The Housing Market and Economic Impacts of a Potential Change in New Jersey's Realty Transfer Fee

Prepared for

New Jersey Realtors® Issues Mobilization Fund

pwc

Table of Contents

The Housing Market and Economic Impacts of a Potential Change in New Jersey's Realty Transfer Fee

Executive Summary

Faced with budgetary pressures and competing priorities, changes to New Jersey's current Realty Transfer Fee have been proposed during past legislative sessions. PwC was engaged by the New Jersey Realtors® Issues Mobilization Fund to evaluate the housing market and economic impacts of one such proposal that would increase the Realty Transfer Fee on buyers of property with a sales price in excess of $1 million from 1 percent to 2 percent. Although the proposal would apply to commercial, residential, and certain farm property, the analysis in this paper is limited to the proposal's impact on owner-occupied housing.

Housing Market Impacts

This paper first estimates the impact on housing prices of a one-percentage point increase in New Jersey's realty transfer fee imposed on buyers of property with a sales price in excess of $1 million. As discussed below, the policy change reduces the price buyers are willing to pay, leading to a reduction in sales of new and existing homes valued in excess of $1 million.

Table ES-1 provides estimates of the average change in housing price for all homes and for homes valued in excess of $1 million in 27 cities across the state, as well as the weighted-average state-wide impact. While the overall impact on housing prices across all homes, including those valued at under $1 million, is low (-0.3 percent), the impact on the price of homes valued at more than $1 million is more significant (-1.9 percent). Consistent with prior research, the reduction in price is estimated to exceed the amount of the tax for homes valued in excess of $1 million.

An increase in the realty transfer fee increases upfront transaction costs for purchases of homes valued in excess of $1 million, thereby increasing the cost of ownership. As a result, buyers are not willing to pay as much for the property as before the tax increase. A reduction in the price of homes by an amount greater than the amount of the tax is consistent with buyers recognizing the tax they will pay upon purchase as well as the tax to be paid by future buyers upon resale.

Some sellers will accept the lower price offered by buyers, while others will decide not to sell and possibly choose to remain in their current home longer. In addition to a reduction in sales of existing homes, the reduction in housing prices will lead to a reduction in construction of new housing units.

Prior research suggests that the impact on housing sales can be significant. Based on this research, it is estimated that the total dollar value of sales of existing homes valued in excess of $1 million would decline by 8 percent in the short-run, and by 6 percent after one year. In addition to the reduction in transaction volume, it is estimated that the remaining transactions will, on average, occur at a price that is 1.9 percent lower. Assuming the realty transfer fee rate increase goes into effect on January 1, 2020, the combined impact of these two effects is an estimated reduction in sales of existing homes valued in excess of $1 million of $649.5 million in 2020 and $535.4 million in 2021, rising to $590.2 million by 2024 (see **Table ES-2**).

The proposal is also estimated to reduce the construction of new homes valued in excess of $1 million by $49.1 million in 2020, rising to $55.9 million in 2024 (see **Table ES-3**).

Table ES-1 – Estimated Change in Housing Price from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes with a Sales Price in Excess of $1 Million
[Weighted-Average Percent Change in Housing Prices]

City	Average Change in Price of All Homes[1]	Average Change in Price for Homes Valued in Excess of $1 Million
Atlantic City City	-0.26%	-1.64%
Bedminster Township	-0.69%	-2.15%
Bridgeton City	-0.12%	-2.04%
Camden City	***	***
Cape May City	-0.45%	-1.81%
Chatham Borough	-0.62%	-1.95%
Clifton City	-0.03%	-1.79%
Colts Neck Township	-0.40%	-2.21%
Dover Town	-0.11%	-1.98%
Elizabeth City	-0.10%	-2.23%
Franklin Lakes Borough	-0.42%	-1.42%
Glassboro Borough	-0.06%	-2.54%
Hackensack City	-0.19%	-1.94%
Harrison Town	-0.06%	-1.80%
Hoboken City	-0.65%	-1.76%
Jersey City City	-0.22%	-1.57%
Long Branch City	-0.33%	-1.72%
New Brunswick City	-0.07%	-2.04%
Newark City	-0.09%	-1.93%
Passaic City	-0.06%	-2.02%
Paterson City	-0.08%	-1.66%
Plainfield City	-0.37%	-2.23%
Pleasantville City	-0.17%	-1.78%
Point Pleasant Borough	-0.30%	-1.73%
Princeton	-0.51%	-2.01%
Trenton City	-0.08%	-1.64%
Vineland City	-0.14%	-1.81%
Mean	-0.25%	-1.90%
Median	-0.18%	-1.87%
Min	-0.69%	-2.54%
Max	-0.03%	-1.42%
Weighted average[2]	**-0.32%**	**-1.87%**

PwC estimates.
(1) Weighted average change in price across all homes, regardless of sales price.
(2) Weighted average across all 27 cities.
***Indicates no impact because there were no homes in the sample for the city with a value in excess of $1 million.

Table ES-2 – Estimated Change in Sales of Existing Homes from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in $ Millions]

Year	Sales in Excess of $1 Million before the Policy Change	Change in Sales in Excess of $1 Million	Sales in Excess of $1 Million after the Policy Change
2020	$6,681	-$649.5	$6,032
2021	$6,902	-$535.4	$6,366
2022	$7,129	-$553.1	$6,576
2023	$7,365	-$571.4	$6,793
2024	$7,608	-$590.2	$7,017

Source: PwC estimates.

Table ES-3 – Estimated Change in New Housing Construction from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in $ Millions]

Year	New Homes Valued in Excess of $1 Million	Change in New Construction	New Homes Valued in Excess of $1 Million
2020	$1,121	-$49.1	$1,072
2021	$1,158	-$50.7	$1,107
2022	$1,196	-$52.4	$1,144
2023	$1,236	-$54.1	$1,182
2024	$1,277	-$55.9	$1,221

Source: PwC estimates.

Economic and Tax Impacts

The real estate sector plays an important role in New Jersey's economy, accounting directly for 6.3 percent of total non-farm employment and 17.6 percent of the private non-farm GDP in the state. As such, changes in housing costs and the corresponding changes in housing sales can have broader impacts on the economy. A decline in housing prices reduces wealth of existing homeowners and causes a decline in consumption (through the "wealth effect"). A decrease in housing prices and sales will reduce new home construction and reduce expenditures associated with the purchase of a new or existing home, including moving costs, spending on furniture and appliances, and repair and renovation expenditures. Other housing transaction related income will also decline, such as brokerage commissions, appraisals and mortgage issuance fees.

We use an economic model of the New Jersey economy to quantify the impact of a 1 percentage increase in the realty transfer fee on buyers of housing with a sales price in excess of $1 million. **Table ES-4** provides estimates of the impact of the proposed change in the Realty Transfer Fee (RTF) on New Jersey's economy, assuming the new tax rate is effective beginning January 1, 2020. Relative to the baseline forecast, total employment is estimated to decline by approximately 700 jobs annually between 2020 and 2024. New Jersey's GDP is estimated to decline by approximately $100 million annually between 2020 and 2024. Labor income, including wages and salaries and proprietors' income, is estimated to decline by $55.0 million in 2020 and by increasing amounts through 2024.

Table ES-4 – Economic Impacts of a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in Millions Dollars]

	2020	2021	2022	2023	2024
Change in New Jersey employment	-723	-684	-682	-669	-652
Change in New Jersey GDP	-$96.7	-$99.1	-$103.2	-$106.1	-$108.2
Change in New Jersey labor income:	-$55.0	-$58.9	-$63.0	-$65.4	-$66.8
*Change in New Jersey wages and salaries**	*-$39.0*	*-$42.8*	*-$46.4*	*-$48.6*	*-$50.1*
Change in New Jersey proprietors income	*-$16.0*	*-$16.1*	*-$16.6*	*-$16.8*	*-$16.8*
Change in New Jersey state and local revenues	$60.4	$61.3	$63.1	$65.1	$67.2
Change in the realty transfer fee	*$64.1*	*$68.9*	*$71.1*	*$73.5*	*$75.9*
*Change in other revenues***	*-$3.7*	*-$7.6*	*-$8.1*	*-$8.4*	*-$8.7*

Source: PwC estimates based on the REMI Tax PI model for the State of New Jersey.
*Includes employer contributions for employee pension and insurance funds and employer contributions to government social insurance programs.
**Includes sales and gross receipts taxes, individual and corporate income taxes, other taxes, and other revenues.

While a 1 percentage point increase in the realty transfer fee on buyers of housing with a sales price in excess of $1 million will increase state and local revenues from the tax, the revenue raised will be less than proportional to the existing tax due to the decline in housing prices and the reduction in housing transactions. As shown in **Table ES-4**, the increase in the realty transfer fee is estimated to increase tax revenues by $64.1 million in 2020, rising to $75.9 million by 2024. Realty transfer fee collections would be $12 million to $14 million higher in the absence of the impact of the tax increase on housing prices and transactions. In addition, the reduction in labor income and economic activity will result in a reduction in other state and local revenues, such as sales and income taxes. It is estimated that other revenues decline by $3.7 million in 2020 and by $8.7 million in 2024. The net effect on revenues is estimated to be 75 percent to 77 percent of the static impact that assumes no impact on the New Jersey housing market and economic activity.

