

Sources of Regulatory Takings Economic Confusion Subsequent to Penn Central

by William W. Wade

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Editors' Summary:

The Federal Circuit *Cienega X* decision imposes insufficient financial analysis of *Penn Central*'s two economic prongs to satisfy either economic practice or the *Penn Central* test. The decision's imposed change in value measurement evaluates only one prong of the *Penn Central* test. Change in value satisfies the economic impact prong but does not establish severity of the economic impact vis-à-vis frustration of distinct investment-backed expectations (DIBE). Mere diminution is well-known to be inadequate to reveal whether economic viability has been destroyed by the regulatory prohibition. This must be determined with reference to the second economic prong of *Penn Central*—frustration of DIBE, a simple and definitive financial calculation. Progeny of *Cienega X* discussed in this Article do not include a complete analysis of the three-pronged *Penn Central* test.

Analysis of the economic applications of the *Penn Cent. Transp. Co. v. New York City* decision¹ in subsequent regulatory takings cases reveals that takings jurisprudence has diverged from standard financial economics. *Penn Central* established several factors that have particular significance² to the decision to pay compensation for a regulatory taking:

- the economic impact of the regulation on the claimant;
- the extent to which the regulation has interfered with distinct investment-backed expectations (DIBE);
- the character of the government regulation.

These factors are known as the *Penn Central* test, affirmed repeatedly as the eye of the needle through which millions of words have been jammed with little agreement among courts about how to analyze the three-step test. The U.S. Supreme Court has provided no elucidation beyond *Palazzolo*'s: "Our polestar . . . remains the principles set forth in *Penn Central* itself and our other cases that govern partial regulatory takings."³ *Lingle v. Chevron U.S.A., Inc.*,⁴ emphasized the polestar importance of the *Penn Central* test in 2005 and affirmed that "the *Penn Central* inquiry turns in large part . . . upon the magnitude of the regulation's economic impact . . ."⁵

Since the 1978 decision, subsequent interpretations of the meaning of *Penn Central* language have created so much confusion that evaluation of the "magnitude of [a] regulation's economic impact" is uncertain, at best.⁶ I would

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1. 438 U.S. 104, 8 ELR 20528 (1978).
2. *Id.* at 124.
3. *Palazzolo v. Rhode Island*, 533 U.S. 606, 633, 32 ELR 20516 (2001) (O'Connor, J., concurring).
4. 544 U.S. 528, 538-39, 35 ELR 20106 (2005) ("The *Penn Central* factors—though each has given rise to vexing subsidiary questions—have served as the principal guidelines for resolving regulatory takings claims that do not fall within the physical takings or *Lucas* rules.")
5. *Id.* at 540 (emphasis added).
6. In the most recent and pending case at the U.S. Court of Appeals for the Federal Circuit dealing with the pervasive economic confusion in issues discussed in this Article, government counsel has reached the opposite conclusion. "Since the Supreme Court's seminal decision in *Penn Central* nearly 35 years ago, courts have developed a substantial body of jurisprudence that informs the ad hoc inquiry under *Penn Central*. . . . [T]he ability to utilize this jurisprudence provides guidance, certainty, and consistency to judicial decision making." (Reply Brief of Defendant-Appellant at 6,

guess that practicing lawyers have no predictable way to evaluate the merits of a takings claim.⁷ What happened?

My perspective as an economist suggests that “too much talk and not enough math” is the source of much of the confusion. Two of *Penn Central*’s “particularly significant factors” hinge on economic theory. Economic calculations must be undertaken and evaluated based on standard financial practice. Knowledge of the law is necessary but not sufficient to conduct the *Penn Central* test; knowledge of standard economic practice is essential. Courts have confused ad hoc considerations of case facts with economic valuation methods, which are not ad hoc.⁸

While *Penn Central* and *Lingle* clearly established the fundamental importance of the economic impact, state and federal courts have been unable to agree how to measure and decide whether the economic impact on the claimant has been sufficient to frustrate DIBE. While a mystery to counsel and jurists, the calculation and evaluation is straightforward for financial economists with established textbook benchmarks by which to gauge the severity of an economic injury.

Penn Central itself is not the problem.⁹ The *Penn Central* decision includes language that reveals financial and economic meaning for the notions of economic impact and frustration of DIBE: to wit, “the appellants had failed to show that they could not earn a reasonable return on their investment in the Terminal itself; . . . even if the Terminal proper could never operate at a reasonable profit, . . .”¹⁰; “on this record, we must regard the New York City law as permitting Penn Central not only to profit from the Terminal but also to obtain a ‘reasonable return’ on its

investment”¹¹—phrases throughout the decision that convey economic thought, at least in the mind of the clerk who wrote the part of the decision that established the *Penn Central* test.¹²

Justice William J. Brennan, who penned the *Penn Central* decision,¹³ relied on Prof. Frank Michelman’s 1967 *Harvard Law Review* article,¹⁴ cited in the opinion,¹⁵ as the basis for the two economic prongs of the *Penn Central* test. Professor Michelman argued that the test for whether compensation should be paid depends not on how much value has been destroyed, but “whether or not the measure in question can easily be seen to have practically deprived the claimant of some distinctly perceived, sharply crystallized, investment-backed expectation.”¹⁶ Prof. Michelman created the language in an economic context adopted in *Penn Central*.

Given that the *Penn Central* ceased to exist as a railroad in 1976 and was being operated as Conrail under federal bankruptcy protection, the “reasonable return” conclusion is difficult to understand. The Court’s conclusion that *Penn Central* “not only . . . [profited] from the Terminal but also obtain[ed] a “reasonable return on its investment”¹⁷ was an unrebutted and mistaken assumption by the Court. Grand Central Station was eventually restored at public expense by the New York MTA. The *Penn Central* decision, based partly on the famous-if-dense Michelman article, distinctly had sound economic standards in mind to evaluate the decision to pay compensation; but that Court incorrectly analyzed the data and reached the wrong economic conclusion.¹⁸

CCA Associates v. United States, No. 97-cv-334 (Fed. Cir. 2010.) This guidance rests on inappropriate economic methods that confound this jurisprudence and motivated this Article.

