February 19, 2020

The Economic Impact of First-Time Homebuyer Savings Accounts in Ohio

Prepared by:

Anderson Economic Group, LLC
Brian Peterson, Consultant
Sarah Mixon, Senior Analyst

Commissioned by:
Ohio Association of REALTORS®

Anderson Economic Group, LLC
20 South Clark St., Suite 2110
Chicago, Illinois 60603
Tel: (312) 670-6810
East Lansing | Chicago

www.AndersonEconomicGroup.com

© Anderson Economic Group, LLC, 2020
Permission to reproduce in entirety granted with proper citation. All other rights reserved.

I.Executive Summary

Since the height of the nation's financial crisis in 2009, the share of all homes sold to first-time homebuyers nationwide has decreased from 47% to 33% in 2018.[1] In response to this decline, eleven states—Alabama, Colorado, Iowa, Minnesota, Mississippi, Missouri, Montana, New York, Oklahoma, Oregon, and Virginia—have passed first-time homebuyer savings account (FHSA) legislation that creates special savings accounts to help renters save for the purchase of a first home. FHSAs allow those who have not previously owned a home to deposit money into a tax-free savings account for the exclusive purpose of purchasing a first home.

PURPOSE OF REPORT

The Ohio Association of REALTORS® (OAR) commissioned Anderson Economic Group (AEG) to estimate the potential impact of a proposed first-time homebuyer savings account law in Ohio. The purpose of this report is to:

- Provide background on similar homebuyer savings programs and practices in other states;
- Analyze the economic impact that the proposed law would have on the Ohio economy; and
- Estimate the fiscal impact of the proposed law on the State of Ohio.

OVERVIEW OF APPROACH

In this report, we use a custom input-output model to estimate the net economic and fiscal impacts of a proposed FHSA program on the Ohio economy. We quantify the annual impact of the program for its first ten years after implementation. The FHSA policy that we model matches that contained in Ohio General Assembly Senate Bill 139.[2]

We define the net economic impact of the program as the new economic activity caused by the program, excluding any economic activity that would otherwise occur if the program were not enacted.

1. Information from the National Association of REALTORS®.
2. Enact First-time Home Buyer Savings Act-allow tax deductions, S.B. 139, 133rd General Assembly (Ohio 2019).

We estimate the economic impact of FHSAs on two sectors in particular:

- New construction of homes, accounting for other changes in construction patterns; and
- Professional services associated with home purchases, such as home inspections, loan origination, etc.

In addition to estimating the net economic impact of FHSAs, we also estimate the net fiscal impact of the program on the State of Ohio. Our net fiscal impact analysis measure the program's impact on increases and decreases in sales tax, realty transfer tax, and income tax revenue resulting from the program.

We relied on data from Ohio REALTORS®, the Ohio Department of Taxation, the U.S. Census Bureau American Community Survey, American Housing Survey, and Decennial Census, the U.S. Bureau of Economic Analysis, and empirical research to model the impacts of the FHSA program. See "Appendix A. Methodology" on page A-1 for a detailed description of our data sources and methodology.

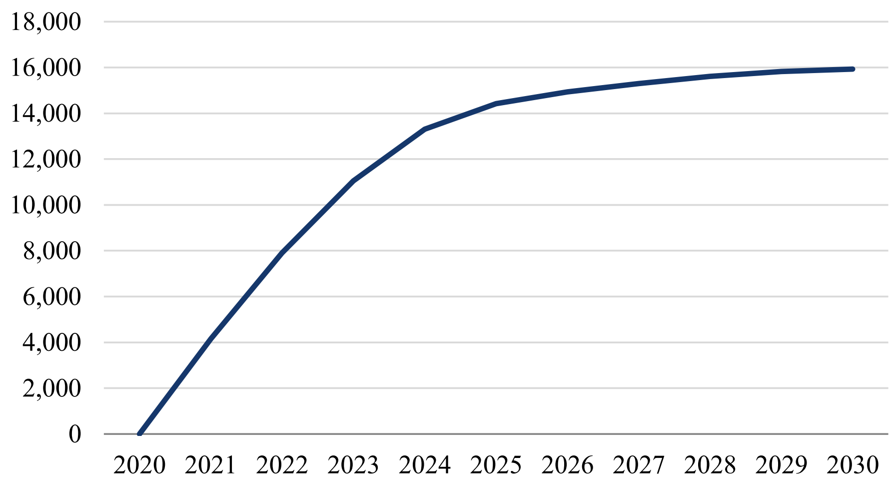
OVERVIEW OF FINDINGS

Our analysis led to the following findings:

1. *If enacted, Approximately 14,400 households in Ohio would have an active FHSA by the fifth year of the program.*

There are 1.6 million rental households in Ohio. Approximately 770,000 of these have heads of household aged 44 or less—the age range where renters are most likely to utilize the FHSA program. We estimate that, within five years, there will be 14,426 active FHSA accounts in Ohio—representing 1.9% of rental households headed by individuals under age 45. After ten years, the number of active accounts will grow to nearly 16,000, as shown in Figure 1 on page 3.

FIGURE 1. Ohio FHSA Program Estimated Number of Active Accounts, by Year



Source: Anderson Economic Group analysis of base data from Ohio REALTORS®, U.S. Census Bureau, Engelhardt, 1997.

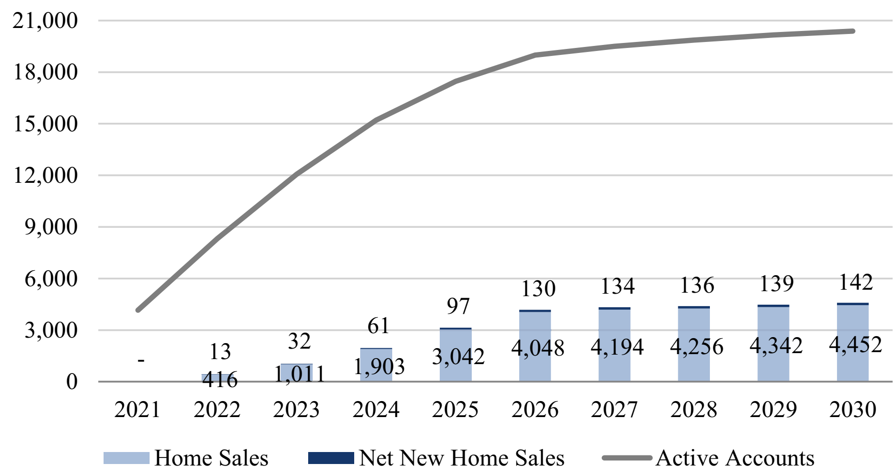
See "Impact on Home Purchases" on page 15 for a full discussion of our estimates of active accounts by year.

2. *FHSAs will be used to purchase an average of 3,000 Ohio homes per year by the fifth year of the program, and over 4,500 homes per year by the tenth year of the program. In the tenth year of the program, 142 additional homes will be sold that would otherwise not be sold if there was no FHSA program.*

Under the FHSA program, owning a home would become less expensive (by the amount of tax savings). Some renters who save for a home under the program would have likely purchased a home even if the program did not exist. For other renters, however, the marginal decrease in the cost of a home will lead them to save for and purchase a home when they otherwise would not have in the absence of the program.

After ten years, we estimate that 27,364 homes will have been sold using FHSAs. Of this amount, 884 sales will have occurred because the program lowered the cost of home purchases, as shown in Figure 2 on page 4.

FIGURE 2. Ohio FHSA Program, Estimated Number of Active Accounts, Home Sales using FHSAs, and Net New Home Sales due to Program, by Year



Source: Anderson Economic Group analysis using base data from the U.S. Census Bureau, Ohio REALTORS®, Engelhardt, 1997.

