MDCEP
MARYLAND CENTER ON ECONOMIC POLICY

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Revenue Options for Baltimore City's Affordable Housing Trust Fund

Baltimore City voters approved a ballot question in 2016 to create an affordable housing trust fund. The purpose of the fund is to allow the city to expand the amount of available housing that is affordable to low-income city residents. One-third of Baltimore homeowners and more than half of renters face unaffordable housing costs, meaning that they spend more than 30 percent of their incomes on housing.[i] This leaves less money for other necessities like food, health care, and transportation, and puts families at a higher risk of becoming homeless. Creating the trust fund was an important step to help Baltimoreans access decent housing, but it can only accomplish this goal with a reliable revenue source. So far, it has none. The Maryland Center on Economic Policy analyzed five potential dedicated revenue sources for the fund:

- Transfer and recordation tax increase
- New construction property tax capture
- Hotel tax increase
- Tax sale proceeds capture
- Development excise tax

Each revenue option was analyzed over a period of past years to determine both the average annual revenue the option would generate and the variation in revenue. The revenue estimates presented in this policy brief are subject to a number of limitations. All estimates are based on historical data and do not attempt to forecast future revenue. All estimates are based on publicly available data, most of which is available only in aggregate. Due to these data limitations and the necessity of making simplifying assumptions, **all revenue estimates in this brief should be treated as order-of-magnitude estimates only**.

Table 1 summarizes estimated revenues from each option.

TABLE 1. SUMMARY OF REVENUE ESTIMATES

OPTION	REVENUE ESTIMATES		
	AVERAGE	RANGE	50% OF YEARS
Transfer and recordation tax increase	$20.9 million	$13.2 million to $37.9 million	$15.4 million to $25.0 million
New construction property tax capture	$15.3 million	$7.1 million to $27.1 million	$8.1 million to $21.5 million
Hotel tax increase	$1.2 million	$994,000 to $1.4 million	$1.1 million to $1.3 million
Tax sale proceeds capture	$5.8 million	$5.1 million to $6.9 million	$5.2 million to $6.3 million
Development excise tax	$11.5 million	$1.5 million to $22.8 million	$7.6 million to $15.3 million

Option 1: Transfer and Recordation Tax Increase

Like most local governments, Baltimore City levies transfer and recordation taxes on real estate sales. These taxes are due when parties record a transaction with the city government, and they apply to similar, but not identical, sets of documents.[ii]

Currently, the city charges 1.5 percent of the purchase price in transfer tax and 1.0 percent (officially, $5 per $500) in recordation tax. Both taxes exempt the first $22,000 in purchase price for transactions in which the buyer intends to live on the property (owner-occupied transactions).[iii]

Option 1 would increase the transfer and recordation tax rates for non-owner occupied transactions. The transfer tax rate would increase to 2.1 percent and the recordation tax rate would increase to 1.4 percent, or $7 per $500. The tax rates for owner-occupied transactions would remain unchanged.

TABLE 2. OPTION 1 REVENUE ESTIMATES

Analysis period	Fiscal years 2007 to 2018
Average revenue	$20.9 million
Range	$13.2 million to $37.9 million
50% of years	$15.4 million to $25.0 million

The calculations for the transfer and recordation tax components of Option 1 are very similar, with only a few differences in details. For simplicity, this section describes the estimation of transfer tax revenue.

This calculation involves three major steps:

1. Estimate the tax base in each year of the analysis period.
2. Estimate the proportion of the tax base attributable to non-owner occupied transactions.
3. Apply the incremental tax rate (0.6 percent) to the non-owner occupied tax base.

Estimating the tax base

The simplest way to estimate the transfer tax base in each year of the analysis period is to divide transfer tax revenue in that year by the tax rate.[iv] Table 3 shows this calculation.

