

# Audits, Markets, and Patents

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## INTRODUCTION

The valuation of illiquid assets is a challenge across many areas of law, from tax to torts to takings to intellectual property. The most common approaches to the problem are state assessment and self-assessment. In a state assessment system, some actor or body employed or deputized by the government—such as an assessor, a jury, or a judge—estimates the value of the asset in question, and that state assessment becomes binding (generally after an appeals process has run its course). Examples of state assessment include local property tax valuations, jury awards in tort cases, court-ordered compensation for takings, and the process for patent and copyright holders to obtain compensation from the federal government when it uses their intellectual property without a license.

In a self-assessment system, asset owners or taxpayers report their own valuations of the item in question. Rather than relying on scout’s honor, authorities generally subject those self-assessed valuations to random or quasi-random audits and then impose penalties if the self-assessment appears to be self-serving. Examples of self-assessment abound in the federal tax context, including the valuation of in-kind income, noncash charitable contributions, goods and services transferred among affiliated business entities, and gifts and inheritances subject to wealth transfer taxes.

Audits are not the only way that governments can test the accuracy of reported valuations in a self-assessment system. An alternative to an “audit test” is a “market test.” Market tests can

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take a number of forms. One way to apply a market test in the context of a self-assessed property tax—suggested by University of Chicago economist Arnold Harberger more than a half century ago<sup>1</sup>—is to allow anyone to purchase the property for the self-assessed price. In more recent decades, other thinkers have proposed clever variations to (and potential improvements upon) Harberger’s approach. For example, Saul Levmore has suggested a mechanism that would allow existing owners to halt a forced sale as long as they are willing to pay a higher amount in property taxes.<sup>2</sup> Lee Fennell has proposed an arrangement whereby property owners could opt in to a Harberger-like system in exchange for a tax break.<sup>3</sup> The “common ownership self-assessed tax” (COST) outlined by Eric Posner and Glen Weyl in their important new book *Radical Markets: Uprooting Capitalism and Democracy for a Just Society* builds upon these earlier proposals and contributes substantially to the self-assessment literature.<sup>4</sup>

This Essay revisits the subject of self-assessment in light of the new arguments that Posner and Weyl advance. First, it considers the tradeoffs between state assessment and self-assessment. Second, it examines the alternatives of self-assessment backed by an audit test and self-assessment backed by a market test. The Essay concludes that a combination of audits and markets will work best when the private sector can gather and process information about valuation more efficiently than the public sector can, and when overvaluation, not undervaluation, is the primary valuation-related concern. These conditions appear to apply to government patent buyouts, and a

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<sup>1</sup> See generally Arnold C. Harberger, *Issues of Tax Reform for Latin America*, in Marto Ballesteros, ed., *Fiscal Policy for Economic Growth in Latin America: Papers and Proceedings of a Conference Held in Santiago, Chile, December, 1962* 110 (Johns Hopkins 1965).

<sup>2</sup> Saul Levmore, *Self-Assessed Valuation Systems for Tort and Other Law*, 68 Va L Rev 771, 783–88 (1982). Under Levmore’s system, bidders could offer to purchase a property for more than its current assessment, and the incumbent owner would then have an opportunity to accept the bid or pay taxes on the now-higher assessed amount. If the property owner chose the latter option, the bidder would receive a commission constituting a portion of the increased tax revenues resulting from the now-higher assessment. *Id.*

<sup>3</sup> Lee Anne Fennell, *Taking Eminent Domain Apart*, 2004 Mich St L Rev 957, 995–1002.

<sup>4</sup> Eric A. Posner and E. Glen Weyl, *Radical Markets: Uprooting Capitalism and Democracy for a Just Society* 61 (Princeton 2018).

hybrid audit/market regime likely represents an improvement over existing patent buyout proposals.

