

5

The Unit Approach to the Taxation of Railroad and Public Utility Property

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The Issue and the Context

Administering a property tax system presents ongoing challenges under the best of circumstances. Whether it involves keeping taxpayer rolls up to date, pursuing tax evaders, or updating taxable property values appropriately, property tax administration requires substantial diligence and expertise. This chapter focuses on one particular area of property tax administration in the United States: the taxation of railroads, public utilities, and other multijurisdiction properties. The number of such taxpayers in a state is generally fairly small compared to the total number of households and businesses paying property taxes. However, due to their size, these companies often incur the largest property tax bills in any given state. Because of both size and complexity, these properties are generally valued by state agencies rather than by local assessors, and the state agencies use valuation methods that differ markedly from the methods employed at the local level. In the sections that follow, the differences in method will be described, along with a brief summary of the history and ongoing controversies surrounding these “centrally assessed” properties.

Before turning to this more detailed discussion, however, it is useful to describe the context more fully. The companies involved are railroads and railcar companies, gas and electric utilities, telecommunications firms, pipelines, airlines, and other firms with real and personal property assets in multiple taxing jurisdictions, often including multiple states. Value added from these firms represented 3.8 percent of gross domestic product (GDP) in 2010. In some states the list

includes natural resource extraction companies such as oil and gas wells, mining operations, and even forestry companies. The 1992 Census of Governments reports that 4.3 percent of the property that is taxable at the local level was centrally assessed (U.S. Census Bureau 1994). Throughout this chapter, examples will be drawn from the electric utility industry because of data availability, but the patterns are similar in the other industries involved.

In terms of both dollars and expense ratios, property taxes are a significant expense factor for centrally assessed companies. Table 5.1 reports property taxes paid by a small sample of electric utility operating companies from around the country. Most of these companies have tangible property assets in multiple states and multiple jurisdictions within each state. The companies shown were selected for their geographic diversity and because they are fairly well known within their regions of operation. They are typical of electric utilities as well as other centrally assessed properties. These firms pay property taxes in the tens and hundreds of millions of dollars each year, and property taxes paid are a very significant share

Table 5.1
Property Taxes Paid by Selected Electric Utility Operating Companies, 2011

Electric Operating Company	Property Taxes Paid (2011)	Gross Operating Revenue (2011)	Property Taxes Paid as Percentage of Gross Operating Revenue
Alabama Power Co.	\$96,223,127	\$5,702,250,135	1.70
Arizona Public Service	143,413,037	3,274,438,030	4.40
Baltimore Gas & Electric	110,405,130	2,992,614,087	3.70
Consolidated Edison Co. of New York	1,316,787,670	10,610,651,493	12.40
Duke Energy ^a	239,835,694	11,862,501,752	2.00
Florida Power & Light	291,208,688	10,609,210,465	2.70
NSTAR Electric Company	103,447,567	2,633,057,952	3.90
Ohio Edison	68,057,825	1,395,495,932	4.90
Oklahoma Gas & Electric	61,996,604	2,328,466,158	2.70
Pacific Gas & Electric	271,956,136	15,160,335,346	1.80
PacifiCorp	116,433,706	4,553,757,373	2.60
Public Service Co. of Colorado	90,096,179	4,293,125,992	2.10
Public Service Co. of New Hampshire	53,441,107	1,033,054,174	5.20
Average			3.90

^aIncludes Duke Energy Carolinas, Duke Energy Indiana, Duke Energy Kentucky, and Duke Energy Ohio. Source: FERC 2011 Form-1 reports and calculations by the authors.

of their respective total operating expenses. As a result, it is common for each company to have its own specialized tax staff, which monitors and manages property taxes, in addition to retaining outside legal staff, specialized appraisers, and other experts during any valuation appeal process.

Comparing the percentages in table 5.1 to the property taxes assessed on residential property is potentially misleading. For example, property taxes as a percentage of gross rent can vary between 15 and 35 percent, depending on the market area. However, gross rent and gross operating revenue under the unit approach are not equivalent concepts. Gross rent is the rental income directly attributable to a property. Gross operating revenue is the total revenue received from all sources by an operating company. The equivalent concept for a residential property would be total household income, including imputed rental value and the value of household production. To illustrate, residential property taxes in Utah in 2010 represented 1.4 percent of statewide personal income, but was more than 50 percent of the U.S. Bureau of Economic Analysis estimate of net rental property income (including imputed rents for owner-occupied property) for that year.

Centrally assessed property represents an important revenue source for local governments. Based on contribution to GDP, these industries represent about 4 percent of the private U.S. economy. Because they tend to be capital intensive, they often represent a large percentage of property value in many states. The 1992 Census of Governments reported that 38 states centrally assessed at least some properties. Among that group of states, centrally assessed companies represented nearly 5 percent of taxable value in county and municipal jurisdictions, but the variance was substantial. Table 5.2 reports the percentage of total locally taxable value that was centrally assessed for the 15 states with the highest percentages. It is clear from the table that utility, railroad, and other centrally assessed properties constitute a significant share of the property tax base in many states.

National data for property assessments were last reported in the 1992 Census of Governments. Although more recent comprehensive valuation data on centrally assessed properties are not available, the importance of these properties for local governments is readily highlighted in table 5.3. The table summarizes the experience of seven states in 2011. The first data column of the table reports public utility and/or centrally assessed property values as a percentage of overall taxable value in the state. Because the statewide experience often masks the importance of these properties in the individual local government tax base, the same ratio was calculated for each county (or school district in the case of South Carolina) in the state. The percentage of total county property value that is centrally assessed in the county with the highest ratio is reported in the second data column, and the last column shows the percentage of counties (or school districts) with more than 20 percent of their property tax base in centrally assessed companies. The table shows clearly that even in states where centrally assessed property is not a large proportion of the overall property tax base, such

Table 5.2
State Assessed Taxable Value as a Percentage of Total Locally Taxable Value, 1992

State	State Assessed Value as a Percentage of Total Locally Taxable Value
Wyoming	71.00
Alaska	42.40
Montana	30.10
Utah	24.00
Arizona	22.10
Ohio	20.70
South Carolina	18.00
New Mexico	17.40
Oklahoma	16.60
Kansas	16.30
Maryland	15.10
Louisiana	14.70
Georgia	14.60
Alabama	13.50
Mississippi	12.40

Source: U.S. Census (1994) and calculations by the authors.

