



Split-Rate Property Taxation in Detroit

FINDINGS AND RECOMMENDATIONS

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Summary for Policymakers

Introduction and Context

Detroit's local tax structure emerges from a decades-long history of industrial restructuring, migration patterns, and a host of other factors that have depopulated and reshaped the city, including migration to suburbs due to subsidized highway development, white flight and racial unrest, and employment dispersion. The consequence of these trends is a persistent, self-reinforcing dilemma: properties of all types are taxed at rates that exceed most other large United States cities but have the lowest market values of any large city. Over time, chronically low taxable values cause local governments to pass higher tax burdens onto each dollar of property value, hastening capital flight and causing further reductions in the tax base. Without a good option to stabilize revenue, cities in distress will cannibalize remaining property value.

Collecting more taxes on fewer properties has created significant challenges for residents and investors in Detroit. High tax rates on residential properties correspond to higher rates of tax delinquency, home abandonment, and foreclosures. Meanwhile, almost all new construction requires fixed-term or permanent exemption from the tax structure. Detroit property owners need incentives that reward development or redevelopment; homeowners and employers need relief from high effective property tax burdens; and local governments need to expand their tax base. A solution that converges on all these needs is a split-rate property tax system.

What a Split-Rate Tax Does

A split-rate property tax applies differential tax rates to the taxable value of properties, with a higher rate applied to land value and a lower rate applied to structures and improvements. In this way, the property tax system provides increased efficiency; that is, less distortion in development timing and capital improvement decisions by property owners. Adoption of a split-rate property tax system discourages the holding of vacant and underutilized property and accelerates development and redevelopment of property.

Past research affirms that taxing land promotes economic growth. Anderson (1999) has shown that the adoption of a split-rate tax system will speed the timing of development and increase the capital intensity of development in cases of decentralizing or declining cities such as Detroit. Oates and Schwab (1997) analyzed Pittsburgh's adoption of a split-rate tax system and found that "...the reliance on increased land taxation played an important supporting role by enabling the city to avoid rate increases in other taxes that could have impeded development." In addition to positive effects on investment, land taxes are widely considered an optimal source of local public revenue because they match government spending to the value it creates (Arnott and Stiglitz 1979; Glaeser 1996; Mirrlees et al. 2011). Because land cannot be withdrawn, taxing it is also more fiscally productive.

Beyond the known effects of a split-rate tax on growth, this report also evaluates whether it would improve effective tax rate equity, both between similar properties and across properties of different value. Analysis of immediate and long-term effects on low- and middle-income homeowners is included.

Findings and Forecast

Three technical papers produced for this study cover subjects of central importance to the City of Detroit: tax delinquency, business formation, and property value effects.

First, analysis of Detroit's recent reassessment shows that tax foreclosures are reduced significantly when effective tax rates on residential properties are lowered. Furthermore, current-year delinquency rates are reduced, and homeownership rates increase.

Second, an analysis of Pennsylvania municipalities that adopted split-rate tax systems shows a sizable, statistically meaningful, and immediate increase in the number of business establishments within those municipalities.

Finally, the experience of Pennsylvania municipalities suggests that there is a statistically significant, positive effect on real property market values after initial implementation, with modest declines in land values offset by increases in the value of structures.

Tax Delinquency, Foreclosure, and Homeownership

- Tax reductions on residential property in Detroit would generate decreases in tax delinquency and foreclosure and increase homeownership rates. If Detroit implemented a 5:1 split-rate tax, the reductions alone would reduce the foreclosure rate by 8.6 percent. Homeownership rates would modestly increase, while current-year tax delinquency would modestly decrease.
- The effects would be greatest in the year following the change, with lesser effects lasting at least three years.
- These estimates support the notion that, if a split-rate tax were to be implemented in Detroit, it would improve tax compliance and increase homeownership among residential properties.

Business Formation

- Based on the experience of Pennsylvania municipalities, there is a sizable and statistically meaningful immediate increase in the number of new businesses when municipalities switch to a split-rate tax system.
 - The increase in new businesses is most apparent in the wholesale, retail, construction, manufacturing, and transportation industries.
 - Losses are observed in service industries, and to a lesser extent in the finance, insurance, and real estate industries.
- The initial increase in the number of new businesses is followed by a slow but significant linear decline of approximately 1.5 percent per year in the five years after implementation.
- After the initial implementation of a rate split, marginal changes to the split-rate ratio do not seem to coincide with changes in the number of business establishments in a municipality.

Property Values

- Switching from conventional property taxation to split-rate taxation has a significant, positive effect on aggregate market values. The average effect of changing split-rate parameters during the sample period is much smaller, and its size is sensitive to empirical specifications.
- Effects differ across property types:
 - Switching to split-rate taxation has significant, positive effects on residential and commercial property values.
 - Compared to residential and industrial property classes, commercial property values benefit most from split-rate taxation, suggesting opportunities to revive commercial districts.

- The effect of split-rate taxation on land values is negative, but small compared to growth in total property value.
 - At most, land values fall by about 2 percent under a 2:1 tax ratio, or 8 percent under a 5:1 tax ratio.
 - Using appropriate valuation methods is crucial for the implementation of a split-rate tax system. Accurate valuations are also important when examining the effects of implementation.

Detroit Forecast

Revenues

- The baseline forecast, using a 5:1 tax rate ratio phased in over five years, estimates a 16.3 percent growth in the total value of taxable property from 2019 to 2024, or 3.1 percent annualized growth.
- The City general levy increases by 10.9 percent over the forecast period (2.1 percent annualized) and the City debt levy increases by 8.4 percent (1.7 percent annualized). These estimates are conservative; additions to the levy from taxable value (TV), uncapping, or new construction are excluded from the model.
- All other tax levies see comparable growth, except the 1-mill Downtown Development Authority (DDA) administration levy, which grows by only 4.4 percent.
- Potential levy growth is greatest for the Detroit Public Schools (DPS) operating levy because its tax base excludes principal residences, a property class with substantial tax reductions.
- DDA tax capture revenues are forecast to grow by 46.4 percent.

Effects on Homeowners

- Improved residential properties—primarily owner-occupied and rental housing—receive an average reduction of 18.3 percent in property tax bills by the end of the phase-in period.
 - Owner-occupied residences alone see a 17.5 percent reduction, an average savings of \$160 per year. This compares favorably to the 17.9 percent exemption received by Neighborhood Enterprise Zone Homestead (NEZ Homestead) applicants. Properties not receiving tax abatements see a higher average reduction of 19.1 percent.
- Almost all neighborhoods see tax savings, with lower-value housing seeing moderately greater savings. Increases in housing values are concentrated in Midtown (12.0 percent) and Downtown (14.7 percent). These areas are dominated by residences with NEZ Rehab and NEZ New tax abatements, which relieve taxes on improvements and thus reduce tax savings from a lesser improvements tax. Tax-abated residences see tax savings compared to their post-abatement tax burden.

Recommendations

- Implement a split-rate property tax system, with a higher tax rate applied to land and a lower rate applied to structures and improvements.
- When choosing the split-rate ratio, consider taxing land at least five times the rate of structures and improvements (i.e., a 5:1 ratio). The land-to-structure ratio could be phased in over time.
- To ensure optimal implementation of a split-rate tax system, taxable land values must be measured accurately and reflect market values.
- For maximum effect, include all units of local government in the split-rate system implementation, to the extent allowable under Michigan law.

- Reevaluate commercial tax abatement underwriting.
- Reconsider the role of the NEZ Homestead program under a split-rate tax system.
- Inform lenders about the implications of changes to the tax system to increase visibility and accelerate market response.
- Use available land price indices or cost-approach methods to validate local sales data.
- Advance policies to reduce accrued delinquent taxes to speed the realization of benefits from a split-rate tax structure.

Detroit's Property Tax Dilemma

The Long View of Detroit's Property Taxes

The current property tax dilemma in Detroit emerges from a long-term, secular trend produced by multiple external forces. While macroeconomic changes have made it harder for Detroit to attract and retain capital investment and residents, the current tax structure may be an internal factor leading to property value decline. From this perspective, Detroit's local tax structure has produced a persistent, self-reinforcing dilemma.

First, Detroit's property tax rates significantly exceed other large U.S. cities. Among the largest cities in each state, Detroit has the highest tax rates for commercial buildings and apartments, and the fourth-highest for single-family homes (Lincoln Institute of Land Policy and Minnesota Center for Fiscal Excellence 2020).

Second, among these cities, Detroit has the lowest market values for properties of all types. Chronically declining taxable values cause local governments to pass higher tax burdens onto each dollar of property value. For 60 years, the City has increased property tax rates without raising more tax revenue. In January 1970, confronting the first of many structural gaps between revenue and expenditures, Deputy City Controller Alfred Pelham wrote to new Mayor Roman Gribbs to describe the problem that every subsequent mayor would face:

On one hand can be noted the insistent demand for more and better public services... On the other hand, can be found the erosion of the property tax base; the flight to the suburbs; the resistance to higher taxes; and the overriding fact that tax yields from all presently available revenue sources have fallen short of keeping pace with the increased problem of providing essential public services. (Pelham 1970)

The forces eroding Detroit's tax base were not driven by Detroit's local governments. Nonetheless, tax-base flight and higher service demands have had a singular effect on the City of Detroit's fiscal strategy. Between 1959 and 2019, City millages grew by 50 percent. With even greater revenue constraints for the school district, total *ad valorem* millages almost doubled. But, adjusting for inflation, a property tax base that produced \$1,072 million in City revenue in 1959 produced just \$119 million in 2019 in real-dollar terms.

Detroit's financial officers have shown ingenuity in offsetting this contraction. Since 1968, the City has introduced three new local revenue streams, pursued a significant expansion of state aid, and helped design many of the federal government's direct fiscal transfers to cities. In 1995, operating revenues for Detroit Public Schools were restructured to increase state contributions while reducing the tax burden on Detroit homeowners. While protecting core services, these diversification measures have been insufficient to overcome the losses in taxable value of property. After adjusting for inflation, Detroit's total own-source revenue in 2019 was just 64.5 percent of 1959 property tax receipts alone. While City

management after the City's 2014 bankruptcy has improved services and reduced spending on debt, the low fiscal productivity of Detroit property remains largely unchanged.

For certain high-tax jurisdictions, tax increases offer a perverse choice: increasing tax rates could diminish total revenue in the long run. In a normal situation, an increased tax rate raises revenue. Beyond a certain tax rate threshold, however, additional tax burden may reduce receipts because it diminishes the tax base. This threshold depends on tax-base composition and regional tax competition, but cities with effective tax rates lower than Detroit's—like Houston, Philadelphia, and New York—show evidence of exceeding their maximum collectible property tax revenue (Haughwout et al. 2004). Once tax burden exceeds this threshold, additional taxes can drive capital out of the city and result in a smaller tax base. While this process is most visible for “easily avoided” taxes like local income taxes, property development is also responsive to an increasing tax burden.

Consider this problem from the perspective of a property taxpayer. If a local jurisdiction can offer a better tax and service value than its neighbor—comparable services at lower tax rates—a prospective buyer will prefer it, other things being equal. Though homeowners, landlords, and investors cannot readily move their existing real estate, they can decline to make new investments and avoid undertaking renovations. Individual, tax-efficient decisions will cumulatively manifest as long-term decline. When taxes on property investments exceed the national average, mobile capital will exit, other factors being equal (Mieszkowski and Zodrow 1989).

This is not to say that locally set property taxes are the sole—or even primary—determinant of long-term decline in Detroit's property values. A vast array of out-of-city policy choices—from interstate highway construction to racially discriminatory mortgage lending—have challenged Detroit's ability to sustain demand for property. They have, in effect, made Detroit property more sensitive to tax overburden. It is plausible to say that Detroit's current tax structure may be an *internal accelerant* of property value decline, even as other causes lay beyond the City's control.

This report considers whether an alternative tax structure is possible, one that would help the City assert control of its fiscal future. In a moment that mirrors all that Deputy City Controller Alfred Pelham faced in January 1970—one of heightened fiscal fragility and acute service needs for Detroit residents—this report takes up the charge given by Detroit CFO Dave Massaron's July 2020 letter to the Detroit City Council:

[S]tructural balance for the City will require policies that drive opportunity to our residents to reduce inequality, attract new residents, and promote new commercial, industrial, and residential investment. (Massaron 2020)

This report considers whether a split-rate tax would provide more structural balance to Detroit's tax system. Before considering how a split-rate tax system would work, the dilemmas of Detroit's current tax structure are discussed. In a high-property tax environment, there are four foreground issues that may cause owners to enter tax delinquency.

Asset Values, Delinquency, and Abandonment

The first issue, driving much of Detroit's present fiscal recovery plan, is a lack of willingness to pay. Property owners may be reluctant to pay taxes when services decline. For these owners, service improvements may also improve tax compliance. While improved services help explain Detroit's improved collection rates since 2014, the number of taxpayers who are merely reluctant to pay may be limited. Owners who withhold taxes electively are engaged in a high-stakes standoff, since nonpayment creates the danger of forfeiture.

The second issue is cash flow. The property tax applies to a stock of wealth in the form of real estate, rather than a flow of current income. Because property ownership does not create realized income, property taxes are assessed without respect to current ability to pay (Youngman 2016). For Detroit households, annual tax payments can capture as much as 15 percent of current income.¹ Because tax payments can be deferred, whereas other expenses cannot, taxpayers may enter delinquency simply because they cannot bear the current expense. Once owners have entered multiyear delinquency, high interest rates can dominate total tax liability and tax payments can become a debt trap for cash-poor households.

Detroit has adopted programs that mitigate cash-flow risks to low-income households. Michigan's poverty tax exemption (PTE) allows cities to provide full or partial exemption of current-year property taxes for low-income owner occupants. Since 2017, the City and local partners have conducted outreach to enroll homeowners in the PTE through the Homeowners Property Tax Assistance Program (HPTAP). In three years, HPTAP has increased yearly PTE applications by 70 percent, enrolling 22 percent of estimated eligible households (Eisenberg et al. 2018). In 2019, Mayor Duggan announced an enhanced benefit for PTE-eligible homeowners, the Pay-As-You-Stay program, which has relieved an estimated \$7 million in delinquent tax liability in its first year of implementation (Alsup 2020). Alongside a citywide reassessment, these programs have incontestably contributed to Detroit's reduction in owner-occupied foreclosures since 2014.

The third issue is the depressive effect of rising tax burden on property value—a relationship known as *tax capitalization*. The value of a real estate asset is the discounted present value of its future net returns. Rising tax costs reduce a home's value because they reduce the annual net returns. A buyer's valuation is net of future tax liabilities, which means higher taxes cause an immediate reduction in property value (Caplan 2001; Yinger et al. 1988). If the tax burden consumes too large a share of a property's rental income or mortgageable value, no sale is possible. Extreme negative tax capitalization makes it financially prudent for homeowners to defer tax payments and to consider walk-away options like tax forfeiture.

This last issue drives pervasive community challenges surrounding foreclosure and abandonment. These challenges are most visible in the rental market, where calculations of net property income are made frequently. When expenses rise above rental income, landlords make a series of economizing choices: they may first neglect maintenance, then defer loan payments, and finally shirk tax bills and liens (Sternlieb et al. 1974). Highly taxed homeowners—who are often unable to sell and may be unable to afford tax burdens—make similar, strategic choices (Cornelissen 2019). Owners may eventually abandon properties they cannot lease or sell. Tax delinquency is one way to stave off these decisions until abandonment becomes necessary. For this reason, highly tax-burdened properties are frequently the first to be abandoned (Arsen 1992). Tax liability is by no means the sole contributing factor to abandonment decisions, but discounted future tax burden is the greatest ongoing cost of not walking away. As burden accrues—whether through high tax rates, high assessments, or interest and penalties—these dynamics can affect whole neighborhoods and contribute to cyclical problems of blight. Throughout the United States, tax-induced abandonment has had its most damaging effects in low-income communities and neighborhoods of color, where disproportionate assessment ratios can lead to widespread abandonment and predatory buying (Kahrl 2018).

This is not to say that all owners suffer in a tax regime that induces high rates of foreclosure and abandonment. Some landlords find ways to profit from abandonment, typically by taking advantage of price distortions in the market and avoiding tax payments. A recent survey of properties sold in the

¹ 32 percent of Detroit households qualify for an income-based poverty exemption. In 2020, four-person households with an income below \$26,780 are eligible. In 2016, 12.5 percent of eligible households applied.

