The Cost of Doing Nothing

Federal and State Impacts of Insufficient Retirement Savings

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ECONSULT SOLUTIONS INC.

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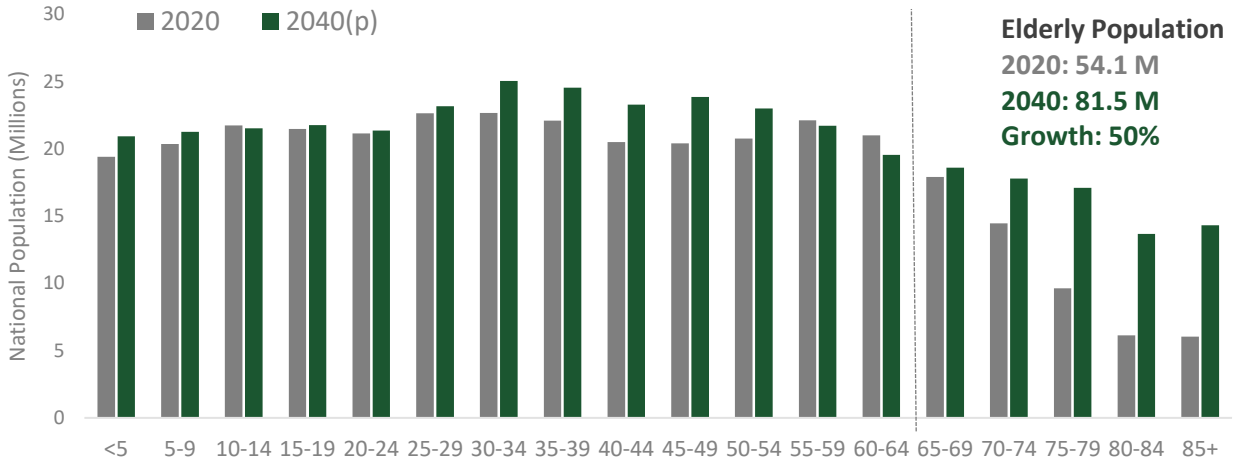
Executive Summary

As the elderly population of the United States continues to grow, it becomes increasingly important that households plan appropriately to maintain their living standards in their retirement years. This study quantifies the potential magnitude of national and state retirement savings shortfalls from 2020-2040 if current trends continue, defines the costs of these potential shortfalls to the US and each state and its residents, and addresses the potential benefits of addressing the savings gap and helping future retirees enhance their financial resiliency.

Shifting Demographics

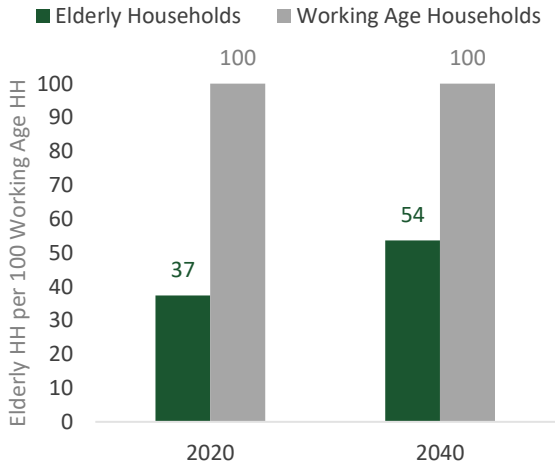
The elderly population of the United States is projected to increase by 50%, rising from 54.1 million in 2020 to 81.5 million in 2040. This increase is about ten times as fast as the non-elderly rate of growth and accounts for nearly two-thirds of the total population growth. Elderly Americans are projected to account for 22% of the population in 2040, up from 16% in 2020 (see Figure ES.1).

Figure ES.1: Projected Population by Age Group, 2020-2040



Elderly residents represented 27% of households in 2020. This number is expected to rise to 35% of households in 2040, while working age households, are projected to fall in share from 73% in 2020 to 65% in 2040. This creates a significant increase in the "**dependency ratio**," which represents the number of elderly households for each working age household within the population. This ratio is projected to grow from **37 elderly households for every 100 working age households in 2020 to 54 elderly households for every 100 working age households** by 2040 (see Figure ES.2).

Figure ES.2: Projected Dependency Ratio



Source (Population and Household Projections): ESI Analysis of Census 2020, CPS & Census Bureau Long-Term Projections

