Options for Restructuring Detroit's Property Tax
Preliminary Analysis

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Abstract

This study offers a detailed parcel-level evaluation of the property tax base within the City of Detroit. For a variety reasons, Detroit's tax base has narrowed and this has resulted in a decline in the revenue-raising potential of the property tax. Further, state and city policies have created significant horizontal inequities. Despite these challenges, the potential use of special assessments offers an opportunity to broaden the tax base, reduce horizontal inequities, and while at the same time reducing actual tax payments for many property owners. The report models the consequences of several land-based (land value and land area) tax scenarios to evaluate the potential impacts of shifting to a special assessment. The scenarios presented are intended to clarify the consequences of the options; they are not recommendations. In particular, the report does not address the political or legal feasibility of these potential strategies for reform.

Another goal of any proposed change is to stimulate economic development and property value growth. While many economists favor a land based tax over the more traditional property value based tax on grounds of stimulating development, caution is warranted as the city represents only a third of the overall property tax burden. Thus, any proposed change to city property tax policies, though potentially helpful to development on the margin, will be dampened by the weight of the tax burden imposed by the overlying jurisdictions.

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Introduction

The City of Detroit, along with many other older manufacturing-based cities, currently faces significant fiscal challenges as a result of declining revenues, increased costs of delivering of basic public services and greater concentrations of populations dependent on social services. Detroit's population has fallen from a peak in 1950 of about 1.8 million to 713,777 in 2010. In 1950 Detroit was the fifth largest city in America; today it is the 17th largest.

More than population has been lost, however. Since 1950, Detroit has lost 47.5 percent of its households, and since 1970 the number of jobs in the city has dropped by 429,000. The number of manufacturing establishments in Detroit declined from 2,398 in 1972 to 472 in 2007. During the same period, manufacturing employment fell by 87 percent. The number of Detroiters with jobs is 281,000 and the unemployment rate in the city is currently 20.6 percent.

In an attempt to stem the tide of economic decline, City officials have granted exemptions and tax abatements with the intention of stimulating economic development. While the efficacy of such strategies is the topic of continuing debate (Sands and Reese, 2006), in the long-run abatements and exemptions narrow the tax base as fewer properties within the city contribute to the tax effort. Moreover, these tax privileges inevitably create horizontal inequities, with similar properties receiving widely different tax bills.

The erosion of Detroit's property tax base is not just the result of adverse economic conditions and city policy choices that exempt individual properties. Michigan's taxable value cap has also led to significant tax base erosion and horizontal inequities. In addition, deep and systemic economic challenges have resulted in vast swaths land area property falling into tax delinquency, subsequently reverting to City ownership. As long as these properties remain in the hands of the City, they do not generate property tax revenue.

Although the factors contributing to the shrinking tax base are widely recognized, the relative contribution of each factor to tax base erosion is much less understood. At the request of Detroit City Councilmember Kenneth V. Cockrel and with funding from the Lincoln Institute of Land Policy, we conduct a detailed examination of the Detroit property tax environment. City officials have provided detailed information on tax status, taxable value, state equalized value, and property characteristics for all real property parcels within the 140 square mile footprint of the city for the fiscal year 2010 (personal property, that is equipment and inventories, is not included but represents about one-sixth of the total property tax base). The analysis offers city officials a useful assessment of tax-base narrowing in the city, including a detailed examination of the contributing factors. It also offers revenue neutral comparisons of the current city property tax structure with alternative land-based taxes/fees. In particular, we consider a tax based on land area (similar to the common area maintenance fees charged in multi-tenant commercial properties) and a tax based on land value. Importantly, the alternatives we evaluate are not simply hypothetical; these proposed scenarios could potentially be

implemented through the creation of a city-wide special assessment district where the basis of the special assessment could be land area, lineal footage of street front, land value, state equalized value of the property, or some combination thereof. Though we do not highlight the advantages of a land taxation over the traditional property tax, we note that many economists favor land taxation as it encourages (or at least does not discourage) property investment because investment in structures and equipment is not taxed.

The remainder of this report is organized as follows. In the next section, we present an overview of the Michigan property tax and exemption policies. We then turn our attention specifically to Detroit's budget and property tax environment. This is followed by an evaluation of the city's property tax base using detailed parcel level data on taxable and nontaxable status. We then provide an evaluation of the taxable property in the city. Based on this analysis, we present comparisons of the current tax environment to some revenue neutral tax scenarios based on: 1) parcel size; and 2) land value. We conclude by offering a concise summary of what we have learned and offer a set of policy options for city policymakers to consider.

Michigan's Property Tax Environment

Over the past 50 years, there have been significant changes in Michigan's property tax policies. The most recent and sweeping changes occurred in 1994 with the passage of Proposal A. Prior to the passage of Proposal A, property taxes were based on the "state equalized value" of the property (SEV).[1] Proposal A restricted growth of property value for tax purposes to the lesser of the general rate of inflation (as measured by the Detroit Consumer Price Index) or five percent, regardless of the actual increase in SEV.[2] After 1994, property taxes were levied on each property's taxable value (TV), which is based on the Proposition A limited increase in taxable value growth. Over time, taxable value (TV) growth lagged well behind increases in SEV.[3] Therefore, the effective property tax rates facing long-time property owners decreased, relative to those of more recent purchasers of property. Through 2007, the taxable value cap reduced the average statutory tax rate by 23 percent statewide; Detroit experienced the same general pattern. By 2007, if Detroit's property tax bills were based on SEV instead of TV, statutory tax rates could have been reduced by 42 percent and still generate the same amount of revenue. However, in the wake of the real estate crisis, SEVs dropped significantly

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[1] The SEV is 50 percent of the assessed market value of the property. Annually, the local assessor determines the assessed value of each property in the jurisdiction, as of December 31 of the previous year. These local estimates are reviewed and adjusted as necessary by the County and State to produce the State Equalized Value.

[2] The five percent limitation has not had any practical effect, since the general inflation rate has been lower than five percent throughout this entire period.

[3] Proposal A also specifies that the taxable value of a property is returned to the current market-based SEV when the property is sold.

across the state and in Detroit, narrowing the gap between SEV and TV. Nevertheless, in 2010 TV in Detroit was 79 percent of SEV.

Proposal A also had a major impact on the funding of public schools in Michigan. Prior to 1994, public schools were financed almost exclusively through local property taxes. Since there was wide variation among school districts in the value of real and personal property per student, this decentralized fiscal system led to extreme differences among school districts in expenditure per student. In addition, Michigan's overall level of property taxation was well above the national average. These features were the source of considerable dissatisfaction among voters, and they led to a long series of reform measures that are discussed in detail in Feldman, Courant, and Drake (2003).

Along with the taxable value cap, Proposal A also introduced a distinction between "homestead property" and "non-homestead property," where a homestead is defined as the homeowner's principal residence. For homestead property, Proposal A imposed a maximum on the statutory property tax millage rate that local school districts could use for public-school operating expenses. This created a "homestead exemption" that reduced the average statutory millage rates by about one-third. The state government enacted a 6-mill "state education tax," and increased sales taxes and cigarette taxes to provide for the financing of elementary and secondary public education.[4]

In the early 1990s prior to Proposal A, the average total statutory millage rate in the state was about 57 mills.[5] After reform, the statewide millage rate declined to about 39 mills and has been stable since. In contrast, Detroit's aggregate statutory tax rate approached 90 mills prior to Proposal A, but dropped to about 60 mills immediately afterward. Since then, the aggregated statutory rate in Detroit has increased to more than 85 mills for non-homestead properties as a result of a number of voter approved millages. Table 1 provides an overview of current millage rates for all overlying jurisdictions imposed on Detroit properties, provided the property is not included in a special zone. Detroit property owners pay roughly twice the statewide average millage if the parcel is not eligible for a tax abatement or exemption.

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[4] Proposal A also put restrictions on the ability of local units to increase property taxes on their own., The funding formulas pushed in the direction of more equal per-student funding for operating expenses,. Per-pupil spending increased substantially in many of the poorest districts, as increased state aid outweighed the reduction in property tax revenues. Spending increases were more modest, or even negative, for more affluent districts. For further discussion of these changes, see Arsen and Plank (2003) and Papke (2008).

[5] In Michigan, the millage is applied to SEV which is defined as half of market value. Therefore prior to Proposal A, the millage if applied to full market value would be half that listed here.

Table 1
Detroit Millage by Taxing Authority, Season, and Purpose (FY2010)

Tax Summer	
TAXING AUTHORITY	**MILLS**
State Education	6.0000
General City Operating	**19.9520**
Debt Service (City)	**9.5558**
Library (Detroit Public)	4.6307
School Bond Debt	13.1015
School Operating	17.8308
Wayne County Operating	5.6483
Total Summer	76.7091
Tax Winter	
Wayne County Operating – Winter	0.9897
Wayne County Jail	0.9381
Wayne County Parks	0.2459
Wayne County Huron Clinton Metropolitan Authority	0.2146
Wayne County Intermediate School District (RESA)	0.0965
Wayne County Intermediate School District Special Education (RESA)	3.3678
Wayne County Community College District	2.4769
Wayne County Zoo	0.1000
Total Winter	**8.4295**
Grand Total (Summer and Winter)	**85.1386**

Proposal A was not the first mechanism for restraining property tax revenues in Michigan. Prior to Proposal A, property tax revenues were already limited by the "Headlee Amendment," which was passed in 1978.[6] While Proposal A limits *statutory millage rates* and imposes a limit on the growth in *taxable values*, the Headlee Amendment puts a direct limitation on property tax *revenues*. The Headlee Amendment restricts property tax revenue growth to the rate of inflation (with an adjustment for new construction). Any jurisdiction with potential revenue increases exceeding the Headlee limit is required to reduce property tax rates, in order to bring revenues into line with the revenue-growth restriction. This type of tax-rate reduction is known as a "Headlee rollback."[7] Prior to the introduction of the taxable value cap, rapidly rising property

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[6] The Headlee Amendment is named for its author, Richard H. Headlee.

[7] Local residents can choose to exceed the Headlee limitation by referendum, but this has been relatively uncommon. Note that the taxable value cap can interact with Headlee rollbacks. To the extent that the cap puts a district under the Headlee limit in a given year, the new Headlee limit is computed from the lower base. See Feldman, Courant, and Drake (2003).

values resulted in numerous Headlee rollbacks. After Proposal A, however, rollbacks have been greatly reduced, both in number and in magnitude.

The Headlee Amendment provided a mechanism for limiting property tax rates by capping revenue, in a uniform manner across all properties in a jurisdiction, unless a given property qualified for a special exemption. Proposal A effectively instituted a new system for limiting effective property tax rates, but the Proposal A mechanism did not treat all properties in a jurisdiction uniformly. Instead, under Proposal A the taxable value cap reduced effective tax rates for existing property owners, but not for new property buyers.

The Michigan Department of Treasury (2010) provides annual estimates of tax expenditures for all major sources of tax revenue. In the 2010 fiscal year, the estimated revenue loss from the taxable value cap was $3.4 billion, an amount second only to the homestead exemption, which produced an estimated revenue loss of $3.52 billion. These two property tax expenditures are estimated to make up more than two-thirds of the total tax expenditures associated with the property tax. In Detroit, tax expenditures related to the taxable value cap are nearly twice the statewide average. As we show in greater detail later, tax base erosion has occurred unevenly across the city and across individual properties, and this has led to significant horizontal inequities among property owners.

In addition to tax base erosion resulting from the taxable value cap, Michigan's property tax system incorporates numerous property tax exemption and abatement programs that effectively remove property value and property value growth from the tax base. The abatement programs have been created by the State to foster economic development and to encourage private investment and employment opportunities. The State has authorized municipalities to forego their own tax revenues (and, in some instances, the tax revenues of overlying jurisdictions) for a fixed period of time. For example Industrial Facilities Tax abatements reduce by half property taxes on new manufacturing investments for up to twelve years. A variety of "Renaissance Zone" programs eliminate all property taxes (except debt millages) for twelve years, followed by a three year phase in to full taxation. Municipalities are also allowed to exempt from tax increases the value of investments in rehabilitation of qualified obsolete commercial properties.

Municipalities may additionally establish more than half a dozen different types of tax increment financing (TIF) districts, each of which diverts growth in property tax revenues from the General Fund to the TIF area designated fund. While many TIF districts are used to finance specific public improvements or remediation of brownfield sites, others provide flexible financing for Downtown Development Authorities. These latter TIFs typically are not time limited.

Finally, in recognition of the negative impact of high property tax rates on new residential investment, the State allows municipalities to establish Neighborhood Enterprise Zones (NEZ). In these zones, qualified properties, mostly new construction, are taxed at half of the current statewide average total millage rate; currently the applicable NEZ rate is about 20 mills.

With this general overview, we now turn our attention to a more specific discussion of Detroit's city finances.

Summary of Detroit Revenue Structure

The adopted FY2013 budget for the City of Detroit totals $2.6 billion. Approximately $1.15 billion in FY13 represents Enterprise Agency appropriations. General Fund appropriations, including debt service, account for $1.39 billion (Detroit 2012-2013 Executive Budget Summary, B6).

Detroit's General Fund has five major sources of revenue: property tax, income tax, utility user tax, State revenue sharing and casino wagering tax. Since FY06 revenue from each of these sources has declined steadily, with further declines projected through FY13 for property taxes and State revenue sharing. Revenue from the casino wagering tax has been stable at about $180 million a year. Table 2 shows that, while overall revenues from these major sources were declining, property tax revenues were falling even more rapidly.

Table 2 summarizes General Fund revenue trends for the three most recent fiscal years. Property taxes contribute 16.8 percent of General Fund Revenue, and just 7.3 percent of total City revenues in FY10 (down from 8.96 percent in FY08). To provide some perspective, property taxes as a percentage of total revenues for most suburban Detroit municipalities in FY09 ranged between 48 percent (Westland) and 77 percent (Romulus).

Table 2 General Fund Revenue by Major Source

	FY08	**FY09**	**FY10**
Revenue Total	$959,277,604	$893,479,000	$849,452,367
Percent of General Fund Total			
Property Tax	18.5%	18.3%	16.8%
Income Tax	28.9%	27.0%	25.5%
Utility User Tax	5.4%	5.5%	5.2%
State Revenue Sharing	28.4%	29.8%	30.9%
Casino Wagering Tax	18.8%	19.4%	21.6%

The decline in property tax revenues is the result of a combination of factors. One primary reason is that the aggregate market value of Detroit real estate has declined substantially in the past few years. This decline is attributable to falling demand as a result of population and job losses, as well as the real estate crisis. From its peak in FY07 of $12.467 billion, Detroit SEV had declined to $9.263 billion in FY11. The corresponding decline in taxable value caused property tax revenue to decline by almost $5 million. There are, however, a number of others factors that have contributed to reduced property tax revenues over time:

Taxable Value Cap

As noted previously, the single largest source of property tax revenue shortfall for the City of Detroit is the State mandated taxable value cap. In 2010, the difference between taxable values and real property SEV is $2.772 billion, or about 25 percent of real property SEV. If this gap could be eliminated by increasing taxable values, City property tax revenue would rise by some $82 million. It is more likely, however, that SEV will continue to decline until most of the gap has been eliminated and a new, lower equilibrium is reached.