See "Impact on Home Purchases" on page 15 for a full discussion of our analysis.

3. The statewide net economic impact of the program would reach over $3 million annually after ten years.

The increase in home sales caused by the FHSA program will have a positive impact on Ohio's economy, leading to increased sales by businesses that provide mortgage and construction services. These increased sales will result in new jobs created and new earnings for households. After ten years, we estimate that the FHSA program would prompt $3.3 million in new output (sales by businesses) annually, account for 27 new jobs, and $740,000 in increased earnings for households annually, as shown in Table 1 below.

TABLE 1. Ohio FHSA Program Economic Impact, by Year

Year	Output (millions)	Earnings (millions)	Employment
2021	-	-	-
2022	$0.31	$0.07	3
2023	$0.75	$0.17	6
2024	$1.42	$0.32	12
2025	$2.26	$0.51	18
2026	$3.01	$0.67	25
2027	$3.12	$0.70	25
2028	$3.17	$0.71	26
2029	$3.23	$0.72	26
2030	$3.31	$0.74	27

Source: Anderson Economic Group analysis using base data from the U.S. Census Bureau, Ohio REALTORS®, Engelhardt, 1997, U.S. Bureau of Economic Analysis RIMS II Multipliers.

See “Net Economic Impact” on page 19 for a detailed discussion of our estimates.

4. In the program’s tenth year, account holders would contribute approximately $144 million annually to their accounts. This would result in $2.4 million in foregone income tax revenue for the State of Ohio.

We estimate that the average FHSA contribution per account holder would be $7,073 annually, representing a mixture of $5,000 contributions from single households, and $10,000 contributions from married households. If participants contributed an average of $7,703 annually, this would result in $29.4 million in contributions to FHSAs in the program’s first year, and $0.5 million less in income tax revenue collections. In the tenth year of the program, account holders would contribute $144.2 million to FHSAs, resulting in $2.4 million less in income tax collections.

The impact of these deductions would be relatively small on the State's finances (In 2019, the State of Ohio collected $9.5 billion in income tax revenue[1]), as shown in Table 2 below.

TABLE 2. Ohio FHSA Program Estimated Contributions

Contributors	Average Contribution	Total Contributions (millions)	Total Lost Revenue (millions)
First Year (2021)			
4,159	$7,073	$29.4	$0.5
Tenth Year (2030)			
20,382	$7,073	$144.2	$2.4

Source: Anderson Economic Group analysis using base data from the U.S. Census Bureau, Ohio Department of Revenue, Engelhardt, 1997, Ohio REALTORS®.

See "FHSA Fiscal Impacts" on page 20 for a detailed discussion of our fiscal impact analysis.

5. The overall net fiscal impact of the First Time Homebuyer Savings Account program, after accounting for account contributions and new tax revenue from increased home sales, would be negligible.

The FHSA program would lead to decreased tax revenue as income tax filers set money aside in their accounts. The program would also lead to increased tax revenue occurring from increased economic activity and home sales. After taking into account both of these factors, we estimate that, in the tenth year of the program, the net fiscal impact on the state would be a loss of $2.4 million in revenue—or a decrease in total income tax revenue of 0.0025% of today's total income tax collections. Table 3 on page 7 below details the net fiscal impact of

1. Ohio Department of Taxation, State of Ohio Comprehensive Annual Financial Report for the Year End June 30, 2019.

the program in its second and tenth years.

TABLE 3. Change in State Tax Revenues Due to the FHSA Program

Tax	2022	2030
Realty Transfer Tax	$2,300	$25,500
Additional Income Tax from Economic Impact	$1,000	$10,600
Additional Sales Tax from Economic Impact	$1,900	$20,400
Subtotal: Increased Tax Revenue	*$5,300*	*$56,400*
FHSA Deductions (loss of Income Tax)	$983,000	$2,410,000
Net Revenue Impact	**$977,000**	**$2,350,000**

Source: Anderson Economic Group analysis using base data from the U.S. Census Bureau, and Bureau of Labor Statistics.
Note: We assume no home sales would occur in the first year of the program. Increased tax revenue caused by the program only occurs in years in which homes are sold. The net fiscal impact of the program in 2021 would be $(0.5) million as discussed in finding 4.

See "FHSA Fiscal Impacts" on page 20 for a complete year-by-year analysis of the program's impact on State of Ohio revenues.

ABOUT ANDERSON ECONOMIC GROUP

Anderson Economic Group, LLC is a boutique research and consulting firm, with offices in East Lansing, Michigan; and Chicago, Illinois. The experts at AEG specialize in economics, public policy, business valuation, and industry analyses. They have conducted analyses of First-Time Homebuyer Savings Accounts in a number of states, and have modeled the impacts of regulatory changes on local housing markets across the country.

For more information, please see "Appendix C: About AEG" on page C-1 or visit www.AndersonEconomicGroup.com.

II. Housing in America and Examples of First-Time Homebuyer Programs

In this section, we discuss issues facing renters today and the economic benefits of homeownership. We also provide an overview of existing programs that assist first-time homebuyers.

HOMEOWNERSHIP CONSIDERATIONS

Housing costs as a share of income have risen dramatically in recent decades. A National Bureau of Economic Research paper on housing demand and affordability found that the share of individuals' spending on housing has risen by 7% since 1970, while the share of other necessities fell from 27% to 11%. The researchers discovered that growth in the share of housing expenditures have accelerated even more sharply for renters, with nearly half of all renters spending more than 30% of their income on housing, and nearly one-third of renters facing an extreme housing burden, defined as spending more than 50% of their income on rent.[2]

Because shelter is a basic necessity, governments take a special interest in housing policy. In particular, governments often encourage homeownership rather than renting. Proponents of homeownership policies make several arguments about the positive aspects of homeownership.[3]

1. Homeowners may be more likely to become active citizens who take a greater interest in advancing community-wide benefits;
2. Homeowners may take better care of their properties relative to renters and rental property owners. This increased level of care can increase property values throughout the community; and
3. High rates of homeownership are correlated with lower crime rates.

While the causal mechanism for these benefits is still widely debated (for example, does low homeownership rates cause crime, or does crime cause low homeownership rates?), many studies have shown correlations between homeownership and these public benefits.

