry* reached the same conclusion two years before.

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45 Anna di Robilant, *Property: A Bundle of Sticks or A Tree?*, 66 Vand. L. Rev. 869, 877 (2013).

46 Government counsel argued otherwise in *Cienega IX*. Defendant's Response to Plaintiffs' Post Trial Brief at 13, Cienega Gardens v. United States, 67 Fed. Cl. 434 (2005), *vacated*, 503 F.3d 1266 (2007) [hereinafter *Cienega IX*] (No. 06-5051) (March 16, 2005). "The change-in-cash flow model has numerous flaws. First, because [the] model only seeks to measure the change in cash flow, it examines only one stick in the bundle of rights. . . . Second, the model fails to consider the properties' overall value." The government failed to recognize that the cash flow from an investment in an income-producing asset is the essential stick in the bundle of rights. The Appraisal Institute's chapter 20, "The Income Capitalization Approach," begins with the following sentence: "Income-producing real estate is typically purchased as an investment and from an investor's point of view earning power is the critical element affecting property value." Appraisal Inst., *supra* note 28; *see also* Van Horne, *supra* note 28. Of course, other unique factors can enter into the ultimate valuation of real property.

47 *See, e.g.*, CCA *I*, 75 Fed. Cl. 170, 200-04 (2007), *vacated in part*, 284 Fed. Appx. 810 (2008).

48 United States v. Pewee Coal, 341 U.S. 114, 119 -120 (1951) (Reed, J., concurring) (emphasis added).

49 CCA *I,* 75 Fed. Cl. at 200 (citing *Pewee Coal*, 341 U.S. at 117).

> [I]f the difference between the market value of the fee on the date of taking and that on the date of return were taken to be the measure, there might frequently be situations in which the owner would receive no compensation whatever because the market value of the property had not decreased during the period of the taker's occupancy.[50]

Real property values can be affected by political and economic forces unrelated to the lost income at issue, which is another reason why FMVs are not reliable measures of just compensation for income losses.

E. Fair Market Values Reflect Current Supply and Demand for Real Property

Economists typically define FMVs as the most likely price that a property should fetch in a current competitive market under specified conditions of exchange between well-informed buyers and sellers.[51] FMV reflects prices that free agents establish for the purposes of exchange under conditions of supply and demand at a particular time.[52] The buyer and seller are each assumed to act prudently and knowledgeably.[53]

Four critical facts about appraising the proscribed use of an income-producing property are at odds with the essential assumptions of a FMV appraisal:

1. Seller is not typically motivated;
2. Seller is well-informed that he is not acting in his best interest;
3. Exchange value set by current supply and demand conditions is irrelevant where future use of the property is at issue;
4. Current supply and demand conditions are unaware of market changes that can affect future income losses.[54]

The standard valuation question to determine "just compensation" for litigation involving an income property is not consistent with FMV: What would the owners have gained if they had been able to carry out their business plans for the property as intended? The answer to this question is the present value amount of future income that measures the economic losses as the basis for just compensation.

1. Appraisals Benchmark Historical Values and are not Based on Future Income Potential

Appraisal standards to establish the FMV dictate that the appraisers rely on contemporary data and information to establish FMVs of buildings at the *effective date of the appraisal*. USPAP standards limit such data to historic information with subsequent information used only to confirm trends at the time of the appraisal[55] Data and information only through the date of appraisal can be used.

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50 Kimball Laundry v. United States, 338 U. S. 1, 7 (1949).

51 Appraisal Standards Bd., USPAP Advisory Opinions A-75 (The Appraisal Found., 2010-2011 ed.), http://www.vw72.com/Links%20Page/2010-11_USPAP.pdf.

52 William S. Walter, Appraisal Methods and Regulatory Takings: New Directions for Appraisers, Judges, and Economists, 63 APPRAISAL J. 331, 337 (1995).

53 Appraisal Standards Bd., *supra* note 51, at A-75.

54 *See generally* Appraisal Institute, The Appraisal of Real Estate (12th ed., 2001).

55 *See generally* UNIF. STANDARDS OF PROF'L APPRAISAL PRACTICE, *supra* note 36.

Two standard appraisal approaches[56] are used to estimate the FMV of income property at the effective date of an appraisal: (1) the Sales Comparison Approach, which estimates the value based upon a comparison of historic market transactions of similar recently sold properties;[57] and (2) the Income Capitalization Approach, which estimates the property's income potential based on a survey of current market rate rental projects in the area.[58] Typically, the appraiser selects a value (or an average value) from the data, which is then capitalized as the FMV.[59]

Another method, Gross Income Multiplier (GIM) might be characterized as a hybrid of these two in that the appraiser develops data of sales prices for recent comparable properties and relates those values to their respective gross revenues. From his selection of properties, the appraiser derives the GIM, which is a ratio of sales price to gross revenues and then simply multiplies that parameter times the gross stabilized income (*i.e.* gross revenues) of the appraised property to opine about its current FMV.

$$\frac{\text{Sale Price}}{\text{Gross Income}} = \text{Gross Income Multiplier (GIM)}$$

$$\text{FMV} = \text{GIM} * \text{Gross Stabilized Income}$$

Variants of this method exist (*e.g.*, Effective Gross Income Multiplier (EGIM)), but don't change the fact that they rely on current prices and recent income.

Either of the basic methods to establish property FMV requires data and information for comparable properties based on activities of buyers and sellers in the current market. FMV deals with the prices of property in the current or recent past, in contrast to economic value, which is concerned with estimates of future market conditions. By definition, the FMV methodology cannot inform what the owner lost from future operations.

For income capitalization, rental income less collection loss, operating expenses, and replacement reserves from comparable properties typically are captured for a *single year* to represent the effective date of the appraisal.[60] This is used to develop an estimate of the stabilized net operating income; *e.g.*, earnings before interest, tax, depreciation, amortization (EBITDA). EBITDA excludes mortgage interest, income taxes, depreciation and amortization for the building. EBITDA, in turn, is converted to an estimate of the building's FMV by dividing the single year EBITDA_T by the capitalization rate, k. The capitalization rate, k, converts the single year EBITDA into the value of a perpetual stream of *identical* annual results. Of course, lost future income will be affected by myriad economic, demographic, and political winds of change, which assure that future income will not be constant. The Appraisal Institute refers to this single year method as Direct Capitalization[61] calculated in the following equation:

$\text{FMV}_T = [(\text{EBITDA}_T)/k]$

(Where T designates the effective date of valuation.)

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56 This Article ignores the cost approach and variants of each.

57 *See generally* Appraisal Inst., *supra* note 28, pt. IV.

58 *See generally id.* pt. V.

59 *See generally id.*

60 The interested reader will find details and background for the financial methods mentioned here and discussed generally throughout this Article in the texts cited at *supra* note 28.

61 *See generally* Appraisal Inst., *supra* note 28, at ch. 22.

Appraisers typically derive the cap rate, k, from observed property transactions in the market by rearranging terms in the above equation and evaluating the ratio of EBITDA and comparable property sales prices in the market at the appraisal date. HUD guidelines,[62] which governed valuations in a number of cases over the last decade in federal courts discussed below, require observed current market cap rates over theoretical calculations, such as band-of-investment technique:[63]

$$k = [(EBITDA_T)/FMV]$$

(Where FMV = an average created by the appraiser of recent comparable sale values.)

