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The Role Of Economics In Regulatory Takings Cases

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Introduction

Two classes of takings stem from the language of the Fifth Amendment of the Constitution: physical takings and regulatory takings.[1] Physical takings result from governmental condemnations, while regulatory takings often impose an inverse condemnation on a property owner. This article considers the role of economics in determining when property owners have been subject to a taking of property, and how they should be compensated for their economic loss.

Government action that results in a physical taking of private property for public use requires *just compensation* for the loss of the property. If the government entity does not make appropriate compensation, the property owner has the right to seek an inverse condemnation.[2] The loss to the property owner is the fair market value of the property, including, if appropriate, the business goodwill value of a displaced business. In California, the just compensation guarantee of the constitution has been characterized as cost-spreading to *socialize the burden* where society as a whole ought to foot the bill.[3]

Governmental regulatory actions, such as enforcement of the Endangered Species Act, also may deny the use of property and result in the loss of its economic benefits to the owner. The Supreme Court's 1922 *Pennsylvania Coal*[4] decision extended the Fifth Amendment protections to property owners for regulations that go *too far*. The law on compensating private property owners due to regulatory takings lacks clarity in comparison to the rulings on physical takings cases. While the criteria to examine in Chief Justice Holmes' balancing standard have been clarified, particularly since the 1978 *Penn Central* case, a clear balancing test has eluded the courts. The decision test remains dependent on *ad hoc factual inquiries* into the *character of government action* compared to the *severity of private eco-*

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[1]The Fifth Amendment states, in part: "Nor shall private property be taken for public use, without just compensation."

[2]*Rose v. State*, 19 Cal. 2d 713, 720 (1942).

[3]See *Holtz v. Superior Court* 3 Cal. 3d 296, 303 (1970) cited in Michael Berger, "'Customer' Service: When Does a Police Action Become a Claim for Inverse Condemnation?" Los Angeles *Daily Journal*, July 6, 1995.

[4]*Pennsylvania Coal v. Mahon*, 260 U.S. 393 (1922). The Supreme Court ruled that when regulation inflicts a loss of "a certain magnitude" on the property owner, then "regulation goes too far" and just compensation is due for the taking. Besides struggling with the *global* constitutional/philosophical notion that society's rights must be balanced with property owners' losses to determine if compensation should be paid, jurists have been consistently unable to agree *locally* what that *certain magnitude* is. (Global and local are italicized to emphasize their mathematical meaning in context.)

nomic impact.[5] Little *just compensation* has been paid by governments over the years, apparently because courts have been reluctant to *socialize the burden* of regulatory takings. The recent passage by the House of Representatives of the Private Property Rights Act and the pending Senate version[6] would remove one source of uncertainty about compensation for a regulatory taking, and would change the form of economic analyses required in federal regulatory takings cases. The differences between the types of analyses needed under the proposed legislation and under historic judicial decisions, are shown in Figure 1. Because the courts have awarded so little compensation to property owners, and made the awards with such inconsistency, the decision test is labeled as a judicial decision in Figure 1 to call attention to the vagaries of the past applications of the *Pennsylvania Coal* balancing standard.[7]