The Housing Market and Economic Impacts of a Potential Change in New Jersey's Realty Transfer Fee

I.   Introduction

New Jersey's Realty Transfer Fee (RTF) was established in 1968 with the original intent to offset the costs of tracking real estate transactions. The RTF is imposed on all real property transfers, with limited exceptions, and is usually collected at closing by the closing agent responsible for recording the deed with the county clerk. The tax is imposed by the state but the revenues are shared between the state and New Jersey's 21 counties.

Currently, New Jersey's general RTF is imposed at graduated rates that depend on the amount of consideration recited in the deed (i.e., the sales price of the home), with rates ranging from 0.4 percent to 1.21 percent, and applies to sellers of both existing properties and new construction. A separate tax of 1 percent of the full purchase price is assessed on buyers of certain property with a sales price in excess of $1 million.

Faced with budgetary pressures and competing priorities, changes to the current RTF have been proposed during past sessions of the New Jersey legislature, including a recent proposal to increase the tax on buyers of property with a sales price in excess of $1 million from 1 percent to 2 percent.[1]

PwC was engaged by the New Jersey Realtors® Issues Mobilization Fund to evaluate the impact of an increase in the RTF on buyers of property with a sales price in excess of $1 million from 1 percent to 2 percent. This report summarizes the impact of such a proposal on housing prices, housing sales, the economy, and New Jersey's state and local tax revenues.

This report is organized as follows. **Section II** provides background information on New Jersey's Realty Transfer Fee. **Section III** presents a version of a standard housing pricing model that incorporates transaction costs, including transfer taxes. That model is used to estimate the impact of the proposed change in the RTF on housing prices and housing sales. **Section IV** uses the Tax PI model, developed by Regional Economic Modeling Inc. (REMI) to estimate the impact of the proposal on New Jersey's Economy, in terms of employment, personal income, and gross domestic product (GDP). The impact on state and local tax revenues is also presented. Additional tax policy considerations, including equity, efficiency, and stability, are addressed in **Section V**. The **Appendices** to the report provide additional information on the models and data used for the analysis.

---

[1] Senate Bill 2813, introduced on June 27, 2018.

II. *Background*

As of 2018, 35 states and the District of Columbia have some form of a real estate transfer or mortgage origination tax. These taxes are typically assessed on the sales price of real property at rates ranging from as low as 0.1 percent to rates in excess of 4 percent, when local transfer taxes are included. These taxes may be assessed on the buyer or the seller, or split between the two.

In New Jersey, the Realty Transfer Fee (RTF) is imposed on upon recording of deeds evidencing the transfer of real property, including residential property, and applies to both existing properties and new construction. The RTF is calculated based on the total consideration recited in the deed and is collected at closing by the closing agent responsible for recording the deed with the county clerk. The fee is imposed by the state but the revenues are shared between the state and New Jersey's 21 counties.

New Jersey's RTF was first enacted in 1968 following the repeal of the federal government's documentary stamp tax on real estate transfers. At its inception, the RTF was imposed on sellers of real property at a flat rate of 0.1 percent of the selling price. Since that time the RTF has been expanded and the rate raised a number of times.

Currently, New Jersey has a general RTF, which is imposed on sellers of property, and a separate RTF, which is imposed on buyers of property with a sales price in excess of $1 million.

New Jersey's general RTF is imposed on sellers of property at graduated rates which depend on the sales price of the home. As shown in **Table 1**, rates range from 0.40 percent to 0.78 percent for homes with a sales price of $350,000 or less and from 0.58 percent to 1.21 percent for homes with a sales price in excess of $350,000.

Table 1. – New Jersey Realty Transfer Fee: General Rates

Sales Price		Fee Per $500	Rate as a
over	but not over	of Sales Price	Percentage
Sales Price Does Not Exceed $350,000			
$0	$150,000	$2.00	0.40%
$150,000	$200,000	$3.35	0.67%
$200,000	$350,000	$3.90	0.78%
Sales Price Exceeds $350,000			
$0	$150,000	$2.90	0.58%
$150,000	$200,000	$4.25	0.85%
$200,000	$550,000	$4.80	0.96%
$550,000	$850,000	$5.30	1.06%
$850,000	$1,000,000	$5.80	1.16%
$1,000,000		$6.05	1.21%

Source: NJ Division of Taxation.

A partial exemption from the general RTF, in the form of reduced rates, applies to sales of property by senior citizens aged 62 or older, blind and disabled persons, and for sales of low- and moderate-income housing. Full exemption is provided for sales to the federal or New Jersey governments, sales to tax-exempt organizations, sales as part of a bankruptcy or delinquent tax proceedings, sales between a husband and wife or between parents and a child, and in other limited circumstances.

In addition to the general fee imposed on the seller, a separate 1 percent fee is imposed on buyers of residential property, commercial property, certain farm property[2], and cooperative units with a sales price in excess of $1 million. The 1 percent fee applies to the full purchase price and is in addition to the fee paid by the seller.

For the fiscal year ended June 30, 2018, combined revenues from New Jersey's general RTF and RTF on buyers totaled $376.3 million, or 2.4 percent of total taxes and 1.0 percent of total revenues for the state.

Changes to the current RTF have been proposed during past legislative sessions. One such proposal, Senate Bill 2813, introduced on June 27, 2018, would have increased the RTF on buyers of property with an acquisition price in excess of $1 million from 1 percent to 2 percent of the total consideration paid for the property.

Such a change would increase the upfront transaction costs paid by buyers of properties with a sales price in excess of $1 million. For example, for homes just above the threshold, increasing the RTF from 1 percent to 2 percent represents a $10,000 increase in upfront costs. As will be discussed in the next section, increasing transaction costs would have an impact on housing prices, housing sales, and new construction in New Jersey.

The real estate sector employed more than 307,000 people in New Jersey in 2017, accounting for 6.3 percent of total non-farm employment in the state. Many of these workers are self-employed real estate agents and brokers. For the same year, the real estate sector directly accounted for $94.4 billion in GDP, representing 17.6 percent of the private non-farm GDP in the state. Given the importance of the real estate sector in New Jersey, changes to the housing market can have important impacts throughout the economy.

---

[2] The fee only applies to farm property if the property includes a building or structure suitable for residential use.

III. Housing Market Impacts of the Proposed Change in New Jersey's Realty Transfer Fee

Theoretical and empirical research suggests that transactions costs, including real estate transfer taxes, have significant impacts on housing markets and distort the buy-sell decision by creating a wedge between the value placed on a home by a potential buyer and the price received by the seller of the property. The value of the home to a buyer must exceed the value of the home to the seller by at least all transaction costs in order for the sale to occur. The impact of real estate transfer taxes, such as the RTF, on housing prices and home sales will depend on a number of factors including the supply and demand for housing and the relative sensitivity of buyers and sellers to changes in the after-tax price of housing.

While the RTF on homes purchased for more than $1 million in New Jersey is imposed on buyers, the ultimate burden of the tax may fall on sellers, in whole or in part. If buyers are less sensitive to price changes than sellers, buyers will bear a greater share of the tax increase. On the other hand, if sellers are less sensitive to the price, then buyers will be able to negotiate greater reductions in the list price and, as a result, sellers will bear a greater share of the tax increase (in the form of a reduced sales price). Furthermore, by creating a wedge between the price asked and the price offered, real estate transfer taxes reduce transactions, thereby creating a lock-in effect for current homeowners. To the extent that an increase in the RTF reduces housing prices, it may also lead to a reduction in the construction of new homes.

Prior Research on the Impact of Real Estate Transfer Taxes

A number of studies have investigated the impact of the transaction taxes on real estate markets. One of the earliest studies on the impact of transfer taxes was Benjamin, Coulson, and Yang (1993), which looked at the increase in Philadelphia's real estate transfer tax from 3.5 percent (including the state of Pennsylvania's 1 percent tax) to 5.07 percent.[3] Using data on home sales in Philadelphia and the surrounding area (where the transfer tax was unchanged) the authors estimated that the tax increase reduced housing prices in Philadelphia by 8 percent in the short-run.

More recent studies have found smaller price impacts from increases in transaction taxes. For example, Dachis, Duranton, and Turner (2012)[4] and Davidoff and Leigh (2013)[5] found that increasing real estate transfer taxes in Toronto and Australia, respectively, reduced housing prices by an amount approximately equal to the increase in tax. These results suggest that the entire burden of the tax is borne by the seller.