TABLE 3. PRELIMINARY TRANSFER TAX BASE ESTIMATE

FISCAL YEAR	TRANSFER TAX REVENUE	PRELIMINARY TAX BASE ESTIMATE
2007	$52.73 million	$3.52 billion
2008	$36.50 million	$2.43 billion
2009	$23.39 million	$1.56 billion
2010	$26.02 million	$1.73 billion
2011	$21.84 million	$1.46 billion
2012	$22.84 million	$1.52 billion
2013	$27.51 million	$1.83 billion
2014	$36.77 million	$2.45 billion
2015	$36.80 million	$2.45 billion
2016	$47.64 million	$3.18 billion
2017	$37.63 million	$2.51 billion
2018	$34.06 million	$2.27 billion

Note: Revenue data from 2009–2017 Baltimore City Summary of the Adopted Budget and 2018 Executive Summary. The preliminary tax base estimate is equal to tax revenue divided by the 1.5 percent tax rate.

However, this approach underestimates the tax base because it does not account for revenue lost to the owner-occupied exemption.[v] Using Maryland Department of Planning data on the full universe of property sales in Baltimore City between September 2016 and August 2017,[vi] MDCEP estimates that this exemption applies to $58.1 million in home sales per year, costing the city $871,000. This is equivalent to an average loss of 2.5 percent of potential transfer tax revenue during the 2007–2018 period. Table 4 shows the tax base estimate after adjusting for the owner-occupied exemption.

TABLE 4. ADJUSTED TRANSFER TAX BASE ESTIMATE

FISCAL YEAR	TRANSFER TAX REVENUE	TAX BASE ESTIMATE
2007	$52.73 million	$3.61 billion
2008	$36.50 million	$2.50 billion
2009	$23.39 million	$1.60 billion
2010	$26.02 million	$1.78 billion
2011	$21.84 million	$1.49 billion
2012	$22.84 million	$1.56 billion
2013	$27.51 million	$1.88 billion
2014	$36.77 million	$2.51 billion
2015	$36.80 million	$2.52 billion
2016	$47.64 million	$3.26 billion
2017	$37.63 million	$2.57 billion
2018	$34.06 million	$2.33 billion

Note: Revenue data from 2009–2017 Baltimore City Summary of the Adopted Budget and 2018 Executive Summary. The adjusted tax base estimate is equal to tax revenue divided by the 1.5 percent tax rate, divided by 97.5 percent.

Estimating the non-owner occupied share

MDCEP estimated the proportion of the transfer tax base attributable to non-owner occupied transactions using Maryland Department of Planning property sales data.[vii] During this period, 19,500 unique property sales occurred.[viii] Of these, one-third involved an owner-occupied property, together accounting for 30.7 percent of the tax base. Applying this estimate to fiscal years 2007 through 2018, Table 5 shows the estimated non-owner occupied transfer tax base.

TABLE 5. NON-OWNER OCCUPIED TAX BASE ESTIMATE

FISCAL YEAR	NON-OWNER OCCUPIED TAX BASE ESTIMATE
2007	$2.50 billion
2008	$1.73 billion
2009	$1.11 billion
2010	$1.23 billion
2011	$1.04 billion
2012	$1.08 billion
2013	$1.30 billion
2014	$1.74 billion
2015	$1.75 billion
2016	$2.26 billion
2017	$1.78 billion
2018	$1.62 billion

Note: Non-owner occupied tax base is estimated as 69.3 percent of the total tax base in each year, based on MDCEP analysis of Maryland Department of Planning property sales data.

Revenue estimate

The additional revenue in each year is estimated by multiplying the incremental tax rate (0.6 percent in the case of transfer tax) by that year's non-owner occupied tax base. These estimates are then adjusted for inflation using the Implicit Price Deflator for State and Local Governments, a price index published by the Bureau of Economic Analysis that reflects the costs these governments face.[ix] Table 6 summarizes these calculations.

TABLE 6. TRANSFER TAX REVENUE ESTIMATE

FISCAL YEAR	REVENUE (NOMINAL)	REVENUE (INFLATION ADJUSTED)
2007	$15.0 million	$18.9 million
2008	$10.4 million	$12.4 million
2009	$6.7 million	$7.8 million
2010	$7.4 million	$8.6 million
2011	$6.2 million	$7.0 million
2012	$6.5 million	$7.1 million
2013	$7.8 million	$8.4 million
2014	$10.5 million	$11.0 million
2015	$10.5 million	$10.9 million
2016	$13.6 million	$14.0 million
2017	$10.7 million	$10.9 million
2018	$9.7 million	$9.7 million
Note: Inflation adjustment uses the Implicit Price Deflator for State and Local Governments.		