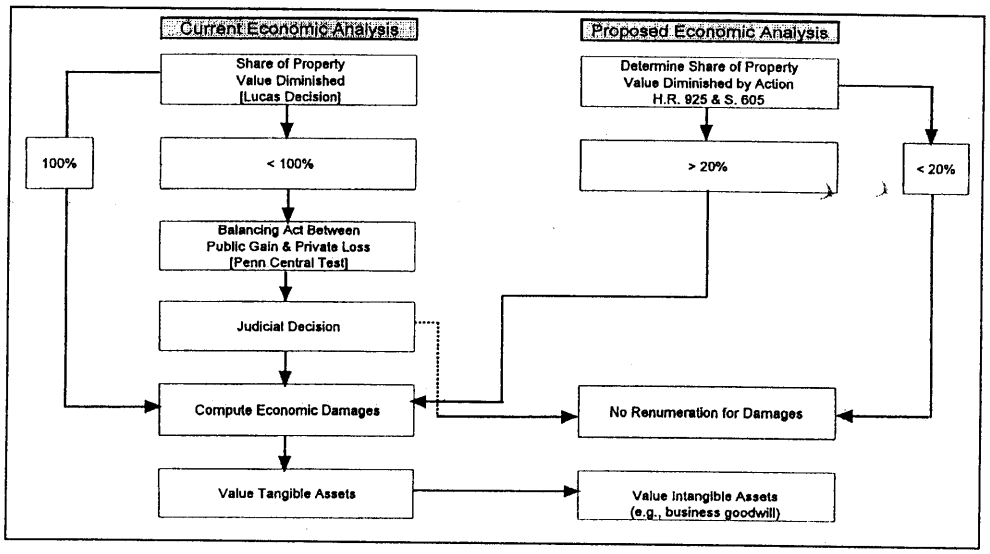

Figure 1. Comparison of Current and Proposed Methods of Determining Takings Compensation

Economic Analysis Within Regulatory Takings

Economic analysis is central to the assessment of a regulatory taking at three stages of the judicial process:

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[5]*Penn Central Transportation v. New York City*, 438 U.S. 104 (1978). The Penn Central case established the two prongs in italics to evaluate in the balance, but did not say how they should be balanced. The case introduced the now-famous parcel-as-a-whole ruling as the basis (denominator) for determining the diminution of value, as well as the "distinct investment-backed expectations" language. On the basis of these factors, Penn Central was denied its claim.

[6]H.R. 925 and S. 605.

[7]See Wade (1995). This article reviews the changing views of criteria on both sides of the balance and concludes that reform should be based on a predictable economic test that incorporates both efficiency and equity measurements to eliminate the vagaries evident in the published case law.

1. The Categorical Screen: To determine the share of the property value denied to the owner by the regulation. According to the *Lucas* standard, if the property owner has been denied all economic beneficial use, it is a categorical taking and compensable without case-specific factual inquiry into the public interest balance.[8]
2. The Balancing Process: To examine the balance between public gain and private economic loss as a result of the regulation. The *Penn Central* Test for less than categorical takings provides the best discussion of the elements to examine for balancing the *character of government action* versus the *severity of economic impact* on affected private property owners.
3. Measuring Damages: Where a taking did occur, just compensation (damages) must be determined for the economic injury. These damages consist of lost tangible asset values, and when appropriate, lost intangible asset values, primarily *business goodwill.*

Tangible assets are those that show up on a balance sheet, including real property. Examples include land, buildings, equipment, accounts receivable, notes receivable, etc. Intangible assets are other assets of the business that can be individually identified and valued. Examples include rights, privileges, assemblages of data and know-how, patents, copyrights, trade secrets, customer lists, special libraries, reputation, management skills, trained labor force, a favorable location, etc. Goodwill is the economic value of a business apart from tangible and other identified intangible assets, representing an extra return to characteristics of the property that cannot be separately valued.

Goodwill is defined in *California Code of Civil Procedure* (section 1263.510(b) as:

> . . . benefits that accrue to a business as a result of its location, reputation for dependability, skill or quality, and any other circumstances resulting in probable retention of old or acquisition of new patronage.

Most intangible assets can be transferred to a new business location without any significant economic loss. However, business goodwill is often tied to a specific physical location, and therefore its value is often diminished when a business is forced to relocate, or denied a permit to expand due to a regulatory prohibition. While many states allow recovery for business goodwill losses, they are not currently recoverable in federal takings cases.[9]

The Current Standard

The current method of determining economic damages recoverable by a property owner is based on the three stages of the judicial process listed above. The denial of the *total* economic beneficial use of a property constitutes a *per se* compensable taking under the *Lucas* decision. If the property

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[8]*Lucas v. South Carolina Coastal Council,* 112 S. Ct. 2886 (1992).

[9]*U. S. v. General Motors Corp.,* 323 US 373 (1945).

owner has lost all economic productive use of his property, then the taking of the property is compensable without any further investigation into legitimate government purpose and the balance between public interest and protection of private property. Economic analysis therefore plays an initial role in determining the extent of economic loss to a particular property owner resulting from a regulation. In most cases regulations reduce, rather than eliminate, the economic uses of someone's property; thus, the *Lucas* standard will apply to only a small portion of situations.[10]

If the loss of productive economic use is not 100 percent, as shown in Figure 1, then the evaluation process moves forward into a balancing of the character of the government action and the severity of the private economic impact due to the taking. The balancing standard is derived from various court cases, beginning with *Pennsylvania Coal,* and continuing through the *Penn Central*, *Nollan,* and *Dolan* cases.[11] The taking determination depends on the *balance* of public interest versus severity of private loss, and requires an examination of the case-specific facts to sort-out this balance.[12]

