Takings Reassessed

Abraham Bell  
*University of San Diego*

Gideon Parchomovsky  
*University of Pennsylvania Carey Law School*

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ESSAY

TAKINGS REASSESSED

Abraham Bell* and Gideon Parchomovsky**

INTRODUCTION ........................................................................................................... 278
I. THE TAKINGS TRIANGLE .......................................................................................... 284
II. THE EFFICIENCY AND FAIRNESS OF DERIVATIVE TAKINGS ..... 289
   A. Derivative Takings and Compensation ......................................................... 289
      1. The Inefficiency of Uncompensated Derivative Takings ......................... 290
      2. The Unfairness of Uncompensated Derivative Takings ......................... 292
   B. The Inadequacy of Existing Theory and Doctrine ..................................... 294
      1. Nuisance Law ............................................................................................... 294
      2. Average Reciprocity of Advantage ........................................................... 297
      3. Practicality and Administrability ............................................................... 299
III. TAKINGS AND SELF-ASSESSMENT .................................................................... 300
   A. A Model of the Self-Assessment Mechanism .............................................. 301
   B. Enriching the Basic Model ............................................................................ 304
      1. Assumptions Revisited ................................................................................ 304
      2. Calibrating the Penalty ................................................................................ 306
      3. Collusion ........................................................................................................ 307
   C. The Insurance Alternative ............................................................................... 307
IV. TOWARD UNIFYING PRINCIPLES ........................................................................ 310
   A. Physical and Regulatory Takings ................................................................. 311
   B. Taxes and Takings ............................................................................................ 314
   C. Self-Assessment: Not a Panacea .................................................................... 316
CONCLUSION ............................................................................................................. 317

**Associate Professor, Fordham University School of Law. The authors thank Ian Ayres, Monica Conyngham, Kirsten Edwards, Assaf Hamdani, Pamela Laufer, Dan Richman, Larry Rothenberg, Eric Selmon, and Peter Siegelman for invaluable comments and criticisms. We also thank Michael Pereira and Kristy Watson for excellent research assistance. We acknowledge with gratitude the support of the John M. Olin Center for Law, Economics, and Business at Harvard Law School.
INTRODUCTION

SINCE the seminal case of Pennsylvania Coal Co. v. Mahon, which extended the reach of the Fifth Amendment's Takings Clause to "regulatory takings," scholars and courts alike have struggled to demarcate a principled boundary between compensable and uncompensable regulatory takings. This effort has been so unsuccessful as to prompt a leading commentator to conclude that "[t]hroughout constitutional jurisprudence, only the right of privacy can compete seriously with takings law for the doctrine-in-most-desperate-need-of-a-principle prize." Takings jurisprudence is replete with inconsistent distinctions that provide scant guidance for courts and policymakers. Indeed, in Penn Cen-

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1 260 U.S. 393 (1922).
2 Id. at 415.
3 See discussion infra Part I.
4 Jed Rubenfeld, Usings, 102 Yale L.J. 1077, 1081 (1993). Rubenfeld is not alone. The list of critics of the Court's takings jurisprudence is long and impressive. See, e.g., Bruce A. Ackerman, Private Property and the Constitution 3 (1977) (calling takings jurisprudence "a set of confused judicial responses"); Raymond R. Coletta, Reciprocity of Advantage and Regulatory Takings: Toward a New Theory of Takings Jurisprudence, 40 Am. U. L. Rev. 297, 299-300 (1990) (calling takings jurisprudence a "chameleon of ad hoc decisions that has bred considerable confusion"); Gideon Kan-
ner, Hunting the Snark, Not the Quark: Has the U.S. Supreme Court Been Competent in Its Effort to Formulate Coherent Regulatory Takings Law?, 30 Urb. Law. 307, 308 (1998) ("The incoherence of the U.S. Supreme Court's output in this field has by now been demonstrated time and again by practitioners and academic commentators ad nauseam, and I refuse to add to the ongoing gratuitous slaughter of trees for the paper consumed in this frustrating and increasingly pointless enter-
prise."); Andrea L. Peterson, The Takings Clause: In Search of Underlying Principles Part I—A Critique of Current Takings Clause Doctrine, 77 Cal. L. Rev. 1299, 1304 (1989) ("[I]t is difficult to imagine a body of case law in greater doctrinal and concep-
tual disarray."); Carol M. Rose, Mahon Reconstructed: Why the Takings Issue Is Still a Muddle, 57 S. Cal. L. Rev. 56, 61-62 (1984) ("By far the most intractable constitutional property issue is whether certain governmental actions 'take' property[;] ... commentators propose test after test to define 'takings,' while courts continue to reach ad hoc determinations rather than principled resolutions.").
5 Compare, e.g., Miller v. Schoene, 276 U.S. 272, 279-80 (1928) (finding no taking where a state regulation required owners to cut down red cedar trees infected with a virus that could kill apple trees, and noting that "where the public interest is involved preferment of that interest over the property interest of the individual, to the extent even of its destruction, is one of the distinguishing characteristics of every exercise of the police power which affects property"), with Dep't of Agric. & Consumer Servs. v. Mid-Fla. Growers, 521 So. 2d 101 (Fla. 1988) (holding that full and just compensation was required when the state, pursuant to its police power, destroyed healthy trees), cert. denied, 488 U.S. 870 (1988); compare Mahon, 260 U.S. 393 (holding that elimina-
The Supreme Court itself acknowledged its failure "to develop any 'set formula' for determining when 'justice and fairness' require that economic injuries caused by public action be compensated by the government," and dubbed takings cases "essentially ad hoc, factual inquiries."

The regulatory takings conundrum has so bewitched academics that it has blinded them to the existence of a companion problem lying at the core of ordinary takings jurisprudence: the problem of externalities produced by takings, or, as we shall call them in this Essay, derivative takings. The problem of derivative takings is best illustrated by the case of United States v. Causby. In Causby, the plaintiffs-respondents claimed that the establishment of an air route above their houses worked a taking on their property. Writing for the Court, Justice William O. Douglas ruled that the establishment of the air routes created an easement on the property owners' air rights. However, he ruled that only those property owners whose houses lay directly below the air routes had a right to compensation under the Fifth Amendment. Justice Douglas denied compensation to the other property owners, who incurred essentially the same harm as a result of the same government action, on the grounds that their property had not suffered a "physical invasion."

The result in Causby is neither fair nor efficient. The outcome is unfair because, from the point of view of the equally harmed property owners, the location of the lots relative to the flight routes is irrelevant and arbitrary. Harm to the property directly over-
flown—the physical taking—is fully compensated, while the same harm to the neighboring lot which lies one inch from the line of the air route—the derivative taking—remains fully uncompensated.\(^\text{11}\) The outcome is inefficient because it permits the government to externalize on private property owners a substantial part of the cost of a decision or policy that is acknowledged to be a taking, leading to inaccurate assessments of the cost effectiveness and desirability of government policies.

The derivative takings problem raised by *Causby* is present in almost every case of a physical taking. For example, every time the government condemns property to pave a road, it only compensates the owners on whose property the road passes. Owners of abutting lots receive no compensation for the diminution in their properties’ value, even though the diminution results directly from the government’s exercise of the power of eminent domain. Even the Supreme Court—while maintaining the rule of *Causby*—has noted the anomaly created by the “gross disparity between the landowner whose premises are taken for a highway (who recovers in full) and the landowner whose property is reduced to 5% of its former value by the highway (who recovers nothing).”\(^\text{12}\)

We argue, contrary to accepted lore, that takings come in three forms, not two: physical takings, regulatory takings, and derivative takings. The three are analytically distinct. A physical taking occurs when the state seizes a property interest in order to put it to public use. In a regulatory taking, the state does not seize the property interest, but regulates its use in a manner that unduly diminishes property values.\(^\text{13}\) A derivative taking is present whenever a taking diminishes the value of surrounding property. Derivative takings are a hybrid of their more familiar close cousins. They resemble regulatory takings in that they reduce the value of property without physically appropriating it. Yet, they are distinct from regulatory takings in that they may arise as the result of a physical

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\(^\text{11}\) Saul Levmore has pointed out that lower courts appear to have added a requirement of low altitude as well as direct overflight before compensation will be ordered. See cases cited in Saul Levmore, Takings, Torts, and Special Interests, 77 Va. L. Rev. 1333, 1352–53, 1353 n.29 (1991).

\(^\text{12}\) Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1019 n.8 (1992). The legal recourse available to these owners is in tort, namely in a nuisance action. We discuss the inadequacy of this option in Section II.B.1, infra.

\(^\text{13}\) See Mahon, 260 U.S. at 413 (1922).
taking. And, unlike its cousins, the derivative taking never appears alone; it must always be preceded by a physical or regulatory taking.14

Our goal in this Essay is twofold. Descriptively, we bring to light the problem of derivative takings. We show that derivative takings pervade virtually every government action affecting property. Prescriptively, we craft a workable mechanism for rectifying the problem of derivative takings. Compensating property owners for harms from derivative takings implicates two principal challenges: inadministrability and inadequate information. The first concern stems from the fear that the judicial system will collapse if a large number of new takings cases are admitted for consideration. The second concern derives from the fact that with derivative takings, as with any other externality, the government lacks sufficient information as to the exact identity of the harmed group and the magnitude of the harm. Self-assessment is capable of allaying both concerns. As we will show, a properly designed self-assessment mechanism can dramatically reduce the cost of compensating property owners. Furthermore, it can induce property owners to report truthfully the harms occasioned on them by government action. Moreover, we show that our proposed mechanism is, in principle, applicable to the two other types of takings—physical takings and regulatory takings—and, thus, it may serve as a unifying principle in an area in desperate need of one.