Wayne County tax foreclosure auction revealed that many landlords do not resume tax payment after sale (Seymour and Akers 2019). Bulk auction buyers collect rents while evading tax payments, allowing them to enjoy rental profits before dumping properties back into the auction process. Recent studies in other cities find above-normal profit margins for low-end property owners who seize on price distortions, defer investments in property, and shirk tax payments (Desmond and Wilmers 2019). Because short-term returns dominate for low-value properties, opportunistic *milkers* may outbid others who aspire to preserve and rehabilitate auction properties. When properties are treated this way, perverse incentives leave local governments without new revenue and leave neighborhoods with more blighted properties.

Commercial Real Estate Development

Rising taxes on buildings diminish demand and raise the costs of new real estate supply. Developers build when expected returns exceed the costs of building and alternative uses of capital. In a market with declining values or high vacancy, developers are challenged to find returns that exceed basic input costs, since a supply glut suppresses rental prices (Glaeser and Gyourko 2005). Higher property taxes further smother returns by raising long-term operating costs. Even high-demand projects may be impossible to finance if lenders are concerned that taxes will capture too much ongoing income.

For this reason, Detroit's real estate developments are only successful when their proponents seek fixed-term tax abatements or permanent tax exemptions like payment-in-lieu-of-tax agreements (PILOTs). Each option has had significant, if geographically limited, success in Detroit. For example, the development of middle-income housing in Elmwood Park in the 1970s was enabled by permanently removing many new housing projects from the *ad valorem* tax roll. Low-income housing is financed by charging an in-lieu-of-tax annual fee as a percentage of shelter rents. In the past decade, tax abatements and tax increment financing (TIF) have helped revive development of Midtown and Downtown. Both market-rate and affordable housing projects illustrate the prospect of unlocking development finance with favorable tax treatment.

However, development potential is also affected by favorable acquisition terms. When land values are rising and speculation is cheap, developers struggle to find development sites. Between the taxable cap limitations of Proposal A and low asset values, owners of vacant and derelict properties have little motivation to sell or self-develop property. Facing low carrying costs, an owner has every incentive to time the sale to the market peak, when maximum profits can be realized. In a low-value market with moderate land price appreciation, there are almost unlimited options to profit from landholding and few penalties for delayed timing. In such an environment, incumbent landowners reap the greatest rewards from economic recovery and rising land values. Developers with large capital endowments and patience can succeed in acquiring sites, but small firms will struggle to find feasible projects.

While tax abatements may partially fix financing challenges, they hurt developers in their pursuit of acquisitions. A sophisticated seller who is aware of the tax-advantaged treatment of new development can capture the future value of the developer's tax abatement in the sale price (Landers 2006). When sellers act in this way, the value given by the abatement may be spent on higher acquisition prices rather than better construction or better amenities. Similar problems are present among home sales in Detroit's Neighborhood Enterprise Zone, where buyers routinely pay a premium that exceeds the total value of the tax abatement (Hodge and Komarek 2016). When a tax benefit is captured as an owner's windfall, rather than a builder's incentive, it cannot change development potential or stimulate investment. In these circumstances, tax abatements remain necessary but functionless.

Detroit's developers resolve these conflicting incentives by pairing tax abatements with public land acquisition, since public land custodians want sites returned to productive use and will discount the tax

abatement value. While this paired strategy can jumpstart development, it has limits. The finite pool of marketable public land, and the finite pool of investors who can dependably buy public land, are reasons to suspect that the strategy cannot be sustained. Continuing real estate development must rest on a strategy that stimulates private sales, discourages speculative holding, and rewards capital investment over other sources of return.

Business Formation

Firms see an above-average property tax as a capital tax and must weigh this tax penalty against local advantages. Competitive, capital-intensive sectors of the local economy—like manufacturing and warehousing—are especially sensitive to these tradeoffs because lower capital costs are decisive for firm success. Although firms accept higher taxes where they can gain irreproducible amenities—like financial firm density in Manhattan or freight access in Chicago—shared regional advantages like a skilled labor pool and value-added supply chain do not give a single city a special advantage over nearby localities. For this reason, firms in Metro Detroit may be more sensitive to local differences in tax costs than firms in New York.

In Detroit, rising local tax burdens have been a central concern of business leaders, who have repeatedly pointed to high taxes as a threat to municipal growth. In 1957, alarmed at the departure of manufacturing inventories from the city, the Detroit Board of Commerce asked future U.S. Budget Director Joe Dodge to evaluate city finances. Dodge found that the City's fractional assessments had increased the assessment ratio on personal property and nonresidential buildings, such that industry paid a greater portion of the rising tax levy. Observing harm to the "competitive position of Detroit for industrial location," Dodge recommended that the City equalize tax burden on buildings and personal property (Dodge 1957). The City modestly lowered assessment ratios on personal property but continued to tax personal property at higher effective rates than other property types, hastening tax base flight. In 1960, the Chrysler Corporation announced that Detroit's higher personal property tax was the decisive factor in moving a 470-employee division from the Conner Avenue Plant to Indiana. Chrysler executives noted that Indianapolis, Cleveland, and Pittsburgh would impose only half the same costs on plant property (Chrysler Corporation 1960). Over the next 20 years, a rash of exiting firms contributed to an 80 percent loss of personal property assessed value.

By 1972, a survey of manufacturers reported that business taxes were second only to crime as a disadvantage of doing business in Detroit (Mandell 1975). Recognizing manufacturer frustrations, Mayor Coleman Young pursued legislation that would minimize the exposure of new industry investments to Detroit's higher tax rates. To expand Chrysler's Mack Avenue plant and retain 5,500 jobs, Young lobbied for a statewide tax abatement on new industrial property, known as the Industrial Facilities Exemption (IFE). Since 1974, 417 IFE certificates have been issued in Detroit, sometimes repeatedly to the same facility as a condition of expansion or retention.

Retrospective analysis shows that the IFE program gave modest competitive advantages to Detroit in the first years after adoption. However, once in-state and out-of-state jurisdictions began to use the same incentives to compete for jobs, tax abatements lost their competitive advantage (Anderson and Wassmer 1995, 2000). The IFE program served to prevent increased job losses within Detroit's high-tax environment, but also gave reciprocal benefits to jurisdictions seeking to poach Detroit's jobs. Paradigmatically, suburban governments use IFE abatements to attract new investment, while urban jurisdictions use them to prevent job loss, creating a fiscal race-to-the-bottom (Reese and Sands 2006). A program initially designed to aid Detroit's tax handicap now serves as a standard industry benefit with no unique advantage for Detroit.

Not all firms choose to exit a high tax environment. Nonprofit, public, and other tax-exempt institutions gain significant competitive advantages. Because they play by different rules, taxes do not threaten operating revenue. They hold special advantages in a high-tax real estate acquisition market; not paying property taxes allows them to outbid other buyers and lets them accumulate large land banks (McEachern 1981). While this special treatment protects employment in tax-exempt industries like education, the dominance of tax-exempt institutions can also accelerate tax roll contraction.

Population Change

Differential trends in Detroit's population change have led to dissimilar experiences in the city's property market. Detroit's population peaked in 1958, then fell steadily for four decades as white residents left the city. However, Black, Asian, and nonwhite Hispanic populations continued to grow until 2000. During Michigan's *single-state recession* in the 2000s, the city saw losses across all population subgroups including a significant loss of Black middle-class residents (Detroit Future City 2019). After a record 2.5 percent annual decline in the first decade of the millennium, the population has partially stabilized, with annual declines of only 0.7 percent since the City emerged from bankruptcy in 2014. Because residential property values declined while homeowners of color moved in, they saw larger collective losses of housing wealth than outgoing white homeowners.

Detroit's population loss has numerous, well-documented causes, some of which *pulled* residents to other cities, others which *pushed* them to leave Detroit. One factor that pulled residents away was suburban development, facilitated by inexpensive automobiles and highway construction, that reduced the costs of living farther from jobs. In addition, mortgage underwriting favored greenfield sites. Influences that pushed population out of Detroit were race riots, white residents' fear of neighborhood integration, and loss of local jobs (Darden et al. 1990; Sugrue 2014). Under these conditions, Detroit's population density gradient flattened, and its land value gradient subsequently collapsed (Anderson 1985; Hodge, Sands, and Skidmore 2017). Despite low land values, in-city housing development remains expensive: property taxes, site remediation, and other cost premiums impose penalties on investing in Detroit. With cheap input costs at the urban periphery, new units are largely built at distant greenfield sites. Galster (2012) calls this process a "housing disassembly line." With low levels of regional population growth, much of the metropolitan area's new housing development has simply replaced units inside Detroit with units outside Detroit. Higher taxes on Detroit's building stock have hastened this migration of homes.

Classically, local governments have two direct levers to discourage population flight. First, they can improve service efficiency. Blight removal, infrastructure repairs, school quality improvements, and crime reduction all have a positive influence on demand for housing; recent work has demonstrated that this holds true in Detroit. Second, local governments can reduce tax rates on highly tax-burdened residents. In pursuit of sustaining value and retaining owners, tax reductions are equivalent to raising services, since the tax-to-service ratio is improved whether you change the numerator or denominator. The remainder of this report asks whether hard-fought improvements in service delivery can be matched by a better tax bargain for residents and investors.

Why Would A Split-Rate Tax Work?

This study asks whether a split-rate tax would meaningfully improve outcomes under Detroit's tax structure. Some explanation of how a split-rate tax differs in structure and effect from a traditional property tax is required to understand this.

A split-rate tax is a partial implementation of a land value tax. It increases the mills assigned to land and decreases the mills assigned to improvements. To remain revenue neutral, the tax burden on individual

properties would change as a function of their land-to-improvements ratio, while overall revenue would remain fixed. The following is an explanation of the economic rationale for taxing land values and using land-based revenue to untax other property.

Land as an Optimal Tax Base

In most U.S. jurisdictions, the local property tax is applied to three major property assets: land, structures, and movable personal property. Though often taxed at the same rate, each property asset responds differently to the tax imposed. The responsiveness of property assets to tax change is its supply *elasticity*. If a local jurisdiction taxes personal property heavily, businesses will swiftly move equipment and inventories, as Chrysler did in 1960. Though property owners cannot readily move structures, increasing local taxes may cause them to delay repairs or relocate new development to lower-tax areas, resulting in a gradual pattern of decline (Caplan 2001; Sternlieb et al. 1974). In deferring maintenance, an owner is effectively withdrawing property assets from the city via depreciation, only at a slower rate than other more mobile assets.

Not only do taxes on moveable personal property and structures penalize new investment, but they also distort the types of investment being made in cities by suppressing returns. When evaluating whether surface parking or a six-story apartment is a better use of a downtown lot, a high tax penalty on structures will give preference to the surface lot.

Unlike taxes on other property, a tax on land does not penalize new investment or distort investment decisions. Regardless of the level of taxation, the supply of land cannot be changed, and the highest use of the site is not altered. This neutrality is uncommon. Under a single-rate tax, the tax on an apartment building will be higher than the tax on a surface lot on the same site, effectively encouraging land to be used in surface lots and discouraging apartment construction. If both uses were taxed only on their land value, there would be no tax penalty to discourage apartment construction or other improvements on a vacant lot. The inelastic supply of land means that land taxes: (1) do not discourage more capital-intensive development; (2) do not penalize renovations on existing investments; and (3) do not diminish investor interest. For local governments, this presents a huge potential advantage for tax productivity. Public finance scholars have long identified inelastic tax bases such as land as optimal sources of revenue because they can generate a given amount of revenue while minimizing distortions that are caused by taxation (Ramsey 1927).

Land is not only a less depletable source of tax revenue; higher taxes on land can also stimulate investment by taxing speculative profits from land rent. Capozza and Helsley (1989) describe this as the expected value of future rent increases, one of the four fundamental components of urban land value. When the tax burden on land is low—either because of depressed values or low tax rates—its carrying costs are low. This creates an option to sell at any point in the future with little current penalty. An investor may amass a large portfolio of vacant property, hold at a low cost, and sell at the peak of the land market cycle. Unlike most market actors, landholders usually benefit from a *last mover* advantage: the longer they wait to sell, the greater the probable payoff. A land value tax reduces the attractiveness of this option, making it harder to profit by holding out (Anderson 1986; Bentick 1979; Brueckner 1986). For parties focused on productive investments, there is a symmetric benefit: higher land taxes mean lower land prices, lowering the barriers to acquiring land.

Finally, taxing land is one of several methods to reinvest public value from economic growth. When publicly funded amenities, regulatory changes, or private improvements arrive in a neighborhood, they raise land values across many properties. These spillovers are the lifeblood of economic development, but they have no ongoing benefit if they are captured only as private property appreciation. Without a tax on land value, property owners gain windfall profits but have less reason to create reciprocal public

value. For instance, recent transit improvements and upzoning in Chicago's Loop substantially increased housing values but not housing construction (Freemark 2019). While higher land values yielded incremental new tax revenue, these policies failed to create their intended benefit of more housing and increased access. Higher taxes on land would stimulate property owners to invest instead of hold, while remitting a share of new private value to public use. These returns provide governments with both the incentive and wherewithal to continue improving local amenities (Glaeser 1996). For many local governments around the world—from Singapore to São Paulo to Vancouver—land value reclamation is a self-sustaining source of local public revenue that supports long-term growth.

Taxing Land Value to Untax Other Property

If Detroit were to raise the tax on land without offsetting the increase elsewhere, it would still gain from the effects described above. Such a strategy has precedent in other U.S. cities. In 1979, the Pittsburgh City Council approved a three-fold increase in taxes on land, phased in over five years. The Council's decision provided a stimulus for commercial building by altering the best use of available sites. In the decade after the tax system conversion, Pittsburgh experienced a 70 percent annual increase in the real value of building permits, unlike the declines observed in other Pennsylvania municipalities at that time (Oates and Schwab 1997). Furthermore, the increased building activity was confined to the city, with the average annual value of building permits declining in the suburbs. The primary focus of the increased building activity in Pittsburgh was in the nonresidential sector (Oates and Schwab 1997). It should be noted, with caution, that Pittsburgh's implementation coincided with strong growth in demand for office space. A land value tax can remove barriers to capital absorption and reduce reliance on more distorting taxes, but it cannot manufacture demand for space.

Because it was introduced as a revenue-raising policy, the land tax did not offset existing taxes. Omitting this option was still revenue-enhancing but may have sacrificed benefits from reducing taxes on structures. Like Detroit, Pittsburgh's commercial tax abatements and low-interest financing likely spurred commercial investment after split-rate implementation. Also, like Detroit, these benefits were mainly restricted to commercial development. One study found that a 10 percent reduction in Pittsburgh's improvement taxes could have spurred a 24 percent increase in housing construction levels, implying that higher levels of real estate investment and city revenue went unclaimed (Bourassa 1987). Other Pennsylvania municipalities have used a split-rate tax to drive down taxes on property other than land. Most, though not all, have sustained this policy after implementation, and gradually increased the split over subsequent decades (Yang 2014).

In Detroit, there are at least two compelling reasons to favor a reduction in improvement taxes to offset an increase in land taxes.

First is a constraint of Michigan state law. Under the 1978 Headlee Amendment, increases in property tax collections beyond the rate of inflation trigger a rollback of the millage rate. The City of Detroit and Detroit Public Schools also face statutory limits on their taxing power, and both currently levy taxes near their statutory maximum. Instead of rolling back millages, local governments could elect to reduce taxes assigned to nonland property forms. This allows local governments to convert a statutory constraint into better market outcomes.

Second, a reduction in the millage rate on improvements vastly increases the number of immediate beneficiaries. In Detroit, improvements represent 95 percent of the assessed value of Detroit's single-family homes; land is a small fraction of the out-of-downtown tax base (Hodge, Sands, and Skidmore 2017). A reduction in improvement taxes offers the greatest immediate benefits to properties outside the downtown core, providing both tax relief and increasing the sale values of homes.

Homeowner-supportive tax exemptions are a longstanding feature of Detroit's fiscal policy. The most notable are Proposal A, which features a reduction in mills applied to owner-occupied property, and the Neighborhood Enterprise Zone Homestead Exemption (NEZ-H), which provides a 15-year, renewable tax exemption for owners in City Council-selected neighborhoods. Detroit homeowners with NEZ-H exemptions have enjoyed lower taxes, higher sale values, and increased mortgage financing. Unlike the NEZ-H program, a revenue-neutral split-rate tax would be universal and permanent, applying equally to all homeowners and renters in Detroit. If improvements are sufficiently untaxed, the tax relief would be substantially greater than under the NEZ-H program.

In rental residences, tax savings may accumulate to the renter through rent relief or to the landlord directly. England (2016) has reviewed the literature on the tax incidence on rental housing, finding that it is not yet known with confidence the extent to which renters bear the burden of the property tax. Early work on this issue indicated that landlords likely bear most of the tax burden, but that view has been challenged in more recent work that considers different renters' housing options and owners' ability to shift investment to other sectors. Numerous studies also find that renters vote for higher levels of public expenditures than non-renters, which is consistent with the theory that renters will accept higher taxes because they do not see the tax bill themselves (Banzhaf and Oates 2013). However, if renters live in more modest residences than the median taxpayer, then their support for higher spending is based on the correct perception that they can receive similar services at a lower cost than others.