Published case records have not examined economic evidence for the balance of public benefits and private losses, although it would appear natural, especially from the vantage point of 1995, to evaluate the *Penn Central Test* in a cost-benefit framework. The benefits to the public could be measured concretely if the courts followed the dictates set forth in the Attorney General's 1988 *Guidelines for the Evaluation of Risk and Avoidance of Unanticipated Takings*, which was issued pursuant to Executive Order 12,630. The *Guidelines* lists attributes of the character of government regulation and the steps in the determination of private economic losses to guide the assessment of whether a regulation will likely result in a compensable taking. Updated to reflect *Nollan,* and *Dolan*, and advances in the tools of economic measurement in recent years, public benefits could be estimated for balancing with private losses based on the five criteria listed below.

Criteria to Determine Societal Benefits of Government Regulation

1. Demonstrate that the regulation achieves, and *substantially advances,* a legitimate state interest.
2. Demonstrate that the regulatory constraints are no more than necessary to achieve the desired effects, and could not be obtained in a more cost-effective way.
3. Determine the degree to which the instant property-related activity or use contributes to (has *nexus* with) the harm that is the target of the proposed regulation:
   - The less direct, immediate and demonstrable the contribu tion of the instant activity, the greater the likelihood that a taking will be found.

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[10] A possibly perverse effect of *Lucas*, noted in Justice Stevens' dissent, is presented by Mandelker (1993, p. 295): "The result is that *Lucas* allows courts to reject, not approve, taking claims in the vast majority of land use cases in which they are likely to arise."

[11] *Dolan v. City of Tigard*, 114 S. Ct. 2309 (1994); and, *Nolan v. California Coastal Commission*, 483 U. S. 825 (1987).

[12] The shortcomings of the balancing process are described more fully in Wade (1995).

4. Quantify the impacts of the unconstrained use of the property, and compare those to the regulatory solution imposed on the property owner:
   - Is there a measurable impact avoided, and does the regula tory action mitigate it, even *roughly proportionately* as held in *Dolan*?
5. Estimate the value of public benefits achieved by the regulation.

These guidelines provide a framework to evaluate the *Penn Central Test* in a cost-benefit context. Economists' tools of benefits measurement have been sufficiently advanced in the last ten years for the courts to demand quantitative evidence of benefits in the balancing process.[13]

Economic analysis plays an obvious role on the cost side of the ledger. Published case law has made considerable progress at conforming court determined notions of value to good economic practice. The following steps, which are developed from published cases, suggest the criteria that go into the measurement of private economic losses caused by a regulation.

Criteria to Evaluate Private Losses due to Regulation

1. Establish the timing and amounts of invested capital, and property interests to demonstrate a legitimate, *reasonable* investment-backed expectation.
2. Document actual and/or planned activities at the site proscribed by the regulation that show the lost opportunity for the property's economic use:
   - To show the ability of the property and business to supply the activities/uses intended; and,
   - To show market conditions that create the opportunities foreclosed by the regulation.
3. Establish time period of the loss: a specific temporary period, or in perpetuity.
4. Estimate tangible asset values reduced by the regulatory constraint:
   - Determine portion of property retaining any economic use, if any.
5. Estimate intangible asset values, including business goodwill, reduced by the regulatory constraint:
   - Does economic viability remain, although at a lower level?
   - How severe is the economic loss as measured by the change in net present value of the ongoing and planned enterprise?
6. Determine elements of risk related to the project:
   - Project completion risk;
   - Product market risk (i.e., sales);
   - Financing risk; and,
   - Other risks.

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[13]Appendix D—Compensatory Restoration Scaling Methods, to NOAA's Notice of Proposed Rulemaking for 15 CFR Part 990, Natural Resources Damage Assessments, 60 *Federal Register* 149, August 3, 1995, 39,825 - 39,826, provides a list of methods for valuing ecosystems in relation to restoring natural resource to their non-injured baseline. The economic methods on the list are deemed to be suitable empirical estimation approaches under 15 CFR Part 990, and, therefore, would be suitable for similar applications under a regulatory taking, for instance, in relationship to denial of use to protect habitat under ESA.