The best way to illustrate how self-assessment works is through a stylized example. Imagine that the state decides to pave a road. To this end, it takes four lots and compensates the owners of the lots taken. Assume that this action reduces the value of each of the four neighboring lots that now abut the road by $50,000. Under our proposed system, the four neighbors will report to the state both their belief that they suffered a derivative taking and the magnitude of the loss (in this case $50,000 each), and in principle, they will be entitled to this amount. To counter the proclivity of the assessors to exaggerate in their own favor by overstating the magnitude of their losses, the state

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14 As we discuss elsewhere, a derivative taking may also result from a physical or regulatory giving. See Abraham Bell & Gideon Parchomovsky, Givings (March 1, 2001) (unpublished manuscript, on file with the Virginia Law Review Association).
must employ probabilistic audits and penalties of sufficient magnitude to deter false reporting. This can be achieved due to the unique informational basis the state has in this context. To slightly modify the previous example, assume now that each of the four homeowners exaggerates her damage by $10,000 (reporting $60,000 each, instead of $50,000). To deter exaggerations, the state audits and sues only one of the four homeowners. To make up for the fact that it has identified only one of the four exaggerating owners, the state can impose a false reporting penalty of three times the magnitude of the exaggeration. Concretely, in this case, the state will assess a penalty of $30,000 on the one audited homeowner. The state will therefore grant her only $20,000 in compensation. Implemented correctly, this mechanism makes truthful reporting the profit-maximizing strategy for each of the homeowners, and ensures that the government does not overpay for its takings.

Although the mechanism may sound unusual, it is not unprecedented; it resembles a procedure in use in the income tax arena. Yet, there are some informational differences that make our mechanism more efficient. In the tax context, the state often lacks a benchmark against which to measure the truthfulness of self-assessments. Here, by contrast, the derivative takings reports may be measured against two important baselines: the compensation paid to the homeowners whose property was physically taken and the reports of other neighbors claiming derivative takings. Furthermore, because the state will know the enforcement rate and the exaggeration rate, it can calibrate the penalties to offset any incentive to overreport.

The outcomes generated by our mechanism increase both efficiency and fairness. Forcing the state to bear the full cost of its actions helps ensure that the state uses its eminent domain power

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15 We discuss further the ideal magnitude of the penalty and the assumptions underlying this example in Part III.A, infra.

only when doing so enhances social utility. The full compensation afforded to owners guarantees efficient investment in property. Insofar as fairness is concerned, our system guarantees just compensation to all homeowners who suffer a harm as a result of government action, eliminating the risk that the public at large will benefit at the expense of few. Furthermore, the mechanism we propose reduces or eliminates two distortions characteristic of takings. First, it reduces the disparate impact of eminent domain on the poor, thus creating a desirable distributive effect. Roads and undesirable public facilities are usually built in poor areas because the value of property in such areas is lower. As a result, derivative takings are much more prevalent in poor neighborhoods. Our system remedies this problem by ensuring that the poor receive compensation for the burdens they are forced to bear. Second, our proposal offers the advantage of a dramatic reduction in administrative costs in compensating for takings. The fear of inadministrability has had an important role in shaping takings doctrine and is responsible for many of the doctrine’s distortions. Alleviating this concern can open the way to a more coherent, efficient, and just takings policy.

We wish to emphasize at the outset that throughout this Essay we remain agnostic as to the definition of a compensable taking. Instead, we assume that once an action is already deemed a taking, the government should account for the full cost of its action to the extent that it is administratively feasible. In accordance with this assumption, we seek to expose the full range of costs occasioned by actions that are already recognized as takings and develop a superior administrative mechanism for compensation.

In Part I, we briefly review the current state of takings jurisprudence. In Part II, we present our modified typology of takings instances. In this Part, we present the problem of derivative takings and we evaluate its effects on fairness and efficiency. In Part III,

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17 We discuss in greater detail below the question of whether the government should be treated as a rational wealth-maximizing economic actor. See infra note 53 and accompanying text.
18 In a study of exercises of eminent domain in Chicago, Patricia Munch demonstrated that that the indigent (those with lower value property) were consistently undercompensated relative to the affluent (those with higher value property) due to the high cost of litigating appeals of government appraisals. See Patricia Munch, An Economic Analysis of Eminent Domain, 84 J. Pol. Econ. 473, 487-88 (1976).
we craft our solution to the problem of derivative takings—self-assessment—and devise a mechanism that ensures truthful reporting. We conclude in Part IV by developing the possibility of using our self-assessment scheme in other areas of takings jurisprudence, especially in the context of regulatory takings.

I. THE TAKINGS TRIANGLE

As a formal matter, the takings conundrum involves nothing more than identifying at which apex of the eminent domain-tax-police power triangle a government action lies. The Fifth Amendment to the Constitution demands that the government compensate property owners when it "takes" the property through its power of eminent domain.19 However, when the government "takes" through taxes, or reduces value by exercise of its police powers, it need not compensate.20 Yet, the label chosen by the government is not dispositive. When regulation—normally, a legitimate exercise of the police power—reduces property values too much, it ceases to be an exercise of the police power and becomes an exercise of the power of eminent domain—thus a compensable taking.21 For the formalist, compensable takings in all

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19 The Fifth Amendment only applies to the national government, but the Fourteenth Amendment incorporates the Bill of Rights’ protections (including the Takings Clause) against actions of state governments. See Chi., Burlington & Quincy R.R. Co. v. Chicago, 166 U.S. 226, 241 (1897) (incorporating the right to just compensation into the Due Process Clause of Fourteenth Amendment).

20 See Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978). The government may also reduce value by committing a tort. However, it cannot be said that there is a government “power” to commit torts. See discussion infra Section II.B.1. For an argument that the original understanding of the Takings Clause mandates that only physical appropriations be viewed as requiring compensation, see William M. Treanor, The Original Understanding of the Takings Clause and the Political Process, 95 Colum. L. Rev. 782 (1995).

21 See Pa. Coal Co. v. Mahon, 260 U.S. 393, 415 (1922). Justice Holmes identified those regulations that have become exercises of the power of eminent domain as regulations that have gone “too far.” Holmes assumed, in accordance with constitutional doctrine of his time, that such “excessive” regulations of property rights would set them afoul of the court’s limitations on the exercise of the police power, founded in economic substantive due process or the Contracts Clause, and that the regulations could therefore be justified only with respect to the power of eminent domain. See Glen E. Summers, Private Property Without Lochner: Toward a Takings Jurisprudence Uncorrupted by Substantive Due Process, 142 U. Pa. L. Rev. 837, 846-54 (1993); cf. Robert Brauneis, “The Foundation of Our ‘Regulatory Takings’ Jurisprudence”: The Myth and Meaning of Justice Holmes’s Opinion in Pennsylvania Coal
cases are easily identified by stripping away the label and uncovering the nature of the actual state power being exercised.

But the formalist approach is deeply unsatisfying. To begin with, the categories are so vague as to settle nothing. How does one tell the difference between exercises of the police power, the taxing power, and the power of eminent domain? After all, once the court is willing to look beyond the label attached by the state, the court must rely on some substantive differences between the different powers that make them intrinsically and identifiably different. The mere label solves nothing. And more importantly, why ought the right to compensation turn on the nature of the exercised power? Why is an uncompensated diminution of value constitutionally offensive when it results from an exercise of the power of eminent domain, but not when it results from the taxing or police powers?

The difficulties in line drawing have been compounded in recent decades by the emergence of new understandings of property. First, as Cass Sunstein has noted in another context, the New Deal undid the notion of property rights as fixed objects in the constitutional constellation. In the post-New Deal universe, property became a legal construct to be reengineered at will by the legislature. This made takings a far more nebulous subject; what might have previously seemed like a seizure of property could be justified in the post-New Deal era as a mere redefinition of property rights. Thus, where the nineteenth-century Supreme Court could view “harm prevention” as a definitively regulatory concept, the late twentieth-century Court saw it as simply another justification for redefining property rights that could, in the appropriate circumstances, be viewed as a seizure.

Second, as Charles Reich established in his celebrated article *The New Property*, the vastly expanded role of government altered traditional concepts of the source and nature of wealth and property. Administrative regulation became the source of vast wealth, or, in some cases, the solvent that wiped away an entire

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{\textit{Co. v. Mahon}, 106 Yale L.J. 613 (1996) (arguing that Mahon is best understood as an expression of Holmes's multifaceted theory of the constitutional protection of property).}


class of property. With the police power becoming the dominant creator of wealth, the importance of traditional confiscation proceedings as means of extinguishing property rights shrank relative to the power of regulation.

Third, and most importantly, the once-dominant notion of property as a discrete thing has been replaced by an understanding that sees property as a bundle of almost infinitely divisible rights. As the concept of property has subdivided, the different government actions affecting property rights have come to be seen as differing only in degree and never in kind. With property now viewed as a bundle of sticks of rights, it is unclear how many sticks have to be removed before a taking occurs.

For the past quarter century, the judiciary has struggled unsuccessfully with this new reality, failing to craft a coherent takings doctrine. In \textit{Penn Central Transportation Co. v. New York City}, the Court explicitly raised its hands and established an ad hoc inquiry comprising three factors for identifying takings in actions that purport to be exercises of the police power: the owner's reasonable investment-backed expectations, the nature of the government action, and the degree of diminution in property value. At the same time, the Court refused to let go of traditional identification schemes characteristic of the pre-New Deal era. Notwithstanding the \textit{Penn Central} test, permanent physical invasions alone are takings, prevention of noxious uses may block the finding of a

\begin{quote}
\textsuperscript{26}See Michael A. Heller, The Boundaries of Private Property, 108 Yale L.J. 1163, 1189–94 (1999) ("Pennsylvania Coal Co. v. Mahon marks the beginning of the Court's dramatic shift away from thing-ownership... toward the bundle metaphor... ").