The empirical literature also finds evidence that real estate transfer taxes create a substantial lock-in effect for current homeowners, reducing the number of housing sales in both the short-run and the long-run. Using data from the Netherlands, Van Ommeren and Van Leuvensteijn (2005) found that a 1 percentage point increase in transaction costs decreases residential mobility rates by at least 8 percent.[6] Dachis, Duranton, and Turner (2012) found that the imposition of Toronto's 1.1 percent land

---

[3] Benjamin, John D., N. Edward Coulson, and Shiawee X. Yang (1993), "Real Estate Transfer Taxes and Property Values: The Philadelphia Story," *Journal of Real Estate Finance and Economics*, Vol. 7, pp 151-157.
[4] Dachis, B., Gilles Duranton, and Matthew A. Turner (2012), "The Effects of Land Transfer Taxes on Real Estate Markets: Evidence from a Natural Experiment in Toronto," *Journal of Economic Geography*, vol. 12, No. 2, pp. 327-354.
[5] Davidoff, Ian and Andrew Leigh (2013), "How Do Stamp Duties Affect the Housing Market?" IZA Discussion Paper 7463.
[6] Van Ommeren, Jos and Michiel Van Leuvensteijn (2005) "New Evidence of the Effect of Transaction Costs on Residential Mobility," *Journal of Regional Science*, Vol. 45, No. 4, pp. 681-702.

transfer tax resulted in a reduction in the number of housing sales of between 10 percent and 20 percent. Davidoff and Leigh (2013) found that a 1 percentage point increase in the transfer tax would reduce the number of sales by 8 percent in the short run.

The literature suggests that the impact on sales may be greater in the short run than in the long run. In a recent analysis of the German real estate transfer tax, Fritzsche and Vandrei (2016) found that a 1 percentage point increase in the transfer tax was associated with a long-run reduction in transactions of 6 percent.[7] Berard and Trannoy (2017) found that a 0.7 percentage point increase in France's real estate transfer tax resulted in a short-run reduction in sales of 7 percent and a long-run reduction of 4.6 percent.[8] They found the short-run impact lasted for approximately 10 months after the tax increase.

A number of recent papers have looked at the impact of "notched" transfer taxes. A real estate transfer tax is said to be notched if different tax rates apply above certain threshold sales prices, creating discontinuous jumps in tax liability. New Jersey's buyer-side RTF is a notched tax, since it only applies to transactions with a sales price in excess of $1 million. The current tax rate is 1 percent and applies to the full sales price, so that a home sold for an amount just over the threshold would incur a tax of $10,000. In contrast, a home sold for $999,999 would incur no buyer-side tax.[9] This provides a strong incentive for buyers to seek to reduce the price below the threshold. If sellers are unwilling to reduce price, buyers and sellers may fail to reach an agreement, causing the current owner to remain in place.

Using data on residential real estate transactions, Best and Kleven (2014) analyzed the impact of a temporary reduction in the UK's real estate transfer tax (which is referred to as a "stamp duty").[10] They first investigate behavior around the price notches in the stamp duty, which create discontinuous jumps in tax liability, and find evidence of a large bunching of transactions just below the thresholds and that the average housing price response around the notch is twice as large as the amount of the tax. Best and Kleven found that the temporary reduction in the stamp duty increased the volume of transactions by as much as 20 percent.

Kopczuk and Monroe (2015) analyzed the impact of the so-called "mansion tax" in New York and New Jersey's RTF on buyers of property valued in excess of $1 million.[11] They found that the tax distorts prices around the $1 million notch, resulting in a significant bunching of transactions below the threshold and that the reduction in housing prices near the threshold exceeds the cost of the tax. They also found that the reduction in sales above the $1 million notch was greater than the increase in sales below the notch, indicating a reduction in the number of transactions as a result of the tax.

Taken as a whole, the literature suggests that real estate transfer taxes reduce housing prices by an amount greater than or equal to the tax, resulting in a significant reduction in housing sales. The presence of price notches, which create discontinuous jumps in tax liability, can lead to bunching of transactions below the notch, and significant reductions in housing prices and transactions above the notch. Further, even in the absence of notches, an increase in transaction costs can reduce housing sales by introducing a price wedge between buyers and sellers.

---

[7] Fritzsche, Carolin and Lars Vandrei (2016), "The German Real Estate Transfer Tax: Evidence for Single-Family Home Transactions," *Ifo Working Paper*, No. 232.

[8] Berard, Guillaume and Alain Trannoy, (2017), "The Impact of a Rise in the Real Estate Transfer Taxes on the French Housing Market," *AIX-Marseille School of Economic Working Paper*, 2017-32.

[9] Both homes would be subject to New Jersey's general RTF on sellers of real property, as described in Section II.

[10] Best, Michael and Henrik Jacobsen Kleven (2014), "Housing Market Responses to Transaction Taxes: Evidence From Notches and Stimulus in the UK," working paper.

[11] Kopczuk, Wojciech and David Munroe (2015), "Mansion Tax: The Effect of Transfer Taxes on the Residential Real Estate Market," *American Economic Journal: Economic Policy*, Vol. 7, No. 2, pp. 214-257.

The Model

In order to analyze the impact an increase in New Jersey's RTF on buyers of property with a sales price in excess of $1 million from 1 percent to 2 percent, we use an expanded version of the "discrete-period housing model" developed by Professor Benjamin Harris.[12]

In standard housing models, homeowners purchase housing until the value they place on housing services received per unit of housing equals the cost of an additional unit of housing. Cost is defined to be the sum of the after-tax interest payments, the after-tax cost of property tax payments, maintenance costs, and the opportunity cost of investing the home equity elsewhere.

The discrete-period housing model expands on the standard model by including transaction costs and expected housing tenure. In equilibrium, households consume housing until the net present value of ownership equals the net present value of the cost of ownership over the expected tenure at the property. Because the model includes transactions costs, it is particularly well-suited to analyze the impact of real estate transfer taxes. As further discussed in **Appendix A**, housing prices in the discrete period model are a function of the total costs of ownership over the duration of ownership. In addition to the costs described above, both front-end transactions costs (those paid by the buyer) and back-end transaction costs (those paid by the seller) are included in the total cost of ownership.

An increase in the RTF on buyers of property with a sales price in excess of $1 million is modeled as an increase in the front-end transaction costs, which increases the total cost of ownership. As derived in **Appendix A**, the impact of such a change on housing prices can be expressed as:

$$\frac{P^1}{P^0} = \frac{TC^0}{TC^1}$$

where P is the housing price and TC is the present value of ownership costs over the expected housing tenure. The superscripts indicate values before (0) and after (1) the change in the RTF.

Impact on Housing Prices

From the equation above it is clear that an increase in the RTF will reduce the price of housing. An increase in upfront transaction costs as a result of the tax change increases the cost of ownership, causing buyers to offer a lower price for the property.

In order to quantify the impact of a potential change in New Jersey's RTF on buyers of property with a sales price in excess of $1 million, we collected data on housing values and incomes for New Jersey residents in 27 municipalities from the US Census Bureau's *American Community Survey* and data on the costs of homeownership from a number of other sources.[13] For each city, homeowners were divided into two groups based on the value of their home. The change in housing price was then calculated for a representative homeowner in each home value group. The overall impact on housing prices within a city is given by the weighted average change in price across the seven value groups, where the weights are each group's share of total housing value. Similarly, the state-wide impact on housing prices is estimated using the weighted average of the city-level impacts.

---

[12] Harris, Benjamin H. "Tax Reform, Transaction Costs, and Metropolitan Housing in the United States," Urban-Brookings Tax Policy Center, June 5, 2013.

[13] For additional detail on the data sources and methodology used, see **Appendix B**.

Table 2 – Estimated Change in Housing Price from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes with a Sales Price in Excess of $1 Million
[Weighted-Average Percent Change in Housing Prices]

City	Average Change in Price of All Homes[1]	Average Change in Price for Homes Valued in Excess of $1 Million
Atlantic City City	-0.26%	-1.64%
Bedminster Township	-0.69%	-2.15%
Bridgeton City	-0.12%	-2.04%
Camden City	***	***
Cape May City	-0.45%	-1.81%
Chatham Borough	-0.62%	-1.95%
Clifton City	-0.03%	-1.79%
Colts Neck Township	-0.40%	-2.21%
Dover Town	-0.11%	-1.98%
Elizabeth City	-0.10%	-2.23%
Franklin Lakes Borough	-0.42%	-1.42%
Glassboro Borough	-0.06%	-2.54%
Hackensack City	-0.19%	-1.94%
Harrison Town	-0.06%	-1.80%
Hoboken City	-0.65%	-1.76%
Jersey City City	-0.22%	-1.57%
Long Branch City	-0.33%	-1.72%
New Brunswick City	-0.07%	-2.04%
Newark City	-0.09%	-1.93%
Passaic City	-0.06%	-2.02%
Paterson City	-0.08%	-1.66%
Plainfield City	-0.37%	-2.23%
Pleasantville City	-0.17%	-1.78%
Point Pleasant Borough	-0.30%	-1.73%
Princeton	-0.51%	-2.01%
Trenton City	-0.08%	-1.64%
Vineland City	-0.14%	-1.81%
Mean	-0.25%	-1.90%
Median	-0.18%	-1.87%
Min	-0.69%	-2.54%
Max	-0.03%	-1.42%
Weighted average[2]	**-0.32%**	**-1.87%**

Source: PwC estimates.
(1) Weighted average change in price across all homes, regardless of sales price.
(2) Weighted average across all 27 cities.
***Indicates no impact because there were no homes in the sample for the city with a value in excess of $1 million.