7. Gideon Kanner is closer to the mark than government counsel. Gideon Kanner, “*Landmark Justice*” or “*Economic Lunacy*”? *A Quarter Century Retrospective on Penn Central*” (decrying *Penn Central*’s “questionable provenance, destabilizing influence on the law, dubious status as precedent, and its substantive shortcomings”), in *INVERSE CONDEMNATION AND RELATED GOVERNMENT LIABILITY* 379, 381-82 (ALI-ABA Course of Study, Apr. 22-24, 2004).
8. *Penn Central*, 438 U.S. at 124. (“In engaging in these essentially ad hoc, factual inquiries, the Court’s decisions have identified several factors that have particular significance.”)
9. Even Prof. John Echeverria agreed that *Penn Central* is here to stay; he just wants to redefine its three factors in ways at odds with standard economic practice such that claimants could never, short of a total wipeout, surmount the *Penn Central* test: “Regulation might undermine the profitability of a particular business enterprise, but not necessarily have any adverse effect on the market value of the land on which the business is located. . . . [I]t is difficult to understand how to analyze the significance of impacts on profitability.” John Echeverria, *Making Sense of Penn Central*, 23 UCLA J. ENVTL. L. & POL’Y 171, 182 (2006). Measuring and benchmarking the change in returns against standard textbook performance hurdles is straightforward for trained practitioners. If these financial measurement approaches enjoyed wider understanding in takings jurisprudence, the *Penn Central* test might begin to make a lot more sense.
10. *Penn Central*, 438 U.S. at 105.

11. *Id.* at 136. Perhaps I am giving the majority decision too much credit for understanding the economic concepts behind the language. After all, Justice William H. Rehnquist called attention to the majority’s lack of definition for “reasonable return” or “economically viable” language and concluded that a rule without definitions poses “difficult conceptual and legal problems.” (*Id.* at 149 n.13, J. Rehnquist, dissenting.) The footnote appears to point out politely that the majority was not schooled in the meanings of the economic terms used in their language.
12. David Carpenter, *Looking Back on Penn Central: A Panel Discussion With the Supreme Court Litigators*, 15 FORDHAM ENVTL. L. REV. 287 (2004). (“The concept of investment-backed expectations definitely came from Michelman’s article.”) David Carpenter was law clerk to Justice Brennan.
13. Actually, his clerk inserted the DIBE phrase as confirmed at footnote 13. Gideon Kanner observed:
I suppose we should all be grateful to Justice Brennan’s clerk for not inserting Michelman’s entire phrase—“distinctly perceived, sharply crystallized, investment-backed expectations”—into the *Penn Central* opinion. God only knows what Byzantine intellectual horrors we and our clients would have been subjected to if we also had to parse “sharply crystallized” along with the other imprecise terms in that phrase.
Gideon Kanner, *Making Laws and Sausages: A Quarter-Century Retrospective on Penn Central Transportation Co. v. City of New York*, 13 WM. & MARY BILL RTS. J. 653, 768 (2005).
14. Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law*, 80 HARV. L. REV. 1165 (1967).
15. *Penn Central*, 438 U.S. at 128.
16. Michelman, *supra* note 14, at 1233.
17. *Penn Central*, 438 U.S. at 136.
18. The reader interested in how this occurred can consult the definitive analysis of the case by Kanner, *supra* note 13.

I. The Real Problems Ensued After *Penn Central*

Subsequent decisions confounded three critical elements from the *Penn Central* decision—reasonable economic expectations, the parcel as a whole, and the takings fraction—in ways that obfuscate standard economic methods. Issues related to these three elements from *Penn Central* are the focus of this Article.

For no discernable legal or linguistic purpose, Justice William H. Rehnquist changed “distinct” to “reasonable” the year following *Penn Central* in *Kaiser Aetna v. United States*.¹⁹ This change has confounded subsequent courts’ views of reasonable profit expectations with plaintiffs’ reasonable notice of regulatory prohibitions, e.g., *Cienega Gardens v. United States*, (“the plaintiffs could not reasonably have expected the change in regulatory approach.”).²⁰ Conversion of *Penn Central*’s DIBE to reasonable notice of rules eviscerates the determinative ability to reveal severity of economic impact. Investment-backed expectations, whether “distinct” or “reasonable,” must be shown to 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.

A few years after *Penn Central*, the Court created the notion of a takings fraction to measure and benchmark a takings claim—a good idea but erroneously defined for definitive financial evaluation.

Because our test for regulatory taking requires us to *compare the value that has been taken from the property with the value that remains* in the property, one of the critical questions is determining how to define the unit of property whose value is to furnish the denominator of the fraction.²¹

Subsequent courts have adopted that comparison as if it reveals some theoretical insights about severity of economic impact—which it does not—thereby creating huge confusion and millions of words about what percentage loss is enough to justify compensation, when financial calculations would be determinative. Percent diminution unbenchmarked to investment does not reveal severity of economic impact.

Penn Central’s sensible “parcel-as-a-whole” language has created a quagmire of economic confusion.²² Measurement of the parcel-as-a-whole is the root source of the confu-

sion post-*Tahoe Sierra*²³ about evaluation of the economic benchmarks within the *Penn Central* test for income-producing properties.

II. The Federal Circuit and Court of Federal Claims Clarified but Ultimately Confounded the *Penn Central* Test

In the absence of guideposts from the Supreme Court to explain its polestar, the Federal Claims Court and the Federal Circuit Court, which frequently deal with the factual inquiries within regulatory takings cases, advanced the economic predicates for evaluating the *Penn Central* factors.

Two cases had seminal influence on analytic understanding of the economic prongs:

- *Florida Rock Industries, Inc. v. United States (Florida Rock V)*²⁴
- *Cienega Gardens v. United States (Cienega VIII)*²⁵

These decisions relied on competent economic testimony in their findings.²⁶ Plaintiff expert witnesses applied standard financial theories and practices and used established textbook formulas to evaluate interference with distinct investment-backed expectations.

Then came *Cienega X*,²⁷ which repudiated *Cienega VIII*, overturned *Cienega IX*,²⁸ and ignored *Florida Rock V*, relying on presentations by the government. This decision removed standard economic methods from the evaluation of the two economic prongs of the *Penn Central* test.

19. 444 U.S. 164, 175, 10 ELR 20042 (1979). Justice Rehnquist’s decisions evidence knowledge of economic methods, e.g., *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989). Perhaps he changed “distinct” to “reasonable” because “reasonable returns” is and was more common jargon among analysts.

20. *Cienega Gardens v. United States (Cienega X)*, 503 F.3d 1266, 1289 (Fed. Cir. 2007).

21. *Keystone Bituminous Coal Ass’n v. DeBenedictis*, 480 U.S. 470, 497, 17 ELR 20440 (1987) (quoting Frank I. Michelman, *Property, Utility and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law*, 80 HARV. L. REV. 1165, 1192 (1967) (emphasis added)).