\textsuperscript{27}See generally Ackerman, supra note 4, at 116–18 (discussing the difference between the layman's view of property and the more complex reality of property as various collections of "property-bundles"). Much of the debate between Justices Holmes and Brandeis in \textit{Mahon} turned on whether the state act had removed an entire estate. Compare \textit{Mahon}, 260 U.S. at 414 (Justice Holmes noting that the state act "purports to abolish what is recognized in Pennsylvania as an estate in land"), with id. at 419 (Brandeis, J., dissenting) ("The rights of an owner as against the public are not increased by dividing the interests in his property into surface and subsoil."). See also Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 130 (1978) (""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.").

\textsuperscript{28}438 U.S. at 130.

\textsuperscript{29}See id. at 124.

\end{quote}
and a complete wipeout of property value not ascribable to nuisance prevention is a per se taking. Arching over the entire scheme, the Court’s new substantive economic due process approach requires a rational “nexus” and/or “rough proportionality” between the government action and its goal.

This confounding welter of cases represents only the Court’s attempt to patrol the line between eminent domain and police powers. The Court has never seriously addressed the relationship of the taxing power to either of these two powers, leaving most of the area of the takings triangle in the shadow of uncertainty.

Coming to the aid of the courts, theoreticians have proposed a plethora of alternative litmus tests for the Takings Clause. The most extreme view is associated with Richard Epstein, who would see practically any government action that diminished property values—whether stemming from tax, eminent domain, or police powers—as a taking for which compensation is constitutionally mandated. At the other end, Louis Kaplow, similarly failing to identify any grounds for distinguishing compensable takings from other government actions diminishing property values, has expressed some doubt about the attractiveness of government compensation altogether. Kaplow and Lawrence Blume and

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35 While the Court has not identified the rationality portion of its takings jurisprudence as “substantive due process,” it is substantive due process that provides the pedigree and the likely doctrinal justification for requiring regulations to be undertaken by means of the power of eminent domain rather than a police power. See City of Monterey v. Del Monte Dunes at Monterey, 526 U.S. 687, 753 (1999) (Souter, J., concurring in part and dissenting in part); supra note 21.
36 There have also been more modest attempts to clean up the doctrine without necessarily resorting to grand theory. See, e.g., Andrea L. Peterson, The Takings Clause: In Search of Underlying Principles Part II—Takings As Intentional Deprivations of Property Without Moral Justification, 78 Cal. L. Rev. 53 (1990).
37 See Epstein, supra note 10, at 35–36. Epstein also sees torts as giving rise to constitutionally required compensation.
39 See id. at 538–41.
Daniel Rubinfeld have suggested that privately supplied insurance for government-induced diminution of property values might be preferable to a scheme of government-provided compensation; Blume and Rubinfeld concluded accordingly that compensation should mimic insurance and be available only where the owners are highly risk-averse and the losses large.

Other commentators have clustered around intermediate positions, most famously explained by Frank Michelman, who proposed that when a utilitarian calculus demonstrates the net positive benefit of the government action, one might appropriately let the losses lay where they fall and refuse to pay compensation. Michelman himself maintained some skepticism about the utilitarian approach, and he insisted that, at the very least, one of the costs to be taken into account is the demoralization that may result from the feeling of having been victimized by a government taking. Any number of additional theorists, most less squeamish about utilitarianism, have found themselves similarly attracted to intermediate positions.

Yet a third group of theories focus on the government’s pre-taking motivation or post-taking use of the property. Joseph Sax has proposed requiring compensation whenever the government acts like an enterprise. On his view the government is required to pay compensation when it uses the property to provide goods and services, but not when it arbitrates private disputes—for instance,

\[\text{\textsuperscript{40}}\text{See Lawrence Blume & Daniel L. Rubinfeld, Compensation for Takings: An Economic Analysis, 72 Cal. L. Rev. 569 (1984).}\]
\[\text{\textsuperscript{41}}\text{See id. at 572.}\]
\[\text{\textsuperscript{42}}\text{See Michelman, supra note 10, at 1214–24.}\]
\[\text{\textsuperscript{43}}\text{Michelman recognized the potential unfairness of refusing compensation on utilitarian grounds, even after demoralization costs are taken into account, and he presented a Rawlsian fairness approach as an alternative to his utilitarian approach. However, he viewed a purely fairness-based jurisprudence of the Takings Clause as practically unworkable. See id. at 1248–53.}\]
\[\text{\textsuperscript{44}}\text{See, e.g., Levmore, supra note 11, at 1334 (suggesting that “[r]esponsibilities that private parties can impose on each other through the tort system, and thus without compensation, can similarly be imposed by the government without compensation”); Fischel, supra note 10, at 351–53 (arguing that compensable takings should be found where regulations diverge from social norms); Thomas J. Miceli & Kathleen Segerson, Regulatory Takings: When Should Compensation Be Paid?, 23 J. Legal Stud. 749, 750 (1994) (adopting a straightforward utilitarian efficiency test).}\]
by preventing noxious uses. Jed Rubenfeld's variation on Sax's test requires compensation whenever the post-taking property is put to public use.

Few of these theories attempt to do more than identify the difference between regulatory takings and noncompensable exercises of the police power. Saul Levmore is one of the few to note that "every theory of takings should explain or at least struggle with the question of why the power to tax—without compensation, of course—is not fundamentally inconsistent with the constitutional obligation to compensate condemnees"; however, there is little serious work on the subject.

II. THE EFFICIENCY AND FAIRNESS OF DERivative TAKINGS

A. Derivative Takings and Compensation

The various rationales discussed earlier can be lumped into two general categories: fairness-based justifications and efficiency-based justifications. For the purpose of this Essay, we do not need to decide which of these sets of justifications is preferable. As we show, failure to compensate for derivative takings is at odds with both.

Efficiency-based justifications focus on the concern that without compensation, the government will excessively exercise its eminent domain power. That is, government will take private property for societal use, even where doing so reduces net social welfare. Fairness-based justifications are based on the idea that it is wrong to


\[\text{See Rubenfeld, supra note 4, at 1078–81.}\]

\[\text{Saul Levmore, Just Compensation and Just Politics, 22 Conn. L. Rev. 285, 292 (1990). Levmore seems to suggest that lack of compensation for taxes can be justified only where the taxes can be seen to work an average reciprocity of benefits.}\]

\[\text{Kaplow briefly suggested that taxes may be distinguished from compensable takings on the grounds that taxes are intended to alter distribution of wealth. See Kaplow, supra note 38, at 519. For a view that takings can legitimately be aimed at redistribution, see Hanoch Dagan, Takings and Distributive Justice, 85 Va. L. Rev. 741, 767–68 (1999).}\]

\[\text{There are, of course, categorical/formal approaches to takings jurisprudence, such as those advanced by Sax, but even these must eventually be justified on either fairness or efficiency grounds. See supra notes 45–46 and accompanying text.}\]
“forc[e] some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.”

1. The Inefficiency of Uncompensated Derivative Takings

Any taking generates positive and negative externalities. Every time the government takes property and puts it to public use, it creates winners and losers. Consider the example of a new highway. The construction of a new highway positively affects commuters and is likely to adversely affect people who reside in close proximity to the new road. The same is true whenever the government condemns private property to build a new airport, to establish a new factory, or to erect a new park. However, the number of people affected by various takings, as well as their respective gains and losses, varies from one case to another. From an efficiency standpoint, a taking is justified only if the net gains to the winners outweigh the net costs to the losers; otherwise, the government action is inefficient. Indeed, the compensation requirement in the Fifth Amendment guarantees just that. The compensation requirement forces the government to consider the cost of its action to private property owners—a cost it could otherwise ignore. Yet, when the external effects of takings are not taken into account, we can never be sure that the actions of government promote economic efficiency.

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51 An externality may be defined as "a cost or benefit that the voluntary actions of one or more people imposes or confers on a third party or parties without their consent." Robert Cooter & Thomas Ulen, Law and Economics 45 (1988). The classic works on the subject are A.C. Pigou, The Economics of Welfare 172-203 (4th ed. 1948) (proposing internalization of externalities by taxation), and R.H. Coase, The Problem of Social Cost, 3 J.L. & Econ. 1, 2, 16-17 (1960) (positing that in the absence of transaction costs, internalization will occur through private negotiations without need for government intervention).
52 The same argument can be made about "givings"—the systematic failure of the government to take into account the windfalls resulting from government action. We discuss this problem in a different article. See Abraham Bell & Gideon Parchomovsky, supra note 14; see also Kaplow, supra note 38, at 567-68 (noting that benefits as well as costs may be discounted by decisionmakers). Inter alia, these difficulties arise as a result of the failure of the government to net out gains accruing to those from whom property is "taken." Under the no-longer applied "benefit-offset" principle, property owners claiming a taking would have their compensation reduced by the amount of benefit the taking conferred on the owners' remaining property. See Fischel, supra note 10, at 80-84. The problem of the distortions caused by the failure
A simple example can illustrate this fact. Assume that the city of Metropolis decides to construct a new airport. To do so, it will have to condemn 20 private lots, and pay the owners compensation in the amount of $1 million. The city estimates that the new airport will bestow an aggregate benefit of $2 million on travelers who reside within Metropolis’ city limits. However, the noise from the flights will also diminish the value of the property in a radius of two miles from the airport by $1.5 million. It does not take much to see that the plan is inefficient: it effects a net loss of $0.5 dollars. Yet, current takings doctrine permits the city of Metropolis to operate under the fiscal illusion that its plan should go forward. This is because the noise damage suffered by nearby property owners is not a taking, and thus the attendant cost of the taking to those owners does not require compensation under existing case law. If the external cost of building the airport falls on a relatively small group of residents, who, for some reason, lacks sufficient political clout to change the decision of the municipality, the plan is likely to go forward despite the fact that it is inefficient.