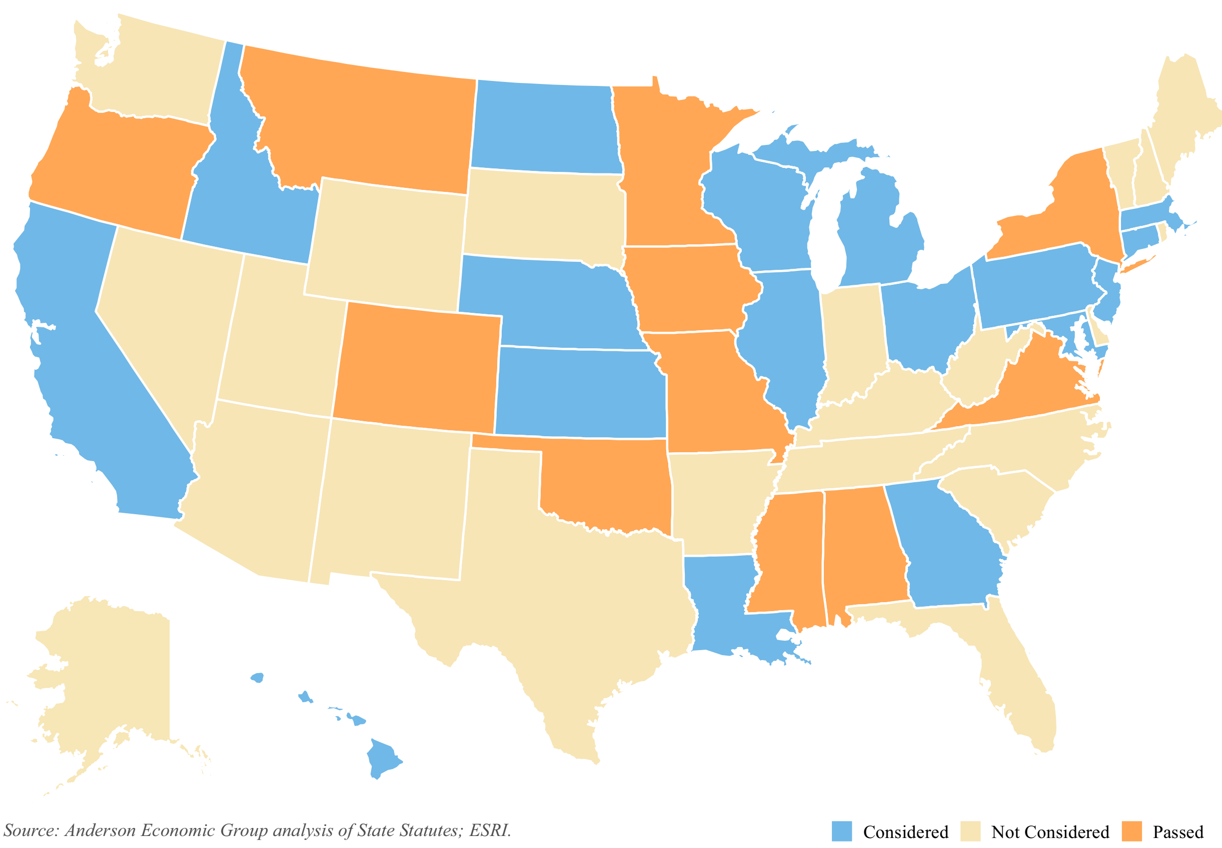
2. David Albouy, Gabriel Ehrlich, &Yingyi Liu, "Housing Demand, Cost-Of-Living Inequality, And The Affordability Crisis", *NBER Working Paper Series*, November, 2016.
3. William Gale, Jonathan Gruber, & Seth Stephens-Davidowitz, "Encouraging Homeownership Through the Tax Code", *Tax Analysts*, June 18, 2007.

FIRST-TIME HOMEBUYER SAVINGS ACCOUNTS

FHSAs allow people who do not, and have not recently, owned a home to create a special savings account in which the individual can save a portion of their pre-tax income without penalty if that money is used to purchase a home. In addition, the interest earned on the account is also considered tax-free. The funds can be used to make qualified purchases on a home, including a down payment, construction costs, and loan origination fees. There are numerous variations regarding these types of accounts, including restrictions on who can establish accounts, the maximum allowable contribution each year, the number of years the account can accrue interest, and penalties for unqualified use.

To date, Alabama, Colorado, Iowa, Minnesota, Mississippi, Missouri, Montana, New York, Oklahoma, Oregon, and Virginia have adopted FHSA programs, and several other states have proposed such laws. Map 1 below shows the states that have passed or considered FHSA legislation.

MAP 1. FHSA Legislative Efforts



Source: Anderson Economic Group analysis of State Statutes; ESRI.

The characteristics of FHSA programs vary from state to state with respect to annual contribution limits, the time over which an account may accrue interest, and the size of the penalty for unauthorized use of funds. Table 4 below shows the features of FHSA programs in states that have passed FHSA laws.

TABLE 4. First-Time Homebuyer Savings Account Legislation

State	Legislation	Principal Deductible?	Interest Deductible?	Maximum Deduction (Individual/Joint)	Penalty for Unqualified Use
Alabama	Adopted 2018	Yes	Mp	\$25,000/\$50,000	10%
Colorado	Adopted 2016	No	Yes	\$14,000/\$28,000	5-10%
Iowa	Adopted 2017	Yes	Yes	\$2,000/\$4,000	10%
Minnesota	Adopted 2017	Yes	Yes	\$50,000/\$100,000 principal/\$150,000 total	10%
Mississippi	Adopted 2017	Yes	Yes	\$2,500/\$5,000	No additional penalty
Missouri	Adopted 2018	Yes	Yes	\$20,000 principal/ \$30,000 total	5% within 10 years/ 10% after 10 years
Montana	Adopted 1997	Yes	Yes	\$3,000/\$6,000	10%
New York	Adopted 2017	Yes	Yes	\$5,000/\$10,000	10%
Oklahoma	Adopted 2019	Yes	Yes	\$5,000/\$10,000	10%
Oregon	Adopted 2019	Yes	Yes	\$50,000/reduction if income is more than \$104,000	5%
Virginia	Adopted 2014	No	Yes	\$50,000 principal/ \$150,000 total	5%

Source: National Association of Realtors®, state legislation.

Established Homebuyer Savings Account Programs

In 1974, Canada instituted the Registered Home Ownership Savings Plan (RHOSP) program. Using this plan, as well as similar savings account plans in nine U.S. states, we discuss common practices for states looking to implement homebuyer savings account programs in order to maximize their impact.

The Canada RHOSP Program. The RHOSP program allowed prospective first-time homebuyers to take a dollar-for-dollar tax deduction for savings to be used on down payments for a home. The program had an annual contribution limit of \$1,000 with a lifetime limit of \$10,000. This equals roughly \$6,800 per year in today's dollars and a lifetime limit of \$68,000.[4] These funds could accrue interest for up to 20 years, at which time participants were required to withdraw the funds. Interest was accrued tax-free. Statutes required withdrawals

4. Figure in USD and estimated using the BLS CPI calculator from January 1970 to December 2019.

to be for the entire balance of the account. If the funds were not used for a home purchase, they were taxed as ordinary income. When the program ended in 1986, all active accounts were converted into tax-deferred savings accounts.

FHSAs in Alabama. Alabama passed FHSA legislation in 2018. Individuals can deduct up to $5,000 per year, and couples filing jointly can deduct up to $10,000 per year. The account may only be open for five years; after the fifth year, any funds not spent on qualifying costs are included in the account holder's taxable income. There is a 10% penalty associated with using the money for unqualified purchases, though the account holder can replace any funds withdrawn within 60 days with no penalty.

FHSAs in Colorado. Starting in 2016, Colorado allowed residents to establish FHSAs. There is a $14,000 annual limit on contributions, and no limit on how long the account may remain open. An individual can contribute up to $50,000, with a total limit of $150,000 including interest and dividend earnings. Contributions are not tax deductible, and earnings are tax-free. If the funds are used for any purpose other than to buy a home, all taxes plus interest must be paid back to the State, as well as a 5% penalty. The savings account is self administered, and taxpayers report any contributions and interest on their personal income taxes.

FHSAs in Iowa. Iowa passed FHSA legislation in 2017. Residents are allowed to save for up to ten years, contributing up to $2,000 for individuals or $4,000 if filing jointly. Contributions and interest earned on the account are tax deductible. Any withdrawal for unqualified purchases is subject to a 10% penalty, in addition to repayment of any foregone taxes. The accounts are self administered.

FHSAs in Minnesota. Minnesota passed FHSA legislation in 2017. Contributions are limited to $14,000 per year for individuals and $28,000 per year for married joint filers. The maximum principal on the account is limited to $50,000 for individual filers and $100,000 for joint filers. The maximum interest and dividends plus principal in the account is limited to $150,000.