### I. STATE ASSESSMENT VERSUS SELF-ASSESSMENT

In US state and local property tax systems, government officials conduct periodic assessments to estimate the “fair market value” of each parcel.<sup>5</sup> Property owners generally have an opportunity to appeal their assessments; otherwise, they pay a tax based on the assessed value.<sup>6</sup> Contrast this state assessment approach with the system for valuing noncash charitable contributions in the federal income tax context (for example, household goods and used clothing donated to Goodwill or the Salvation Army). Taxpayers are responsible for estimating the value of donated items themselves,<sup>7</sup> and those self-assessments are then subject to quasi-random IRS audits. If the IRS concludes that a taxpayer has overstated the value of the contribution (and thus understated her tax liability), it will require the taxpayer to make up the difference and—depending upon the magnitude of the misstatement—potentially pay penalties as well.<sup>8</sup> Enhanced penalties—including in some cases criminal sanctions—apply if the misstatement amounts to fraud.<sup>9</sup>

These regimes are not inevitable. We can imagine a world in which taxpayers self-assess the value of real property for purposes of local property taxes, with local authorities auditing a subset of assessments and imposing penalties on taxpayers who understate the value of their parcels. Alternatively, we can envision a scenario in which IRS agents wait at Goodwill and Salvation Army donation centers and themselves assess the value of

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<sup>5</sup> See, for example, *Understanding Your Assessment* (Cook County Assessor’s Office, 2015), archived at <http://perma.cc/W28G-B5MD>.

<sup>6</sup> See Eric Zorn, *Why It’s Foolish Not to Appeal Your Property Tax Assessment* (Chicago Tribune, June 16, 2017), archived at <http://perma.cc/NCM9-P3N8>.

<sup>7</sup> If the deduction is more than \$5,000, the taxpayer must obtain a professional appraisal before claiming the deduction on her tax return. See IRC § 170(f)(11). A qualified appraisal also is required for a deduction of more than \$500 in the case of clothing or household item if the property is not in “good used condition or better.” IRC § 170(f)(16)(A).

<sup>8</sup> If the IRS determines that the value reported by the taxpayer was 150 percent or more of the property’s fair market value, the taxpayer will be liable for a “substantial valuation misstatement” penalty equal to 20 percent of the underpayment. IRC § 6662(a), (e)(1). In the case of a “gross valuation misstatement” (that is, when the IRS determines that the value reported by the taxpayer was 200 percent or more of fair market value), the penalty rises to 40 percent of the underpayment. IRC § 6662(h).

<sup>9</sup> IRC §§ 6663, 7201, 7206, 7207.

all noncash charitable contributions. In choosing between the two approaches, valuation costs play an important role (or at least, ought to). If the costs of gathering and processing the information necessary to arrive at an accurate appraisal are lower for the government than for taxpayers, state assessment will likely be preferable to self-assessment—and vice versa if taxpayers can gather and process that information more cheaply than can the government.

One might expect that self-assessment would generally economize on valuation costs,<sup>10</sup> because owners start with more information about the attributes of their property than the government does. This expectation, however, does not necessarily hold in all contexts. As one illustration, a homeowner may have information about the value of her house that the government can access only at cost (for example, when the kitchen was last renovated, whether the house has central air conditioning, whether the paint in the bedrooms is peeling), but public records probably will reflect the most salient features of real property, and the government may have information about recent sales prices of similar properties that the homeowner initially lacks. These considerations may help to account for the prevalence of state assessment in the property tax context, though home value estimators on websites such as Zillow and Redfin that comb public records for data on sales prices of similar properties potentially narrow the gap between the government and homeowners in terms of valuation costs.<sup>11</sup>

For high-stakes self-assessments, taxpayers often hire experts to guide them through the valuation process. For example, multinational corporations routinely retain large accounting firms to assist in valuing goods and services transferred among affiliates. Likewise, lay executors of large estates rarely go it alone without the help of attorneys, accountants, and professional appraisers. Arguably, reliance on outside experts in the self-assessment context suggests that state assessment may be as, if not more, economical. Instead of every large estate with expensive artwork hiring an appraiser to estimate each piece of

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<sup>10</sup> See Levmore, 68 Va L Rev at 774–77 (cited in note 2) (discussing problems with “institutional”—that is, state—assessment in the property tax context).

<sup>11</sup> See *Zestimate* (Zillow, Nov 14, 2018), archived at <http://perma.cc/8BSE-LUXD>; *How We Calculate the Redfin Estimate* (Redfin, Feb 2018), online at <http://www.redfin.com/what-is-my-home-worth> (visited Feb 12, 2019) (Perma archive unavailable).

art's value and then the IRS Art Appraisal Service checking those estimates in a subset of cases, the IRS could conduct the initial valuation itself, which would be binding unless appealed.<sup>12</sup> In determining which approach minimizes the costs of the valuation process, efficiencies potentially generated by private-sector competition must be compared against the scale economies that the IRS may enjoy.

There is much more to say about the choice between state assessment and self-assessment—more than a short essay can contain. Two observations in particular merit mention.