Table 2 provides estimates of the average change in housing price for all homes and for homes valued in excess of $1 million. While the overall impact on housing prices averaged across all home values is

low (-0.3 percent), the impact on the price of homes valued at more than $1 million is more significant. The impact on homes valued in excess of $1 million ranges from a low of -1.4 percent in Franklin Lakes to a high of -2.5 percent in Glassboro. The weighted average state-wide impact on the price of homes valued in excess of $1 million is estimated to be -1.9 percent. Consistent with the literature described above, the reduction in price exceeds the amount of the tax for homes valued in excess of $1 million.

For purposes of these calculations, we assume there is no price impact of the policy change on houses valued at $1 million or less. Therefore, our estimates understate the true impact on housing prices if potential homebuyers consider that the price they receive when they sell their home in the future may be reduced because of the increase in the RTF. For example, a buyer of a home priced at just under $1 million may recognize that a future buyer would be liable for the higher RTF given expected housing appreciation. This in turn would reduce the price the current buyer could expect to receive when they sell. As a result, a current buyer might reduce the price they would be willing to pay for a home priced under $1 million since they would otherwise suffer a loss in value when they sought to sell their house.

The estimated price impacts do not take into account the effect the reduced housing prices will have on new housing construction, and the feedback effect of the reduced construction on housing prices. Over time, lower prices will lead to reduced construction of new homes with sales prices in excess of $1 million. All else constant, this reduced supply may offset part of the reduction in sales prices for homes valued in excess of $1 million. As such the price reductions presented in **Table 2** are best thought of as the short-run impact on housing prices.[14]

The price impacts estimated in **Table 2** are averages based on a number of assumptions believed to be representative of the New Jersey housing market. Changes in these assumptions can lead to somewhat different estimated impacts. For example, while the analysis assumes, based on information from a survey of home buyers and sellers, that home buyers expect to live in their house for 10 years,[15] shorter or longer holding periods will lead to different price impacts. **Table 3**, below, provides estimates for a range of alternative holding periods of the statewide average impact of a 1 percentage point increase in the RTF on buyers of property with a sales price in excess of $1 million.

Table 3 – Estimated Change in Price Resulting From a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes with a Sales Price in Excess of $1 Million: Alternative Holding Periods
[Weighted-Average Percent Change in Housing Prices]

Expected Holding Period	All Homes	Homes with Sales Price in Excess of $1 Million
5 years	-0.48%	-2.78%
10 years (base assumption)	-0.32%	-1.87%
15 years	-0.25%	-1.45%
20 years	-0.21%	-1.21%
25 years	-0.18%	-1.06%

Source: PwC estimates.

---

[14] The impact on new construction is considered in the macroeconomic estimates of the impact of the policy change reported in the next section.

[15] The National Association of Realtors® 2018 *Home Buyer and Seller Generational Trends Report* reports that the median seller lived in their home for 10 years before selling.

The impact of the policy change is greater at shorter holding periods. A potential homebuyer with an expected 5-year holding period would require a reduction in the price of 2.8 percent, while a buyer with an expected holding period of 25 years would require a price reduction of 1.1 percent. Because the tax is only paid once, at purchase, while other costs are paid continuously over the owner's tenure in the home, the RTF represents a greater share of the total costs of ownership at shorter holding periods.

Impact on Housing Sales

The New Jersey real estate market has been trending upward over the past several years. Between 2014 and 2018, the number of sales of existing single-family homes, townhomes, and condos grew at an average annual rate of 9.3 percent, according to data from the New Jersey Realtors®.[16] While there is some indication that the pace of growth may be slowing, the market remains strong. Despite a slight reduction in the number of existing home sales (0.2 percent) in 2018, the average price of homes sold was up 2.6 percent compared to 2017. For March 2019, the most recent month for which data are available, the average housing price was up 3.6 percent compared to March 2018.

Table 4 presents a forecast of the dollar volume sales of existing homes, assuming total sales grow at an annual rate of 3.3 percent through 2024.[17] Total housing sales in New Jersey are projected to grow from $40.2 billion in 2018 to more than $49.5 billion by 2024. Data from the US Census Bureau's *American Community Survey* was used to estimate the share of owner-occupied housing in New Jersey with a market value in excess of $1 million. Assuming the price distribution of sales is similar to the distribution of market values, 15.4 percent of transactions have a sales price in excess of $1 million. This amounts to total sales of existing property subject to the buyer-side RTF of $6.7 billion in 2020, growing to $7.6 billion in 2024.

Table 4 – Estimated Change in Sales of Existing Housing from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in $ Millions]

		Under Current RTF		Under Policy Change	
Year	Total Sales	Share of Sales in Excess of $1 Million	Sales in Excess of $1 Million	Change in Sales in Excess of $1 Million	Sales in Excess of $1 Million
2018	$40,752	15.4%	$6,261		
2019	$42,097	15.4%	$6,468		
2020	$43,486	15.4%	$6,681	-$649.5	$6,032
2021	$44,921	15.4%	$6,902	-$535.4	$6,366
2022	$46,403	15.4%	$7,129	-$553.1	$6,576
2023	$47,935	15.4%	$7,365	-$571.4	$6,793
2024	$49,516	15.4%	$7,608	-$590.2	$7,017

Source: PwC estimates.
Note: It is assumed that the increase in the RTF is effective on January 1, 2020.

As described above, prior research has found that real estate transfer taxes can lead to large reductions in housing sales. In the context of the model described above, an increase in the buyer-side RTF

---

[16] See statewide monthly indicator reports for December (various years) at http://njar-public.stats.10kresearch.com/reports.
[17] 3.3 percent is the average of the expected annual housing price appreciation between 2019 and 2023 as reported by Zillow, based on its *First Quarter 2019 Home Price Expectations Survey*. For purposes of the baseline projection, it is assumed that there is no growth in the number of transactions so that the total dollar volume of sales also grows at a rate of 3.3 percent.

increases the costs of ownership and reduces the price buyers are willing to pay. Some sellers will accept the lower price while others will decide not to sell or to remain in their current home until the price further appreciates.

Based on existing research we assume a short-run reduction in total dollar volume of sales of existing homes valued in excess of $1 million of 8 percent in the first year in which the rate increase is in effect, and a long-run reduction of 6 percent. In addition to the reduction in transaction volume, we assume the remaining transactions will, on average, occur at a price that is 1.9 percent lower. Assuming the RTF rate increase goes into effect on January 1, 2020, the combined impact of these two effects is an estimated reduction in total sales of existing homes valued in excess of $1 million of $649.5 million in 2020 and $535.4 million in 2021, rising to $590.2 million by 2024 (see **Table 4**).

As discussed above, the empirical literature suggests that the presence of price thresholds, which create discontinuous jumps in tax liability, can lead to bunching of transactions below the threshold. This bunching may result from houses that would have been sold above the threshold being sold at a price below the threshold or, in cases in which the seller does not accept a lower price, by buyers purchasing a home that would have been below the threshold even before the tax increase (the "substitution effect"). The estimates in **Table 4** implicitly assumed that all transactions between $1,000,000 and $1,018,700 move to the threshold but that 8 percent of higher valued home sales are lost.

Increasing the RTF on homes valued in excess of $1 million will also reduce new construction of homes in this price range. To estimate the reduction in construction of new homes, this study used data from the US Census Bureau and the National Association of Realtors® to estimate new home construction in New Jersey. New homes typically sell at a greater price that comparable existing homes[18], as such the share of new homes valued in excess of $1 million is greater than the share of existing homes. Using data from the American Community Survey, it is estimated that 34.4 percent of all newly built owner-occupied housing in New Jersey is sold for a price in excess of $1 million.

Table 5, below, presents a forecast of new home construction assuming annual growth of 3.3 percent through 2024.[19] Total construction of new owner-occupied housing is projected to increase from $3.1 billion in 2018 to $3.7 billion in 2024. New construction of homes valued in excess of $1 million is estimated to increase from $1.1 billion in 2018 to $1.3 billion in 2024.