Table 5.3
Public Utility/Centrally Assessed Property as a Percentage of Total Taxable Value, 2011

State	Public Utility/Centrally Assessed Property as Percentage of Total Taxable Property Value	Maximum Local Ratio Within the State (%)	Percentage of Counties with 20% or More of Their Property Tax Base Centrally Assessed
California	1.80	15.60	0
Georgia	3.60	65.50	3.20
Kansas	11.40	84.30	35.20
Mississippi	11.20	45.30	20.70
Oregon	4.90	70.60	14.30
South Carolina (school districts)	7.20	51.20	8.20
Utah	10.90	83.40	34.50

Source: Calculations by the authors from state tax agency annual reports.

as California, it is extremely important for selected local governments. And in many counties, these industries constitute a very large proportion of the local base. Because of the importance of these companies in the local tax base, how they are valued is a matter of significant concern to local government officials. Their concern is often expressed in terms of independent appeals of state valuations and active involvement in appeals filed by taxpayers.

Should the property owners choose to appeal their value, local governments are faced with a dilemma. Their financial plans and programming are built around an assumed revenue stream tied to the state's estimation of value. While the appeal is pending, a significant percentage of the revenue stream becomes uncertain and may need to be refunded to the taxpayer at some future date. If local governments proceed with their plans but the state loses the appeal, local governments may be forced to increase taxes on other taxpayers in order to refund taxes and/or fulfill obligations incurred under the assumed increase in tax revenue. Local governments could delay implementation until the appeal is settled, but the uncertainty could last for years. Hence, both the taxpayer and benefiting local governments have a strong and active interest in the valuation process for centrally assessed property. (See box 5.1.)

To summarize the context, public utilities, railroads, and other complex industrial properties are frequently valued for property tax purposes by state agencies. The resulting property tax bills constitute a significant expense for these companies. At the same time, these centrally assessed properties make up an important share of the overall property tax base, and in a number of cases the share exceeds 50 percent of the local tax base. As a result, local governments pay close attention to the valuation methods used and the resulting taxable values. State tax administrators are thus pressured by taxpayers to lower values and by local governments to raise values. The courts are certainly no strangers to this tension. As discussed later in this chapter, the methods employed by state agencies charged with valuing centrally assessed properties differ markedly from the methods used by local assessors. The next section describes the logic employed in these assessments. A subsequent section provides a more detailed description of the appraisal methods used.

The Unit Approach

In 1890, the Cincinnati, Lafayette and Chicago Railroad operated a branch line that ran from Templeton, Indiana, to Kankakee, Illinois, a distance of some 60 miles. The line crossed the Indiana-Illinois state boundary and passed through several Indiana and Illinois counties. Most of the Indiana track was in Benton County, but a small two-mile section ran through a corner of adjacent Newton

Box 5.1

It may be helpful to consider a specific example. Beaver County, Utah, is a rural county with a population of between 6,000 and 6,500 people and has a little more than 2,000 residential properties. The county is proud to be the only region in Utah with geothermal plants that deliver electricity to the grid. In the 2009 tax year, centrally assessed electric assets constituted 15 percent of the property tax base in Beaver County. In 2010, new geothermal capacity entered the tax base and increased the value of centrally assessed electric utility property by a little more than \$305 million, increasing the electric utility share of the tax base to nearly 42 percent.

The impact on local government revenue was dramatic. In Beaver County, 69 percent of the property tax goes to the local school district, while 19 percent flows to the county government. The remainder is divided between special service districts (9 to 10 percent) and the cities and towns (3 to 4 percent). Obviously, the school district is the main beneficiary from taxes on the new electric capacity. District tax revenues per household increased by nearly 70 percent between 2009 and 2010. School property tax revenues increased from \$4.6 million in the 2009–2010 school year to \$7.1 million in the 2011–2012 budget. On the expenditure side, the school district launched a capital program and increased outlays from an annual average of about \$430,000 between 2007–2008 and 2009–2010 to \$11.5 million in the 2011–2012 budget. At the same time, state aid dropped from \$7.6 million to \$6.7 million.

The impact on the taxpayers was equally large. The \$305 million in additional taxable value resulted in \$2.87 million in annual property taxes for the property owners. Under the methods employed by the Utah State Tax Commission in valuing electric utility property, the \$305 million in value represents 100 percent of market value and is arrived at using a combination of the methods outlined below. Based on the Utah capitalization rate study for utilities in 2010 (Property Tax Division 2010) and assuming a 10 percent cost of debt, the annual Net Operating Income (NOI) necessary to arrive at a final value of \$305 million was on the order of \$26 million, and the resulting annual tax burden represented over 10.8 percent of NOI. Even if the cost of debt is widely different from that assumed here, the property tax burden in all likelihood exceeded 8 percent of NOI. The point is not to ask whether the Utah State Tax Commission was correct in their analysis. Our point is simply that the \$2.87 million in property taxes paid by the owners of new electric capacity in Beaver County represents a substantial charge against NOI, and those owners are likely to consider carefully whether they agree that the tax is appropriate.

County before the line crossed into Illinois. There were no stations or other facilities in Newton County. As in other similar cases, property tax administrators in Indiana confronted the question of how to value the rail line.

The perspective adopted by many states in answering this question relies on a crucial assumption about the nature of the property being valued. A classic report published by the National Association of Tax Administrators points to the example of a parcel of city land that includes an older but serviceable house. The report argues that if the land and house were sold separately, they would be worth much less than if sold as a single integrated unit. The authors go on to argue that the best indicator of value for the land and house is the sales price for the unit, without reference to how that value is divided between land and improvements. With regard to this example, the report concludes:

A unit appraisal is superior to a summation appraisal in this case not only because it produces a result that is closer to the true value of the property as a whole but because it produces that result by resort to more reliable and more readily available evidences of value than those that would be used for a summation appraisal. (Chapman et al. 1954, 14)

It is worth noting that this example is still cited by some states in justifying a unit approach (e.g., California State Board of Equalization 2003). The point being made is that virtually all appraisals of real property involve the identification of a tangible bundle of land and improvements, which is defined as the unit to be valued. While this is true, it is also critical to recognize that the unit generally valued by local assessors differs fundamentally from the unit as defined by states in valuing railroads and public utilities. The point here is that both local assessors and state tax agencies define a unit to be valued, and for both the object is to value the unit that is most likely to be traded in the marketplace. Unit valuations of railroads and other public utilities attempt to value the combination of properties that is likely to sell in the market as a single operating unit. Local assessors most commonly consider the value of a parcel of land and associated permanent improvements without reference to the overall business activities of the occupants. State assessors, in contrast, begin with the business enterprise as the unit to be valued.

