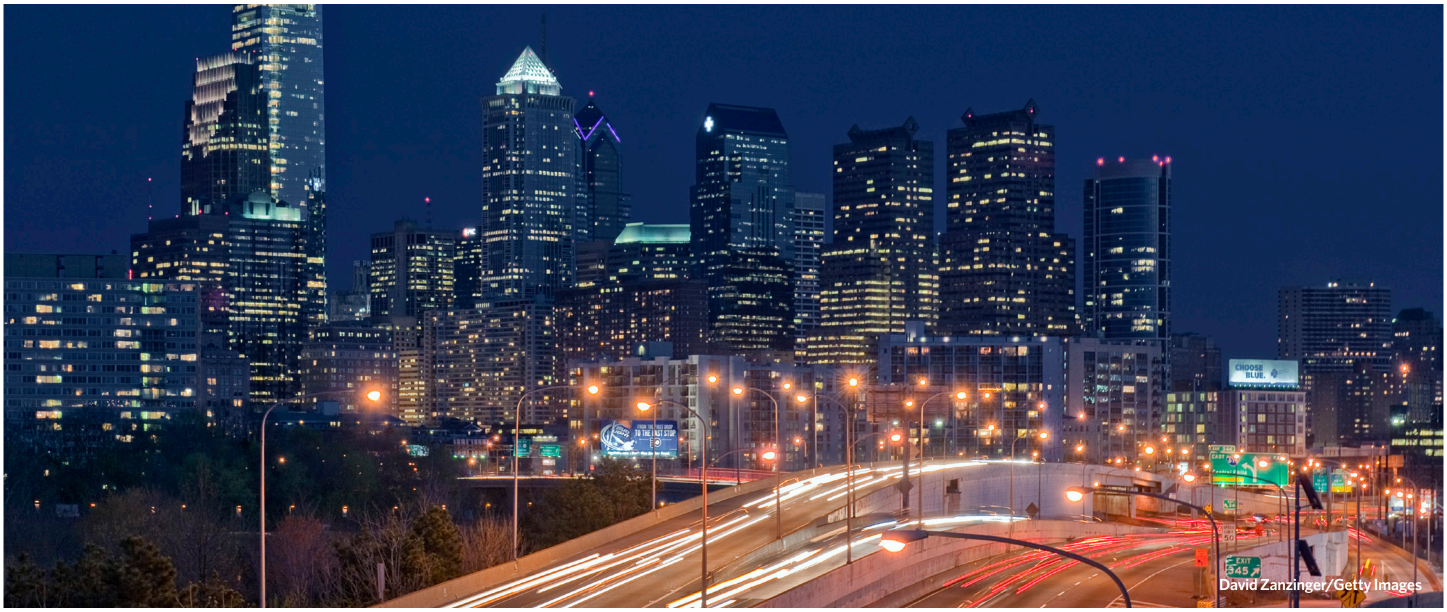


The Shrinking Tax Gap Between Philadelphia and Its Suburbs

Overview

For a homeowning family, the tax disadvantage of living in Philadelphia instead of the suburbs has dipped to its lowest point in at least 15 years, making the city more affordable in terms of taxes than many surrounding towns, particularly other communities with relatively low median household incomes.

Research by The Pew Charitable Trusts shows that a middle-income family with a home in the city spent 12.4 percent of its income in 2015 on local property tax, state and local sales tax, and state and local income tax, the biggest nonfederal levies. The same family living and working in the suburbs of Pennsylvania and New Jersey had an average tax burden of 11.8 percent, or just 0.6 percentage points less. In 2000, the average gap between the city and suburbs was 3.7 percentage points. In dollar terms, adjusted for inflation, the family went from saving an average $2,410 in taxes in 2000 by living and working in the suburbs to saving just $390 in 2015.

This difference in state and local taxes between Philadelphia and its neighboring towns is a financial barometer of the city's attractiveness as a place to live or work, compared with the 354 communities surrounding it.

The research, which focused on taxes that a hypothetical family would pay in the city versus the suburbs, updates a 2012 Pew report, *Residential Taxes: A Narrowing Gap Between Philadelphia and Its Suburbs*. At that time, the average city-suburban tax gap was 1.2 percentage points, or about $750 in taxes per year. Since that report, the landscape has changed mainly because of changes in property taxes—most significantly in New Jersey.

In the city, the biggest single factor in narrowing the tax gap is the homestead relief program enacted in 2013 as part of a property tax overhaul. Without this program, which delivered a break that was particularly significant for families owning modestly priced homes, Philadelphia's tax burden would have risen and its disadvantage would have grown.

Philadelphia's tax burden shrank the most in comparison with suburbs that have relatively low median household incomes, like the city itself. Among the 100 poorest communities in the area, Philadelphia's tax burden declined from third-heaviest in 2000 to 59th-heaviest in 2015. In relation to the 100 wealthiest towns, Philadelphia had the 10th-heaviest tax burden—meaning it still had a significant tax disadvantage compared with places that attract higher-earning families.

The analysis also found that:

- Philadelphia in 2015 still was more heavily taxed than a large majority of its suburbs, with the 97th-heaviest tax burden out of 355 municipalities studied in nine counties in southeastern Pennsylvania and southern New Jersey.
- Suburban residents who work in Philadelphia had the worst tax situation. A family earning its income in the city and owning a home in the suburbs instead of Philadelphia saved about $300 in 2000 but lost $1,210 in 2015. (All amounts are inflation-adjusted to 2015 dollars.) During that period, the family's suburban property taxes rose substantially while its city wage taxes fell slightly.
- The most heavily taxed suburb in New Jersey in 2015 was Woodlynne Borough in Camden County. In Pennsylvania, it was Colwyn Borough in Delaware County.
- Lower Alloways Creek Township in Salem County had the lightest tax burden in New Jersey, while Bryn Athyn Borough in Montgomery County had the lightest in Pennsylvania.

Interactive map

Tax burdens and tax gaps for every municipality in this study can be found in an interactive map at **pewtrusts.org/compare-philly-suburban-tax-burden**. The interactive map allows users to view findings by town, county, income level, year, and residence or work location.

The tax burden on the hypothetical family may not match the reality for many residents, especially on the property tax, which is the most complicated element to compare across jurisdictions. In addition, the tax burden calculation does not include any other taxes and fees beyond wage, property, and sales taxes. Nor does the analysis reflect residents' level of satisfaction with the municipal services they are funding, especially schools and public safety, which often outweighs the level of taxation in families' decisions about where to live.

The impact of these tax trends within the region is hard to pin down. During the 15-year period examined in this study, Philadelphia's population hit a 100-year low, then grew for the first time in decades. The extent to which these trends or others were directly affected by local tax changes is unclear and was beyond the scope of this research.

Still, economists say the tax gap is a useful measure of tax competitiveness and potentially a factor in issues ranging from suburban flight to the funding of public services—and can help local officials gauge their tax decisions in relation to other municipalities in the region.

Definitions of 'Tax Burden' and 'Tax Gap'

This report updates, refines, and expands on an analysis that Pew published in 2012 using a "tax burden" model created by professor Robert P. Inman of the Wharton School of the University of Pennsylvania. A full explanation of the methodology can be found in the appendix.

The goal of this report is to analyze state and local tax rates by estimating how much tax a hypothetical family would owe if it were moving into the region and could choose any town in which to live and work. The research focused on rates in Philadelphia and 354 other municipalities in Bucks, Chester, Delaware, and Montgomery counties in Pennsylvania, and Burlington, Camden, Gloucester, and Salem counties in New Jersey. The analysis is based on rates in effect for 2015-16, 2012-13, and 2000-01, with the latter being the original benchmark period.