In order to estimate the impact of the proposed increase in the RTF on the construction of new homes, this study uses estimates of the price elasticity of supply reported by Saiz (2010).[20] Using a weighted average of the elasticity of supply for metropolitan ares in New Jersey reported by Saiz, we assume a state-wide elasticity of 1.37. Given an estimated reduction in price of 1.87 percent, this implies a reduction in new construction of 2.56 percent. Coupled with the reduction in the value of new homes, we estimate a reduction in the construction of new homes valued in excess of $1 million of $49.1 million in 2020, rising to $55.9 million in 2024.

---

[18] Data from the Census Bureau and the National Association of Realtors® suggests that new homes sell by as much as 30 percent more than existing properties.

[19] The baseline projection assumes no change in the number of new homes constructed but an increase in the average sales price of new homes of 3.3 percent.

[20] Saiz, Albert (2010), "The Geographic Determinants of Housing Supply," *The Quarterly Journal of Economics*, Vol. 125, No. 3, pp. 1253-1296.

Table 5 – Estimated Change in New Housing Construction from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in $ Millions]

Year	Under Current RTF			Under Policy Change	
	Value of New Construction	Share Valued in Excess of $1 Million	New Homes Valued in Excess of $1 Million	Change in New Construction	New Homes Valued in Excess of $1 Million
2018	$3,051	34.4%	$1,051		
2019	$3,151	34.4%	$1,085		
2020	$3,255	34.4%	$1,121	-$49.1	$1,072
2021	$3,363	34.4%	$1,158	-$50.7	$1,107
2022	$3,474	34.4%	$1,196	-$52.4	$1,144
2023	$3,588	34.4%	$1,236	-$54.1	$1,182
2024	$3,707	34.4%	$1,277	-$55.9	$1,221

Source: PwC estimates.

IV. Economic Impacts of the Proposed Change in New Jersey's Realty Transfer Fee

As discussed in **Section II**, the real estate sector plays an important role in New Jersey's economy. As such, changes in housing costs and the corresponding changes in housing sales can have broader impacts on the economy. A decline in housing prices reduces wealth of existing homeowners and causes a decline in consumption (through the "wealth effect"). A decrease in housing sales can reduce new home construction and reduce expenditures associated with moving, such as spending on furniture and appliances, as well as repair and renovation expenditures. Other housing transaction related income will also decline, such as brokerage commissions, appraisals and mortgage issuance fees.

In order to quantify the impact of a 1 percentage increase in the RTF on buyers of housing with a sales price in excess of $1 million on New Jersey's economy, the REMI model is used to simulate the effects of a reduction in construction of new owner-occupied housing equal to the amounts provided in **Table 5**, above, and a decline in output in the real estate sector equal to the estimated decline in closing costs (primarily realtor commissions) resulting from the decline in sales of both new and existing homes.[21]

The Tax PI model, developed by REMI, is a structural economic forecasting model that uses several analytical techniques, including input-output tables, computable general equilibrium modeling, econometric equations, and economic geography, to analyze the impact of policy changes on regional economies and state and local budgets. The linkages in the model trace a shock, or change, in one value through the economy.

Table 6 summarizes the estimated impacts of the proposed change in the RTF on New Jersey's economy assuming the new tax rate is effective beginning January 1, 2020. Relative to the baseline forecast without the increase in the RTF, total employment declines by 723 jobs in 2020 and by 652 in 2024. Similarly, GDP is $96.7 million lower under the policy change compared to the baseline forecast in 2020. The annual reduction in New Jersey's GDP, relative to the baseline, rises from $99.1 million in 2021 to $108.2 million in 2024.

Table 6 – Economic Impacts of a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in Millions of 2009 Dollars]

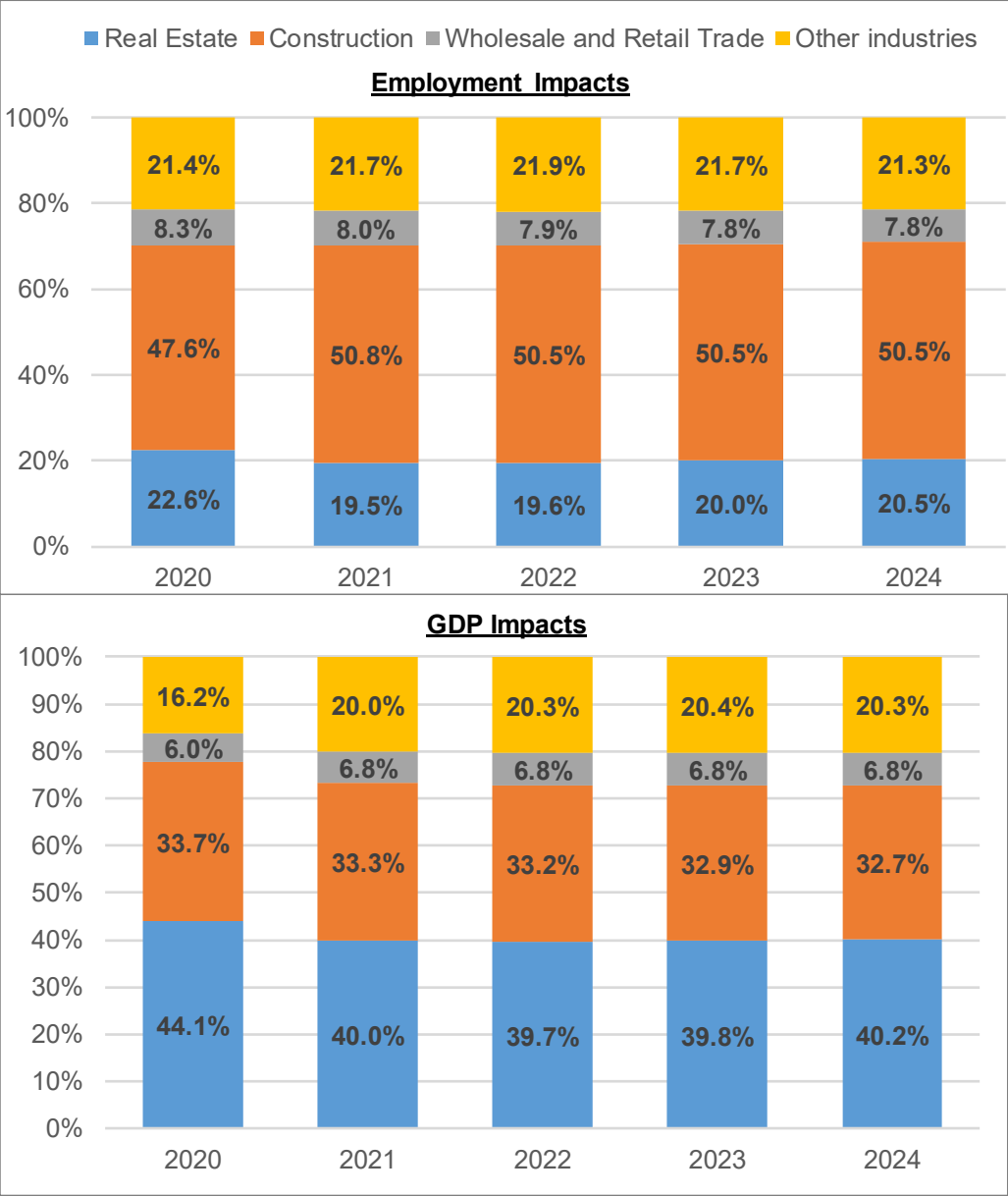|	2020	2021	2022	2023	2024
Change in New Jersey employment	-723	-684	-682	-669	-652
Change in New Jersey GDP	-$96.7	-$99.1	-$103.2	-$106.1	-$108.2
Change in New Jersey personal income	-$47.6	-$51.8	-$57.3	-$61.0	-$64.0
Change in New Jersey labor income:	-$55.0	-$58.9	-$63.0	-$65.4	-$66.8
*Change in New Jersey wages and salaries**	*-$39.0*	*-$42.8*	*-$46.4*	*-$48.6*	*-$50.1*
Change in New Jersey proprietors income	*-$16.0*	*-$16.1*	*-$16.6*	*-$16.8*	*-$16.8*
Change in New Jersey consumption expenditures	-$36.3	-$39.7	-$43.4	-$46.2	-$48.7

Source: PwC estimates based on the REMI Tax PI model for the State of New Jersey.
*Includes employer contributions for employee pension and insurance funds and employer contributions to government social insurance programs.

---

[21] The reduction in realtor commissions and closing costs resulting from the reduction in sales of new and existing housing is estimated to be $43.5 million in 2020 and $36.5 million in 2021 rising to $40.3 million in 2024.

As shown in **Figure 1** the impact of the policy change is greatest in the real estate and construction industries. More than 70 percent of the decline in employment and GDP is in these two industries. The decline in output and employment in the real estate and construction sectors, however, have an impact throughout the economy. For example, reduced labor income in the real estate and construction industries lead to a reduction in consumer spending that, in turn, leads to reduced employment in the wholesale and retail trade sector. Overall, labor income declines by $55 million in 2020 leading to a decline in personal consumption expenditures of $36 million.