Traditionally, professional appraisers have used three approaches to estimate market value, and all are grounded in attempts to replicate the reasoning of potential actors in the real estate market. This is the “willing buyer, willing seller” concept, which assumes two reasonably well-informed parties who wish to engage in a transaction but are not required to do so. Hence, one approach to the railroad valuation question would be to estimate the cost of rights-of-way, rails, railroad ties, and other permanent improvements. But it can be argued that this cost approach greatly understates the value of the railroad. Put another way, no seller would be willing to accept a price calculated in this manner, and knowledgeable buyers would be willing to pay considerably more. Both buyers

and sellers would look at the income-generating potential of the line in negotiating a mutually agreeable price. The problem arises in considering the two miles of track in Newton County. Without terminals, stations, switching yards, or other facilities, the income potential of the track was zero. As a railroad, it was worthless. But at the same time, the 60-mile line from Templeton to Kankakee was also worth substantially less without the two miles of track in Newton County.

Tax administrators argued that in order to value each section of track, the overall value of the railroad as a going concern first had to be estimated. This value was then distributed across the entire line, based on the argument that each rail section was essential to realizing the potential of the overall enterprise. Without the Newton County track, the remaining 58 miles of track and related facilities had very little value. By the same argument, each mile of track contributed equally to company value. This method of estimating market value came to be known as the unit (or unitary) approach (or rule). It is based on the argument that assembled and operating tangible assets are worth more in real-world markets than the sum of the individual unassembled parts. That claim lies at the root of the valuation methods employed by state agencies in valuing centrally assessed property. It is also a claim that taxpayers have resisted for well over 100 years. The next section summarizes some of that history.

History and Development of the Unit Approach to Value —————

As suggested by the example above, the unit approach was first applied to railroads. The specific case mentioned was resolved by the U.S. Supreme Court in 1894 (*Cleveland, Cincinnati, Chicago & St. Louis Railway Co. v. Backus*, 154 U.S. 439 [1894]). State supreme courts had heard earlier cases in 1868 in Kentucky and 1871 in Kansas, and the U.S. Supreme Court had ruled on the validity of the unit approach as applied to railroads in 1875 (*Taylor v. Secor*, 92 U.S. 575 [1875]). Two points are at issue in these early cases. First was the validity of using the going concern value as the basis for valuing railroads. Second was how the portion of overall value should be determined for each taxing jurisdiction. Three statements taken from these early court cases summarize the judicial conclusion:

Applegate v. Ernst, 66 Ky. 648, 650 (1868): “The law treats a railroad and all of its appurtenances as one entire thing.”

Missouri River, Fort Scott & Gulf Railroad v. Morris, 7 Kan. 210, 222–23 (Kan. 1871): “A railroad is an entire thing and should be assessed as a whole. It would be almost as easy and as reasonable to divide a house or a locomotive into portions and assess each portion separately, as to divide a railroad into portions and assess each portion separately.”

Taylor v. Secor, 92 U.S. 575, 608 (1875): “It may well be doubted whether any better mode of determining the value of that portion of the track

within any one county has been devised than to ascertain the value of the whole road, and apportion the value within the county by its relative length to the whole.”

The earliest railroad cases considered the valuation of railroads within a state, but as noted in the Indiana-Illinois example, railroads soon expanded and crossed state lines. Given the constitutional prohibition on taxing interstate commerce, it was certain that the courts would be asked to rule on whether the unit approach violated the commerce clause. In 1894, the U.S. Supreme Court upheld the application of the unit approach in valuing interstate railroads, arguing that the unit approach was used to estimate value, and track mileage was then used to measure value in each jurisdiction, but the tax was only on the value within a given jurisdiction (*Cleveland, Cincinnati, Chicago & St. Louis Railway Co. v. Backus*).

By the turn of the century, other multijurisdiction companies were emerging, and tax administrators began applying the unit approach to those entities as well. In 1896, the Supreme Court upheld the application of the unit approach to telegraph lines (*Western Union Telegraph Co. v. Taggart*, 163 U.S. 1, 18 [1896]) and, the following year, to express companies (*Adams Express Co. v. Ohio State Auditor*, 165 U.S. 194 [1897]). In the twentieth century, the unit approach was also extended to electric utilities, telecommunication, pipeline, and other capital-intensive firms that employ a system of interconnected assets. Today, 40 out of 50 states centrally assess at least some portion of real property, and 39 states employ the unit approach (Department of Taxation and Finance 2005).

Because of the size of the taxpayers involved and the magnitude of the resulting property tax bills, appeals have been common, and an extensive body of case law has developed. Many of the fundamental concerns raised by taxpayers over the years have proved difficult to resolve completely. The Advisory Commission on Intergovernmental Relations (ACIR) published an assessment of property tax practices in 1962 and reissued the report in 1975. That chapter on central assessment practices begins with this statement: “Among the problems of property taxation one of the most controversial and perplexing is that of administering the ad valorem tax on railroads and other public utilities” (Advisory Commission on Intergovernmental Relations 1963, 147). To understand why controversy persists after more than 150 years of scrutiny and debate, we highlight four nagging issues that routinely resurface in the debate.

DEFINING THE UNIT

The unitary valuation approach is typically applied to properties that operate across county and state boundaries and whose “value depends on the interrelation and operation of [all of the properties] as a unit. Many of the separate assets would be practically valueless without the rest of the system. Ten miles of telephone wire or one specially designed turbine would have a questionable value, other than as scrap, without the benefit of the rest of the system as a whole” (*ITT*

World Communications, Inc. v. San Francisco, 37 Cal.3d 859, 210 Cal. Rptr. 226, 693 P.2d 811 [1985]). As technologies and business organizations evolve, questions frequently arise as to whether a particular type of business asset or group of operating properties should be subject to unitary assessment. For example, in the past, telephone companies were required to be assessed as a unit, but the properties of cable companies were not. Technologies have changed, so cable companies now provide many of the same telecommunications services that are provided by telephone companies, and jurisdictions have grappled with whether the properties of cable companies are now subject to unitary assessment:

Comcast Corp. v. Department of Revenue, No. TC 4909, 2011 WL 3505148 (Or. T.C. Aug. 10, 2011), holding that a cable company may not be subject to central assessment even though it transmits certain data.

Qwest Corp. v. Colorado Div. of Property Taxation, No. 10CA1320, 2011 WL 3332876 (Colo. Ct. App. Aug. 4, 2011), holding that a telecommunications company was not able to be treated like a cable company, whose intangible property is exempt and overall value is capped; also that there was no constitutional violation for treating a telecommunications company and a cable company differently, even though they perform many of the same services.