One can argue, of course, that the government will only take private property when the taking is efficient. The government will consider the aggregate costs and benefits of its actions independently of its duty to pay compensation. But this argument is, at best, Pollyannaish. When no compensation is required, one cannot rely on the government to act efficiently. The aftermath of Lucas v. South Carolina Coastal Council provides a cogent example.

to consider the losses to all parties in calculating the utility of an action has recently been reexamined in the context of tort. See Robert Cooter & Ariel Porat, Does Risk to Oneself Increase the Care Owed to Others? Law and Economics in Conflict, 29 J. Legal Stud. 19 (2000) (demonstrating that the failure of the Hand rule to take into account potential harm to tortfeasors has led to the adoption of suboptimal standards of care).

In saying that the government is susceptible to fiscal illusion—that is, that when government does not have to bear the cost of its actions, it operates under the illusion that its actions are costless—we do not take the further step of arguing that the government acts like the rational wealth-maximizing individual prevalent in economists’ models. It is not clear what government maximizes; indeed, Arrow’s theorem predicts uncertainty. See Daniel A. Farber & Philip F. Frickey, Law and Public Choice: A Critical Introduction 38–39 (1991); Daniel A. Farber, Economic Analysis and Just Compensation, 12 Intl Rev. L. & Econ. 125, 129–32 (1992). Nevertheless, the empirical data can be said to demonstrate that government does operate under fiscal illusion. See Fischel, supra note 10, at 96–97; text accompanying notes 54–57 infra.

In 1988, South Carolina enacted the Beachfront Management Act, which prohibited development of certain coastal properties. As a result of the law, David Lucas was unable to develop two lots that he had purchased two years earlier for $487,500 each. After extended litigation, the Supreme Court upheld Lucas's claim that the legislation worked a taking, and that he was therefore entitled to compensation.

Faced with a court order to compensate Lucas for the taking, South Carolina bought the lots from Lucas for $425,000 each, repealed the preservation statute that had occasioned the lawsuit, and offered for sale the two lots it had just taken from Lucas. Astonishingly, South Carolina rejected an offer from Lucas's former neighbors to purchase one of the lots for $315,000 and preserve it undeveloped. Instead, the state sold the lots to a developer for $392,500 each. The numbers reveal that the South Carolina government was content to require beachfront preservation at a cost of $487,500 per lot to Lucas (Lucas's purchase cost for the lots), but not at a cost of $77,500 per lot to itself (the difference between what the state would have received had it sold the lots to the preservationist neighbors, versus what it received when it sold the lots to the developer). This outcome suggests, at the very least, that government's cost-benefit analysis is affected by its duty to compensate.

More importantly for our purposes, the outcome of Lucas strongly suggests that the government will not, of its own initiative, compensate—or even take into account—property owners who are adversely affected by derivative takings.

2. The Unfairness of Uncompensated Derivative Takings

The fact that takings create winners and losers also raises concerns about the equity of government action. In contrast to

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* Lucas paid $975,000 for the two lots. Lucas, 505 U.S. at 1006.
* The state also paid for Lucas's legal costs, bringing the total settlement to $1.5 million. See H. Jane Lehman, Case Closed: Settlement Ends Property Rights Lawsuit, Chi. Trib., July 25, 1993, at G3.
* See Fischel, supra note 10, at 61.
* Again, the same can be said for government actions resulting in windfalls. See supra note 52.
efficiency-based concerns that focus on the welfare effects of government action, fairness-based concerns focus on how the cost of government action is distributed among the public. From a fairness vantage point, the just compensation requirement embodies the Kantian imperative that individuals be treated as ends and not as means. Accordingly, even when a taking is efficient it should not disproportionately burden any individual member of society.

The Takings Clause assures fairness by requiring that the state compensate individuals whose property would otherwise be sacrificed for the greater good. But here, again, by failing to compensate for derivative takings, current takings doctrine violates the underlying fairness rationale. Under current doctrine, it turns out that certain individuals' property may be sacrificed for the greater good after all. Consider again the case of United States v. Causby. In Causby, the overflights occasioned a loss upon all of the owners in the neighborhood overflown by airplanes using the new flight routes. However, the only property owners to receive compensation were those whose property was directly beneath the new air routes. Other property owners were effectively forced to subsidize the new policy. Regardless of whether the establishment of the new air routes was efficient, it is difficult to contrive a fairness principle to support the compensation of some, but not all, of the harmed property owners in Causby and similar cases.

More importantly, and somewhat ironically in light of the general rhetoric accompanying the takings debates, uncompensated derivative takings tend to severely disadvantage the poor and disenfranchised. Absent the need to compensate, it is political power, rather than an economic calculus, which dictates the siting of takings accompanied by negative externalities. While this phenomenon has prompted debate in the new field of "environmental justice," it has otherwise tended to escape the notice of takings scholars. Assume that the city of Metropolis needs to build a new power plant. Two sites are suitable for the project: the first one is

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1 See 328 U.S. 256 (1946); see supra notes 8–9 and accompanying text.
3 See, e.g., Richard J. Lazarus, Pursuing "Environmental Justice": The Distributio­
in the middle of the most affluent neighborhood, and the second is in the middle of the most poor and neglected neighborhood. In the ordinary course of politics, Metropolis will choose the second option.

Of course, even if derivative takings required compensation, it would still make sense for the government to condemn the cheapest property so as to minimize its financial liability. Empirical evidence indeed suggests that in real world takings, local and federal governments prefer to take property on the cheap.64 But if compensation for derivative takings is mandatory, those who are repeatedly forced to bear the burden of government takings—the poor—will not be made economically worse off by the government taking.

**B. The Inadequacy of Existing Theory and Doctrine**

Having established a prima facie case for compensating for derivative takings, we must now consider whether there are any overriding doctrinal or theoretical reasons for leaving this problem unattended. Three reasons seem particularly pertinent: nuisance law, the principle of reciprocity of advantage, and concerns for the cost and practicality of administering a compensation scheme for derivative takings.

1. **Nuisance Law**

   The tort of nuisance entitles the users of land to compensation for damages arising from an unreasonable and substantial interference with the use and enjoyment of land.65 Accordingly, one might argue that any property owner suffering from a derivative taking can find her remedy in nuisance law.

   As a preliminary matter, it is not self-evident that by placing derivative takings in the nuisance box, the government would escape its constitutional duty to compensate. Indeed, Richard Epstein has controversially argued that all government torts are takings, for

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64 See sources cited supra note 53.
which the Takings Clause mandates compensation. But irrespective of whether Epstein is correct, compensation for damages in nuisance actions is not an adequate substitute for compensation for derivative takings.

Nuisance—labeled by Prosser as a “legal garbage can”—is a highly imperfect remedy for damage to property. First, nuisance law is triggered only by unreasonable acts. The definition of reasonableness in nuisance law has sparked substantial disagreement. Some courts have ruled that the reasonableness requirement goes to the level of interference. The Restatement's view, however, is that reasonableness in the context of nuisance is identical to the reasonableness requirement in the context of negligence. Specifically, the Restatement instructs the court to determine whether “the gravity of the harm outweighs the utility of the actor's conduct.” Under this test, victims of derivative takings will not receive compensation if the government can show that, on the whole, a taking effected a net gain.

Second, nuisance law requires a plaintiff to prove substantial interference with her use or enjoyment of land; interference that does not meet this standard is not actionable in nuisance. Although derivative takings may sometimes satisfy the substantiality re-

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67 William L. Prosser, Nuisance Without Fault, 20 Tex. L. Rev. 399, 410 (1942); see Keeton et al., supra note 65, § 86, at 616 (“There is perhaps no more impenetrable jungle in the entire law than that which surrounds the word 'nuisance.'

68 See, e.g., Boomer v. Atl. Cement Co., 257 N.E.2d 870 (N.Y. 1970) (granting an injunction to the plaintiff landowners unless the defendant cement plant owner compensated the plaintiffs for the total economic loss to their property (present and future) caused by the defendant's operations, where total damage to the plaintiffs' properties was relatively small in comparison with the value of the defendant's operation); Jost v. Dairyland Power Coop. 172 N.W.2d 647 (Wis. 1969) (upholding the exclusion of evidence offered by the defendant to show that the utility of its power plant outweighed the gravity of the harm caused by the plaintiffs).

69 Restatement (Second) of Torts § 826(a) (1977).

70 For theorists who would compensate only where the costs of government action are outweighed by its benefits, this would not be a terribly disturbing result per se. See supra text accompanying notes 42-44. But it is unlikely that the cost-benefit analysis contemplated by nuisance would include all of the factors required by Michelman, such as demoralization costs.
requirement, they will often be too minor to support a nuisance claim.\textsuperscript{71} Importantly, though, the fact that the interference is insubstantial in each individual case does not mean that it is also insubstantial when all individual interferences are aggregated. Yet, nuisance law requires each individual plaintiff to have an actionable claim.

Third, nuisance law protects use and enjoyment of land. Derivative takings, on the other hand, affect the value of property,\textsuperscript{72} an interest that in many cases differs from use and enjoyment. For example, the paving of a new highway in proximity to a neighborhood often diminishes the value of all the properties in the neighborhood—even those that are not affected by the traffic. Yet, because nuisance law focuses only on use and enjoyment, it offers no protection against diminution in value, and property owners whose enjoyment and use have not been hampered will go uncompensated even if the value of their property has dropped substantially.