These remedial equations emphasize that given any two factual values from research of actual market conditions at the time of the appraisal, an appraiser can determine the value of the third parameter for the appraisal date. None of these benchmarks measure future conditions.[64] HUD guidelines, for example, restrict appraised values from any insight into the value of the owner's future lost opportunity.[65]

To emphasize this conclusion, another variant of the valuation equation, used to evaluate business values, includes an assumption about future growth rate, g, of net operating income to account for expected increases in firm income as shown in the equation below. Applied to rental properties, this, of course, would yield higher FMVs to anticipate future income growth:

$$FMV = [(EBITDA_T)/(k-g)]$$

HUD's Guidelines explicitly require that appraisers use cap rates "based on market data,"[66] which confirms that the FMVs estimated in the HUD cases reflect then-current conditions. Consideration of future economic market conditions is the relevant issue to determine claimants' losses in income loss cases.

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62 Final Guidelines for Determining Appraisals of Preservation Value Under the Low-Income Housing Preservation & Resident Homeownership Act of 1990, 57 Fed. Reg. 19,970 (May 8, 1992).

63 The band-of-investment method calculates the capitalization rate for an income-generating property using individual rates of interest for properties for both debt and equity, weighted by their financing shares. Assuming that the borrowing rates and the equity rates are derived from financial markets, and not observed property transactions, a band-of-investment cap rate would be equivalent to a weighted average cost of capital (WACC).

64 USPAP allows Prospective Appraisals under specific conditions; such an appraisal has an effective date of the valuation subsequent to the date of the report. Prospective Appraisals relate more to specific expected changes in the existing property rather than an economist's *ex post* estimate of lost earnings from a taking. *See* APPRAISAL STANDARDS BD., UNIF. STANDARDS OF PROF'L APPRAISAL PRACTICE U-76 to U-77 (THE APPRAISAL FOUND., 2014-2015 ed.) (explaining that "[p]rospective value opinions . . . are intended to reflect the current expectations and perceptions of market participants").

65 *See* U.S. DEP'T OF HOUS. & URBAN DEV., VALUATION ANALYSIS FOR SINGLE FAMILY ONE- TO FOUR- UNIT DWELLINGS, DIRECTIVE NO. 4150.2, pt. 3-1 (July 1, 1999), http://portal.hud.gov/hudportal/documents/huddoc?id=41502c3HSGH.pdf (describing appraisal requirements).

66 Final Guidelines for Determining Appraisals of Preservation Value Under the Low-Income Housing Preservation & Resident Homeownership Act of 1990, 57 Fed. Reg. 19,970, 19,985 (May 8, 1992).

2. Just Compensation is Estimated with the Discounted Cash Flow Model as Net Present Value of Lost Income

Economists use a method that looks forward to discover what is lost by the foreclosed uses of property; they use historical data to benchmark current market conditions as a starting point.[67] Research looking back from the time of trial, *ex post*, provides more compelling evidence than research looking back from the time of the tort or take.[68] A standard valuation model measures the Net Present Value (NPV) of the foreclosed opportunity based on actual data.[69]

In contrast to FMV estimated by capitalizing a single recent year (or several-year average) value of EBITDA for a selection of comparable properties, just compensation for economic losses due to proscribed use of the property begins with an estimate of the present value (PV) of the *but for* projected net operating income, $EBITDA_t$, for the N years of the forecast of lost income:

But For Market Income = PV ($EBITDA_{(t\,=\,1\text{-}N)}$)

(Where PV = the present value of the discounted cash $EBITDA_t$ flows.)

Each year's income is discounted with the risk-weighted discount rate, r, appropriate for the business operation at the time and for the duration of the forecast period.[70]

Economic losses for income producing property begin with calculating the present value (PV_o) of lost future cash flows that could have been earned by the property had the owner not been proscribed from conducting his business in the property:

$PV_o = S(CF_t/(1+r)^t)$

Where:

PV_o = present value at benchmark date, o, of cash flows measured over years t=1 thru T, terminal date,

S = summation over years, 1 thru T,

CF_t = annual cash flows (net income less operating costs) for each year,

r = discount rate.

The Appraisal Institute refers to this method as yield capitalization.[71] The discount rate, r, represents the opportunity cost, or yield, of the next best investment opportunity available to investors in income producing properties.[72]

The DCF model allows calculation of both the NPV and the Internal Rate of Return (IRR). These are standard benchmarks used in investment analysis, which in turn can be used to examine the owner's *investment-backed expectations* associated with any property. Economic loss is calculated at the taking date as the difference between the NPV of the projected lost opportunity, less the NPV of the actual outcome. NPV_E equals the Present Value of expected cash flows, PV_o, less the value of the owner's equity, or investment, I_o, in the property at the benchmark date, o, or date of taking:

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67 *See, e.g.*, Trout & Wade, *The Role of Economics in Regulatory Takings Cases*, Litig. Econ. Digest 1, (1995).

68 *Id.*

69 *Id.*

70 *Id.*

71 Appraisal Inst., *supra* note 28, at ch. 22.

72 Also referred to as the hurdle rate. Abundant literature beginning with the texts cited in note 28, *supra*, define the financial terms above: discount rate, hurdle rate and opportunity cost.

NPV_E = PV_oless I_o

The actual outcome may have different causations. In the HUD cases discussed in Part II, where owners were proscribed from converting their properties to market rentals as expected, the actual outcomes often involved the forced sale of the property to a qualified non-profit for an amount derived from the FMV set by appraisal, often after lengthy delay.[73] I will designate the actual outcome as the NPV_A of the appraised FMV after the years of delay, t = 1- end delay, less the value of the owner's equity or investment, I_o, at the benchmark valuation date, o, or taking date:[74]

$NPV_A = PV_o\,(FMV)/(1/(1+r)^t)$ less I_o

Time values of delays are important to discriminate the actual outcomes from the expected NPV_E, calculated at prepayment date. Economic loss as just compensation equals the difference in net present values at the benchmark date, or, in the HUD cases, prepayment date:

Economic loss = NPV_ElessNPV_A

Economic loss, calculated in this manner, by definition encompasses the whole life of the property for both the *with* and *without* scenarios. The Internal Rate of Return (IRR) of each scenario could be calculated to reveal the economic returns in relation to the owner's entire stake in the property investment over its entire life.

III. STANDARD AND NOVEL APPROACHES TO MEASURING JUST COMPENSATION

Dozens of investor groups developed subsidized Department of Housing and Urban Development (HUD) low-income housing projects in the 1970s with the expectation of converting their properties to market rentals at the end of 20 years.[75] In 1987, and again in 1990, Congress, fearful about the loss of a great deal of low-income housing, passed laws to prevent owners of low-income housing projects from converting their properties to market rentals as allowed under the owners' original regulatory agreement.[76] These Preservation Statutes imposed permanent restrictions on property owners' rights to convert to market rentals.[77] With rents restricted under the Preservation Statutes, owners

73 This Article is not intended to describe the details of these alternatives nor the detailed calculation nuances. Other outcomes also occurred.

74 Other empirical adjustments were made to FMV that are irrelevant to this Article.

75 Brandon Coan, *Section 108 Loan Guarantees*, MAIN STREET AMERICA (Aug. 2002), http://www.preservationnation.org/main-street/main-street-news/2002/08/section-108-loan-guarantees.html.

76 Low-Income Housing Preservation and Resident Homeownership Act of 1990, 12 U.S.C. §§ 4101–25 (2012) (codified as Title VI within the Cranston-Gonzalez National Affordable Housing Act, Pub. L. No. 101-625, 104 Stat. 4079 (1990)); Emergency Low Income Housing Preservation Act of 1987, Pub. L. No. 100-242, §§ 201–263, 101 Stat. 1877 (1988) (codified as Title II within the Housing and Community Development Act of 1987, Pub. L. No. 100-242, 101 Stat. 1815 (1988)). Any of the cited HUD cases provide the legislative history not repeated here. The two laws are collectively referred to as "Preservation Statutes."