In addition to cable companies, other types of business organizations have been identified as possible candidates for central assessment because they operate across county or state lines. The resolution of these matters will largely depend on the statutory scheme adopted by the particular state. For example, in *Beaver County v. WilTel, Inc.* (2000 UT 29 ¶19, 995 P.2d 6002), a provider of long-distance telecommunications services argued that it should not be subjected to central assessment when other “classes of enterprises” such as banks, retail furniture chains, cable television companies, and Internet service providers operate across county or state lines and are locally assessed. The court attempted to resolve this dispute by analyzing the level of physical, economic, and functional integration of the operating properties. The court ultimately ruled that the properties WilTel used to provide interstate long-distance communication services were completely integrated and thus were appropriately subject to central assessment as a single operating unit. The court then indicated, in dicta, that it did not appear that the properties associated with the branches of a bank or retail outlet were as functionally integrated because the branches “in some cases could operate independently.”

DEFINING WHAT SHOULD BE INCLUDED IN THE UNIT

Almost from the earliest cases there has been controversy regarding which properties should be included in the unit. Should the unit include all property owned by the firm or only the property that is actually used to conduct utility

operations? Should exempt properties be included in the unit? Should property leased from others be included?

Over time, it has generally become accepted that properties owned by a firm that are not required for the operation of the utility business (i.e., “nonoperating properties”) should not be included in the unit (Chapman et al. 1954, 18). Nonoperating properties may include such assets as those associated with other lines of business owned by the firm or unrelated investments. The properties used to conduct the utility business are generally referred to as “operating properties.” Operating properties include all properties necessary to conduct the unitary business, regardless of whether they are owned, leased, or otherwise exempt from taxation in the particular jurisdiction. Over the years, many controversies have arisen about how to properly value the leased operating properties used within the unit and how to properly remove exempt operating properties (i.e., intangible property) from the unit assessments.

Utilities and railroads frequently lease properties that are used in their unitary operations. These entities can lease such properties through either a capital lease or an operating lease. Capital leases do not pose much of an issue in unitary assessment because the property is treated as owned on the records of the company. Property used under an operating lease, however, is not recorded on the books of the company, and for financial accounting purposes the company recognizes a rental expense but no depreciation expense. Appraisers recognize that this accounting treatment affects the cash flows capitalized in the income approach described below and that an adjustment typically needs to be made to the income approach to account for the use of operating leased property. The most frequently used method for making this adjustment is to treat the leased property as if it were owned by (1) disallowing the rent expense; (2) allowing a depreciation expense; (3) recalculating the tax obligation associated for the prior adjustments; and (4) making an appropriate allowance for the capital expenditures that would be required to maintain and replace the subject unitary property. Several governmental appraisers have started to suggest that different methods should be used to account for the value of the leased operating property, and litigation has ensued:

Delta Airlines, Inc. v. Department of Revenue, 328 Or. 596, 984 P.2d 836 (1999), holding that in the context of a limited life model, the leased operating property could be valued by capitalizing the annual lease payments and adding a residual value of the leased aircraft.

Union Pacific Railroad v. Utah State Tax Commission, Case No. 090700830 AA (2nd Dist. Ct. Utah 2012) (decision is pending), dealing with whether the proper way to value operating leased property is simply treating it as though it is owned, or capitalizing the income stream to the lessor.

EXCLUDING INTANGIBLE VALUE

A common dispute in unitary matters is whether unitary assessed property owners are receiving equal protection under the tax laws in relation to locally assessed property owners. This dispute most frequently arises in the context of whether the unit approach is capturing and taxing the value of nontaxable intangible business assets (i.e., goodwill, workforce, software) and nonproperty assets (i.e., business growth expectations) when the locally assessed approaches are not capturing and taxing such values.

More than a century ago, the U.S. Supreme Court ruled that states may impose property tax on both tangible and intangible properties:

A distinction must be noticed between the construction of a state law and the power of a state. If a statute, properly construed, contemplates only the taxation of horses and wagons, then those belonging to an express company can be taxed at no higher value than those belonging to a farmer. But, if the state comprehends all property in its scheme of taxation, then the goodwill of an organization and established industry must be recognized as a thing of value. (*Adams Express Co. v. Ohio State Auditor*, 166 U.S. 185, 221 17 S.Ct. 604 [1897])

It has also long been recognized that it is difficult to separate the tangible from the intangible in property values. As one oft-quoted 1906 opinion put it, “One might as well try to value the life-blood of a horse, or his capacity to breathe, as try to place a value upon the visible part of a railroad property separate from its rights, franchises and privileges” (*Chicago and North Western R.R. Co. v. State*, 108 N.W. 557, 573 [Wis. 1906]). Numerous states have chosen¹ to exempt intangible properties from their *ad valorem* property tax schemes and thus are required to identify and remove the value of intangible properties that may be captured in their unit valuations. The identification and removal of intangible property values from unit assessments has been an ongoing area of litigation. Recent court decisions include the following:

T-Mobile USA, Inc. v. Utah State Tax Comm’n, 2011 UT 28, ¶51, 254 P.3d 752, holding that goodwill constitutes intangible property under the generally accepted definition of intangible property, and therefore the value attributable to goodwill is not subject to Utah property tax and must be removed from the unitary assessment.

1. Some states have decided to exempt intangible properties from property tax because they impose an income tax on the earnings from the intangible properties. Such states often perceive that imposing both a property tax and an income tax on such intangible properties could result in a form of double taxation. See generally, *T-Mobile USA, Inc. v. Utah State Tax Comm’n*, 2011 UT 28, ¶29, 254 P.3d 752, 762.

Elk Hills Power, LLC v. Board of Equalization, 123 Cal.Rptr.3d 906 (2011) (appealed to Calif. Supreme Court), holding that the value of emission reduction credits (ERCs) could be included in the value of the electric utility property even though the ERCs are intangible assets.

Union Pacific Railroad v. Utah State Tax Commission, Case No. 090700830 AA (2nd Dist. Ct. Utah 2012) (decision is pending), dealing with whether custom computer software and a trained and assembled workforce constitute intangible property exempt from property taxation.

Beaver County v. Property Tax Division of the Utah State Tax Comm'n, No. 080905451 (3rd Dist. Ct. Utah, Feb. 15, 2012), holding that the stock and debt valuation model should not be used to value unitary property unless the intangible property captured in the model is removed.