First, the choice between state assessment and self-assessment entails a tradeoff between administrative costs borne by the government and compliance costs borne by private parties. From a social welfare perspective, there is no a priori reason to favor one approach or the other on those grounds: administrative costs borne by the government and compliance costs borne by private parties are social costs just the same.<sup>13</sup> Politicians and policymakers, however, may find it more attractive to shift the costs of gathering and processing information from the public sector to the private sector. One might think of private-sector compliance costs as a form of off-budget spending that is immune from the procedural rules that apply to direct government expenditures (for example, Pay-As-You-Go rules at the federal level and balanced budget requirements at the state level).<sup>14</sup> Moreover, raising taxes may be more costly politically than raising private-sector tax compliance costs (the infamous line, after all, is “read my lips: no new taxes”—not “read my lips, no new tax-related compliance costs”).<sup>15</sup> For these reasons, we

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<sup>12</sup> On the IRS's process for valuing artwork, see Glenn Dixon, *The Secretive Panel of Art Experts That Tells the IRS How Much Art Is Worth* (Wash Post Mag, Dec 7, 2017), archived at <http://perma.cc/X6JN-T3D2>.

<sup>13</sup> Some have suggested that private-sector compliance costs should be favored over public-sector administrative costs because the government must raise revenue through distortionary taxes. See, for example, Michael Keen and Joel Slemrod, *Optimal Tax Administration*, 152 J Pub Econ 133, 141 (2017). For rebuttals of this view, see Louis Kaplow, *The Optimal Supply of Public Goods and the Distortionary Cost of Taxation*, 49 Natl Tax J 513, 524 (1996); David Weisbach, Daniel Hemel, and Jennifer Nou, *Appendix to “The Marginal Revenue Rule in Cost-Benefit Analysis”* \*6–7 (SSRN, Sept 11, 2018), archived at <http://perma.cc/M36V-GF7R>.

<sup>14</sup> See *Policy Basics: The “Pay-As-You-Go” Budget Rule* (Ctr on Budget & Pol Priorities, Dec 3, 2018), archived at <http://perma.cc/G8ZC-JHMK>; Kim S. Rueben and Megan Randall, *Balanced Budget Requirements: How States Limit Deficit Spending* (Tax Policy Ctr, Nov 28, 2017), archived at <http://perma.cc/7CF2-U8K3>.

<sup>15</sup> See Glenn Kessler, *Grover Norquist's History Lesson: George H.W. Bush, “No New Taxes,” and the 1992 Election* (Wash Post, Nov 27, 2012), archived at

might expect that the allocation of assessment tasks between the public and private sectors will be skewed toward the latter.

Second, state assessment may have advantages over self-assessment with a quasi-random audit test in terms of transparency and accountability. If assessors systematically favor political patrons or other interest groups, these biases can be detected by comparing the assessed values of favored taxpayers' properties to the assessed values of otherwise similar parcels. By contrast, when an auditor declines to audit a political patron, it is generally impossible to know whether the non-audit is the outcome of a random process or a product of bias.<sup>16</sup> This is not to suggest that state assessment systems are immune from rent-seeking behavior (Cook County's recent experience suggests quite the opposite<sup>17</sup>). Rather, it is to suggest that when rent-seeking and interest-group politics taint tax enforcement, that taint generally will be easier to detect in the state assessment context rather than in the context of self-assessment with a quasi-random audit test.

## II. AUDIT TESTS VERSUS MARKET TESTS

The discussion of self-assessment in the previous Part focused on cases in which self-assessed valuations are checked via quasi-random audits. As noted at the outset, an alternative approach to self-assessment involves the use of markets as a verification mechanism. Posner and Weyl's COST proposal exemplifies the latter approach. In brief: individuals would self-assess the value of each piece of property that they own and pay taxes based on those self-assessed values; self-assessments would be publicly posted; and everyone else would have the option to purchase property from an owner for the self-assessed price.<sup>18</sup> The last market feature serves as a check on self-assessments to en-

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<http://perma.cc/4B8B-R53H>. See also *Federal Taxpayer Protection Pledge* (Americans for Tax Reform 2011), archived at <http://perma.cc/S99B-LTY7> (pledging to "oppose any and all efforts to increase the marginal income tax rates for individuals and/or businesses," with no mention of tax-related compliance costs).