77 *See generally* statutes cited *supra* note 76.

earned substantially less than they anticipated in their original contract with HUD. This led to an ongoing series of lawsuits alleging both contract and takings claims.

Following standard textbook support for measurement of income losses, plaintiffs consistently introduced expert testimony based on lost income in Federal Claims court trials to measure just compensation and deal with the *Penn Central test*.[78] Government counsel initially introduced lost income testimony, but subsequently introduced novel approaches to measure *Penn Central*'s economic prongs and just compensation. Government counsel repeatedly argued that before-and-after FMV appraisals of a property represent the best measure of financial loss incurred by the plaintiffs and provide information needed to evaluate the economic prongs within the *Penn Central test*.

Where income loss was the issue that prompted the plaintiffs' complaints and became a hotly contested issue, the contrast between the government's use of novel economic methods and the plaintiffs' consistent economic testimony in these cases provides a useful view into trial court measurement and appellate court evaluation of just compensation in federal courts.

A. *Cienega VIII* Adopted Standard Economic Measurement of Income Losses

The first of these cases, *Cienega Gardens v. United States*,[79] culminated with the June 2003 Federal Circuit decision for the plaintiffs in *Cienega VIII*.[80] The *Cienega VIII* decision confirmed that economic values and damages must be measured with reference to plaintiffs' rental income losses.[81] The decision made clear that profit—meaning recoupment of the investment plus a reasonable return—is a factor to consider in assessing economic impact of a regulation.[82]

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78 *See*, *e.g.*, Steven J. Eagle, *"Economic Impact" In Regulatory Takings Law*, 19 Hastings W.-N.W. J. Envtl. L. & Pol'y 407, 439.

79 *Cienega Gardens* entered the courts as a contract case with a finding of liability for the plaintiffs. Cienega Gardens v. United States, 33 Fed. Cl. 196 (1995) [hereinafter *Cienega I*]. Four *model plaintiffs* were then selected for the purposes of litigating the damages trial on the breach of contract claim. The trial court awarded the *model plaintiffs* $3,061,107 in the damages trial. Cienega Gardens v. United States, 38 Fed. Cl. 64 (1997) [hereinafter *Cienega II*]. *Cienega III* in the Federal Circuit overturned *Cienega II*, holding that privity of contract did not exist between owners and HUD with respect to prepayment of mortgage loans, vacated the contract claims and remanded. Cienega Gardens v. United States, 194 F.3d 1231 (Fed. Cir. 1998.) [hereinafter *Cienega III*]. The case subsequently was retried as a regulatory takings case and ultimately decided in 2003. Cienega Gardens v. United States, 331 F.3d 1319 (Fed. Cir. 2003) [hereinafter *Cienega VIII*].

80 *Cienega VIII*, 331 F.3d 1319. The decision was based on economic testimony in *Cienega II*, 38 Fed. Cl. at 74–82.

81 *Cienega VIII*, 331 F.3d at 1341. ("[T]he trial court [in *Cienega II*] already made findings of fact that are dispositive of the question of economic impact. The parties offered extensive evidence . . . in the damages trial. The fact-finding in that trial was sufficient in scope and depth to permit an economic impact analysis here because the trial court awarded damages for breach of contract based on a lost profits theory." (citations omitted)).

82 *Id.* ("The lost profits proof, thus, also led to many findings with direct relevance to a *Penn Central* economic impact analysis.").

The decision in *Cienega VIII* was based on economic testimony in *Cienega II*. In *Cienega II*, both the plaintiffs' and the government's experts calculated the present value of the market conversion and the actual outcome scenarios, and used the income differential approach to calculate damages.[83] Both experts measured damages as the difference between the present value of the rental income plaintiffs actually received and the projected operating cash flows under market conditions.[84] The government's real estate economist employed myriad different assumptions than the plaintiffs' economist; government counsel attempted to chisel away at plaintiff economist's assumptions, unsuccessfully.[85]

The decision concluded that "[p]laintiffs' damages model is comprehensive, reliable, and based on objective, verifiable HUD and industry data. In contrast, defendant's economic model is subjective and plagued by admitted errors, material omissions, and incorrect assumptions."[86] The *Cienega VIII* decision relied on plaintiff economist's estimate of annual earnings after the regulatory imposition.[87]

B. *Independence Park* Determined Damages for Properties not Addressed by *Cienega VIII*

Independence Park Apartments, et al. v. United States,[88] was an offshoot of *Cienega VIII*, which previously decided that the plaintiffs had suffered a temporary taking and awarded damages. Damages were the only issue at trial for this second group of properties; *Cienega VIII* established damages only for the four Model Plaintiffs.[89]

The government flip-flopped and changed its position on damages. Government counsel now asked the court to reject the lost income basis for the original *Cienega II* damages award[90] and "to adopt the damages model presented by their expert witness."[91] The government's expert now estimated damages based solely on the interest for the present value of foregone net rents and excluded any compensation for the lost net rental income itself.[92]

Plaintiffs' expert calculated damages in the standard manner as the present value of lost rental income as a result of owners' inability to convert to market rental rates.[93] This model by the hold-over *Cienega VIII* expert formed the basis for the court's original damages judgment in *Cienega II*.[94]

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83 *Cienega II*, 38 Fed. Cl. 64.
84 *Id.* at 76.
85 *See id.* at 75-78.
86 *Cienega III*, 38 Fed. Cl. at 89.
87 *Cienega VIII*, 331 F.3d at 1342 (citing *Cienega III*, 38 Fed. Cl. at 75).
88 Indep. Park Apartments v. United States, 61 Fed. Cl. 692 (2004), *rev'd*, 449 F.3d 1235 (Fed. Cir. 2006).
89 *Cienega VIII*, 331 F.3d 1324.
90 *Cienega II*, 38 Fed. Cl. at 85-89.
91 *Indep. Park Apartments*, 61 Fed. Cl. at 706.
92 *Id.*
93 *Id.*
94 *Id.* (citing *Cienega II*, "The basic structure of [plaintiff's] model formed the basis for this court's original damages judgment in *Cienega II*.").

In *Independence Park*, the government attacked the plaintiff expert's approach as a "lost profits" model.[95] Indeed, *Cienega VIII* had explicitly characterized the approach as a lost profits method and cited to *Cienega II's* steps to prove lost profits: "It required the . . . Plaintiffs to prove, and made findings of fact for each of three prongs in a lost profits test: (A) causation, (B) contemplation, and (C) certainty."[96]

The court rejected the government's objection to the "lost profits" aspects of plaintiffs' model, concluding, "the plaintiffs' foregone rent increases are the best available indicator for determining just compensation."[97] The court rejected the government expert's "interest only" approach as the basis for just compensation.[98] His model ignored the lost rental income plaintiffs would have received but for the taking.

Readers familiar with the body of federal regulatory takings case law will recognize that the government expert's estimate of foregone interest in place of foregone rental earnings was based on *Yuba Natural Resources, Inc. v. United States*.[99] *Yuba* was about delay in permitting a gold mine, which was not yet a going concern, at the end of which the owner was free to commence mining gold ore intact.[100] "Importantly, at the end of the taking period in *Yuba*, the plaintiff retained all the gold it had initially possessed and was free to do with the gold as it liked. Thus, the benefits adhering to the property were simply delayed by the taking without disrupting or altering an on-going business, and the just compensation award paid for that delay."[101]

At trial, the government expert's conversion of *Yuba's* delay of income to the *Independence Park* plaintiffs' interest on foregone earnings measured by the owner's opportunity cost of money was not analogous to the *Yuba* ruling. In fact, the plain language ruling in *Yuba* states "The usual measure of just compensation for a temporary taking . . . is the fair rental value of the property for the period of the taking."[102]

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95 *Indep. Park Apartments*, 61 Fed. Cl. at 708.