THE IMPACT OF REGULATION ON UNITARY VALUATIONS

One of the arguments made for central assessment and the application of the unit approach is that the firms in question have historically been regulated by state or federal agencies (Chapman et al. 1954; Janata 1993). These properties are often subject to regulatory schemes that restrict the rates that may be charged by the utility or require compliance with certain operating expenditures. Questions continue to arise regarding the valuation impacts associated with regulation:

PacifiCorp v. Idaho State Tax Comm'n, No. CV OC 08 18158 (4th Dist. Ct. Idaho, Sept. 16, 2010), holding that the Idaho State Tax Commission's assessed value of PacifiCorp was erroneously high, that book depreciation does not account for all forms of obsolescence, and that a rate-regulated utility suffers obsolescence as a result of regulation.

Boston Gas Co. v. Board of Assessors, 941 N.E.2d 595, 607–08 (Mass. 2011), holding that the fair market value of a pipeline was greater than the net book value even though it was a regulated utility and only able to earn a return on its rate base.

PacifiCorp v. State of Montana, 253 P.3d 847 (Mont. 2011), holding that there was no additional obsolescence to deduct from the original cost less depreciation.

Beaver County v. Property Tax Division of the Utah State Tax Comm'n, No. 080905451 (3rd Dist. Ct. Utah, Feb. 15, 2012), holding that a rate-regulated utility suffers from additional obsolescence due to its being regulated.

Jones v. Southern Natural Gas Co., 63 So.3d 1080 (La. Ct. App. 2011), holding that there was insufficient evidence to allow additional obsolescence as a result of a gas pipeline being a regulated utility.

By the late 1960s and early 1970s, the railroad industry in the United States was in serious financial difficulty. A number of railroad companies were insolvent, and Congress became concerned that the U.S. rail system would collapse. It responded with several reforms that led to a substantial restructuring of the industry. As part of that restructuring, Congress passed the Railroad Revitalization and Regulatory Reform Act of 1976, known since as the 4R Act (Pub. L. 94-210, 90 Stat. 31, 49 U.S.C. § 11501). One of the arguments made by the railroad industry was that states were too slow to grant valuation relief in the face of the industry's financial troubles. As part of the 4R Act, states were prohibited from unreasonable or unjust discrimination against or an unreasonable burden on interstate commerce. Most important, the act prohibited states from assessing railroads at a higher ratio to market value than that used for other property in the state or at a higher tax rate. The act also gave companies the right to access the federal courts directly in seeking relief from state assessments (Adams 1977). The result was a fundamental change in the application of the unit approach to railroads. The 4R Act was followed by the Motor Carrier Act of 1980 (Pub. L. 96-296, 94 Stat. 792) and section 1371 of the Tax Equity and Fiscal Responsibility Act of 1982 (Pub. L. 97-248, 96 Stat. 324). The net result was to provide railroads, motor carriers, and airlines with effective federal remedies against what were perceived to be discriminatory state tax practices (Janata 1993). A more detailed description of the current approaches, methods, and practices employed by central assessment offices follows.

Overview of the Valuation Methods Employed in the Unit Approach

Three questions must be answered before a property tax can be imposed: (1) who will conduct the valuation; (2) what should be valued; and (3) how will the appraiser conduct the valuation? In the context of this chapter, the first question is concerned with whether local or central officials will do the appraisal. As noted in the introduction, state revenue departments usually appraise the complex firms that are the subject here.

There are two basic approaches to the question of what should be valued. Assessors may value each separate parcel, improvement, or piece of equipment owned by a firm. When this approach is followed, each taxable property is valued using some measure of cost, such as the historical cost or the current cost of replacement. The final value is the summation of the values of the properties in the individual state. This method is followed in several states (e.g., Virginia and New York) and by most local assessors.

The other approach is the unit approach described earlier. Under this approach, the value of the entire enterprise is estimated, net of nontaxable components. The unit method takes advantage of the company-wide financial and operational data made available to regulatory bodies and the financial data

provided to equity owners. As an example, an appraiser valuing Delta Airlines would estimate the entire value of the company. After determining the total value, the appraiser would allocate a specific "share" of the total value to the state doing the appraisal.

The geographic and financial size of the companies that state tax agencies must deal with can be intimidating. Transportation companies, for example, may provide service in every state and literally thousands of local taxing jurisdictions. Electric utilities usually operate in fewer but still multiple states. Furthermore, electric utilities are often the largest industrial and commercial operation in a state or region. Telecommunication companies not only operate in the entire United States, but they are also becoming worldwide in their dimensions. Regardless of the geographic size of such firms, even more intimidating are their total assets. It is not uncommon to value companies whose assets are in excess of several billion dollars.

The third question, concerning how public utilities and transportation companies are valued, has significant policy implications. The valuation process for all taxed properties must meet the requirement that the process achieve a reasonable estimate of fair market value or a valuation result that represents what informed buyers and sellers would accept. Appraisal professionals may employ three approaches to estimate the value of properties and firms: the cost approach, the income approach, and the sales approach. Some aspect of each of these approaches is typically used when valuing complex properties using the unit approach.

COST APPROACH

The logic implicit in using a cost approach to value property is that no buyer would be willing to pay more for an asset than the cost of purchasing and assembling the various components of the property. Several variations of the cost approach can be used. The four most widely accepted cost models are historical cost less depreciation, regulatory rate base, reproduction cost less depreciation, and replacement cost new less depreciation.²

Historical Cost Less Depreciation (HCLD) This widely used cost model attempts to determine value by taking the historical costs for the property reported on the firm's books minus the accounting depreciation allowed by regulatory or financial accounting rules. Book depreciation is often based on a straight-line convention and may not be consistent with the actual depreciation of the property within its respective market. Consequently, the HCLD model should be adjusted for additional forms of market depreciation (i.e., obsolescence) if an accurate valuation estimate is to be achieved using this cost model. If the firm being valued is regulated, the appraiser will also need to consider adjusting the HCLD

2. For a good discussion of the cost approach applied to utilities, transportation companies, and telecommunication companies, see Janata (1993).

model for costs on which the firm is not allowed to earn a return. Theoretically, purchasers would not pay more for a property than its existing earnings base unless they were willing to accept a lower rate of return than is currently being earned. HCLD must be adjusted for obsolescence (i.e., loss in potential earning power) and to recognize some assets that do not contribute to earnings. The goal is to determine the net investment of all taxable assets adjusted for changes in earning power of those assets that do not contribute to earnings in the normal rate-of-return-times-earnings-base calculation. For a description of how obsolescence is calculated for railroads, see Adolphson, Cornia, and Walters (1989).