For the purposes of the report, "tax burden" is the percentage of gross income that the family would owe on the major nonfederal taxes: state and local income taxes, state and local sales taxes, and local property taxes (on residential real estate). The "tax gap" is the difference in tax burdens between Philadelphia and each town.

Data on the report's hypothetical family

The hypothetical family is assumed to consist of two married adults under 65 with two dependent children; the family files taxes jointly, lives year-round in a house that it owns, and takes all common exemptions and deductions allowed by its state. It does not qualify for tax abatements or other special credits.

For the core analysis, the family's income, all from wages, was set at roughly equal to the regional median household figure for each year: $62,000 in 2015. In an extra analysis, the research also modeled a family earning half the median income and another earning double the median income plus some dividends and capital gains, which are taxed by Philadelphia and each state but not by any of the suburbs.

To compute the property tax burden, the market value of the family's house was set at a multiple of its income, based on ratios found in census surveys for each year. The house's taxable assessed value was set according to each town's official property tax-equalization ratio, as computed by state officials, with the subtraction of any homestead relief to which a family is entitled.

The report examines the hypothetical family with three job/home location scenarios:

- **City resident:** The family lives in Philadelphia, where it pays income and property taxes, and its adults work either in the city or the suburbs, paying half of its sales taxes in each area. (About 3 in 10 working Philadelphians hold jobs in the suburbs.)
- **Suburban commuter:** The family's adults work in Philadelphia, where they pay local wage taxes and a quarter of their sales tax, but live in a suburb where they pay property tax and the remainder of sales taxes. (About 4 in 10 jobs in the city are held by suburban residents.)
- **Suburban noncommuter:** The family lives in the same Pennsylvania or New Jersey suburb where it works, and where all of its income, property, and sales taxes are paid.

The Philadelphia region's tax burdens

Pew's tax burden analysis shows that Philadelphia remains heavily taxed compared with most of its surrounding suburbs. But from 2000 to 2015, its average tax gap with the suburbs narrowed significantly for a middle-income family, largely because property and income taxes rose in the suburbs and fell slightly in Philadelphia—although the pace and pattern of these changes differed from town to town and between Pennsylvania and New Jersey.

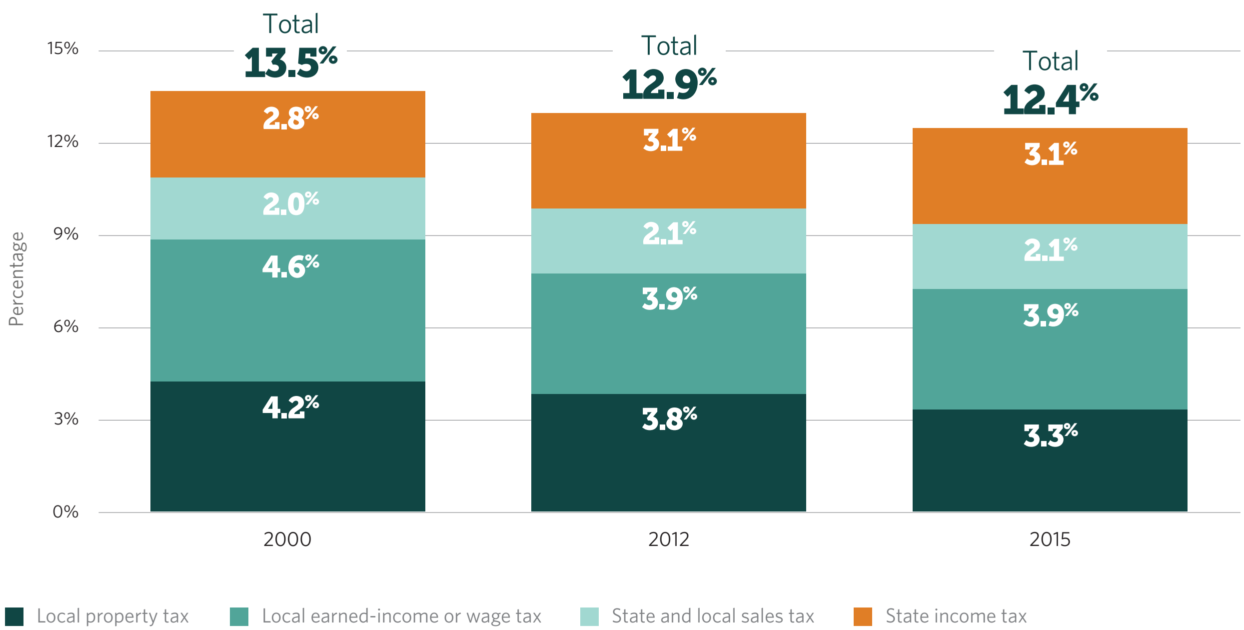
The city's tax burden

In Philadelphia in 2000, the hypothetical middle-income family owning a home and earning income in the city spent 13.5 percent of its gross income on local property taxes, state and local income taxes, and state and local sales taxes. Fifteen years later, the family's tax burden had fallen to 12.4 percent. (See Figure 1.)

Figure 1

Philadelphia Tax Burden on a Median-Income Family

In percentages



A median-income family in Philadelphia paid a decreasing percentage of its income to state and local taxes over the 15 years. In particular, less went to the city's wage tax and property tax, the latter in part because of the homestead tax exemption adopted in 2013. Figures may not add up perfectly due to rounding.

Source: Pew analysis based on published tax rates

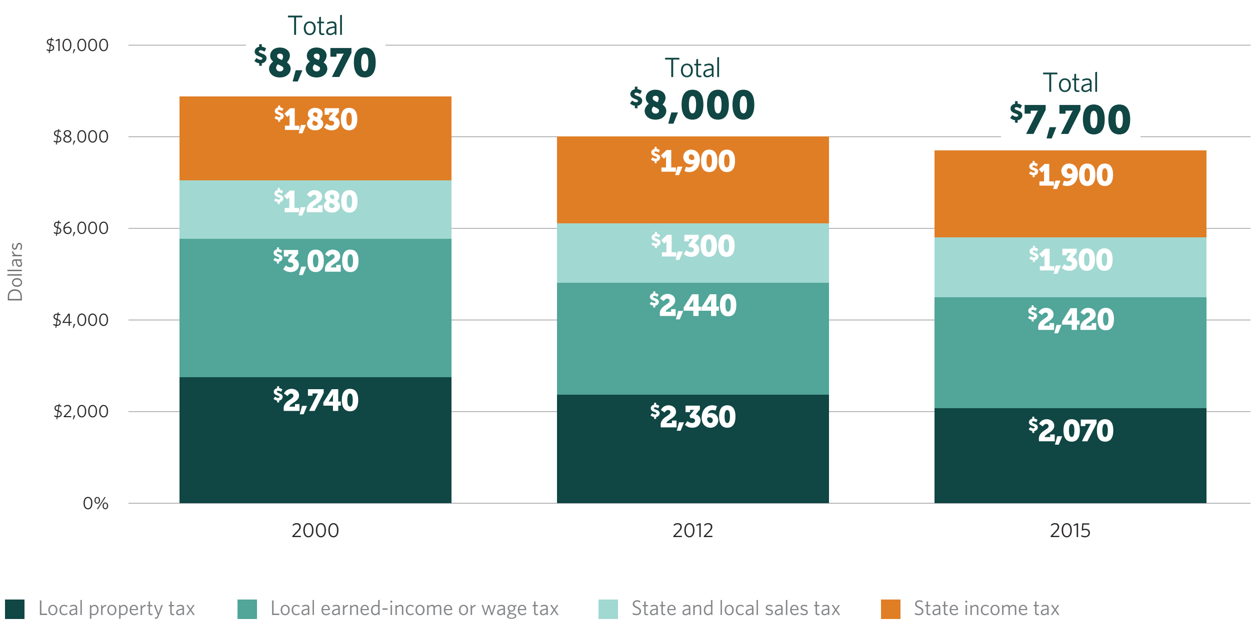
Driving the change was the gradual decline in the city's wage tax rates and a decrease in effective property taxes. The city boosted its sales tax rate, but that did not outweigh the other decreases.