96 *Cienega VIII*, 331 F.3d at 1341 (citing *Cienega III*, 38 Fed. Cl. at 73).

97 *Indep. Park Apartments*, 61 Fed. Cl. at 708. *See* Rose Acre Farms, Inc. v. United States, 373 F.3d 1177, 1188-89 (Fed. Cir. 2004) ("where . . . the issue concerns the economic impact, albeit temporary, of government regulations on a going business concern[,]" a returns-based analysis may be more suitable than one based on diminution in value); and Kimball Laundry v. United States,, 338 U.S. 1, 15 (1949) ("[W]hen the Government has taken the temporary use of [a going concern], it would be unfair to deny compensation for a demonstrable loss of going-concern value.").

98 *Indep. Park Apartments*, 61 Fed. Cl. at 708.

99 Yuba Nat. Res., Inc. v. United States, 904 F.2d 1577, 1581 (Fed. Cir. 1990) [hereinafter *Yuba*]. ("The usual measure of just compensation for a temporary taking . . . is the fair rental value of the property taken for the period of the taking.") The *Yuba* decision rejected plaintiff's contention that "just compensation consists of the difference in value of the gold during the taking period compared to the value of that gold subsequently." Of course, fair rental value for income producing property is not calculated by interest rates stand-alone.

100 *See generally id.*

101 *Indep. Park Apartments*, 61 Fed. Cl. at 706 (citing *Yuba*, 904 F.2d at 1582), *rev'd and remanded*, 449 F.3d 1235 (Fed. Cir. 2006) (". . . [T]here was no existing business or going concern that the government took. There was only a proposed agreement which, had there been no taking, presumably ultimately would have developed into an existing mining operation. Even that was not certain, however.").

102 *Yuba*, 904 F.2d at 1581.

Pertinent to the entire line of the HUD lost income cases, the government's damages expert "conceded at trial that a property owner who suffered a temporary taking of his or her rental property would be entitled to receive rents that he or she had been forced to forego."[103] Thus, both the plaintiff's and government's experts agreed that plaintiff's income losses were the proper measure of just compensation.[104] However, the present value of foregone rent increases is the appropriate basis for just compensation of plaintiffs' losses. Interpretation of the law should not govern applied economic analysis. Standard economic methods that conform to *Daubert* requirements should be applied within legal cases based on the facts.

C. *Cienega IX* Litigated the Remaining Cienega Properties

Cienega IX[105] was litigated jointly with *Chancellor Manor v. United States*,[106] each containing groups of low-income HUD rental properties that entered the Court with *Cienega I*. Each group was represented by separate counsel with different economic experts. The Cienega group relied on the same expert from *Cienega VIII* and *Independence Park*. The Chancellor Manor group, which contained properties in Minnesota, retained a local professor of real estate finance. Both of these experts applied similar DCF models and calculated losses based on the factual details of each property's proscribed opportunity to convert to market rentals at the end of 20 years.

1. Plaintiff and Government Expert Testimony

The government retained an appraiser, who "testified as to the value of the plaintiffs' apartment buildings on the initial prepayment date (1) free of restrictions on prepayment, and (2) with the delay in prepayment assumed by the plaintiffs' damages model."[107] Thus, he estimated FMV, with and without the delay caused by HUD.

The government also retained an economic expert who used the appraisals to calculate the economic impact from the alleged delay in conversion to market rentals, based on the diminution in property value approach.[108] He concluded that, at most, the Cienega properties were diminished in value between 13.3 and 28.8 percent, reported in context with the economic prongs of the *Penn Central test*.[109]

To estimate economic damages, the government economist repeated the *Yuba* error that was tossed out in the *Independence Park* decision. He calculated the present value of

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103 *Indep. Park Apartments*, 61 Fed. Cl. at 707, n.13. I find it hard to imagine how an economist initially construed the interest on lost income to make the plaintiffs "whole" when clearly textbook economics would require a payment of the lost income *plus* appropriate interest. Yuba's lost interest as time value of delay of the start-up gold mine has no relevance to the going concern rental business with actual lost rental income.

104 *Id.*

105 *Cienega IX*, 67 Fed. Cl. 434 (2005), *vacated*, 503 F.3d 1266 (2007).

106 Chancellor Manor v. United States, 67 Fed. Cl. 434 (2005), *vacated*, 503 F.3d 1266 (2007) (decided jointly with *Cienega IX*). The author testified for Chancellor Manor plaintiffs on the economic elements of the *Penn Central test* and damages, relying on the real estate calculations by a local Minnesota expert.

107 Brief for Defendant-Appellant, *Cienega IX*, 67 Fed. Cl. 434 (2005) (No. 06-5051), 2006 WL 1865580, at *41.

108 *Id.* at *41-42.

109 *Id.* at *64 (citing to Transcript at 4149-51 (Hamm)).

expected cash flows in the but-for world over the entire 20-year life of the property that was allegedly taken by the government.[110] He labeled his estimate as the market value of the property, and then applied an interest rate to the value of this property during the taking period, following *Yuba*.[111] The government labeled this result the *Fair Rental Value*,[112] misconstruing Yuba's foregone time value of delayed start-up for actual lost rental income.

The government's expert proposed an award that amounted to interest for the delayed receipt of the income stream, repeating the *Yuba* error.[113] The government expert's model incorrectly assumed that what was taken from plaintiffs was exactly the same as what was returned to plaintiffs; this ignored plaintiffs' permanent loss of years of income. On cross, the government expert conceded, like his counterpart in *Independence Park*, that his model made no attempt to compensate plaintiffs for the loss of the cash flows from the original prepayment eligibility date.[114] His model paid the interest on the damages, but not damages.[115]

Government counsel, mis-focused on property values as the basis for measuring economic impact, argued that the plaintiff expert's model misused *ex post* information to determine the lost income as the basis for damages.[116] "Because the objective of providing just compensation is measuring the value of the property taken at the time of the taking, a just compensation model should rely solely upon *ex ante* information."[117]

Real property FMVs estimated by appraisers are, of course, properly based on the information the market would have had at the date of the appraisal. However, lost rental income from the use of the buildings, not the buildings themselves, was taken. In the delay from the date of taking to trial date, a lot of useful data and rental market information became available, which the plaintiff's expert used.[118] *Ex ante* FMVs of buildings

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110 *Id.* at *42, *55. *See also* Indep. Park Apartments v. United States, 465 F.3d 1308, 1311 (Fed. Cir. 2006).

111 *Id.* at *42, *64 (citing to Transcript 4146-51 Hamm); *see also Yuba*, 904 F.2d at 1581.

112 Brief for Defendant-Appellant, *Cienega IX,* 67 Fed. Cl. 434 (2005) (No. 06-5051), 2006 WL 1865580, at *62 (Italics added to highlight this unique definition of FRV compared to the standard term Fair Market Rent (FMR)).

113 *Id.* (citing Transcript at 4234:11-18 Hamm).

114 *See supra* note 103.