Nuisance law does provide for damages occasioned by “public nuisances,” that is, acts that interfere with general community interests or the comfort of the public at large, even where the acts do not affect the use and enjoyment of land.\textsuperscript{73} Public nuisances are only actionable, however, if the plaintiff suffers special or unique harm.\textsuperscript{74} Thus, property owners whose property values have been diminished by an act that is not actionable as an ordinary, or private, nuisance will not likely find their remedy in public nuisance either.

For all these reasons, many cases of derivative takings, including severe ones, will fly under the nuisance radar screen. Nevertheless, one might ask why the government should be forced to pay for externalities that are not actionable as torts while private property owners may create such externalities without having to compensate.\textsuperscript{75} There are at least four reasons to reject such an approach.

\textsuperscript{71} See Keeton et al., supra note 65, § 88, at 626–27.
\textsuperscript{72} The property may be real or personal property.
\textsuperscript{73} See Keeton et al., supra note 65, § 86, at 618.
\textsuperscript{74} See Richard A. Epstein, Nuisance Law: Corrective Justice and Its Utilitarian Constraints, 8 J. Legal Stud. 49, 98–102 (1979) (discussing the distinction between private and public nuisance).
\textsuperscript{75} Cf. Levmore, supra note 11, at 1334 (arguing that the government should be liable only where a private party would be liable).
First, the compensation to be paid for derivative takings is solely for externalities created by exercise of the power of eminent domain, a power generally unavailable to private actors. Thus, there is no private parallel to the derivative taking. Second, the government may regulate the creation of, and compensation for, externalities among private parties. However, other than structural and political limitations imposed on the government, such as those imposed by the Takings Clause, the government cannot be regulated by another party. Consequently, there is greater need to ensure compensation for government-created externalities than for privately created externalities. Third, the imposition of negative externalities on private individuals by other individuals is sharply limited by the existence of social norms, which sanction certain kinds of socially undesirable behavior. There is little reason to suppose that the government is similarly subject to the curbing effects of social norms. Finally, it would be more fair and efficient to respond to the disparity in treatment of externalities by curbing private owners’ ability to impose negative externalities on their neighbors, rather than by allowing the government to impose similar negative externalities.

2. Average Reciprocity of Advantage

The concept of “average reciprocity of advantage” as a justification for avoiding compensation was most prominently identified by Justice Oliver Wendell Holmes in Pennsylvania Coal Co. v. Mahon. Seeking to distinguish Plymouth Coal Co. v. Pennsylvania, Justice Holmes noted that some regulations, while diminishing the value of property in one respect, could be said to benefit the property owner in another respect, such that no additional compensation is required. For example, a regulation forcing mining companies to leave intact pillars of coal in abandoned mines was excused from the compensation requirement because the regula-
tion benefited the mine owners by protecting the safety of their employees.  

It is not entirely clear how the concept of “advantage” is to be measured in order to determine whether a given regulation produces average reciprocity. If the value of the advantage must be precisely equal to the loss, the question of whether there is average reciprocity of advantage (thereby defeating the need for finding a taking) becomes identical to the question of whether “just compensation” has been paid. Whether referred to as an advantage or compensation, the benefit received by the property owner would only exempt the government from compensation if it were equal in magnitude to the loss created by the regulation.

On the other hand, if the calculus is looser, as seemed to be the case in *Penn Central Transportation Co. v. New York City*, the principle of average reciprocity of advantage could become offensive to any notion of fairness or efficiency. Why should inadequate compensation become satisfactory simply because it is in the form of an “advantage” rather than a cash payment? Assume that the paving of a new highway had the following effect on Sue, a nearby neighbor: It brought her one minute closer to the nearest interstate highway, and reduced the value of her property by $100,000. Under a broad interpretation of the average reciprocity of advantage principle, the quicker access to the interstate may constitute adequate compensation for Sue’s loss. But this result clearly violates the spirit and the goals of the Fifth Amendment.

Even more importantly, it is difficult to see why the concept of average reciprocity of advantage should have any particular force with regard to derivative takings. Indeed, to the extent that fairness and efficiency require accurate evaluation of the losses imposed by

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80 See *Mahon*, 260 U.S. at 415. The related “benefit-offset” principle is discussed supra at note 52.
82 The *Penn Central* Court noted that, in theory, property owners could transfer the development rights blocked by the regulation in question to adjacent properties. The Court did not ask whether the transferable development rights were equal in value to the air rights that could no longer be exercised. See *Penn Cent. Transp. Co.*, 438 U.S. at 129–35.
83 A more congenial concept of the average reciprocity of interest test might see it as an attempt to incorporate the idea that the government action is actually better viewed as a tax. See supra note 48; infra text accompanying notes 127–28.
government action, it is all the more important that derivative takings be taken into account in order to determine whether a government action has, in fact, created an average reciprocity of advantage.

Finally, the average reciprocity of advantage principle is irrelevant to many cases of derivative takings. For example, the new highway may not confer any benefit whatsoever on Sue and her neighbors if no on-ramp exists near their residences. There is no inherent reason to suppose that a property owner suffering from a derivative taking is more likely to receive an advantage than a property owner who suffered a physical or regulatory taking.

The true usefulness of relying on average reciprocity of advantage is its promise of savings in administrative costs. Relying upon the assumption of an average reciprocity of advantage absolves courts of the difficult task of measuring benefits and losses to determine whether a given exercise of the power of eminent domain is efficient and fair. We therefore turn now to the question of administrative costs.

3. Practicality and Administrability

Administrative costs have played a decisive role in defining the shape and scope of takings jurisprudence. Frank Michelman has explicitly attributed the "jarring outcomes" produced in cases such as Causby to the "felt need of courts for doctrinal principles which can be stated generally and yet incisively enough to conform visibly with the ideal of an impersonal justice." Empirical data have confirmed the need for concern. One study showed that in highway projects, for every dollar issued in compensation for property seized by eminent domain, an additional twenty-three cents were expended in administrative costs. Concern for inadministrability is responsible, in large part, for the reluctance to extend the Takings Clause to regulatory takings. Once the floodgates open, so the argument goes, the legal system will drown.

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Michelman, supra note 10, at 1170.


led various theorists to argue that as long as a taking is, on the whole, efficient, there is no need for precise accounting among winners and losers, and the losses should lie where they fall.87

While this concern certainly has merit, its power has been overstated. First, administrative efficiency is not the only goal promoted by the Takings Clause.88 A concern for the distribution of societal burdens may trump administrative efficiency considerations, and as we showed, the problem of derivative takings disproportionately harms the poor. Second, in the remainder of this Essay, we will demonstrate that the inadministrability problem can be overcome through the self-assessment mechanism that we develop in the next part.

III. TAKINGS AND SELF-ASSESSMENT

Self-assessment is an important, yet largely unrecognized, mechanism of law enforcement.89 Potentially, self-assessment offers two advantages over administrative or judicial assessment mechanisms: reduced administrative costs and superior information. Self-assessment mechanisms place the burden of reporting and evaluating harms and benefits on the primary targets of these effects: the individuals who experience them. Yet, as Saul Levmore has noted, self-assessment remains a mostly untapped source.90 Aside from the instance of income tax reporting, self-assessment remains a suspect tool. The main source of this suspicion is the fear of strategic reporting; in the absence of an external check on the self-assessment’s veracity, individuals will have the incentive to overreport their entitlement to benefits and underreport their liabilities.

Self-assessment is readily applicable to derivative takings. As in other contexts, however, the key to utilizing the self-assessment mechanism effectively in the realm of derivative takings is to craft an effective mechanism for combating strategic reporting. We propose a self-assessment mechanism that incorporates probabilistic auditing and weighted penalties. Our mechanism is modeled in

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87 See supra notes 43–45.
90 See Levmore, supra note 16, at 771.
part on the income tax enforcement apparatus\textsuperscript{91} and meets the need for low cost and accuracy. In addition, the auditing and penalty mechanism allays the concern of strategic reporting by providing optimal incentives to report truthfully. Finally, by ensuring the simplicity of the mechanism, we avoid the excessive externalization of administrative costs on private property owners, a difficulty that plagues the income tax reporting system.

Our self-assessment model draws on the central insight of Gary Becker's pioneering model of law enforcement.\textsuperscript{92} Becker was the first to note the virtues of probabilistic enforcement. Working in the area of criminal law, he observed that perfect detection and punishment of all criminal violations, even if achievable, would be socially undesirable. Given the existence of enforcement costs, the more efficient solution, he suggested, is to enforce the law probabilistically—that is, to prosecute only some violators while raising the penalties to compensate for the partial enforcement. Becker demonstrated that such probabilistic enforcement preserves ex ante deterrence at a lower cost than a system of full enforcement. Extending Becker's work, Louis Kaplow and Steven Shavell demonstrated that optimal enforcement schemes with self-reporting are more efficient than ones without self-reporting, since self-reporting further reduces enforcement costs.\textsuperscript{93} We show that with the necessary adjustments, self-assessment and self-reporting can reduce transaction costs sufficiently to enable compensation of derivative takings.

\textit{A. A Model of the Self-Assessment Mechanism}

In our proposal, any government exercise of the power of eminent domain entitles affected property owners to file a self-assessment report. In other words, the triggering event is either the commencement of condemnation proceedings or a finding of in-

\textsuperscript{93} See Kaplow & Shavell, supra note 89, at 584–85.
verse condemnation.94 Once the triggering event occurs, property owners claiming a derivative taking will be allowed one year to file their reports. In the report, property owners will have to specify only three items: the identity of the taking occasioning the loss, the base value of the property, and the magnitude of the loss. In the ordinary course of events, the government will compensate the property owner at the amount claimed in the report. However, a certain percentage of the reports will be audited, and if the auditor determines that the claim is exaggerated, the payment will be reduced by the amount of exaggeration and an additional penalty calibrated to optimize deterrence. Owners disagreeing with the audit results will be entitled to appeal to a court of law.