Transaction frequency

Although not necessary to estimate revenue, it is useful to have an estimate of how often various types of property are sold. This estimate informs how often property owners are expected to pay transfer and recordation taxes.[x]

Sale frequency was estimated by two methods, using Maryland Department of Planning data on properties and property sales:

1. Divide the total number of taxable properties of each type by the number of sales of each type over a 12-month period. This equals the reciprocal of the probability of a given property being sold in a given year. This number is reported in Table 7 as Estimate 1.
2. For each property type, find the average time since taxable properties of that type were last sold. Some properties were recently sold and will not be sold again for some time, while others will be sold soon. On average, it is reasonable to assume that the average time between sales is **double** the time since the last sale. This number is reported in Table 7 as Estimate 2. (That is, single-family properties were on average sold 9 years ago, so it is estimated that they are sold every 18 years on average.)

TABLE 7. ESTIMATED TRANSACTION FREQUENCY BY PROPERTY TYPE

		TRANSACTION FREQUENCY (YEARS)	
PROPERTY TYPE	% OF PROPERTIES	ESTIMATE 1	ESTIMATE 2
Nonresidential	11%	18	19
Single-family	83%	7	16
2-3 unit	4%	10	18
4-6 unit	1%	12	18
7-9 unit	< 1%	13	16
10-19 unit	< 1%	11	18
20+ unit	1%	20	21

Option 2: New Construction Property Tax Capture

Under Option 2, 50 percent of the increase in property tax revenue from all new construction would be deposited to the housing trust fund rather than the general fund for five years after completion.

TABLE 8. OPTION 2 REVENUE ESTIMATES

Analysis period	Fiscal years 2004 to 2018 (Revenue estimates for 2008 to 2018)
Average revenue	$14.9 million
Range	$7.6 million to $25.8 million
50% of years	$8.2 million to $20.5 million

This calculation involves three major steps:

1. Estimate the value of new construction completed in each year during the analysis period.
2. For each year's new construction, estimate the property tax revenue generated over a five-year window.
3. For each year in the analysis period, 50 percent of the revenue from the previous five years' construction is deposited to the housing trust fund. Revenue estimates begin in the fifth year of the analysis period to reflect revenue generated once Option 2 is fully phased in.

Estimating the value of new construction

The State Department of Assessments and Taxation publishes estimates of the real property assessable base for each county every March 31.[xi] These estimates include the value of new construction assessed between July 1 and January 1 of each year.[xii] The relevant quantity for the purposes of Option 2 is the value of all construction in a given year, regardless of its completion date. For this reason, MDCEP estimated the value of new construction as double the amount reported in the "New Construction" column of SDAT tables. Table 9 shows the estimated value of new construction for fiscal years 2004 through 2018.

TABLE 9. ESTIMATED VALUE OF NEW CONSTRUCTION, FY 2004–2018

YEAR	PARTIAL YEAR ASSESSMENT	NEW CONSTRUCTION ESTIMATE
2004	$98.7 million	$197.5 million
2005	$80.0 million	$160.1 million
2006	$276.1 million	$552.1 million
2007	$192.0 million	$384.1 million
2008	$239.8 million	$479.7 million
2009	$306.0 million	$612.0 million
2010	$73.4 million	$146.9 million
2011	$60.5 million	$120.9 million
2012	$36.0 million	$71.9 million
2013	$97.5 million	$195.1 million
2014	$142.9 million	$285.7 million
2015	$52.9 million	$1058 million
2016	$75.9 million	$151.8 million
2017	$267.9 million	$535.9 million
2018	$46.3 million	$92.5 million

Source: State Department of Assessments and Taxation estimates of the assessable base. See endnote (x) for more detail. Note: SDAT documents identify years by their beginning date. For example, FY 2004 is the same as the tax year beginning July 1, 2003.