For a middle-income family, the city's property tax burden declined because Philadelphia adopted a homestead relief program. The program, which accompanied a 2013 property tax overhaul known as the Actual Value Initiative, allows homeowners to reduce the taxable value of their homes by $30,000, thereby reducing the family's current tax bill by $415. This tax relief was greater than that of most similar programs elsewhere in the region.[1] And for the hypothetical family, it kept the city's property tax burden below 2012 levels, despite several rate hikes in the years from 2012 to 2015. If not for this program, the family's tax burden would have risen between 2012 and 2015.[2]

Another consequence of Philadelphia's homestead relief program was a decline in the property portion of the tax burden. As seen in Figure 1, the family paid 3.3 percent of its income in property taxes in 2015, down almost 1 percentage point over the period studied. In the suburbs, property taxes consumed a growing share of the family's gross income over the same period, as detailed on Page 6.

These percentages translated into sizable amounts of money for the family living in Philadelphia. Adjusted for inflation, its tax bill fell by $1,170 in 2015 compared with 2000, a drop of about 13 percent. (See Figure 2.)

Figure 2
Philadelphia Tax Burden on a Median-Income Family
In dollars



From 2000 to 2015, the amount of taxes paid by a hypothetical median-income family living in Philadelphia fell by about $1,170. All dollar figures are inflation-adjusted to 2015 dollars. Figures may not add up perfectly due to rounding.

Source: Pew analysis based on published tax rates

Suburban tax burden

In 2000, the family's tax burden was 9.9 percent on average in the Pennsylvania and New Jersey suburbs. By 2015, it had risen to 11.8 percent but with clear differences between the two states.

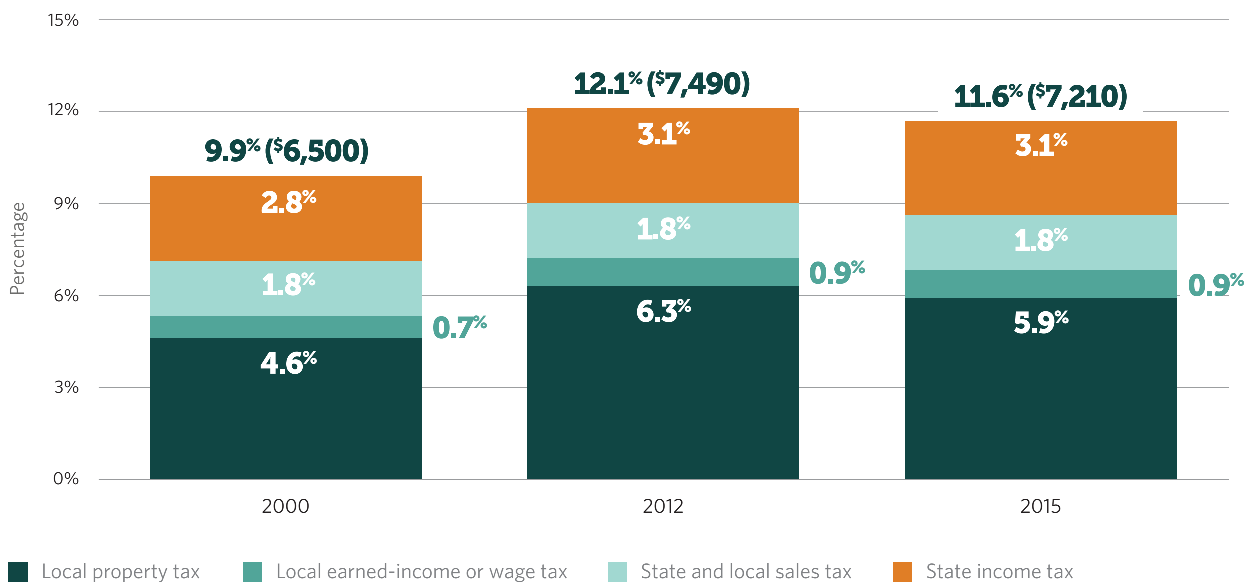
In the Pennsylvania suburbs, the figure rose to 12.1 percent in 2012, then fell to 11.6 percent in 2015 as some towns and counties lowered property assessments after the Great Recession.

Translated into dollars and adjusted for inflation, the Pennsylvania suburban family's annual tax bill rose by about $710 between 2000 and 2015. (See Figure 3.)

Figure 3

Pennsylvania Suburban Tax Burden on Median-Income Family

In percentages



The average state and local tax bill of a middle-income family living and working in the Pennsylvania suburbs rose sharply from 2000 to 2012, then dropped slightly in 2015. All dollar figures are inflation-adjusted to 2015 dollars. Figures may not add up perfectly due to rounding.

Source: Pew analysis based on published tax rates

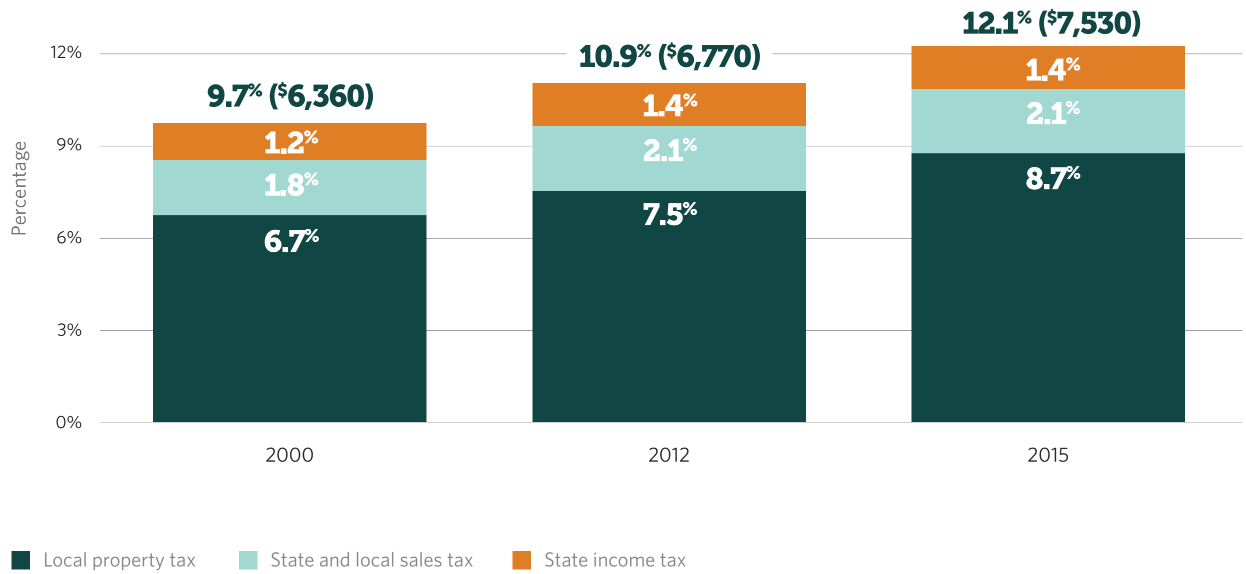
In New Jersey, the suburban family's tax burden rose to 10.9 percent in 2012 and 12.1 percent in 2015 as property assessments rose faster than income. The family paid about $1,170 more in major state and local taxes in 2015 than it did in 2000. (See Figure 4.)