Tax Increment Financing

Property tax revenue is captured by TIF districts (the largest of which is the one that includes much of the central business district) for use within the district. It is estimated that at least $1 million annually is diverted from the General Fund and captured by the downtown TIF district. Brownfield reclamation TIF also divert substantial revenue from the General Fund.

Abatements

City-granted tax abatements for industrial and residential properties cost the city an estimated $15 million a year. Existing contractual agreements limit the ability of the city to begin collecting the full tax revenues from these properties, in many instances for more than a decade.

Tax Exempt Private Property

Non-profit entities, including hospitals, private schools, charitable organizations and churches, are traditionally exempt from taxes. Their land and buildings constitute a substantial part of Detroit's real estate value. While the city does not report the assessed value of buildings and other improvements owned by non-profits, the value of the land occupied by these tax exempt, non-profit entities is more than $256 million, seven percent of total city land value. If this land value land could be taxed at the current rate, the City would receive an additional $7.5 million annually. If some of the improvements could also be taxed, additional revenue would be realized. Increasingly, cities across the country have asked the owners of tax exempt properties to contribute to the funding of public services through "payments in lieu of taxes."

Surplus Land Sales

The City owns a large number of parcels, more than 50,000, which have been acquired for economic development or through tax foreclosures. Most of these are small, low value residential lots. As we discuss later, returning these properties to the tax rolls could increase the tax base by as much as 6.7 percent.

However, there are many barriers and obstacles that inhibit the return of these properties to the private sector and thus back on the tax roll.

Detroit Taxable and Nontaxable Properties

There are 386,861 parcels in the city, covering roughly 140 square miles of land area. In terms of land area, Detroit is one of the largest cities in the country; three cities the size of Boston or San Francisco can easily fit within it boundary. About 15 percent of all parcels in the city are currently in a nontaxable status, either because of reversion due to tax delinquency or because of various types of tax exemptions. In addition, several thousand parcels are partially exempt from property taxes as a result of abatements.

Figure 1 shows that just over three-quarters (77 percent) of all parcels are zoned residential. Commercial property (6 percent) and industrial property (2 percent) make up the remainder of taxable property. Nontaxable property, roughly 15 percent of all parcels also includes residential, commercial, and industrial property.

Figure 1
Percentage of Properties (by Class)
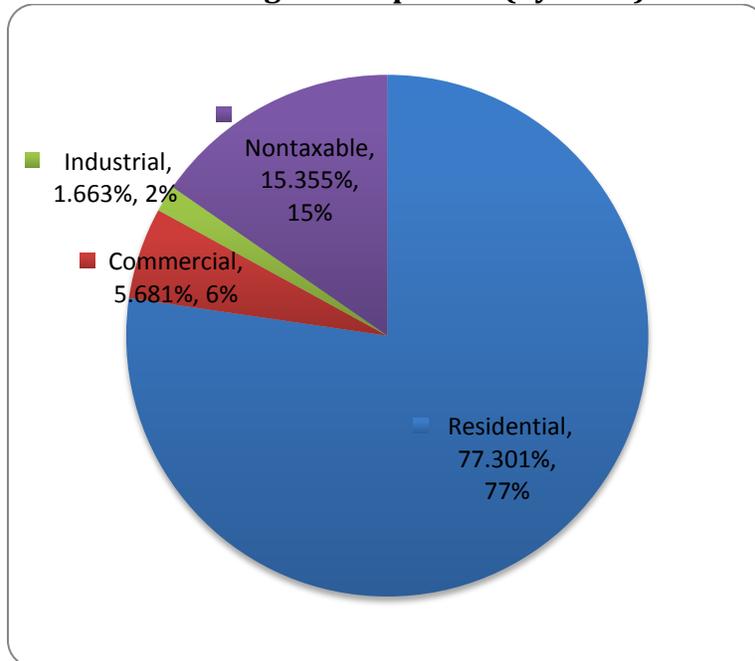
Parcels		
	Number	**% of Total**
Residential	299,049	77.30%
Commercial	21,976	5.68%
Industrial	6,434	1.66%
Nontaxable	59,402	15.36%
Total	**386,861**	**100.00%**

Maps 1 and 2 provide overviews of the distribution of nontaxable properties across the city.   In addition to publicly owned property (for example parks, schools, libraries) the nontaxable properties include tax exempt private properties (churches, hospitals, private schools, cemeteries) along with property that has been granted tax abatements by the city and properties that have reverted to the city because of nonpayment of property taxes.

Map 1
Taxable and Nontaxable Properties
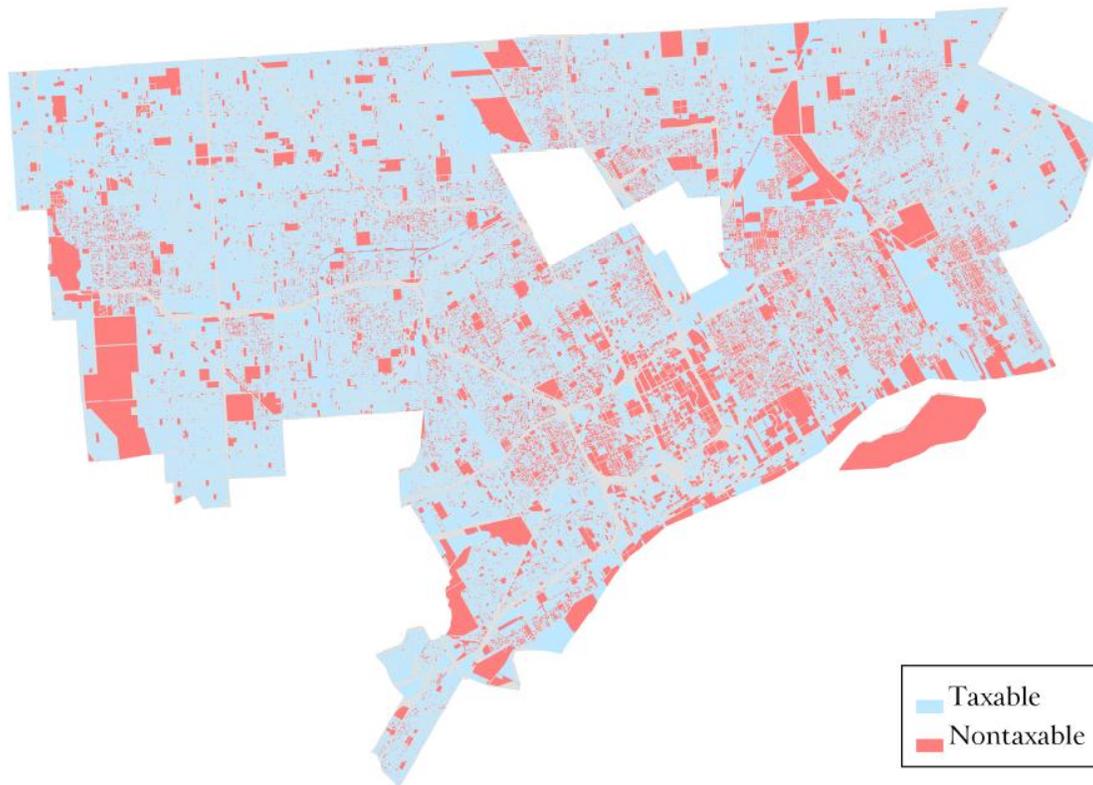
Map 1 illustrates the combination of large (typically parks and cemeteries) and small parcels that make up the nontaxable inventory. Map 2 focuses on the central area of the city, where tax exempt properties predominate.

Map 2
Central City Taxable and Nontaxable Properties

Taxable and Nontaxable Properties

Legend:
- Taxable
- Nontaxable
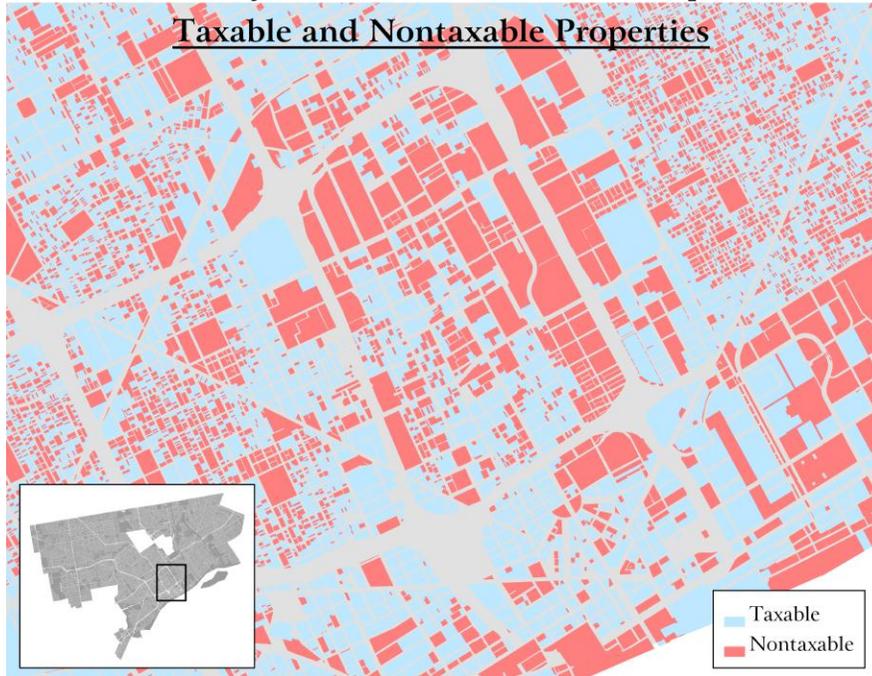
Land Area and Land Value

While 15 percent of all parcels have nontaxable designation, nontaxable properties account for a much larger percent of the city's land area (Figure 2).[8] More than a quarter (almost 28 percent) of the total land area of Detroit is currently nontaxable. Some 53 percent of land area is classified as residential, and 11 percent and eight percent are classified as industrial and commercial, respectively. Moreover, the 28 percent figure includes only properties that are completely tax exempt; properties that are only partially tax exempt (for example because of a city granted abatement) are included in the respective tax paying category.

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[8] Land area data are based on the GIS shape file information. The City parcel files also include this information, but these data appear less reliable than the GIS files. .

Figure 2
Percentage of Total Square Feet (by Class)
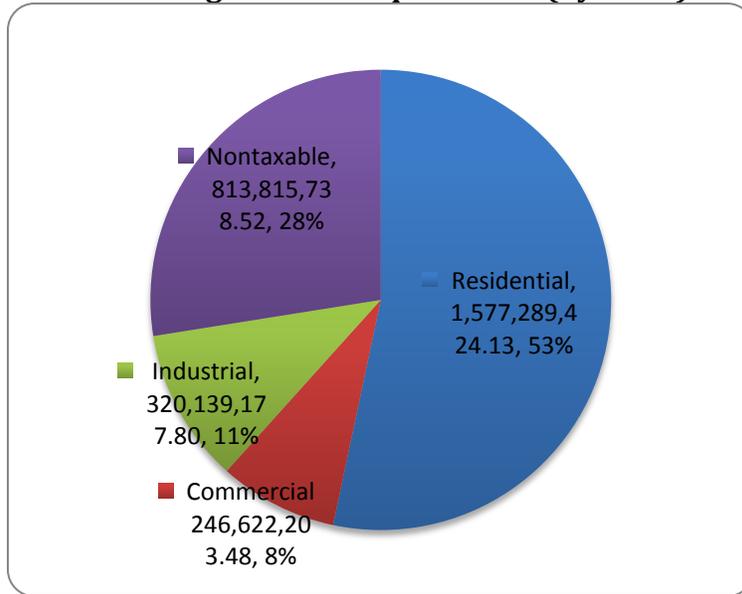
Land Area (GIS Shape Files)		
Square Feet	**% of Total**	
1,577,289,427	53.33%	Residential
246,622,203	8.34%	Commercial
320,120,186	10.82%	Industrial
813,815,739	27.51%	Nontaxable
2,957,847,554	**100.00%**	**Total**

Public records do not include an estimate of the value of structures on and improvements to nontaxable parcels. The city does, however, estimate land values for all properties, including those in nontaxable status. Figure 3 provides a summary of assessed land value for taxable and nontaxable properties. Here we see that 43 percent of land value is nontaxable. Many of these nontaxable properties, about 29 percent of the total area are owned by government agencies and used for public purposes such as city hall, schools, parks, and the like, as well as tax foreclosed parcels. The remaining 14 percent of the aggregate land value consists of privately owned tax exempt property.

Figure 3
Land Values by Category
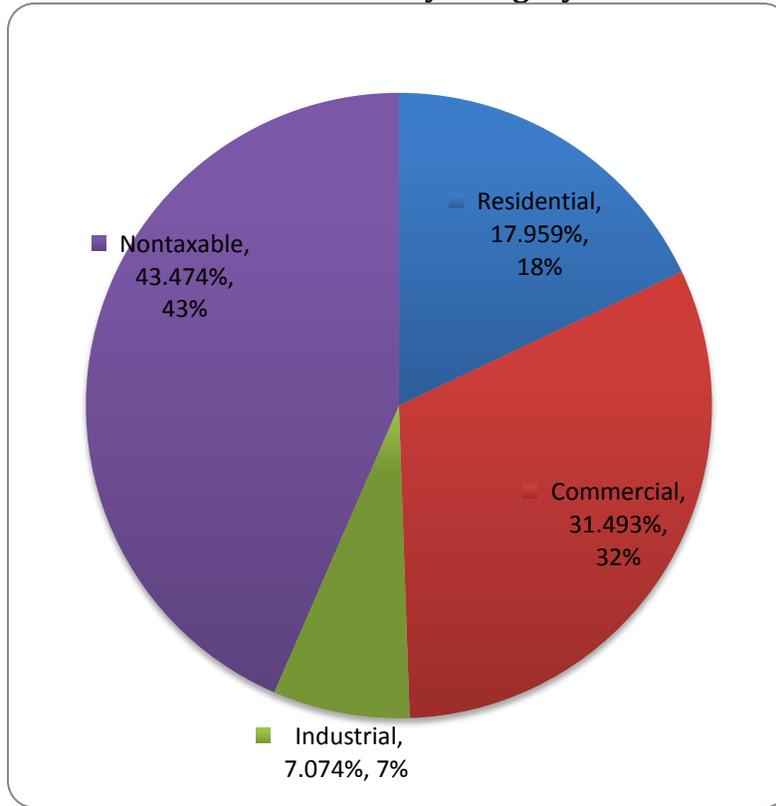
	Land Value	
	Total	**% of Total**
Residential	602,037,261	17.97%
Commercial	1,055,712,422	31.51%
Industrial	237,143,712	7.08%
Nontaxable	1,455,868,365	43.45%
Total	**3,350,761,760**	**100.00%**

The City of Detroit is the single largest land owner, in terms of number of parcels, land area and values. About 442 million square feet (roughly 16 square miles) consists of land used for parks and other public purposes. In addition, the city owns up to 50,000 individual properties that have been acquired through tax foreclosures. Only about 5,000 of these parcels are large enough to build on under current zoning requirements.