Rate Base This model is similar to HCLD, but may include additional adjustments for items on which the firm is not allowed to earn a return. This model is based on the observation that the earnings of regulated companies in the United States are primarily determined by rate of return times the rate base that is allowed by the regulatory body. Because rate base is the base on which earnings are determined, it follows that this base may be a primary indicator of value.³ This model uses the actual rate base of the company, which is established by a regulatory body, instead of using HCLD as a surrogate. The basic formula employed in the determination of rate base is given by this equation:

$$\text{Rate Base} = (C - D)r + \gamma + \omega + m - CWP - DFIT - DFITC$$

where

C	= original cost of the tangible assets
D	= accumulated depreciation
r	= allowed rate of return
γ	= cash
ω	= working capital
m	= materials and supplies
CWP	= construction work in progress
$DFIT$	= deferred federal income taxes
$DFITC$	= deferred federal investment tax credits

As for the HCLD model, this approach is further adjusted for obsolescence to account for differences between the earned rate of return and the allowed rate of return due to changing external conditions.

Reproduction Cost Less Depreciation This approach inflates HCLD by a price index to bring it up to current costs. It is an estimate of the current cost to replicate the existing system. This model is much less widely used because of the complications of the indexing procedures as well as the necessity of adjusting

3. For a discussion of the establishment of rate base and the regulatory process, see Phillips (1993).

for the functional obsolescence of existing plant. Because reproduction cost less depreciation has no relationship to the existing rate base, additional economic and functional obsolescence must be accounted for.

Replacement Cost New Less Depreciation The replacement cost model estimates the current costs to construct a replacement property of equivalent utility using current technology and design standards. This model tends to eliminate much of the functional obsolescence that might be present in a reproduction or HCLD model. Replacement cost models are best suited for industries that experience rapid technological advancements, such as the wireless telecommunications industry. Once the current replacement cost estimate is derived, the appraiser then has to remove depreciation from the estimate to account for the age and condition of the property being appraised.

One of the major challenges associated with implementing the cost approach has to do with the frequent disconnect between historical cost and the earning potential of assets. It is often the case that assets maintain their functional efficiency, but external forces such as changing technology render the assets obsolete. Yet it is sometimes the case that buyers may be willing to pay a premium for a particular asset because market conditions suggest extraordinary earning potential for that asset. In general, nonregulated markets pay much less attention to historical or reproduction cost than they do to potential future earnings. This leads to the use of projected income as another indicator of value (Adolphson, Cornia, and Walters 1992).

INCOME APPROACH

The logic behind the income approach to value is that a knowledgeable buyer would not pay more (and no seller would take less) for an asset than the time-adjusted value of the net income stream generated by the asset. Two basic income approaches are utilized in utility valuation. Both are variations of the yield capitalization methodology (Damodaran 2002; Koller, Goedhart, and Wessels 2010).

Traditional Perpetuity Capitalization This approach is well suited to public utility valuation. It capitalizes a stable, level annual income by assuming that annual depreciation charges will be reinvested annually. This produces a level rate base and, thus, a level income. This net operating income (*NOI*) is then simply divided by the market capitalization rate (*r*). The same mathematical formula ($V = NOI/r$) is also appropriate if the intent is to only value the assets in existence on the lien date. In such a situation, it is assumed that depreciation is equal to the amount of replacement capital expenditures necessary to maintain the existing assets into perpetuity. Thus, the cash flow (*CF*) to be capitalized is deemed to be equal to *NOI*. This formula can also be expressed as $V = CF/r - g$ where the growth (*g*) is equal to 0 percent when it is expected that the cash flows will remain constant into perpetuity.

Discounted Cash Flow Analysis This method attempts to quantify all future cash flow (net operating income plus depreciation plus deferred taxes less capital replacement) for some period into the future and then assumes perpetuity thereafter. It, too, is well suited to utility valuation because future income is somewhat predictable because of regulatory oversight. It is also more sensitive than perpetuity capitalization because it attempts to quantify all future cash flows.

The basic formula for a discounted cash flow is as follows:

$$\text{Value} = \sum_{t=0}^T \frac{\text{NOI}_t}{(1+r)^t}$$

where NOI = net operating income in time period t
 r = rate of return
 T = the life of the asset in years

One of the major challenges of the income approach is the determination of r , the rate of return. States have detailed processes to collect market data and determine reasonable estimates of market rates of return for various industries (e.g., Property Tax Division 2010). The process often involves industry input and comment, but it can nevertheless be controversial. Expert opinion may concur on a range for r , but differences at the second or third decimal point can result in substantial differences in the ultimate tax bill when overall values are in the billions of dollars.

SALES COMPARISON APPROACH

The third approach to value is the sales comparison approach, which involves examining the market and observing what actual buyers are paying (and sellers accepting) for similar assets. Because public utilities seldom sell on the open market, the typical sales approach cannot be used. Two alternative approaches have been applied: the stock-and-debt method and the direct capitalization method.

Stock-and-Debt Method This approach follows the accounting principle that assets equal liabilities plus capital. Although it is not possible to directly determine the market value of all items on the asset side of the balance sheet, it is feasible to determine the market value of all liabilities and equity (long-term debt and common stock). This is then assumed to equal the value of all of the firm's assets: tangible, intangible, operating, and nonoperating. This method is now used infrequently. Several difficulties arise in this approach because of problems in determining certain liabilities (e.g., accumulated deferred income taxes), allocating common stock value to subsidiary companies, and figuring the deduction for nontaxable intangible and nonoperating assets.

Direct Capitalization Direct capitalization is a form of the comparable sales approach. The most popular version is the use of capitalization rates based on income-to-market ratios (e.g., earnings/price ratios), although other nonincome ratios can also be utilized (e.g., book value/price ratios). The reliability of the method is directly proportional to the comparability of those companies chosen for the derivation of the ratios. To the extent that such ratios are not derived from truly comparable companies, this approach can produce unreliable results.