22. *Penn Central*, 438 U.S. at 130-31. (“Taking jurisprudence does not divide a single parcel into discrete segments and attempt to determine whether rights in a particular segment have been entirely abrogated. . . . [T]his Court focuses rather . . . [on] the parcel as a whole”)

23. *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency*, 535 U.S. 302, 331-32, 32 ELR 20627 (2002):

Hence, a permanent deprivation of the owner’s use of the entire area is a taking of the parcel as a whole, whereas a temporary restriction that merely causes a diminution in value is not. Logically, a fee-simple estate cannot be rendered valueless by a temporary prohibition on economic use, because the property will recover value as soon as the prohibition is lifted.

24. 45 Fed. Cl. 21 (Fed. Cl. 1999). *Florida Rock* was not the first taking decision that adopted competent economic testimony. See, e.g., *Whitney Benefits, Inc. v. United States*, 926 F.2d 1169, 21 ELR 20806 (Fed. Cir. 1991). This was a coal case. Plaintiff purchased the property before the 1977 passage of the Surface Mining Control and Reclamation Act (SMCRA) of 1977, which prohibited mining the coal. Claimants demonstrated a competent mining plan, market demand, and reasonable investor expectations. The United States finally paid \$60 million in damages in 1995, plus interest, but not before arguing that cattle grazing was a viable alternative for the investment in the coal property and incurring a rebuke by the trial court. The trial court ruled that the government’s claim that some economic use remained as farming was “completely off the mark.” (*Id.* at 1174.)

25. *Cienega Gardens v. United States*, 331 F.3d 1319, 33 ELR 20221 (Fed. Cir. 2003).

26. See, e.g., *Cienega Gardens*, 331 F.3d at 1340.

27. *Cienega Gardens v. United States*, 503 F.3d 1266 (Fed. Cir. 2007), cert. dismissed, 129 S. Ct. 17 (2008) (*Cienega X*).

28. *Cienega Gardens v. United States*, 67 Fed. Cl. 434 (2005) (*Cienega IX*).

A. Florida Rock V Conformed the Evaluation of a Partial Taking to Standard Economics

Florida Rock V clarified measurement of and benchmarks for the economic elements of the *Penn Central* test. The decision provides mathematical answers to two straightforward questions related to a change in the federal regulatory regime that prevented Florida Rock from mining on its property.

- Has the value of the property been significantly diminished?
- Do revenues after regulatory change recoup investment in the property?²⁹

Competent economic testimony showed the answers to be “yes” and “no,” which satisfied each of the economic prongs of *Penn Central*.³⁰

Florida Rock V established the correct economic basis for the denominator of the takings fraction and clarified conditions under which a partial reduction in value (“partial taking” of plaintiff’s property) would justify payment of damages.

Chief Judge Loren Smith recognized in *Florida Rock V* that change in value of the relevant property is not dispositive of the magnitude of the economic impact, i.e., diminution alone is not enough to reveal whether economic viability has been destroyed.³¹ Economic viability must be measured with reference to returns to investments in order to evaluate standard financial performance measures. Evaluation of DIBE is the essential prong of the *Penn Central* test.³²

29. *Florida Rock*, 45 Fed. Cl. at 24. As the revenues after the change in regulation barely recovered one-half of the investment, return on investment was not at issue.

30.

After permit denial, the same property was worth only \$2,822 per acre. . . . [T]his amount is a 73.1% diminution in value. *The court does not rely on the magnitude of this diminution in value alone*, however, to determine the severity of the economic impact to plaintiff resulting from permit denial. . . . Having considered Dr. Nicholas’ credible testimony . . . the court finds that plaintiff could have recovered barely half of its inflation adjusted investment in the subject property through the only remaining means, resale as a speculative investment.

Id. at 36-38. Emphasis added to call attention to the court’s nonreliance on percent diminution to evaluate the severity of economic impact.

31. *Id.* at 21. The discussion in *Florida Rock V* adds clarity to a remark in an earlier Supreme Court case misconstrued into countless disputes as to how much diminution is enough: “Mere diminution in the value of property, however serious, is insufficient to demonstrate a taking.” *Concrete Pipe & Prods. v. Construction Laborers Pension Trust*, 508 U.S. 602, 645 (1992).

32. The U.S. Court of Appeals for the Ninth Circuit en banc decision in *Guggenheim v. City of Goleta*, Dec. 22, 2010, a California rent control case, is the most recent ruling to emphasize *Lingle’s* reliance on DIBE to deny a taking. “Primary among those factors are the economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations.” *Lingle*, 544 U.S. at 538-39 (internal editorial and quotation marks omitted). The Ninth Circuit ruled: “The case before us turns on the ‘primary’ factor. That ‘primary’ factor, ‘the extent to which the regulation has interfered with distinct investment-backed expectations,’ is fatal to the Guggenheims’ claim.” The en banc decision reversed *Guggenheim v. City of Goleta*, 582 F.3d 996 (9th Cir. 2009), affirming the district court denial of a taking (*Guggenheim v. City of Goleta*, cv-02-2478 (D.C. Cal. 2006), cert. denied. The Ninth Circuit

Florida Rock V established the investment basis in the property as the denominator of the takings fraction and compared returns before and after the change in regulation, not to each other, but to that investment basis to determine if any “reasonable return” was possible after the change.³³

This ruling clarified the all-important takings fraction to require measurement of the investment in the property as the “value . . . to furnish the denominator of the fraction,” correcting *Keystone’s* misfocus on comparing “after” values to “before” values, a ratio that reveals little about the effect of regulatory change on economic viability of the investment.

By comparing returns before and after to the investment basis in the property, courts can evaluate frustration of DIBE with standard financial methods and performance benchmarks—net present value of cash flows or return on investment. The ratio of returns to investments, discounted with the plaintiff’s opportunity cost of money, reveals both recoupment of investment and demonstrates economic viability—or lack thereof. This is black-letter economics, the point avoided in *Cienega X* and its progeny.

B. Cienega VIII Applied Rock V’s Approach to Temporary Takings

A number of federal takings cases heard in the first decade of this century consider the conceptual measurement of economic impact within the *Penn Central* test for income-producing properties. The issue that first arose in *Cienega Gardens VIII* was repeatedly argued throughout the decade: whether evaluation of the severity of economic loss should be based on *change in value* of the real property using appraisal methods or evaluation of lost use of the property based on the effect of lost income on *return on equity*.