For commercial properties, early work by McDonald (1993) for downtown Chicago indicated that 45 percent of property tax differentials were passed forward to tenants. More recent work by Rolheiser (2019) uses more sophisticated empirical methods analyzing commercial buildings across 93 municipalities in the Boston Metropolitan Statistical Area. Rolheiser finds there was a full pass-through of property taxes to tenants. Furthermore, for buildings in the Boston Central Business District, Rolheiser found overshifting of property taxes to tenants, with tenants paying \$1.06 to \$1.39 for each additional dollar in landlord property taxes. Economic theory indicates that overshifting of tax can occur in the context of markets with less than full competition. If this result holds true in Detroit, it implies that a dollar reduction in tax burden on commercial landlords would be fully realized as a lower asking rent, and vice versa.

Risks and Uncertainties of a Split-Rate Tax

The risks and uncertainties associated with the adoption of a split-rate tax system must be acknowledged. Significantly, there are few examples of split-rate tax systems in large U.S. cities, particularly within fiscally fragmented regions such as metropolitan Detroit. Most implementations have been limited to no more than 30 percent of overall tax liability. Most commonly, a city applies a split rate, but other local taxing jurisdictions do not. In Pittsburgh, for example, the county and overlying school district did not participate in the split-rate tax. Finally, land may be a less stable revenue base in the short term because its value is more subject to market fluctuations (assuming that assessments are up-to-date and reflect market values). This effect would be moderated by lower land rents due to the higher rate of taxation, an effect this study measures.

Review of Past Efforts at Reform

Local Strategies to Restructure Tax Burden

The appeal of a split-rate tax is that many of its features are reflected in past reforms intended to stimulate economic growth in Detroit. These solutions have not slowed overall tax-base deterioration, but they have allowed projects to proceed in a difficult development climate. Past solutions do, however,

illuminate the largest flaws in Detroit's tax structure, and show that further reforms might reduce penalties imposed by the current tax structure.

Much of the past innovation in Detroit's tax structure has been a workaround to offset a high effective tax rate, either by preventing further growth in tax burden or exempting selected investments from the full burden. At least four commissions have been convened since 1957 to reform local taxes. While successfully diversifying revenue and developing an increasingly elaborate fiscal structure, none have successfully reduced Detroit's millage rate or removed its competitive disadvantages.

Detroit's primary strategy to offset property tax base erosion, and perhaps the most intuitive, has been to diversify its tax base. The Cavanagh Administration introduced an income tax in 1962 to shore up declining property tax receipts. This strategy was repeated by Mayor Gribbs in 1972, with a new utility users tax, and by Mayor Archer in 1994, with the wagering tax. The presumption underlying all these efforts was that any additional property tax burden would cause more fiscal harm than good, but none reduced high effective tax rates on property.

Since the 1970s, mayoral administrations have tried to rein in capital withdrawal and population flight by creating limited-term tax abatements. For investors, these programs function like a split-rate tax, in that a certificate holder is relieved of some taxes on new investment but continues to pay full taxes on land. Yet tax abatements miss out on certain benefits of a land value tax. As discussed, abatements do not raise the cost of speculative vacant land holding and they may increase speculative profits. More broadly, unlike a split-rate tax, abatements are conditional, revocable, and nonuniversal. If the goals of a tax structure are to stimulate productive investment, ensure equitable treatment, and match ability to pay, then relief should be awarded to all Detroiters in perpetuity. In this respect, a split-rate tax is fundamentally superior to tax abatements.

While the Young administration pioneered tax abatements for industrial facilities, subsequent administrations implemented similar abatement programs for commercial properties. The proliferation of abatement programs amplifies their fundamental problems. Because they are available to all local governments, tax abatements induce bidding wars to compete for business (Reese and Sands 2006). As more municipalities in the metro area adopted abatements, the initial effect of abatements in Detroit dissipated (Anderson and Wassmer 1995). By 2000, local governments in Southeast Michigan were abating as much as 30 percent of their property tax base via the IFE (Anderson 2000). While abatements remain a necessary source of gap financing in Detroit, they create no durable advantage for Detroit.

Other than abatements for commercial and industrial properties, efforts have been made to extend similar programs to residential property. The Neighborhood Enterprise Zone Act, passed in 1992, provides commercial tax abatement-like incentives for newly constructed and rehabilitated housing. An expansion of this program was implemented in 2006 in recognition of the acute tax burdens faced by Detroit's middle- and high-income homeowners. New facility NEZs are assessed at market value for tax purposes, but a reduced millage rate is applied. Rehabilitation NEZs have a frozen taxable value, but existing improvements are taxed at the standard millage rate. The NEZ Homestead tax exemption provides an 18 percent reduction in the millage rate applied to existing improvements. These programs, which are only available in City Council-approved districts (currently 52 NEZ Homestead neighborhoods), have had favorable effects on development and property values in those districts. However, they are statutorily limited: only 15 percent of Detroit's geographic area can be covered by each program and the tax relief persists for only 15 years. In recognition of the tax cliff faced by abatement holders, the City has recently made NEZ Homestead abatements renewable.

In addition to coverage limitations, these abatements have narrow benefits that are captured quickly. Like other tax abatements, the NEZ Homestead program has a single principal beneficiary: the owner at

the time of the program's implementation. Hodge and Komarek (2016) show that incumbent owners can fully gain the future tax savings of the NEZ Homestead tax abatement program through the premium they receive at the time of sale (i.e., the benefits of the program are fully capitalized in property value).

Statewide Reforms to Constrain Taxing Power

Beyond Detroit, other local communities in Michigan have faced similar problems with tax-rate growth, albeit to a lesser degree. Concerns about growing property tax burdens have led to several major changes in the Michigan tax system. First among these changes is the Headlee Amendment, an amendment to the state constitution approved by voters in 1978. The amendment placed a restriction on total revenue collected via property taxes in a jurisdiction and is one of the most restrictive local tax limitations in the United States. It requires that local governments *roll back* millage rates as the tax base increases, limiting the total tax levy to the rate of inflation unless voters override the rollback.

With continuing concern over property tax burdens, however, voters approved another constitutional amendment in 1994 known as Proposal A. There are two key provisions of Proposal A: (1) a limitation on taxable value (TV) increases for individual property parcels to the minimum of inflation or 5 percent; and (2) implementation of a statewide property tax and increased sales tax to fund public education.

The limitation on the growth of TV can drive a wedge between state equalized value (SEV) and TV that grows over time as property values rise. When property ownership changes, TV is reset to SEV, making tax burdens subject to acquisition dates and ownership tenure. The combination of these changes in the Michigan tax system has created enormous challenges for local governments. Nowhere has this been truer than in Detroit, where the collision of capped collections, high levels of limited obligation debt, and existing high tax burdens have given local officials few options to increase or decrease property tax revenue.

In summary, high property taxes continue to motivate constraints on taxing power and create more conditional abatements and exemptions. These ideas have found favor across Michigan, and the City of Detroit has been a key sponsor of these strategies. This reform agenda has created a high degree of horizontal inequity in tax burdens among property owners, allowing some projects to proceed but only through tax abatements or exemptions. This adds regulatory burden for development approvals and home sales, but also leaves many neighborhoods without relief. In the past decade, there has been effectively no commercial investment in Detroit under the *ad valorem* tax regime. Tax abatement policy makes investment attraction more complex and uneven by the same measure that it delivers relief. Given this context, what is needed is a fundamentally new approach to property taxation to break out of this situation. That is the prospect of split-rate taxation.

Study Findings

Much of what is written about split-rate tax shows its effects through structural models or simulations (Anderson 2009). Models give insight into the mechanisms that cause changes in the real estate markets or taxpayer behavior, but they cannot pinpoint the size or sensitivity of these changes. They also cannot consider messy conditions that cause economic models to deviate from real-world conditions. Moreover, while most market changes under a split-rate tax are predictable, some are not.

Consider what structural models can and cannot say about real estate values. It can be confidently said that lower taxes on structures will cause their value to rise. Since the value of a capital asset is the discounted present value of the net income stream it generates, a reduction in taxes applied will increase asset values through increased net income. Land values, however, have conflicting drivers: they are

pushed upward by new development opportunities, but downward by an increased tax burden. Without real-world experience and data, it is difficult to know how these separate effects would net out for residents, much less local government revenue.

Accordingly, this study's highest priority was to understand split-rate tax effects using real implementations of tax reform. The City and its partners provided the highest-priority outcomes for measurement, and the Lincoln Institute of Land Policy team worked to find the best-available data to capture these effects and fit them to the best available econometric methods.

While there are valid reasons to prefer real-world data, there is still a strict tradeoff between analyzing data from the City of Detroit and analyzing the best existing implementations of a split-rate tax. Detroit has few comparable peers in decline or recovery, a strikingly different revenue mix, and a set of statutory limitations that aggressively limit property tax collections. The approach of this study, therefore, was to use Detroit's tax data whenever it could reasonably reveal how tax changes affected taxpayer behavior. When it could not—such as when measuring outcomes from an existing split-rate implementation—data was used from Pennsylvania municipalities that have transitioned to a split-rate tax system. These Pennsylvania municipalities share many features in common with Detroit, even if different in degree: multiple taxing jurisdictions, a population loss trend from 1950 onward, losses of property value, and challenges with revenue stability. Of course, these cities cannot replicate Detroit's taxing environment, so differences and limitations are noted.

The following section of this policy report summarizes the methods, data, and findings of the three technical papers produced as part of this project: "Assessment of Property Tax Reductions on Tax Delinquency, Tax Foreclosure, and Home Ownership," by Fernanda Alfaro, Dusan Paredes, and Mark Skidmore; "Split-Rate Taxation and Business Establishment Location: Evidence from the Pennsylvania Experience," by Andrew Hanson; and "Split-Rate Taxation: Impacts on Tax Base," by Zhou Yang and Zackary Hawley. The following summaries are largely taken from those reports. For details, readers are referred to the more complete explanations in those reports.

Delinquency, Tax Foreclosure, and Homeownership

Motivation and Descriptive Conditions in Detroit

Detroit's chronic challenges with high levels of tax delinquency among property owners, an overburdened tax foreclosure process, and low rates of homeownership motivate this evaluation. The potential for a split-rate tax system to improve these conditions is examined in the technical paper by Fernanda Alfaro, Dusan Paredes, and Mark Skidmore.

Summary of Methods and Data Limitations

To anticipate the behavioral response of property owners in Detroit, regarding the payment of taxes and decisions to become homeowners, Alfaro, Paredes, and Skidmore carried out an assessment of the effects of moving to a split-rate tax system on tax delinquency, tax foreclosure, and homeownership. Their empirical approach is informed by previous studies including Alm et al. (2014), Alfaro et al. (2020), and Hodge (2019). In addition, Allen (2019) shows that in a static environment, a revenue-neutral shift from a traditional property tax to a split-rate tax in Detroit will result in significant reductions in tax burden on most residential property.

To simulate the behavioral responses following such a reduction in tax burden, the researchers used data from the recent citywide reassessment, which reduced assessed values for a large share of residential

properties during a period when values were stable or rising. Reductions in assessed value (AV) reduce the effective tax rate (ETR), that is, the tax bill divided by market value, on those properties. That reduction in ETR is used as an approximation of the anticipated effect of moving to a split-rate tax. Annual parcel-level data on tax delinquency, tax foreclosure, and homeownership over the period 2011 through 2019 is used in the analysis.

The empirical strategy uses changes in taxable values driven by reassessment (and other changes in ETRs) to evaluate changes in the probability of tax delinquency, tax foreclosure, and homeownership. By tracking effective tax rates for individual properties, this approach avoids potential problems or biases in assessments, providing confidence that the estimates are causally determined.

There are two potential ways in which a split-rate tax may reduce delinquency and foreclosure. First, the reduction in ETR may improve the perception of fairness of the tax system and make it easier for property owners to pay their taxes, reducing the cash-flow problem mentioned previously. That would reduce delinquency and/or foreclosure. Second, property owners can anticipate increases in property value due to the capitalized tax reductions thereby increasing the cost of failing to make tax payments resulting in property forfeiture. For both reasons, property owners have increased incentives to pay taxes. These effects are examined in a dynamic context to observe likely timing of the effects.

Effects on homeownership depend on the relative responsiveness of participants in the housing market (i.e., potential buyers of rental properties and owner-occupants). Without information on how different actors respond to tax reductions, the homeownership effect is theoretically ambiguous. It must be empirically determined.

Findings

Tax Delinquency

The research team analyzed the predicted probability for each of the four possible dynamic delinquency status conditions. To summarize, a property can: (1) move from delinquent in year t to nondelinquent in year $t+1$; (2) remain delinquent from year t to year $t+1$; (3) move from nondelinquent in year t to delinquent in year $t+1$; or (4) remain nondelinquent from year t to year $t+1$.

Consider first the predicted probability of a taxpayer moving from a higher level of tax delinquency to a lower level. The results indicate that an 80 percent reduction in TV has the effect of increasing the probability of reduced tax delinquency from 66 percent to 93 percent (i.e., a 27-percentage point difference). See figure 1 (page 13) of the technical paper. Beyond the first-year effect, the evidence indicates continuing improvement in years two and three, although the effect attenuates over time. When owner-occupied homes are separated from rental properties in the analysis, the estimated effects are slightly more responsive for owner-occupied properties. See figure 2 (page 14) of the technical paper. Overall, this analysis indicates that reductions in TV have had a significant and substantial effect in reducing delinquency and improving tax compliance. To gain an appreciation for the magnitude of the effect over the three lags used, consider an 80 percent reduction in TV once again. The effect is to increase the proportion of properties with reduced delinquency by approximately 14 percent compared to those properties that experienced increased delinquency (8 percent). That translates to reduced net delinquencies for 6 percent of all residential improved properties.

In summary, this research demonstrates that declines in TV had a statistically significant effect on delinquency, leading to meaningful improvements in tax compliance.

Tax Foreclosure

The team also examined tax foreclosure, recognizing the distinction that a property owner may delay property tax payments and incur penalties but never actually relinquish the property through property tax foreclosure.

The State of Michigan guidelines on the tax foreclosure process follow a three-year timeline as outlined in the technical paper. However, tax-delinquent properties in Wayne County often remain in tax foreclosure longer than this three-year period because the number of potential tax foreclosures is so large. Informally, Wayne County has only foreclosed on properties with larger back-taxes owed, and there is no official policy for how large the tax delinquent amounts must be for a property to go to auction. The implication is that tax foreclosure is a function of both the decisions of property owners to not pay taxes as well as the Wayne County decision to foreclose or not. Hence, in this analysis it is recognized that foreclosure depends on the actions of both actors.

Once a property is at auction, a private party can purchase it, but if there are no buyers the parcel reverts to the land bank. Tax foreclosure and potential vacancy can create a downward cycle of falling property values and neighborhood decline. Policymakers have considered a range of options to intervene and reverse this negative cycle. Moving to a split-rate tax may help in this regard.

Detailed data on tax foreclosures from 2011 to 2019 were compiled by Loveland Technologies² and were ultimately obtained from the Wayne County Treasurer's Office. In an average year, 2.66 percent of the sample transitioned from *at-risk* to *foreclosure* status, whereas the remainder of tax-delinquent properties remained at-risk from year to year.³ This approach is used to predict changes in tax foreclosure status where a reduction in TV may affect the probability of a property going into foreclosure.

As with the tax delinquency evaluation, two levels of control variables were used—parcel-level features (e.g., geographic coordinates, the size of the property measured in acres, the change in SEV, and the millage applied to the parcel) and aggregated characteristics (e.g., ZIP code to control for neighborhood characteristics that did not change during the estimation period and year time effects to control for citywide changes over time).

The objective was to determine the degree to which a reduction in TV (and thus a reduction in ETR) can influence tax foreclosures. The focus is on two possible outcomes in the modelling of changing tax foreclosure status from period t to period $t + 1$. Only those properties that entered the foreclosure process are evaluated. Thus, the model indicates the change in being *at-risk* (AR) to *foreclosed* (F) from one period to the next. A given property can: (1) move from at-risk to tax foreclosed (AR_t to F_{t+1}); or (2) remain at-risk (AR_t to AR_{t+1}).