FHSAs in Mississippi. Mississippi passed FHSA legislation in 2017. Residents may contribute up to $2,500 for individuals or $5,000 if filing jointly. There is no limit on how long the account may remain active, but there is a 10% penalty on using the funds for unqualified purchases. The accounts are self administered.

FHSAs in Missouri. The Missouri First Time Homebuyer Savings Program was signed into law in 2018. The plan allows residents to set aside up to $1,600 if filing individually, or $3,200 for joint filers. Parents and grandparents can also set up accounts for their children or grandchildren and contribute money to the account. Up to 50% of the maximum principal investment is tax deductible and the interest is earned tax-free.

FHSAs in Montana. Montana has the oldest FHSA program in the nation. The program allows residents to contribute $3,000 per year into a savings account with no lifetime limit. The annual contribution limit is $6,000 for couples filing jointly. Contributions and earned interest are tax deductible. Account holders have up to 10 years to deduct the amount saved for a qualified purchase, at which point interest can continue to accrue but becomes taxable. Any withdrawal for unqualified purchases is subject to back taxes and a 10% penalty. Unlike in other states, a financial institution must be the account administrator, controlling any funds that are deposited into or withdrawn from the account.

FHSAs in New York. New York adopted FHSA legislation in December 2018. Under the legislation, an individual is eligible to make a $5,000 per year tax-deductible deposit into a New York FHSA, ($10,000 for joint filers). Any interest accrued is not subject to taxes. If funds from the account are used for non-eligible expenses, or if the home is not used as a primary residence for a period of two years, the entire account balance becomes taxable, including interest. A 10% state penalty tax on earnings may also apply.

FHSAs in Oklahoma. The Oklahoma Home Buyer Savings Account Act was enacted in 2019. Tax exempt contributions are limited to $5,000 per taxpayer, or $10,000 for joint filers each tax year. The total amount of principal and earnings cannot exceed $50,000. Funds from these accounts must be used for eligible costs. If the funds in a homebuyer savings account are used for non-eligible expenses, then those amounts must be added back to taxable income and there is a 10% penalty of the amount withdrawn.

FHSAs in Oregon. Oregon implemented FHSAs at the beginning of 2019. Residents can contribute up to $5,000 per year for individuals or $10,000 for joint filers. Contributions, interest, and dividends are tax-free. These contributions may not exceed $50,000 over all tax years. The Oregon program includes an income limit; individuals making more than $104,000 may only deduct a percentage of their contributions to the FHSA. There is a 5% penalty for unqualified purchases.

FHSAs in Virginia. The rules regulating FHSAs in Virginia are very similar to the regulations in Colorado. Adopted in 2014, Virginia allows residents to contribute a maximum of $50,000 towards a qualified purchase, with no annual cap on how much a person can contribute. The total account can have a maximum balance of $150,000. All interest earned on the account is accrued tax free, while the principal contribution is taxed as normal income.

EMPIRICAL EFFECTS OF FHSA PROGRAMS ON HOME PURCHASES

We performed a thorough review of economic literature to identify the economic impacts that the proposed FHSA law might have on home purchases and other economic variables. We reviewed the effects of FHSAs on renter-to-owner transitions, as well as how increased demand for homes impacts the construction industry, the demand for professional services necessary for home sale transactions, and the markets for durable goods, home furnishings, utilities, and home repairs.

Impact of FHSAs on Home Transitions

To understand the economic and fiscal impacts that the proposed FHSA program would have, we must first understand how many households would transition from renting to owning a home due to the program. We define the act of a household moving from renting to owning as a home transition, and the share of households who transition from renting to owning as the transition rate. Since there have only been nine FHSA programs in practice, and nearly all have been implemented in the past five years, empirical evidence on the impact of such programs is limited.

Several studies have been conducted on the effects of the Canadian Registered Home Ownership Savings Plan (RHOSP) program. Because the program was cancelled in 1986, economists were able to observe those who enrolled in the program prior to cancellation and similar enrollees who had not yet purchased a house at the time of cancellation. The estimated impact of the program was measured as the difference in transition rates between these two groups after controlling for important factors such as changes in market conditions over the time period. The study authors found that the RHOSP program increased the annual transition rate for program participants from renting to home ownership by 3.2 percentage points. This represented a 19% increase in the transition rate.[5]

Impact of Home Purchases on Construction

If the demand for homes increases, demand for newly-constructed homes will also increase. This higher demand for new construction will produce economic impacts as households spend more on new construction. However, this may also result in decreased demand for multi-unit residences which could adversely affect construction.

In our review of the research, we found that the supply of rental housing is only marginally responsive to changes in price in the short and medium term.[6] Therefore, we expect that the impact of FHSAs on rental unit construction would be

5. Engelhardt, Gary V., *Journal of Housing Research*, "Do Targeted Savings Incentive for Homeownership Work? The Canadian Experience", Vol. 8, No. 2, 1997, p.225-248.
6. DeLeeuw, Frank & Ekanem, Nkanta F., *The American Economic Review*, "The Supply of Rental Housing", 2001, p. 806-817.

minimal. However, studies on the rental housing market typically focus on voucher programs designed to increase the demand for rental housing and therefore may not be representative of the market changes brought by the establishment of an FHSA program. In the long run, the market would be more responsive to price changes.

Impact of Home Purchases on Other Types of Purchases

While consumer expenditure data makes it clear that homeowners spend more on all types of goods and services than renters, this does not tell us much about how the transition from renting to owning affects consumption. Data clearly shows that homeowners spend more on transportation, health care, durable goods, utilities, and many other expenses, but homeowners are also older and wealthier than renters.[7] It stands to reason that purchasing a home impacts a person's desire to purchase consumer goods to furnish their home. This may also be the case for home repairs and utilities, as single family homes tend to be bigger than apartments and therefore require more energy to heat, cool, and maintain. However, we have not found reliable research indicating the magnitude of this effect.

Some research exists on durable goods purchases. While homeowners may purchase more durable goods to furnish their home, it appears that homeowners may delay these purchases in the six months after buying a home due to the large capital outlay required to purchase a home.[8] While we cannot reliably estimate the effect of purchasing a home for the first time on durable good purchases, the body of research suggests that the effect is small because these type of acquisitions require large savings and are therefore planned out well in advance.

7. Paulin, Geoffrey D., *Journal of Consumer Affairs*, "A Comparison of Consumer Expenditures by Housing Tenure", Vol. 29, No. 1, 1995, p. 164-198.
8. Soutar, Geoffrey N. & Cornish-Ward, Steven P., *Applied Economics*, "Ownership Patterns for Durable Goods and Financial Assets: A Rasch Analysis", Vol 29., No. 7., P. 903-911.

III. Economic and Fiscal Impact of FHSAs in Ohio

If Ohio were to adopt S.B. 139, the FHSA program would result in increased economic activity across the state. As the effective price of a home declines due to an increase in tax savings, more people would transition from renting to buying a home. An increase in home sales, and renters setting aside money in their FHSAs would impact state tax revenues. We discuss these impacts below.

FHSA ECONOMIC IMPACTS

If Ohio were to adopt the FHSA program, more residents would purchase homes, which would spur new spending on construction, as well as increased spending in industries associated with home purchases, such as professional services for loan origination, and home furnishings.