<sup>16</sup> For evidence that suggests that IRS audit decisions are affected by partisan politics, see Marilyn Young, Michael Reksulak, and William F. Shughart II, *The Political Economy of the IRS*, 13 *Econ & Pol* 201, 214 (2001).

<sup>17</sup> See Greg Hinz, *Blockbuster Report: How Cook County Tax System Shafts the Little Guy* (Crain's Chicago Business, Feb 15, 2018), archived at <http://perma.cc/EBD2-LZU8>.

<sup>18</sup> See Posner and Weyl, *Radical Markets* at 61–79 (cited in note 4).

sure that individuals do not understate the value of their holdings.

Although obviating the need for government-employed assessors or auditors, self-assessment with a market test does not necessarily economize on overall valuation costs. Rather, a market test shifts valuation costs from the public sector to the private sector, but these costs are costs to society regardless of whether the public sector or the private sector bears them. The use of a market test, moreover, may lead to duplicative and wasteful expenditures. Consider a profit-seeking private-sector firm whose business is to identify and acquire underpriced assets in a self-assessment regime with a market test. The firm will expend resources to value an asset if the private return exceeds the private cost. In making that calculation, the firm will not take into account the effect on others—including current owners as well as competitor firms—and therefore may invest more than the socially optimal amount in valuation. (Those familiar with the literature on the economics of intellectual property will recognize this as a variant of the “common pool problem” discussed by Partha Dasgupta and Joseph Stiglitz.)<sup>19</sup> These excessive valuation costs must be balanced against the potential costs of rent-seeking in a regime of state assessment or self-assessment with an audit test.

One objective that self-assessment with a market test does accomplish is that, as noted by Levmore, it “avoids entirely the need for fallible or corruptible government assessors and auditors.”<sup>20</sup> But while self-assessment with a market test reduces the risk of corruption, it increases the risk of collusion. In a market test regime, property owners may seek to understate the value of property for tax purposes while striking side deals with potential purchasers to maintain control of assets. Presumably the government will try to detect and punish collusion, but that will require it to employ additional law enforcement officials who are themselves potentially fallible and corruptible.

For Posner and Weyl, the central attraction of self-assessment with a market test is not that it would reduce the potential for corruption but that it could resolve imperfections in

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<sup>19</sup> Partha Dasgupta and Joseph Stiglitz, *Uncertainty, Industrial Structure, and the Speed of R&D*, 11 *Bell J Econ* 1, 18 (1980). See also Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 *Am Econ Rev* 691, 693–94 (1983).

<sup>20</sup> Levmore, 68 *Va L Rev* at 779 (cited in note 2).

property markets. Posner and Weyl are particularly concerned about a problem identified by the economists Roger Myerson and Mark Satterthwaite in a canonical 1983 article.<sup>21</sup> Myerson and Satterthwaite showed that in the bilateral trading context, neither a property owner nor a potential purchaser has an incentive to reveal the true value that she assigns to the property in question, and that some mutually beneficial bargains may not transpire as a result.<sup>22</sup> Posner and Weyl's COST mechanism is designed to induce owners to reveal the true value that they assign to their property and thus to solve the problem that Myerson and Satterthwaite identify.

Yet importantly, the problem identified by Myerson and Satterthwaite is a problem primarily of small markets, and it recedes as market size increases.<sup>23</sup> And it is rarely clear whether a particular market is a "small" one to which the Myerson-Satterthwaite theorem applies or a "large" market in which inefficiency asymptotically disappears. Should we think of the relevant market as the market for a particular house on a particular block in Hyde Park, or as the market for homes on the South Side of Chicago, or as the market for homes in Illinois? The correct answer is probably "all of the above," which makes it very difficult to determine whether the Myerson-Satterthwaite problem is a significant problem at all.

Self-assessment with a market test, moreover, may create as many misallocation problems as it solves. As Posner and Weyl show, the tax rate necessary to induce truthful self-assessment under COST is equal to the turnover rate for the relevant asset. Thus, as the authors acknowledge, "some assets unlikely to turn over often (family heirlooms and photographs, diaries) would be taxed at very low rates, while others (such as trendy gadgets) would be taxed at high rates."<sup>24</sup> Those differences in tax rates across asset types may distort individual decisions about investment and consumption. For example, COST may generate incentives for individuals to shift from high turnover assets (for example, publicly traded securities) to low turn-

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<sup>21</sup> Posner and Weyl, *Radical Markets* at 50–51 (cited in note 4). See generally Roger B. Myerson and Mark A. Satterthwaite, *Efficient Mechanisms for Bilateral Trading*, 29 *J Econ Theory* 265 (1983).