Estimated results indicate that for an 80 percent reduction in TV, lagged one year, the probability of moving into foreclosure is reduced from 7 percent to 3 percent, a net reduction of 4 percentage points. See figure 4 (page 19) of the technical paper. Further reductions occur in the two- and three-year lags, although with smaller effects. When owner-occupied properties are examined separately from rental properties, homeowners are substantially more responsive than rental property owners. The overall result over three years indicates that an 80 percent reduction in TV leads to reductions in foreclosures of approximately 40 percent compared to properties that experience an improvement in delinquency status.

² We thank Jerry Paffendorf and Nick Downer for sharing the tax foreclosure dataset and for their assistance.

³ The tax foreclosure data indicate the status or nature of the tax foreclosed properties as “sold,” “bundled,” or “closed.” This initial evaluation includes all tax foreclosed properties regardless of this status.

For all residential improved properties, this translates to a substantial reduction in the foreclosure rate from 1.8 percent to 1.1 percent.

This evaluation of tax foreclosure indicates that TV reductions lessen the likelihood of at-risk properties moving fully into tax foreclosure. Furthermore, while the effect is strongest in the first year, there are continuing improvements that occur over a three-year period.

Homeownership

Finally, this report evaluates how reductions in TV (and thus tax burden) affect homeownership decisions. The literature indicates that the effect depends on the responsiveness of potential home buyers relative to rental property investors. An analysis is presented using the core data described in Part 1 of the technical paper.

The objective in this analysis is to determine the degree to which a reduction in TV can influence homeownership decisions. As with the tax delinquency analysis, there are four possible outcomes for changing property status from year t to year $t+1$. A property can: (1) change from a rental property to a homestead property; (2) remain a rental property; (3) change from a homestead to a rental property; or (4) remain as a homestead property. The data show that there is a propensity to remain in the original status. About 91 percent of the sample remains either a rental or homestead from period to period. However, about 9 percent of residential parcels change to homestead from one period to the next. The modeling approach is dynamic, so it is estimating the determinants of *changing* homeownership status from one period to the next.

The approach in this analysis is to predict changes in homeownership status where a reduction in TV may affect the probability of moving from a rental property to homestead and vice versa. This analysis uses the same control variables and aggregated characteristics that are used in the tax delinquency and foreclosure evaluations.

It could take several years for assessment changes to have a full effect on homeownership status. In addition, property purchase decisions in the current year are influenced more by the previous year's TV change than the current year. Therefore, an evaluation of the temporal effects of the TV reduction on property owner status are included. The estimate of temporal effects includes time lags for one and two years, and the marginal effects of each are calculated. Thus, the length of time required for a TV reduction to fully affect homeownership status is estimated.

The estimated effect is positive in the rental to homeowner regression and negative in the homeowner to rental regression, and both coefficients are significant at the 1-percent confidence level. These estimates indicate that a reduction in TV reduces the probability of a property transitioning from homeowner to rental status and increases the probability that a rental property will transition to homeowner status. In other words, a reduction in TV increases the relative probability of a property transitioning from rental to homestead status compared to the other three possible outcomes. In the first year following an 80 percent reduction in TV, the homeownership rate rose from 9 percent to 28 percent, an increase of 19 percentage points. The effects in the second- and third-year lags are similar but of a somewhat smaller magnitude. See figure 7 (page 23) of the technical paper. Over the three-year period and across the full sample of properties, the estimates indicate that ownership rises from 52 percent to 55.7 percent, an increase of 3.7 percentage points.

In summary, this research suggests that declines in TV have resulted in a movement from rental to homestead status.

Thus far, technical analyses of how changes in tax burden affect tax delinquency, tax foreclosure, and homeownership have been reported. The next section offers simulations that indicate how large the effects are likely to be, should a split-rate tax and associated tax reduction on residential properties be adopted in Detroit.

Simulations

The estimates presented above provide a basis for simulating the potential effects of moving from a traditional property tax to a split-rate tax. Allen (2019) calculates changes in parcel-level tax payments if Detroit were to move to a split-rate tax, assuming revenue neutrality. Specifically, the author considers a 5:1 ratio where land is taxed at a rate five times that of structures, like Pittsburgh’s split-rate system. Also included in the evaluation is a pure land tax where structures are exempt from taxation. In addition to these scenarios, 2:1, 5:1, 7:1, and 10:1 split rates are considered along with a full land value tax (LVT).

Table 1 presents anticipated effects on tax delinquency, tax foreclosure, and homeownership for different split-rate scenarios using median-valued occupied property. The first row presents the current property tax environment with a 1:1 tax ratio on land and structures. The reported tax delinquency and homeownership rates in this scenario are average values over the period of analysis for all residential properties included in the evaluation. The tax foreclosure rate is the proportion of at-risk properties that transitioned to tax foreclosure, where the sample is limited to the at-risk properties. From this baseline, the anticipated changes from the dynamic analysis are calculated. The first and second columns present the different split-rate scenarios and expected tax reductions for various scenarios using average tax payments for residential properties. Columns 3, 4, and 5 report the predicted tax delinquency, tax foreclosure, and homeownership rates for each split-rate scenario, respectively.

Table 1. Simulated Effects of Moving to a Split-rate Tax on Tax Delinquency, Tax Foreclosure, and Homeownership for Median Homestead Property

Split-Rate Ratio	Estimated Tax Reduction (%)	Tax Delinquency Rate (%)	Tax Foreclosure Rate (%)	Owner-Occupied Rate (%)
1:1	0	45.35	1.04	47.58
2:1	-0.8	45.33	1.03	47.59
5:1	-18.6	45.02	0.95	47.88
7:1	-26.2	44.89	0.92	48.00
10:1	-34.1	44.75	0.89	48.14
Full Land Tax	-70.6	44.17	0.76	48.82

Source: Alfaro et al. (2021)

The recommended scenario, a 5:1 split-rate simulation, would generate an approximate 18.6 percent reduction in taxes for residential properties. The simulation shows that the proportion of properties expected to have an improvement in tax delinquent condition is 0.33 percentage points (a reduction from 45.35 percent under the current 1:1 tax ratio to 45.02 percent under a 5:1 ratio). The tax foreclosure rate is expected to fall more significantly, from 1.04 percent to 0.95 percent of all residential properties, a reduction of 8.6 percent. Furthermore, the homeownership rate is expected to rise by 0.3 percentage points from 47.58 percent to 47.88 percent.

There are two reasons for the modest changes in these rates. First, the 5:1 ratio yields an 18.6 percent reduction in residential tax payments, much less than the maximum possible reduction of 70.6 percent. Second, in 2019 the changes in tax delinquency status, tax foreclosure status, and owner-occupied status were much smaller than earlier years. The analysis estimates yearly changes in status that are then transformed into estimates to calibrate the level of these measures. Hence, any differences from the baseline in 2019 will be small because changes from 2018 to 2019 were small. If estimated over a longer period, or if a split-rate tax had been implemented in Detroit's peak years of foreclosure, delinquency, and homeownership decline, the changes would be larger. Finally, the tax delinquency measure captures only delinquent balances with the City, not delinquent back taxes. Current owners may prefer to pay down long-term county tax debts prior to resuming current-year payments to the City. Nevertheless, these results suggest meaningful improvements in tax compliance and homeownership resulting from a transition to a split-rate tax.

Fully transitioning to a land value tax provides even more positive simulated effects. Hence, the simulations indicate that the higher the split-rate ratio, the greater the anticipated effects on tax delinquency, tax foreclosure, and homeownership.

In summary, results indicate that tax reductions resulting from the property reassessment in Detroit generated improvements in tax compliance and increased homeownership. This evaluation also suggests that the effects tend to be observed most strongly in the year following the change, with additional but smaller effects over a period lasting at least three years. These findings are consistent with the work of Kang, Skidmore, and Reese (2012), which indicates that an exogenous decline in property tax rates due to the adoption of Proposal A resulted in property value increases over three years until a new equilibrium emerged. Generally, these estimates lend support to the notion that if a split-rate tax were to be implemented in Detroit, there would be improved tax compliance and increased homeownership among residential properties.

Business Formation

Motivation and Pennsylvania Case Studies

The move to a split-rate tax system holds the prospect of stimulating economic activity as it can both discourage the holding of vacant land and encourage capital investment in structures and improvements. In the United States, the notable examples of split-rate tax systems are all in the Commonwealth of Pennsylvania. In particular, the experience of the city of Pittsburgh, in its revival from a declining steel city to a vibrant metropolitan economy in the 1970s and 1980s, has been used as an example of the benefits of a split-rate tax system. To analyze how split-rate tax systems might affect business formation, Andrew Hanson wrote the technical paper that investigates the effects on business establishment location.

Instead of targeting specific firms or industries for tax incentives, a split-rate tax stimulates economic development with a local tax environment that is favorable to growth. This strategy removes local taxes that distort location and investment behavior in favor of tax systems that encourage general economic growth. Relative to a pure tax on land, local property taxes can reduce the resources devoted to development, and a split-rate tax may be a reasonable compromise between a property tax and a land-only tax. Furthermore, the common practice in many cities, including Detroit, of granting industrial and commercial property tax abatements for new capital investments is, in fact, an indirect form of a split-rate tax. Transitioning from a traditional property tax with select abatements to a split-rate tax is a more direct and transparent means of accomplishing economic development objectives.

The move from conventional property taxation to a split-rate tax system can promote both a direct business establishment response and an indirect response. The split-rate tax makes using capital improvements (building structures) relatively less expensive than using land, so businesses that use more capital improvements will prefer a split-rate tax jurisdiction to other locations, all else being equal. A split-rate tax is also likely to encourage the construction of structures and increase density, potentially inducing local multiplier effects and accelerating agglomeration economies.

Although the largest municipality in the state, Philadelphia, has never had a split-rate tax, Pittsburgh and many other municipalities across the state have implemented split-rate taxes. Table 2 shows the year of implementation and the final year (if applicable) for the Pennsylvania municipalities that had a split-rate tax structure at any point during the 1994–2017 period. The mean land-to-structure tax ratios vary widely among cities, ranging from a low of 1.67 in Steelton to a high of 26.11 in Dubois. The Hanson technical paper uses Pennsylvania data from the period 1994–2017, during which the mean land-to-structure ratio was 7.73.

Table 2. Split-Rate Municipalities in Pennsylvania

Municipality	County	First Year	Final Year	Mean Land-to-Structure Ratio	Standard Deviation of Land-to-Structure Ratio
Aliquippa	Beaver	1988	—	7.97	2.3
Allentown	Lehigh	1997	—	4.41	1.05
Altoona	Blair	2003	2016	16.73	19.32
Clairton	Allegheny	1989	—	12.76	7.33
Coatesville	Chester	1991	2005	2.19	0.25
Connellsville	Fayette	1992	2003	6.48	0.0
Dubois	Clearfield	1991	2018	26.11	16.77
Duquesne	Allegheny	1985	—	1.75	0.28
Ebensburg	Cambria	2000	—	3.43	0.65
Harrisburg	Dauphin	1975	—	5.33	1.05
Lock Haven	Clinton	1991	—	4.56	0.67
McKeesport	Allegheny	1980	—	4.25	0.66
New Castle	Lawrence	1982	—	3.7	0.21
Oil City	Venango	1989	2002	3.25	0.09
Pittsburgh	Allegheny	1913	2000	5.76	0.0
Scranton	Lackawanna	1913	—	4.78	0.37
Steelton	Dauphin	2000	2007	1.67	0.53
Titusville	Crawford	1990	—	3.28	0.25
Washington	Washington	1985	—	20.59	7.7

Source: Yang (2014), updated by Yang and Hawley.

Note: Mean and standard deviation values are from municipal-year data merged with industry counts and have missing values for some municipality years. Mean and standard deviation values are from data beginning in 1994 and ending in 2017 (inclusive).

Summary of Methods and Data Limitations

To estimate the effects of split-rate taxation on business establishment location, Hanson uses variation across Pennsylvania municipalities and difference-in-difference (DID) style modeling applied to data from the U.S. Census Bureau County Business Patterns ZIP code files. The analysis relies on

municipality implementation, removal, changes to the tax ratio, and length of time the policy is in effect to identify the relationship between split-rate taxation and business establishment location. The analysis uses a two-way fixed-effects variant of the DID model to control for year and municipality fixed effects, separating tax policy changes from other city-specific and year-specific changes. Because the estimation relies on changes to split-rate policies, it is important to consider which municipalities changed policy during this time and to what extent municipalities varied the ratio of the tax on land to the tax on structure.

During the period of this study, 1994–2017, there were four municipalities that implemented a split-rate system (Allentown, Altoona, Ebensburg, and Steelton), and five that went from a split-rate system back to a conventional property tax (Altoona, Coatesville, Oil City, Pittsburgh, and Steelton). During the years when a split-rate tax was active, there were substantial differences both within and across municipalities in the ratio of the land to structure rate imposed.

In the analysis of Pennsylvania municipalities' experience with split-rate taxation, four separate models are estimated: (1) a level-shift model; (2) a slope-over-time model; (3) a combination level-shift and slope-over-time model; and (4) a policy-intensity model.

The level-shift model enables measurement of the effect of moving to a split-rate tax system on the number of business establishments in a municipality. This model tests for an immediate increase in the number of business establishments, that is, within the first year after implementing a split-rate tax, that remains constant over the period that the policy remains in effect. The level shift model estimates the effect of moving from no split-rate policy to the average split-rate policy among municipalities that implement a split-rate tax (or from removing the average split-rate policy). For the years of data in the sample, and the coverage of municipalities, this model shows the effect of moving from no split-rate to a split-rate with a land-to-structure ratio of 7.73:1. Importantly, the model controls for the overall level of taxation on property. The overall level of taxation is a factor that changes both across time and across municipalities and controlling for it is important for two reasons. First, it allows the results to be interpreted as a move to a split-rate system, given that the overall tax burden is held constant—it effectively highlights the differential taxation of land and structures rather than an overall lower or higher level of taxation. Second, it gives insight into how unobservable factors that vary across time and across municipalities could be affecting the estimation results.

The slope-over-time model allows for the effects of a split-rate tax structure to differ over time, something that is not possible under the level-shift model. Rather than measure a one-time change in business establishments, as in the level-shift model, the slope-over-time model allows for the effect to happen gradually over the years that the policy is in effect. This model tests for a differential trend in the number of business establishments occurring in municipalities that implement a split-rate tax structure.

The combination model allows for the effect of split-rate taxation to have both an immediate/constant effect and a differential effect based on how long it has been in place. Estimating both the level shift and slope over time simultaneously provides insight into how these effects may interact with each other. For example, allowing the slope to change at the same time as the level shift may reveal that the immediate effects of the policy change are less sizable, but increase in significance once the policy has been in place longer.

In the policy-intensity model, the coefficient of interest measures how a one-unit change in the ratio of the split-rate tax (for example from 5:1 to 6:1) changes the number of business establishments in a municipality. This model is linear in that it treats a one-unit change in the ratio the same, regardless of where in the distribution that change is occurring. For example, it treats a change in ratio from 3:1 to 4:1 as identical to a change from 5:1 to 6:1. Hanson also explored a nonlinear relationship between the split-

rate ratio and the number of business establishments, but these specifications strongly suggest that a linear relationship is appropriate. The most accurate interpretation of the policy-intensity model is to interpret the results as a move from the mean ratio (7.73) to a one unit larger or smaller ratio (e.g., 8.73 or 6.73).

The policy-intensity model is estimated using only data from municipalities that have split-rate taxation, highlighting variation in the intensity of the policy among that group. This is done to remove selection bias that would occur if the policy intensity comparison were made between split-rate municipalities and non-split-rate municipalities. Including non-split-rate municipalities in this model would potentially confound the effects of *having* a split with the effects of having a different split-rate ratio.

Data used to measure business location come from the U.S. Census Bureau's County Business Patterns (CBP) using data files at the ZIP code level, covering the period from 1994 through 2017. For each ZIP code in Pennsylvania, there are counts of business establishments for the entire ZIP code, and in most cases counts across several industry sectors. The underlying data on business establishment counts come from several survey-based sources within the Census—the annual Company Organization Survey, which tracks multi-establishment companies, as well as the Economic Census, Annual Survey of Manufactures, and Current Business Survey, all of which track single-establishment companies.

Findings

These are the key results that emerge from the model estimates in the technical paper:

- First, there is a sizable, statistically meaningful, and immediate increase in the number of business establishments that coincides with municipalities switching to a split-rate tax system.
- Second, the initial increase in the number of business establishments is followed by a slow but significant decline in the number of total business establishments over time, but the level remains higher than the pre-implementation period.
- Finally, beyond the initial land-to-structure ratio implemented, marginal changes to the split-rate ratio do not seem to coincide with changes in the number of business establishments in a municipality.