Five-year revenue estimates

The most straightforward way to estimate the revenue generated by new construction would be to multiply the tax base estimate by the city's current 2.248 percent property tax rate. However, there are three problems with this approach:

- Because of exemptions, the effective property tax rate does not equal the statutory rate. Between fiscal years 2009 and 2018, the city estimated that the effective tax rate was between 96.0 percent and 98.5 percent of the statutory rate, averaging 97.2 percent.[xiii] For this reason, MDCEP assumed an effective tax rate of 2.185 percent, or 97.2 percent of the statutory rate.
- New construction is not immediately assessed at its full value. Rather, the value is phased in according to the state's three-year property assessment schedule. New construction on properties that are two years away from their next scheduled assessment is assessed at one-third of its full value. Construction on properties that are one year away from their scheduled assessment is assessed at two-thirds of its full value. Construction that is completed in a property's scheduled assessment year is immediately assessed at its full value. MDCEP assumed that new construction is evenly distributed among the city's three assessment zones. This means that on average, new construction is assessed at 67 percent of its full value in its initial year (the average of 33 percent, 67 percent, and 100 percent), 89 percent in its second year (the average of 67 percent, 100 percent, and 100 percent), and 100 percent in subsequent years.
- Depending on the time of year when the value of new construction is assessed, it is taxed for either the full year or half the year. For this reason, MDCEP assumed that half of all new construction was only taxed for half of its initial year. This means that, on average, new construction is taxed at 75 percent of the usual rate in its initial year.

Table 10 illustrates these adjustments for new construction completed in 2003 (first taxable in fiscal year 2004).

TABLE 10. ADJUSTMENTS TO NEW CONSTRUCTION REVENUE

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Value of New Construction Completed in 2003	$197.5 million	$197.5 million	$197.5 million	$197.5 million	$197.5 million
Effective Tax Rate	2.185%	2.185%	2.185%	2.185%	2.185%
Phase-In	66.7%	88.9%	100%	100%	100%
Proration	75%	100%	100%	100%	100%
Revenue	$2.16 million	$3.84 million	$4.32 million	$4.32 million	$4.32 million
50% of Revenue	$1.08 million	$1.92 million	$2.16 million	$2.16 million	$2.16 million

Combine five-year revenue estimates

Table 11 summarizes the calculation of revenue estimates for 2008 through 2018 (that is, beginning in Year 5 of the analysis period).

TABLE 11. NEW CONSTRUCTION PROPERTY TAX REVENUE ESTIMATES

	REVENUE ESTIMATE						
FISCAL YEAR	CURRENT YEAR	YEAR *t* – 1	YEAR *t* – 2	YEAR *t* – 3	YEAR *t* – 4	TOTAL	INFLATION ADJUSTED
2004	$1.1 million						
2005	$874,000	$1.9 million					
2006	$3.0 million	$1.6 million	$2.2 million				
2007	$2.1 million	$5.4 million	$1.7 million	$2.2 million			
2008	$2.6 million	$3.7 million	$6.0 million	$1.7 million	$2.2 million	$16.3 million	$19.5 million
2009	$3.3 million	$4.7 million	$4.2 million	$6.0 million	$1.7 million	$20.0 million	$23.4 million
2010	$802,000	$5.9 million	$5.2 million	$4.2 million	$6.0 million	$22.2 million	$25.8 million
2011	$661,000	$1.4 million	$6.7 million	$5.2 million	$4.2 million	$18.2 million	$20.5 million
2012	$393,000	$1.2 million	$1.6 million	$6.7 million	$5.2 million	$15.1 million	$16.6 million
2013	$1.1 million	$699,000	$1.3 million	$1.6 million	$6.7 million	$11.4 million	$12.3 million
2014	$1.6 million	$1.9 million	$786,000	$1.3 million	$1.6 million	$7.2 million	$7.6 million
2015	$578,000	$2.8 million	$2.1 million	$786,000	$1.3 million	$7.6 million	$7.9 million
2016	$829,000	$1.0 million	$3.1 million	$2.1 million	$786,000	$7.9 million	$8.2 million
2017	$2.9 million	$1.5 million	$1.2 million	$3.1 million	$2.1 million	$10.8 million	$11.0 million
2018	$505,000	$5.2 million	$1.7 million	$1.2 million	$3.1 million	$11.6 million	$11.6 million

Note: Revenue estimates begin in Year 5 to reflect the revenue generated by Option 2 once fully phased in.