<sup>22</sup> Myerson and Satterthwaite, 29 *J Econ Theory* at 267–71 (cited in note 21).

<sup>23</sup> See Aldo Rustichini, Mark A. Satterthwaite, and Steven R. Williams, *Convergence to Efficiency in a Simple Market with Incomplete Information*, 62 *Econometrica* 1041, 1043 (1994).

<sup>24</sup> Posner and Weyl, *Radical Markets* at 64 (cited in note 4).

over assets (for example, paintings by an artist who is out of fashion). Equalizing the tax rate across all asset types is hardly a solution, as taxpayers still will have an incentive to shift toward low turnover assets and to understate the value knowing that no other bidder is likely to swoop in.<sup>25</sup>

Self-assessment with a market test may detract from allocative efficiency in still other ways. In such a regime, individuals will want to hold assets that are more valuable than they appear, so that owners can enjoy the benefits of valuable assets without paying high taxes and without potential purchasers placing bids. We can expect to see, for example, fewer front decks and more finished basements, even when the efficient outcome absent tax considerations would be otherwise.

Perhaps the most nightmarish aspect of Posner and Weyl's proposal—at least from an administrative perspective—is the treatment of maintenance. The authors acknowledge that their proposal will dull incentives to engage in upkeep. To address this, the authors suggest:

For some assets, where maintenance is clearly required and easily monitored, possessors would have to take care of them. . . . Maintenance could be monitored either by inspections or by embedded technology. If possessors make improvements that can be verified technologically using, for example, image analysis, they could receive a subsidy for this investment to offset COST's tendency to discourage investment.<sup>26</sup>

What Posner and Weyl seem to be suggesting, in effect, is that homeowners will be required to mow their lawns every  $x$  number of weeks, to paint their walls every  $y$  number of years, and to retiling their roofs every  $z$  number of decades, with the government monitoring their behavior and subsidizing certain tasks. And likewise for every other asset that depreciates absent maintenance. This, of course, reintroduces the central features of an audit regime: government inspections and government valuations. Indeed, one way to understand the difference between Posner and Weyl's proposal and the status quo is that

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<sup>25</sup> Posner and Weyl's COST proposal also would create a bias for services over goods, assuming that services are excluded from the COST tax base. On the challenge of valuing services in a self-assessment regime with a market test, see text accompanying notes 11–12.

<sup>26</sup> Posner and Weyl, *Radical Markets* at 65–66 (cited in note 4).

both involve markets and state assessments or audits, though in different contexts: Posner and Weyl would rely on markets to determine asset values while relying on state assessments and audits to determine and police maintenance expenditures, whereas the status quo relies upon state assessments to determine asset values while leaving maintenance up to the market.

One can anticipate at least two potential responses from the authors. The first is to emphasize the implications of the envelope theorem. That is, if we start with a world in which all property is taxed uniformly, small adjustments to reflect differential turnover rates generate first-order information-revelation benefits but only slightly distort consumption and investment choices. Similarly, if we start with a world with no property taxes at all, a small tax on the self-assessed value of property distorts maintenance and improvement incentives only a bit, while also generating first-order benefits from the reallocation of assets to the highest value users. Thus, it is not necessary to mandate and monitor the number of times that homeowners mow their lawns, repaint their walls, or retile their roofs, because the relevant social costs are not first-order as long as the tax rate under the COST regime remains low.

Yet the case for a hybrid approach that sets tax rates somewhere below the asset-specific turnover rate is far from conclusive. That is because the private-sector compliance costs of a comprehensive self-assessment regime are indeed first-order even if the relevant tax rate is low. Requiring every US taxpayer to inventory all of her assets and to update that inventory annually will entail millions if not billions of person-hours of labor. These compliance costs do not appear to factor into Posner and Weyl's estimates of the potential GDP gains that their proposal would bring.<sup>27</sup>

Second, Posner and Weyl might object that the critiques of the COST proposal in the previous paragraphs misunderstand their larger point. The COST proposal, perhaps like the current President's words, should be taken "seriously, but not literally."<sup>28</sup> That is, COST is meant to illustrate that self-assessment with a market test can improve upon existing mechanisms for asset valuation and allocation, and it should be understood as a generative theoretical exercise rather than a fully fleshed out

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<sup>27</sup> See id at 69.