The balance of nontaxable properties are privately owned, used by a government agency (including City of Detroit enterprise agencies), or owned by a Land Bank Authority. Table 3 provides a more detailed breakdown of the ownership and land value of the remaining nontaxable properties. Government agency properties are generally relatively large, with the average parcel ranging in size from an average of about 10,000 square feet for Detroit Housing Commission properties to over 125,000 square feet for Water and

Sewage Department facilities. Reported land values are also high, an average of $1.25 a square foot, compared to an average of $1.13 for all parcels.

Table 3
Select Categories of Nontaxable Property Details

	Parcels		Area (shape files)		Average Size	LV	LV/sq ft
Board of Educ.	1044	1.77%	71,348,833	8.97%	68,342	$62,940,376	0.88
Cnty Owned	172	0.29%	8,199,679	1.03%	47,673	15,801,341	1.93
Detroit Housing Comm.	671	1.14%	7,922,554	1.00%	11,807	8,632,968	1.09
Federal	159	0.27%	2,092,455	0.26%	13,160	13,122,158	6.27
Public Lighting	30	0.05%	723,288	0.09%	24,110	1,269,224	1.75
State Owned	302	0.51%	21,542,239	2.71%	71,332	48,664,029	2.26
Water Department	139	0.24%	17,399,627	2.19%	125,177	10,070,926	0.58
Projects	273	0.46%	3,075,064	0.39%	11,264	5,285,481	1.72
Total	**2790**	**4.72%**	**132,303,738**	**16.63%**		**165,786,503**	**1.25**
State Land Bank	7212	12.21%	29,672,317	3.73%	4,114	10,788,197	0.36
Real Estate Division	380	0.64%	2,907,333	0.37%	7,651	1,639,691	0.56
Cnty Land Bank	132	0.22%	964,391	0.12%	7,306	1,899,103	1.97
City Land Bank	6	0.01%	35,885	0.00%	5,981	35,348	0.99
Total	**7730**	**13.08%**	**33,579,926**	**4.22%**		**14,362,339**	**0.43**
Benevolent/ Charity	484	0.82%	11,036,370	1.39%	22,802	19,456,720	1.76
Communications	52	0.09%	1,628,334	0.20%	31,314	6,217,632	3.82
Disabled Veteran	9	0.02%	89,118	0.01%	9,902	120,393	1.35
Ed/Scientific	199	0.34%	10,751,191	1.35%	54,026	32,253,477	3.00
Hospital	155	0.26%	6,946,598	0.87%	44,817	42,979,633	6.19
Non-profit	81	0.14%	4,303,421	0.54%	53,129	13,396,973	3.11
PILOT	2066	3.50%	32,853,023	4.13%	15,902	35,921,859	1.09
Religious	4102	6.94%	62,940,685	7.91%	15,344	55,865,838	0.89
Statutory	65	0.11%	34,843,284	4.38%	536,051	27,460,337	0.79
Railroad	327	0.55%	21,841,709	2.75%	66,794	22,645,485	1.04
Total	**7540**	**12.76%**	**187,233,732**	**23.54%**		**256,318,347**	**1.37**
Grand Total	**18,060**	**30.54%**	**353,117,388**	**44.39%**		**436,467.189**	**1.24**

The second group of nontaxable properties consists of properties held by public Land Bank authorities, including properties held by the City of Detroit Real Estate Division. These properties are on offer to private buyers and have the potential of adding to the tax base. Unfortunately, most of these parcels are small (an average size of less than 5,000 square feet) and have an average land value per square foot of about $0.43 per square foot. Even if the Land Banks are successful in their attempts to return these properties to a taxable status, there would likely be only a small increase in the tax base.

The third category in this table includes privately owned properties that are traditionally exempt from local property taxes, including hospitals, churches, private school and the like. There are more than 7,500 parcels in this category with an aggregate land value of $256 million, 7.6 percent of the citywide total. Many of these properties have substantial improvements on them, the value of which is not included in the assessment files. These properties have an average land value of $1.37 per square foot, with the highest values reported for hospitals ($6.19), Communications ($3.82) and Non-Profits ($3.11). Several categories have an average parcel size of more than an acre.

In summary, Detroit has a large number of parcels that are currently nontaxable (15 percent of the total), cover 27 percent of the city's area and represent 43 percent of total land value. While these properties might represent a source of revenue, it is not clear that they can readily be converted to a tax paying status.

Next, we present two census tract maps (Maps 3 and 4) that illustrate the distribution of taxable and nontaxable land. Map 3 shows the proportion of the area of each tract that is tax exempt. The city center and the east side tracts contain the largest portions of nontaxable land. In the city center, much of the nontaxable land is in public use or owned by non-profits. The nontaxable areas on the east side include many tax foreclosures and parcels acquired for economic development activities. The west and northwest areas of city (perhaps the least stressed area) contains the largest proportions of taxable land.

Map 3
Taxable Land Values – Percent of Land Value That is Taxable
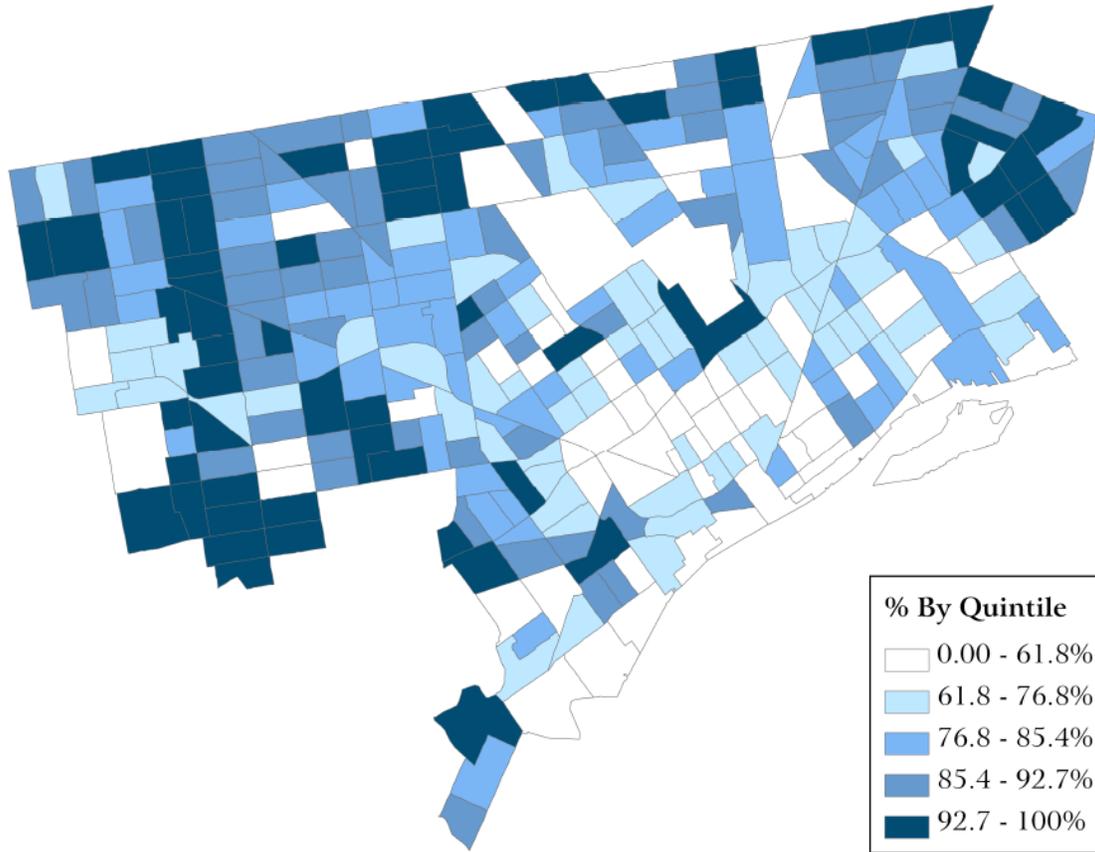
Map 4 presents information on the locations of the lowest valued land. The lowest quintile has a median land value of $610. The largest portions of properties in the lowest land value category are on the east side of the city and just west of the city center along the river. The congruence between census tracts with high proportions of tax foreclosed properties and tracts with high proportions of low valued properties provides an indication of the neighborhoods where the cost of providing city services may sustantially exceed the property tax revenues they generate. Combined with the public uses and the privately owned exempt properties in the city center, a substantial portion of the city does not fully pay for the services received. The neighborhoods in the north, far west, and northeast parts of the city appear more likely to "paying their way."

Map 4
Percent of Lowest Land Values in Lowest Quintile

| % By Quintile |
| 0.00 - 0.68% |
| 0.68 - 2.02% |
| 2.02 - 9.49% |
| 9.49 - 45.2% |
| 45.2 - 100% |
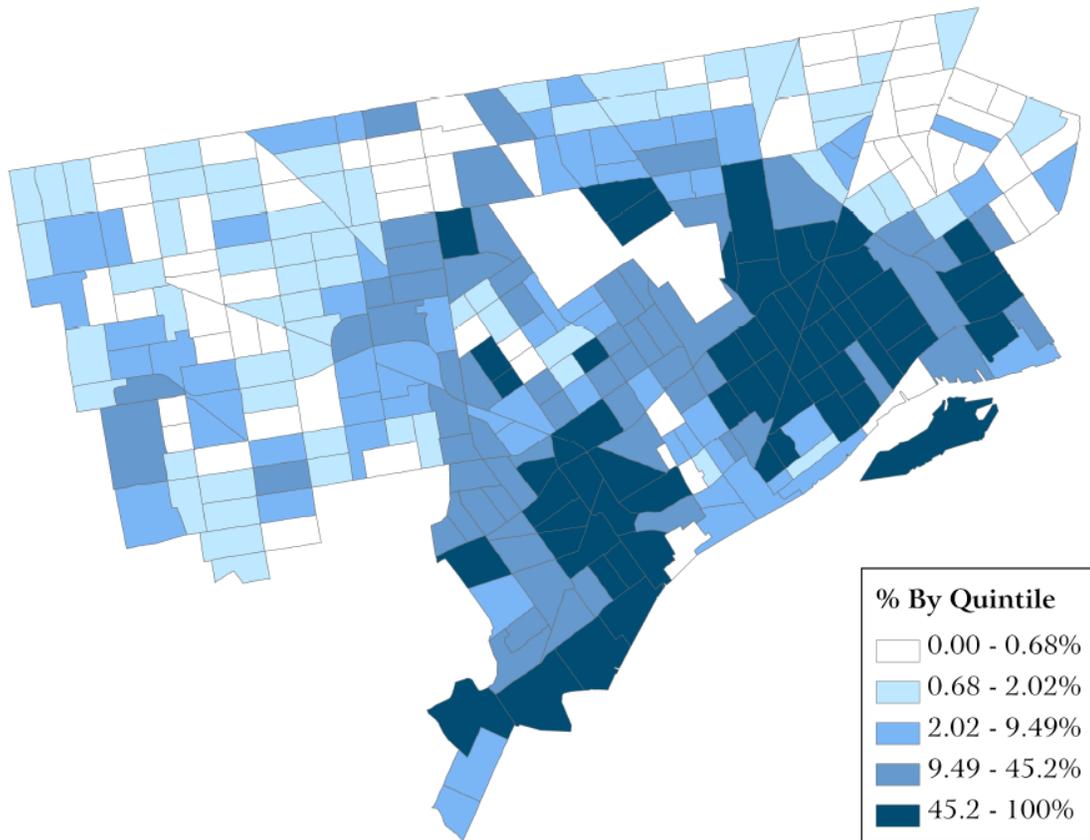
Table 4 presents the distribution of land values for all properties, as well as for residential, commercial, industrial, and nontaxable properties. About 75 percent of all parcels are valued at $2,125 or less. The average value for properties in the third (middle) quintile is $1,598, and the average value for the lowest quintile is just $610. As one might expect, small residential parcels have lower values than commercial or industrial properties. Even so, commercial and industrial land values are extremely low according to the city's assessment. The distribution of land values for nontaxable properties is comparable to that of other properties citywide. These data provide a basis for understanding how a land value tax might play out in the city, as discussed later in this report.

Table 4
Distribution of Land Values by Use Category

	Total	Residential	Commercial	Industrial	Nontaxable
1st Quintile	$ 610	$ 701	$ 1,595	$ 1,579	$ 413
2st Quintile	1,131	1,223	3,478	3,899	630
3st Quintile	1,598	1,624	6,312	8,872	899
4st Quintile	2,125	2,047	13,180	20,656	1,352
5st Quintile	37,863	4,475	215,646	149,375	119,254
Mean	8,661	2,013	48,039	36,858	24,509
Number	386,861	299,049	21,976	6,434	59,402

State Equalized Value and Taxable Value of Properties

We now consider the SEV and TV for all taxable parcels in the city. Two thirds of the city's SEV is residential, with the remaining third split between commercial (26 percent) and industrial property (7 percent). The land use designation of nontaxable properties is similar; however, because no information is available about the improvements on them, they will not be discussed separately.