Option 3: Hotel Tax Increase

Under Option 3, the city would increase its hotel tax rate from 9.5 percent to 10.5 percent and deposit the net additional revenue to the housing trust fund.

TABLE 12. OPTION 3 REVENUE ESTIMATES

Analysis period	Fiscal years 2009 to 2018
Average revenue	$1.2 million
Range	$994,000 to $1.4 million
50% of years	$1.1 million to $1.3 million

Under current law, hotel tax revenues serve four purposes:[xiv]

- They are the sole revenue source used to pay the interest and principal on debt incurred by the Baltimore Convention Center.
- By law, 40 percent of gross revenue must be appropriated to Visit Baltimore, the city's tourism agency.
- The fund serves as an indirect subsidy to the Baltimore Convention Center's operating deficit. Although this subsidy does not create current-year costs, the city sets aside revenue equal to one-third of the convention center's deficit for this purpose.

- The remainder funds city services through the general fund. In fiscal years 2016 through 2018, on average 43.7 percent of net general fund hotel tax revenues (that is, revenues net of convention center debt service) were available to fund city services. MDCEP assumed that only this portion of the additional revenue from a higher tax rate would be available to the housing trust fund.

Table 13 summarizes the estimation of revenue from Option 3. This calculation involves five steps:

1. Obtain historical net general fund revenue data from Baltimore City budget documents.[xv]
2. Estimate the tax base by dividing revenue by the contemporary tax rate (7.5 percent until 2010, 9.5 percent beginning in 2011).
3. Estimate the total additional revenue from a 1 percentage point tax increase.
4. Adjust for mandatory appropriations, assuming that 43.7 percent of additional revenue is available to the housing trust fund.
5. Adjust for inflation using the Implicit Price Deflator for State and Local Governments.

TABLE 13. CALCULATION OF OPTION 3 REVENUE

YEAR	NET GENERAL FUND REVENUE	TAX RATE	TAX BASE ESTIMATE	ADDITIONAL REVENUE	ADJUSTED FOR MANDATORY APPROPRIATIONS	INFLATION ADJUSTED
2009	$16.2 million	7.5%	$216.0 million	$2.2 million	$944,000	$1.1 million
2010	$14.7 million	7.5%	$196.0 million	$2.0 million	$857,000	$994,000
2011	$22.5 million	9.5%	$236.8 million	$2.4 million	$1.0 million	$1.2 million
2012	$25.4 million	9.5%	$267.4 million	$2.7 million	$1.2 million	$1.3 million
2013	$25.9 million	9.5%	$272.6 million	$2.7 million	$1.2 million	$1.3 million
2014	$23.9 million	9.5%	$251.6 million	$2.5 million	$1.1 million	$1.2 million
2015	$26.7 million	9.5%	$281.1 million	$2.8 million	$1.2 million	$1.3 million
2016	$29.6 million	9.5%	$311.6 million	$3.1 million	$1.4 million	$1.4 million
2017	$28.4 million	9.5%	$298.9 million	$3.0 million	$1.3 million	$1.3 million
2018	$29.2 million	9.5%	$307.4 million	$3.1 million	$1.3 million	$1.3 million
Source: Baltimore City FY 2018 budget Executive Summary.						

Option 4: Tax Sale Proceeds Capture

Each year, Baltimore City conducts tax sales to collect unpaid property taxes.[xvi] Currently, all proceeds from tax sales go to the city's general fund. Under Option 4, the city would deposit 25 percent of tax sale proceeds to the housing trust fund. Because tax sale proceeds were estimated on the basis of historical data, these estimates do not reflect recent legislation that suspends the use of tax sales to collect unpaid water bills.

TABLE 14. OPTION 4 REVENUE ESTIMATES	
Analysis period	Calendar years 2007 to 2018
Average revenue	$5.8 million
Range	$5.1 million to $6.9 million
50% of years	$5.2 million to $6.3 million

Table 15 summarizes the estimation of revenue from Option 4. This process involves four steps:

1. Obtain historical tax sale and assignment sale data from the Baltimore Tax Certificate Auction Website.[xvii]

2. Calculate total tax sale and assignment sale proceeds for each year. This is defined as the amount owed on all properties in the tax sale and assignment sale data sets that are not marked as removed and have a winning bidder other than the city itself.[xviii]
3. Calculate revenues deposited to the housing trust fund, equal to 25 percent of total proceeds.
4. Adjust for inflation using the Implicit Price Deflator for State and Local Governments.