Figure 1 – Change in Employment and GDP Resulting from of a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million, by Industry

Source: PwC estimates based on the REMI Tax PI model for the State of New Jersey.

The estimates in **Table 6** do not account for any lost purchases of housing related items resulting from a decline in housing sales. A recent study by the National Association of Home Builders indicates that the typical homebuyer spends between $12,000 and $13,000 over a two-year period on housing-related items such as appliances and furniture and on repairs and alterations to the property.[22] The economic impacts of reduced spending on such items would be in addition to those modeled.

Impact on State and Local Budgets

While a 1 percentage increase in the RTF on buyers of housing with a sales price in excess of $1 million will increase state and local revenues from the tax, the revenue raised will be less than proportional to the existing RTF due to the decline in price and the reduction in transactions. As shown in **Table 7**, absent any change in housing price or sales a 1 percentage point increase in the buyers' RTF has the potential to increase revenues by $78.0 million in 2020, rising to $88.8 million in 2024. However, as described above, total sales of new and existing homes valued in excess of $1 million will be $698.6 million lower in 2020, thereby reducing revenues from the tax increase by $14.0 million to $64.1 million, an 18 percent reduction. The percentage reduction in RTF revenue relative to the static estimate is greater than the percentage reduction in sales (7.3 percent) because the existing 1 percent RTF will not be collected on any sales that no longer occur.

Table 7 – Change in State and Local Revenues from a 1 Percentage Point Increase in New Jersey's Realty Transfer Fee on Buyers of Homes in Excess of $1 Million
[Dollar Amounts in $ Millions]

	2020	2021	2022	2023	2024
Static impact of increase in RTF	$78.0	$80.6	$83.3	$86.0	$88.8
Lost revenue due to reduction in sales volume	-$14.0	-$11.7	-$12.1	-$12.5	-$12.9
Final impact of 1 percentage point increase in RTF	$64.1	$68.9	$71.1	$73.5	$75.9
Impact on other state and local revenues					
Change in sales and gross receipts taxes	-$0.6	-$1.2	-$1.2	-$1.2	-$1.3
Change in individual income tax	-$0.6	-$1.2	-$1.3	-$1.5	-$1.5
Change in corporate income tax	-$0.2	-$0.5	-$0.5	-$0.5	-$0.5
Change in other taxes and revenues	-$2.3	-$4.7	-$5.1	-$5.2	-$5.4
Total impact on New Jersey state and local revenues	**$60.4**	**$61.3**	**$63.1**	**$65.1**	**$67.2**

Source: PwC estimates. Impact on revenues from the RTF is based on projected sales of new and used property and the housing market impacts described above. All other estimates based on the REMI Tax PI model for the State of New Jersey.

In addition, due to the decline in economic activity in the real estate and other industries, the increase in the RTF will have a negative impact on other taxes and revenues, such as personal and corporate income taxes and the sales tax. In total, we estimate that other state and local government revenues in New Jersey are reduced by $3.7 million in 2020 and by $8.7 million in 2024. As such the overall impact of the policy change on state and local tax revenues is an increase of $60.4 million in 2020 (77 percent of the static impact) rising to $67.2 million in 2024 (75 percent of the static revenue impact). To put this into perspective, the net increase in state and local revenues from the policy change is estimated to be 0.05 percent of total state and local revenues in the absence of the policy change.

---

[22] See Siniavskaia, Natalia, "Spending Patterns of Home Buyers: Appliances, Furnishings and Property Alterations," NAHB Special Study, July 5, 2017. Available online at:
http://www.nahbclassic.org/generic.aspx?sectionID=734&genericContentID=257993&channelID=311

V. Other Tax Policy Considerations

A number of criteria can be used to evaluate a given tax or fee, such as the New Jersey's RTF, including fairness, efficiency, adequacy, and stability.
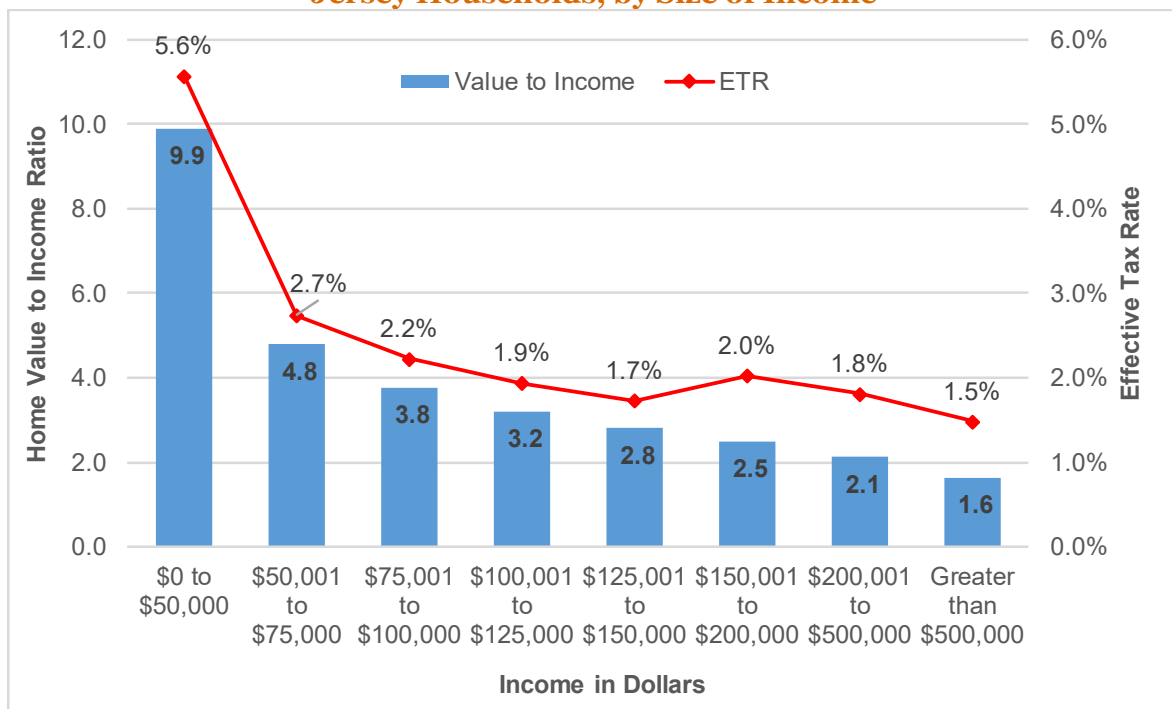
Fairness

The fairness of a real estate transfer tax has traditionally been evaluated in two ways: (1) vertical equity and (2) horizontal equity.

Vertical equity is based on the principle that households with a greater ability to pay tax (higher incomes) should pay more tax than those who have lower income. A tax is said to be progressive if the tax as a percent of income rises as income increases. A tax is considered to be regressive if lower income households pay a greater share of income in tax than higher-income households. A tax is considered to be distributed proportionately if the burden of the tax is relatively constant across income groups.

The National Association of Realtors® ("NAR") has suggested that real estate transfer taxes are regressive because lower-income households spend a greater share of their total income on housing.[23] **Figure 2**, below, shows the ratio of home value to income for New Jersey homeowners at various income levels using data from the American Community Survey.

Figure 2 – Ratio of Housing Value to Income and Effective Transfer Tax Rate for New Jersey Households, by Size of Income

Source: Value-to-income ratios are based on data from the US Census Bureau's American Community Survey. Effective transfer tax rates are calculated as the general realty transfer fee divided by the average income for homeowners in each income category.

---

[23] National Association of Realtors®, "Potential Impact of Increases in Real Estate Transfer Taxes," August 2003.

The ratio of home value to income is greater at lower income levels. For New Jersey homeowners with income of $50,000 or less, the average value-to-income ratio is 9.9, compared to a value-to-income ratio of 1.6 for homeowners with income in excess of $500,000.

Figure 2 also provides estimates of the effective transfer tax rate for the average homeowner in each income range, assuming the property is sold. This analysis indicates that New Jersey's general RTF *on sellers* is regressive. The effective tax rate declines as income increases, from 5.6 percent for New Jersey homeowners with income of $50,000 or less to 1.5 percent for homeowners with income in excess of $500,000.[24]

While the additional RTF on buyers of homes valued in excess of $1 million increases the progressivity of New Jersey's RTF, the tax may have other impacts which affect lower-income households not subject to the tax. For example, if housing values decline more for higher income households it may increase the property tax burden for lower income households as property tax rates will need to be raised in order to raise the same amount of revenue.

Horizontal Equity is based on the principal that individuals with similar income and assets should pay the same amount in taxes.