Cienega VIII extended *Florida Rock V* by establishing a benchmark rate of return as the threshold of “serious financial loss.” *Cienega VIII* transformed the economic impact prong of the *Penn Central* test to a threshold requirement. Plaintiff must “show ‘serious financial loss’ from the regulatory imposition in order to merit compensation.”³⁴ Frustrated

en banc decision is consistent with standard economics expressed in *Loveladies Harbor, Inc. v. United States*, 28 F.3d 1171, 1177 (Fed. Cir. 1994):

[T]he owner who bought with knowledge of [a particular] restraint could be said . . . to have assumed the risk of any economic loss. In economic terms . . . the market had already discounted for the restraint, so that a purchaser could not show a loss in his investment attribu[table] to [the regulatory action].

The economic analyses at the trial court by both plaintiff and defendant economists in *Guggenheim* showed that the owners were earning a competitive rate of return on their investment. *Guggenheim v. City of Goleta*, cv-02-2478 (D. Cal. 2006.) Evidence in the case showed that the owners purchased the park with county rent controls in place in 1997 before the city of Goleta incorporated (2002) within the county and immediately adopted the County Code in its entirety. The fact that owners could be earning a lot more—the essential economic point raised at trial and on plaintiff’s appeal—arguably was a moot point given (1) existing rent control laws and (2) the *Penn Central* framework. Rent control is a bad regulation, but it was the governing law. And the owners were fully aware of it. The en banc decision concluded based on the DIBE prong that the owners’ expectations were not frustrated; this conclusion subsumed the economic impact prong—although the decision did *algebraically* skip that step.

33. *Florida Rock V*, 45 Fed. Cl. at 38.

34. *Cienega VIII*, 331 F.3d at 1340.

tion of economic viability governs “serious financial loss” and the decision to pay compensation.

Cienega VIII established that economic viability be measured with reference to both recoupment of investment and return on investment in order to evaluate a standard financial performance measure.³⁵ This adopted the opportunity cost of investment—the hurdle rate of return—as an attribute of the investment in the property, consistent with economic theory and standard financial practice.

Economists speak of the opportunity cost of capital, meaning the return from the next best opportunity foreclosed by the investor’s decision. Cost of capital is the required return by investors; it is the basis for the discount rate, and is based on the risk of the cash flows and underlying financial market conditions.

John Maynard Keynes defined investment as the right to obtain a series of prospective returns during the life of the asset. Keynes emphasized the expected profitability of investments as the key motivating determinant for investment.³⁶ To the economist, DIBE amount to nothing more complicated than prospective returns reasonably expected as an attribute of property investment. Taking the income stream from the use of property by an unforeseen change in regulation is not dissimilar from a tort that might have the same effect and should be evaluated by the same economic theories and methods. The government has persistently failed to acknowledge that the cash flow from investments in income-producing properties is the essential stick in the bundle of rights.

Cienega VIII conformed case law to match economic practice: when the return on investment is less than the opportunity cost of the owners’ investment, economic viability is frustrated. Economic decision rules play an obvious role in determining when a regulation undermines investment-backed expectations sufficiently to award compensation, i.e., when the regulation “goes [so] far” that it crosses a relevant threshold.³⁷

- Cash flow returns benchmarked to owner’s equity and the opportunity cost of capital replaces percent diminution in value as the determinative *Penn Central* economic prong.
- If returns after the regulatory proscription on plaintiff’s use of the property are less than opportunity cost, economic viability is eliminated.
- This is a binary rule in economic practice: either returns after the taking exceed the opportunity cost or they do not. Calculation of percent diminution of return is without theoretical economic content. *Cienega VIII* did this; but it was superfluous and recognized as such by Judge Michel.³⁸

35. *Id.* at 1333.

36. JOHN MAYNARD KEYNES, *GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY* 135, 225 (Harcourt, Brace & World eds., 1936).

37. *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922).

38. *Cienega VIII*, 331 F.3d at 1343, n.39:

We do this [percent diminution] calculation only to have a percentage loss to compare with other takings cases in which a percentage

The government argued in this and subsequent lost income cases that the before-and-after appraisal of fair market value (FMV) of real property best measures loss incurred by the plaintiffs and is the correct approach to evaluate the economic impact prong of the *Penn Central* test. Both *Cienega VIII* and the follow-on 2005 decision of the Court of Federal Claims in *Cienega IX* disabused the government: “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.”³⁹

Florida Rock V and *Cienega VIII* are seminal decisions that clarified how to apply, measure, and evaluate the economic elements of the *Penn Central* test to determine when a compensable taking has occurred. These cases adopted standard economic methods to determine when the economic impact to a claimant sufficiently erodes DIBE to justify compensation. Then came *Cienega X*.

C. *Cienega X* Is a Radical Back-Step in the Understanding of *Penn Central*’s Economic Prongs for Income-Producing Properties⁴⁰

The 2007 *Cienega X* decision held that the Court of Federal Claims erred in *Cienega IX* by not considering the impact of the regulatory restriction on the property as a whole. Instead, “the Court of Federal Claims applied a ‘return-on-equity’ approach, considering the income from the project for each individual year as a separate property interest.”⁴¹ The 2007 decision revisited the thought-settled question: whether valuation of the lost income from use of the plaintiff’s property or valuation of the change in real property value is the more appropriate measure of the *Penn Central* test in light of *Tahoe-Sierra*’s parcel as a temporal whole. *Cienega X* repudiated return on equity, the standard approach to measure the economic viability of a company,⁴² or economic impact for a regulatory taking for income-producing property that was adopted in the Federal Circuit’s 2003 *Cienega VIII* decision.

Cienega X invoked *Tahoe-Sierra*’s enlargement of property as a physical whole to encompass temporal segmen-

loss was described. A 0.3 percent rate of return may signify a “serious financial loss” with no need to resort to further calculation, but as all of the precedent cited to us involves percentages showing loss, we think it useful to make the further calculation.

39. *Cienega IX*, 67 Fed. Cl. at 475.

40. The interested reader will discover additional information about *Cienega X* in the author’s 2008 article, William W. Wade, *Confusion About “Change in Value” and “Return on Equity” Approaches to the Penn Central Test in Temporary Takings*, 38 ELR 10486 (July 2008).

41. *Cienega X*, 503 F.3d at 1280 (citing *Cienega IX*, 67 Fed. Cl. at 475-76). Actually, plaintiff economists testified that return on equity for *all* years during the taking period failed to come close to owners’ opportunity cost of capital. The author testified for Chancellor Manor plaintiffs, which was litigated together with *Cienega Gardens*.