FHSA Characteristics

For our analysis, we assumed the following FHSA regulatory framework, based on S.B. 139:

- Contributions to FHSAs and interest earned on the account would be tax deductible.
- A15-year limit on the account before a withdrawal must be made.
- A maximum annual income tax deduction of $5,000 for individuals and $10,000 for joint filers.
- Only purchases of primary residences in Ohio would be eligible.
- The account would be managed by an individual, not a financial institution.
- A 10% penalty would apply to the non-qualified use of funds from the FHSA savings account.

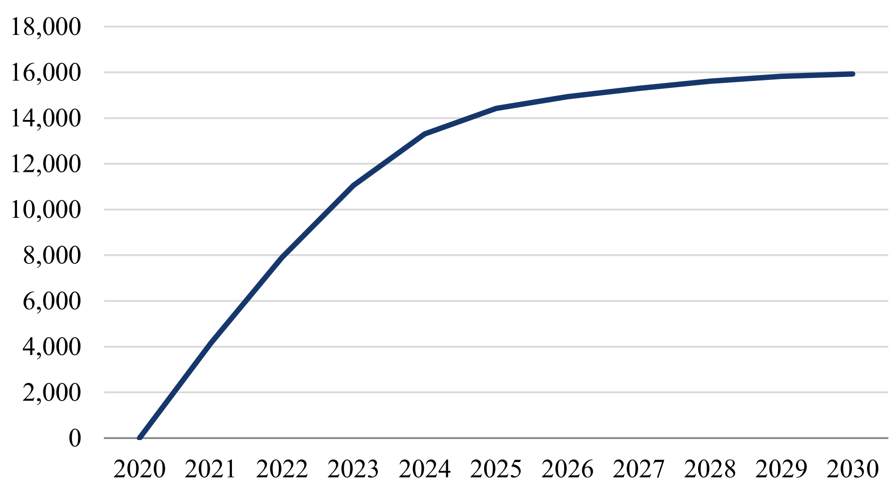
Impact on Home Purchases

There are 1.6 million housing units occupied by renters in Ohio, of which about half have a head of household under the age of 45. These 770,000 households represent the universe of likely FHSA participants. We estimate that the amount of homes that would be purchased under the FHSA program would increase gradually each year as more and more renters sign up for the program and the amount saved in accounts grows.

We estimate that the number of active FHSA accounts would rise at a steady rate for the first five years of the program, after which the number of active accounts would begin to level off as the number of account holders closing their accounts in order to make a down payment increases.

We estimate that, by the fifth year of the program, there would be approximately 14,400 active accounts statewide. This total would grow to nearly 16,000 by the tenth year of the program, representing roughly 2.1% of all rental households with heads of household under age 45. We show our estimates of active accounts in Figure 3 below.

FIGURE 3. Ohio FHSA Program Estimated Number of Active Accounts, by Year

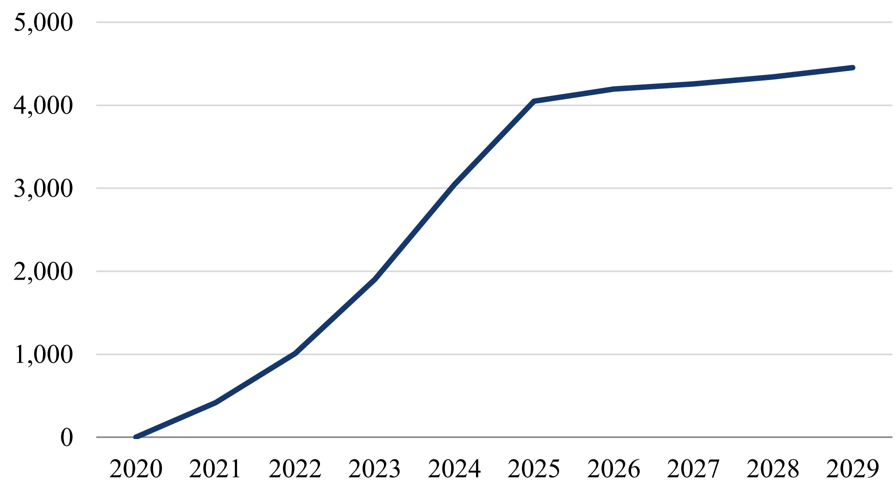


Source: Anderson Economic Group analysis of base data from Ohio REALTORS®, U.S. Census Bureau, Engelhardt, 1997.

Each year, a portion of accounts would be closed as account holders use their savings to purchase a home, while other participants would choose to keep their account open and continue making contributions. This means that there would be fewer homes sold with FHSAs in the first years of the program, and more homes sold with FHSAs as time passes.

We estimate that FHSA home sales would grow exponentially in the first few years—from zero sales in the first year of the program to 4,000 sales by the fifth year. After the fifth year, sales would level off as the ratio of FHSA contributors to homebuyers approaches an equilibrium. We estimate that, in the tenth year of the program, there would be 4,500 FHSA sales. We show our estimates for total home sales in Figure 4 on page 17.

FIGURE 4. Ohio FHSA Program Estimated Number of Homes Sold with FHSA Accounts, by Year



Source: Anderson Economic Group analysis of base data from Ohio REALTORS®, U.S. Census Bureau, Engelhardt, 1997.

Some of the homes that would be sold under the FHSA program would have likely been sold even if the program did not exist. In other words, buyers who intended on purchasing a home would take advantage of the program, but the sales would not be a “new” sale that only occurred because of the program.

A smaller portion of FHSA home sales would occur because the program would make homes more affordable. These “new” home sales amount to increased economic activity in Ohio. We estimate that the number of net new home sales attributed to the program will range between 10 and 150 new homes annually, as shown in Table 5.

TABLE 5. Ohio FHSA Program Estimated Number of Total and Net New Home Sales, by Year

Year	FHSA Home Sales	Net New FHSA Home Sales
2021	0	0
2022	416	13
2023	1,011	32
2024	1,903	61
2025	3,042	97
2026	4,048	130
2027	4,194	134
2028	4,256	136
2029	4,342	139
2030	4,452	142

Source: Anderson Economic Group analysis of base data from Ohio REALTORS®, U.S. Census Bureau, Engelhardt, 1997.

Sources of Economic Impact

By encouraging Ohio residents to save for a home, FHSAs will spur new economic activity through increased purchases. There are six main types of purchases that could be affected as people transition from renting to owning:

- **Construction:** Some residents will choose to purchase newly-constructed homes that would not have otherwise been purchased.
- **Professional Services:** Residents who purchase a home will need to purchase professional services, including loan origination fees, home inspections, etc.
- **Home Repairs:** Because homeowners tend to feel more attached to their homes than their rental units, they may spend more on maintenance and upkeep than rental property owners.
- **Utilities:** Homes purchased under the FHSA program may be larger than apartments and may result in increased spending on utilities.
- **Appliances:** If more people buy homes, they may be more likely to purchase new home appliances and other "big ticket" items.
- **Home Furnishings:** Homeowners may purchase additional home furnishings for their new home that they would not otherwise purchase if they continued to rent.

The total value of these purchases that would not occur in the absence of the FHSA program constitutes a new impact on the state's economy. Of these categories, we were able to identify and produce rigorous estimates for two—construction spending and professional services.[9]

Net Economic Impact

In the second year after implementation, the FHSA program would create $310,000 in increased sales for Ohio businesses, along with small increases in household earnings and employment statewide.[10] We estimate that the FHSA program would prompt $3.3 million in new output (sales by businesses), along with $740,000 in increased household earnings, and 27 new jobs by the program's tenth year. We show the annual economic impact of the program in Table 6.