115 The appraiser based part of his FMV valuation on actual market rents. I cannot guess why the economic expert did not rely on the difference between market and regulated rents during the taking period, which were in the appraiser's testimony, to estimate the lost income. Reliance on the *Yuba* case in place of standard economic practice governed his erroneous calculation of "*FRV*." HUD, by the way, defines FMR in its "Fair Market Rents for the Section 8 Housing Assistance Payments Program" guidance document. ". . .Not surprisingly, HUD's FMR value is based on "gross rent estimates," not interest. *See also* U.S. Dep't Hous. and Urban Dev., http://www.huduser.org/portal/datasets/fmr.html (last visited Feb. 21, 2016).

116 Brief for Defendant-Appellant, *Cienega IX,* 67 Fed. Cl. 434 (2005) (No. 06-5051), 2006 WL 1865580, at *66.

117 *Id.* at *67.

118 *See* Michael J. Wagner et al., *Ex Ante Versus Ex Post Damages Calculation*, *in* Litigation Services Handbook: The Role of the Financial Expert, 8.1, 8.17 (Roman L. Weil et al. eds., 4th ed. 2007).

deal with current property values, and are irrelevant to computing lost future income as damages, which are easily observed within the period of delay from date of taking to trial date.

I based *Chancellor Manor*'s damages calculations on a DCF model. I used Chancellor Manor's local real estate expert's data to examine the economic prongs of *Penn Central* and compute lost profits incurred by plaintiffs.[119] I computed damages as the present value of the difference between foregone market rental income, less actual HUD regulated results for each property.[120]

Cienega Gardens' expert, who testified in the earlier *Cienega* cases, estimated the loss by comparing market rental income to the regulated HUD rentals, the same as *Chancellor Manor*'s expert.[121] Plaintiffs' post trial brief cites the government's expert agreement that the proper measure of the rental value of commercial property would be "the value of the profits that a reasonable person would expect to generate from [the property] in the future."[122] The government damages model did not measure that rental value.

2. *CIENEGA IX* REAFFIRMED THE USE OF STANDARD ECONOMIC MODELS

Citing *United States v. Miller*,[123] the *Cienega IX* decision in 2005 invoked just compensation under the Fifth Amendment as the amount of money that places the owner "in as good [a] position pecuniarily as he would have occupied if his property had not been taken."[124] The court concluded that plaintiffs were unable to charge market rents for their properties during the course of the taking, and that this measure of compensation most closely approximates "the rental [the plaintiffs] could have obtained."[125]

The decision rejected the government expert's estimate of just compensation based on the interest on the foregone rental income and not the lost income *per se*.[126] Why exactly the government proffered this theory of damages a second time is baffling, given that the theory failed in *Independence Park*.[127] The court ruled that "plaintiffs' [lost in-

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119 Ex. 469: Amended Expert Report: *Penn Central* Tests For Chancellor Manor Properties, November 15, 2004, Chancellor Manor v. United States, 331 F.3d 891 (2003) (No. 02-5066) (on file with author).

120 Ex. 474: Rebuttal Report: Revised Damage Estimates for Chancellor Manor Properties, December 5, 2004, *Chancellor Manor*, 331 F.3d 891 (No. 02-5066) (on file with author).

121 Plaintiffs' Post Trial Memorandum, at 68, February 23, 2005, *Cienega IX*, 67 Fed. Cl. 434 (2005) (No. 06-5051). "The proper measure of just compensation for a temporary taking is the fair market rent that the landowner could have earned on the property during the takings period. *See, e.g.*, United States v. Petty Motor Co., 327 U.S. 372, 381 (1946); United States v. Gen. Motors Corp., 323 U.S. 373, 379 (1945); Kimball Laundry Co. v. United States, 338 U.S. 1, 5-7 (1949)." This definition of fair market rental value (FMR) trumps the government counsel labeling of interest on rental returns as FRV.

122 Plaintiffs' Post Trial Memorandum, at 70, February 23, 2005, *Cienega IX*, 67 Fed. Cl. 434 (2005) (No. 06-5051) (citing to Transcript 4171:12–72:5 (Hamm)).

123 *Miller*, 317 U.S. at 373.

124 *Cienega IX*, 67 Fed. Cl. at 483.

125 *Id.* (citing to *Kimball Laundry Co.*, 338 U.S. at 7).

126 *See id.* at 483-94.

127 Indep. Park Apartments v. United States, 61 Fed. Cl. 692, 706-08 (2004), *rev'd*, 449 F.3d 1235 (Fed. Cir. 2006).

come] models by each expert are conceptually sound as a basis for measuring compensation and that the government's proffered interest-only model fails to provide just compensation to the plaintiffs for the rental value they would have received had they prepaid."[128] Had *Daubert* been invoked in *Independence Park*, the court likely would not have repeated the same error committed in *Yuba*.

The Preservation Statutes, which prevented owners of low-income housing projects from converting their properties to market rentals after 20 years as expected, took business income, not buildings. The government repeatedly conflated the use of market valuation approaches for real property with techniques to value income losses from the use of the property. Rejecting that argument, the *Cienega IX* decision in the Court of Federal Claims concluded that "the return-on-equity approach best measures the impact of [lost income during the taking] on the plaintiffs. Measuring an owner's return on equity better demonstrates the economic impact [of] temporary takings of income-generating property than a measurement of the change in fair market value."[129] Just compensation was awarded as the present value of lost profits.

D. *Rose Acre Farms* Conflated Relevance of Change-In-Value for *Penn Central* Prongs and Just Compensation

Rose Acre Farms complained about its loss of table egg sales due to government restrictions.[130] For health concerns, the United States Department of Agriculture (USDA) had required Rose Acre to send 57.75 million dozen eggs to the breaker market, where they were pasteurized and sold as breaker eggs, rather than to the more lucrative table egg market.[131] Rose Acre filed a regulatory taking claim.[132]

In what the record reveals to be a rough ride through the perils of *Penn Central*, *Rose Acre Farms* slogged through a morass of confused and confounding economic approaches to Penn Central's investment-backed expectations prong for four more trials. Economic testimony, counsel argument and court decisions of *Rose Acre Farms'* saga are salient to this discussion. Out of the economic confusion by all involved, *Rose Acre Farms* gave birth to misinterpreted language that continues to inflict bad economics on claimants.

Rose Acre Farms differs from the HUD line of cases in that plaintiff suffered past egg sale losses, not future rental income losses. Plaintiff and their counsel might have anticipated that their expert, a prominent agricultural economist,[133] need only estimate these losses with factual data and counsel would argue that plaintiff's required actions to with-

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128 *Cienega IX*, 67 Fed. Cl. 434, 484 (2005).

129 *Id.* at 475 (citing *Kimball Laundry Co.*, 338 U.S. at 7).

130 Rose Acre Farms, Inc. v. United States, 559 F.3d 1260, 1262-65 (Fed. Cir. 2009) [hereinafter *Rose Acre V*]. Rose Acre Farms made two round trips between the Claims Court and the Federal Circuit arguing whether the economic impact should be calculated by diminution in value analysis or by diminution in returns. Cases cited are: Rose Acre Farms, Inc. v. United States, 75 Fed. Cl. 527 (2007) [hereinafter *Rose Acre IV*]; Rose Acre Farms, Inc. v. United States, 373 F.3d 1177 (Fed. Cir. 2004) [hereinafter *Rose Acre III*]; Rose Acre Farms, Inc. v. United States, 53 Fed. Cl. 504 (2002), [hereinafter *Rose Acre I*]; *superseded by* 55 Fed. Cl. 643 (2003) [hereinafter *Rose Acre II*].

131 *Rose Acre V*, 559 F.3d at 1263–64.

132 *Rose Acre I*, 53 Fed. Cl. at 519.