7. Estimate the reduced reasonable investment-backed profit expectations caused by the regulation.
8. Capitalize the lost earnings at a discount rate consisting of the market cost of money, plus risk factors to reflect the level of uncertainty of future cash flows.

The greater the diminution of profit expectations, the greater the likelihood that a taking has occurred and compensation should be paid. Except for the *Lucas* 100 percent standard, however, the percentage of diminution of property value is not a stand-alone determinant of a compensable taking. Walter's review of 26 regulatory takings cases between 1915 and 1994 revealed that the taking determination is unrelated to the percentage diminution of property value. Walter's data show nine examples where the diminution ranged between 75 percent and 97.7 percent for which no compensation was paid for a regulatory taking. Another seven examples with reduced values ranging from 88 to 100 percent were judged regulatory takings and compensation was paid.[14] Under the current standard, unless the loss is total, the private loss must be compared to the public benefits directly related to the proscribed use of the property in order to rule on a takings case. In cases reviewed, case-specific facts other than the degree of economic loss governed the judicial decisions as to whether a taking had occurred that should be compensated, *Lucas* excepted.

While no court has done so yet, the evaluation of case-specific facts could be done using economic analysis to match private costs against public benefits. This cost-benefit framework would facilitate a predictable economic test to correct the arbitrary nature of prior takings decisions and preclude the *ad hoc* threshold approach of the 104th Congress' proposed legislation to reform regulatory takings law.

The Proposed Standard

The proposed legislation emphasizes a "no fault" interpretation of the Fifth Amendment, which requires government compensation when regulatory action reduces the value of private property by a certain "bright line threshold." The pending Congressional bills substitute a 20 percent threshold for the *Lucas* 100 percent standard, and eliminate the balancing provisions that have developed through case law since 1922. Under the proposed law, diminution of economic value alone is the basis for compensation. Claimants need only demonstrate that their property value has been reduced by more than 20 percent to be compensated. Issues related to the legitimate public interest (other than nuisance exclusions) no longer apply. The damages *per se*, or the amount of compensation that would keep the property owner whole, would be equivalent to the amount calculated in conducting the 20 percent threshold test.

On its face, this is a simple economic test that looks at the value of the affected property before and after the effect of the regulation. The drawback

[14]Walter (1995), p.338. Walter's discussion emphasized methods to improve economic loss measurement and ignored the important judicial question at the heart of regulatory takings cases: How far can a regulation diminish economic viability before just compensation must be paid? Clearly, the decision in the cases listed in his article hinged on judicial views of offsetting public benefits not the economic losses to property owners. Methods to improve the evidence on both sides of the ledger are needed.

is that both the pre-regulation property value, and the post-regulation property value have to be measured by the two parties. Any disagreement in property values will likely result in protracted litigation, just as we observe now. The eight criteria listed above still apply to the process of measuring a takings loss. The *Florida Rock* and the *Whitney* marathon cases illustrate how government entities and affected property owners will fundamentally disagree over estimates of market demand, the ability to supply, and the risk of the project foreclosed by regulation, as well as valuation methods, even if Congress passes a new "simplified" takings law.[15] Opposing sides will continue to litigate on the criteria listed above. If the regulatory impact is, for example, real but "small," opposing sides will have difficulty in agreeing that the reduction in property value is 19.9 rather than 20.1 percent. Estimates by opposing experts will have ranges of error that may render the "bright line threshold" as murky as the existing balance approach. In reality the proposed threshold test for a taking may be no more certain than the existing balancing approach.[16] Neither does it allow any consideration of the efficiency consequences of regulation; all prior decisions under the case-specific balancing standard considered the public's right to public health, safety and welfare as well as basic fairness to the property owner.

Estimating Economic Damages

The basic economic methods used to measure both personal and corporate damages are well founded and presented in a variety of text books and journal articles.[17] Value for any asset is generally determined by computing the present value of future cash flows to the owner of the asset. This type of model can be used to determine the value in place, or investment value, of the asset. Another concept of value is fair market value, which requires a notion of some trading market for assets where buyers and sellers determine prices, such as a securities market.