42. Check out the annual report of any traded company to find the reported current and history of its return on equity.

tation of income,⁴³ adopting the government's persistent argument that return on equity does not encompass the value of the real estate. The panel decided that "the impact on the value of the property as a whole is an important consideration [in a temporary taking], just as it is in the context of a permanent regulatory taking."⁴⁴

Keep in mind the salient factual economic differences between *Tahoe Sierra* and *Cienega Gardens* plaintiffs:

- *Tahoe Sierra* was about a 32-month moratorium on potential development of residential housing in the woods of Lake Tahoe. Current income was not at issue. The prevailing argument concluded that the value of the land bounced-back at the end of the moratorium as if landowners had lost nothing. Value therefore remained in time; the Court denied the taking under a *Lucas* claim and decided that the facts of the case should be evaluated in a *Penn Central* framework.
- *Cienega Gardens* and related cases had actual and substantial rental income losses during the period of regulatory prohibition. Land was not taken nor were the apartment houses stopped from renting. They simply could not raise rents to earn a reasonable return during the period of taking. Income was taken; real property was not at issue.

The recovery of value of the tangible 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.

Applying *Tahoe-Sierra's* temporal parcel as a whole to income-producing properties is misguided.⁴⁵ Time value of money differentiates temporal segmentation of the parcel as a whole per *Tahoe-Sierra* from physical segmentation. Land parcels might be segmented horizontally into the left or right, north or south acreage; or vertically into the air rights above, or mining rights below.⁴⁶ Temporary taking of cash flows removes the near-term returns from the commercial activity and restores the cash flows at the end of the useful life of the project, if at all. These dollars are not fungible. *Tahoe-Sierra's* temporal segmentation fails to account for time value of money during the temporal segment taken. Returning the use of the property after some

taking period does not return the income flow that was lost in time.

The court proposed two possible ways "to compare the value of the restriction to the value of the property as a whole,"⁴⁷ adopting language from the government:

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 [second] 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).⁴⁸

The *Cienega X* decision cites the *Keystone* decision in search of the all-important denominator of the takings fraction. Reliance on *Keystone's* fateful fraction of "value taken to value remaining" fails to recognize the empirical fact that *Keystone* was about coal in the ground, a tangible asset with no value established in the case; the loss in *Cienega Gardens* was foregone income from use of the property, and the income was critical to economic viability of the investment.⁴⁹

I. Before and After Real Estate Valuations Do Not Measure Income Loss

The first adopted remedy for purported shortcomings of the return on equity approach is labeled the "change-in-value" approach, which is described as the ratio of the "value of the . . . property encumbered by regulation [to] the value of the same property not so encumbered Because the change in value approach considers everything that affects the property's value, it provides the most reliable measure of a regulation's impact upon the property [as a whole]."⁵⁰

Appraisal approaches may accurately measure a change in market value for real property, but they do not accurately

43. *Tahoe-Sierra Preservation Council v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 327, 32 ELR 20627 (2002). ("[E]ven though multiple factors are relevant in the analysis of regulatory takings claims, in such cases we must focus on 'the parcel as a whole.'")

44. *Cienega X*, 503 F.3d at 1281.

45. Reliance on *Tahoe-Sierra* is misplaced if for no other reason than the fact that *Tahoe-Sierra* was a *Lucas* case. *Tahoe-Sierra*, in fact, denied the *Lucas* taking and concluded that the facts of the case would be "best analyzed within the *Penn Central* framework." The decision provided no guidance for undertaking the *Penn Central* test. *Tahoe-Sierra*, 535 U.S. at 321.

46. For more discussion on physical relevant parcels, see John E. Fee, *Unearthing the Denominator in Regulatory Takings Claims*, 61 U. CHI. L. REV. 1535 (1994), and Steven J. Eagle, *Unresolved Issues in Regulatory Takings and the Protection of Private Property Rights*, Section VII, CLE International Conference on Regulatory Takings: New Thoughts on the State of the Law, Tampa, Florida, Feb. 23, 2007.

47. *Cienega X*, 503 F.3d at 1282.

48. *Id.* (emphasis added to call attention to the *entire useful life* phrase).

49. *Keystone* petitioners provided no value estimates associated with the mandated support coal for the mines that initiated the lawsuit. The owners did not show deprivation of any economically viable use of that coal. No lost earnings were at issue in *Keystone*. The support coal had no demonstrable economic value prior to the regulation; the regulation cannot be said to have deprived the mine owners of any economic value. The decision correctly ruled no taking because the stick at issue had no demonstrated economic value, not because of any reduction in the taking fraction. No analysis in the case evaluated a takings fraction to determine if it had any determinative merit. The value of the *Cienega IX* stick—lost earnings—was not zero, and its importance to the integrity of the entire bundle was paramount. The *Keystone* mine owners possessed full value for their operations before and after the mal-alleged taking. The petitioner's lawyers brought this takings case with no economic damages, and with only a gobbledygook response to the question about the economic effects of the Subsidence Act on their clients: "An assessment of the actual impact that the Act has on petitioners' operations 'will involve complex and voluminous proofs,' which neither party [is] currently in a position to present." *Keystone*, 480 U.S. at 493.

50. *Cienega X*, 503 F.3d at 1280 (citing *Cienega IX*, 67 Fed. Cl. at 475-76). Actually, plaintiff economists testified that return on equity for *all* years during the taking period failed to come close to owners' opportunity cost of capital. Full disclosure: the author testified for Chancellor Manor plaintiffs, which was litigated together with *Cienega Gardens*.

measure economic losses to the owner of income-producing properties. The change in market value approach will produce incorrect estimates of economic damage because the before and after appraisal of market value measures the wrong stick in the bundle of property rights—the tangible asset in lieu of the income stream from the use of the property.

Apart from the measurement deficiencies, the fatal flaw with the before and after approach is the problem identified with *Keystone's* takings fraction, corrected by *Florida Rock V*. The value after compared to the value before, or the percent decline of value, yields no financial decision benchmark. Where income losses are at stake, owners' change in income and equity are the relevant concepts to measure and compare. This is black-letter economics. Fundamentally, the *Penn Central* test requires a showing that DIBE have been frustrated; i.e., the investment is not earning a reasonable or competitive return on the investment.

2. Takings Law Precludes Evaluation of Temporary Takings With Income After the Taking Period

On to the second approach adopted by the decision. The valuation of the property with a discount cash flow model over the "entire useful life of the project" is less appropriate than the appraisal method based on established law.⁵¹ This would require experts to evaluate the economic impact of a temporary loss of income during the taking period with data beyond the end of the taking to prove that the loss *during* the temporary taking period eviscerates the economic prospects of the plaintiff for all time to come. This would eliminate thought-to-be black-letter law that the effects of temporary takings are measured between a "start" date and an "end" date.⁵² If so, a temporary taking of income must be shown to be equivalent to a permanent taking to justify compensation. This precludes the valuation of the property as the net present value of net profits because this method must consider the entire life of the investment.