133 *See id.*

hold the sale of eggs into their highest valued market would surmount the *Penn Central test*. After all, Rose Acre Farm diverted its eggs, despite no showing of salmonella infection, to the pasteurized market to benefit the public by protecting against the risk of illness; Rose Acre Farms did not inflict a nuisance on society.[134]

The Federal Claims and Federal Circuit Courts heard *Rose Acre Farms* twice; each time the Claims Court found a taking and the Federal Circuit reversed.[135] Opposing counsel in *Rose Acre Farms* hopelessly confounded the courts' understanding of the economic facts of the case. The line of *Rose Acre Farms* cases do not produce any clear standard benchmark for judging the severity of economic impact. The government's arguments and application misapplied the only sensible economic finding in those cases: that at least two ways exist to evaluate the severity of regulatory restriction. The Federal Circuit never parsed the appropriate use of either of the "two ways" between cases dealing with taking of real property compared to cases with income losses. Nor did the decision recognize that the change in income for income-producing properties required ties to the owner's equity to have any decisive merit.[136] *Rose Acre Farms* is the prime example of how misuse and lack of understanding of standard economic valuation methods creates bad case law.[137]

After the Federal Circuit published its decision in *Rose Acre III*,[138] government counsel in the HUD cases seized on its language, "two ways to compare the value of the restriction to the value of the property as a whole . . . to determine if there has been

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134 *Id.* at 524.

135 *Rose Acre III* remanded for reconsideration of the severity of the economic impact. Standard economic approaches are hopelessly muddled within both of the two courts' decisions. Both the plaintiff and government economic testimony ignored standard financial analysis and produced no relevant calculations to evaluate the investment-backed expectations prong of the *Penn Central* test.

136 The interested reader will not find a more economically confused record and decision than *Rose Acre IV*, No. 92-710C, 2007 WL 5177409 (Fed. Cl. July 11, 2007), and *Rose Acre V*, 559 F.3d 1260, (Fed. Cir. 2009). *Rose Acre V* decided that Rose Acre Farms did not suffer a compensable taking. *Rose Acre V*, 559 F.3d at 1262. The author has written about the saga of *Rose Acre Farms* twice: William Wade, *"Sophistical and Abstruse Formulas" Made Simple: Advances in Measurement of Penn Central's Economic Prongs and Estimation of Economic Damages in Federal Claims and Circuit Courts*, 38 THE URBAN LAWYER 337 (2006); William Wade, *Penn Central's Ad Hocery Yields Inconsistent Takings Decisions*, 42 THE URBAN LAWYER 549 (2010). Standard economic approaches are hopelessly muddled within all of the two courts' decisions. The two experts did agree on the financial loss due to lost egg sales. Each adopted non-standard evaluation methods beyond that, which confounded the courts as to the severity of economic impact and led to a decision for the government when, in fact, Rose Acre Farms losses were severe.

137 For another example of how *Rose Acre* can lead to misinterpretation of standard economic analysis to lead astray legal practitioners, *see* William Wade, *Misconstruing Size of Economic Impacts as the Determinant of Penn Central Test Does Not Invoke Average Reciprocity of Advantage*, 21 HASTINGS W.-NW. J. ENVTL. LAW 197 (2015).

138 *See* Reply Brief for Defendant-Appellant, the United States, *Cienega IX*, 67 Fed. Cl. 434 (2006) (No. 06-5051), 2006 WL 3846647.

severe economic loss;" diminution in value and diminution in return.[139] The Federal Circuit's remand to evaluate the proper measurement of "severity of economic impact" gave impetus to government counsel's recurrent reliance on change in FMV as the mistaken basis for estimating income losses and "severity of economic impact" in the *Penn Central test*.[140] Government counsel mistakenly relied thereafter on the "two ways," even after the final decision in *Rose Acre V*.[141]

E. *CCA Associates* Provides Contrast of the Effect of the Two Loss Measurement Approaches

CCA *Associates v. United States*[142] ("CCA *I*") followed *Cienega IX* to trial. The case dealt with a single low-income HUD rental property in New Orleans, which, like the Cienega and Chancellor properties, was denied the right to convert to market rentals after 20 years in the HUD program.[143] This 2007 decision in the Court of Federal Claims reiterated the appropriateness of lost income as the basis to measure economic impact: "[Return on Equity] 'best measures the impact . . . on' the owners'. . . properties because the alleged taking involves lost streams of income at an operating property, not the physical transfer of a piece of undeveloped property to the government and subsequent return of that property to the owner."[144] The decision provides another example of government counsel's continued misuse of measurement of property values in lieu of lost income.

1. *Plaintiff and Government Expert Testimony*

CCA's expert properly estimated damages as "the difference between the cash flow CCA would have received had it been allowed to . . . operate the property as a conventional apartment complex and the cash flow CCA actually received from operating the property as a HUD-restricted property."[145]

The government proffered another novel way to use its change in property value approach to economic losses. It relied on a real estate appraiser to perform a retrospective appraisal of the CCA property under two stated scenarios: (1) the appraised market value of the property at the beginning of the takings period, 1991, assuming that the owner could have converted to market rate operations immediately; and (2) the appraised market value of the property at the same valuation date, *but* assuming that conversion to market rate operation was delayed until 1996.[146] The appraisal expert projected market rents for each year of each period, subtracted the rental income that

139 *Id.* at *17, where return implies change in income to diminish the owner's return on investment as proffered by plaintiffs, or by percent loss of gross revenues as countered by government counsel.

140 The reader might remember that the *Penn Central* decision rests on an unrebutted error that the Penn Central Rail Road was earning a reasonable return, when, in fact, it was in bankruptcy. *See* Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 106 (1978).

141 *Rose Acre V*, 559 F.3d 1260 (Fed. Cir. 2009).

142 CCA *I*, 75 Fed. Cl. 170 (2007), *vacated in part*, 284 Fed. Appx. 810 (2008).

143 *Id.* at 179.

144 *Id.* at 195-96 (citing *Cienega VIII*, 331 F.3d 1319, 1342 (Fed. Cir. 2003).

145 *See* Brief for Appellee-Respondent CCA *I*, 284 Fed. Appx. 810 (2008) (No. 97-334C).

146 *Id.*

CCA was expected to earn under the HUD program, and discounted the difference back to the date of valuation, 1991.[147]

Instead of characterizing the present value of the difference in income as a measure of lost income, which would have made some financial sense,[148] the government expert subtracted the amount from the 1991 FMV appraisal, determined this to be an amount equal to 18.1 percent of the property value, and labeled that the change in value of the property.[149] This misdirected and confounded the percent of loss benchmark away from the owners' lost income and its effect on the owners' investment at stake.

Benchmarking the loss to the 1991 appraised value of the property confounded the fact that this caused a significant loss of return to the owners' equity. Keep in mind that typically 75% of the property value is the mortgage owed to the bank. Comparing the income loss to the market value of the property instead of to the owners' equity had the effect of diminishing the magnitude of the impact to the owners.[150] No economic theory supports the comparison of lost income to real property value as a relevant financial decision criterion for these income loss cases. The standard benchmark is return on equity, not return on property value. Yet, in CCA, the government persisted in its argument that change in property value, not change in economic returns to the owners' equity is the relevant measure of severity of economic impact. The government's assertion that the resulting 18.1 percent diminution in value was too small to surmount *Penn Central's* economic impact benchmark was an unrebutted economic error that came back in *CCA III* to the detriment of the plaintiff in *CCA IV*.