In takings cases economic losses are of two types: loss of economic use of the taken property, and where allowed, loss of business goodwill. Walter (1995) summarizes the different economic models that have been applied in previous condemnation and takings cases. In the case of a condemnation and physical taking of property, the property value as a rental asset (or

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[15] *Florida Rock Industries v. United States* 8 Cl.Ct. 160 (1985) entered the court system ten years ago over denial of a permit by the Corps of Engineers to mine 98 acres of aggregate purchased in 1972 for $2.9 million, before any regulatory prohibition subsequently passed by federal law. The case was tried by U.S. Court of Claims, reversed by the Federal Circuit court in 1986, *Florida Rock II*, 791 F. 2d 893 (1986); retried by Claims court in 1990, *Florida Rock III*, 21 Cl.Ct. 161 (1990); and, reversed again in 1994 by the federal circuit, *Florida Rock IV*, 18 F. 3d. 1560, 38 ERC 1297. So far, no damages have been paid.
Whitney Benefits, Inc. v. United States, 926 F. 2d 1169 (1985); 18 Cl.Ct. 394 (1989); 752 F.2d 1554 (1985) cert. denied., 116 L.ED 2d 354 (1991) was a coal case. Like the prior case, plaintiff purchased the coal property before the 1977 passage of the SMCRA, which prohibited mining the coal. Government witnesses claimed that the coal property was valueless while Whitney demonstrated a competent mining plan, market demand, and reasonable investor expectations. The United States finally paid $60 million in damages in 1995.

[16] See Shabman and White (1995, p. 21) for more discussion of the analytic problem of "establishing(ing) fair market values with precision and without dispute from either the agency or the landowner."

[17] Brookshire (1987) contains a good review of estimating damages for a variety of litigation cases. See also Foster, Trout and Gaughan (1994) for damage models relating specifically to businesses.

other highest and best use) is usually determined by using a DCF model or a comparable sales model. Other types of experts may be necessary to value property that has rights to underground resources, such as coal, water or petroleum, for example.[18] In cases involving a loss of business goodwill, diminution of business goodwill value is usually measured by an economist or business appraiser. The loss of business goodwill is related to, but not always identical with, a loss of business profits. Past profits, and expectation of future profits, primarily determine total business value. Total business value can be described as the sum of tangible asset value plus intangible asset (goodwill) value.[19]

(1) Total Value = Tangible Asset Value + Intangible Asset Value

The value of business goodwill, when recovery is allowed, can be determined by valuing the total business entity, and then subtracting the market value of the tangible assets, or by using what is called the "excess earnings model". The excess earnings model divides the earnings into two streams, one stream of income related to a return on the tangible assets and one stream of income related to a return on the intangible assets. The segmenting of the income streams allows the appraiser to value each component separately, and thereby determine a separate value for business goodwill.[20]

The diminution in economic value of the property and related business is the proper measure of loss in a takings case. The change in economic value should reflect the change in expected future cash flows to be earned from using the property, in present value terms. The correct expression of the change in value is the change in discounted cash flow, as measured by the DCF model. The DCF model is shown in Equation 2, below.

(2) $$\text{Price} = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^t}$$

Where CF_t = Cash flows in period t, k is the discount rate, and t is the time period.

While economists believe this is the most appropriate model for measuring damages, published case records indicate courts have considered numerous damage concepts and approaches in measuring takings related damages. The eight criteria listed previously emphasize the *Wheeler IV* standard—lost opportunity—as the appropriate measure of loss.[21] Loss in estimated income from the property's planned (demonstrable) highest and best use is the appropriate damage concept in 1995. Damages under this concept are best measured using a DCF model.

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[18]For a discussion of valuing coal in a takings case, see *Whitney Benefits, Inc. v. United States*, op. cit. Another noteworthy case involving valuing limestone in a takings case is *Florida Rock Industries, Inc. v. United States*, op. cit.

[19]Business valuation is discussed in many available texts. A summary of the concepts and sources can be found in Trout (1994).

[20]Goodwill valuation is discussed in many valuation texts. See Pratt (1989); or, Desmond and Kelley (1980), for example.

[21]*Wheeler (IV) v. City of Pleasant Grove*, 833 F.2d 267 (11th Cir. 1987).

Walter's survey of regulatory takings cases indicates that the DCF model has been neither widely embraced, nor roundly condemned.[22] He is correct in asserting that this model took several years of acceptance in the academic world and the investment world before being accepted by regulatory commissions for use in utility rate cases.