New Jersey's general RTF may impose different burdens on homeowners with similar income levels living in different parts of the state. This would be the case if the ratio of housing value to income varies across the state. **Table 8**, on the next page, provides estimates of the home value to income ratio for homeowners in 27 cities with incomes between $70,000 and $80,000, near the statewide median income homeowners of $76,500.[25] **Table 8** then calculates the implied home value for a household with the median income of $76,500, along with the general transfer tax due if the homeowner were to sell their home. The final column shows that the effective tax rate (i.e., the transfer tax as a percent of household income) varies considerably, with a higher effective tax rate in cities where the value-to-income ratio is higher.

Efficiency

By introducing a wedge between the price paid by the buyer and the amount received by the seller, taxes can lead to distortions in economic incentives that make the economy less efficient.

A real estate transfer tax is an added cost related to the sale of a home. Given this added cost, homeowners may be less willing to move when they would otherwise choose to do so, creating a lock-in effect. People who move more frequently may be discouraged from buying a home, choosing to rent instead. Differential tax rates or burdens may distort a buyer's location decision resulting in an inefficient allocation of housing.

As discussed in greater detail in **Section III**, the empirical research suggests that real estate transfer taxes have significant impacts on the buy-sell decision in housing markets. Taken as a whole, the literature suggests that real estate transfer taxes reduce housing prices by an amount greater than or equal to the tax. The reduction in housing price leads to a reduction in transactions and a lock-in effect, whereby homeowners elect to stay in their current residence for a longer period of time than they would in the absence of the tax. The presence of price notches, which create discontinuous jumps in tax

---

[24] The NAR report found that this result holds for a generic real estate transfer tax, even when one accounts for the fact that higher income households move more frequently than lower income households.

[25] According to the American Community Survey, the median income for New Jersey homeowners is approximately $76,500 in 2017.

liability, can lead to an inefficient allocation of housing due to a bunching of transactions below the notch and a decline in transactions above the notch.

Table 8 – Ratio of Housing Value to Income and Effective Transfer Tax Rate for New Jersey Households with $76,500 in Household Income, by City

City	Value-to-Income Ratio	Implied Home Value	Estimated Tax Bill	Effective Tax Rate
Atlantic City	3.10	$237,389	$1,227	1.6%
Bedminster Township	6.35	$486,154	$4,042	5.3%
Bridgeton	2.51	$192,088	$882	1.2%
Camden	1.76	$134,670	$539	0.7%
Cape May	4.57	$349,946	$2,105	2.8%
Chatham Borough	6.53	$499,677	$4,172	5.5%
Clifton	4.39	$335,826	$1,994	2.6%
Colts Neck Township	4.91	$375,345	$2,978	3.9%
Dover Town	4.21	$322,338	$1,889	2.5%
Elizabeth	3.41	$260,788	$1,409	1.8%
Franklin Lakes Borough	6.72	$513,769	$4,307	5.6%
Glassboro Borough	2.75	$210,389	$1,016	1.3%
Hackensack	4.33	$330,869	$1,956	2.6%
Harrison Town	3.83	$293,309	$1,663	2.2%
Hoboken	4.85	$370,962	$2,936	3.8%
Jersey City	4.34	$331,650	$1,962	2.6%
Long Branch	5.05	$386,139	$3,082	4.0%
New Brunswick	3.83	$292,785	$1,659	2.2%
Newark	2.92	$223,062	$1,115	1.5%
Passaic	3.96	$303,228	$1,740	2.3%
Paterson	3.12	$238,365	$1,234	1.6%
Plainfield	4.77	$364,846	$2,878	3.8%
Pleasantville	2.83	$216,741	$1,066	1.4%
Point Pleasant Borough	4.46	$341,009	$2,035	2.7%
Princeton	4.58	$350,320	$2,107	2.8%
Trenton	2.00	$152,963	$620	0.8%
Vineland	2.26	$172,967	$754	1.0%

Source: Value-to-income ratios based on data for homeowners with household income between $70,000 and $80,000 from the American Community Survey. Implied housing value for a household with $76,500 in income is calculated using the value-to-income ratio for each city.
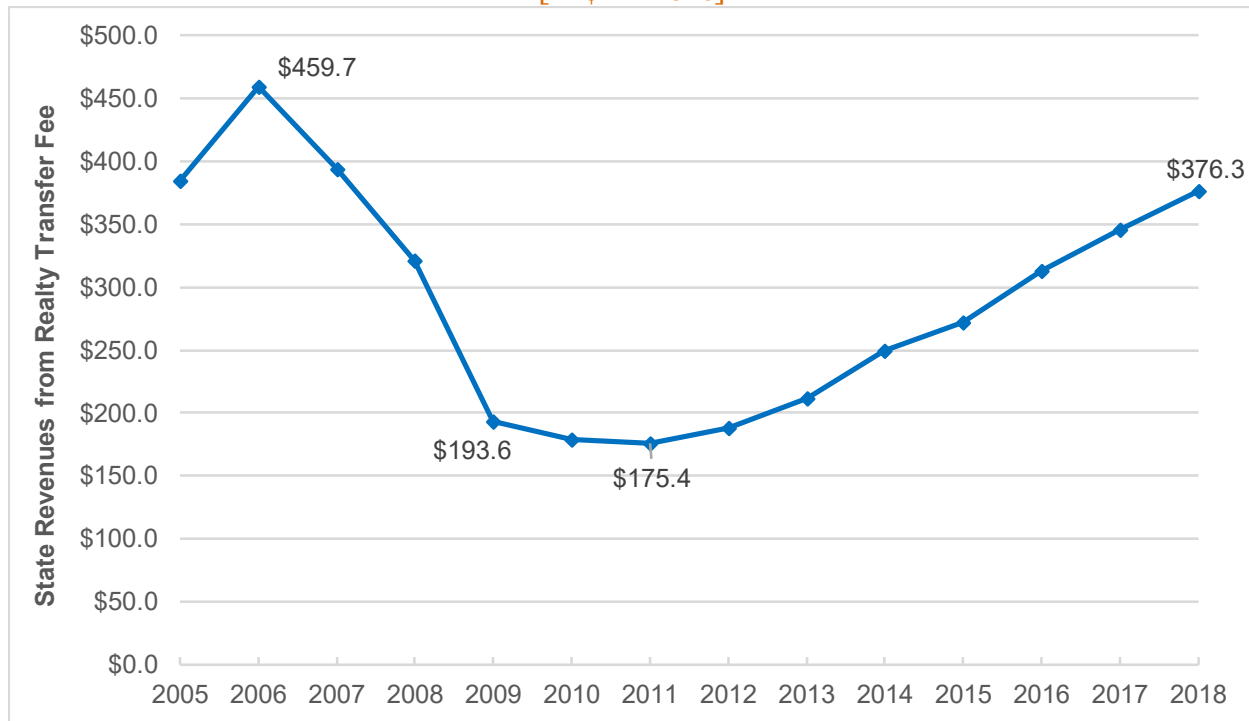
Adequacy and Stability of Revenues

For the fiscal year ended June 30, 2018, the New Jersey's RTF, including both the general RTF and the fee imposed on buyers of homes priced in excess of $1 million, raised $376.3 million, approximately 1 percent of total revenues for the state. As discussed above, a 1 percentage point increase in the RTF on buyers of housing valued in excess of $1 million would increase revenues but the increase would be less than proportional due to the reduction in housing prices and housing sales.

Transfer tax revenues depend on a number of factors including tax rates, the number of properties sold, property values (sales prices), and other economic conditions. Real estate transfer taxes tend to be more volatile than other property taxes due to their sensitivity to changes in economic and market conditions. Revenues tend to increase when markets are strong due to higher housing prices and a greater number of sales. Revenues decrease when markets are soft. Increases in interest rates, mortgage rates, and unemployment all have a negative impact on transfer tax revenues.

Figure 3 provides data on RTF collections in New Jersey for fiscal years 2005 to 2018, the most recent year for which data is available. Beginning on August 1, 2004 general RTF rates on properties selling for more than $350,000 were raised. The additional 1 percent RTF on buyers of housing valued in excess of $1 million also went into effect on August 1, 2004.

Figure 3 – State Revenues from New Jersey's Realty Transfer Fee, Fiscal Years 2005-2018
[in $ Millions]

Source: New Jersey Budget, various years.

For the fiscal year that ended June 30, 2006, the first fiscal year for which the new RTF rates were fully in effect, the RTF raised $459.7 million, or approximately 1.1 percent total state revenues. Revenues dipped in 2007 and then fell considerably during the financial crisis that began in late 2007 and the recession that followed. For the fiscal year that ended June 30, 2011, the RTF raised $175.4 million, just 0.4 percent of total state revenues. Since 2011, RTF revenues have slowly increased and are now approaching pre-financial crisis levels.