The theoretically preferred way to value income losses during a temporary taking of income-producing property is to calculate the change in profits using a cash flow model taught in first-year graduate finance courses.⁵³ Common sense and Supreme Court decisions point out that tangible asset (real property) values can increase or decrease in value during the temporary taking for a number of reasons unrelated to the lost income at stake.⁵⁴ What is lost are the cash

flows from the use of the real property during the time period of the taking. Time values of the lost income during the taking are not measured by real property appraisals. Benchmarking the change in income during the taking to 100% of owner's equity in the property is consistent with *Penn Central's* property as a whole. More importantly, this step addresses the second economic prong of *Penn Central*, frustration of DIBE—or not.

Cienega X reverses a line of cases that brought clarity to the *Penn Central* test. Not surprisingly, Circuit Judge Pauline Newman, who was on the *Cienega VIII* and *Cienega X* panels, had reasonably harsh words for her colleagues. "This panel has no authority to revoke our prior decision [in *Cienega VIII*]." ⁵⁵ "[Considering the] creative theories propounded by my colleagues for redetermining whether a taking occurred ignore the law of this case . . . I must, respectfully, dissent."⁵⁶

III. Progeny of *Cienega X*—Rose Acre Farms and CCA Associates—Reveal Its Confused Application of *Penn Central's* Economic Underpinnings⁵⁷

Progeny of *Cienega X* demonstrate that faulty legal interpretations of economic theories developed in *Cienega X* should not displace well-established textbook economic methods to measure and benchmark financial losses. Recent Federal Circuit and Federal Claims Court decisions reveal that confused legal interpretations cannot be shoehorned into standard economic theories essential to evaluate the *Penn Central* test.⁵⁸

business operation is interrupted. Justice Stanley Foreman Reed contrasted returns with the change in market value in the 1951 *United States v. 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." 341 U.S. 114, 119-21 (1951) (Reed, J., concurring). *Kimball Laundry v. United States*, 338 U.S. 1, 7 (1949), reached the same conclusion:

[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.

Cienega X erred when it disallowed the application of *Kimball Laundry's* use of return on equity for damages to the liability element of the *Penn Central* test. The professional economist must use the correct tool in his testimony to meet *Daubert* standards. Return on equity is the right tool to measure effect of loss of income on investment-backed expectations.

51. *Wyatt v. United States*, 271 F.3d 1090, 32 ELR 20345 (Fed. Cir. 2001).

52. The Federal Circuit decided and the Court of Federal Claims cases have consistently restricted measurement of economic data governing the *Penn Central* test and damages to the period of the temporary takings. *Wyatt*, 271 F.3d at 1097 n.6 (Fed. Cir. 2001). ("The essential element of a temporary taking is a finite start and end to the taking.") See also *Cienega IX*, 67 Fed. Cl. at 483 (citing *Wyatt* (the "essential element" of a temporary taking is "a finite start and end to the taking")).

53. See VAN HORNE, FINANCIAL MANAGEMENT AND POLICY, ch. 20 (12th ed. 2004); APPRAISAL INSTITUTE, THE APPRAISAL OF REAL ESTATE, ch. 20 (12th ed. 2001); SHANNON PRATT ET AL., VALUING A BUSINESS, ch. 9 (4th ed. 2000).

54. Two Supreme Court cases confirm what economists and financial analysts consider bedrock: lost earnings are what matter when an income-producing

55. *Cienega X*, 503 F.3d at 1291-92 (Newman, J., dissenting).

56. *Id.* at 1295 (Newman, J., dissenting). (Judge Newman served as an adjunct professor of law at George Mason at the time, teaching Legal and Economic Theory of Intellectual Property. She received a B.A. from Vassar College in 1947, an M.A. from Columbia University in 1948, a Ph.D. from Yale University in 1952, and an LL.B. from New York University School of Law in 1958. Chances are good that she knows some economics and finance.)

57. This section draws on the author's *Federal Circuit's Economic Failings Undo the Penn Central Test*, 40 ELR 10914 (Sept. 2010); and *Penn Central's Ad Hocery Yields Inconsistent Takings Decisions*, 42 URB. LAW. 549 (2010).

58. The standard for whether a compensable taking has "occurred is a question of law . . . based on factual determinations." *Bass Enters. Prod. Co. v. United States*, 381 F.3d 1360, 1365 (Fed. Cir. 2004). Empirical analysis reliant on standard economic methods governs the interpretation of the law. Interpre-

Progeny of *Cienega X* at issue are:

- *Rose Acre Farms, Inc. v. United States (Rose Acre VI)*⁵⁹
- *CCA Associates v. United States (CCA III)*⁶⁰
- *CCA Associates v. United States (CCA II)*⁶¹

The essential economic fact to understand in the *Cienega Gardens*, *CCA*, and *Rose Acre Farms* cases is that unanticipated regulatory proscriptions interrupted their plans of business operations causing substantial loss of income for a period of two to five years. *CCA Associates* and *Cienega Gardens* owned rental properties, which were prohibited from exiting a government low-income housing program and increasing rents to market; *Rose Acre Farms* suffered a 25-month loss of table egg sales due to government restrictions.

Reliance on change in value of real (or imagined⁶²) property in lieu of loss of income led each of the Federal Circuit decisions astray.

A. *Rose Acre Farms Confounded Numerator and Denominator to Reach a Confused Analysis of One Penn Central Economic Prong*

Rose Acre Farms was heard by the Federal Claims and Federal Circuit Courts twice; both times the lower court found a taking, and the Federal Circuit reversed. Most recently, the Federal Circuit, following *Cienega X*, overturned because it disagreed with assessing the *severity of the economic impact* by looking at the percentage decrease in profits, finding that doing so “does not provide a sufficiently accurate view.”⁶³

Rose Acre Farms VI revisited the question of whether the economic impact should be calculated by a diminution in value analysis or a diminution in return analysis. Conjoining this question with *Cienega X*'s parcel as a temporal whole notion, the government argued in their brief “[t]he exclusive focus upon *Rose Acre*'s lost profitability *during* the temporary period [of the restrictions] is an erroneous assessment of the economic impact of a temporary regulatory restriction upon the property as a whole.” “The obvious purpose for [the *Taboe-Sierra*] requirement is to assess the economic impact of the temporary regulatory action in relation to *the entire life of the property*.”⁶⁴

The *Rose Acre VI* decision emphasizes the need for courts to distinguish the economic differences between valuation of real property in permanent takings cases and estimation

of lost earnings from business operations in temporary takings cases. The decision applies a uniquely ad hoc, confused approach that transubstantiated eggs—a farm product sold for revenues—into the mistaken denominator parcel. The court evaluated loss of gross revenues as an ad hoc but wholly erroneous measure of decline in value of the parcel. Lost income was the property right at stake, and diminution in rate of return was the correct economic metric.