The DCF model is one of two market based models which can be used to demonstrate and measure a change in economic value.[23] The DCF model is directly related to both the Net Present Value (NPV) and Internal Rate of Return (IRR) models used in investment analysis, which in turn can be used to examine the original *investment backed expectations* associated with any property.[24]

In cases of partial economic loss, diminution of goodwill value can be measured by initially computing the change in operating profits to the affected business owner resulting from the regulation, and then examining how that change to profits would affect the value of the business. The change in value of the business can be determined with the DCF model, or with a market capitalization model, which is a derivative of the DCF model. It is possible that the change in total value could be partially related to a change in the value of the tangible assets and also to a change in the value of the intangible assets (e.g., goodwill). However, if the tangible assets are not affected by the regulation, then all of the impact from the regulation to operating profits should be allocated to the goodwill portion of the business value.

As shown in Figure 1, the first step is an examination of the *Lucas* test: was 100 percent of the economic use taken away from the property owner. This step requires an economic analysis of the potential for economic use after the effect of the regulation on the landowner. If there is no economic value left, then the *Lucas per se* rule applies, and the landowner should be fully compensated for loss of economic use of the property.

If the taking is not 100 percent, then under current law the balancing between private property owner losses and public gains must be examined and evaluated. At the federal level, this means the portion of the property taken must be determined, and the owner must compute its economic loss. This loss would most often be the value of the property taken, as measured by the economic models described above.

At the state level, the taking may impose a compensable business goodwill loss on the property owner. For example, a fruit grower in California was denied use of a significant portion of his land for fruit production. The grower lost not only about half of his fruit bearing trees, but also incurred a significant loss in the amount of fruit through-put to his nearby fruit canning and fruit processing plants. The taking caused not only a loss of property and its use, but also a secondary "down stream" loss to the remaining businesses of the grower. Any loss to the economic use of the remaining portion of the property is referred to as a severance damage. In some states, severance damages are compensable to the property owner separate from any loss directly related to a condemnation.

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[22]Walter, op. cit., p 346.

[23]The other model is the market capitalization valuation model. In valuing common stock investments it is referred to as the price/earnings (P/E) model.

[24]This was an important factor in the *Penn Central* case.

The economic analysis in this particular case extended to the reduction in gross revenues, and the loss of profits resulting from the effect of the taking on the direct use of the land as well as the downstream business required the produce of the land as an economic input. The loss of a significant portion of the fruit caused a decline in the economic value of the related businesses resulting from the state's taking of a portion of the grower's land. The DCF model was used to determine both the value of the physical property taken and the size of the severance damages to the grower resulting from the taking. In this case, the taking was a physical taking, rather than a regulatory taking. The economic analysis would be the same in either situation.

In other cases the economic impact on the business is more direct, but the effect on the value of the business may be less obvious. For example, a bank branch was required to move to a less desirable location as a result of local regulations. The move to a new location affected the branch's level of potential deposit growth, but not its instant level of deposits. The loss of potential deposits in turn reduced the potential future lending capacity of the branch, which thereby reduced potential branch operating profits. The reduction in potential profits affected the value of the branch and its related business goodwill.

In this case, the loss of deposit growth was computed by comparing the condemned branch deposits with an index of deposits for six similar branches that did not move, as shown in Figure 2. Notice that deposits for the affected branch do not keep up with the growth in deposits of the bank's nearby branches. Once the loss of deposits was determined, profits and reduced business goodwill value were estimated using standard financial accounting and valuation tools. This is an example of a business goodwill loss resulting from a physical taking of the property through condemnation. The economic analysis would be the same if a regulatory taking had occurred which prohibited expansion of the bank's business at its original location.