To put the broad results into a policy context, they can be interpreted as the average split-rate ratio in the data. The average split-rate ratio for municipalities that have a split-rate tax over the years of data in the sample is 7.73. Municipalities going from conventional property taxation to a split-rate system with a ratio of 7.73 experience an average immediate increase in the number of business establishments between 60 and 107 establishments across all the estimated models. The number of business establishments does not appear to be sensitive to marginal changes in the split-rate ratio after implementation; however, estimates indicate that after the initial increase in the net number of establishments there is an annual decline each year, between 3.3 and 5.5 establishments, or about 5 percent of the initial increase.

Hanson also examines industry sector responses. Based on economic theory, one would expect that establishments relying more on buildings and improvements would be most responsive to the introduction of a split-rate tax regime. Correspondingly, one might expect the construction industry to benefit. The level-shift model shows that adoption of a split-rate tax system has the greatest positive effect in the wholesale, retail, construction, manufacturing, and transportation sectors. The exceptions, with significant negative effects, are the service sector and the finance-insurance-real estate (FIRE) sector. The results suggest the potential for highly heterogeneous effects when introducing a split-rate tax system.

In summary, the analysis of Pennsylvania municipalities with split-rate taxes indicates that moving from conventional property taxation to a split-rate system (with an average land-to-structure tax ratio of 7.73:1) is associated with an immediate increase of between 60 to 107 business establishments. The number of business establishments does not appear to be sensitive to marginal changes in the split-rate ratio after implementation, but the initial net increase in the number of establishments declines each year after implementation by between 3.3 to 5.5 establishments, or about 5 percent.

The Pennsylvania results are instructive, but in the dynamic analysis of Detroit, an increased number of business establishments is not included when simulating the effects of moving to split-rate taxation. There are several reasons to omit this change. First, while an increase in the number of establishments may be anticipated, the number, type, industry sector, and other characteristics associated with those establishments are unknown and therefore cannot be reasonably factored into the simulations. Second, there is the problem of out-of-sample prediction when using Pennsylvania municipalities to predict results for Detroit, especially when considering city size. The Pennsylvania municipalities are generally much smaller than the City of Detroit, and the extent to which business formation scales with population or local economic output is unknown. Omitting business formation makes the dynamic simulations a more conservative estimate of split-rate tax effects.

Land Values, Structure Values, and Property Tax Base

Motivation and Descriptive Conditions in Detroit

It is important to know how a change to a split-rate tax system can affect land and structure values as well as tax revenues. To do that, Zhou Yang and Zack Hawley produced a technical paper analyzing the experience of Pennsylvania split-rate municipalities to investigate the effects on the tax base and tax revenue. The analysis also provides lessons for how to successfully implement split-rate property taxation as well as lessons or concerns that may come with implementation. The study specifically estimates the effect of split-rate property taxation on total property market values using panel data from Pennsylvania municipalities. It also explores the differential effects across types of land use, such as residential, industrial, and commercial properties. Finally, this component separately examines the effect of the tax on land values using a recently published dataset.

Summary of Methods and Data Limitations

Property values depend on various factors besides tax policy, including location attributes, property features, economic conditions, and housing demand. By controlling for these other factors in split-rate and non split-rate jurisdictions, the report uses an empirical model to estimate the independent effect of split-rate taxation on aggregate market values. The model explains aggregate market values in Pennsylvania municipalities as a function of the effective total level of taxation on land in the previous year (calculated as nominal total tax rate multiplied by the applicable assessment ratio), and the land-to-structure tax ratio in the previous year capturing the split-rate tax structure. Variables are also included in the model to control for county-level assessment practices and economic and demographic factors. Specific care is taken in the modeling approach to account for endogeneity associated with assessments. The Pennsylvania State Tax Equalization Board (STEB) uses market values to determine the common-level ratio for counties. This practice creates endogeneity between market values and common-level ratios in the model. To correct for this estimation problem, the study employs a two-stage approach in estimation with instruments known as two-stage least squares.

To model land values, the team used a similar specification with the exception that the proxy variables for assessment practices are excluded from the model. In addition, the endogeneity problem resulting

from the data generation process is not a concern for land value estimation because the source of the land value data is different and is not involved in the calculation of common level ratios. Thus, ordinary least squares (OLS) regressions are performed for land value estimation. A set of municipal-level rather than county-level controls for economic and demographic factors are included in the model. Standardized land values at the county subdivision level are matched to U.S. Census American Community Survey data for the control variables.

The empirical analysis uses aggregate market values and land values as outcome measures. Market values from 1990 to 2018 are obtained from the Pennsylvania STEB, which collects assessed market values for all Pennsylvania municipalities, including market values for residential, commercial, and industrial property classes. This data set is used to examine the effects on the tax base. A second data set on land values is collected from Davis et al. (2020), which uses 14 million U.S. appraisals to derive yearly estimates of land values from 2012 to 2018. The standardized values for a quarter-acre lot from that data set are used in this analysis. To match the land value data to the tax policy data, the study aggregates ZIP code data to the county subdivision geography. A Census crosswalk file is used to identify intersections between each county subdivision and ZIP code.

Findings

Models of aggregate market values are estimated for three samples: a sample of all Pennsylvania municipalities, a sample with municipalities in counties where the split-rate municipalities are located, and a sample with split-rate municipalities only. The various samples used in estimation are also used to deal with potential statistical problems of selection. The results from the municipalities in the split-rate counties sample find that switching from conventional property taxation to split-rate taxation increases aggregate market values by about 21.5 percent. Note that this estimated effect is averaged across all split-rate municipalities and the time periods for which split-rate taxation was in effect. Once implemented, however, further changes in the tax ratio did not appear to have much effect on market values during the sample period (1990–2018).

As expected, the effects differ across property types. Switching to a split-rate tax system has significant and positive effects on residential and commercial properties, with residential property values rising by approximately 11.9 percent and commercial property values rising by approximately 19.9 percent. The estimated change in industrial property values is not statistically different from zero.

In addition, the study of Pennsylvania municipalities finds that the effect of split-rate taxation on land values is negative, though modest in magnitude. At most, land values fall by about 2 percent if land is taxed at twice the rate of structures. Of course, the anticipation is that land values should fall with heavier taxation of land. With a higher tax rate ratio of 5:1 or 7:1, it is anticipated that land values could fall by 8 or 12 percent, respectively (assuming linearity in the relationship). These findings suggest that cities should expect changes in the value of land when implementing a split-rate tax. It appears that land values would not fall drastically, at least in the experience of Pennsylvania municipalities with split-rate taxation from 2012 to 2018. In making this observation, however, it should be recognized that the quality of market value and land value data affects the estimates. Using appropriate valuation methods is crucial for the implementation of a split-rate tax system. Accurate valuations are also important when examining the effects of implementation.

The finding that property values rise while land values fall reveals that the switch to a split-rate tax system raises structure values. The higher tax on land is capitalized into lower values, while the lower tax on structures is capitalized into higher values. While not directly estimated in this study, the increase in structure values in a community is also due to a combination of new fixed investment and maintenance, both induced by the lower rate of taxation.

Revenue Forecast

Inputs and Assumptions

Background Assumptions

The forecasting model is designed with two primary functions: (1) to estimate the overall local government revenue change that would occur under a revenue-neutral split-rate tax; and (2) to estimate the distributive effects of a revenue-neutral split-rate shift. This is accomplished by estimating changes in the aggregate base and evaluating parcel-level shifts in tax burden. Market responses in the revenue model are bounded by—and almost exclusively restricted to—parameters estimated in the technical papers.

The ability to incorporate pandemic-induced changes in real estate asset markets is limited, although their prospective effect on the tax base must be recognized. The forecasts rely on 2019 tax year data provided by Detroit’s Office of the Treasurer and Office of the Assessor, which do not account for recent changes in expected property income. July 2020 inflation projections are incorporated to reflect the Federal Reserve’s intention to keep near-zero interest rates through 2023. Low inflation projections heavily influence maximum allowable property tax collections in Michigan because of the Headlee and Proposal A tax limitations.

Except for inflation forecasts, this report does not account for the effects of the COVID recession and recovery, since it relies on data provided from 2019. Historically, property tax revenue is more resilient than other local government revenues after economic shocks (Anderson and Shimul 2018). The City’s September 2020 revenue forecast reflects the stabilizing influence of property taxes, as do post-COVID forecasts of nationwide local government revenues (Chernick, Copeland, and Reschovsky 2020).

Tax Levy Forecast

In forecasting property tax collection, the model’s principal aim is to identify risks of tax levy losses that could occur from a revenue-neutral, citywide shift to a split-rate tax. These risks have two sources: First, because a split-rate tax alters the spatial distribution of tax liability, some local jurisdictions could lose tax revenue because of higher special district tax capture. Second, Michigan’s two constraints on levy growth govern the rate at which tax base growth can be captured as new revenue:

- Under the Headlee Amendment, each annual local levy may only grow by the Consumer Price Index (CPI) or 5 percent, whichever is less, apart from new additions to the tax base. However, the levy may fall without restraint if taxable values fall.
- Under Proposal A, each property’s taxable value (TV) may rise only by the lesser of CPI or 5 percent until the time of sale but will fall without restraint if market values fall.

Taken together, these two limitations allow for an unlimited decline in collections after a market downturn, but only slow recovery of lost taxable value thereafter. Policies that alter the component values of the tax base—like a land value tax—provide an asymmetric payoff. For example, if the policy causes existing properties to appreciate 30 percent but inflation remains at 1.5 percent, the Headlee Amendment will slow tax levy growth and it will take 20 years to capture the gain. If the local tax base falls by 30 percent, losses to the levy are immediate under Proposal A, and it could take up to 20 years to recover lost taxing power, even if market values recover rapidly.

To capture these asymmetric risks as carefully as possible, the model introduces all known sources of taxable-value loss but avoids introducing gains that have not been directly estimated in the technical papers. The 2019 Detroit Revenue Estimating Conference (REC) forecast is used as the anchor point because it makes similar, conservative assumptions under a constant tax rate regime. This tax levy forecast is primarily driven by:

- **Inflation adjustments in taxable value.** Except for new property additions (i.e., new construction), Headlee restricts upward growth in the levy. Estimates from the Congressional Budget Office’s July 2020 Consumer Price Index for 2019–2023 are used to forecast Michigan’s Inflation Rate Multiplier for tax years 2020–2024. This mirrors the REC approach.
- **Tax capitalization.** The valuation study finds that under the base split-rate scenario (5:1), aggregate residential land values in Pennsylvania declined by an average of 6.7 percent. Market value growth for commercial and residential property indicates that growth in structure values more than offsets the decline in land value.
- **Expiration of tax abatements.** For each tax year, the cumulative totals of prior-year expired tax abatements have been added, which returns abated improvements to the *ad valorem* structure tax rate. NEZ Homestead certificate expirations have been wholly excluded, since they are renewable, and they are the only tax abatements that can remove accrued taxable value from the tax roll.
- **Headlee neutrality.** Like the REC approach, the primary sources of levy growth are the CPI forecast and known additions to the tax base. Instead of assuming strict, own-year revenue neutrality, in this analysis the levy is allowed to grow up to the amount expected by inflation.

Several unmeasured sources of taxable value growth are omitted, all of which may enhance taxes collected under a split-rate tax regime:

- **Uncapping effects.** Under Proposal A, arm’s-length sales and other *uncapping events* are the primary, parcel-level source of taxable value growth. Brueckner (1986) suggests that a higher tax on land may cause some owners of undeveloped property to sell. However, no attempt has been made to estimate a pre-split or post-split uncapping rate. The Detroit REC also does not estimate a background level of taxable-value uncapping,
- **Additions to the tax base.** The most likely prediction from a split-rate tax is a near-term increase in construction. In Pittsburgh, construction permit value increased 18 percent in the immediate post-implementation period, and similar permit increases are seen in other Pennsylvania jurisdictions (Oates and Schwab 1997; Yang 2014). However, both new construction and higher market prices are measured by market value. Because real property additions cannot be separated, they do not carry forward in the analysis of taxable value. This explains the large spread between growth in true cash value (i.e., an estimate of market value) and growth in the tax levy.
- **Changing demand for tax abatements.** Because the benefit of tax abatements is substantially less under a split-rate tax, the City may see fewer applications for additional tax incentives. If so, new construction would create more immediate tax revenue.
- **New business formation.** The technical papers reveal strong positive business formation effects from a split-rate tax shift. Although increased business activity is expected to also increase income tax receipts and enhance commercial property values, the firm-count estimates from that report cannot be converted into a defensible estimate of property tax-base growth.

The estimates are based on the 2019 assessment roll and treasury billing data provided by the City of Detroit.

The base model forecast changes under a 5:1 tax rate ratio, with the ratio evenly phased in over five years. This baseline reflects the city-only ratio used in Pittsburgh (5.77:1), although the population average for all Pennsylvania split-rate municipalities is closer to 7:1. We believe a 5:1 rate split is the ratio at which meaningful economic changes can be predicted. The model also implements five other scenarios: a single rate (1:1), 2:1, 7:1, 10:1, and a full land value tax (LVT), in which the same revenue is collected with no tax on improvements. The default model uses Yang and Hawley's *county dummy* specification to estimate market value change, and it applies an average of their land-value change estimates.

Microsimulation Estimates of Changes in Taxpayer Incidence

The twin goals of the microsimulation model are to understand changes in taxpayer burden across all properties and classes of property and to estimate changes in collectible revenue for capture jurisdictions within Detroit. To the extent possible, parcel-level changes in taxable value and tax burden have been measured.

Because estimates of changes in market value and land value are measured for an aggregate tax base, market capitalization changes at the parcel level cannot be directly measured. Similarly, individual uncapping events or new additions that would affect parcel tax burden cannot be predicted. The same is true for the delinquency and foreclosure estimates, where unmeasured behavioral factors likely dominate each individual property's entry and exit from tax delinquency. Modest citywide declines in land value imply that the model moderately overstates increases in tax bills for unimproved properties, while slightly understating savings for improved properties.

The microsimulation proceeds as follows:

1. Estimate capped-value taxable value change for each parcel
2. Calculate a fixed fraction of taxable land value for each parcel
3. Identify revenue-neutral, differentially weighted millages that are equivalent to a single-rate millage
4. Assign these weights to each property's 2019 total millage rate to modify parcel-level millage rates

This approach accounts for varying millage rates across properties, including millages excluded under Principal Residence Exemptions, Neighborhood Enterprise Zone certificates, senior and veteran exemptions, and commercial and industrial millage rates. It cannot account for future changes in the mills levied by a jurisdiction, and it assumes that all jurisdictions will enact a split-rate tax. Accordingly, the tax burden on each parcel is defined as:

$$(km_i) \times TV_i \frac{L_i}{TCV_i} + (k^{-1}m_i) \times TV_i \frac{I_i}{TCV_i}$$

where k is a constant, citywide increase in the land millage rate, m_i is the parcel's current millage rate, TV_i is the parcel's taxable value, and the L and I terms are the fraction of true cash value (TCV) from land and improvements. For neutrality in the tax levy, a 5:1 split-rate tax sets k by finding values for k such that the tax base is unchanged when its land and improvement components are differently weighted:

$$TV = k \left(TV \frac{L}{TCV} \right) + \frac{1}{5} * k \left(TV \frac{I}{TCV} \right)$$

Results

This section reports baseline revenue estimates, followed by estimates for Downtown Development Authority (DDA) tax increment revenues; brownfield tax increment finance revenues; effects for property classes, neighborhoods, and portfolios; and finally, effects for neighborhood retail areas.

Baseline Approach

As shown in table 3, our baseline model forecasts large increases in residential (13.4 percent) and commercial (21.5 percent) market values, with a statistically insignificant change in industrial market values. This increase is smoothed over the phase-in period. With these inputs, an average 3.1 percent increase in taxable true cash value is expected annually during implementation, or 16.3 percent growth over the total phase-in period. In this scenario, growth in the tax base exceeds the forecasted Headlee constraint on taxable value growth. This means that citywide assessed values will rise faster than the rate at which local governments can increase their tax levy. Tax-base growth beyond Headlee constraints would be added to taxable value in subsequent years.

All six specifications of Pennsylvania market changes from the Yang and Hawley technical paper have been tested on the Detroit tax base. In addition to the chosen specification of 3.1 percent, other specifications produce forecasts that vary from a -0.2 percent annual (-0.8 percent total) reduction in true cash value to a 6.8 percent annual (33.8 percent total) increase in true cash value. Four of six specifications, including the base model, find true cash value growth exceeds forecasted Headlee limitations. Five specifications predict growth greater than current revenue forecasts. Based on the Pennsylvania experience, it is reasonable to assume that a split-rate tax will cause more tax-base growth than continuing a single-rate tax structure. Uncertainty about the size of tax-base growth arises both from the methodological questions described in the technical paper and from unforeseeable changes in Detroit's investment climate over the next five years.