Figure 4
State Equalized Value (by Class)
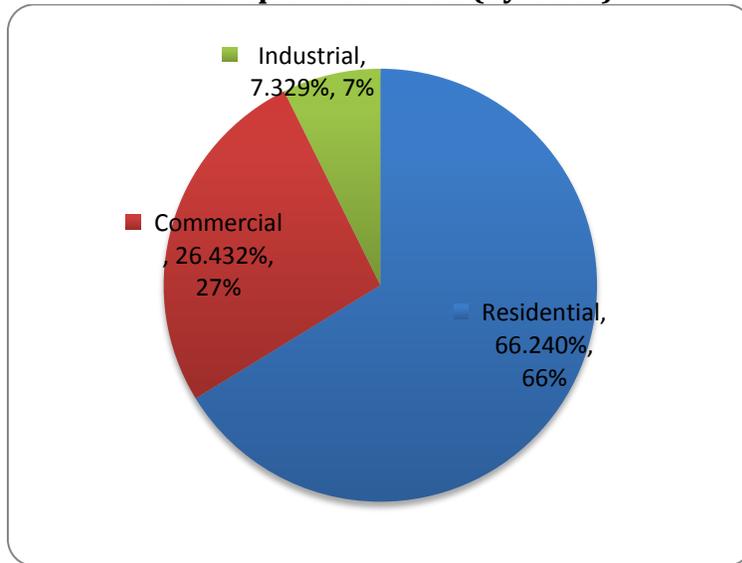
SEV		
	Total	**% of Total**
Residential	6,337,072,887	66.24%
Commercial	2,528,699,075	26.43%
Industrial	701,127,842	7.33%
Total	**9,566,899,804**	**100.00%**

Figure 5
Taxable Value (by Class)
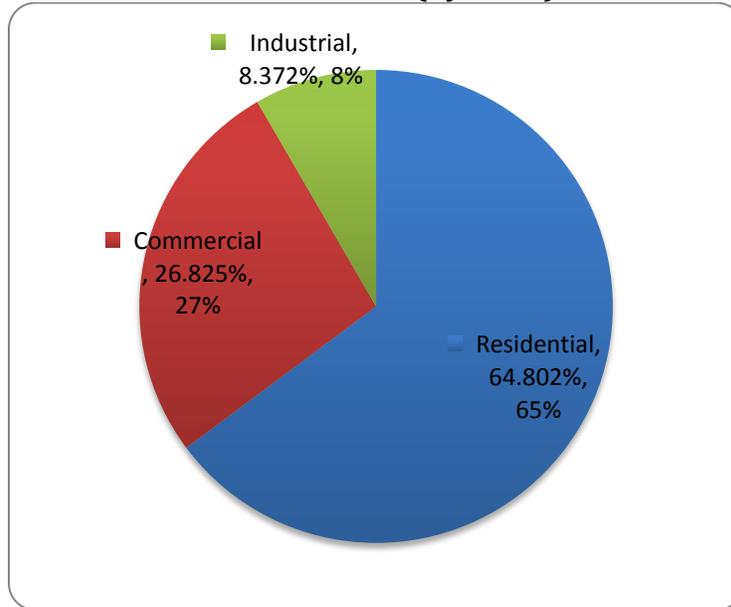
TV		
	Total	**% of Total**
Residential	4,902,581,815	64.80%
Commercial	2,029,460,595	26.83%
Industrial	633,385,587	8.37%
Total	**7,565,427,997**	**100.00%**

The largest source of tax base erosion in Detroit is the taxable value cap. As shown in Figures 4 and 5, current SEV is $9.567 billion but total TV is $7.565 billion, a difference of about $2 billion. The ratio varies across land uses, with the ratio of TV to SEV highest for industrial properties and lowest for Commercial properties.

Table 5

TV/SEV					
	Obs.	**Mean**	**Std. Dev.**	**Min.**	**Max.**
All	325,357	0.815	0.224	0.0018	1
Residential	297,026	0.814	0.227	0.0072	1
Commercial	21,927	0.786	0.186	0.0018	1
Industrial	6,404	0.953	0.132	0.0026	1

*NOTE: 2,102 observations were dropped because they had a taxable value equal to zero.

The Detroit property tax structure, as it has evolved, is rife with inequities. Few similarly valued properties actually have equal tax burdens. The taxable value cap favors long

time property owners, who pay much lower taxes than recent purchasers. (Homeowners receive substantial benefits over renters, but this is limited to school, rather than city, taxes.) Tens of thousands of tax foreclosed properties also do not contribute to property tax revenues and indeed add to the city's costs for their maintenance. In addition, state and local tax privileges shift the burden of supporting city government operations to a dwindling number of property owners who do not qualify for any of the favored categories.

Table 6 presents the distribution of taxable values for all property as well as residential, commercial, and industrial properties. Generally, taxable values of property are very low. Some 75 percent of all properties have an estimated taxable value of $22,617 or less. The average value within the median (third) quintile is $13,933, and the average value of the lowest quintile is just $959. As one might expect, small residential parcels have lower values than commercial or industrial properties. Even so commercial and industrial land values are very low according to the city's assessment. Note, however, that there are some relatively high value commercial and industrial properties that lift values in the highest quintile. Nevertheless, these values are just a fraction of real estate values in other major cities of similar size.

Table 6
Distribution of Taxable Values by Land Use Category

	Total	Residential	Commercial	Industrial
1st Quintile	$ 959	$ 918	$ 1596	$ 1086
2st Quintile	7,035	7,225	5,380	4,404
3st Quintile	13,933	13,981	12,860	15,109
4st Quintile	22,617	22,327	31,183	41,470
5st Quintile	70,086	37,527	410,869	430,791
Mean	23,103	16,394	92,349	98,444
Number	327,459	299,049	21,976	6,434

Maps 5 and 6 show at the Census Tract level where the highest and lowest taxable value properties are located. Map 5 shows that the concentrations of lowest taxable values are in the central city and the east side, a pattern similar to that in Map 1. Map 6 clearly illustrates that neighborhoods on the periphery of the city have the highest proportion of tax-paying properties, whereas most of the city center neighborhoods have less than three-quarters of their property owners paying property taxes.

Map 5
Percent of Parcels Taxable at the Tract Level

% By Quintile
- 0.00 - 72.3%
- 72.3 - 85.1%
- 85.1 - 91.4%
- 91.4 - 97.0%
- 97.0 - 100%
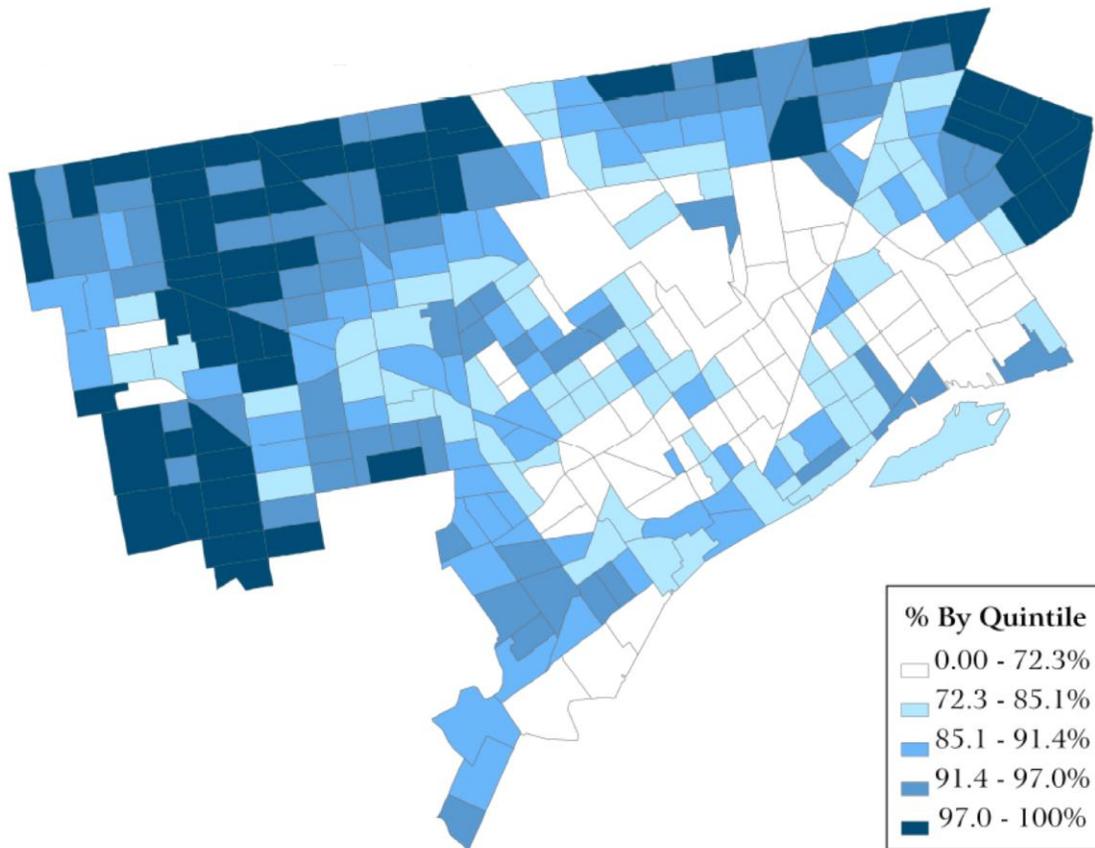
Map 6 presents the concentrations of low value property Measured by the proportion of parcels in each tract that falls in the lowest quintile in terms of taxable value. There are high concentrations fo low taxable value in the central city and on the east side, the reverse of the pattern seen in Map 5. Property on the west side has been more successful in maintianing its value.

Map 6
Percent of Taxable Properties in Lowest Quintile
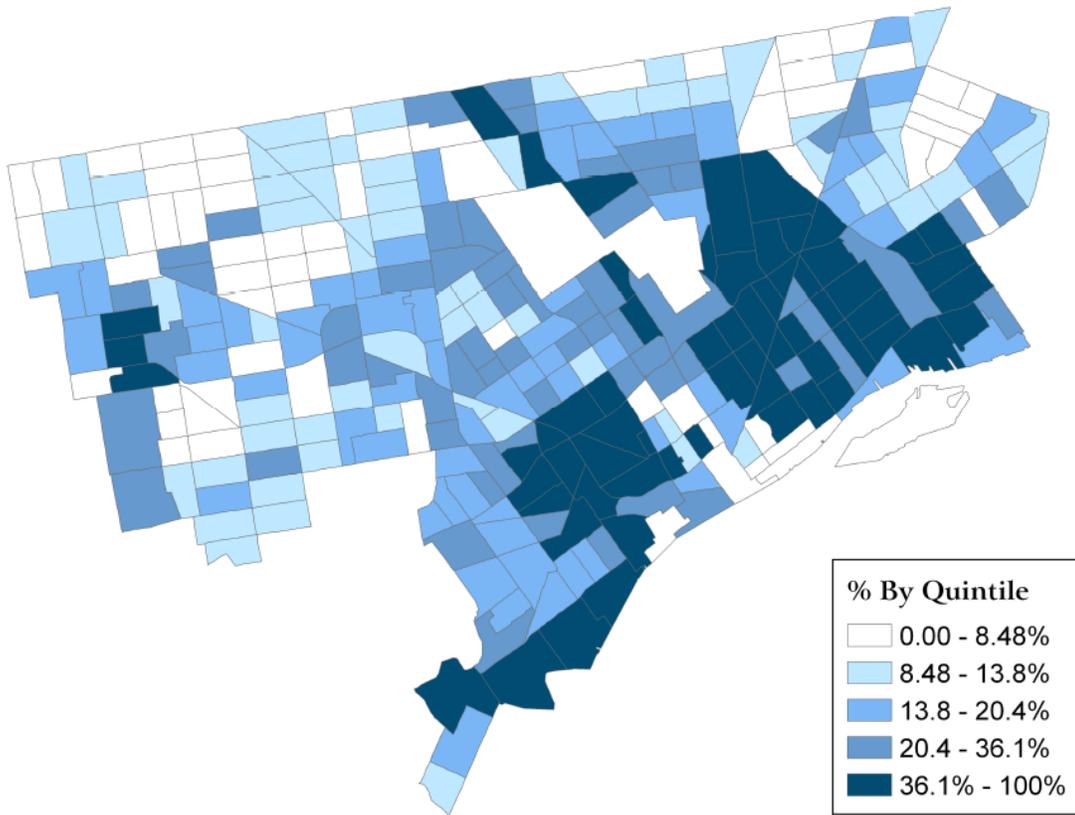
Analysis of Parcel-level Taxable Values and Effective Tax Rates

The analysis thus far clearly demonstrates that there is significant variation across the city in tax base erosion and effective tax rates. This variation depends on changing economic circumstances and their interaction with state and local policies. The single largest source of tax base erosion (and thus differentials in effective tax rates) is the cap on growth of taxable value implemented with Proposal A in 1994.   As previously described, as long as a property owners does not sell the property taxable value can only grow at the rate of inflation or five percent, whichever is less. During the late 1990's through 2007 property value growth (particularly residential property values) was higher than the inflation. Thus, the differential between SEV and TV steadily increased. While the legislation had the intended effect of protecting long-time homeowners from large increases in taxes, it also resulted in relatively higher tax payments for new homeowners because when a property is sold, its TV is reset to SEV; the basis for the tax is therefore much higher for the new property owner than the previous owner. As shown in the summary statistics in Table 7 (page24), nearly half of Detroit property owners have owned their property since 1994.

In addition to the taxable value cap, further tax base erosion is also caused by the Principle Residence Exemption, which exempts all principle residence properties from paying local school property taxes (about 75 percent of residential property). Further, city officials have also granted various types of preferential treatment (Renaissance Zones, Neighborhood Enterprise Zones, Downtown Development Authorities, Tax Increment Finance Districts, Smart Zones, Brownfield Redevelopment Authorities) to select properties. As shown in Table 7, a relatively small proportion of properties qualify for such treatment, but many of these properties are among the highest valued properties in the city.

To better understand the sources and distribution of tax base and tax rate erosion, we conduct a parcel level analysis of taxable values and effective tax rates. Specifically, we use regression analysis to explain the variation across parcels in taxable values and effective tax rates, where the effective tax rate is defined as the actual tax payment divided by the state equalized value of the property.

Taxable Value Analysis

This examination of taxable values is based on hedonic analysis. The hedonic framework incorporates the idea that embodied in any good (in this case a real property) is a bundle of characteristics (e.g., lot size, home square footage of the structure, age, etc.), each of which offers a benefit to the buyer. As first modeled by Rosen (1974), hedonic analysis uses observations on the overall good or service to obtain implicit prices for the individual components of the good or service embodied therein. Hedonic analysis has been used extensively to estimate willingness to pay for product characteristics, evaluate differences in quality of life, assess the willingness to pay for various environmental quality attributes, and evaluate the degree to which taxes and public services are capitalized into the value of property. Of particular relevance to the present study, hedonic pricing has been used extensively in housing markets to evaluate willingness to pay for characteristics embodied in a home (see for example Palmquist, 1984 and Orford, 2000).

Our research design evaluates willingness to pay for measurable property attributes, including whether a property qualifies for preferential tax treatment. The hedonic pricing model treats a property as providing a collection of characteristics. Below, we offer a brief theoretical discussion that is used to guide this portion of the empirical analysis.

In the case of property purchase decisions, each potential purchaser may attach different benefits (utilities) to a given property. The utility (U) of the buyer is a function of a composite good, Y, the property, X, and taste parameters, T. This relationship is expressed as $U = U(Y, X, T)$. Utility is maximized subject to a budget constraint, $P_Y * Y + P_X * X = M$, where P_Y represents the price of the composite good Y (all other goods and services), P_X represents the price a property, and M is income. Constrained optimization yields a set of demand functions where $X = X(P_Y, P_X, T, M)$. Each property buyer has a collection of indifference curves representing his or her trade-off between the different types of properties, including preferred property characteristics; higher indifference

curves are associated with higher utility levels and higher willingness to pay for the property. A property offers a set of characteristics that matches the preferences of the buyer. The bid function for the adoption experience (θ) is determined by the price, P_X, a vector of property attributes, Z, and the benefit of the property to the buyer, π: $\theta = \theta(P_X, Z, \pi)$. In this framework, each property has a different set of attributes and thus (potentially) a different price. Hedonic analysis uses variation in property characteristics to generate estimates of implicit costs (or prices) for each of the property attributes, including any preferential treatment it may receive.