<sup>28</sup> See Salena Zito, *Taking Trump Seriously, Not Literally* (The Atlantic, Sept 23, 2016), archived at <http://perma.cc/5RBB-WJP4>.

policy proposal ready for implementation tomorrow. Indeed, the authors acknowledge as much: “It would be imprudent,” they wisely write, “to leap head first into a system that would change the texture of markets and the economy in such basic ways.”<sup>29</sup>

Particular contexts in which Posner and Weyl suggest self-assessment with a market test include Internet domain names and radio spectrum licenses.<sup>30</sup> A self-assessment regime with a market test could be extended to several other vexing valuation problems. Enforcement of estate taxes might be improved if, say, executors of large estates were required to publicly post a list of all asset valuations (along with a description of the relevant assets), and if third parties then had an opportunity to purchase any asset from the estate during a fixed period for the self-assessed price.<sup>31</sup> One can imagine a similar system for asset transfers between US corporations and their foreign affiliates, in which US corporations currently have an incentive to understate the value of assets they move overseas.<sup>32</sup> Corporations could be required to grant their competitors a limited-time option to purchase any such asset for its self-assessed value, which would serve as a check against undervaluation.

Self-assessment with an audit test is more difficult to apply to areas in which overvaluation rather than undervaluation is the primary concern. Consider again the example of charitable contribution deductions for noncash gifts. Imagine that I donate a couch to Goodwill and self-assess the couch’s value at \$1,000 when in fact the fair market value is \$500. It does no good to give others the option to buy the couch for the self-assessed value—the problem is that the self-assessed value is too high, not too low. Overvaluation, not undervaluation, is the primary concern in other contexts as well. For example, a multinational corporation might seek to reduce its US tax bill by inflating the value of assets that its US subsidiary purchases from overseas affiliates. Or, to use another example that recently drew national media attention, a real estate developer father might overstate the value of assets that he purchases from his children so

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<sup>29</sup> Posner and Weyl, *Radical Markets* at 69 (cited in note 4).

<sup>30</sup> *Id.* at 71–72.

<sup>31</sup> See Daniel Hemel, *What Americans Should Learn from the Trump Tax Story—and One Way to Help Stop Further Trickery* (TIME, Oct 5, 2018), archived at <http://perma.cc/ST7Y-UP48>.

<sup>32</sup> In both cases, the market test may generate incentives for taxpayers to hide the true value of their assets from potential market participants, but note that taxpayers already have incentives to hide the value of their assets from potential auditors.

that he can transfer cash to the next generation without paying estate or gift taxes.<sup>33</sup>

Yet even when the relevant risk is overvaluation, market tests might have some use. In the case of noncash charitable contributions, for example, the IRS could randomly select some taxpayers who claim the deduction for a “market audit.” The IRS would then take the asset in question (for example, a couch) and sell it off at a public auction. If the winning bid at the auction were substantially less than the self-assessed value, the taxpayer would be liable for valuation misstatement penalties.<sup>34</sup>

In still other self-assessment contexts, audit tests enjoy insurmountable advantages over market tests. One example is the valuation of services. Under current law, dividends received by S corporation shareholders are exempt from Social Security and Medicare taxes that otherwise apply to compensation. Thus, a self-employed individual can reduce her tax liability by setting up an S corporation and channeling her income through that entity. A 1974 IRS revenue ruling requires taxpayers to separate their S corporation income into “dividends,” which are exempt from Social Security and Medicare taxes, and “reasonable compensation” for services, which are subject to those taxes.<sup>35</sup> Taxpayers therefore have an incentive to understate the value of services they provide to their S corporations. (This move is sometimes known as the “Gingrich-Edwards loophole,” because former House Speaker Newt Gingrich and former vice-presidential candidate John Edwards both have been accused of exploiting it.<sup>36</sup>)

In theory, the IRS could address the Gingrich-Edwards loophole through the same market audit approach suggested

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<sup>33</sup> See David Barstow, Susanne Craig, and Russ Buettner, *Special Investigation: Trump Engaged in Suspect Tax Schemes as He Reaped Riches From His Father* (NY Times, Oct 2, 2018), archived at <http://perma.cc/82KC-C9JX>. To quote the Times exposé:

The [Trump family’s] most overt fraud was All County Building Supply & Maintenance, a company formed by the Trump family in 1992. All County’s ostensible purpose was to be the purchasing agent for Fred Trump’s buildings, buying everything from boilers to cleaning supplies. It did no such thing, records and interviews show. Instead All County siphoned millions of dollars from Fred Trump’s empire by simply marking up purchases already made by his employees. Those millions, effectively untaxed gifts, then flowed to All County’s owners—Donald Trump, his siblings and a cousin.