Table 3. Taxable True Cash Value by Property Class, 2019–2024*

	2019	2020	2021	2022	2023	2024
Residential Land	\$382.9 M	\$378.8 M	\$374.8 M	\$370.7 M	\$366.8 M	\$362.8 M
Residential Imp	<u>\$7,691.7 M</u>	<u>\$7,888.6 M</u>	<u>\$8,090.1 M</u>	<u>\$8,296.2 M</u>	<u>\$8,507.2 M</u>	<u>\$8,723.0 M</u>
Subtotal	<u>\$8,074.6 M</u>	<u>\$8,267.4 M</u>	<u>\$8,464.8 M</u>	<u>\$8,667.0 M</u>	<u>\$8,873.9 M</u>	<u>\$9,085.8 M</u>
<i>Residential % Change</i>		2.4%	2.4%	2.4%	2.4%	2.4%
Commercial Land	\$2,290.1 M	\$2,265.5 M	\$2,241.2 M	\$2,217.2 M	\$2,193.4 M	\$2,169.9 M
Commercial Imp	<u>\$7,620.4 M</u>	<u>\$8,039.6 M</u>	<u>\$8,474.2 M</u>	<u>\$8,924.9 M</u>	<u>\$9,392.4 M</u>	<u>\$9,877.3 M</u>
Subtotal	<u>\$9,910.5 M</u>	<u>\$10,305.1 M</u>	<u>\$10,715.5 M</u>	<u>\$11,142.2 M</u>	<u>\$11,585.8 M</u>	<u>\$12,047.2 M</u>
<i>Commercial % Change</i>		3.8%	3.8%	3.8%	3.8%	3.8%
Industrial Land	\$267.1 M	\$264.3 M	\$261.4 M	\$258.6 M	\$255.9 M	\$253.1 M
Industrial Imp	<u>\$998.0 M</u>	<u>\$1,000.8 M</u>	<u>\$1,003.7 M</u>	<u>\$1,006.5 M</u>	<u>\$1,009.2 M</u>	<u>\$1,012.0 M</u>
Subtotal	<u>\$1,265.1 M</u>	<u>\$1,265.1 M</u>	<u>\$1,265.1 M</u>	<u>\$1,265.1 M</u>	<u>\$1,265.1 M</u>	<u>\$1,265.1 M</u>
<i>Industrial % Change</i>		0.0%	0.0%	0.0%	0.0%	0.0%
Land Improvements	\$2,940.1 M	\$2,908.6 M	\$2,877.4 M	\$2,846.6 M	\$2,816.1 M	\$2,785.9 M
Improvements	<u>\$16,310.0 M</u>	<u>\$16,929.0 M</u>	<u>\$17,568.0 M</u>	<u>\$18,227.6 M</u>	<u>\$18,908.8 M</u>	<u>\$19,612.2 M</u>
Total TCV	<u>\$19,250.1 M</u>	<u>\$19,837.6 M</u>	<u>\$20,445.4 M</u>	<u>\$21,074.2 M</u>	<u>\$21,724.9 M</u>	<u>\$22,398.1 M</u>
Land % Change		-1.1%	-1.1%	-1.1%	-1.1%	-1.1%
Improvements % Change		3.8%	3.8%	3.8%	3.7%	3.7%
Total % Change		3.1%	3.1%	3.1%	3.1%	3.1%

Source: Author calculations from 2019 City of Detroit Assessment Records

* 5:1 final ratio, five-year phase-in

How much tax base growth will be available as new taxable value? Following precedents used by the Detroit Revenue Estimating Conference and Bankruptcy Plan of Adjustment, the forecast as shown in table 4 provides a lower-bound estimate of the tax-base growth converted into new local revenues. This approach is driven both by fiscal prudence and measurement limitations. Under Proposal A, the greatest drivers of taxable value growth in Michigan cities are new additions to the tax base and arms'-length sales that reset taxable value. The technical papers do not estimate either of these drivers. While past studies demonstrate growth in construction rates after split-rate tax implementation, the technical papers cannot isolate improvements from other sources of market value growth.⁴ No method is available to estimate how property sales volume would be affected under a split-rate tax. Without these changes occurring at the parcel level, taxable value growth is capped by the forecasted rate of inflation, even though total true cash value growth is expected to be two to five times higher than forecasted inflation in each year.

⁴ While some portion of the measured market value changes in Pennsylvania comes from additions to the tax base, the specific portion cannot be measured. In view of this, additions to the tax base are set at zero.

Table 4. Taxable Value Forecast, 2019–2024

	2019	2020	2021	2022	2023	2024
Land TV	\$690.8 M	\$703.2 M	\$709.5 M	\$718.1 M	\$731.7 M	\$747.8 M
Structure TV	\$4,460.9 M	\$4,541.2 M	\$4,582.0 M	\$4,637.0 M	\$4,725.1 M	\$4,829.1 M
Total TV	\$5,151.7 M	\$5,244.4 M	\$5,291.6 M	\$5,355.1 M	\$5,456.8 M	\$5,576.9 M
		1.80%	0.90%	1.20%	1.90%	2.20%

Source: Author calculations from 2019 City of Detroit Assessment Records

Having established an estimate of tax-base growth under a split-rate tax regime, the model sets revenue-neutral millages on improvements and land. The basis for revenue neutrality is equivalent collection upon taxable value growth between single-rate and split-rate scenarios, not a constant tax levy in each year. In other words, rather than holding revenue completely static for five years, the forecast assumes local jurisdictions prefer to capture taxable value growth stimulated by a new tax regime.

This modeling approach requires that local governments choose a target ratio of land-to-improvement taxes, then set land and improvement rates that produce the same levy as a single-rate tax. Essentially, the model asks: “Under the tax-base changes expected in the selected scenario, which land and improvement millage rates will collect the same levy as a 1:1 ratio?” The results of this analysis are given in table 5. The final ratio is then phased in over a designated number of years, adding an equal portion of the ratio difference in each year. For example, if a 5:1 ratio is phased in over five years, the tax-rate ratio is 2:1 in the second year, 3:1 in the third year, and so on.

In addition to taxable-value growth, the model estimates the effect of citywide tax abatement expirations through 2024. A property’s return to *ad valorem* millages is assumed to be permanent, so prior-year expirations accumulate as added collections in subsequent years. NEZ-H certificate expirations are exempted from these changes, since certificates are renewable and new applications for NEZ-H certificates may offset properties returning to the tax roll.

Table 5. Final Millage Rates for Revenue Neutrality

	Current	2:1	5:1	7:1	10:1	LVT
<u>Homestead</u>						
Improvements	69.62	61.55	45.66	38.95	31.92	0.00
Land	69.62	123.09	228.28	272.66	319.21	519.20
<u>Non-Homestead</u>						
Improvements	87.62	77.46	57.46	49.02	40.17	0.00
Land	87.62	154.91	287.30	343.16	401.74	653.43

Source: Author calculations from 2019 City of Detroit Assessment Records

The base forecast shown in table 6 contemplates Detroit transitioning from a single rate of 77.0 mills in 2019—the blended average for all taxable properties—to a rate of 51.7 mills applied to improvements and 258.7 mills applied to land in 2024. For homestead properties, this changes from a single rate of 68.7 mills to split rate of 45.7 mills on improvements and 228.3 mills on land. For a median-value owner-occupied house with 5 percent of taxable value from its land assessment, the weighted average millage rate is 54.8 mills, compared to 68.7 mills under the single-rate regime.

Table 6. Total Levy Forecast (\$M) *

	2019	2020	2021	2022	2023	2024
Land Levy	\$58.2	\$96.3	\$127.9	\$155.5	\$181.0	\$204.9
Improved Levy	\$338.6	\$311.3	\$285.1	\$264.4	\$248.1	\$234.6
Expiring Abatements	\$0	\$0	\$1.2	\$2.1	\$3.0	\$4.1
Total Levy	\$396.8	\$407.6	\$414.2	\$422.0	\$432.2	\$443.5
		2.7%	1.6%	1.9%	2.4%	2.6%
Land Mills	77.02	126.37	167.58	202.67	257.70	258.79
Improvement Mills	77.02	70.18	64.42	59.65	55.44	51.77
Blended Average Mills	77.02	77.72	78.27	78.80	79.19	79.53

Source: Author calculations from 2019 City of Detroit Assessment Records

Note: Mills are a TV-weighted average for all properties.

* 5:1 final ratio, five-year phase-in

The analysis finds that local taxing jurisdictions will collect the Headlee-maximum collection amount in each forecasted tax year, an average increase of 1.9 percent according to the Congressional Budget Office (CBO) inflation forecast. As shown in table 7, the net levy for each jurisdiction, after capture by smaller taxing districts, is uniformly positive. The DDA administrative levy is the only deviation from the consistent positive trend: although revenues grow by 4.4 percent over the full period, they fall in the second year after implementation. City general revenue rises by 10.9 percent over the phase-in period, while the City debt levy rises by 8.4 percent.

Although also limited by Headlee, the Detroit Public School (DPS) operating millages are poised for greater growth than other jurisdictions. Under a split-rate tax system, potential growth is slightly less than twice that of other taxing jurisdictions. This reflects the narrower tax base for the school operating levy, which excludes homestead residential properties. Because homestead properties are a primary saver under a split-rate tax, a tax base that excludes these properties experiences a greater revenue gain.

Table 7. Net Real Property Tax Levy (\$M) *

	2019	2020	2021	2022	2023	2024
City of Detroit						
General	\$83.44	\$84.74	\$85.63	\$86.79	\$88.46	\$90.47
Debt Service	\$44.47	\$45.46	\$46.13	\$46.94	\$48.04	\$49.32
Subtotal	\$127.91	\$130.20	\$131.76	\$133.73	\$136.50	\$139.79
DDA Admin	\$0.93	\$1.02	\$0.77	\$0.84	\$0.90	\$0.97
Library	\$19.72	\$19.99	\$20.17	\$20.42	\$20.79	\$21.24
Detroit Public Schools						
School Operating	\$54.24	\$56.26	\$57.90	\$59.51	\$61.31	\$63.18
School Debt	\$64.32	\$65.74	\$66.71	\$67.88	\$69.47	\$71.33
Subtotal	\$118.56	\$122.00	\$124.60	\$127.39	\$130.78	\$134.50
Wayne County						
Summer	\$23.62	\$23.99	\$24.24	\$24.57	\$25.04	\$25.61
Winter	\$4.58	\$4.69	\$4.78	\$4.87	\$5.00	\$5.14
HCMA	\$0.90	\$0.91	\$0.92	\$0.93	\$0.95	\$0.97
WCCC	\$13.78	\$13.97	\$14.10	\$14.27	\$14.53	\$14.85
WC Jails	\$4.41	\$4.52	\$4.59	\$4.68	\$4.79	\$4.92
WC Parks	\$1.15	\$1.18	\$1.20	\$1.22	\$1.26	\$1.29
Subtotal	\$48.44	\$49.27	\$49.83	\$50.55	\$51.57	\$52.78
DIA	\$0.95	\$0.97	\$0.99	\$1.00	\$1.03	\$1.06
Zoo	\$0.46	\$0.47	\$0.48	\$0.49	\$0.50	\$0.51
State Ed. Tax	\$25.99	\$26.29	\$26.46	\$26.72	\$27.13	\$27.62
Wayne RESA						
RESA	\$0.50	\$0.51	\$0.53	\$0.54	\$0.55	\$0.57
RESA Enhanced	\$9.77	\$9.99	\$10.14	\$10.32	\$10.57	\$10.85
RESA Sp Ed	\$14.34	\$14.54	\$14.67	\$14.85	\$15.12	\$15.45
Subtotal	\$24.61	\$25.05	\$25.34	\$25.72	\$26.25	\$26.88
TOTAL	\$367.58	\$375.26	\$380.41	\$386.85	\$395.45	\$405.35
		2.1%	1.4%	1.7%	2.2%	2.5%

Source: Author calculations from 2019 City of Detroit Assessment Records

* 5:1 final ratio, five-year phase-in

Downtown Development Authority (DDA) Tax Increment Revenues

The DDA comprises eight Tax Increment Districts (TIDs) that were established between 1978 and 2013. Although each district has a different base year for initial assessed value, bonds are pledged against the gross revenue for all increment districts. This analysis assumes that *initial assessed value* for each Tax Increment District represents a proportionate loss of building and land value from capturable millages.

Under a 2012 amendment to the DDA Act, all major millages may be captured for tax increment purposes, including debt millages (see table 8). Captured school millages are reimbursed by the state School Aid Fund.

Net capturable DDA revenue grows by 46.4 percent over the forecast period. In the baseline model, this growth is achieved without loss of revenue to other jurisdictions. This occurs because of the preponderance of vacant land and inefficient uses of land in many parts of the central business district. With over \$570 million of true cash value in vacant land and parking throughout Downtown and Midtown, the revenue potential is easy to understand. Less-developed DDA areas in the northwest quadrant and southeast quadrants of Downtown Detroit deliver a large share of total growth.

The DDA captures a disproportionate share of the added gross levy among Detroit’s capture jurisdictions: 30 percent of the gross increase in the DPS operating levy, 40 percent of the City general levy, and 44 percent of the State Education Tax. As previously noted, the model still anticipates significant growth in net levy for each of these jurisdictions, particularly for DPS operations. However, the extent of this capture will be greatly influenced by how amending legislation defines the capturable increment. Michigan’s tax increment finance statutes do not distinguish between land and improvement components of initial assessed value, so a split-rate tax must be accompanied by a new method to set the initial assessed value of building and land at the time of TIF commencement. Unless detailed historical assessment records are available, it may be impossible to recover the share of base value originally given to land. For this reason, the administrative method for allocating base land value will substantially determine the margin of capturable revenue. Methods that assign more weight to land as a component of initial assessed value will reduce the capturable increment.

Table 8. DDA Levy Capture by Tax Jurisdiction (\$M) *

	2019	2020	2021	2022	2023	2024
General Tax Increment Revenues						
City of Detroit						
City Operating	\$8.81	\$9.85	\$10.66	\$11.43	\$12.26	\$13.13
Library	\$2.05	\$2.29	\$2.47	\$2.65	\$2.85	\$3.05
Wayne County						
WC Summer	\$2.49	\$2.79	\$3.01	\$3.23	\$3.47	\$3.71
HCMA	\$0.09	\$0.11	\$0.11	\$0.12	\$0.13	\$0.14
WCCC	\$1.43	\$1.60	\$1.73	\$1.86	\$1.99	\$2.13
Subtotal	\$14.88	\$16.64	\$17.99	\$19.29	\$20.70	\$22.16
Catalyst Project Revenues						
SET	\$2.85	\$3.15	\$3.37	\$3.59	\$3.83	\$4.07
Detroit Public Schools						
School Operating	\$8.52	\$9.41	\$10.09	\$10.74	\$11.45	\$12.17
Wayne RESA						
RESA	\$0.04	\$0.05	\$0.05	\$0.06	\$0.06	\$0.06
RESA Sp Ed	\$1.49	\$1.66	\$1.80	\$1.93	\$2.07	\$2.21
Subtotal	\$12.90	\$14.27	\$15.31	\$16.32	\$17.40	\$18.52
Total	\$27.78	\$30.91	\$33.30	\$35.61	\$38.11	\$40.68
		11.3%	7.8%	6.9%	7.0%	6.7%

Source: Author calculations from 2019 City of Detroit Assessment Records

* 5:1 final ratio, five-year phase-in

Brownfield Tax Increment Revenues

Brownfield tax increment finance allows real estate developments to capture incremental growth in nondebt millages for a period of up to 30 years, or until approved expenses are reimbursed. Like the DDA, a split-rate tax produces significant short-term growth of total tax increment revenues across brownfield areas. Not all brownfield TIF areas, however, have capturable increment growth.

While the forecast (see table 9) can measure changes in the gross tax revenues produced within a Brownfield TIF district, it cannot directly measure changes in capturable incremental revenues because assessment records received do not record the *initial assessed value* within each district. The *gross levy* is provided as a sufficient measure for directional change in available capturable value, even though we cannot measure changes in the levy net of initial assessed value.

Data provided by the City Assessor define 60 distinct Brownfield TIF areas, encompassing \$162 million in real property taxable value. Under the 5:1 split tax-rate scenario, aggregate taxable value within brownfield areas grows 8.3 percent. All taxes levied within brownfield plan areas grow 30.7 percent, while the gross levy for capturable tax jurisdictions grows 32.6 percent, or \$2.25 million. The higher growth in gross levy is due to the large share of taxable land within Brownfield TIF districts. If land and structure values remain in constant ratio under a 5:1 rate split, levy growth will exceed taxable value growth whenever one-fifth of taxable value is contributed by land. In addition, certain Brownfield TIF districts have limited capture due to tax abatements for new construction. In these cases, the reduction in structure taxes is less influential for near-term increment generation.