In the hedonic framework, the market is assumed to be in equilibrium. That is, the property offer function is equal to a buyer's bid function so that the marginal cost of the property is equal to the marginal valuation of the buyer. Differences among buyers in their desire for different property characteristics, and differences in the property attributes, result in a heterogeneous property market.

In the context of Detroit, our goal is to use this framework to determine the impact of various policies on taxable values so as to better understand the sources of tax base growth and erosion. We use TV as opposed to SEV or actual sale prices because of the role the taxable value cap plays in restraining the growth in value of unsold properties. One objective is to determine the degree to which long-time property owners are protected from rising property taxes compared to newer home buyers. TV reflects sales price and state equalized value if the property is sold, but is constrained by the taxable value cap for the years the property is not sold (and the property value growth is greater than the rate of inflation). By including a series of indicator variables to mark the year the property was last sold, we determine the degree of tax base erosion caused by the taxable value cap across all parcels in the city.

We estimate a set of regressions based on the following equation:

$$Taxable\ Value_{ik} = C_i\alpha + LS_i\delta + N_j + \varepsilon_i,$$

where *Taxable Value$_{ik}$* is the taxable value of parcel i of property class k (single family residential, multi-family residential, commercial, industrial, and unimproved), C_i is a vector of parcel characteristics including variables that characterize any preferential treatment for which the parcel qualifies, LS_i represents a series of dummy variables indicating the year the property was last sold, and N_j is a vector of neighborhood fixed effects[9], and ε_i is the error term.

Summary statistics and definitions for all variables used in this portion of the analysis are presented in Table 7 and the Appendix, respectively. The results of the taxable value regressions are presented in Tables 8-10. These tables contain the taxable value regressions along with two sets of effective tax rate regressions. Because the taxable

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[9] In the estimates presented, we control for neighborhood fixed effects. In estimates not presented but are available upon request, we control fixed effects at the zip code level (broader scale) and at the tract level (narrower scale). The coefficient estimates are similar in all cases.

value regressions are closely related to the effective tax rate regressions, we first review the modeling of effective tax rate regressions before discussing the results.

Table 7
Summary Statistics
(std. dev. in parentheses)

Variable	SF Resid.	MF Resid.	Commercial	Industrial	Unimproved
SEV	25,912	18,967	171,363	173,530	4,277
	(14,118)	(10,793)	(2,136,986)	(1,101,512)	(112,126)
Taxable Value	20,167	13,819	136,915	160,009	3,227
	(12,727)	(09,167)	(1,868,630)	(968,383)	(59,283)
GC Erate	15.63	15.41	15.35	19.04	18.74
	(4.496)	(5.171)	(3.741)	(2.637)	(3.124)
Erate	59.10	62.05	64.85	80.94	75.82
	(19.55)	(21.78)	(15.84)	(9.620)	(14.06)
Last Sale Date					
Pre-1994	0.471	0.478	0.430	0.499	0.440
	(0.499)	(0.500)	(0.495)	(0.500)	(0.496)
1995	0.016	0.012	0.016	0.015	0.007
	(0.127)	(0.109)	(0.127)	(0.122)	(0.085)
1996	0.019	0.014	0.020	0.017	0.009
	(0.135)	(0.118)	(0.140)	(0.129)	(0.095)
1997	0.018	0.017	0.027	0.026	0.018
	(0.134)	(0.127)	(0.161)	(0.159)	(0.134)
1998	0.022	0.021	0.031	0.024	0.026
	(0.148)	(0.142)	(0.174)	(0.153)	(0.159)
1999	0.034	0.035	0.045	0.038	0.052
	(0.181)	(0.183)	(0.206)	(0.191)	(0.221)
2000	0.030	0.034	0.046	0.033	0.044
	(0.171)	(0.181)	(0.209)	(0.178)	(0.205)
2001	0.023	0.024	0.031	0.030	0.027
	(0.151)	(0.154)	(0.172)	(0.170)	(0.163)
2002	0.021	0.024	0.031	0.024	0.024
	(0.144)	(0.152)	(0.174)	(0.152)	(0.153)
2003	0.027	0.032	0.040	0.042	0.069
	(0.162)	(0.176)	(0.197)	(0.200)	(0.254)
2004	0.031	0.035	0.042	0.042	0.062
	(0.174)	(0.183)	(0.200)	(0.200)	(0.242)
2005	0.037	0.046	0.050	0.040	0.055
	(0.188)	(0.210)	(0.217)	(0.196)	(0.229)
2006	0.045	0.055	0.053	0.043	0.058
	(0.208)	(0.227)	(0.224)	(0.203)	(0.234)
2007	0.055	0.058	0.046	0.046	0.034
	(0.229)	(0.233)	(0.209)	(0.209)	(0.182)
2008	0.066	0.057	0.042	0.044	0.038
	(0.248)	(0.232)	(0.200)	(0.205)	(0.191)
2009	0.064	0.047	0.044	0.032	0.029
	(0.245)	(0.212)	(0.205)	(0.177)	(0.169)
2010	0.018	0.013	0.007	0.006	0.006

	(0.135)	(0.113)	(0.086)	(0.080)	(0.077)
RZ	0.002	0.005	0.009	0.027	0.012
	(0.045)	(0.070)	(0.095)	(0.162)	(0.107)
InNEZ	0.249	0.106	-	-	0.175
	(0.433)	(0.307)			(0.380)
NEZH	0.0033	0.0006	-	-	0.106
	(0.058)	(0.025)			(0.308)
NEZnewrehab	0.0004	0.0001	-	-	0.040
	(0.020)	(0.008)			(0.197)
PRE100	0.756	0.454	-	-	-
	(0.430)	(0.498)			
PRE50	-	0.125	-	-	-
		(0.330)			
DDA	-	-	0.027	-	0.007
			(0.161)		(0.085)
SmartZone	-	-	0.012	0.006	0.005
			(0.109)	(0.080)	(0.073)
Brownfield	-	-	0.007	0.007	0.019
			(0.083)	(0.085)	(0.137)
Age	73.23	87.39	60.70	62.99	-
	(14.89)	(9.900)	(22.76)	(20.01)	
SqFt	1,072	2,011	11,590	43,449	-
	(516.2)	(781.8)	(77,996)	(690,791)	
LotSize	4,816	4,271	13,838	68,403	7,524
	(1,793)	(1,244)	(117,338)	(288,349)	(47,431)
Living	-	-	0.095	-	-
			(0.294)		
Auto	-	-	0.126	-	-
			(0.332)		
Office	-	-	0.103	-	-
			(0.305)		
Restaurant	-	-	0.059	-	-
			(0.235)		
Amenities	-	-	0.046	-	-
			(0.209)		
Unknown	-	-	0.161	-	-
			(0.367)		
Residential	-	-	-	-	0.854
					(0.353)
Commercial	-	-	-	-	0.106
					(0.308)
Industrial	-	-	-	-	0.040
					(0.196)
# of obs.	206,013	34,066	12,745	3,435	62,515

Effective Tax Rate Analysis

In Michigan the effective tax rate is a more accurate measure of tax burden than the statutory tax rate because the definition of the tax base may differ for each parcel. TV may equal SEV, but could also be substantially less. SEV is the upper limit for a property's TV. Further, some parcels receive preferential treatment in the form of a reduced rate or partial to full exemption of its TV. We therefore calculate the effective tax rate for each parcel by dividing the actual tax payment by the state equalized value. The effective tax rate regressions are illustrated with the following equation:

$$EFFECTIVE\ RATE_i = C_i\beta + LS_i\gamma + N_j + \mu_i,$$

where *EFFECTIVE RATE$_i$* is the effective property tax rate for parcel i[10], C_i is a vector of parcel characteristics, LS_i is a series of indicator variables marking the date of last sale, N_j is vector of neighborhood indicator variables and μ_i is the error term. This framework mirrors the taxable value regressions in that we attempt to control for parcel characteristics and neighborhood characteristics to determine the degree to which various policies have resulted differences in effective tax rates across the city.[11]

Before discussing the regression results, consider the following maps to illustrate the difference across neighborhoods and parcels in the city. Maps 7-10 illustrate effective tax rates by neighborhood (Census tract) for single family residential, commercial, industrial, and unimproved properties, respectively. These maps demonstrate the significant variation across neighborhoods in effective tax rates. For residential properties, much of this variation is due to the taxable value cap and the Primary Residence Exemption, but Neighborhood Enterprise Zones also play a role. Commercial properties also exhibit significant variation across properties, but here the primary factors are the taxable value cap and other tax relief efforts. Note the relatively low effective rates in the core downtown area of the city. The industrial or unimproved property maps show variation in effective tax rates across neighborhoods that appears to be less than residential or commercial properties.

In Map 11, we present parcel level effective tax rates to further illustrate the horizontal inequities present in the current property tax environment. This map reveals the stark contrast from parcel to parcel in effective tax rates. Consider two houses adjacent to one another. There are numerous cases within this neighborhood where one property owner pays an effective tax rate of less than 31 mills and the other pays more than 81 mills. The regression analysis described next helps to explain the variation across properties in effective tax rates.

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[10] We calculate the effective tax rate for the City of Detroit General property tax and the property tax of all overlying jurisdictions including all debt millages.

[11] This approach follows that of Skidmore, et al (2010).

Map 7

Single Family Tract Level Effective Rates
(Real & Taxable Properties)

Effective Rates
- 3.24 - 51.91
- 51.92 - 55.76
- 55.77 - 58.59
- 58.60 - 62.73
- 62.74 - 84.50

*Striped tracts do not have properties that meet the criteria - real, improved, single family residential, and taxable.
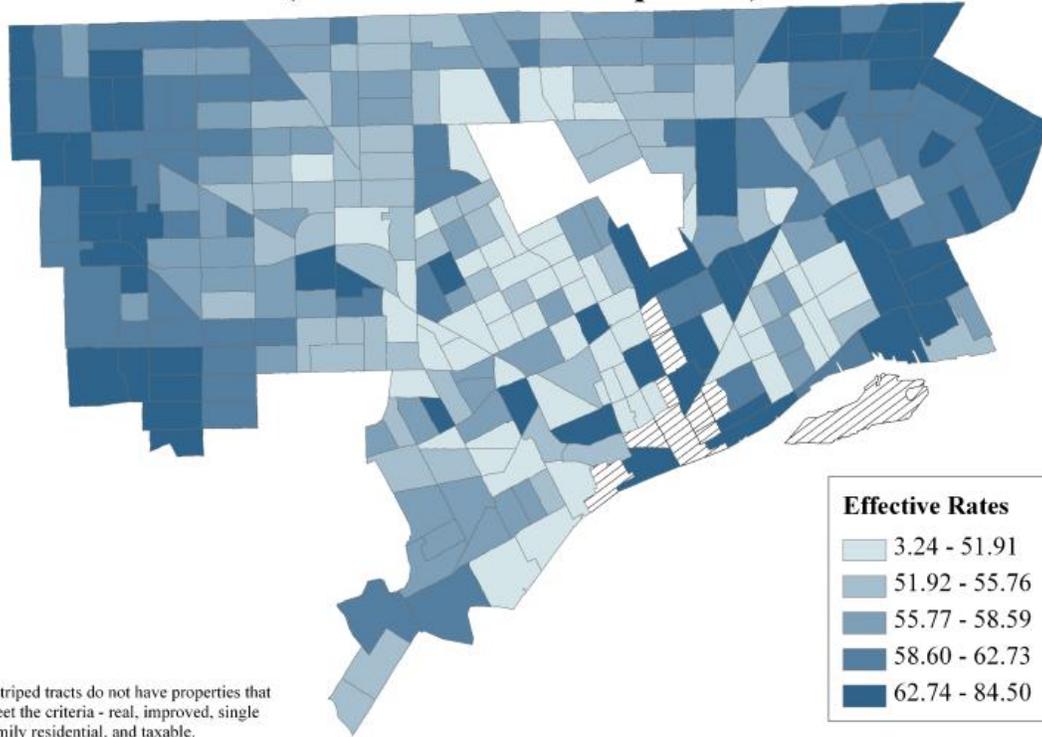
Map 8

**Commercial Tract Level Effective Rates
(Real & Taxable Properties)**

Effective Rates

- 31.42 - 52.65
- 52.66 - 61.83
- 61.84 - 65.96
- 65.97 - 69.84
- 69.85 - 80.31

*Striped tracts do not have properties that meet
the criteria - real, improved, commercial, and taxable.

Map 9

Industrial Tract Level Effective Rates
(Real & Taxable Properties)

Effective Rates

	0.00 - 59.16
	59.17 - 74.95
	74.96 - 80.85
	80.86 - 83.04
	83.05 - 84.51

*Striped tracts do not have properties that meet the criteria - real, improved, industrial, and taxable.

Map 10

**Unimproved Tract Level Effective Rates
(Real & Taxable Properties)**

Effective Rates
- 39.48 - 53.42
- 53.43 - 67.12
- 67.13 - 73.20
- 73.21 - 77.75
- 77.76 - 95.46

*Striped tracts do not have properties that meet
the criteria - real, unimproved, and taxable.