<sup>34</sup> See note 8.

<sup>35</sup> Rev Rul 74-44, 1974-1 Cum Bull 287.

<sup>36</sup> See Mark Koba, *How the Gingrich-Edwards Tax Loophole Works* (CNBC, Mar 5, 2014), archived at <http://perma.cc/MN3C-N4WU>.

above for noncash charitable contributions. If, for example, John Edwards were selected for a market audit, then auction participants would bid on Edwards's services as a trial lawyer, which he claimed were worth \$360,000 a year.<sup>37</sup> If the winning bid substantially exceeded \$360,000, Edwards would owe penalties. But the problems with this approach are obvious. If Edwards were working as a trial lawyer for an unrelated auction winner, then he would have little incentive to perform at his best (or to perform at all). Knowing this, the auction participants would submit low or no bids. Edwards's self-assessed compensation of \$360,000 a year would thus appear "reasonable" (indeed, inflated) after the auction even though it was rather clearly not.

The market test approach similarly falters when the owner of an asset has the ability to make modifications that reduce the asset's value to others but not to herself. Under a self-assessed property tax with a market test, for example, a homeowner with an idiosyncratic preference for purple might paint his house that color, knowing that it will reduce the amount that others will be willing to bid for the house and thus allow him to reduce its value for tax purposes. An auditor could choose to ignore such features when valuing an asset. Market participants presumably would not.<sup>38</sup>

It is therefore implausible that markets will ever fully replace audits as mechanisms for checking self-assessed valuations. What markets can do is to serve as complements to audits in particular valuation contexts. Perhaps the principal virtue of Posner and Weyl's COST proposal is that it challenges us to consider more carefully when and where market tests can generate significant welfare gains.

### III. MARKET AUDITS FOR PATENTS

To recap so far: Self-assessment will generally be preferable to state assessment when private actors can gather and process information about value more cheaply and accurately than the

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<sup>37</sup> *Id.*

<sup>38</sup> A similar problem arises with respect to family limited partnerships in the estate and gift tax context. Wealthy individuals routinely place assets into partnerships, impose onerous restrictions on the liquidation of those partnerships, and then claim that their partnership interests are worth substantially less than the sum of the assets for estate and gift tax purposes. For this reason, section 2704 of the Internal Revenue Code requires that certain liquidation restrictions be ignored when valuing assets for estate and gift tax purposes. See IRC § 2704.

government can. The choice between markets and audits as checks on self-assessed valuations will depend upon a number of further factors: the potential for corruption or for collusion, whether the item being valued is property or a service, and whether taxpayers have opportunities to deflate the value of items under assessment. In its classic form, self-assessment with a market test is ill-suited to problems of overvaluation, but these circumstances can be addressed through “market audits”: assets can be randomly selected for public auction, with penalties for taxpayers whose self-assessments substantially exceed the winning auction bid.

One area in which this market audit approach is particularly promising is patent law. Patents are especially attractive as an innovation incentive when information about the value of potential innovations is widely dispersed across the private sector.<sup>39</sup> The most significant drawback of patents is the deadweight loss of monopoly pricing. Several scholars have suggested that governments can preserve the innovation incentive benefits of patents while minimizing deadweight loss by purchasing patent rights from inventors and then placing those inventions in the public domain immediately.<sup>40</sup> The challenge, though, is one of valuation: how can the government—which by hypothesis has inferior information about the value of potential innovations—determine the appropriate price for patent buy-outs?

In a creative and widely cited 1998 article, Harvard economist Michael Kremer proposed an auction mechanism for resolving this valuation problem.<sup>41</sup> Under Kremer’s proposal, inventors would transfer their patents to the government, which would run a sealed-bid second-price auction to determine the patent’s market value. The government would then offer to buy the patent from the inventor at a price based on the second highest auction bid (with a markup to reflect the difference between social value and market value). As Kremer explains:

Most of the patents that the government bought would be placed in the public domain. However, in order to give auc-

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<sup>39</sup> See Daniel J. Hemel and Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 Tex L Rev 303, 307 (2013).