TABLE 6. Ohio FHSA Program Net Economic Impact, by Year

Year	Output (millions)	Earnings (millions)	Employment
2021	-	-	-
2022	$0.31	$0.07	3
2023	$0.75	$0.17	6
2024	$1.42	$0.32	12
2025	$2.26	$0.51	18
2026	$3.01	$0.67	25
2027	$3.12	$0.70	25
2028	$3.17	$0.71	26
2029	$3.23	$0.72	26
2030	$3.31	$0.74	27

Source: Anderson Economic Group analysis using base data from the U.S. Census Bureau, and U.S. Bureau of Economic Analysis RIMS II Multipliers.

The largest source of economic impact of the program is due to increased demand for professional services associated with home purchases. As account holders purchases financial services needed to close on a home, the spending circulates throughout the Ohio economy, increasing demand for goods and services in other industries as well.

See "Estimating the FHSA Economic Impact" on page A-5 for a full description of our economic impact methodology and assumptions.

9. See "Appendix A. Methodology" on page A-1 for a full discussion of our methodology.
10. There would be no economic impact in the program's first year since no additional homes would be sold.

FHSA FISCAL IMPACTS

The Ohio FHSA program would have competing impacts on state tax collections, with some aspects of the program reducing tax collections, and others aspects increasing tax collections. The fiscal impacts of the program include:

- Money set aside in income tax-sheltered savings accounts would result in a decrease in income tax revenue collections.
- Increased spending on construction of new homes would generate new sales tax revenues.
- Increased employment and earnings resulting from the program would lead to new taxable income generated, as well as new spending on goods and services subject to sales tax.
- Increased home sales transactions would generate new realty transfer tax revenue.

The largest fiscal impact of the FHSA program would be the decrease in tax revenue collections due to the use of the tax-sheltered savings accounts. This impact exceeds the value of increased revenues generated from the new economic activity caused by the program. In the first year of the program, we estimate that the State would forego $500,000 in income tax collections. This would increase to $2.4 million by the tenth year of the program. While this amount may seem significant at first, it should be noted that, in 2019, the State of Ohio collected $9.5 billion in income tax revenue.[11]

We estimate that the increased economic activity spurred by the program lead to $2,300 in additional realty transfer taxes in the second year of the program (since no homes would be sold in the program's first year), and $25,500 annually after ten years. In the tenth year of the program, the state would also see $20,500 in new sales tax collections and $10,500 in new income tax collections. Table 7 on page 21 shows the resulting changes in tax revenues due to the program in each year. The net fiscal impact of the program would be a loss of

11. Ohio Department of Taxation Comprehensive Annual Financial Report, 2019.

$500,000 in revenue in the first year of the program, and a loss of $2.4 million in revenue in the tenth year of the program.

TABLE 7. Ohio FHSA Program Net Fiscal Impact, by Year and Revenue Type

	Revenue Impact			
Year	**Sales**	**Income[a]**	**Realty Transfer**	**Net Impact**
2021	$0	$(491,283)	$0	$(491,283)
2022	$1,906	$(981,577)	$2,380	$(977,290)
2023	$4,629	$(1,422,319)	$5,784	$(1,411,906)
2024	$8,712	$(1,792,104)	$10,888	$(1,772,504)
2025	$13,929	$(2,055,964)	$17,049	$(2,024,626)
2026	$18,533	$(2,232,764)	$23,164	$(2,191,067)
2027	$19,201	$(2,292,820)	$24,000	$(2,249,619)
2028	$19,487	$(2,335,824)	$24,357	$(2,291,979)
2029	$19,881	$(2,371,394)	$24,849	$(2,326,663)
2030	$20,382	$(2,396,751)	$25,476	$(2,350,893)

Source: Anderson Economic Group analysis of base data from Ohio REALTORS®, Ohio Department of Taxation, U.S. Census Bureau, Engelhardt, 1997.

For a full discussion of our fiscal impact analysis methodology, see "Estimating the FHSA Fiscal Impact" on page A-6.

Appendix A. Methodology

We outline the data sources we used in our analysis and discuss the analytical steps taken to produce our estimates below.

In order to assess the economic and fiscal impacts of the proposed FHSA program, we reviewed empirical research on the impacts of first-time homebuyer programs, and then constructed a custom Ohio housing market model that measures the impacts of the program on home sales, the Ohio economy, and state tax revenues.

DATA SOURCES

Our housing market model estimates rely on numerous government surveys on population, housing, and demographics, as well as Ohio Association of REALTORS® data on home sales in Ohio, and empirical research on home purchasing behavior. We provide a complete list of sources below.

We used the following sources to complete our analysis:

- U.S. Census Bureau American Community Survey data on the number of homeowners and renters, and home values in Ohio.
- U.S. Census Bureau American Housing Survey data on the share of homes that are new construction.
- U.S. Bureau of Economic Analysis RIMS II Economic Impact Multipliers.
- U.S. Bureau of Labor Statistics Consumer Expenditure Survey data on consumer expenditure patterns.
- U.S. Census Bureau Decennial Census for data on the share of renters by age.
- Data on home sales and sale prices in Ohio, collected from Ohio REALTORS®.
- Ohio Department of Taxation information on income tax brackets, sales tax rates, and realty transfer tax rates.
- State of Ohio Comprehensive Annual Financial Report for the year end June 30, 2019.
- Gary Engelhardt, "Do Targeted Savings Incentives for Homeownership Work? The Canadian Experience," *Journal of Housing Research,* 8(2), 1997.
- Jason Horwitz and Judy Zhang, "2018 State Business Tax Burden Rankings," Anderson Economic Group, LLC.
- Hotpads, "How Long does it Take to Save for a Down Payment?" July, 2018. https://hotpads.com/blog/save-for-down-payment/.
- Fiscal notes for FHSA legislation in Colorado, Connecticut, Idaho, Iowa, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Oklahoma, Oregon, and Pennsylvania.

ESTIMATING NEW HOME SALES

We constructed a custom home transaction model for Ohio based primarily on our review of the Registered Home Ownership Savings Program (RHOSP) in Canada and data from Ohio REALTORS® and the U.S. Census Bureau, supplemented with information provided in fiscal notes for FHSA legislation in other states. Our model estimates the number of renters who would open a first-time homebuyer savings account, how long those accounts would remain open for, how many homes would be purchased with an account, and how many of the homes sold would otherwise not have been sold if the program did not exist. Our analysis focuses on program participation for renters younger than 45. We determined that this cohort is most likely to use an FHSA account after conducting a review of economic literature on first time home purchases.

The RHOSP program in Canada was structured very similarly to FHSAs. The program allowed Canadians to set aside money tax-free into a savings account, and then use those funds to purchase a home. A post-facto analysis of the program showed that approximately 14% of Canadian renters had an active savings account within five years of the program beginning. These renters faced an average marginal income tax rate of 36%—far greater than tax rates in Ohio. Researchers also determined that for every 10% increase in marginal tax rates, participants were 3.67% more likely to participate in the program.

Using this finding, along with an assumption that the average Ohio FHSA participant would face an average marginal tax rate of 3.326%, we determined that, within five years, 1.91% of all rental households in Ohio would have an active FHSA. We also determined that this percentage would increase to 2.13% by the tenth year of the program. This means that, in year five of the program, Ohio would have 14,426 active accounts, and 15,918 active accounts in year ten.

After estimating the number of active accounts in the fifth and tenth year of the program, we estimated the number of accounts that would be opened and closed each year as account holders purchase homes. We assumed that participants would, on average, save for a home for six years (similar to the national average). We also assumed that each participant's likelihood of using the account to purchase a home would increase each year, as shown in Table A-1 below.