2. *CCA I* DECISION RELIED ON PLAINTIFF'S LOST EARNINGS

Citing to *Cienega VIII*, the Federal Claims Court concluded that "[T]he better measure [for temporary possession of a business enterprise is] the operating losses suffered during the temporary period of government control."[151] The decision found an 81.25 percent diminution of return on equity over the five-year taking period based on comparing lost rental income to reported equity values for each year.[152]

The decision discussed extensive case law that disavows the change in market value of the real estate to measure income losses including a bedrock citation to *Kimball Laundry*: "[M]easuring the economic impact by assessing the change in fair market value runs the risk of substantially understating the effect on the owner's property interest."[153] The *CCA I* decision concludes with the four-page recitation of the law and precedent supporting its decision by upbraiding the government: "[i]n all the circumstances, the gov-

147 *Id.*

148 Assuming an *ex ante* guess about future market rents.

149 *Id.*

150 But that's another story related to denominators and *Penn Central*, not just compensation. The interested reader is referred to the author's article, Wade, *supra* note 19.

151 CCA *I*, 75 Fed. Cl. 170, 200 (2007), *vacated in part*, 284 Fed. Appx. 810 (2008).

152 *Id.* at 199. Along the way, Judge Lettow once again chastised the government for its persistent argument against the return on equity method: "In resisting the return-on-equity approach and favoring the change-in-value method of economic analysis, the government manifestly errs by suggesting that in *Cienega VIII* the Federal Circuit broke new ground in Fifth Amendment Takings Clause jurisprudence. . .The return-on-equity approach was relatively novel at one time-over fifty years ago-but not today." *Id.*

153 *Id.* (citing Kimball Laundry Co. v. United States, 338 U.S. 1, 7 (1949)).

ernment's objections to use of the return-on-equity approach for measuring economic impact are not well received."[154]

The government appealed, arguing that the appraised value of the building declined only 18.1 percent, too little to justify a taking.[155] Part of its extensive brief invoked *Tahoe-Sierra's* parcel as a temporal whole to argue that "[t]he trial court erred when it evaluated the alleged economic impact of CCA's takings claim using a return on equity approach, rather than a change in value approach."[156]

Before the Federal Circuit issued its *CCA II* decision,[157] its game-changing *Cienega X* opinion[158] altered *Cienega VIII*'s focus on lost income to evaluate the economic prongs of *Penn Central*. In its *Cienega X* decision, the court adopted the government's argument that *Tahoe-Sierra*'s parcel as a temporal whole directs the *Penn Central* economic prongs toward before and after real property valuations.[159] *Cienega X* overturned the carefully developed analytic approach to the *Penn Central test* laid out in *Cienega VIII*, reversing *Cienega IX*. The *CCA II* short decision merely remanded the 2007 *CCA I* decision "for further consideration in accordance with *Cienega X*."[160]

F. *Cienega X* Reversed a Decade-Old Standard of Measuring Economic Loss

Cienega X invoked *Tahoe-Sierra*[161] to overturn *Cienega VIII*'s analytic approach to measure economic impacts, reversing *Cienega IX*.[162] The decision addressed whether valuation of the lost income from use of the plaintiff's property or valuation of the change

154 *CCA I*, 75 Fed. Cl. at 197.

155 Brief for Defendant-Appellant, the United States, CCA Associates v. United States, 284 Fed. Appx. 810 (Fed. Cir. 2008) [hereinafter *CCA II*] (No. 2007-5094), at 43, 2007 WL 2734357. (". . . [N]o court has found a regulatory taking under *Penn Central* where economic impact did not exceed 50 percent.") Reply Brief of Defendant-Appellant and Response to the Brief of Plaintiff-Cross Appellant, CCA Assocs. v. United States, 284 Fed. Appx. 810 (2008) (Nos. 2010-5100, 2010-5101), 2010 WL 5560229, at *4.

156 Brief for Defendant-Appellant, the United States, *CCA II*, *supra* note 155, at 44. ("The Court's return on equity approach is flawed because it disregards the well-established principle that the analysis of economic impact must consider the property as a whole."). *See* Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 331–32 (2002).

157 *CCA II*, 284 Fed. Appx. 810.

158 Cienega Gardens v. United States, 503 F.3d 1266 (Fed. Cir. 2007) [hereinafter *Cienega X*].

159 *Id.* at 1281 (citing *Tahoe-Sierra Pres. Council, Inc.*, 535 U.S. 302) (ruling that the economic impact of the loss of income had to be evaluated in context with the value of the business as a whole "just as it is in the context of a permanent regulatory taking."). The decision failed to understand time value of money. The recovery of value of the land assets of Tahoe-Sierra's plaintiffs' undeveloped lots is not a competent comparison to a business' ability to resume operations after the end of the regulatory prohibition. Income lost in time is not restored as if by magic.

160 *CCA II*, 284 Fed. App'x. at 811.

161 *Tahoe-Sierra Pres. Council, Inc.*, 535 U.S. at 331–32 ("An interest in real property is defined by the metes and bounds that describe its geographic dimensions and the term of years that describes the temporal aspect of the owner's interest.").

162 *Cienega X*, 503 F.3d at 1291 (vacating *Cienega IX*). *See also* *CCA II*, 284 Fed. App'x. at 811 (citing *Cienega X*) (vacating in part *CCA I*).

in real property value before and after the government imposition is more appropriate in application of *Penn Central*. The panel ruled that the economic impact of the loss of income had to be evaluated in context with the value of the business as a whole "just as it is in the context of a permanent regulatory taking."[163] The court proposed two possible ways "to compare the value of the restriction to the value of the property as a whole."[164]

> First, a comparison could be made between the market value of the property with and without the restrictions on the date that the restriction began (the change in value approach). The other approach is to compare the lost net income due to the restriction (discounted to present value at the date the restriction was imposed) with the total net income without the restriction *over the entire useful life of the property* (again discounted to present value).[165]

Part II of this Article demonstrated that comparison of two market values of real property do not measure the lost future income suffered by the plaintiff. This approach to lost income is misdirected to current property values, not lost future income amounts. *Cienega X's* second approach, however, explicitly measures the lost income. The language can be clarified to show that the panel endorsed measurement of lost income over the life of the owner's investment in the property:

> Economic Loss = PV [(total net income without the restriction over the entire useful life of the property) less (actual net income due to the restriction)]
>
> (Where PV = Discounted to present value at the date the restriction was imposed.)

Cienega X went further, however, and adopted the comparison of the two income streams to measure the percent change as a benchmark to measure the "severity of economic impact" within the *Penn Central test*.[166] Comparing two income streams to each other is adequate proof of income loss; but, for a competent application of the *Penn Central test*'s three prongs, which was the focus in *Cienega X*, each income stream has to be compared to the owner's investment in the property. This benchmark reveals whether the government imposition reduces returns to owner's investment sufficiently to frustrate investment-backed expectations. *Cienega X* misconstrued the present value of the future earnings of the property over the Cienega properties' taking periods as the denominator in the *Penn Central test*, a financially confused fatal error[167] that resulted in sharp ex-

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163 *Cienega X*, 503 F.3d at 1281.
164 *Id.* at 1282.
165 *Id.* (emphasis added to call attention to the *entire useful life* phrase).
166 *Cienega X*, 503 F.3d at 1278 (citing to *Rose Acre Farms*, 373 F.3d at 1188, for fateful language about two ways to measure severity: comparing market value with the restriction to value without; comparing lost net income to net income without the restriction.)
167 *Id.* at 1280–82.

changes among circuit judges[168] and millions of dollars of damages from *Cienega IX* to be overturned.[169]