Property taxes rose faster in New Jersey suburbs than in Pennsylvania because of bigger increases in local public-service costs, such as schools and infrastructure, as well as property reassessments in the Garden State. Another reason could be differences in state aid for local governments: Census figures show that the state-funded share of local government budgets fell in New Jersey over the period but not in Pennsylvania.[3]

Figure 4

New Jersey Suburban Tax Burden on a Median-Income Family

In percentages



The state and local tax burden of a family living and working in the New Jersey suburbs rose on average between 2000 and 2015. Local property tax was the biggest driver. All dollar figures are inflation-adjusted to 2015 dollars. Figures may not add up perfectly due to rounding.

Source: Pew analysis based on published tax rates

In suburbs in both states, property taxes were the main driver of tax burdens throughout the period studied. In New Jersey, the share of income paid in property taxes rose from 6.7 percent to 8.7 percent of family income between 2000 and 2015; in Pennsylvania, it rose from 4.6 percent to 5.9 percent.

City-suburban tax gap

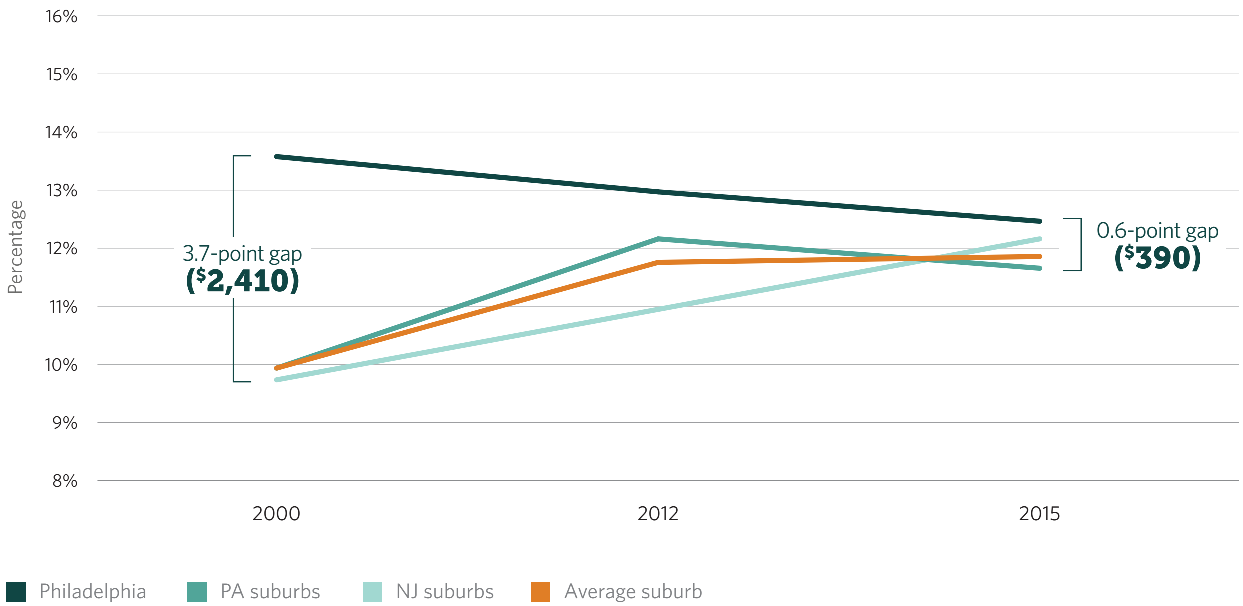
In 2000, Philadelphia imposed the third-highest tax burden among 355 municipalities in southeastern Pennsylvania and southern New Jersey. In 2012, the city had the 72nd-heaviest tax burden. In 2015, its tax burden was 97th heaviest.

Accordingly, Philadelphia's tax gap shrank compared with many of its neighboring towns. In 2000, the city's tax burden was 3.7 percentage points higher on average than the Pennsylvania and New Jersey suburbs as a group. That translated into annual average tax savings of about $2,410 for a middle-income family living and working in the suburbs rather than living in Philadelphia—a significant tax disadvantage for the city in the quest for residents and jobs.

Since then, the city-suburban gap has shrunk to 0.6 percentage points. By living and working in the suburbs rather than living in the city, the family saved just $390 per year on average in 2015—or about $500 in Pennsylvania and $170 in New Jersey. (See Figure 5.)

Figure 5

City-Suburban Tax Gap for a Median-Income Family



Philadelphia's city-suburban tax gap narrowed significantly from 2000 to 2012. Since then, the gap changed little compared with the Pennsylvania suburbs but continued to shrink in relation to the New Jersey suburbs.

Source: Pew analysis based on published tax rates

Among the 96 municipalities in the region with heavier tax burdens than Philadelphia, 59 were in Delaware County and Camden County, including the most heavily taxed suburbs: Woodlynne Borough, Camden County (26 percent), and Colwyn Borough, Delaware County (18.7 percent).

High Rates in Woodlynne

In tiny Woodlynne Borough in Camden County, the middle-income family had a tax burden of 26 percent in 2015, heaviest among 355 municipalities in the region. Its tax gap with Philadelphia was $8,480, which is the amount of extra taxes that the family paid by living and working in Woodlynne instead of living in Philadelphia.

Woodlynne Mayor Jeraldo Fuentes said his town is paying neighboring Collingswood High School nearly seven times more to educate Woodlynne children than it did in 2000. "That's what we have to collect taxes for," said Fuentes, the four-term mayor of the community of 2,900 people. "The town is the same size. So what has to change is the [tax] rate."

Fuentes said his town has no say over the school costs and does not have a lot of businesses or land suitable for development so that the town can expand its tax base. With limited aid from the state or Camden County, Woodlynne has resorted to raising the property tax rate and aggressively cutting costs.

"I laid off some people; I made cuts. We went from full-time to part-time employees. … We look for everything we can get. Every nickel and dime counts," he said.

Among municipalities lightening their tax burdens from 2000 to 2015, Red Hill Borough in Montgomery County moved 277 spots from 17th to 294th. In New Jersey, Burlington County's Pemberton Borough shifted 259 spots from 94th to 353rd.

Low Rates in Red Hill

In the late 1990s, tiny Red Hill Borough in Montgomery County decided to withdraw from a suburban regional police force and rely instead on the Pennsylvania State Police, according to Borough Council member Elizabeth DeJesus.