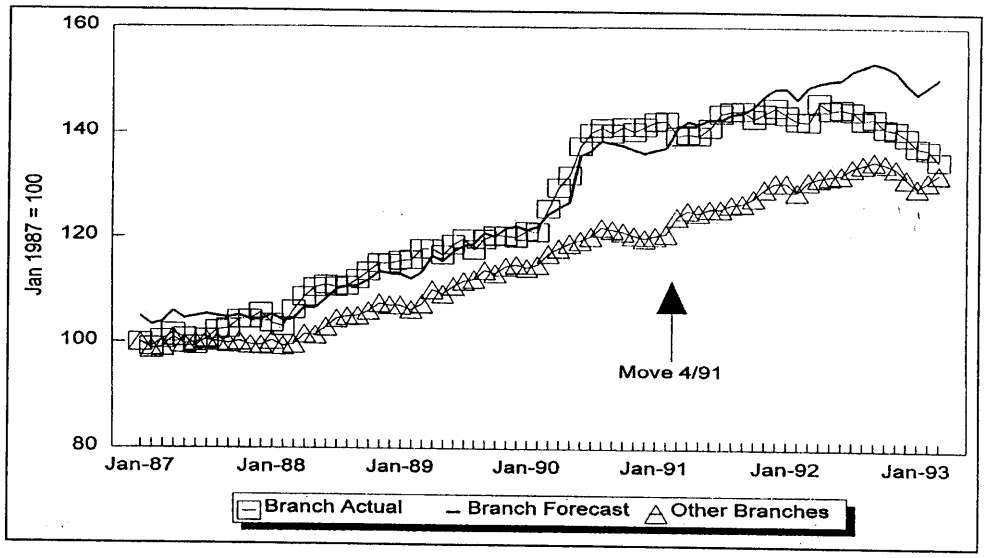

Figure 2. Regression of Bank Branch Index, Jan. 1987 - Mar. 1993

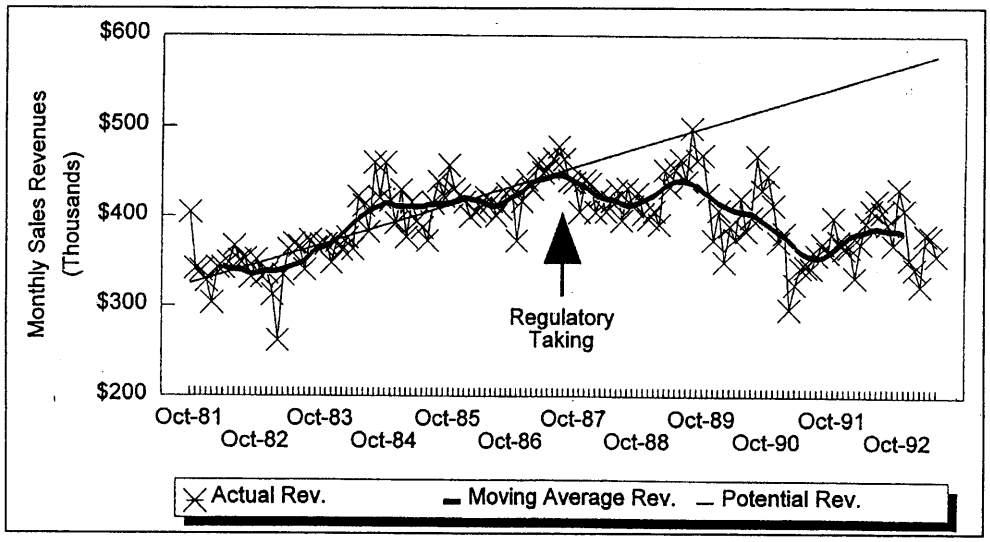

Figure 3. Total Revenues: October 1981 to May 1993

In another case involving an inverse condemnation, a business faced the loss of use of a portion of his property because of certain land use regulations that affected only a portion of the landowner's property. The loss of partial use of the property severely affected the level of business conducted on the unaffected parcel of land, thereby rendering the business nearly worthless. Figure 3 compares revenues before and after the impact of the regulations. The graphical presentation of historic revenues shows that revenues declined significantly after the regulation was implemented. The change in revenues which are quite obvious in Figure 3, can easily be translated into a change in net profit. The DCF model was used to translate the change in profits to a change in economic value, and thereby a determination of the business goodwill loss resulting from the regulations. This is an example of a regulatory taking case; however, the analysis of the goodwill loss would be the same if a portion of the property had been physically taken in a condemnation, rather than reduced in value through the effect of government regulations.

Conclusions

Estimating economic damages is the traditional role of economists in both regulatory takings and condemnation cases. However, there are two additional roles for economists identified herein: examining the effect of the *Lucas* standard, and determining the costs and benefits under the Penn Central Test. If the Congress passes a new regulatory takings law, there will no doubt be substantial valuation disputes about economic losses, particularly those near the 20 percent threshold figure that would trigger compensation. If the Congress does not pass its version of regulatory takings reform, benefits estimation should become the basis for providing the evidence on the public's side of the regulatory ledger. The cost-benefit framework should become the economic tool of choice for resolving takings cases.

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