In disaggregating the 32.6 percent growth across all Brownfield TIF districts, 41 districts, or 68.3 percent of all districts, experience growth in the gross levy. Districts with a high share of extant land value—such as 3800 Woodward, Brush Park, Lafayette West, and Queen Lillian—see growth of more than 50 percent of current capturable revenue. Among districts losing revenue, the maximum percentage reduction in gross levy is 23.6 percent. The largest absolute reductions occur for the Lafayette Towers and DuCharme Place districts, which each lose annual capturable value of \$50,000. These projects may still capture all eligible expenses over a longer period.

For newer Brownfield TIF districts, these fiscal projections are not suitable for assessing financing risks. In recently established districts—1475 E Jefferson, 40 Hague, Lafayette West, and the Packard Administration Building—the assessor does not record an improved value. This implies that improvements have not yet been undertaken, meaning that anticipated capture value may be substantially different than current capture value. For these five to seven projects in preconstruction, development teams may need to reevaluate whether tax increment finance remains a viable funding mechanism.

Looking ahead, a 5:1 split rate would not eliminate the revenue potential of future Brownfield TIF plans but will reduce total capture or spread out the reimbursements. Except under a full land value tax, a split-rate tax will still create a capturable increment of taxes on new improvements. A lower rate of taxation on improvements would require that eligible expenses be reimbursed over a longer period, since the annual increment is smaller. Within Detroit's current financing environment, the best analogy for the combined effect is the common practice of layering a Brownfield TIF and an Industrial Facilities Exemption (IFE). A *new facility* IFE abates 50 percent of taxes on new improvements for 12 years, analogous to the 35 percent perpetual reduction under a 5:1 rate split. Because current Brownfield TIF revenues have little revenue-bonding potential, spreading the capture over a longer time frame is unlikely to jeopardize private bond obligations.

Table 9. Brownfield TIF District Revenue, 2019–2024 *

Brownfield TIF Area	Base Year	Taxable Value		Gross Levy		Pct Change
		2019	2024	2019	2024	
10108 W Seven Mile		\$0.15 M	\$0.16 M	\$11,666	\$14,279	22.4%
1475 E Jefferson	2017	\$0.13 M	\$0.15 M	\$10,782	\$32,892	205.1%
3100 Woodward	2005	\$10.23 M	\$11.07 M	\$275,835	\$287,783	4.3%
3408 Woodward	2005	\$0.38 M	\$0.41 M	\$26,655	\$43,454	63.0%
3800 Woodward	2010	\$7.52 M	\$8.14 M	\$379,841	\$1,015,876	167.4%
40 Hague	2019	\$0.56 M	\$0.61 M	\$38,542	\$130,680	239.1%
7 Liv	2017	\$0.12 M	\$0.13 M	\$9,746	\$12,490	28.2%
7 Mile & Gratiot	2002	\$1.35 M	\$1.46 M	\$89,964	\$77,571	-13.8%
711 Alexandrine	2014	\$1.12 M	\$1.21 M	\$33,790	\$26,176	-22.5%
Albert Kahn	2018	\$3.29 M	\$3.56 M	\$216,755	\$270,424	24.8%
Auto Body One	2000	\$0.46 M	\$0.50 M	\$32,266	\$85,493	165.0%
Bellview/Uniroyal	2006	\$0.91 M	\$0.98 M	\$61,217	\$91,005	48.7%
Brush Park A-B	2016	\$12.31 M	\$13.33 M	\$484,509	\$602,403	24.3%
Canfield Lofts	2005	\$0.30 M	\$0.32 M	\$21,615	\$39,720	83.8%
Cardinal Health	2013	\$6.30 M	\$6.82 M	\$246,036	\$239,824	-2.5%
Carpenter Road	2008	\$0.67 M	\$0.73 M	\$26,481	\$25,325	-4.4%
Comprehensive Logistics	2014	\$5.54 M	\$6.00 M	\$238,044	\$274,842	15.5%
Corktown Lofts	2019	\$0.21 M	\$0.22 M	\$15,469	\$18,775	21.4%
Detroit Gateway	2011	\$8.76 M	\$9.48 M	\$573,871	\$581,638	1.4%
Du Charme Place	2014	\$9.93 M	\$10.75 M	\$246,116	\$199,597	-18.9%
E Jefferson Neighborhood	2010	\$0.77 M	\$0.84 M	\$36,759	\$34,871	-5.1%
Eastern Market	2018	\$0.18 M	\$0.19 M	\$13,579	\$32,858	142.0%
Eastwood Senior	2017	\$0.10 M	\$0.10 M	\$8,338	\$7,365	-11.7%
El Moor Gardens	2014	\$0.86 M	\$0.93 M	\$25,215	\$22,769	-9.7%
Forest Arm Apartments	2009	\$2.16 M	\$2.33 M	\$37,851	\$35,813	-5.4%
Garfield Area	2006	\$1.92 M	\$2.08 M	\$127,526	\$267,032	109.4%
Grand River-Six Mile		\$0.53 M	\$0.57 M	\$36,410	\$42,981	18.0%
Green Garage	2010	\$0.32 M	\$0.35 M	\$13,691	\$24,500	79.0%
Harbortown	2012	\$6.67 M	\$7.23 M	\$437,926	\$535,235	22.2%
Herman Kiefer	2017	\$0.03 M	\$0.04 M	\$4,270	\$6,521	52.7%
I 94 Area #1	2002	\$2.71 M	\$2.94 M	\$179,113	\$184,828	3.2%
I 94 Area #2	2002	\$0.09 M	\$0.10 M	\$7,990	\$10,290	28.8%
I 94 Area #3	2002	\$0.14 M	\$0.15 M	\$10,964	\$33,536	205.9%
I 94 Area #4	2002	\$4.50 M	\$4.87 M	\$173,606	\$191,871	10.5%
I 94 Area #5	2002	\$6.70 M	\$7.26 M	\$9,200	\$9,786	6.4%
I 94 Area #6	2002	\$0.00 M	\$0.00 M	\$2,032	\$2,070	1.9%
Lafayette Towers	2015	\$10.11 M	\$10.95 M	\$369,419	\$323,479	-12.4%
Lafayette West	2018	\$2.13 M	\$2.30 M	\$141,084	\$491,892	248.7%
Mack Alter North	2002	\$0.30 M	\$0.33 M	\$21,686	\$20,456	-5.7%
Mack Altern South	2002	\$1.01 M	\$1.10 M	\$68,225	\$65,714	-3.7%
Mack Athletic	2014	\$0.07 M	\$0.07 M	\$6,266	\$9,816	56.7%

Table 9. Brownfield TIF District Revenue, 2019–2024 * (continued from page 36)

Brownfield TIF Area	Base Year	Taxable Value		Gross Levy		Pct Change
		2019	2024	2019	2024	
Mexicantown	2001	\$0.37 M	\$0.40 M	\$26,121	\$23,145	-11.4%
Morgan Waterfront		\$10.53 M	\$11.40 M	\$309,688	\$339,905	9.8%
NDC Project 1	2002	\$1.79 M	\$1.94 M	\$118,872	\$158,895	33.7%
Oakman NSO	2006	\$0.52 M	\$0.56 M	\$18,365	\$25,705	40.0%
Okaman Focus Hope	2006	\$0.99 M	\$1.07 M	\$47,147	\$44,650	-5.3%
Orleans Landing	2014	\$11.23 M	\$12.16 M	\$327,163	\$521,882	59.5%
Osi Art Apt	2019	\$0.01 M	\$0.01 M	\$2,835	\$4,900	72.8%
Packard Adm Bldg	2016	\$0.16 M	\$0.17 M	\$12,294	\$23,440	90.7%
Queen Lillian 1	2012	\$2.96 M	\$3.20 M	\$195,151	\$331,056	69.6%
Redford High	2011	\$5.79 M	\$6.27 M	\$380,404	\$391,759	3.0%
St Charles	2016	\$1.71 M	\$1.85 M	\$111,823	\$94,983	-15.1%
Std Fed Gratiot	2003	\$0.14 M	\$0.16 M	\$11,424	\$18,675	63.5%
Third and Grand	2016	\$6.26 M	\$6.78 M	\$157,882	\$136,705	-13.4%
Tiger Stadium	2007	\$0.19 M	\$0.21 M	\$14,470	\$20,508	41.7%
Tiger Stadium Ret	2007	\$0.57 M	\$0.61 M	\$39,071	\$132,543	239.2%
Union at Midtown	2016	\$0.04 M	\$0.05 M	\$4,823	\$11,902	146.8%
West Grand Blvd		\$0.13 M	\$0.14 M	\$6,526	\$5,534	-15.2%
Wolverine Packing	2017	\$2.16 M	\$2.33 M	\$142,814	\$128,067	-10.3%
Woodward Mill	2001	\$5.22 M	\$5.65 M	\$186,700	\$288,484	54.5%
All Brownfield Districts		\$162.30 M	\$175.69 M	\$6.88 M	\$9.13 M	32.6%

Source: Author calculations from 2019 City of Detroit Assessment Records

* 5:1 final ratio, five-year phase-in

Effects on Property Classes, Neighborhoods, and Portfolios

A primary reason to conduct a parcel-level analysis of split-rate tax adoption is to identify the effects on residential taxpayers. The results in table 10 reflect reductions from the beginning to end of the phase-in period. For further analysis, the forecast data is also coded according to neighborhood, retail district, Strategic Neighborhood Fund (SNF) area, and NEZ Homestead district, which are available as appendices to this report.

Ad valorem principal residences—exclusive of condominium units—see an average reduction of 19.1 percent in property tax bills by the end of the phase-in period, as indicated in the top panel of table 9. Principal residences alone see an 18.6 percent reduction, or an average savings of \$160 per year, and non-principal residence properties see slightly lower reductions. Properties with true cash values between \$30,000 and \$75,000 see the largest reductions, 20.4 percent on average. Savings attenuate for properties between \$75,000 and \$150,000 and are reduced by 10 percent for values above \$150,000. Greater savings for lower-value properties are consistent across all split-rate tax ratio scenarios.

Savings for residential properties are notably uniform: 97.5 percent of homeowners paying full millages see a tax reduction or no change under the 5:1 tax rate scenario, as indicated in the lower panel of table 9. The forecast finds widespread residential tax savings for all scenarios but the 2:1 tax rate

scenario, where residential properties are more affected by increases in market value than lower taxes on improvements.

Through Detroit’s various NEZ programs, 3.8 percent of Detroit homeowners already benefit from a reduced tax burden on improvements. When a split-rate tax is added to this, 92.1 percent of NEZ Homestead owners see a reduction or no change in tax burden, with an average reduction of \$217 dollars per year. NEZ New and Rehab certificate holders, which have 75 percent or more of their taxes on improvements exempted, see a respective average increase of \$200 and \$396 dollars per year. Because improvements are already abated in the short term, a majority face short-term increases from taxes on land but would benefit greatly when the abatement expires and taxes on improvements resume.

Table 10. Summary of Effective Tax Reductions for Full-Millage Residential Property

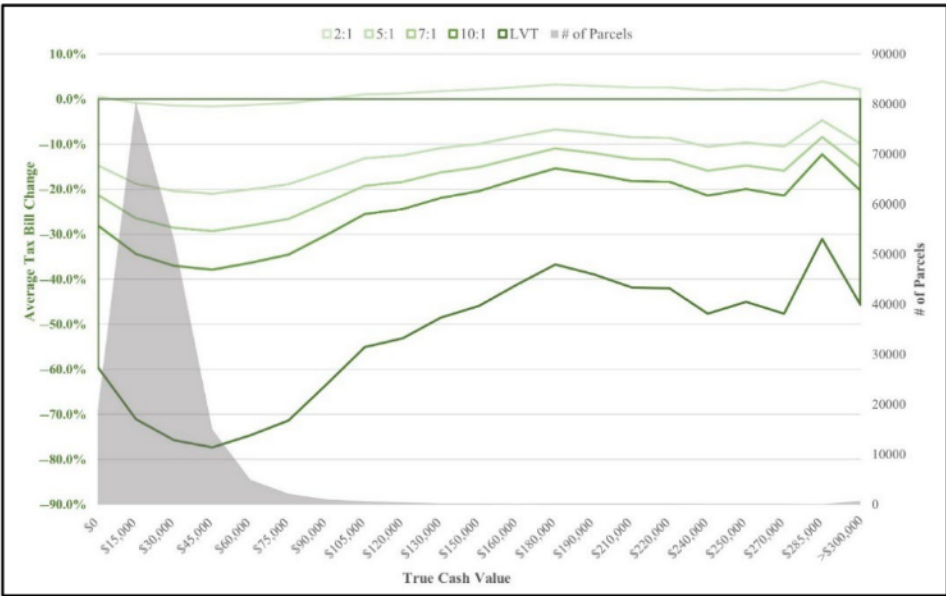
Average Effective Tax Reductions for Residential Properties							
	<u>Properties</u>	<u>Current</u>	<u>2:1</u>	<u>5:1</u>	<u>7:1</u>	<u>10:1</u>	<u>LVT</u>
Principal Residence	83,644	0%	-1%	-18.4%	-26.0%	-33.8%	-70.0%
Non-Principal Residence	89,807	0%	-0.9%	-18.8%	-26.4%	-34.3%	-71.0%
All Residential	187,877	0%	-0.8%	-18.6%	-26.2%	-34.1%	-70.6%
Percent of Residential Properties with Tax Reduction or No Change							
	<u>Properties</u>	<u>Current</u>	<u>2:1</u>	<u>5:1</u>	<u>7:1</u>	<u>10:1</u>	<u>LVT</u>
Principal Residence	83,644	0%	82.8%	97.5%	97.8%	98.0%	98.4%
Non-Principal Residence	89,807	0%	80.8%	97.1%	97.4%	97.5%	97.9%
All Residential	178,877	0%	81.9%	97.2%	97.5%	97.7%	98.1%

Source: Author calculations from 2019 City of Detroit Assessment Records

Note: Excludes condos, NEZ property

Figure 1 illustrates the average tax change by property value for residential properties without tax abatements. Alternative split-rate tax ratios are illustrated by the green lines, with the average percentage change indicated on the left-hand scale. The number of properties is illustrated by the gray area and indicated on the right-hand scale.

Figure 1. Average Tax Change by Residential Property Value



Source: Author calculations from 2019 City of Detroit Assessment Records

Nearly all city neighborhoods see tax savings, with lower-value housing areas seeing moderately larger savings. In SNF areas, average residential savings range between a 1.6 percent reduction (Jefferson Chalmers) and a 23 percent reduction (Southwest/Vernor), with all but two SNF neighborhoods seeing savings exceeding 17 percent. The appendices to this report provide detailed estimates for all Department of Neighborhoods-defined neighborhoods and SNF areas.

More moderate savings occur in neighborhoods with high home values, such as Boston Edison and University District, although the measured savings are moderated by the existing NEZ-H abatements in place on many tax parcels. Midtown and Downtown residential properties, on average, see a 15 percent tax increase. Approximately 30 percent of residences in these areas hold an NEZ Rehab tax exemption, which substantially reduces the value of a lower tax rate on improvements.

As table 11 shows, a 5:1 split-rate tax provides relief equivalent to the NEZ Homestead program. In 2019, the NEZ-H program reduced the statutory tax burden on improvements by 17.9 percent for certificate holders in eligible neighborhoods. Because only 15 percent of the city’s geographic area is currently eligible for the program, and only 30 percent of eligible owners apply for NEZ-H exemptions, a split-rate tax regime will create many more beneficiaries than the NEZ Homestead program.

Several NEZ Rehab properties with certificates that expire in the next three years were sampled. Among these properties, the NEZ Rehab certificate discounted up to 98 percent of the property’s tax liability by exempting new improvements. For this reason, owners are liable for a major rate increase when the abatement expires. If a split-rate tax were in place, it would reduce the increase after abatement expiration by an average of 40 percent.