Map 11
Parcel Level Effective Tax Rate Map
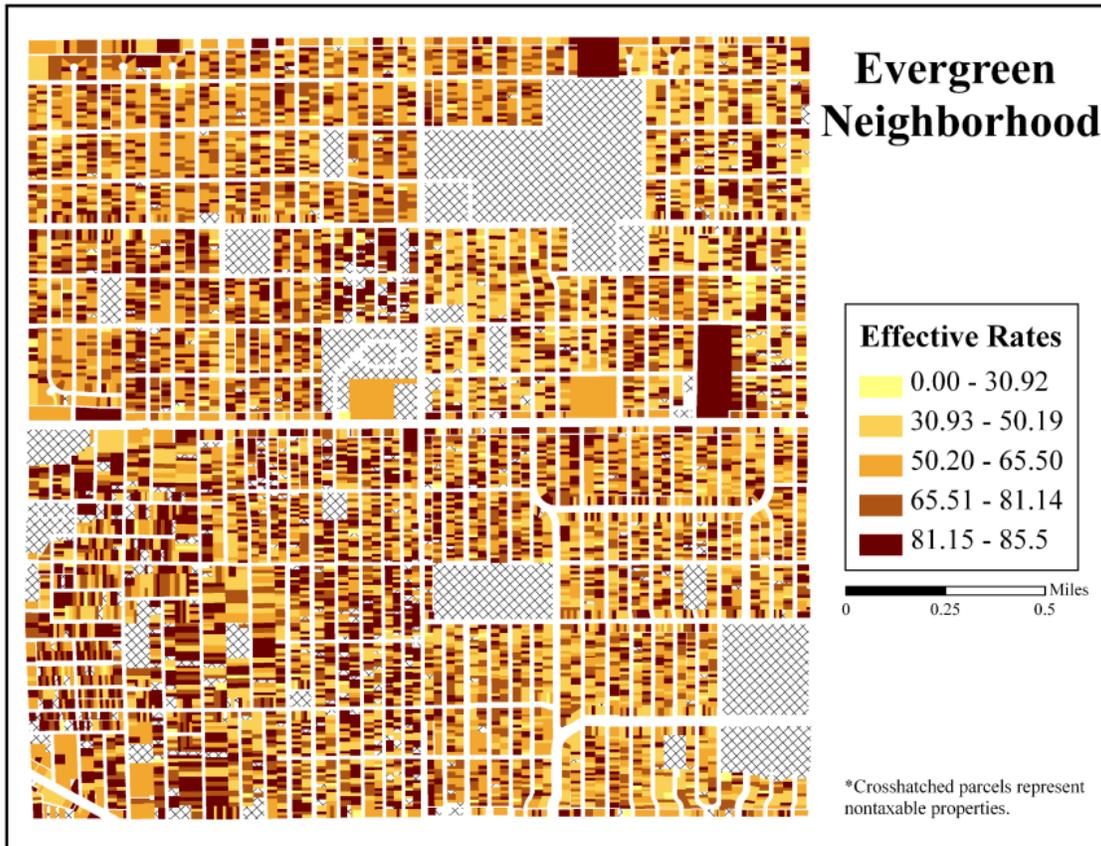
Regression Results

The results of the taxable value and effective tax rate regressions for single family residential, multi-family residential, commercial, industrial, and unimproved parcels are presented in Tables 8-10. The adjusted R-squares for the Taxable Value regressions range from 0.6 to 0.78 in the residential, commercial and industrial property regressions, which is quite good for a cross-sectional analysis. However, the R-square for unimproved taxable value regression is low. The R-squares for the effective tax rate regressions ranges from 0.20 to 0.56, indicating that these specifications capture some of the variation across parcels in effective tax rates.

Consider first the results for the single family residential and multi-family residential parcels (Table 8). All regressions include as control variables a vector of neighborhood indicator variables, as well as size of structure (Sqft), size of lot (Lotsize), and age of structure (Age). Our primary variables are: 1) a vector of dummy variables indicating whether or not a property was sold in a given year[12]; and 2) a series of variables that

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[12] The omitted category contains all properties sold prior to 1994, the date the taxable value cap was first imposed.

characterize whether or not the property receives preferential tax treatment (Renaissance Zones (RZ), Neighborhood Enterprise Zones (inNEZ, NEZH, NEZnewrehab)[13], and the Primary Residence Exemption (PRE100 and PRE50). In the commercial, industrial, and unimproved property regressions we also include variables that indicate whether or not the parcel is a part of a Downtown Development Authority (DDA)[14], a Smart Zone (SmartZone), or Brownfield Redevelopment (Brownfield). We consider the general city taxes (GCErate) as well as taxes for all overlying jurisdictions (Erate).

Table 8
Residential Property Regressions
(t-statistics in parentheses)

Variable	Single Family Residential			Multi-Family and Income Residential		
	Taxable Value	GC Erate	Erate	Taxable Value	GC Erate	Erate
Last Sale Date						
1995	1198.15***	0.86***	3.52***	121.16	0.15	1.07
	(8.01)	(14.96)	(15.64)	(0.58)	(0.64)	(1.16)
1996	2762.97***	1.49***	5.38***	211.61	-0.09	-0.32
	(22.29)	(27.05)	(25.24)	(1.21)	(-0.44)	(-0.37)
1997	2794.30***	1.79***	6.49***	641.84***	0.24	1.11
	(21.09)	(28.84)	(27.51)	(3.23)	(1.25)	(1.42)
1998	5120.16***	3.70***	13.73***	2639.71***	2.04***	8.69***
	(40.30)	(66.22)	(62.37)	(12.75)	(12.02)	(12.52)
1999	5486.56***	4.37***	16.21***	3376.47***	2.82***	11.71***
	(53.99)	(93.09)	(87.33)	(18.61)	(20.93)	(21.39)
2000	6539.07***	5.51***	20.56***	5488.24***	4.83***	19.80***
	(58.47)	(122.21)	(111.55)	(25.44)	(38.39)	(37.98)
2001	6479.88***	5.44***	20.15***	5601.52***	5.20***	21.20***
	(48.83)	(100.92)	(94.60)	(19.83)	(35.05)	(34.86)
2002	6665.46***	6.01***	23.40***	6265.46***	5.89***	24.47***
	(51.87)	(121.45)	(109.51)	(22.05)	(44.25)	(43.30)
2003	6807.51***	6.25***	25.48***	6968.11***	6.19***	26.26***
	(58.71)	(147.71)	(135.24)	(28.14)	(56.32)	(55.65)
2004	6938.47***	6.37***	27.03***	6907.81***	6.38***	27.13***
	(64.80)	(165.46)	(151.99)	(28.36)	(66.29)	(65.01)
2005	7238.98***	6.51***	28.60***	7021.58***	6.56***	28.52***
	(71.75)	(190.92)	(179.27)	(34.70)	(80.64)	(80.15)
2006	7647.99***	6.53***	29.66***	7182.97***	6.34***	27.52***
	(75.60)	(218.78)	(210.19)	(39.41)	(79.24)	(79.56)
2007	7870.39***	6.47***	31.38***	7048.69***	6.35***	27.97***
	(95.06)	(239.73)	(249.93)	(39.39)	(80.62)	(83.26)
2008	8445.98***	6.33***	31.20***	7656.90***	6.15***	27.20***

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[13]In most instances, a property will be granted just one of these tax preferences. InNEZ is an indicator variable marking whether or not a property is in a zone. However, not all properties that could regressions, we use NEZH and NEZnewrehab, which are variables that indicate whether or not a particular property actually received preferential treatment.

[14] There are also Tax Increment Finance Districts (TIFs), but with the exception of a few properties TIDs overlap nearly perfectly with DDAs. Therefore, the DDA variable also marks whether or not a parcel is also a part of a TIF.

	(109.16)	(258.01)	(273.57)	(35.49)	(75.93)	(78.51)
2009	9100.08***	6.49***	30.52***	8020.97***	6.34***	27.64***
	(103.19)	(285.50)	(276.05)	(38.88)	(73.72)	(73.56)
2010	6769.32***	4.68***	20.48***	5662.50***	4.27***	18.11***
	(40.89)	(75.70)	(74.68)	(14.65)	(18.62)	(18.91)
RZ	1222.24***	-2.42***	-8.53***	-97.51	-0.35	0.49
	(4.16)	(-8.31)	(-7.73)	(-0.25)	(-0.69)	(0.26)
InNEZ	7537.90***	-	-	6254.78***	-	-
	(60.39)			(31.95)		
NEZH	-	-0.08	-8.40***	-	-	-
		(-1.11)	(-23.71)			
NEZnewrehab	-	0.74	-2.71	-	-	-
		(1.30)	(-1.12)			
PRE100	2888.35***	0.15***	-8.24***	637.83***	-0.11**	-6.06***
	(61.82)	(8.02)	(-108.20)	(9.10)	(-2.19)	(-30.16)
PRE50	-	-	-	1017.66***	-0.14**	-5.37***
				(8.71)	(-2.06)	(-18.99)
Age	-184.92***	-0.02***	-0.07***	-154.18***	-0.01***	-0.03**
	(-26.72)	(-23.95)	(-18.48)	(-23.21)	(-4.03)	(-2.00)
SqFt	5.53879***	0.00006***	-0.00013	2.2644***	-0.0001***	0.0003*
	(13.91)	(2.86)	(-1.50)	(24.35)	(-2.84)	(1.85)
LotSize	1.27861***	0.00005***	0.00005**	0.59933***	0.00001	-0.00015*
	(28.46)	(8.70)	(2.23)	(15.40)	(0.65)	(-1.78)
Constant	7547.18***	14.25***	58.41***	10800.49***	14.91***	58.91***
	(12.35)	(100.65)	(108.45)	(16.78)	(39.36)	(38.42)
R-squared	0.615	0.496	0.545	0.563	0.383	0.415
# of obs.	206,013	202,493	202,493	34,063	33,634	33,634

Notes: All regressions include neighborhood fixed effects and are corrected for heteroskedasticity. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) levels.

The control variables show that properties with larger lots, newer and larger structures have higher taxable values. Older homes tend to have lower effective tax rates, all else equal. Size of structure and lot size, though statistically significant, have mixed effects on effective rates. Further, the coefficients are small, suggesting that these effects are only marginally important.

Of greater interest are the coefficients on the policy variables. Consider first the set of indicator variables that mark the date of last sale. The baseline includes properties that have not been sold since the imposition of the taxable value cap in 1994. If a single family residential property was sold in 2009, its taxable value is estimated to be $9,100 greater than a similar property that had not been sold after 1994, controlling for other property characteristics. This differential narrowed for properties last sold in 2010 as the real estate crisis began to be reflected in declining taxable values.

Because of the differentials in TV between properties recently sold and those that had not been sold, effective tax rates differ markedly. To illustrate, again consider properties sold in 2009; controlling for other factors these property owners paid an overall effective tax rate that was about 31 mills higher than a property that was sold prior to 1994. Focusing on the city property tax for operations, these property owners paid an effective rate about

6.5 mills more than long-time property owners. These effects are of similar magnitude for multi-family residential properties.

The other preferential treatments also generate tax differentials, though the number of properties that benefit from these zones is relatively small. Properties in Renaissance Zones have higher taxable values (by $1,222) and effective tax rates are lower by 2.4 mills and 8.53 mills for the general city and overall rates, respectively. Properties in Neighborhood Enterprise Zones also have higher taxable values and lower effective rates. Finally, properties that qualify for the Primary Residence Exemption have higher taxable values and lower effective tax rates. A majority of residential properties receive this exemption.

Before proceeding further, we offer a word of caution in interpreting the coefficients in the taxable value regressions: The coefficients on the preferential treatment variables should not necessarily be interpreted as causal. Indeed, the fact that the granting of these tax privileges is discretionary on the part of the city (a relatively small proportion of all properties that have similar characteristics actually receive this preferential tax treatment) suggests causality could run the other way. However, since the taxable value cap and the Principle Residence Exemption are policies imposed at the state level, these coefficients can be interpreted as causal.

This portion of the analysis highlights two important points. First, state and local policies have been instrumental in narrowing Detroit's tax base and reducing the city's overall tax capacity. Second, these policies have led to substantial horizontal inequities across property owners within the same class of property. To illustrate, consider two residential properties: one qualifies for a Principle Residence Exemption (which exempts the property from the local school operating millage), is in a Renaissance Zone (which exempts the property from most other ad valorem taxes), and has remained in the hands of the same property owner since 1994 (which results in a low Taxable Value). The other property, however, does not qualify for the Principle Residence Exemption, is not in a Renaissance Zone, and was purchased in 2009. The differential in effective tax rates between these two properties is 47 mills, more than half the maximum millage of about 84 mills.

These comparisons suggest that taxing authorities could reduce the horizontal inequities and generate new revenues to fund public services by modifying tax policies. Some of the policies are specifically designed to protect existing property owners from increasing taxes. This benefit may be offset by the unintended consequence that new owners bear a larger tax burden; importantly, imposing higher tax rates on potential buyers can deter development (Skidmore and Tosun, 2011) Leveling the playing field could potentially lead to greater economic activity.

Consider now the commercial and industrial property regressions found in Table 9. The general pattern of increasing effective tax rates for new property owners is also present here, but the magnitudes of the effects are smaller. This is particularly true for industrial properties. These smaller effects reflect the relatively slow growth in the prices of these

properties compared to residential properties. As for the effects of the various zones, our analysis suggests that only qualifying industrial properties experienced significant effective tax rate reductions from Renaissance Zones. Properties in Downtown Development Authority, Smart Zones, and Brownfield areas did not receive tax rate benefits over those not in such zones, on average.

Table 9
Commercial and Industrial Property Regressions
(t-statistics in parentheses)

Variable	Commercial			Industrial		
	Taxable Value	GC Erate	Erate	Taxable Value	GC Erate	Erate
Last Sale Date						
1995	-1406.08 (-0.08)	0.19 (0.98)	0.87 (1.03)	-13310.83 (-0.50)	-0.31 (-0.63)	-0.64 (-0.40)
1996	82620.37 (1.29)	0.35** (2.01)	1.65** (2.25)	112063.82 (1.22)	-0.31 (-0.89)	-1.11 (-0.87)
1997	9307.49 (0.48)	0.09 (0.54)	0.37 (0.54)	7530.79 (0.17)	0.15 (0.69)	0.69 (0.95)
1998	44206.20 (1.17)	0.28* (1.78)	1.29* (1.92)	37506.70* (1.95)	0.30** (2.39)	1.05* (1.93)
1999	-16915.24 (-0.29)	0.43*** (3.63)	1.90*** (3.78)	-30472.28 (-0.93)	-0.34 (-1.13)	-1.21 (-1.15)
2000	1941.67 (0.13)	0.75*** (6.34)	3.31*** (6.67)	5041.92 (0.33)	0.36 (1.51)	1.28 (1.34)
2001	35362.06 (1.50)	1.11*** (8.05)	4.84*** (8.42)	-53484.15 (-1.33)	0.58*** (3.11)	2.28*** (3.00)
2002	10265.05 (0.37)	1.53*** (10.06)	6.66*** (10.38)	-21002.65 (-0.99)	0.66*** (3.31)	2.72*** (3.42)
2003	45537.12* (1.68)	2.95*** (19.28)	12.64*** (19.50)	5350.09 (0.10)	0.27 (1.30)	1.47* (1.89)
2004	22975.22* (1.92)	4.09*** (23.63)	17.53*** (23.91)	96828.79 (1.51)	0.38 (1.59)	1.62* (1.83)
2005	47924.22** (2.14)	4.38*** (28.56)	18.77*** (29.33)	-44033.10 (-1.15)	0.72*** (5.66)	3.03*** (6.96)
2006	9174.07 (0.59)	4.41*** (31.05)	18.91*** (31.37)	-18955.04 (-0.74)	0.88*** (7.15)	3.47*** (7.58)
2007	77032.77** (2.16)	4.64*** (31.55)	19.92*** (32.33)	-14394.06 (-0.76)	0.82*** (7.60)	3.43*** (8.90)
2008	11159.53 (0.39)	4.81*** (33.54)	20.66*** (34.03)	-11368.49 (-0.58)	0.77*** (8.60)	3.23*** (9.36)
2009	11374.93 (0.87)	5.64*** (56.41)	24.01*** (56.39)	38233.38 (1.46)	0.73*** (3.64)	3.05*** (4.34)
2010	15229.22 (0.55)	2.86*** (9.26)	12.27*** (9.29)	22290.59 (0.89)	-0.01 (-0.02)	-0.12 (-0.06)
RZ	-88944.66** (-1.97)	0.38 (0.94)	2.33 (1.52)	34697.51 (0.34)	-4.88*** (-5.95)	-15.63*** (-5.93)
DDA	543284.96** (2.47)	1.85 (1.42)	9.29* (1.71)	-	-	-
SmartZone	-37008.96 (-0.46)	0.26 (0.79)	1.55 (1.11)	-	-	-
Brownfield	-140096.44 (-1.57)	-0.19 (-0.41)	-0.97 (-0.49)	-	-	-