TABLE A-1. Estimated Likelihood of Home Purchase, by FHSA Account Age

Account Age (Years)	Likelihood of Home Purchase
1	0%
2	10%
3	16%
4	28%
5	50%
6	90%
7	95%
8	95%
9	100%

Source: Anderson Economic Group analysis of Hotpads, "How Long does it Take to Save for a Down Payment?" 2018.

After determining the rate at which account users would close their accounts to purchase a home, we then determined how many accounts would be opened in the first five years such that 14,426 accounts would be open at the end of the fifth year of the program, and 15,918 would be open at the end of the tenth year. We show our full estimate of active and closed accounts (home sales) in Table A-2 below.

TABLE A-2. Ohio FHSA Estimated number of Active and Closed Accounts, by Year

Year	Active Accounts	Home Sales
2021	4,159	0
2022	8,319	416
2023	12,062	1,011
2024	15,211	1,903
2025	17,468	3,042
2026	18,985	4,048
2027	19,497	4,194
2028	18,862	4,256
2029	20,165	4,342
2030	20,382	4,452

Source: Anderson Economic Group analysis of base data from Ohio REALTORS®, U.S. Census Bureau, Engelhardt, 1997.

Research shows that many of the homes that would be sold under the FHSA program would have been sold even if the program did not exist. In other words, buyers who intend on purchasing a home would take advantage of the program. A smaller portion of home sales would occur because the program would make homes more affordable. These "net new" home sales across the state translate to new economic activity in Ohio.

RHOSP program researchers found that the rate of home purchases for program participants was 3.2% higher than for nonparticipants each year. We believe that this increased purchase rate would also hold true for Ohio. We show total FHSA home sales, and "net new" homes sold under the program in Table A-3 below.

TABLE A-3. Ohio FHSA Program Estimated Number of Total and Net New Home Sales, by Year

Year	FHSA Home Sales	Net New FHSA Home Sales
2021	0	0
2022	416	13
2023	1,011	32
2024	1,903	61
2025	3,042	97
2026	4,048	130
2027	4,194	134
2028	4,256	136
2029	4,342	139
2030	4,452	142

Source: Anderson Economic Group analysis of base data from Ohio REALTORS, U.S. Census Bureau, Engelhardt, 1997.

After determining the number of homes that would be sold under the program, we estimated an average distribution of sales prices for homes, based on Census Bureau data on home values. We assumed that each home sold under the program would reflect the average distribution of home values statewide. In other words, if 10% of homes across Ohio had a value between $200,000 and $250,000, we assumed that 10% of homes sold under the program would have a value between $200,000 and $250,000.

We made an exception to the distribution rule above when factoring in the sale of new homes. We estimated that 0.9% of all homes sold under the FHSA program would be new homes, based on our analysis of new home sales nationwide. We also estimated that the average value of new homes sold under the program would be $252,300 based on Census Bureau estimates of the median home value in the United States.

Comparison to FHSA programs in other states. As discussed in "First-Time Homebuyer Savings Accounts" on page 9, several states have passed FHSA bills. Data on participation rates in other states are not readily available since many of these bills were only passed within the last three years. The Ohio Legislative Service Commission (LSC) issued a Fiscal Note for S.B. 139 that estimated a participation rate slightly higher than our estimates.[12]

The LSC Fiscal Note also included data on FHSA participation in Virginia and Montana. Participation rates in these states are lower than what we estimate for Ohio. The Virginia data obtained by the LSC is not publicly available information, and, to our knowledge, has not be thoroughly vetted. In some states with FHSA laws, account holders are responsible for self-reporting FHSA participation on income tax forms, which could lead to undercounts of participants. The Montana program has existed for a longer period of time (since 1997), and reports a lower participation rate than our estimates, however the characteristics of the Montana program differ from the program proposed in S.B. 139, and the Montana housing market, which is predominantly rural, is much different from the Ohio housing market. Therefore, we did not take the Montana numbers into account in our estimates. The LSC also noted in its Fiscal Note that the participation rates reported in Virginia and Montana appeared to be much lower than what could occur in Ohio, and did not use these numbers in its analysis.

ESTIMATING THE FHSA ECONOMIC IMPACT

To estimate the economic impact generated by FHSAs we considered all sources of new spending that could be tied to an increase in home purchases. We considered the following potential sources of economic impact:

- New home construction;
- Professional services used to purchase or sell homes;
- Home repairs;
- Utilities;
- Home appliances; and
- Home furnishings.

After a thorough review of economic literature, we were unable to find research that would allow us to produce a consistent estimate on new purchases of utilities, home appliances, or home furnishings due to the creation of FHSAs. While we theorize that these types of purchases are likely to increase when home purchases increase, we are unable to estimate the magnitude of this effect.

12. Ohio Legislative Service Commission, S.B. 139 Fiscal Note & Local Impact Statement, June 4, 2019. See: https://www.legislature.ohio.gov/legislation/legislation-documents?id=GA133-SB-139.

To estimate the amount spent on construction, we multiplied the total value of all newly constructed homes by the share of home value that is spent on construction. Based on a 2018 estimate from the National Association of Home Builders, construction costs comprise 55.6% of the average value of a newly-constructed home. We applied U.S. Bureau of Economic Analysis RIMS II multipliers for the construction industry in Ohio to the total amount of construction spending.

We used a similar approach to estimate the impact FHSAs would generate through new spending on professional services. We describe these steps below.

1. We used the total number of net new home sales to account for spending by those purchasing existing homes.
2. We used U.S. Census Bureau data to determine the share of homes in Ohio in different ranges of home values. We calculated the midpoint of each range and set it as the estimated value for homes in that range.
3. We multiplied the number of net new homes in each value range by the midpoint of the value range to determine the total value of all home purchases for each program year.
4. We multiplied the total value of all homes purchased due to the credit by 7.0% to reflect the share of home value that is spent on professional services. We reached this figure by estimating the total value of commissions, loan origination fees, and home inspection fees that homebuyers pay when purchasing a home. We used data from the National Association of REALTORS® to determine the cost of each type of professional service. We then divided the total share spent on professional services in half to reflect that some people may forego purchasing these services, or may purchase a somewhat smaller home in order to pay for these services.
5. We applied U.S. Bureau of Economic Analysis RIMS II multipliers for the real estate industry in Ohio to the total amount of professional services spending.

ESTIMATING THE FHSA FISCAL IMPACT

To estimate the fiscal impact that the FHSA program would have on the State of Ohio, we considered how FHSAs and the resulting economic impact would affect tax collections in the following areas:

- Realty transfer taxes;
- Sales taxes;
- Property taxes; and
- Income taxes.

Impact on the State of Ohio

To estimate new realty transfer tax collections, we multiplied the total value of newly-purchased homes by the Ohio conveyance tax rate. This is equal to 1 mill, or $1 per $1,000 of the value of property sold or transferred.

To estimate new sales tax collections, we took the following steps:

1. We multiplied the new household earning generated by the program by one-minus the average effective state income tax rate (1.67%) to estimate the total household income generated by the program that households would have available to spend on taxable goods and services.
2. We then determined the share of after-tax household income that is consumed, as well as the share of consumption that is subject to the sales tax. To determine the share of income that is consumed, we used consumer expenditure data from the Bureau of Labor Statistics. For the purpose of our sales tax calculations, we assumed that households purchasing a home made between $70,000 and $99,999.[13] We estimate that 88.5% of disposable income is consumed by households in this income range, and that 42.1% of consumption in Ohio is subject to the general sales tax. For our methodology on the share of consumption subject to the sales tax, see our annual "Business Tax Burden" report.
3. We added the amount of income subject to the sales tax to the amount spent on new construction from our economic impact estimate. This gives us the total amount of spending that is subject to the sales tax.
4. We multiplied the above figure by the general sales tax rate of 5.75%.