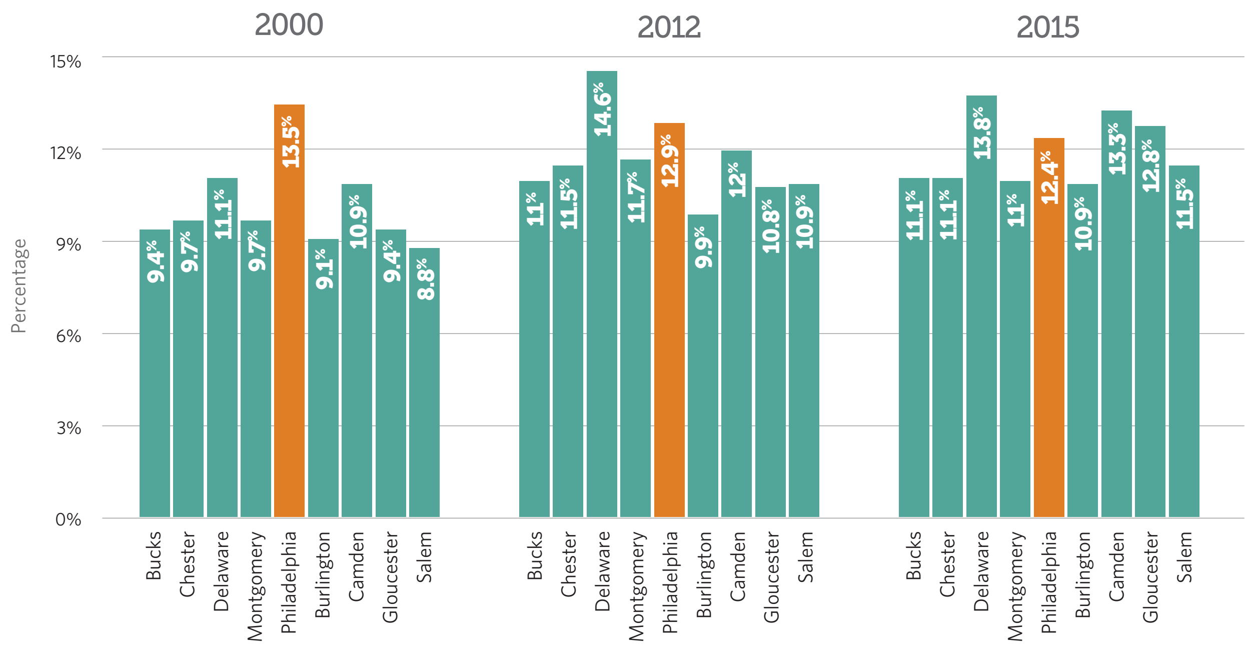
One effect of the change soon became clear: Red Hill's property tax rate dropped. Its overall tax burden declined from 12.1 percent of the hypothetical median family's income in 2000 to 10.3 percent in 2015. The family would pay $1,330 less in taxes to live and work in Red Hill rather than Philadelphia.

There was little change in crime figures in the area over much of the period, and the residential population rose 14 percent over the period, now standing at 2,376.[4]

Communities in Delaware County had the heaviest average tax burden in both 2012 and 2015 among the nine counties studied, including Philadelphia. In 2012, Delaware County was the only one with a higher average tax burden than Philadelphia. In 2015, it was joined by Camden and Gloucester counties. Burlington County in New Jersey had the lightest average tax burden for a middle-income family. (See Figure 6.)

Figure 6

County Average Tax Burden on a Median-Income Family



Among nine counties in southeastern Pennsylvania and southern New Jersey, Philadelphia had the heaviest tax burden on average in 2000 but the fourth-heaviest in 2015.

Source: Pew analysis based on published tax rates

Tax gap between rich and poor suburbs

The analysis found that lower-income towns in the Philadelphia area—as measured by their median household income in 2014, the last year available at the time of this research—tended to have heavier tax burdens on the hypothetical middle-income family than did upper-income towns.

Among the 355 municipalities in 2015, the 100 towns with the highest median household incomes had an average tax burden of 10.8 percent, while in the 100 communities with the lowest median household incomes, it was 13.3 percent.

Philadelphia is a low-income city, with a median household income of $37,460.[5] It closed the tax gap mostly with other low-income communities. In 2015, the city had a tax advantage over 58 of the 100 communities in the lower-income group; in 2000, it had an edge over only two of them.

Over the same period, Philadelphia's tax disadvantage against higher-income towns changed very little. In 2015, the city had a tax advantage over just nine of 100 upper-income communities. That was unchanged from three years earlier; in 2000, it did not have an advantage over any of them.

Commuter tax burden and tax gap

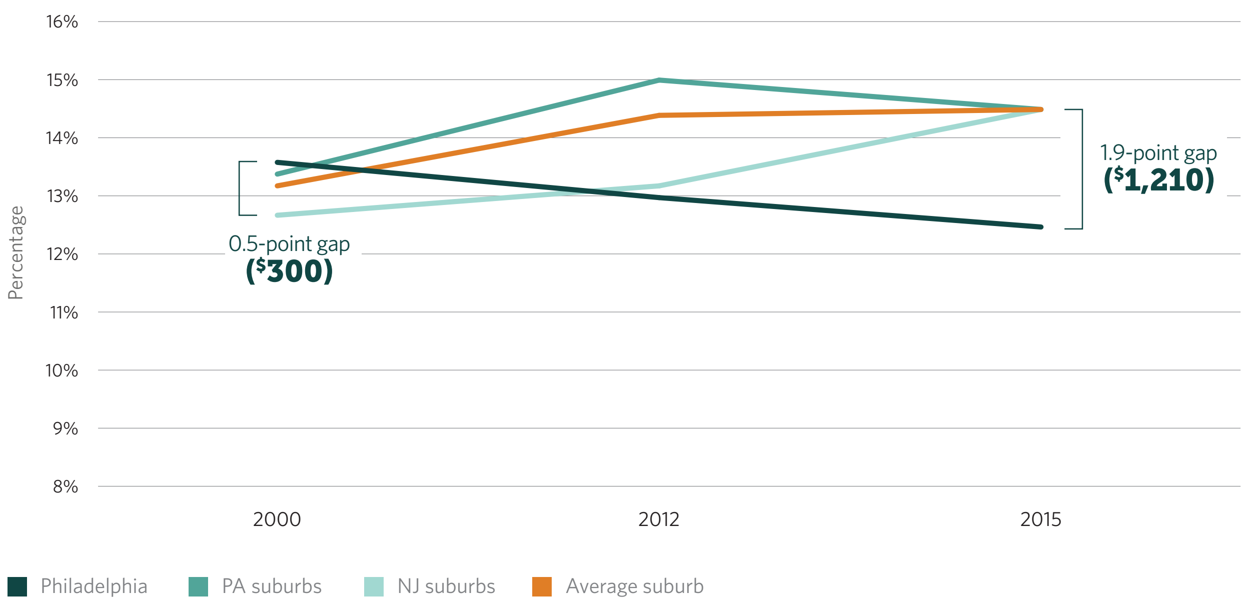
Suburbanites who commute to work in Philadelphia have been hardest hit by state and local tax trends over the past 15 years.

In 2000, the middle-income family with a home in the suburbs and all of its income earned in Philadelphia spent 13.1 percent of its income on state and local property, income, and sales taxes. That was slightly lower than the 13.5 percent paid by Philadelphia residents.

Over the ensuing decade, property tax bills rose substantially in the suburbs. The city wage tax rate paid by commuters fell, but not by much and not as much as it did for city residents. As a result, the commuting family's tax burden rose to 14.4 percent in 2015, while Philadelphia's tax burden fell to 12.4 percent.[6] (See Figure 7.)

In inflation-adjusted dollars, the family of the commuter paid $300 less in state and local taxes in 2000 than it would have paid living in the city. But by 2015, the family paid $1,210 more than it would have paid in Philadelphia.

Figure 7
Tax Gap Between Living in Philadelphia and Commuting to the City From the Suburbs



Middle-income workers who commute to Philadelphia from the Pennsylvania and New Jersey suburbs would reduce their taxes by moving to the city or getting jobs in the suburbs. Figures may not add up perfectly due to rounding.

Source: Pew analysis based on published tax rates

The tax disadvantage for a commuting family varied by state and county. For example, commuting from Delaware County to Philadelphia cost the family an average of $2,840 in additional taxes over the amount it would pay by moving to the city or finding a job in the suburbs. Living in Burlington County, New Jersey, and commuting to the city resulted in just $390 in extra taxes.

High- and low-income families

To get a broader view of tax conditions in Philadelphia and its suburbs, the research also included models of a high-income family and a low-income family. For modeling purposes, the high-income family earned twice as much in wages as the middle-income family plus a modest amount of nonwage investment income, for an income total of $128,000 in 2015. The low-income family earned half the wages of the middle-income family with no income-producing investments, amounting to $31,000 in 2015.