The key to the efficient operation of the reporting mechanism lies in setting the penalty amount so as to generate optimal deterrence, and to offset the cost of the exaggerations that occur despite the penalties.95 Specifically, the penalties discounted by the likelihood of being audited must eliminate the inherent incentive to overreport, and must also compensate the government for the excessive amounts paid to exaggerating property owners whose reports were not audited.

The optimal penalty is represented by the formula $P = px = (1/a - 1)x$, where $P$ is the penalty, $p$ is the penalty multiplier (that is, the number by which the overreported amount is multiplied to arrive at the magnitude of the penalty), $x$ is the overreported amount, and $a$ is the probability of detection. This penalty ensures optimal deterrence, since it creates the maximum expected payoff for owners at a self-assessment with zero overreporting.

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94 Unlike a condemnation proceeding, an inverse condemnation proceeding is not an administrative action that is initiated by the government under explicit authority of the eminent domain power. Rather, to pursue an inverse condemnation claim, an aggrieved owner must bring a law suit alleging the uncompensated and unacknowledged exercise of eminent domain power. See Jesse Dukeminier & James E. Krier, Property 1168 (4th ed. 1998).

95 Exaggerations will occur despite the penalty because different property owners have different attitudes toward risk. Risk-seeking property owners will exaggerate their reports despite the risk of being penalized.
The payoff for any given exaggeration is determined by the formula

\[ f(x) = (1 - a)(v + x) + a(v - P) \]

where \( f(x) \) is the expected payoff for any given exaggeration \( x \), \( v \) is the true value of the loss occasioned by the derivative taking, and all other variables are as described above. The maximum payoff is determined by the partial differential of \( f(x) \) with respect to \( x \), at

\[ \frac{\delta f(x)}{\delta x} = 1 - a(1 - p) = 0 \]

which is at \( p = 1/a - 1 \), or \( P = (1/a - 1)x \), as noted above.

The penalty also ensures that the net government payout will be optimized since the total payout, \( G \), will be represented by

\[ G = \sum_{i=1}^{w} [(1 - a)(x_i + v_i) + a(v_i - P_i)] \]

where \( w \) is the total number of property owners.\(^*\) Assuming that exaggerations are equally distributed across property owners, and given that the penalty is set at \( P = (1/a - 1)x \), the total payout should be at \( G = wx + wv - awx - awv + awx - wx \), or simply \( G = wv \), which is the total value of the property loss. Thus, the government payout, assuming a properly calibrated penalty, will equal the net loss to property owners.

A simple numeric example may illustrate the mechanism. Imagine that the city of Metropolis paves a new road. The city initiates condemnation proceedings against the owners whose property will be paved over, and ten owners of property abutting the new road file self-assessments. The ten abutting lots drop in value by $50,000 each, from $250,000 to $200,000. However, each of the ten homeowners exaggerates her damage by $10,000, reporting a loss of $60,000. Assume that the practice in the city of Metropolis is to audit ten percent of the reports—in our case, one report out of the ten—and that the auditor immediately spots the exaggeration. To make up for the ten percent audit rate, Metropolis should impose a

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* We assume, for simplicity's sake, that the average exaggeration is equally distributed across reporting property owners.
false reporting penalty of nine times the magnitude of the exaggeration—in our example, a penalty of $90,000.97

B. Enriching the Basic Model

1. Assumptions Revisited

The above illustration incorporates two simplifying assumptions. First, we assumed that audits are perfectly effective and completely random—that is, that the chance of one's exaggeration being detected is identical to the percentage of the reports being audited. Second, we treat the exaggerations as being randomly distributed and of random magnitude across the entire population such that they may be averaged. Neither assumption is likely to obtain in reality. As in the case of income tax oversight, audits may be triggered by suspicious elements in the reports such as unusually high reported property values. Exaggerations will vary in reference to expectations of avoiding detection as well as such factors as relative propensity for risk.

None of this undermines the validity of our self-assessment mechanism. Rather, relaxing the simplifying assumptions reinforces the validity and reliability of our proposal. Selective auditing will only increase the likelihood of detecting overreporting. When auditors are free to select which report to audit, they will, no doubt, focus on the ones reporting a higher than average loss: any deviations from the average figure will immediately attract the eye of the auditor. Furthermore, and by contrast to income tax audits, in the case at hand, various external indicia put the auditor in an excellent informational position to detect exaggerations. Not only does the auditor know the reports of other neighbors, but she also knows the amount paid to neighboring homeowners whose property was physically taken (in the eminent domain cases)98 and the valuation of the property for property tax purposes. For these reasons, the percentage of exaggerated reports detected by targeted

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97 In this example, the likelihood of being audited is 0.1, so the penalty multiplier \( p = \frac{1}{a-1} \) should be \( \frac{1}{0.1 - 1} = 9 \). The actual penalty \( P = px \) should be \( 9 \times \$10,000 = \$90,000 \).

98 Below, in Part IV, we propose extending the self-assessment mechanism to physical takings as well. If this proposal is adopted, the external validation of a judged condemnation value would no longer be available.
audits is likely to be higher than the percentage of exaggerated reports detected in a random audit. This should more than offset the risk of being unable to detect an exaggeration in an audit. It is true, of course, that exaggerations will not be randomly distributed across the population—some people are innately more risk prone than others. But this fact does not, ex ante, skew the results in favor of those not audited.  

A more serious challenge to our self-assessment mechanism is that real estate appraisal is not a precise science. The data necessary to evaluate property under standard appraisal methods, such as comparable sales, may not be available. Furthermore, even where data is readily available, appraisers may reasonably differ in their interpretation of the data. To accommodate this challenge, we propose that minor variations of up to five percent not be penalized, although the government’s appraisal would still control. The property owner would have to pay the amount assessed by the government, but no weighted penalty would be added.

It is important, though, that the government not reveal its allowance of a “de minimis” defense to penalty assessments, lest homeowners routinely add a standard five percent exaggeration to their self-assessments. In other words, we encourage the government to maintain “acoustic separation” with respect to its leniency rate.

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99 For a general discussion of the effects on deterrence of relaxing the assumption of risk-neutrality, see A. Mitchell Polinsky, An Introduction to Law and Economics 75–86 (2d ed. 1989). The movement away from random audits to targeted audits may introduce the complication of strategic reporting—a difficulty we do not address.

100 When the leniency rate is known to property owners, slight overreporting implicates very little risk. If not audited, overreporting would result in overcompensation. If caught, they will receive the true compensation they deserve. However, due to the inherent indeterminacy of real estate appraisal, homeowners are unlikely to take advantage of the full five percent grace. As with their entire reporting strategy, their decision to exploit the de minimis defense will depend on their propensity for risk.

2. Calibrating the Penalty

Thus far we have set the penalty at what our formula establishes as the optimal deterrence level. Importantly, however, ours is one of those rare cases in which there is no concern about overdeterrence. Should the government decide to assess penalties in excess of our suggested amount, it does not present a problem for our mechanism. Our formula only establishes the minimum penalty to be imposed. This is due to the fact that the ideal amount of over-reporting is zero, and as penalties can only be assessed on exaggerations; the government has no way to subvert the mechanism into a revenue raising measure. Raising the penalty amount will prompt assessors to report truthfully, which will lead, in equilibrium, to zero revenues to the government.102

To be sure, there will be cases in which the penalty will generate inadequate deterrence. The paradigm instance of underdeterrence is one in which the homeowner lacks the wherewithal to pay the assessed penalty. For instance, a homeowner whose house is mortgaged to its full value, and who lacks other assets, will not be deterred by the prospect of being penalized because the penalty cannot be collected. The homeowner may, therefore, be predisposed to overreport. To alleviate this problem, criminal sanctions must be available against those who deliberately overreport. While, at first glance, this measure may seem extreme, it is necessary to prevent deliberate defrauding of the public, and indeed, it is widely accepted in the tax context. Property owners are entitled to just compensation, but not to plundering of the public fisc. The self-assessment mechanism that we propose enables the award of compensation to those whose political weakness allows them to be victimized by the government. It would be unjust and inefficient to allow fraudulent abuse of this mechanism.103

102 This assumes that there is no fear of government error in issuing assessments and that homeowners are confident that they can be indemnified in the event that they present a mistaken assessment based on a faulty appraisal. If these two assumptions are relaxed, overdeterrence may prevent some homeowners from presenting true reports lest they be penalized.

103 Obviously, some good faith defense must be available. It would be morally reprehensible to jail someone simply because she lacked assets with which to pay a fine. It is important to realize, however, that all deterrence-based models have no applicability to individuals who make innocent mistakes that cannot be prevented with greater caution. Furthermore, property owners who overreport on account of the negligence
3. Collusion

Another refinement must be added to our model to meet the potential threat of property owners colluding to misrepresent the value of their assets. For example, homeowners located near a potential highway may decide to collectively overreport the noise damage, hoping that the similarity of reported values will shield the exaggeration from audit. It is important to note at the outset that such collusive strategy is highly unlikely. First, as is the case with any collusion, each colluder has a strong incentive to defect. In the present context, each reporter can increase her expected payoff by exaggerating marginally less than her neighbors. Second, the possibility of collusive behavior is further restricted by the fact that auditors can examine real estate property tax assessments and compare them with the self-assessed reports. Nevertheless, to further reduce the likelihood of collusive false reporting, we recommend the imposition of joint and several liability on colluding homeowners. This would enable the government to collect the debts of colluders who lack the financial means to pay them from other, wealthier, colluders, thereby increasing the deterrent effect on each individual homeowner.