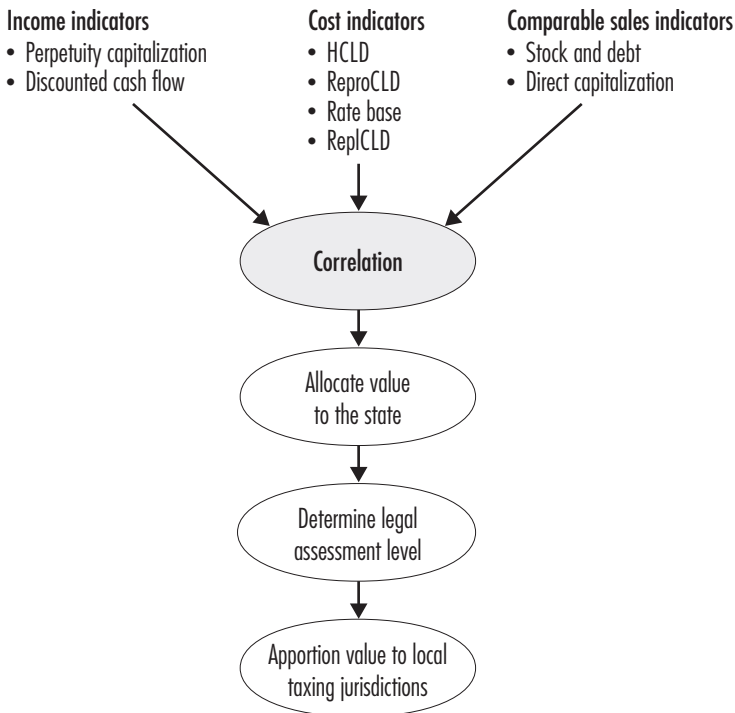
From this discussion, it should be clear that the major challenge in implementing the comparable sales approach to value is the difficulty in finding truly comparable properties that are actively traded. Surrogates based on market transactions for entire firms or individual stocks require the appraiser to make adjustments for intangible and nontaxable components embedded in observed prices. This has proved to be controversial.

CORRELATION

The multiple appraisal approaches are listed in figure 5.1. After the various appraisal approaches, or some selected subset, are completed, the appraiser must

Figure 5.1

Appraisal Approaches and Techniques Used to Value Utilities and Transportation Companies



then determine the appropriate estimate of the unit value. Determining the final value is required because the estimates of value from the various appraisal methods are rarely equal. The appraiser must weigh the evidence and determine the final value for taxation. Correlation, the process of combining various approaches to value and determining one value, is a common practice in the appraisal industry. The appraiser employs his or her best judgment in considering the quality of underlying data and the results of the various approaches, and then makes a final estimate of unit value. In this process, all the knowledge and experience of the appraiser come into play to form a final opinion of value.

Administrative Issues

The process of moving from the unit value to taxable value in each jurisdiction is also illustrated in figure 5.1. Allocation of the correlated unit value to a specific state is usually determined by comparing relative investment or usage in a specific taxing jurisdiction. Quantitative measures include such things as the relative number of units (miles of pipe, generating stations, seat miles, barrels of oil, etc.), the cost of facilities (either depreciated or undepreciated), or revenue factors such as gross or net revenue per state. If, for example, a state generated 50 percent of total ton miles shipped by a railroad, it could be allocated 50 percent of the total unit value of the railroad. It is important to understand that allocation is an *assignment* of value rather than a *determination* of value.

The next step, as shown in figure 5.1, is to adjust the allocated property for any exempt property value and for the legal assessment level. It is often the case that property not subject to property tax is included in the unit value. For example, motor vehicles may be separately taxed, but their aggregate value is included in the unit value. As noted earlier, intangible property is often also excluded from the property tax base. Unless the intangible property has previously been removed from the individual valuation indicators used to derive the correlated value, the state agencies must identify and subtract any property (tangible or intangible) in their state that is included in the correlated unit value but is not subject to the property tax. The assessment level is then adjusted to the legally established ratio between the market value of a property and the taxable assessed value. Currently, in the United States, assessment ratios range from less than 10 percent to 100 percent of value.

The final step is to determine how much assessed or taxable value to assign to each specific taxing jurisdiction within the state. This process is known as apportionment. It is similar to allocation but is practiced on an intrastate basis. The apportionment is usually accomplished by dividing the total taxable value of a firm by a distribution base. The distribution base varies by the class of utility or railroad. For example, the distribution base for transportation companies may be the total miles of track operated by a company in a state. The resulting factor is then multiplied by the track miles in a specific taxing jurisdiction. A taxing

jurisdiction with 10 percent of the total track miles in the state would have 10 percent of the taxable value of the railroad apportioned to it.

Valuation Appeals

Companies are given informal opportunities to provide input on issues of fact and on the methods used before a final valuation is determined. After a final value has been determined, disagreements are appealed to a central or state board of equalization or its equivalent. Matters before the state board of equalization are usually conducted as a formal hearing and result in a written decision from the board. Issues about value can often be raised by both companies and other interested parties, such as local governments. Issues from the board of equalization can often be appealed directly to the trial or appellate court. It is not uncommon to have numerous annual valuations appealed in each state. The resolution of valuation appeals can take years, and these appeals can cause substantial revenue instability for local governments.

Unitary valuation methods are subject to the same standards as nonunitary valuation methods in that the methods must be accurate and reasonably designed to achieve a fair market value estimate for the unitary property that is taxable. Consequently, there are continued controversies in the arena of unitary valuation regarding (1) the use of models like the stock-and-debt and direct capitalization models, which tend to include significant amounts of nontaxable, intangible properties that are difficult to remove from the assessment; and (2) proper valuation techniques used with particular models, such as proper capitalization techniques:

Utah Ass'n of Counties v. Tax Comm'n, 895 P.2d 825, 828 (1995), holding that the evidence before the state tax commission supported the "Commission's decision to disregard the stock and debt method."

PacifiCorp v. State of Montana, 253 P.3d 847 (Mont. 2011), holding that it was appropriate to use an earnings-to-price ratio to determine a discount rate to be used in a direct capitalization income method.

Airtouch Communications, Inc. v. Department of Revenue, State of Wyoming, 76 P.3d 342, 360 (Wyo. 2003), holding that there should have been a flotation cost adjustment to the capitalization rate.

PacifiCorp v. Idaho State Tax Comm'n, No. CV OC 08 18158, ¶¶ 44, 47, 51 (4th Dist. Ct. Idaho, Sept. 16, 2010), accepting the valuation proposed by PacifiCorp and acknowledging that it contained a flotation cost adjustment to the cost of capital.

Colorado Interstate Gas Co. v. Property Tax Administrator Mary Huddleston, 28 P.3d 958, 962 (Colo. Ct. App. 2000), holding that when assessing property as a unit it is not required to make a flotation cost adjustment to the capitalization rate.

PacifiCorp v. Property Tax Division of the Utah State Tax Commission, Utah State Tax Commission Appeal No. 06–0767, ¶¶ 152–168 (Feb. 28, 2008), holding that the appropriate cost of capital should not include a flotation cost adjustment.

Global GT LP v. Golden Telecom, Inc., 993 A.2d 497 (Del. Ch. 2010), in which the court used the lower Ibbotson supply-side equity risk premium as opposed to the higher Ibbotson historical equity risk premium when valuing a business in an appraisal action brought by dissenting shareholders of a merger.

Assessor of Roger Mills County v. Unit Drilling Co., 247 P.3d 1170 (Okla. 2011), holding that a statute mandating the use of a certain publication to determine the value of property violated the fair market value constitutional mandate.