Equating revenues from the sale of eggs with the denominator parcel was the initial error adopted by the Federal Circuit. Revenues are correctly measured within the numerator. The government expert measured loss of sales of the eggs as only 10.6% impact, and government counsel convinced the court that claimant's property value was insufficiently reduced to surmount the *Penn Central* test and justify compensation. Lost income, not property values, was at stake, and no competent benchmarking of the severity of economic impact is in the trial record. The Federal Circuit failed to understand that claimant's profit margin on the sale of eggs was only 2%; therefore, a 10.6% loss of revenues extinguished 100% of profits and rendered a negative rate of return on the three farm properties during the period of the taking, which is not in plaintiff's testimony or trial record.

I. *Experts Agreed on Economic Impact but Neither Evaluated Frustration of DIBE*

The economic record of *Rose Acre V* and *VI* is hopelessly muddled, particularly in the discussions of elements of the *Penn Central* test.⁶⁵ Whether the denominator was the diverted eggs or the three farms—or neither—whether gross revenues or net profits, lost income or lost value, average marginal costs or average total costs governed the numerator apparently eluded the judges, the parties, and even the experts. In fact, opposing experts measured only revenue losses and agreed on the amount of loss, or economic impact. Neither expert benchmarked this loss to the investment basis in the property to examine the severity of economic impact. The DIBE prong of the *Penn Central* test was not evaluated with standard financial methods; change in return on equity was not calculated. The decision did not evaluate three prongs of *Penn Central*.

Following *Florida Rock V*, which was not cited in the trial, the investment basis in the *Rose Acre Farms*, which was not introduced at trial, was the correct basis for the denominator. The change in profits due to the loss of revenues from lost sales of the eggs was the correct numerator, and the change in returns might have revealed a sufficiently severe economic impact to frustrate DIBE.⁶⁶ Had *Florida Rock V* been followed, the outcome might have turned out differently.

tations of the law should not govern the applied analysis. Experts are subject to *Daubert* standards. (The discussion of *Rose Acre Farms* below is a prime example of shoehorning confused legal theories into economic methods.)

59. 559 F.3d 1260, 39 ELR 20058 (Fed. Cir. 2009), cert. denied, 130 S. Ct. 1501 (2010).

60. 91 Fed. Cl. 580 (2010).

61. 284 Fed. Appx. 810, 811 (Fed. Cir. 2008).

62. For *Rose Acre Farms VI*, i.e., no competent value of the real farm property is in the record. Nor is a sensible denominator parcel defined and quantified.

63. *Rose Acre Farms VI*, 559 F.3d at 1268.

64. Corrected Brief for Defendant-Appellant at 40-41, *Rose Acre Farms v. United States*, 559 F.3d 1260 (Fed. Cir. 2009) (emphasis added).

65. *Rose Acre VI*, 559 F.3d at 1282-84.

66. *Rose Acre VI*, 559 F.3d at 1274 mentions that *Rose Acre* owned six other farms, unaffected by the problems at three farms. Data from these other operations are not in the trial record.

B. Federal Circuit Abruptly Remanded CCA's Thorough Claims Court Analysis of Loss of Income for Reconsideration Under *Cienega X's* Change in Property Value

Citing to *Cienega VIII* and two 1949 and 1951 Supreme Court cases, the Federal Claims Court concluded in the 2007 *CCA* decision: "The better measure [for temporary possession of a business enterprise is] the operating losses suffered during the temporary period of government control."⁶⁷ The decision found an 81.25% diminution of return on equity over the five-year taking period based on lost rental income.⁶⁸ Whereupon, the Federal Circuit in a four-page decision threw out Judge Charles F. Lettow's careful benchmarking of five years of lost income to CCA's equity in the trial court finding of a taking; the Federal Circuit remanded for "further consideration in accordance with *Cienega X*."⁶⁹ Thus, the case came back to Judge Lettow and the economic issues were relitigated following *Cienega X* instead of *Cienega VIII*.

Not surprisingly, CCA Associates' post-trial memorandum put the court on notice that they were playing under protest of the *Cienega X Penn Central* rules.

CCA acknowledges that this Court generally must apply the *Cienega X* analysis, notwithstanding the fact that this analysis directly conflicts with the Federal Circuit's decision in *Cienega VIII*. However, CCA preserves herein its argument that *Cienega X's* "lifetime value" approach to measuring economic impact is contrary to United States Supreme Court precedents, contrary to Federal Circuit precedents, and contrary to sound policy.⁷⁰

Following the Before and After approach of *Cienega X*, the parties agreed that the building value had been reduced 18% by the five years of rental income losses. The Claims Court again found for the claimant:

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 num-

ber," and "no set formula." Here, an 18% economic loss concentrated over approximately five years constitutes a "serious financial loss." 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 investment-backed expectations, which both factor heavily in CCA's favor, is sufficient to establish that CCA suffered a temporary regulatory taking.⁷¹

I. CCA Change in Value Alone Does Not Complete the *Penn Central* Test

One wonders how the Federal Circuit will deal with the 18% diminution in property value as the basis for a taking decision following the government's appeal filed July 20, 2010. This value, in fact, does not measure the all-important *Penn Central* test prong: frustration of DIBE. The 18% value only measures the diminution in value, or the economic impact prong of the *Penn Central* test. *Cienega X* precluded Judge Lettow from comparing income losses to owners' equity in the remand trial. Hence, the 18% number is not benchmarked to a proper denominator. The same problem confounded the *Rose Acre VI* decision; change in revenues is only one prong of the *Penn Central* test. It is only a measure of the economic impact and does not evaluate the severity of the economic impact vis-à-vis DIBE.

The *CCA III* decision's reliance on 18% diminution in building market value ignored the point of *Florida Rock V's* seminal decision that diminution in value of the property is not dispositive of the severity of the economic impact. Diminution alone is not sufficient to reveal whether economic viability has been destroyed, which must be determined with reference to the second economic prong of *Penn Central*—frustration of DIBE, a simple and definitive mathematical calculation for expert economists.