C. The Insurance Alternative

Various scholars have expressed the view that private insurance may be superior to government compensation in effecting efficient allocation of resources. This view emphasizes the effectiveness of insurance in causing insured homeowners to consider the social cost of their decisions. Assume, for example, that a developer must

of the appraisers they hired should have a cause of action against those appraisers in tort. This chosen action might provide an asset that can be used to satisfy a fine.

Collusive agreements among property owners, like any other cartel, are characterized by a prisoner’s dilemma payoff matrix and thus provide conspirators with a strong incentive to defect. While cooperation produces the highest aggregate payoff, defection increases the private payoff of each individual actor. For a more in depth discussion of the problem of cartelization, see Andrew R. Dick, When Are Cartels Stable Contracts?, 39 J.L. & Econ. 241 (1996) (analyzing the conditions under which cartels are stable). As a general rule, it is widely accepted that collusion is less likely to succeed when the number of colluders is large. See George A. Hay & Daniel Kelley, An Empirical Survey of Price Fixing Conspiracies, 17 J.L. & Econ. 13, 14 (1974).

See Blume & Rubinfeld, supra note 40, at 567–69; Kaplow, supra note 38, at 538–41.
decide whether to construct a hotel or a camping site in an area susceptible to flooding. Building the hotel guarantees the developer a higher payoff, but at the same time imposes on society the cost of compensating the developer in the case of flood. When the societal cost element is taken into account, building the camping site is actually the better option. However, since she is guaranteed compensation, our developer will opt to build the hotel. Thus, the Takings Clause creates an incentive for property owners to engage in excessively risky projects and spread the cost of the risk on society as a whole. Insurance, it is suggested, can overcome this problem, and, more importantly for our purpose, insurance can compensate property owners for any loss caused by a derivative taking without creating a need for government compensation.

Aside from the Constitution's specific dictate of government-provided compensation, and the observable fact that the market has not yet produced private takings insurance, there are a number of prudential reasons to reject the insurance alternative. First, as Thomas Miceli has argued, the incentive analysis underlying the argument for insurance may be in error. Once one assumes both that the government takes into account the cost of compensation in its decision to take and that a property owner takes into account the likelihood of a taking in her decision to develop, owners will move toward optimal levels of investment. Owners will fear that if they overdevelop their property, they will deter a government taking and be left bearing the loss of the needless development.

Second, William Fischel and Perry Shapiro have observed that the insurance approach rests upon another faulty assumption, in that it relies upon an outmoded "Pigouvian" notion of the govern-

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106 This example is a simplified version of the example discussed by William Fischel and Perry Shapiro in Takings, Insurance, and Michelman: Comments on Economic Interpretations of "Just Compensation" Law, 17 J. Legal Stud. 269, 271-76 (1988).
107 It is worth noting that the discussion of insurance against takings focuses primarily on the threat of regulatory takings. It is not obvious that all the arguments for and against insurance are directly applicable in the context of derivative takings. A full exploration of this issue is beyond the ken of this Essay.
108 Others commenting on the lack of privately supplied insurance include Blume & Rubinfeld, supra note 40, at 569.
This view posits that the government always behaves efficiently to promote public welfare. Consequently, no external checks on the government are necessary. However, modern public choice theory rejects this unrealistic view of government and cases such as *Lucas v. South Carolina Coastal Council* provide ample evidence of the failures of the Pigouvian view. In light of the modern view of government, it is not enough to provide insurance-based compensation to private owners. It is also necessary to demand government payment in order to deter inefficient government action.

Third, in addition to their failure to satisfy the efficiency concerns of the Takings Clause, insurance schemes fail to fully answer fairness concerns as well. The availability of private insurance does not take into account the demoralization costs identified by Michelman. On this view, when the government calculates whether compensation is constitutionally warranted, it must consider the possible negative effects on morale occasioned on individuals who feel unjustly victimized. As Fischel and Shapiro write, the demoralizing effects of takings occur at the point in time that individuals are made aware that their wealth is being taken away, not at the point when the taking actually occurs. Thus, the fact that property owners would be forced to purchase insurance would itself create demoralization costs that would not be fully compensated. The problem would be particularly exacerbated were a particular class of property owners—the indigent—required to pay higher insurance premiums due to their greater vulnerability to government takings.

Fourth, establishing a system of private insurance introduces the risk of insurance companies improperly influencing government policy. This is a particular manifestation of the moral hazard prob-

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110 Fischel & Shapiro, supra note 106, at 276.
111 See Farber & Frickey, supra note 53, at 12–62.
113 See supra Section II.A.1.
114 See Michelman, supra note 10, at 1215.
115 See Fischel & Shapiro, supra note 106, at 287. The authors conclude that the "existence of insurance... is no more an argument for legalizing uncompensated takings than it is for legalizing the theft of watches." Id.
lem. Insurance companies who stand to lose from certain takings might exert improper influence on governmental decisions, by means of political contributions or bribes, in order to increase their revenues or minimize their losses. Of course, such influence is already possible without insurance, which is why, as we noted earlier, the burden of government takings tends to fall upon the poorest and least politically powerful. However, the aggregation of property claims in the hands of private insurers will increase their ability to influence the political process.

Fifth, a takings insurance scheme is vulnerable to adverse selection. As Robert Ellickson has pointed out, public officials and land developers may inform property owners of pending plans that might affect the owners, which would prompt them to buy insurance in order to neutralize political opposition to the projects. As a result, insurance companies will not be able to adequately diversify away the costs of selling takings insurance, and the insurance mechanism will collapse. This is the obverse of the previous problem, again reflecting the fact that the government behaves differently than other actors and that the interests of politicians or government managers may lead to a decision that would not be reached if both costs and benefits were directly incorporated into government budgets.

At the end of the day, then, private insurance is not an adequate substitute for government compensation for derivative takings.

IV. TOWARD UNIFYING PRINCIPLES

We have, thus far, introduced a new form of compensable taking—the derivative taking—and suggested a self-assessment mechanism for administering the compensation. Yet, nothing in our self-assessment mechanism limits it to derivative takings. The introduction of self-assessment can go a long way towards address-

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116 Generally, moral hazard is a concept associated with the tendency of the insured to take too many risks in response to the knowledge that adverse results are indemnified by insurance. See, e.g., Polinsky, supra note 99, at 54–55. Interestingly, Blume and Rubinfeld believe that insurance creates a very different moral hazard, namely, that property owners will become indifferent to government takings and there will be a lack of necessary lobbying. See Blume & Rubinfeld, supra note 40, at 597–98.

117 See Fischel & Shapiro, supra note 106, at 286 (citing a letter written to the authors by Ellickson).
ing many of the shortcomings of takings doctrine. In this Part, we show that our proposed self-assessment mechanism may be readily extended to physical and regulatory takings. Furthermore, we suggest the utilization of the concept of derivative takings and the mechanism of self-assessment to make sense of takings doctrine by defining which takings should be compensable. We conclude this Part by delineating the scope of self-assessment and defining its boundaries.

A. Physical and Regulatory Takings

Not only is our proposed method of self-assessment readily applicable to physical takings, but it also improves upon the existing system by reducing the cost of administering compensation. Allowing property owners to assess and report the losses occasioned upon them by physical takings will result in compensation awards no less accurate than those allowed under the existing court-based system, but at a substantially reduced cost. The current compensation mechanism relies on judicial determination of compensation awards, and consequently, the grant of compensation is often preceded by extended litigation. This process imposes a considerable cost on property owners and unnecessarily burdens the judiciary. The implementation of our proposed self-assessment mechanism could dramatically decrease these costs. Rather than litigating all cases that involve disagreement as to the appropriate compensation, the government could allow property owners to report their losses, could audit a certain percentage of the reports, and then penalize overreports by using our formula. In fact, if the government

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118See sources cited supra note 53. See also Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1006 (1992) (reviewing the extensive history of the case from its beginnings in 1998 up until the Supreme Court granted certiorari); Dukeminier & Krier, supra note 94, at 1209 (reviewing the complicated aftermath of the Supreme's Court's decision in Lucas that the government regulation was a taking); see also Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 421 (1982) (holding that a permanent physical occupation of property is a taking). On remand, the New York Court of Appeals upheld the validity of the statutory provisions that authorized the Commission on Cable Television to determine adequate compensation for homeowners harmed by the legislation. See Loretto v. Teleprompter Manhattan CATV Corp., 446 N.E.2d 428 (N.Y. 1983). Following this ruling, the Commission concluded that the one dollar compensation award was sufficient since the installation of cable television usually increases the value of the property. See Dukeminier & Krier, supra note 94, at 1137.
calibrates the penalties correctly, very few incidents of overreporting—and hence, potential litigation—should be expected.

Removing the obstacle of administrability, we submit, is also the key to a more coherent and well-defined regulatory takings doctrine. We believe that the obscurity surrounding the compensability of regulatory takings is due in large part to the fear of courts and commentators of the dire administrative consequences that would befall us if the Takings Clause extended to cover all compensatory takings. While this concern is warranted, the analysis that underlies it fails to take into account the possibility of crafting a superior administrative mechanism to address the concern. Self-assessment provides such an improved mechanism. The adoption of our proposal would require court intervention only in a tiny percentage of the cases—those cases where an audited owner decides to appeal a finding of overreporting. If, for instance, 10% of reports were audited, 50% of all audited reports revealed exaggeration sufficient to warrant a penalty, and 50% of all penalties were appealed in court, only 2.5% of all reports would require the courts' intervention.