Cienega X's invocation of the lifetime earnings of the property made one standard decision criterion, internal rate of return (IRR), a correct financial benchmark to overcome the government's recurrent objection to annual book rate of returns. The *Cienega X* appellate panel concluded that the annual calculations offended *Tahoe Sierra's* temporal whole requirement.[170] The IRR measures economic values of the change in income over the whole life of the property and does not offend *Tahoe Sierra's* temporal whole. The NPV of cash flows for the *with* and *without* scenarios is an even more robust comparison of the change in the owners' economic prospects.[171]

G. CCA III and *IV* Confirm that Bad Economics Led to Bad Law

CCA *Associates v. Unites States* returned to the Federal Claims Court as the first test of *Cienega X's* two ways to measure economic impacts.[172] The parties stipulated that CCA suffered an economic impact of 18.1 percent as a result of the "Preservation Statutes" during the 5-year period of the taking.[173] "The parties did not present [new] evidence at trial that would enable the court to apply . . . [*Cienega X's*] second [way to measure economic impact]. Although there is evidence of the 'lost net income due to the restriction,' [$714,430] there is no evidence as to 'the total net income without the restriction over the entire useful life of the property.'"[174]

Plaintiff's counsel relied on the $714,430 in lost income for the 104-unit apartment complex concentrated within a 5-year taking period, reflecting an 80% income loss for that period (the stipulated 18% loss in the value of the property), and described the result as a severe loss.[175]

The 2010 remand decision ignored the government's witness and again found for the plaintiff:

> As a result of the temporary taking, and considering the entire, whole, useful life of [its apartment complex], CCA suffered an 18% economic loss in its total market value. In determining how far is 'too far,' there is 'no magic number,' and 'no set formula.' . . . The duration of the deprivation, five years and ten days, is significant in this regard. . . . The economic loss suffered here, when combined with the character of the government's actions and CCA's reasonable invest-

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168 *Id.* at 1291–92, 1295 (Newman, P. dissenting) ("This panel has no authority to revoke our prior decision in *Cienega VIII*. . . . The creative theories propounded by my colleagues for redetermining whether a taking occurred ignore the law of this case. . . . I must, respectfully, dissent.").

169 *Cienega X*, 503 F.3d at 1291. ("[W]e vacate and remand for a new *Penn Central* analysis under the correct legal standard. . . .").

170 *Id.*

171 *See* Van Horne, *supra* note 28, at 144-45 (discussing NPV as the preferred evaluation criterion because it reveals the scale of absolute returns over the life of a project).

172 CCA Associates v. United States, 91 Fed. Cl. 580, 603 (2010) [hereinafter CCA *III*].

173 See id.

174 *CCA III*, 91 Fed. Cl. at 612 (citing *Cienega X*, 503 F.3d at 1282).

175 *Id.* at 612-13.

ment-backed expectations, which both factor heavily in CCA's favor, is sufficient to establish that CCA suffered a temporary regulatory taking.[176]

The 18.1 percent mistaken benchmark remained in the record and the government appealed as before; no one acknowledged that comparing the 18.1 percent loss of income to the building FMV instead of to the owner's actual equity stake in the property at the taking date was not a competent decision criterion. It did not reveal whether the owner enjoyed an adequate return on investment or not under the HUD-regulated rental income. The extent of frustration of the owner's investment-backed expectations remains missing from the record.

In the 2011 Federal Circuit CCA *IV* decision, the panel majority, while following *Cienega X*'s denominator precedent, made clear that the result of *Cienega X*'s analytic approach ran afoul of long-standing precedent, "which would eliminate all regulatory takings. Quite frankly, the selection of the *denominator* in these cases . . . determine[s] the severity of the economic impact."[177] A comparison of two values of a property or two income streams from the use of the property does not include a theoretical valuation benchmark, or denominator, which would be the owner's equity stake in the property at the date of taking.

To paraphrase and amend language from the CCA *III* trial court decision, "The government believes that a return-on-equity analysis provides only a 'snapshot' at a given point in time and does not adequately take into account the duration of the taking."[178] "However, the government's proffered metaphor is mistaken and misleading. Rather than a snapshot, the [*internal rate of return*] approach . . . closely resembles a composite, long-exposure photograph taken over the entire period of the . . . taking."[179]

IV. CONCLUSION

Skimming over these HUD lost income cases, the view from above the forest reveals that a series of plaintiffs' economists all employed the standard DCF model to estimate lost income. Decisions at the Federal Claims Courts discussed above agreed with each other and with plaintiffs' economists that this approach was correct.

Government counsel initially retained an expert in *Cienega I & II* who employed the same standard textbook model. When reliance on the standard DCF model in *Cienega VIII* failed, government experts adopted a series of novel approaches that arose not from economic practice, but from case decisions. Two government experts applied the *Yuba* "lost interest on present value of lost income" theory in *Independence Park* and *Cienega IX*. Likely, the measurement of lost interest in lieu of lost income would not have survived a *Daubert* challenge the first time out.

176 *Id.* at 618-19 (internal citations omitted).

177 CCA Associates v. United States, 667 F.3d 1239, 1247 (Fed. Cir. 2011) [hereinafter CCA *IV*].

178 Brief for Defendant, at 38, CCA *IV*, 667 F.3d at 1247.

179 *CCA III*, 91 Fed. Cl. 580, 618-19. (The inserted phrase in italics replaces the general term, return on equity, with the precisely defined internal rate of return calculation.)

After *Rose Acre Farms*, government counsel relied on the misuse of property values to measure lost income. While the *Cienega IX* decision was not beguiled by the government's change in property value to measure economic impact, *Cienega X* cited to *Rose Acre Farms III*[180] in its reversal. *Rose Acre Farms III* allowed government counsel to define economic methods that displaced standard economic theories with novel ideas. Standard economic theory, not legal sophistry, should be relied upon to benchmark severity of economic impact.

Part of the confusion over when to rely on change in property value or change in income from use of the property stems from failure of the courts to discriminate between the property interest taken by the regulation at issue – the tangible assets or the intangible assets. Confusion of valuation approaches for tangible real property cases and the intangible use of the property has led government presentations away from standard valuation estimates of lost income. Lost use of property is measured by lost earnings or lost income, not change in real property value.

Regardless of whether counsel correctly acknowledges the owner's investment in the property as the proper denominator to measure the owner's stake in the property as a whole, the economic impact has to be measured by standard *Daubert*-vetted methods. Where the loss is foregone income, the correct method is that employed by the plaintiffs' experts in the HUD line of cases: present value of lost income based on the DCF model.

The March 2016 *Braggs v. EAA* remand decision made the same mistake, directing appraisals of land values where income losses were at stake, which is inconsistent with standard valuation practice for lost income cases. When courts ask the wrong questions, they get incorrect answers. Unfortunately, wrong results can create precedent for more bad law. *Penn Central* takings cases entail a balancing of private property rights and public benefits. This cannot be achieved without competent economic approaches to value the private and public stakes in a sustainable water supply for Texas future.[181]

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180 *Cienega X*, 503 F.3d 1266, 1278 (Fed. Cir. 2007) (citing *Rose Acre III* 373 F.3d 1177, 1188 (Fed. Cir. 2004) ("there are a number of different ways to measure the severity of the impact of the restrictions.").

181 *See* Belza, *supra* note 10, at 211 ("If other courts adopt the *Bragg* interpretation of the *Penn Central* test, the doctrine of invalid regulatory takings will expand beyond its reasonable bounds. The resultant obligation by government agencies to compensate the individuals and industries they regulate could cripple lawmaking efforts, especially environmental regulation.").