The guiding *Cienega X* decision fails to grasp what the Supreme Court had known for decades, i.e., that appraisal approaches may measure a change in market value for real property—tangible assets—but they cannot accurately measure income losses for income-producing properties. The government in its appeal brief continued to argue change in value citing the usual list of cases where percent diminution much greater than 18% were not ruled a taking, including on the list irrelevant cases that were decided on nuisance or harm prevented.

Accepting the trial court's assertion that "an 18% economic loss concentrated over approximately five years constitutes a 'serious financial loss' would run counter to decades of regulatory takings jurisprudence and dramatically lower the bar for takings claimants."⁷²

67. *CCA Assocs. v. United States*, 75 Fed. Cl. 170, 200 (2007).

68. *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." Def.'s Reply at 28 (citing *Cienega VIII* as "the first case to ever reference the 'rate of return' analysis."). The return-on-equity approach was relatively novel at one time—over fifty years ago—but not today. *Id.*

69. *CCA Assocs. v. United States*, 284 Fed. Appx. 810, 811 (Fed. Cir. 2008): We most recently addressed these issues in *Cienega Gardens v. United States*, 503 F.3d 1266 (Fed. Cir. 2007) ("*Cienega X*"). That decision, which was issued after the decision of the Court of Federal Claims in this case and the submission of the government's opening brief, addressed arguments that are in many respects identical to those presented here.

70. Plaintiff CCA Associates' Post-Trial Memorandum, at 23 n.15, *CCA Assocs. v. United States*, 91 Fed. Cl. 580 (2010). (The lengthy footnote is referred to interested readers.)

71. *CCA III*, 91 Fed. Cl. 580, 618-19 (2010) (internal citations omitted).

72. Brief of Defendant-Appellant, The United States at Plaintiff CCA Associates' Post-Trial Memorandum, 19-20, July 19, 2010. It is worth noting that a small cadre of U.S. Department of Justice lawyers has honed the change in value arguments over the decade since *Cienega VIII*. Opposing counsel

The real property, of course, was not taken or at issue. The government confounds the all-critical denominator value against which to measure the severity of economic impact.⁷³ The government's notion of "settled law" does not evaluate the two economic prongs of the *Penn Central* test with competent measures of the lost income and the investment basis that should serve as the denominator of takings fraction. The 18% calculated diminution in value of the real property, taking account of income for the life of the rental building, is not a competent basis to evaluate severity of economic impact. The value of the real property is composed of both equity and debt. The stipulated 18% change in value does not reveal the effect of the lost income benchmarked to equity alone.

Until such time that the Federal Circuit or the Supreme Court corrects the specious analysis of severity of economic impact adopted in *Cienega X* and made by the government in this case and *Rose Acre Farms*, opposing counsel will go on arguing what percentage diminution in property value is sufficient to justify compensation—a measure shown to be not dispositive in *Florida Rock V* and textbook economics. The change in value approach espoused in *Cienega X* is only one prong of the *Penn Central* test and not sufficient to reveal frustration of DIBE; the comparison of change in cash flows during the taking period with cash flows for the life of the project eliminates temporary taking of income as a legal doctrine.

IV. Conclusions: *Florida Rock V* and *Cienega Gardens VIII* Embed Seminal Applications of Standard Economic Theories and Valuation Practice to Address Both Prongs of the *Penn Central* Test

Economic theory demands that income losses govern cases with regulatory-imposed diminished business income just as in comparable tort cases. Losses must be benchmarked to owner's equity to evaluate severity of economic impact and frustration of DIBE. Faulty understanding of standard economic and financial analysis within regulatory takings cases continues to set this jurisprudence apart from standard tort cases, where state-of-the-art economic methods typically are applied within both liability and damages phases of the trial.

in the various cases may take up these issues anew without benefit of the same continuity.

73. The government's December 13, 2010, reply brief confirms that its diminution in value calculation extends beyond the end of the taking period and compares incomes with and without the five-year interruption to each other. "[T]he market value of an income-producing property is determined by the rental income the property is expected to generate. The Government's appraiser essentially estimated market rents for each year of the alleged taking and subtracted the rents that the property was expected to earn under the HUD program." The decision did not benchmark losses to equity as called for by both *Florida Rock V* and *Cienega VIII*. CCA's equity in the property at the time of the taking, \$811,700, is in the record. *CCA III*, 91 Fed. Cl. at 611 n.35.

Florida Rock V and *Cienega Gardens VIII*, seminal decisions in Federal Claims and Federal Circuit Courts, advanced standard applications of good economics to measure and evaluate the *Penn Central* test. These cases clarified the denominator of the takings fraction as the investment in the property and measured frustrations of DIBE with the change in economic viability of the investment. Recoupment of and return on investment were established as the basis to evaluate the economic elements of the *Penn Central* test.

The government's persistent argument in a series of Federal Claims Court cases that claimant's temporary loss of income arising from the use of their property should be evaluated in context with the real property misconstrued *Tahoe Sierra's* parcel as a temporal whole to confound standard economic methods. Measuring business income losses with property values is erroneous.

Cienega X's failure to follow the economic methods vetted in *Cienega VIII* ignores standard economic practice to value business income losses based on the losses and substitutes instead the valuation of the business' real property. This is economic nonsense and sidesteps a strong line of Supreme Court precedent that relied on the correct return on equity approach. The *Rose Acre Farms VI* and *CCA Associates* decisions at the Federal Circuit and Federal Claims Court, progeny of *Cienega X*, reveal disarray in understanding what to measure and how to evaluate the two economic prongs of the *Penn Central* test. Each only measured the economic impact prong of the *Penn Central* test, and neither benchmarked the change in value to owners' equity to examine whether the change was sufficient to frustrate DIBE. Hence, the *Cienega X* methods are not only divergent from standard textbook economics; the change in value approach does not evaluate the *Penn Central* test.

Change in value satisfies the economic impact prong but does not establish the severity of the economic impact with regard to frustration of DIBE. Diminution alone is well-known to be insufficient to reveal whether economic viability has been destroyed by the regulatory prohibition. This must be determined with reference to the second economic prong of *Penn Central*—frustration of DIBE, a simple and definitive financial calculation. *Cienega X* and its progeny do not include a complete analysis of the three-pronged *Penn Central* test.

Temporary or partial takings jurisprudence is unlikely to have any predictability until the economic underpinning of the *Penn Central* test are reconformed to standard economic approaches as decided in *Florida Rock V* and *Cienega VIII*. Until the Supreme Court puts an end to faulty applications of economics within the *Penn Central* test—if, indeed, it is to be its polestar—widespread confusion of takings jurisprudence will persist.