With concerns for inadministrability out of the way, policymakers could revisit and revise regulatory takings to take advantage of the new possibility frontiers. Current regulatory takings doctrine offers only three guideposts to the public. The first is that a substantial diminution in value is a compensable taking. The second—a rather trivial derivative of the first—is that a complete wipeout of value amounts to a substantial diminution. The third is a relic of a previous era, which posits that elimination of a noxious use is never a taking.

The Court's current ad hoc test for substantial diminution has proven nearly impossible to administer—in no small part because, absent a total wipeout, there is no way to know whether the government has gone too far. But with widespread information on property losses provided by self-assessment reports, policymakers could fashion per se rules for substantial diminution. For example,

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120 See Lucas, 505 U.S. at 1029.
courts may set a rule that any diminution in excess of 25% percent effects a compensable taking.122

Alternatively, it is possible to devise a more sophisticated assessment mechanism to examine more precisely the harms and benefits that are produced by regulation and alleged to be a taking. Current regulatory takings doctrine fails to incorporate adequately one of the primary justifications for uncompensated regulations—the regulations’ ability to prevent property owners from externalizing on the public costs associated with their property. A new assessment mechanism for alleged regulatory takings could incorporate all the elements of our self-assessment mechanism for derivative takings but also reduce a property owner’s potential recovery by the value of the negative externalities prevented by the regulation.123 Such a mechanism would provide a more accurate calculus of the efficacy of the regulation and would also produce fairer results than any of the current doctrines.

Policymakers might even take the bold step of eschewing altogether impracticable tests such as substantial diminution and hopeless debates about definitions of property.124 Instead, they could rely on the limits of administrability to determine what is a compensable regulatory taking. Such a pragmatic approach may be the only workable solution to the regulatory takings challenge. This approach requires, however, a period of experimentation during which empirical data will be gathered on the costs of processing and settling self-assessment claims.

122 Naturally, the relevant percentage may be higher or lower depending on one’s view of what constitutes substantial diminution. Of course, any number may be attacked as being arbitrary, which should tell us something about the usefulness of the substantial diminution test.

123 In a related vein, Kaplow and Shavell proposed a self-reporting mechanism that deals exclusively with the problem of private externalities. In their scheme, harm-causing individuals will be induced to self report their misdeeds in exchange for a somewhat lower penalty than the one expected if the government detects the wrongdoing (the legal penalty multiplied by the probability of punishment). See Kaplow & Shavell, supra note 89, at 587-90. Admittedly, measurement of such externalities, either in our scheme or in Kaplow and Shavell’s, presents logistical problems far in excess of those discussed in our Essay.

The use of self-assessment can also answer the call for a de minimis exception in takings law.\textsuperscript{125} As Saul Levmore has noted, self-assessment does not completely do away with administrative costs—to some extent, it merely shifts them to private property owners.\textsuperscript{126} And while shifting the costs to the party who can most efficiently handle them reduces administrative costs, preparing self-assessment reports will not be costless. Thus, placing the cost of assessment on the property owners will necessarily eliminate insubstantial claims. No owner will incur the cost of preparing a report if this cost exceeds the expected compensation.

We fully understand the need to allow the government to function. Accordingly, we do not suggest that any government action that adversely impacts property is by definition a taking; we remain agnostic on this debate. We do submit, however, that the same criterion for compensation should apply to all three types of takings—physical, regulatory, and derivative. It is senseless and unjustifiable that a diminution of one dollar due to a physical taking is compensable per se, while a diminution of $100,000 resulting from a derivative or regulatory taking can be effected with impunity. The source of the harm and the harm’s effect on property owners are the same, irrespective of classifications. By dramatically reducing administrative costs, our self-assessment mechanism presents the government with a unique opportunity to overhaul takings jurisprudence and establish a uniform compensation criterion for all types of takings. Doing so will improve not only fairness and efficiency, but also the mood of millions of property owners, lawyers, and law students.

\textit{B. Taxes and Takings}

As we noted in Part I of this Essay, the taxing power remains the neglected corner of the takings triangle. While it is universally acknowledged—as it must be—that the government may tax property, theoreticians have rarely explored the notion that dimi-
nutions of property value in the name of the police power or eminent domain could be considered noncompensable taxes. In a rare exception, Carol Rose has justified the concept of public nuisance—in which only those who have suffered special damage can get redress against acts that interfere with community interests or public comfort—on the grounds of in-kind taxation. But few have systematically explored the idea that when the burden of a government action falls on a sufficiently broad public in roughly equal proportions, the action is better characterized as a tax than as a taking or a regulation.

We do not offer an unqualified endorsement of this concept of the taxing corner of the takings triangle. At least a colorable argument exists that when payment can only be made with particular property rather than a common means of exchange, the government action is a taking and not a tax. One might also argue that no government action should be considered a tax unless it is primarily concerned with the raising of revenue. Nevertheless, to the extent that policymakers wish to adopt this concept of the taxing-takings relationship, the information provided by widespread self-reporting could be critical. For example, if a government zoning regulation uniformly reduces property values in an entire county by ten percent, it may make more sense to consider the action a "zoning tax" than a regulatory taking. Indeed, the action is the equivalent of a ten percent property tax. Self-assessment reports would provide the information necessary to discern the true nature of government action. Specifically, the reports would indicate the size of the population burdened by the government action, and the distribution of the burden across the population.

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129 Indeed, several commentators have suggested that compensation should depend on whether the government action singles out a particular group. See Heller & Krier, supra note 88, at 1008 (suggesting that absent evidence that a particular group was singled out by the government, compensation should not be rendered for "small" takings); Levmore, supra note 11, at 1344-47 (asserting that compensation for overflights rightly depends, in practice, on whether owners have been singled out).
C. Self-Assessment: Not a Panacea

Obviously, self-assessment is not an elixir. As any other mechanism, our self-assessment mechanism has inherent limitations. First, our proposal cannot accommodate idiosyncratic tastes. Individuals who assign unique value to their property will be systematically undercompensated, as they are now. It must be borne in mind, however, that such undercompensation is inherent in any regime that permits forced sales at market prices. Although our scheme does not compensate owners for their loss of idiosyncratic value, neither does the compensation mechanism currently in place. Notably, we do not suggest increasing the power of the government to force sales, something that might introduce a new source of unfairness, as well as create uncompensated demoralization costs.

Second, while our scheme substantially reduces administrative costs, it does not completely eliminate them. As we noted, in part, self-administration merely shifts administrative costs, albeit reduced costs, to property owners seeking compensation. Thus, under our scheme, administrative costs remain a distorting factor and a source of inadequate compensation, at least at the margin. Moreover, the fact that property owners bear administrative costs, rather than the government, may induce policymakers to create unduly cumbersome record-keeping requirements and compensation structures. Administration, like any other government function, is subject to fiscal illusion, and if creating administrative

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130 See Levmore, supra note 16, at 780–82.
131 See Dukeminier & Krier, supra note 94, at 1121–23; Thomas J. Miceli, Economics of the Law: Torts, Contracts, Property, Litigation 116 (1997); see also Coniston Corp. v. Vill. of Hoffman Estates, 844 F.2d 461, 464 (7th Cir. 1988) ("Compensation [for takings] in the constitutional sense is [] not full compensation, for market value is not the value that every owner of property attaches to his property but merely the value that the marginal owner attaches to his property. Many owners are 'intramarginal,' meaning that because of relocation costs, sentimental attachments, or the special suitability of the property for their particular (perhaps idiosyncratic) needs, they value their property at more than its market value (i.e., it is not 'for sale').").
132 The fact that taxation also has administrative costs means that additional compensation payments will create a certain additional level of deadweight loss. See Fischel, supra note 10, at 146. These are additional administrative costs that owners will have to bear.
133 The income tax self-assessment system provides a none-too-encouraging example.
burdens is costless for the government, it may be tempted to over-regulate. Our self-assessment mechanism does not solve this problem. Unfortunately, the world without administrative costs is rarely found outside of economics journals, and placing administrative burdens on those who can most cheaply bear them is the best that can be done in many circumstances.

CONCLUSION

In this Essay, we have uncovered and analyzed a previously unappreciated dimension of the perennially troubling takings jurisprudence—the adverse impact of government takings on neighboring third parties. We showed that virtually every exercise of the power of takings generates externalities—derivative takings—that have largely evaded takings scholars. Furthermore, we demonstrated that a takings system that fails to account for derivative takings is neither efficient nor fair. To remedy this problem, we constructed a self-assessment mechanism that incentivizes property owners to report truthfully the losses they suffer as a result of government takings. We accomplished this by basing our mechanism on the principle of probabilistic enforcement accompanied by weighted penalties for exaggerations. By lowering the administrative cost of compensation, our self-assessment mechanism enables the compensation of currently uncompensated property owners. Simultaneously, it enhances economic efficiency, because it forces the government to fully internalize the cost of its actions.

We also showed that the utilization of our self-assessment mechanism could illuminate and improve many of the pitfalls of existing takings doctrine. Our self-assessment mechanism may be used to compensate victims of physical takings and perform this function at a much lower cost than the judicial mechanism currently in place. Its utilization in the context of regulatory takings offers the opportunity to reduce dramatically the cost of administering claims. This may, in turn, prompt policymakers finally to set a clear rule as to when regulation “goes too far” and becomes an exercise of the power of eminent domain. Finally, the information garnered from the self-assessment report may enable us to distinguish between uses of the taxation power that legitimately go uncompensated and takings that demand compensation. We sub-
mit that the aggregation of these effects would result in a better and fairer use of the takings power and would begin the process of injecting coherence into a desperately confused area of the law.