These income differences bring several additional elements into play. For instance, by living in the city, the wealthier family's investments are subject to Philadelphia's school income tax—which neither of the other families in the model faces.[7] By living in New Jersey, the high-income family pays a higher state tax rate than the low-income family and does not get homestead tax relief.

For both the high- and low-income family, the analysis shows that the city-suburban tax gap narrowed and city taxes became less burdensome from 2000 to 2012, just as they did for the middle-income family. Between 2012 and 2015, however, the pattern changed: In tax terms, Philadelphia did not become much more favorable for a high-income family but did become more favorable for a low-income family.

Conclusion

For many years, experts and residents have cited higher taxes in Philadelphia and lower taxes in the suburbs as major reasons for the flow of city residents and jobs to the suburbs.[8] This analysis shows that the city still has a tax disadvantage compared with the suburbs but that the gap has fallen to its lowest point in 15 years, with significant variations depending on the income levels of each suburb and whether it is located in Pennsylvania or New Jersey.

The consequences of this shift are unclear. From 2000 to 2015, the balance of residents and workers in Philadelphia versus the suburbs changed only slightly; the city had 28 percent to 30 percent of the region's population and 27 percent to 29 percent of its jobs.[9]

The questions of whether the changing tax gap had any relation to these relatively modest shifts, and whether Philadelphia's population or job growth can be prolonged with tax-rate changes, are beyond the scope of this study.

Still, taxes have an immediate impact on families who pay them and on the communities that rely on tax-funded services. Ultimately, the city's challenge is keeping the regional tax gap in mind as it sets rates that will be seen as fair, sustain needed services, and give people a reason to move to or stay in Philadelphia.

About this brief

This brief updates research initially conducted for a 2012 Pew report, *Residential Taxes: A Narrowing Gap Between Philadelphia and Its Suburbs*. Both reports were researched and written by Thomas Ginsberg of Pew's Philadelphia research initiative and edited by Larry Eichel, the initiative's director. This brief benefited from the insights of three external reviewers: Robert P. Inman, Richard King Mellon professor of finance, professor of business economics and public policy, and professor of real estate at the Wharton School of the University of Pennsylvania; Joseph P. McLaughlin Jr., director of the Institute for Public Affairs at Temple University; and Joel L. Naroff, president of Naroff Economic Advisors. Douglas R. Madanick, CPA, of Kulzer & DiPadova, PA, also provided insight on taxation in New Jersey. Neither the reviewers nor their organizations necessarily endorse the findings and conclusions.

About the Philadelphia research initiative

Pew's Philadelphia research initiative provides timely, impartial research and analysis on key issues facing Philadelphia for the benefit of the city's residents and leaders.

Methodology Appendix

This study looks at a hypothetical family's tax burden over time from three kinds of nonfederal taxes: local residential property taxes, state and local personal income taxes, and state and local sales taxes on consumer purchases. The goal is to measure the tax burden in Philadelphia versus various municipalities, based on the experience of an average family as if it were moving into the region and could choose any location to buy a house and get a job.

This report updates and expands on an analysis that Pew published in 2012 using a model created by professor Robert P. Inman of the Wharton School of the University of Pennsylvania, with additional computations at that time by professor Robert P. Strauss of Carnegie Mellon University and Kevin C. Gillen, a Philadelphia-based real estate economist. The initial report looked at the period of 2012-13 compared with 2000-01. (The periods span two years because they include a calendar tax year and a local school district fiscal year.) This report extends the time series to 2015-16, updates some past rates, and makes some revisions in the methodology, so readers are urged to consult this version rather than the 2012 report.

Tax burden formula

The analysis used tax rates in effect in Philadelphia and the 354 municipalities with taxing authority in four suburban counties in southeastern Pennsylvania (Bucks, Chester, Delaware, and Montgomery) and four in southern New Jersey (Burlington, Camden, Gloucester, and Salem).

The time periods in this study vary slightly from state to state because of differences when rates are approved and released. The report uses state and local income tax rates for tax years 2000, 2012, and 2015. Local property tax rates in Pennsylvania are valid for fiscal years 2000-01, 2012-13, and 2015-16, while in New Jersey they are for calendar years 2000, 2012, and 2015. The assessment-equalization ratios (explained below) were based on real estate prices in the calendar year preceding the effective year; e.g., the 2000 ratio was based on real estate prices in 1999.

Assumptions about the family

The hypothetical family consisted of two adults under age 65 with two dependent children that filed taxes jointly and lived year-round in a house that it owned and that did not qualify for tax abatements. The family did not have retirement income or major deductible expenses, such as large medical bills. The assumption was that the family was able and willing to live in any municipality, even though in reality, it might not have found a house it could afford or would want in each place.

The family claimed the common exemptions and deductions allowed by its state for dependents and homeownership. The analysis ignored smaller fees or taxes, such as local service fees or cigarette taxes.

Income tax assumptions and formulas

This study used three scenarios of family income:

Median-income family: Its gross income was roughly equal to the Philadelphia regional median household income in each year, as reported by the U.S. Census Bureau's American Community Survey for the nine-county region, and it came entirely from earned salary or wages without any dividends, interest, or capital gains. The rounded figure was used to compute the tax-burden percentage each year. For cross-year comparison of dollar amounts, all the income figures were inflation-adjusted to 2015 dollars using the U.S. Bureau of Labor Statistics' "urban" Consumer Price Index, found at http://www.bls.gov/data/inflation_calculator.htm. Here are the unadjusted and adjusted income numbers used:

	Median-income family	
Year	Gross income, unadjusted and rounded from census data	Gross income, inflation-adjusted to 2015 dollars
2000	$47,500	$65,467
2012	$60,000	$62,023
2015	$62,000	$62,000

Throughout the report, this family was used as the primary measurement of tax burdens and tax gaps. For supplemental and broader analysis, two other family-income scenarios were created:

High-income family: Its income was equal to double the regional median household income, plus another 3 percent of that amount from taxable dividends, interest, or capital gains, also known as nonwage or unearned income. Here are the unadjusted and inflation-adjusted numbers:

	High-income family	
Year	Gross income, unadjusted and rounded from census data	Gross income, inflation-adjusted to 2015 dollars
2000	$97,500	$134,380
2012	$124,000	$128,181
2015	$128,000	$128,000

Low-income family: Its income was equal to half of the regional median household income in the given year. Like the middle-income family, it did not have any taxable dividends, interest, or capital gains. Here are the unadjusted and inflation-adjusted numbers:

	Low-income family	
Year	Gross income, unadjusted and rounded from census data	Gross income, inflation-adjusted to 2015 dollars
2000	$23,500	$32,389
2012	$30,000	$31,012
2015	$31,000	$31,000

The models subjected the family to state tax rates on earned wage income and unearned nonwage income as set by the commonwealth of Pennsylvania, found at http://www.revenue.pa.gov/GeneralTaxInformation/Current%20Tax%20Rates/Pages/default.aspx, and the state of New Jersey, found at http://www.state.nj.us/treasury/taxation/taxtables.shtml. It also applied the local earned income tax rate in force in each municipality in Pennsylvania as compiled by the Pennsylvania Department of Community and Economic Development, found under "Tax Registers (real-time)" at http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=EitWithCollector_Dyn_Excel&type=R). New Jersey does not allow its municipalities to impose a local income tax.

In Philadelphia, the family was subject to resident wage taxes or, in the case of commuters, nonresident wage taxes. In addition, the upper-income family when living in Philadelphia paid Philadelphia's school income tax, which applies to the family's unearned nonwage income, such as capital gains or dividends, at the same rate as the city's resident wage tax. All the Philadelphia rates were found at http://www.phila.gov/Revenue/taxpro/Pages/rates.aspx.