Beaver County v. Property Tax Division of the Utah State Tax Comm’n, No. 080905451 (3rd Dist. Ct. Utah, Feb. 15, 2012), holding that an administrative rule requiring certain applications when valuing property did not violate the constitutional fair market standard.

Political Issues

In practice, the division of functions between valuing property and using tax revenues from the property creates organizational and political problems. A central department of revenue faces a number of external publics that it must try to please. The two most important of these are the companies that are appraised by the department and the local government that benefits from the resulting tax base. These two groups are often at odds, as noted earlier. The companies understandably want to minimize the appraised value of their properties and lower their tax obligations. Local governments want the appraised value to be as high as possible. Pleasing one group often means offending the other.

Displeasing the companies will likely lead to a series of appeals before a hearing board and, eventually, cases briefed and argued before the courts. Property tax litigation can be an expensive and uncertain process for resolving differences between taxpayers and departments of revenue. Such cases are often complex and require careful analysis and a substantial degree of understanding on the part of the parties and the judge in order to obtain a judgment that can resolve the dispute and provide a workable framework for future valuations. The administrative hearing and court processes can also be time-consuming. It is not uncommon for a centrally assessed value dispute to take four to eight years to complete. The lengthy pendency of these actions places a heavy burden on both the taxpayer and the taxing authority. Neither may be certain as to the outcome of the dispute. Thus, the taxpayer may be required to either pay or accrue significant amounts of tax that may ultimately be determined to not be owed. Similarly, the taxing

authority may have to adjust its operating budgets because it cannot collect the disputed taxes or because it is required to escrow the disputed taxes in order to be able to pay a potential future refund.

Displeasing local governments can be equally uncomfortable. While many local governments do not have the resources to carry a fight over valuations to the courts, they have other avenues at their disposal. One of the most effective techniques local governments use is to raise questions with elected state political officials about the ability and motivation of the revenue department. When valuation issues are raised in a political context, the outcome is perhaps even more uncertain than when these issues are resolved by the courts. Thus, a central revenue department must maintain balance on a difficult tightrope, with the ultimate balance point being the fair market value.

In the Beaver County example described earlier, centrally assessed property was responsible for a significant change in overall revenues. However, it may be the case that the valuation process and timing within a state result in significant shifts in the tax burden. The normal practice is for states to update the value of centrally assessed property every year. But few local governments follow a similar practice for locally assessed property. One recent survey of state tax policies and practice found that while 35 percent of states legally require that property be reappraised every year, less than 26 percent of states actually revalue locally assessed property annually. Nearly half the states surveyed indicated that the common practice was to reappraise locally assessed property on a four-year cycle or longer (Dornfest et al. 2010).

This disparity in appraisal cycles can create unintended shifts in the property tax burden and significant political problems for local officials. For example, assume that both locally and centrally assessed properties are increasing at a rate of 2 percent each year. Assume further that centrally assessed property is revalued every year and the revaluation accurately captures the 2 percent increase in value, but locally assessed property is only revalued every fifth year. Under this scenario, each year a greater proportion of the tax collected will be paid by centrally assessed property owners.

In the fifth year, when locally assessed property is revalued, there will be a large increase in taxable value. Given the assumed 2 percent annual increase, the taxable value of locally assessed property will increase by 12.6 percent. Local elected officials will then face a major challenge. If they leave the tax rate unchanged, local property owners will incur a 12.6 percent increase in their property taxes. Faced with the likely political fallout from such an increase, local officials may lower the tax rate to achieve a revenue-neutral outcome. Even if neutrality is the objective, local property owners will face a substantial tax increase, while centrally assessed property owners will enjoy a substantial tax reduction. The only way to avoid this dilemma is to match the revaluation cycles of local and centrally assessed property. Some states accomplish annual local revaluations with statistical models and value indexing.

Conclusions

This chapter began by describing the context in which unit valuation takes place. It is a high-stakes environment for both taxpayers and local governments. Many of the issues that continue to be litigated today have been debated in one form or another for the last century. But one reason for the continued debate is that industries change and evolve over time, and those changes should be reflected in tax policy and practice. All too often, the policy and practice lag is substantial, resulting in inequitable treatment of one party or another.

One may ask, for example, if the tax burden placed on centrally assessed property is commensurate with the benefits received from public services or the costs imposed on local communities. Return for a moment to the Beaver County example. In 2010, electric utilities in the county paid more than \$3.8 million in property taxes, while householders paid less than \$1.5 million. It seems very unlikely that electric utilities imposed more than 2.5 times the burden on local services as did local residents. In more urbanized jurisdictions, the relative tax burdens may be more commensurate with benefits received, but that does not seem to be the case in many more rural parts of the country.

The final issue relates to the impact of regulation on valuation. As noted, one of the arguments made for using unit valuation and centrally assessing these properties is that they have traditionally been regulated by state or federal agencies. But over time, many of these industries have been increasingly deregulated. A recent study by the New York State Department of Taxation and Finance found that even in states where industries such as electric utilities have been largely deregulated, little has changed in the assessment practices of state agencies (Department of Taxation and Finance 2005). This finding may be perfectly reasonable if in fact there are other compelling reasons why some properties should be centrally assessed using unitary valuation methods while others continue to be assessed by local officials using a very different (local) unit and only a subset of the methods employed by state tax officials. In other contexts, we have explored some of the implications of deregulation for tax assessment in the electric industry (Cornia and Walters 2000; Walters and Cornia 1997; Walters and Cornia 2001), but the issue deserves further study.

It may well be the case that complex properties with assets in multiple jurisdictions and working as an integrated whole merit a different definition of the unit to be valued and a different set of valuation methods. If such is the case, then it is also reasonable to ask why other industries that meet this criterion are not uniformly assessed by states using the unit approach. Consider again the example of cable TV companies. As cable companies increasingly offer services that have traditionally been provided by telephone companies, it is very hard to see why the two industries should be treated differently by property tax policies. Indeed, some states, but certainly not all, have now begun centrally assessing cable operations.

These considerations raise again some of the central questions that have been at the heart of the unit approach since its earliest application in the railroad industry. What tangible, intangible, operating, and nonoperating properties are included in the unit that is centrally assessed, and how does that combination of properties differ from the unit identified and assessed by local tax assessors? Does the difference in the choice of unit result in unfair or inequitable treatment of some taxpayers? Is there a way to reliably measure the fair market value of integrated, multijurisdiction tangible property assets as a unit without capturing the intangible asset values policy makers wish to exempt? These remain important issues that merit significantly more attention than they have received from scholars in recent years.

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