Age	-4229.32***	-0.01***	-0.04***	-2398.07***	0.01**	0.02**
	(-7.96)	(-5.95)	(-6.19)	(-2.81)	(2.25)	(1.97)
SqFt	9.051596***	0.000001	0.000003	0.1551561	0.0000003**	0.0000012**
	(3.66)	(1.19)	(1.04)	(0.91)	(2.21)	(2.29)
LotSize	-0.19681112	-0.00000003	-0.00000035	2.663145***	-0.000001**	-0.000004**
	(-0.60)	(-0.13)	(-0.40)	(4.88)	(-2.19)	(-2.24)
Living	-29750.27	-0.32***	-1.63***	-	-	-
	(-0.73)	(-2.94)	(-3.52)			
Auto	-33420.58***	-0.16*	-0.58	-	-	-
	(-4.26)	(-1.85)	(-1.56)			
Office	-3654.69	0.09	0.43	-	-	-
	(-0.25)	(1.05)	(1.14)			
Restaurant	-24132.09*	0.00	0.14	-	-	-
	(-1.90)	(0.04)	(0.29)			
Amenities	11538.18	0.33***	1.35***	-	-	-
	(0.59)	(3.02)	(2.93)			
Unknown	-33958.30*	0.39***	1.31***	-	-	-
	(-1.79)	(4.06)	(3.25)			
Constant	279629.54***	14.58***	61.67***	47089.63	18.14***	78.04***
	(6.88)	(65.19)	(67.99)	(0.49)	(47.63)	(60.22)
R-squared	0.600	0.342	0.347	0.785	0.216	0.198
# of obs.	12,743	12,698	12,698	3,435	3,420	3,420

Notes: All regressions include neighborhood fixed effects and are corrected for heteroskedasticity. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) levels.

Regressions for unimproved property are presented in Table 10. Again, the taxable value cap appears to generate substantial differentials in effective tax rates across parcels. Renaissance Zones, Neighborhood Enterprise Zones, Downtown Development Authority, and Brownfield area designation all lead to lower effective property tax rates.

Table 10
Unimproved Property Regressions
(t-statistics in parentheses)

	Unimproved		
	Taxable Value	GC Erate	Erate
Last Sale Date			
1995	-573.37	-0.20	-1.01
	(-0.43)	(-1.29)	(-1.50)
1996	-1700.30***	-0.28**	-0.79
	(-2.63)	(-2.03)	(-1.33)
1997	210.32	-1.41***	-3.46***
	(0.17)	(-12.01)	(-7.44)
1998	-2.18	-0.80***	-1.54***
	(-0.00)	(-8.74)	(-4.16)
1999	98.45	0.40***	3.45***
	(0.15)	(8.76)	(17.59)
2000	-390.84	0.50***	3.42***
	(-0.82)	(9.57)	(15.20)
2001	563.28	0.82***	4.08***
	(0.64)	(12.02)	(14.16)
2002	2494.15	1.13***	5.38***
	(1.11)	(18.20)	(20.00)
2003	755.83	1.04***	5.94***

	(0.94)	(27.67)	(36.74)
2004	-572.46	1.34***	7.18***
	(-1.11)	(33.86)	(42.45)
2005	-2804.84**	1.62***	8.10***
	(-2.28)	(36.92)	(43.01)
2006	-3185.45***	1.60***	7.99***
	(-2.69)	(35.53)	(40.92)
2007	-975.56	1.62***	8.06***
	(-0.75)	(32.76)	(37.06)
2008	-2371.48**	1.66***	8.76***
	(-2.13)	(34.60)	(39.95)
2009	-1445.12	1.85***	11.14***
	(-1.31)	(35.30)	(42.58)
2010	-959.96	0.70***	4.81***
	(-0.95)	(4.23)	(6.69)
RZ	-579.64	-3.71***	-11.50***
	(-0.32)	(-13.03)	(-12.14)
InNEZ	722.55	-	-
	(1.21)		
NEZH	-	-0.86***	-16.77***
		(-19.79)	(-91.65)
NEZnewrehab	-	-0.27**	-11.55***
		(-2.41)	(-25.30)
DDA	-107256.49	-2.54***	-9.96***
	(-1.38)	(-3.69)	(-3.40)
SmartZone	8108.59***	0.25*	0.29
	(4.06)	(1.76)	(0.44)
Brownfield	1465.29**	-1.36***	-5.12***
	(2.00)	(-8.43)	(-7.92)
LotSize	0.035589	0.000001**	0.000007***
	(0.82)	(2.36)	(2.74)
Residential	-13108.32***	0.75***	0.65**
	(-4.61)	(9.81)	(2.12)
Commercial	-1869.34	-2.32***	-10.23***
	(-0.56)	(-27.73)	(-30.42)
Constant	12700.20***	18.29***	77.19***
	(4.47)	(204.36)	(212.35)
R-squared	0.039	0.197	0.255
# of obs.	62,504	61,864	61,864
Notes: All regressions include neighborhood fixed effects and are corrected for heteroskedasticity. Asterisks denote significance at the 10% (*), 5% (**), and 1% (***) levels.			

What Is the Value of Nontaxable Property?

City officials do not have the time or resources, especially personnel, to assess the value of improvements on nontaxable properties, including properties that may eventually be returned the tax rolls. As a result, information on the total value of nontaxable properties is unavailable. To estimate the value of these nontaxable properties, a series of regressions analogous to the taxable value regressions were estimated except that the dependent variable in these regressions is SEV. We then multiplied the coefficient

estimates from those regressions by the characteristics of the nontaxable property to obtain an estimate of the value of each nontaxable parcel. We then summed the individual parcel values for each of the property classes, derived from Table 8, to obtain an aggregate measure of property value. These estimated values are presented in Table 11.

Table 11
Estimated Value of Nontaxable Properties

	Predicted Nontaxable TV	Predicted Nontaxable Value as a Percent of City TV	Total City TV
SF Residential	75,005,015	1.8%	4,154,668,291
MF Residential	16,638,125	3.5%	470,773,384
Commercial	1,402,935,470	80.4%	1,744,986,773
Industrial	127,596	0.02%	549,629,541
Unimproved	408,920,678	83.1%	492,135,672
Total	**1,903,626,884**	**25.7%**	**7,412,193,661**

According to this analysis, the estimated SEV of the nontaxable properties is roughly 26 percent of the city's current tax base. This estimate is subject to a number of qualifications, however. Property values in the city continue to fall and the responsibility to pay back taxes/fees may fall on new property owners, which serves to further reduce willingness to pay for such property. Further, according to city assessment records actual sales prices are considerably lower than what is suggested by the assessed values. For these reasons, these estimates are likely much larger than actual values. Nevertheless, city officials could potentially generate more tax revenues by eliminating obstacles to moving nontaxable properties back on to the tax rolls.

Alternative Tax Scenarios

The discussion and analysis thus far provide necessary background for understanding how a change in tax policies might alter the distribution of tax payments across parcels and land use type. Further, a significant portion of the city's potential tax base is not making any contribution to the tax effort. By redefining the tax base it may be possible to generate additional tax revenue.

In this section, we offer analyses of several alternative tax scenarios. The first examines the distribution of tax payments across property type and property value, if the sole basis of the tax was parcel size (square feet). The scenario is similar to a Common Area Maintenance fee used in many multi-tenant commercial properties. The second scenario estimates tax payments based on land value. We also present scenarios in which the city millage rate is partially cut and revenues replaced by a land value or land area tax. For ease of comparison, initial examinations are conducted assuming a static, revenue-neutral change. That is, we do not consider how property values might change in response to a new tax regime, and we hold general fund property tax revenues constant in the alternative tax scenarios. The comparisons consider the city operating millage (19.95

mills) and debt service (8.9157 mills), but not the millage from any of the other overlying jurisdictions.

Table 12 provides the average tax payments based on the current tax environment, as well as for the land area and land value tax scenarios. Also, for comparison we present scenarios in which the millage cut by 10 mills and those revenues replaced with a tax based either on land area or on land value. In each scenario we calculate the number of parcels that would be subject to a tax reduction and to a tax increase.

Table 12
Revenue Neutral Tax Payment Scenarios

Scenario	Property Class	Average Tax Payment	Parcels with Decrease	Parcels with Increase
Existing	Residential Commercial Industrial	$ 327 1,812 1,747		
Land Area Tax	Residential Commercial Industrial	$ 364 807 3,366	134,102 8,632 929	**162,651** **12,335** **5,348**
Land Value Tax	Residential Commercial Industrial	$ 156 3,915 2,826	**232,149** 3,736 1,007	64,604 **17,231** **5,270**
Ten Mills and Land Area Tax	Residential Commercial Industrial	$ 345 1,310 2,557	134,091 8,631 929	**162,662** **12,336** **5,348**
Ten Mills and Land Value Tax	Residential Commercial Industrial	$ 241 2,864 2,286	**232,149** 3,736 1,007	64,604 **17,231** **5,270**

The first row labeled "Existing" provides a basis for comparing the alternative tax scenarios. The average tax payment to the city for general operations is $327, $1,812, $1,747 for residential, commercial, and industrial properties. For commercial and industrial properties, the averages are skewed by a number of highly valued properties which have correspondingly large tax payments. The median tax payments for residential, commercial, and industrial properties are $278, $242, and $294, respectively.

Consider now the land area tax scenario. Compared to the existing situation, average residential tax payments increase modestly; more properties would see an increase than a decrease. Commercial properties experience a dramatic reduction in taxes of about $1,005, but the majority of commercial properties would see an increase in their tax bill. This is because tax payments for most commercial properties are small - the median is only $242. Most industrial properties would also experience a tax increase, as the

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average payment almost doubles. The land area tax actually requires most property owners to pay more even though the proposed change in revenue neutral.

The land value tax, however, yields significant savings to residential property owners, but imposes substantial tax increases on commercial and industrial properties. In this scenario a vast majority of residential properties would see lower taxes, of the tax burden would shift toward commercial and industrial properties, which have land values that are considerably higher than residential land values. Note, however, that with a land value tax, any future real[15] property investment would be exempt from the general city tax. The exemption of such investments from taxation is one reason many economists favor the land value tax over the traditional property tax.

The last two scenarios are combinations that reduce the current city operating millage to 10 mills and replace the lost revenues with a land area tax or a land value tax. As one might expect the average tax payments for each class of property are between the existing circumstance and the first to scenarios (replacing the property tax with a land area and land value tax). Interestingly, the distribution of properties with tax increases and tax reductions with these hybrid scenarios are quite similar the first two scenarios.

Special Assessments

These examples show that moving to a land based tax has significant implications in terms of shifting tax burdens across property classes as well as within property classes. Shifting within property classes, according to public finance principles, may generally improve horizontal equity. The shifting burden across classes, however, requires careful consideration. If one were to base the tax on payment of public services, one could identify specific services that were tied more closely to land value (e.g., fire and police services) and services that were tied to land area (e.g., street and sidewalk maintenance, and street lighting) and then impose land area and land value taxes in the proper proportions. Similarly, one could identify which sets of services were targeted more at residential properties and which were targeted at commercial and industrial properties, and again charge a fee per square foot or millage per land value appropriate for each class of property.

In Michigan, state law allows local governments to impose special assessments where the basis of the special assessment can be defined by local authorities, and can be based on land area or land value. That is, Detroit could potentially use the special assessment law to implement a type of land (value or area) based tax to pay for a range of public services. We now turn to this discussion.

In the previous section, we have considered property tax options that would substitute a new tax base (land value or land area) for the current one, which includes the value of both land and property. Either of the two new options raises the same revenue as the

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[15] If the entire property tax base is shifted to land values, future personal property investments would be exempt as well.

traditional property tax, but a change in the base of the property tax also results in substantial shifts in the tax burden borne by different types of property. For some taxpayers, the increases can be substantial and may appear arbitrary relative to the services received.

It is possible to achieve a better match between tax payments and benefits received by creating a special assessment district(s) for specific services. In Michigan and other states special assessments are commonly used to pay for capital improvements such as water and sewer systems. They have also been used to pay for ongoing services ranging from public safety and libraries to street lighting. In Michigan, a downtown development authority may levy a millage for operating and capital expenditures. Homeowner association assessments are common in many suburbs and are equivalent to a municipal special assessment district in that they used to provide for a variety of services, including park maintenance, maintenance of common areas, and snow plowing.

Moreover, the basis for the assessment can differ, depending on the particular service being provided. For example, front footage of a parcel may be appropriate for utility and sidewalk improvements, whereas property value may be more appropriate for public safety. Other standards can be used to define the tax base for a special assessment district, so long as the all properties in the district are assessed equitably. The tax assessment for the district is typically reviewed, and adjusted as needed, on an annual basis.

The following discussion addresses the potential for creating a special assessment district(s) that would provide specific services to properties in the City of Detroit, with revenue generated from a tax base that is defined so as to match the costs incurred to the benefits received. There are numerous municipal services that might be provided by a special assessment district and there is a range of options for establishing the basis for the assessment. The following example is presented to illustrate the principles used in this type of evaluation, and should not be considered a recommendation or endorsement.

Many of the services provided by municipalities can be categorized into three broad groups, services to people, services to property, and general overhead (Figure 6). The latter category includes activities such as issuing permits, conducting inspections, finance, planning, etc. that do not uniformly benefit all properties in the city. While a special assessment might be used to fund some of these activities, the assignment of appropriate costs and benefits to individual properties would be difficult. Services to property include some that are related to the value of the property and some that are a function of the physical characteristics of the parcel of land. The dollar amount for each of the expenditures is based on an analysis of Detroit's Fiscal Year 2010 budget by Dr. Janet Anderson. This analysis provides much greater detail on expenditures by category.