Table 11. Tax Changes for Residential Properties by Tax Classification

	Properties	Pct with reduction	Avg TV	2019 Avg Levy	Avg 2024 Change
Principal Residence					
Ad Valorem	89,715	97.5%	\$12,221	\$856	-19.1%
Ad Valorem Condo	515	97.9%	\$45,769	\$3,188	-14.3%
NEZ Homestead	5,190	92.1%	\$31,239	\$1,831	-11.6%
NEZ New	673	40.9%	\$63,608	\$1,331	15.5%
NEZ Rehab	626	24.8%	\$14,827	\$1,070	29.3%
All Principal Residences	96,719	96.3%	\$13,794	\$926	-17.5%
Non-Principal Residence					
Ad Valorem	92,310	97.0%	\$10,005	\$877	-19.3%
Ad Valorem Condo	617	82.8%	\$50,143	\$4,378	-10.1%
NEZ Homestead	67	97.0%	\$21,739	\$1,631	-18.7%
NEZ New	221	43.4%	\$62,100	\$1,842	10.1%
NEZ Rehab	709	26.1%	\$11,560	\$1,015	46.6%
All Non-Principal Residences	93,924	96.2%	\$10,411	\$903	-18.3%
Total	190,643	96.3%	\$12,127	\$915	-17.9%

Source: City of Detroit Assessment Records, author calculations

Note: Estimates assume that NEZ tax rates and split-rate tax rates are both present. If NEZ certificates expire, or districts are removed, properties save substantially more compared to their *ad valorem* tax burden.

Effects on Neighborhood Retail

Effects within the City’s targeted commercial corridors vary across the city. Although these corridors share common zoning restrictions, they have substantially different compositions of land use and differences in underlying land values. Average tax bills for improved property in the Southwest/Vernor, Russel Woods/Dexter, and Villages/Van Dyke areas are reduced by -12 to -25 percent.

The East Jefferson corridor experiences a total increase in tax burden of 90 percent, largely due to the presence of bank branches, car dealerships, auto service facilities, low-rise office buildings, and shopping centers, all of which maintain substantial parking areas (average floor-area ratios are 0.5). Like Midtown and Downtown, the policy effect would function as a development stimulus, provided there is demand for additional construction. The City’s recent East Jefferson Corridor Enhancement Plan (2019) finds that higher residential densities and more retail amenities fit with Detroiters’ aspirations for the corridor.

All other primary retail areas see small aggregate changes of approximately 2 to 5 percent from current bills. This variation is likely a function of existing development intensity. Appendices to this report provide a detailed analysis of net payers and net savers among improved properties along retail corridors.

Effects on Employment Districts

Table 12 shows the effects of proposed tax changes on commercial and industrial property. The changes are considered within the employment districts defined by the Detroit Future City Strategic Framework (2012). Personal property is excluded from the analysis. Effects correspond approximately to the labor-

intensity and capital intensity of businesses. Heavy manufacturing industries have a total decrease in tax liability of 7.7 percent; light manufacturing sees a total increase of 5.9 percent; warehouses and logistics see an increase of approximately 28.0 percent. For individual businesses, capital-intensive land uses produce savings, while laydown yards, parking, and open storage areas increase tax costs. Auto scrapyards and scrap metal operations are among the largest net payers: tax burden doubles for all identified scrap operations. Aggregate storage areas and open-air material storage areas also see a near-maximum increase in tax burden.

These effects are consistent with the City’s current economic development strategy, which seeks to maximize employment density and building square footage within industrial districts. The findings also match business formation findings from Pennsylvania: capital-intensive industries are most attracted by a split-rate tax regime in part because they see immediate tax savings under this regime.

Table 12. Tax Changes for Major Commercial and Industrial Land Uses

	<u>Parcels</u>	<u>Acres</u>	<u>Floor Area</u>	<u>Avg. FAR</u>	<u>TCV</u>	<u>2019 Levy</u>	<u>2024 Levy</u>	<u>Change (%)</u>
Commercial								
Nursing Home/ Assisted Living Hospital & Medical Office	71	93	2.5M	0.8	\$93.8M	\$2.9M	\$2.3M	-19.3
Hotel/Motel	65	54	5.1M	1.8	\$608.3M	\$6.7M	\$6.7M	0.0
Office ≥3 Stories Large-Format	111	170	32.1M	6.7	\$2,117.2M	\$35.6M	\$38.2M	7.0
Retail	233	366	5.4M	0.5	\$253.5M	\$7.5M	\$8.1M	8.0
Casino	14	35	3.9M	1.9	\$1,148.6M	\$20.0M	\$23.1M	15.4
Office <3 Stories	996	1,460	7.9M	0.7	\$393.6M	\$8.4M	\$14.7M	74.6
Industrial								
Heavy Manufacturing	88	927	11.4M	0.7	\$195.4M	\$5.8M	\$5.5M	-6.7
Light Manufacturing	452	875	17.2M	0.7	\$261.0M	\$6.1M	\$6.6M	8.2
Engineering/ R&D	45	85	1.5M	0.6	\$40.1M	\$0.7M	\$0.9M	24.6
Other Improved Warehouse & Storage	232	419	3.6M	0.6	\$77.9M	\$2.2M	\$2.8M	26.6
Logistics	1,218	1,711	34.0M	0.8	\$396.0M	\$8.7M	\$11.1M	28.0
Marine	221	706	6.8M	0.2	\$119.0M	\$3.5M	\$4.5M	29.3
Marine	22	129	0.6M	0.1	\$21.7M	\$0.4M	\$0.8M	84.5
Utility/Railroad	131	302	1.3M	0.2	\$38.0M	\$1.4M	\$2.6M	85.9
Scrapyard Aggregate & Materials Storage	148	434	1.7M	0.1	\$35.4M	\$0.9M	\$1.8M	102.0
Storage	75	155	0.3M	0.0	\$11.2M	\$0.3M	\$1.0M	186.2

Source: City of Detroit Assessment Records

Effects on Major Property Portfolios

Finally, the analysis considers the effects on major property portfolios across the city of Detroit. The project team has identified common beneficial ownership of Detroit tax parcels, including those under different holding companies, using a string-searching algorithm and the provided assessment data. Because the portfolio-level effects have much to do with portfolio holdings and investor strategy, the

findings are difficult to generalize. It suffices to say that changes in tax burden match the expected incidence of a split-rate tax, with a shift in burden towards properties held substantially below their highest-and-best use. For an investor who owns a mixed portfolio of surface parking and major commercial buildings, holdings offset. An analysis by portfolio holdings is available under separate appendices for Detroit's largest employers, large commercial developers (>\$50 million in true cash value), and large industrial portfolios (>\$10 million in true cash value).

Recommendations

The following policy recommendations for the City of Detroit are based on the analysis reviewed in this report:

Implement a split-rate property tax system, with a higher tax rate applied to land and a lower rate applied to structures and improvements.

This study indicates that a split-rate system can improve both the equity and efficiency of the property tax in Detroit. Adoption of a split rate improves the prospect of accelerating land development and stimulating structural improvements. Furthermore, tax compliance and homeownership can be meaningfully improved with this approach, and new businesses can be attracted.

When choosing the split-rate ratio, consider taxing land at least five times the rate of structures and improvements (i.e., a 5:1 ratio). The land-to-structure ratio could be phased in over time.

In the proposed model, a 5:1 ratio lowers Detroit's tax rate on improvements to 57.3 mills, close to parity with the Detroit metro region and with the statewide average millage rate (52.7 mills in 2018). From a capital tax viewpoint, this lower rate reduces tax penalties to firms and homeowners who locate in Detroit. For residential property, it provides rates commensurate with those under the NEZ-H program (56.3 mills). Note that this ratio is nominally like Pittsburgh's split-rate tax implementation of 5.77:1, although this *Pittsburgh ratio* applied only to city millages and not to other jurisdictions.

While other ratios can be considered, the analysis of varied ratios in Pennsylvania indicates that the investment effects of a split-rate tax are not highly sensitive to the selected ratio. Larger ratios are expected to amplify the effects outlined in these papers, including further reductions in tax delinquency and foreclosure, and additional reductions in residential tax burden can only serve to support neighborhood stabilization efforts.

To ensure optimal implementation of a split-rate tax system, taxable land values must be measured accurately and reflect market values.

A split-rate tax is not anticipated to substantially change the administration of property assessment. However, with increased reliance on the land value component of the property tax base, careful attention to assessing land values accurately and appropriately is essential. This requires estimation of market-based land values. Additionally, regular updating of land values is advisable. Updating does not necessarily require reexamination each year and could be accomplished with model recalibration or market adjustment factors based on sales-ratio studies (see *IAAO Standard on Mass Appraisal of Real Property*, section 4.8, page 10).

For maximum effect, include all units of local government in the split-rate system implementation.

If only the City of Detroit adopts a split-rate system, the benefits will be attenuated. Maximum benefits of moving to a split-rate tax regime will only be realized if all units of local government adopt the split-rate approach. The inclusion of other jurisdictions, however, may be partially constrained by prior interpretations of Michigan's Uniformity of Taxation clause.

Reevaluate commercial tax abatement underwriting.

Tax abatements deliver similar, but inferior, private benefits to a land value tax (Anderson and Dye 2011). The City's underwriting should evaluate whether adding tax incentives to a split-rate tax regime creates excess returns. Tax subsidies may still be needed when other cities compete for investments with attractive tax incentives, but they are less likely to be necessary for place-based investments.

Reconsider the role of the NEZ-H program under a split-rate tax system.

At ratios above 5:1, a split-rate tax system provides more relief than a Neighborhood Enterprise Zone Homestead (NEZ-H) tax exemption for at least 92 percent of current NEZ-H properties. This relief applies to all owner-occupied properties and does so without petition. Given the unequal tax rates that the NEZ-H program introduced, the City should consider whether local NEZ-H districts are necessary under a split-rate tax system. Terminating the NEZ-H program would provide identical privileges for all homeowners and at the same time extend comparable tax benefits to current NEZ-H certificate holders.

In 2019, the 6,163 active NEZ-H certificates represented a \$2.63 million total tax expenditure, achieved through a reduction of City operating, county operating, and library mills. The 50 percent reduction in library mills is the most consequential, representing 1.2 percent of the Detroit Public Library's FY18 budget. The program's fiscal effect is limited because enrollment is low: about 20 percent of eligible homeowners in NEZ-H districts are currently enrolled in the program, with rates near 40 percent in districts where properties have average true cash values exceeding \$200,000.

If current NEZ-H districts are retained under a split-rate tax, they would further reduce improvement millages. The 3.7 percent of owner-occupied properties with higher split-rate tax bills are concentrated in a few existing NEZ-H districts (Midtown, Indian Village, Boston Edison, and the 8 Mile-Woodward subdivisions). In these areas, most properties already see split-rate reductions but retaining the NEZ-H exemption would moderate tax increases for the rest. These options need to be weighed against the inequity of retaining unique tax privileges for Detroit's highest-value submarkets.

NEZ-H districts have additional application as a transitional exemption for NEZ Rehab and NEZ New districts, some of which authorize as much as a 95 percent discount on the principal residence tax rate for 15 years. The model shows that a split-rate tax softens the return to a full taxation for these districts. Sampled properties with expiring NEZ Rehab certificates have 40 percent less increase than they do in a single-rate environment. Layering an NEZ-H certificate would further soften the transition through the additional exemption from improvement taxes.

This analysis reaffirms that the NEZ-H program has no permanent effect on housing affordability or neighborhood wealth, although it does increase housing prices. Hodge and Komerak (2016) convincingly show that the only economic beneficiaries of the NEZ-H program are incumbent owners when an NEZ-H district is designated. Future homeowners pay for the reduced tax burden when they acquire the property, meaning the tax savings are given to the seller rather than to local governments. By comparison, a split-rate tax confers similar benefits on most NEZ-H certificate holders while expanding the same benefit to all other homeowners. Replacing the NEZ-H program improves the horizontal and vertical equity of the property tax.

Inform lenders about the implications of changes to the tax system.

Local commercial and residential mortgage bankers frequently require applicants to pursue tax abatements before securing a loan. To enhance credit access and loan size, lenders should be notified of tax changes that would enhance debt service coverage without the procedural barriers of tax abatements. Lender education may increase the visibility of the change, accelerating the market response. The strongest effects on lending volume would occur in affordable neighborhoods with strong lending potential but no targeted tax relief programs, such as Southwest Detroit, College Park, the North End, Mohican Regent, Banglatown, Ravendale, Chandler Park, and Warrendale (east of the Southfield Freeway).

Use available land price indices or cost-approach methods to validate local sales data.

Under a tax regime that assigns more importance to land values, accurate land valuation becomes more essential to assessment validity and achieving the desired policy effects. Assessment approaches based on arms'-length transactions have limited application in a market with few private-party vacant land sales. For this reason, Detroit's residential land assessments are primarily driven by appraiser opinions-of-value for vacant land within residential submarkets. While split-rate implementation does not require any immediate change to land valuation or any other feature of the assessment process, there may be ways to overcome data limitations.

Replacement cost methods value land as a residual, subtracting the depreciated cost of the improvements from the total property value. Assessors are trained in separately measuring structure value, even for heavily depreciated housing in weak markets. In Detroit, the key advantage of the replacement approach is expanding the available pool of sales data to include improved residential properties, rather than deriving land values solely from vacant land sales. A small-scale, replacement cost survey of improved land parcels would validate current opinions-of-value. A replacement cost study would: (1) identify recent arms'-length residential property sales; (2) select a representative, small-area sample of these sales for several Economic Condition Factors neighborhoods; (3) estimate structure replacement cost for these properties; and (4) determine whether residual land value reflects appraiser opinion of vacant land values.

In submarkets with active mortgage lending, the uniform appraisals reports recorded by Fannie Mae and Freddie Mac could accomplish this goal without the need for field surveys, since these reports now record structure value and residual land value for all federally guaranteed home mortgages. Using publicly available mortgage-lending data alone would limit the breadth of neighborhoods covered but may better capture changes over time in recovering submarkets.

If property-level studies prove administratively burdensome over time, localized land value indices may be an alternative source for capturing changes in land value. The Federal Housing Finance Agency (FHFA) releases a residential land value index (Larson et al. 2019) at the Census tract-level using the uniform appraisal reports. This records adjustments in both absolute land value for residential properties and the fractional share of land over time. This index could be used to make automatic yearly adjustments to local-area land apportionments and could also be used to spot-check new appraiser opinions.

Implement ways to encourage payment of back taxes to reduce existing chronic tax delinquency.

Almost all homeowners see a substantially reduced tax burden under a split-rate tax, which enhances their ability to pay future taxes and will encourage tax compliance. However, this benefit will not be fully felt by homeowners who are paying substantial taxes, interest, and fees from earlier tax years. Coupling a split-rate tax with programs that encourage payment of delinquent taxes, as with the recent implementation of the Pay-As-You-Stay (PAYS) program, can also help increase future tax compliance, complementing an important benefit of split-rate taxation.

Further Considerations

If the City wishes to initially implement a lower ratio of land-to-structure tax rates, phasing to a higher ratio later is feasible. The results of this analysis indicate that the positive effects observed are not highly sensitive to the tax ratio, within the range observed. In other words, most effects will scale in proportion to the ratio the City selects. However, care should be taken to assure initial overall revenue neutrality.

The effects predicted in this report depend on market-value assessment methods. While the theory of property taxation holds that a tax on land value is neutral with respect to development timing, that result only holds if land is assessed independently of its current use. To the extent that assessments reflect current use, the property tax can alter decisions of landowners on development and redevelopment, both in terms of the timing and intensity of capital applied to the land (Anderson 1986; Bentick 1979, 1982; Oates and Schwab 1997). For the tax system to achieve a neutral effect, assessments must reflect market value, not current use value. Skidmore and Sands (2015) also stress that if Detroit considers a potential move to reliance on land taxation, “an accurate and up-to-date appraisal of all land values is a prerequisite for such a change.”

While it is preferable to pursue state legislation to permit a split-rate tax, as Sands and Skidmore (2015) point out, it is possible under current state statutes for the City of Detroit to implement a land-based special assessment tax. This approach is clearly second-best but could be considered in the absence of a state-enabled split-rate tax policy option.

Concerns about increased tax liabilities for certain property owners may be addressed with several mechanisms, including exemptions or credits. While the aim of a split-rate tax system is to move away from selective exemptions, partial exemptions of the tax increase for specific classes of taxpayers, whose liabilities rise substantially, could be considered. Alternatively, a mechanism that provides a partial tax credit for increased liability above a threshold level could be considered. A final option, with more neutral effects, is to make higher tax burdens payable upon property sale. This would provide a stabilizing, Proposal A-like effect for highly-affected properties without changing development incentives. Administrative aspects of implementing such a credit or deferral deserve further consideration, however.

Finally, as with any tax regime change, the adoption of a split-rate tax system creates short-term winners and losers, that is, property owners whose taxes fall or rise. A split-rate tax system realigns tax burden with a purpose: to spur development, reduce speculative holding, and lower the costs of maintaining property. Individualized relief programs attenuate those incentives and reduce the effectiveness of the tax system change. When considering exemptions for a select group of property owners, the trade-offs between individual relief and overall strategy must be considered.

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