<sup>40</sup> See generally, for example, Steven Shavell and Tanguy van Ypersele, *Rewards versus Intellectual Property Rights*, 44 J L & Econ 525 (2001).

<sup>41</sup> Michael Kremer, *Patent Buyouts: A Mechanism for Encouraging Innovation*, 113 Q J Econ 1137, 1138 (1998).

tion participants an incentive to reveal their true valuations, a small proportion of patents, chosen randomly, would be sold to the high bidder. Patent holders would have the right to accept or reject the government's offer.<sup>42</sup>

As ingenious as Kremer's proposal is, it is not perfect. For one, it would involve running an enormous number of auctions, each of which entails costs for the government auctioneer and for private-party participants. The US Patent and Trademark Office grants roughly 300,000 utility patents per year,<sup>43</sup> so even if only 20 percent of inventors submitted their patents to the auction process, Kremer's proposal would entail 60,000 separate auctions, with valuation costs plausibly running into the billions of dollars. Second, the incentive for potential bidders to participate in the auction process and invest resources in calibrating their bids will be dulled by the knowledge that, in the vast majority of cases, the auction is essentially a dry run, with the government ultimately purchasing the patent itself rather than assigning it to the auction winner. Third, as Kremer notes, the government would need to invest in policing collusion, or else inventors could engineer inflated bids for their patents and reap outsized rewards from the system.<sup>44</sup>

Self-assessment backed by market audits would substantially address these concerns. Under such a system, inventors would self-assess the value of their patents, and the government would purchase patents from their inventors at the self-assessed price. To guard against overvaluation, a subset of randomly selected patents would be put up for auction. If the winning bid fell below the self-assessed value, the inventor would be liable for the difference; if the gap were substantial, the inventor would be subject to graduated penalties. Thus, in most cases, no auction would be necessary. When an auction did occur, the government would assign the patent to the high bidder, so private parties would have strong incentives to participate meaningfully. And since the number of auctions would be smaller, the cost of policing collusion would be smaller as well.

A key challenge in implementing such a system would be the calibration of penalties in cases of overvaluation. If the in-

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<sup>42</sup> Id at 1146–47.

<sup>43</sup> See *US Patent Statistics Chart: Calendar Years 1963–2015* (US Patent & Trademark Office, June 15, 2016), archived at <http://perma.cc/QBY3-WDN7>.

<sup>44</sup> See Kremer, 113 Q J Econ at 1157–59 (cited in note 41).

ventor knows the price that her patent will command at auction but the government does not, then the government can induce truthful self-assessment by setting a penalty of at least  $(x_s - x_m)/p$ , where  $x_s$  is the self-assessed value,  $x_m$  is the market value as determined by the auction, and  $p$  is the fraction of government-purchased patents that are submitted to a market audit test. To illustrate: If  $p$  is 0.1 and  $x_m$  is 90, an inventor would derive no benefit from reporting a self-assessed value of 91, because the penalty  $((91 - 90)/0.1, \text{ or } 10)$  applied with probability 0.1 would offset the benefit (1) of the slightly inflated self-assessment.

What if inventors do not know with certainty what price their patents will command at auction? This issue arises with any self-assessment regime backed by penalties: self-assessors expose themselves to some risk when they cannot predict with 100 percent confidence what value the audit test or market test will assign. Only a system of state assessment can eliminate this risk entirely. Nonetheless, there are several ways in which individuals and firms can manage the risk of penalties that self-assessment entails. Large corporations may choose to self-insure, especially if shareholders can minimize idiosyncratic risk through diversification. Smaller firms and risk-averse individuals may choose to purchase “penalty insurance,” in which case the loading cost of insurance should be added to the valuation costs of a self-assessment system. Insurers, of course, will want to engage in their own valuations of patents when underwriting penalty insurance policies. The most successful insurers will be the ones that can predict auction results most cheaply and most accurately.

## CONCLUSION

Audits and markets both are mechanisms for policing valuations in self-assessment systems. Rather than always serving as strict substitutes, audits and markets can be complementary ways to verify self-assessments. The patent buyout proposal here is one example of a promising audit/market hybrid. Even the “radical markets” approach advocated by Posner and Weyl involves audit-like interventions to monitor the maintenance of depreciable assets.<sup>45</sup> Instead of asking whether audits or markets are preferable in a particular context, policymakers who

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<sup>45</sup> See note 26 and accompanying text.

confront valuation challenges would be wise to ask how the two can be combined most fruitfully.