Here are the nominal income tax rates used in this study:

	Year		
	2000	2012	2015
PA state rate on wages or nonwage income (flat rate: all income levels)	2.80%	3.07%	3.07%
NJ state rate on wages or nonwage income (graduated rate: median-income level)	1.308%	1.546%	1.575%
NJ state rate on wages or nonwage income (graduated rate: high-income level)	2.396%	3.064%	3.141%
NJ state rate on wages or nonwage income (graduated rate: low-income level)	1.102%	1.225%	1.242%
Philadelphia city rate on wage income (residents)	4.6135%	3.9280%	3.9102%
Philadelphia city rate on wage income (nonresidents)	4.0112%	3.4985%	3.4828%
Philadelphia school district rate on nonwage income (residents only)	4.6135%	3.9280%	3.9102%
PA average suburban local tax rate on wage income*	0.69%	0.87%	0.87%

*Rates were found for each municipality but are not listed here.

For each family-income scenario, there were three job/home location scenarios:

- City resident family lived in Philadelphia, and the adults worked either in the city or a Pennsylvania suburb, which is the most common work location for reverse commuters.
- Suburban commuter family lived in a suburb, and the adults worked in Philadelphia.
- Suburban noncommuter family lived in a suburb, and the adults worked in the same suburb.

The report did not analyze suburb-to-suburb commuters, which is a scenario not relevant to this study of Philadelphia tax rates.

For each scenario above, the family got the following tax benefits in New Jersey that were not available in Pennsylvania: personal exemptions equal to $1,000 for each adult and $1,500 for each dependent child off its gross income, meaning that the four-member family's taxable income was $5,000 less in New Jersey than in Pennsylvania; and a deduction of its local property tax payments from its gross income to reduce its New Jersey income tax liability.

The model also applied the following rules to the commuter scenarios, in accordance with the applicable laws:

- If the adults commuted from a Pennsylvania suburb to Philadelphia, the family was exempt from its hometown's earned-income tax.
- If the adults commuted from a New Jersey suburb, the family did not pay Pennsylvania state income tax.
- If the adults commuted from a New Jersey suburb, the family deducted its Philadelphia nonresident wage taxes from its New Jersey state income tax liability, which had the effect of eliminating that liability in the tax brackets we used.
- If the adults commuted from a Philadelphia home to a Pennsylvania suburban job, the family paid the city's resident wage tax rather than a suburban earned-income tax, if the town had one.

Here is the basic formula for the income tax portion of the tax burden, which the model computed for each family scenario in each municipality:

Income tax burden =

(Taxable* earned and unearned income x state income tax rate) +

(Taxable earned income x local income tax rate, if any) +

(Only Philadelphia residents: taxable unearned income, if any, x Philadelphia resident income tax rate)

/Gross income

* In Pennsylvania, taxable income = gross income. In New Jersey, taxable income = gross income - personal exemptions and property taxes due.

Sales tax assumptions and formulas

The model assumed that the median-income family spent 30 percent of its gross income buying consumer goods or services that are subject to sales taxes, a figure reached by dividing Pennsylvania's statewide personal (nonbusiness) sales-tax collections by statewide personal gross taxable income, a formula suggested by professor John L. Mikesell of Indiana University, Bloomington, who is an expert on sales taxes. Readers are cautioned that 30 percent is a broad estimate and does not account for the fact that different items were exempt in each state in the years we studied, such as gasoline in New Jersey and internet service in Pennsylvania.

The 30 percent figure was used as a benchmark for setting the sales-taxable amounts for the high- and low-income families. The U.S. Bureau of Labor Statistics Consumer Expenditure Survey (found at http://www.bls.gov/cex) provides a breakdown of Americans' average consumer purchases by household-income bracket. This survey includes three brackets that roughly corresponded to the hypothetical family's median-, high-, and low-income levels. For each bracket, the income figure was divided by the consumer-purchases figure to arrive at a percentage of income spent on consumer purchases. Based on the spread between those calculations, the high-income family was set at 20 percent and the low-income family at 60 percent.

Three different sales-tax rates were in effect across the region, so the family's purchases were apportioned geographically based on the following assumptions:

- When the family lived in Philadelphia, the model assumed that it made half of its sales-taxable purchases in the city and half in the Pennsylvania suburbs. This configuration reflected the assumption that city residents at times would take advantage of the lower rates in the nearby Pennsylvania suburbs.[10]
- When the family lived in either the Pennsylvania or New Jersey suburbs with adults working in Philadelphia, the model assumed that it made three-quarters of its consumer purchases in its hometown and one-quarter in Philadelphia.
- When the family lived and worked in the suburbs, the model assumed that it made all of its purchases in the same suburb where it lived and worked.

Here are the sales tax rates applied to the family in each municipality and state:

Year	Philadelphia	PA suburbs	NJ suburbs
2000	7%	6%	6%
2012	8%	6%	7%
2015	8%	6%	7%

The result was the family's sales tax due in each place. This tax amount was divided back into gross income to arrive at the sales-tax portion of the tax burden. Here is the formula, where income is adjusted according to where the family lived and worked:

Sales tax burden =

(Gross income x portion of income spent on sales-taxable purchases in suburbs) x

(Sales tax rate applicable in suburbs) +

(Gross income x portion of income spent on sales-taxable purchases in Philadelphia) x

(Sales tax rate applicable in Philadelphia)

/Gross income

Property tax assumptions and formulas

The model's foundation was to set the market value of the family's home using a multiple of its household income for each year studied. Those multiples matched the actual ratios of median home prices to median household income found in data from the American Community Survey, with additional analysis by Gillen, the Philadelphia-based real estate economist. Here are the multiples and market values used for each family-income scenario:

Year	Multiply times income to obtain house value	Assumed house value for median-income family	Assumed house value for high-income family	Assumed house value for low-income family
2000	2.3	$109,250	$224,250	$54,050
2012	3.1	$186,000	$384,400	$93,000
2015	2.9	$179,800	$371,200	$89,900

Note: These house values are lower than the Census Bureau's median house value for the region but higher than its median for some counties, including Philadelphia. This simplification was necessary to view the individual family's tax burden across many municipalities.

For Pennsylvania, the property tax rate for each municipality was used. This information was found at each county's official website or through the state Department of Community and Economic Development's archives, available at http://munstats.pa.gov/public. For New Jersey, each municipality's general property tax rate was used. This information was found at the state Department of the Treasury's website, available at http://www.state.nj.us/treasury/taxation/lpt/taxrate.shtml.

Property taxes are based on assessed values. Assessments are determined by local or county assessors, whose judgments can differ from town to town, county to county, or state to state. To compare property tax rates across jurisdictions, assessments were adjusted to a common measurement of market value, a process known as equalization. Equalization ratios, also known as assessment ratios, are multiplied into the local nominal rates to produce equalized tax rates, which are then considered to be comparable from town to town.

For the Pennsylvania municipalities except Philadelphia in 2000 and 2012, a countywide equalization ratio known as a common level ratio was used. This ratio was computed for each year by the Tax Equalization Division, formerly the State Tax Equalization Board, found at http://www.newpa.com/local-government/boards-committees/tax-equalization-division.

State officials informed the researchers that the common level ratio was probably inaccurate for Philadelphia in 2000 and 2012 because of unreliable data from the city. Gillen and Strauss were retained to compute equalization ratios for the 2012 study; their detailed methodology can be found in the appendix of that study. After the city reformed its property tax system in 2013, state officials affirmed that their common level ratio for the city was accurate again, so it was used for the 2015 tax burden.