TABLE 15. CALCULATION OF OPTION 4 REVENUES

YEAR	TAX SALE PROCEEDS	ASSIGNMENT SALE PROCEEDS	TOTAL PROCEEDS	25% OF TOTAL	INFLATION ADJUSTED
2006	$14.8 million	$798,000	$15.6 million	$3.9 million	$5.2 million
2007	$17.2 million	$361,000	$17.5 million	$4.4 million	$5.5 million
2008	$22.7 million	$463,000	$23.2 million	$5.8 million	$6.9 million
2009	$20.8 million	$631,000	$21.5 million	$5.4 million	$6.3 million
2010	$16.2 million	$1.6 million	$17.8 million	$4.5 million	$5.2 million
2011	$17.3 million	$1.0 million	$18.3 million	$4.6 million	$5.1 million
2012	$20.0 million	$1.3 million	$21.3 million	$5.3 million	$5.8 million
2013	$17.6 million	$1.3 million	$18.8 million	$4.7 million	$5.1 million
2014	$19.9 million	$1.0 million	$20.9 million	$5.2 million	$5.5 million
2015	$21.2 million	$1.2 million	$22.4 million	$5.6 million	$5.8 million
2016	$18.7 million	$7.1 million	$25.7 million	$6.4 million	$6.6 million
2017	$22.9 million	$1.7 million	$24.6 million	$6.1 million	$6.2 million
Source: MDCEP analysis of Baltimore Tax Certificate Auction data.					

Option 5: Development Excise Tax

Sixteen Maryland counties currently charge impact fees or excise taxes on new real estate development. While impact fees may only be used to fund public services at a specific development site, development excise taxes have a broader range of allowed uses. Under Option 5, the city would levy a tax of $10,000 per dwelling unit on residential development and $5 per square foot on commercial development. These taxes would apply to the net increase in residential units and commercial square footage in new development as well as improvements to existing properties.

TABLE 16. OPTION 5 REVENUE ESTIMATES

Analysis period	Calendar years 2001 to 2015
Average revenue	$11.4 million
Range	$1.5 million to $20.4 million
50% of years	$5.8 million to $17.0 million

Revenue under Option 5 was estimated in three steps:

1. Obtain data on the full universe of properties located in Baltimore City from the Maryland Department of Planning.
2. For each year from 2001 to 2015, determine the number of dwelling units in structures built in that year and the total footprint of commercial structures built in that year.

3. Apply the $10,000 tax rate to residential units and the $5 tax rate to commercial square footage.

Note that due to data limitations, this estimate includes two important simplifying assumptions. Both assumptions are likely to bias the revenue estimate downward. For this reason, the revenue estimates for Option 5 should be considered conservative.

- The estimate includes only structures built in each year during the analysis period. However, the development excise tax would apply to both new construction and improvements to existing structures (if these improvements increase the number of dwelling units or commercial square footage).
- The estimate includes only the footprint of commercial structures, not the total square footage.

Table 17 summarizes these calculations.

TABLE 17. CALCULATION OF OPTION 5 REVENUE ESTIMATES

	DWELLING UNITS		COMMERCIAL FOOTPRINT		TOTAL
YEAR	COUNT	REVENUE	SQ. FEET	REVENUE	REVENUE
2001	163	$1.6 million	1.3 million	$6.4 million	$8.1 million
2002	500	$5.0 million	1.9 million	$9.3 million	$14.3 million
2003	365	$3.7 million	1.3 million	$6.3 million	$10.0 million
2004	500	$5.0 million	919,000	$4.6 million	$9.6 million
2005	1,538	$15.4 million	996,000	$5.0 million	$20.4 million
2006	1,145	$11.5 million	1.4 million	$6.9 million	$18.4 million
2007	1,239	$12.4 million	1.6 million	$7.8 million	$20.2 million
2008	648	$6.5 million	1.9 million	$9.3 million	$15.8 million
2009	519	$5.2 million	128,000	$639,000	$5.8 million
2010	1,032	$10.3 million	366,000	$1.8 million	$12.2 million
2011	221	$2.2 million	1.5 million	$7.3 million	$9.5 million
2012	123	$1.2 million	3.2 million	$15.8 million	$17.0 million
2013	227	$2.3 million	332,000	$1.7 million	$3.9 million
2014	175	$1.8 million	552,000	$2.8 million	$4.5 million
2015	68	$680,000	157,000	$785,000	$1.5 million