Appendix A – The Discrete-Period Housing Model

This paper uses a version of the discrete period housing model, developed by Professor Benjamin Harris, to estimate the impact in a change in New Jersey's RTF on buyers of homes with a sales price in excess of $1 million.[26]

In the discrete-period housing model sets the present value of housing services equal to the present value of the costs of homeownership over the expected tenure at the property. The version of the discrete-period model used in this paper expands on the prior version by explicitly including maintenance costs and the benefit of the untaxed capital gain upon sale. In particular:

(1) $\sum_{t=1}^{K} \frac{R_t}{(1+i)^t} = PT^0 + P\sum_{t=1}^{K}\left[\frac{\alpha r_t(1-\gamma\tau^y)+\tau^P((1-\gamma\tau^y)}{(1+i)^t}\right] + P\sum_{t=1}^{K}\left[\frac{(1+\pi)^K m}{(1+i)^t}\right] +$
$P\left[\frac{(1-\alpha)(1+g(1-\gamma\tau^{cg})-(1-\alpha)}{(1+i)^K}\right] + P\left[\frac{(1+\pi)^K T^B}{(1+i)^K}\right] - P\left[\frac{\{(1+\pi)^K-1\}\tau^{cg}}{(1+i)^K}\right]$

where R_t is the rental value of owner-occupied housing in period t, i is the discount rate, P is the price of housing, and K is the number of years the buyer expects to own the property. T^0 are the upfront transaction costs of purchasing a home expressed as a share of housing price. T^0 includes all closing costs paid by the buyer and the RTF on buyers of homes with a sales price in excess of $1 million. Similarly, T^B are the back-end transaction costs paid by sellers, expressed as a share of housing price. T^B includes realtor commission fees and New Jersey's general RTF on sellers. Other model parameters include:

> α = the loan-to-value ratio,
> r_t = the mortgage interest rate,
> γ = the deductible potion of mortgage interest and property taxes,
> τ^Y = the combined federal and state income tax rate,
> τ^P = the property tax rate,
> π = the expected rate of housing appreciation,
> m = annual maintenance expenditures as a share of the purchase price,
> g = the rate of return on alternative (non-housing) investments, and
> τ^{cg} = the combined federal and state capital gains tax rate.

As such, the second term on the right side of equation (1) gives the present value of the after tax cost of mortgage interest and property tax payments over the expected ownership period. The third term is simply the present value of maintenance expenses. The fourth term in equation (1) can be thought of as the opportunity cost of purchasing the home, rather than an alternative investment. The fifth term is the present value of the back-end transaction costs that will be paid when the owners sells the property in K years. The final term in equation one is a measure of the benefit to homeowners from the untaxed capital gain upon sale.

---

[26] Harris, Benjamin H. "Tax Reform, Transaction Costs, and Metropolitan Housing in the United States," Urban-Brookings Tax Policy Center, June 5, 2013.

In equilibrium, assuming constant rents and no change in housing supply the equilibrium condition is given by:

$$(2) \qquad \frac{P^1}{P^0} = \frac{\frac{R}{P^0}}{\frac{R}{P^0} + \frac{(TC^1 - TC^0)}{TC^0} \times \frac{R}{P^0}}$$

where:

$$TC = T^0 + \sum_{t=1}^{K} \left[\frac{\alpha r_t (1 - \gamma \tau^y) + \tau^P ((1 - \gamma \tau^y))}{(1+i)^t} \right] + \sum_{t=1}^{K} \left[\frac{(1+\pi)^K m}{(1+i)^t} \right]$$
$$+ \left[\frac{(1-\alpha)(1 + g(1 - \gamma \tau^{cg}) - (1-\alpha)}{(1+i)^K} \right] + \left[\frac{(1+\pi)^K T^B}{(1+i)^K} \right] - \left[\frac{\{(1+\pi)^K - 1\} \tau^{cg}}{(1+i)^K} \right]$$

and the superscripts 0 and 1 indicate values before and after the increase in the RTF on buyers of homes with a sales price in excess of $1 million.

Equation (2) simplifies to:

$$(3) \qquad \frac{P^1}{P^0} = \frac{1}{1 + \frac{(TC^1 - TC^0)}{TC^0}} = \frac{1}{1 + \frac{TC^1}{TC^0} - 1} = \frac{TC^0}{TC^1}$$

As discussed in **Section III**, equation (3) implies an increase in the RTF reduces housing costs because the increase cost of ownership leads buyers to offer a lower price.

Appendix B – Data Sources and Methodology

In order to quantify the impact of the potential increase in New Jersey's RTF on buyers of property with a sales price in excess of $1 million, we collected data on housing values and income for New Jersey residents in 27 municipalities from the US Census Bureau's *American Community Survey* and data on the costs of homeownership from a number of other sources.

In particular, the model was parameterized as follows:

1. Closing Costs: County-level closing cost data were obtained from ClosingCorp. Upfront closing costs include lender's title, owner's title, appraisals, settlement fees, recording fees, and land surveys and are based on market rates charged by the most-active settlement services providers within the ClosingCorp Network in each county.[27]

2. Loan-to-Value and Mortgage Interest Rates: The Federal Housing Finance Agency (FHFA)'s *Monthly Interest Rate Survey* provides monthly information on interest rates, loan terms, and house prices by property type and loan type.[28] Data is provided by state and Metropolitan Statistical Area (MSA). The 27 municipalities included in the study were mapped to MSAs. FHFA data on loan-to-value ratios and mortgage interest rates in 2018 for conventional mortgages on single family homes were collected for each MSA. Where a municipality is not part of an MSA reported in the FHFA survey, the statewide value was used.

3. Expecting Housing Appreciation: Expected housing appreciation is assumed to be the average of the annual expected appreciation among professional economists and experts surveyed as part of Zillow's *First Quarter 2019 Home Price Expectations Survey*, conducted by Pulsenomics.[29]

4. Tax Rates and Tax Parameters: Tax rates used in the study are based on the federal and state tax laws in effect for 2018. Property tax rates for 2018 were obtained from New Jersey's Division of Taxation.[30] The deductible portion of mortgage interest and state income taxes were estimated based on data from the IRS and the Joint Committee on Taxation. Since the federal deduction for state and local taxes is limited to $10,000, it is assumed that the deduction is fully used by homebuyers for state and local income taxes. Accordingly, it is assumed that property taxes are not deducted. Realty transfer fee rates were obtained from the New Jersey Division of Taxation.[31]

5. Maintenance Costs: Annual housing maintenance costs are assumed to be equal to 1 percent of the original purchase price.

6. Return on Alternative Investments: The nominal return on non-housing investments is assumed to be equal to 6 percent.

7. Back-End Transaction Costs: Back-end transaction costs include realtor commission fees and the back-end transfer tax paid by sellers. Realtor commission fees are assumed to be 5.2 percent based on an average of commission rates between 2015 and 2017 reported by Real Trends.[32]

---

[27] See https://www.closing.com/wp-content/uploads/CC_2018ClosingCostsPR_FINAL_072518.pdf. County-level data are available on request from ClosingCorp.

[28] https://www.fhfa.gov/DataTools/Downloads/Pages/Monthly-Interest-Rate-Data.aspx

[29] https://pulsenomics.com/surveys/#home-price-expectations

[30] https://www.state.nj.us/treasury/taxation/lpt/taxrate.shtml

[31] https://www.state.nj.us/treasury/taxation/lpt/rtffaqs.shtml

[32] See https://www.realtrends.com/blog/3-factors-that-impact-commissions/

8. Expected Housing Tenure: Expected housing tenure is based on survey data collected by the National Association of Realtors® (NAR). NAR's 2018 *Home Buyer and Seller Generational Trends Report* found that the median home seller had owned their home for 10 years prior to sale.

Methodology

Data on housing values and income of owners were collected from the US Census Bureau's American Community Survey Public Use Microdata Sample (PUMS), which contains a sample of responses to the American Community Survey. The data were collected from the 2013-2017 PUMS household-level dataset for New Jersey. Each record in the household-level dataset represents a single housing unit and weights are provided for each record to allow users to develop population totals. In addition to the value of the home owned, the data set includes a wealth of information on the characteristics of the housing unit and the income of the owner. Region, census division, state, and public use microdata areas (PUMAs) are the only geographic locations identified in the dataset.

Each municipality included in the study was mapped to a PUMA. Data on housing value and owners' income for all owner-occupied housing units in the sample was obtained for each PUMA included in the study. Housing records in each PUMA were then divided into two groups: Those valued $1 million or less and those valued in excess of $1 million.

Within each value range, all records were weighted to determine the total value of housing and the total income of home owners. Finally, the average housing value and average income of homeowners was estimated based on the total (weighted) number of housing units.

The impact of the proposed change in the RTF on housing prices in each city was then estimated using the model and parameters described above, assuming the sales price before the policy change is equal to the average housing value in each value range. Income and capital gains tax rates are based on tax rate schedules for 2018 and the average income of homeowners in each value group. The overall impact of the policy change on housing prices in a given city is estimated as the weighted-average impact across all seven value groups, where the weights are the total housing value in each group.

The average state-wide impact on housing prices is estimated using the weighted average of the city-level impacts, where the weights are the total housing value in each city.