Figure 6
Detroit FY10 Expenditure Categories
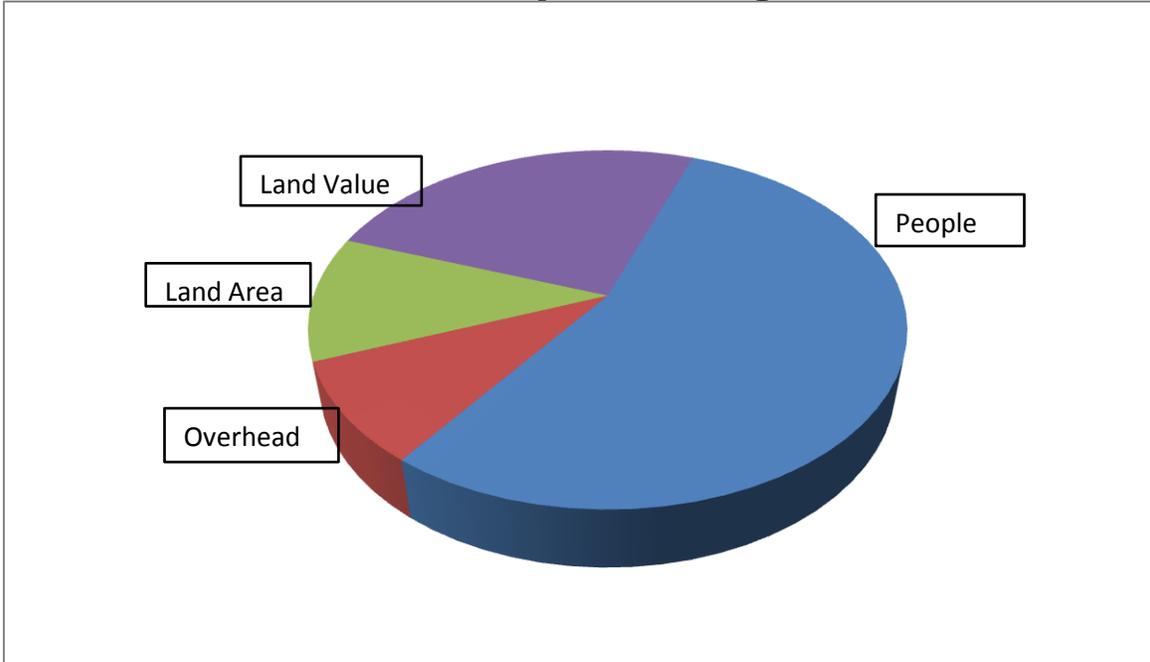
Table 13 provides a classification of services into people and land focused activities. At this level of aggregation, the assignment of categories is admittedly arbitrary. For example, police protection can be a service to people and a service based on the value of property improvements, but probably not the land value. While the allocation of actual expenses would require detailed analysis, according to the City Crime Reports, about three quarter of reported crimes are property crimes. Similarly, Environmental Protection activities may fall into any one of the three categories, depending on the specific activity.

Table 13
Illustrative Classification of Municipal Services by Primary Focus

| | Land Based | |
Population Based	Value	Area
Health	Environmental	Street Cleaning
Recreation		Street Maintenance
Library		Street Lights, Signals
Neighborhood Development		Trunk Lines
District Court		PLD Steam
Bus Service		Vacant Lots
Police		Environmental
Environmental		

Consider those expenditure categories that are related to land area. These expenditure categories are more likely to be evenly distributed across properties and the basis for the

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assessment more stable.[16] Of the land area based activities listed in Table 13, only the cost of the Public Lighting Department's steam generating operation is excluded from the estimated Special Assessment tax. (The cost of the steam distribution system clearly provides potential benefits only to a small portion of the city's total area and thus should not be included in a citywide tax. Its costs could, however, be included in a separate, smaller special assessment district.)

In Fiscal Year 2010, the cost of the services that might be included in a city-wide special assessment was about $61.7 million, out of total General Fund expenditures of approximately $886 million. For context, the property tax generated $146 million in FY10. Reducing the property tax levy by $61.7 million would allow for the city's operating millage to be lowered from about 19.95 mills to roughly 11.3 mills, a decrease of more than 43 percent. The lost property tax revenue could be regained by a special assessment based on land area of each taxable parcel. A tax rate of about 2.98 cents a square foot would generate the revenue lost by the reduction in the property tax.[17]

As was the case with the changes in the property tax base discussed previously, the special assessment based on land area would have distributional consequences, and these are presented in Table 14. The vast majority of land owners, those who own residential parcels, would experience a modest increase in their total property tax bill. Commercial property, which typically has a relatively higher value per square foot, would see a reduction of total taxes of almost 23 percent. Industrial parcels, with generally low values per square foot but large in terms of area, would be subject to an increase of more than 40 percent.

Table 14
Tax Burden with Special Assessment (Revenue Neutral)

	Current Average Property Tax	Special Assessment Option			Net Change
		Average New Property Tax	Average Special Assessment	Average Total Payment	
Residential	$327	$189	$151	$340	+3.98%
Commercial	$1,812	$1,052	$335	$1,381	-23.8%
Industrial	$1,747	$1,009	$1,452	$2,461	+40.9%

The Special Assessment scenario would, of course, benefit some property owners while others would see an increase in their tax bill. The majority of residential and industrial property owners would face higher tax bills, for example.

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[16] Some of these services are more appropriately considered as a function of the front footage of each parcel, rather than its total area. While these calculations could be made where appropriate, using land area for all services provides a useful approximation.

[17] If the special assessment were applied equally to currently tax exempt properties, the cost per square foot would be 2.1 cents.

Conclusions

The evaluation presented in the report highlights important attributes of the Detroit property tax environment. First, the existing property tax system creates substantial inequities across classes of property and across parcels within the same property classes. It is frequently the case that owners of similarly valued properties are subject to widely disparate tax burdens. While some of these inequities are beyond the city's direct control, any effort to reform the system should have as its goal the reduction of these differentials among similar properties.

The largest source of inequity is the State mandated cap on taxable value increases. While the primary purpose of the taxable value cap is to limit property tax growth for all taxpayers, the result has been to favor longtime property owners over new owners. By rewarding owners who do not move, recent entrants to the market are subject to a greater effective tax rate (Skidmore, et al, 2011). Not only does this create differentials in effective tax rates, it also distorts the local housing market by discouraging in-migration and mobility (Skidmore and Tosun, 2011).

Another source of tax rate differential imposed by the State is the Principle Resident Exemption that is available to owner occupants. Homeowners are exempted from the local school operating millage. The savings to homeowners are substantial, but the burden falls to all other local property owners. While the homestead exemption does not directly affect City tax revenues, it contributes substantially to the overall tax rate differentials across classes of property

The collapse of Detroit's housing market has also contributed to overall tax base decline. Tens of thousands of residential properties have reverted to the city because of tax delinquency. While the City theoretically gains ownership of an asset, it is an asset that requires maintenance and does not generate tax revenue. Until these properties are returned to private ownership, the burden of funding public services falls to the remaining taxable property owners on all other property.

In addition, the city is home to numerous private, non-profit, tax exempt properties, including churches, private schools, hospitals and cemeteries. The cost of providing local government services to these entities must be borne by the city's other property owners. As is often the case, there is a higher than average concentration of such facilities in struggling cities such as Detroit. Although these properties provide important benefits, tax paying residents may also pay higher taxes because of them.

The City has also used its discretionary authority to grant property tax exemptions to certain property owners. For example, property in designated Renaissance Zone areas is exempt from all property taxes except millage to repay bonded indebtedness. Qualifying industrial and residential properties may be granted partial (in some instances, up to 70 percent) tax abatements, while the value of improvements to certain obsolete properties may be exempted entirely. Several thousand Detroit properties benefit from these programs. Even though properties in Tax Increment Financing districts are taxed at the

full rate, tax revenue growth in these districts is diverted from the General Fund to TIF district activities. Each of these programs effectively shifts the tax burden to other properties.

A second major observation is that the negative effects of statutory requirements, policy choices and the recent economic decline, have combined to create a tax environment that is inadequate to meet the city's needs. Property taxes account for just over seven percent of all city revenues and about 16 percent of General Fund revenues. Despite a high tax rate (28.9157 mills for debt service and operations), the numerous exemptions and preferential treatment significantly limit property tax revenues. Further, falling property values and tax foreclosures mean that property tax collections are falling more rapidly than most other major sources of General Fund revenue.

With limited ability to increase revenue from other sources, it seems appropriate to consider substantial changes to the Detroit property tax environment. Along with expanding the tax base, any modifications should improve equity, transparency, and stability. As noted previously, alternate definitions of the property tax base, such as land area or land value, can produce substantial shifts in the tax burdens for residential, commercial and industrial properties. Increasing tax rates would generate more revenue (at least in the short-run), with different implications for each class of property. However, the tax rate paid by Detroit property owners is already roughly twice the regional average. Thus, broadening the tax base seems like a more prudent option for generating revenue. Broadening the base would reduce effective tax rates for many property owners while still generating new revenues. Importantly, special assessment laws provide an avenue by which city authorities could potentially broaden the base, using one or more of several option for defining that base, including lineal street frontage, land area, land value, or state equalized value.

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Appendix Variable Names and Definitions	
Variable Name	**Definition**
SEV	State equalized value, equal to 50 percent of the assessed market value of the property.
Taxable Value	Value from which the property taxes are calculated. Equal to SEV during the year a property is sold.
GC Erate	The general city effective tax rate that property owners pay, measured by the general city tax payment divided by the state equalized value of the property.
Erate	The effective tax rate that property owners pay, measured by the total tax payment divided by the state equalized value of the property.
Pre-1994	Indicator variable to distinguish whether a property was sold prior to 1995 (1=if the property was sold pre-1995, and 0 otherwise).
1995	Indicator variable to distinguish whether a property was sold in 1995 (1=if the property was sold in 1995, and 0 otherwise).
1996	Indicator var able to distinguish whether a property was sold in 1996 (1=if the property was sold in 1996, and 0 otherwise).
1997	Indicator variable to distinguish whether a property was sold in 1997 (1=if the property was sold in 1997, and 0 otherwise).
1998	Indicator variable to distinguish whether a property was sold in 1998 (1=if the property was sold in 1998, and 0 otherwise).
1999	Indicator variable to distinguish whether a property was sold in 1999 (1=if the property was sold in 1999, and 0 otherwise).
2000	Indicator variable to distinguish whether a property was sold in 2000 (1=if the property was sold in 2000, and 0 otherwise).
2001	Indicator variable to distinguish whether a property was sold in 2001 (1=if the property was sold in 2001, and 0 otherwise).
2002	Indicator variable to distinguish whether a property was sold in 2002 (1=if the property was sold in 2002, and 0 otherwise).
2003	Indicator variable to distinguish whether a property was sold in 2003 (1=if the property was sold in 2003, and 0 otherwise).
2004	Indicator variable to distinguish whether a property was sold in 2004 (1=if the property was sold in 2004, and 0 otherwise).
2005	Indicator variable to distinguish whether a property was sold in 2005 (1=if the property was sold in 2005, and 0 otherwise).
2006	Indicator variable to distinguish whether a property was sold in 2006 (1=if the property was sold in 2006, and 0 otherwise).
2007	Indicator variable to distinguish whether a property was sold in 2007 (1=if the property was sold in 2007, and 0 otherwise).
2008	Indicator variable to distinguish whether a property was sold in 2008 (1=if the property was sold in 2008, and 0 otherwise).
2009	Indicator variable to distinguish whether a property was sold in 2009 (1=if the property was sold in 2009, and 0 otherwise).
2010	Indicator variable to distinguish whether a property was sold in 2010 (1=if the property was sold in 2010, and 0 otherwise).
RZ	Indicator variable to distinguish whether a property is within the borders of a Renaissance Zone (1=if the property is within a Renaissance Zone, and 0 otherwise). Most state and local taxes for businesses and individuals are abated in Renaissance Zones, including local real property taxes and state education taxes. For more information, see: http://ref.michigan.org/medc/services/sitedevelopment/renzone/index.asp.
InNEZ	Indicator variable to distinguish whether a property is within a Neighborhood Enterprise Zone (1=if the property is within a Neighborhood Enterprise Zone, and 0 otherwise). Neighborhood Enterprise Zones provide tax abatements for homeowners for up to 12 years. For more information, see: http://www.michigan.gov/taxes/0,1607,7-238-43535_53197-

	213184--,00.html.
NEZH	Indicator variable representing approved NEZ homestead properties (1=if the property is approved, and 0 otherwise).
NEZnewrehab	Indicator variable representing approved NEZ new and rehabilitated properties (1=if the property is approved, and 0 otherwise).
PRE100	Indicator variable representing properties fully benefitting from the Principal Residence Exemption (PRE) (1=if the property benefits, and 0 otherwise). The PRE exempts resident taxpayers from the tax levied by local school districts for school operating purposes (up to 18 mills). For more information, see: http://www.michigan.gov/taxes/0,1607,7-238-43535_43539---,00.html.
PRE50	Indicator variable representing properties partially benefitting from the Principal Residence Exemption (1=if the property partially benefits, and 0 otherwise).
DDA	Indicator variable representing properties located in Detroit's Downtown Development Authority (1=if the property is part of the DDA, and 0 otherwise). The DDA supports growth to businesses within Detroit's central business district with loans, grants, improvements, and other programs designed to increase economic activity. To fund basic operations of the DDA, property owners within the district pay an extra 1 mill. For more information, see: http://www.degc.org/board-administration.aspx/city-of-detroit-downtown-development-authority.
SmartZone	Indicator variable representing properties within designated SmartZones (1=if the property is within a SmartZone, and 0 otherwise). For more information, see: http://www.michiganadvantage.org/SmartZones-and-Business-Incubators/
Brownfield	Indicator variable representing properties that are designated as brownfield sites (1=if the property is a brownfield, and 0 otherwise).
Age	Age of the structure on a property.
SqFt	Size of the structure on improved properties (square feet).
LotSize	Size of the property (square feet).
Living	Indicator variable representing commercial properties with residents (1=if the commercial property is considered 'living,' and 0 otherwise). Commercial properties given this designation include apartments and condominiums.
Auto	Indicator variable representing automotive commercial properties (1=if the commercial property is automotive related, and 0 otherwise). Commercial properties given this designation include: gas stations, auto sales, service and repair stations, car washes, and parking garages.
Office	Indicator variable representing commercial properties designated as office space (1=if the commercial property is designated as office space, and 0 otherwise).
Restaurant	Indicator variable representing commercial properties designated as either a restaurant or bar (1=if the commercial property is a restaurant or bar, and 0 otherwise).
Amenities	Indicator variable representing commercial properties considered amenities (1=if the commercial property is an amenity, and 0 otherwise). Commercial properties considered amenities include: hotels, bowling alleys, movie theatres, gyms, dance halls, etc.
Unknown	Indicator variable representing commercial properties that could not be given any specific designation (1=if the commercial property is unknown, and 0 otherwise).
Residential	Indicator variable representing unimproved, residential properties (1=if the unimproved property is zoned residential, and 0 otherwise).
Commercial	Indicator variable representing unimproved, commercial properties (1=if the unimproved property is zoned commercial, and 0 otherwise).
Industrial	Indicator variable representing unimproved, industrial properties (1=if the unimproved property is zoned industrial, and 0 otherwise).