Source: MDCEP analysis of Maryland Department of Planning data on Baltimore City properties. Note: Revenue estimates for Option 5 are not adjusted for inflation because a current-dollar tax rate is applied on a per-unit (*in rem*) basis.

[i] Baltimore City Department of Planning (https://planning.baltimorecity.gov/planning-data).

[ii] See Vol. 3 of the Maryland Legislative Handbook for detail on the specific documents subject to transfer and recordation taxes (http://mgaleg.maryland.gov/Pubs/legislegal/2014-LegislativeHandbookSeries-Vol-3.pdf).

[iii] For the transfer tax, this exemption applies only to sales under $750,000. There is no cap for the recordation tax.

[iv] Historical transfer revenue data from 2009–2017 Baltimore City Summary of the Adopted Budget and 2018 Executive Summary (https://bbmr.baltimorecity.gov/budget-publications).

[v] In this policy brief, the term "tax base" refers to the total consideration (price) of all taxable transactions, including the exempt portion of owner-occupied transactions. This approach simplifies calculations in Step 2 (estimating the proportion of the tax base attributable to non-owner occupied transactions).

[vi] Sales data are available at http://planning.maryland.gov/Pages/OurProducts/DownloadFiles.aspx.

[vii] Ibid.

[viii] To avoid double-counting a small number of duplicate records in the data set, unique transactions were defined by the combination of buyer, seller, and date.

[ix] Bureau of Economic Analysis National Income and Product Accounts Table 3.9.4 (https://www.bea.gov/iTable/iTableHtml.cfm?reqid=19&step=3&isuri=1&1921=survey&1903=97). In this policy brief, inflation adjustments are based on a fiscal year. For example, for FY 2016, the average value of the Implicit Price deflator from 2015 Q3 through 2016 Q2 is used. When these analyses were conducted, Implicit Price Deflator data were available up to FY 2017. MDCEP assumed that prices for FY 2018 increased by 1.56 percent, the geometric mean of the previous five years' increases.

[x] This estimate does not include taxable events other than a sale, such as refinancing.

[xi] SDAT also publishes estimates every November 30. When available, this policy brief uses the March estimates, which are the final estimates published by SDAT for each year. March estimates are used for FY 2005 and 2010–2017. For FY 2018, March 2017 estimates are used, which were the most recent estimates available at the time the analysis was performed. For FY 2004 and 2006–2009, archived annual reports of the Department of Assessments and Taxation were used. Assessable base estimates are available at http://dat.maryland.gov/Pages/Assessable-Base-Report.aspx. Archived annual reports are available at http://msa.maryland.gov/msa/mdmanual/25ind/html/06assesr.html.

[xii] Note that new construction includes improvements to existing structures and changes in land use that substantially increase value.

[xiii] Baltimore City 2009–2017 Summary of the Adopted Budget, 2018 Executive Summary (https://bbmr.baltimorecity.gov/budget-publications).

[xiv] See 2018 Summary of the Adopted Budget, p. 46–47.

[xv] Baltimore City 2018 budget Executive Summary (https://bbmr.baltimorecity.gov/budget-publications).

[xvi] Historically, tax sales were also used to collect other unpaid obligations such as water bills. Legislation passed on the last day of the General Assembly's 2018 session would suspend the use of tax sales to collect unpaid water bills.

[xvii] Tax and assignment sale data are available at www.bidbaltimore.com. The assignment sale is a noncompetitive sale to collect debt on properties not sold during the tax sale.

[xviii] In the city data sets, this corresponds to the column titled, "Face Value." Although tax sale participants may submit bids above the face value of the lien on a property, these excess proceeds (net of fees and penalties) generally go to the original property owner. See https://taxsale.baltimorecity.gov/tax-sale-process.