The remaining impact on the State lies only in the change in income tax collections. The FHSA program would result in competing impacts. First, increased home purchases and increased household earnings would lead to increased taxable income generated in Ohio. Second, the deductions that account holders take would result in decreased income tax revenue for the state.

To estimate the positive income tax impact, we multiplied the estimated new earnings from our economic impact analysis by the average effective income tax rate for Ohio—1.67%. We determined this effective income tax rate based on an analysis of the state's Comprehensive Annual Financial Report.

We took the following steps to estimate the negative income tax impact resulting from FHSA contributions.

1. We estimated the number of accounts created each year, as described in "Estimating New Home Sales" on page A-2.
2. After estimating the number of accounts that would be created each year, we estimated the average contribution amount per account. Under the program, individuals would be able to set aside $5,000 per year, while joint income tax filers would be able to set aside $10,000 per year. We estimated that 41.5% of account holder would contribute the joint filer maximum of $10,000, and 58.5% of accounts contributed the single filer maximum of $5,000, based on our review of IRS tax filing statistics for Ohio.

13. Assuming an income of $50,000 to $70,000 or $100,000 to $150,000 did not materially affect our results.

Research on contribution totals to FHSAs is mixed, and we were unable to identify any research that would suggest that using anything other than a $5,000/$10,000 contribution rate would be more or less valid than using the maximum possible contribution rate. Therefore, we use the maximum contribution limits for these two groups. This aligns with our conservative methodology, and results in the largest possible negative fiscal impact. If participants contributed less than the maximum amount to their FHSAs, the fiscal impact of the program would be less negative.

3. After determining an average contribution rate for each account, we multiplied the total value of funds set aside by an estimated marginal tax rate of 3.326%—the marginal tax rate we estimate that most participants would face when contributing to their account.
4. We then summed the total of foregone tax revenue to determine the negative fiscal impacts of FHSA contributions.

Appendix B. Detailed Exhibits

The following exhibits show the estimated effects of the FHSA program in Ohio over the first ten years after the policy is passed.

TABLE B-4. Estimated FHSA Active Accounts and Additional Home Sale Transactions due to FHSA Program in Ohio

Year	FHSA Active Accounts	Additional Home Sale Transactions
2021	4,159	-
2022	8,319	416
2023	12,062	1,011
2024	15,211	1,903
2025	17,468	3,042
2026	18,985	4,4048
2027	19,497	4,194
2028	19,862	4,256
2029	20,165	4,342
2030	20,382	4,452

Source: AEG analysis using base data from the U.S. Census Bureau, Ohio REALTORS®, Engelhardt, 1997.

TABLE B-5. Estimated FHSA Contributions and Lost Income Tax Revenue in Ohio, by Year

Year	Total Contributions (millions)	Total Lost Income Tax Revenue (millions)
2021	$29.4	$0.5
2022	$58.8	$1.0
2023	$85.3	$1.4
2024	$107.6	$1.8
2025	$123.5	$2.1
2026	$134.3	$2.2
2027	$137.9	$2.3
2028	$140.5	$2.3
2029	$142.6	$2.4
2030	$144.2	$2.4

Source: AEG analysis using base data from the U.S. Census Bureau, Ohio REALTORS®, Ohio Department of Taxation, Engelhardt, 1997.

TABLE B-6. Change in Sate Tax Revenues Due to the FHSA Program, by Year

Year	Sales Tax	Income Tax	Realty Transfer Tax	Lost Income Tax Revenue	Total Fiscal Impact
2021	-	-	-	($491,283)	($491,283)
2022	$1,906	$989	$2,380	($982,565)	($977,290)
2023	$4,629	$2,401	$5,784	(1,424,720)	($1,411,906)
2024	$8,712	$4,518	$10,888	($1,795,621)	($1,772,504)
2025	$13,929	$7,223	$17,409	($2,063,186)	($2,024,626)
2026	$18,533	$9,610	$23,164	($2,242,374)	($2,191,067)
2027	$19,201	$9,957	$24,00	($2,302,777)	($2,249,619)
2028	$19,487	$10,105	$24,357	($2,381,703)	($2,326,663)
2029	$19,881	$10,309	$24,849	($2,381,703)	($2,326,663)
2030	$20,382	$10,569	$25,476	($2,407,320)	($2,350,893)

Source: AEG analysis using base data from the U.S. Census Bureau, U.S. Bureau of Labor Statistics, Ohio REALTORS®, Ohio Department of Taxation, Engelhardt, 1997.
Note: Columns may not sum to totals due to rounding

Appendix C: About AEG

Anderson Economic Group, LLC is a boutique consulting firm founded in 1996, with offices in East Lansing, Chicago, New York, and Istanbul. Our team has a deep understanding of advanced economic modeling techniques and extensive experience in multiple industries in multiple states and countries. We are experts across a variety of fields in tax policy, strategy and business valuation, public policy and economic analysis, and market and industry analysis.

The consultants at Anderson Economic Group are often published on topics within their respective fields of expertise. Publications from our team include:

- "The Economic and Fiscal Impact of First Time Homebuyer Savings Accounts in Alabama, Louisiana, and Michigan," published in January 2018.
- "The Economic and Fiscal Impact of First Time Homebuyer Savings Accounts in Missouri," published in October 2017.
- "The Economic Impact of First Time Homebuyer Savings Accounts in Pennsylvania," published in August, 2017.
- "Real Estate Taxes for Pennsylvania's Local Governments," completed in May 2015.

Past clients of Anderson Economic Group include:

- *Governments:* The government of Canada; the states of Michigan, North Carolina, and Wisconsin; the cities of Detroit, Cincinnati, and Sandusky; counties such as Oakland County, and Collier County; and authorities such as the Detroit-Wayne County Port Authority.
- *Corporations:* Ford Motor Company, First Merit Bank, Lithia Motors, Spartan Stores, Nestle, and InBev USA; automobile dealers and dealership groups representing Toyota, Honda, Chrysler, Mercedes-Benz, General Motors, Kia, and other brands.
- *Nonprofit organizations:* Convention and visitor bureaus of Lansing, Ann Arbor, Traverse City, and Detroit, and Experience Grand Rapids; higher education institutions including Michigan State University, Wayne State University, and University of Michigan; trade associations such as the Michigan Manufacturers Association, Service Employees International Union, Automation Alley, the Michigan Chamber of Commerce, and Business Leaders for Michigan.

Please visit www.AndersonEconomicGroup.com for more information.

ABOUT THE AUTHORS

Brian R. Peterson

Mr. Peterson is a Consultant with Anderson Economic Group, working in the Public Policy and Economic Analysis practice area. His work focuses on economic and fiscal impact analysis. Mr. Peterson has worked with public and private clients on issues such as pension reform and compensation analysis, property tax impact analysis, and environmental economics.

Mr. Peterson holds a Master of Urban Planning from the University of Wisconsin—Milwaukee and a Bachelor of Arts in Economics and Urban Studies from the University of Minnesota Twin Cities.

Sarah Mixon

Sarah Mixon is a senior analyst in Anderson Economic Group's public policy and economic analysis practice area. Her work primarily focuses on conducting cost-benefit and economic impact analyses. Ms. Mixon's recent projects include an assessment of healthcare innovation models, state education funding research, and impact analyses on various development projects that utilize TIF funding models.

Sarah holds a Master of Public Policy degree from the Harris School of Public Policy at the University of Chicago, and a Bachelor of Arts in economics from Oklahoma State University.