Here are the Pennsylvania and Philadelphia equalization ratios, averaged by county (town-by-town ratios were computed but are not shown here):

Year	Philadelphia	Bucks County (average)	Chester County (average)	Delaware County (average)	Montgomery County (average)
2000	22.0%	4.4%	89.8%	97.1%	93.6%
2012	13.0%	10.8%	59.0%	72.2%	61.9%
2015	98.9%	11.3%	55.4%	67.8%	56.2%

In New Jersey, state officials have two ways to compare property tax rates from town to town: an equalization ratio that can be multiplied into the town's nominal general rate (as described above), and an "effective rate" for each town that also can be used to account for differing market conditions. On the advice of the New Jersey Treasury Department, the model used the former option with equalization ratios found in the department's Table of Equalized Valuations, available at http://www.state.nj.us/treasury/taxation/lpt/lptvalue.shtml.

Here are the New Jersey equalization ratios averaged by county (town-by-town ratios were computed but are not shown here):

Year	Burlington County (average)	Camden County (average)	Gloucester County (average)	Salem County (average)
2000	96.1%	98.4%	96.7%	91.0%
2012	88.7%	80.2%	76.1%	98.5%
2015	94.9%	95.8%	99.7%	103.9%

Multiplying the nominal tax rates by the equalization ratios, researchers arrived at an equalized property tax rate for each of the 355 municipalities in Pennsylvania and New Jersey. Here are the equalized rates, averaged by county:

	Year		
	2000	2012	2015
Philadelphia	1.818%	1.226%	1.384%
Bucks County (average)	1.759%	1.786%	1.933%
Chester County (average)	1.861%	1.941%	1.913%
Delaware County (average)	2.713%	3.150%	3.110%
Montgomery County (average)	1.871%	1.990%	1.902%
Burlington County (average)	2.664%	2.228%	2.689%
Camden County (average)	3.449%	2.991%	3.611%
Gloucester County (average)	2.791%	2.563%	3.405%
Salem County (average)	2.508%	2.576%	2.932%

Then the property tax bill for the family at each income/home value level was determined, with equalized rates used for each municipality. This dollar amount also was used to compute the family's homestead tax relief, according to rules in force in each state.

In 2000 in the Pennsylvania suburbs, the hypothetical family did not qualify for state-run property tax relief programs, which were mostly geared to senior citizens. In 2012 and 2015, new programs provided broader property tax relief in the suburbs but not in Philadelphia. For the suburban family in 2012 and 2015, the model used the Pennsylvania Department of Education's calculation of the average amount of homestead tax relief delivered each year to each household in each school district, found at http://www.education.pa.gov/Teachers%20-%20Administrators/Property%20Tax%20Relief/Pages/Property-Tax-Reduction-Allocations.aspx. Each town in the study was cross-matched with its corresponding school district. Then the homestead relief amounts were subtracted from the family's property tax bill, arriving at a post-relief property tax bill for each town, year, and income level.

In 2013, Philadelphia created its own homestead property tax relief program, under which any homeowner could claim a $30,000 reduction of the assessed value of a property. This formula was applied to the city resident family's property tax.

New Jersey has an income or property-value threshold that excluded the hypothetical high-income family from homestead relief; the median- and low-income families were eligible. In 2000, the homestead benefit was based on a percentage of gross income, and in 2012 and 2015, the benefit was based on a percentage of property taxes paid in 2006, capped at $10,000. Here is the formula used for 2012 and 2015, as set by New Jersey law:

1. The family home's 2006 assessed value (estimated) multiplied by the municipality's 2006 effective property tax rate to derive the family's 2006 property tax bill.
2. Its 2006 tax bill multiplied by 6.67 percent (or 10 percent for a low-income family) to derive the amount of homestead relief.
3. Homestead relief subtracted from 2012 property tax bill to derive the post-relief tax bill for 2012.
4. Same operation as above for the 2015 tax bill.

For each municipality in Pennsylvania and New Jersey and for Philadelphia, the family's post-relief property tax bill was divided by its gross income. That gave the effective equalized property tax rate, also called the family's property tax burden. Here is the final formula:

Property tax burden =

(Equalized property tax rate x home value) -

Average homestead exemption amount per household

/Gross income

Aggregate tax burden from income, sales, property taxes

Tax burden was defined as the hypothetical family's aggregate state and local tax liability—from income, sales, and property taxes—divided by its annual gross income and expressed as a percentage of its income. It was found by adding together the component tax burdens above. Here is the formula:

Tax burden =

(Home value x effective equalized property tax rate) +

(Gross income x (effective state + local income tax rates)) +

(Portion of income spent on sales-taxable purchases x effective sales tax rate)

/Gross income

Changes in methodology from 2012 to 2015

This report covered Philadelphia plus all 354 suburban tax jurisdictions in adjacent Pennsylvania and New Jersey counties; the previous report covered 236. All of the towns added in this study were in Pennsylvania.

In this report, the family in New Jersey deducted property taxes from its income tax liability. In the previous report, the family did not take the deduction.

In compiling municipal property tax rates in New Jersey, this report used each locality's "general rate" multiplied by its "equalized value" percentage, as recommended by the state Treasury Department. The previous report, also on the advice of treasury officials at that time, used the department's "effective rate," which included a different kind of equalization method. The switch resulted in the 2012 effective property tax rates going up in some towns and down in others but did not change the overall averages in this report from the previous report.

This report computes homestead relief for the middle-income family in New Jersey using a benefit ratio of 6.67 percent; the previous report used a ratio of 13.34 percent divided by 4, which was the formula in effect at that time. The switch was made at the urging of the New Jersey Treasury Department, which said the latter formula was used only once—coincidentally the year of the previous report—but should not be used for ongoing research. The switch resulted in greater homestead relief in 2012 in this report than in the previous report.

This study included a high-income and low-income family, for a broader analysis of tax burdens. The previous study did not include those additional hypothetical families.

Endnotes

1 Pennsylvania and New Jersey both provide state funds to counties to distribute to their municipalities in the form of homestead relief from local property taxes. In Pennsylvania, Philadelphia alone is allowed to keep the state's homestead allocation in its Treasury strictly for use in offsetting or lowering the city wage tax rate. The state homestead program is separate from Philadelphia's homestead relief program enacted in 2013.

2 In our model, removing the $30,000 homestead relief, without any other changes, increases Philadelphia's middle-income tax burden to 13.1 percent and changes its rank to 72nd heaviest.

3 U.S. Census Bureau Survey of State and Local Government Finance, http://www.census.gov/govs/local. These percentages do not include federal pass-through funds such as the 2009 "stimulus" program.

4 U.S. Census Bureau American Community Survey and Pennsylvania Uniform Crime Reporting System.

5 U.S. Census Bureau American Community Survey, 2010-14, five-year estimate, available at http://factfinder.census.gov.

6 The Philadelphia-resident family has the same tax burden whether it works in the city or in the suburbs (reverse commutes) because it is subject to the resident income taxes and property taxes in both cases.

7 The Philadelphia school income tax is levied only on city residents' nonwage (unearned) income at the same rate as the city's wage tax. Its proceeds go to the Philadelphia School District.

8 See Philadelphia Growth Coalition (2016), http://philadelphiagrowthcoalition.com; see also Mayor's Task Force on Tax Policy & Economic Competitiveness (2009).

9 U.S. Bureau of Labor Statistics and U.S. Census Bureau American Community Survey.

10 Putting all of the city resident's sales-taxable purchases in the city, and none in the suburbs, slightly raises the city resident's tax burden and leads to a slightly smaller—but still notable—reduction in its tax gap with the suburbs.

For further information, please visit:

pewtrusts.org/philaresearch

Contact: Elizabeth Lowe, communications officer
Email: elowe@pewtrusts.org
Project website: pewtrusts.org/philaresearch