Retirement Readiness and Savings Gaps

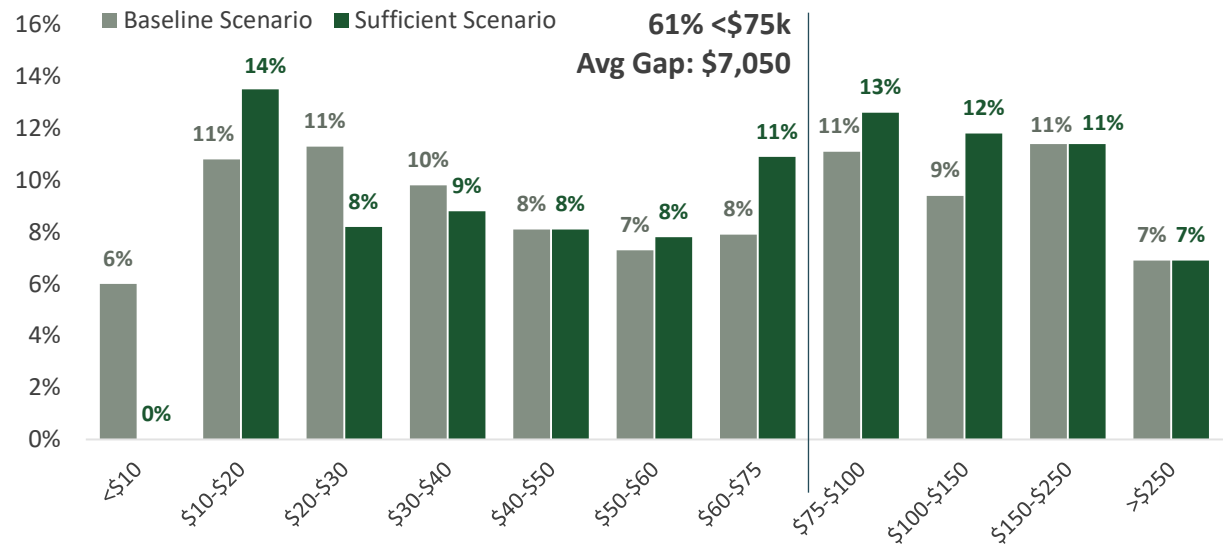
As additional households approach and reach retirement age, their retirement readiness becomes increasingly important to the quality of life, economy, and the government's fiscal position. Financial planners and retirement experts typically define targets for financial security in retirement years based on the maintenance of the basic living standards enjoyed by households during their working years. This concept can be translated to an "income replacement" target, which is set as a percentage of working-age income, and therefore will vary by household.

Analysis in this report of income patterns over time shows that current retirees have fallen well short of recommended income replacement standards. Building from Census Bureau population projections and analysis of federal data sets on income patterns by age over time, this study develops two scenarios for population and income change for the nation's elderly residents from 2020-2040:

1. A "baseline" scenario in which retirement savings levels remain consistent with current trends
2. A "sufficient savings" scenario in which current and future retiree households achieve recommended savings levels to maintain their standard of living.

The differential between these scenarios represents the gap between the income levels that retirees are anticipated to achieve under the current trends, and the typically recommended income replacement levels. Under the continuation of current trends (baseline scenario), 61% of elderly households are projected to have an annual income below $75,000 in 2040. The number of these **vulnerable elderly households is projected to grow by nearly 10 million from 22.8 million in 2020 to 32.6 million in 2040,** an increase of 43%. **Among these vulnerable households, the average annual income shortfall is projected to be $7,050 in 2040** (see Figure ES.3).

Figure ES.3: Projected Income Distribution of Elderly Households by Scenario – 2040 (in $2020)



Source: ESI Analysis of Current Population Survey (CPS) Data

Household Impacts from Insufficient Savings

The shortfalls in retirement savings shown at a population level above have significant implications for the financial stability and quality of life of millions of individual households across the country.

Financial modeling can put in context the relationship between the anticipated income gaps in retirement estimated above and the additional savings levels that a representative household would need to achieve recommended retirement income levels. Based on the mid-point of standardized financial assumptions, addressing the projected income gap of around $7,050 requires a lump sum savings of around $117,500 available at retirement. Over a 30-year time horizon at standard market returns, achieving this level of assets requires **an annual savings level of $1,685, or about $140 per month**. **With access Saver's Credit matching contributions, the annual savings required falls to $1,120, or about $95 per month** (see Figure ES.4).

Figure ES.4: Savings Needed to Close the Retirement Income Gap for HH <$75,000

	Analyzed Range	Midpoint Assumption	w/Saver's Credit Match
Savings Period	25-35 years	30 years	30 years
Annual Return	4-6%	5%	5%
Annuity Rate	5-7%	6%	6%
Avg. Income Differential (HH <$75k)		$7,050	$7,050
Avg. Asset Amount to Close Income Gap		$117,500	$117,500
Annual Savings to Close Income Gap		**$1,685**	**$1,125**
Monthly Savings to Close Income Gap		**$140**	**$95**

Source: ESI Financial Modeling

States have considered, studied, and implemented a range of approaches to increase retirement savings access, with several pursuing "automated savings programs" models. This framework requires some or all employers to either offer their employees retirement savings access directly through a financial provider, or to enable their employees to participate in a "state-facilitated" savings program. Early evidence from the longest operating programs in Oregon, Illinois, and California shows that these plans have received participant contribution levels similar to this magnitude. Program data from December 2022 indicates that **contribution levels range from around $130 to $170 per month, an annualized amount of around $1,500 to $2,000.**

Short of reaching recommended income replacement levels, **even modest levels of accumulated savings can provide a "buffer" to help vulnerable households manage their finances more effectively, improving financial outcomes and quality of life**. Federal legislation included in the December 2022 "Omnibus" bill provides greater flexibility in withdrawing emergency funds from retirement accounts without penalty, enabling households with savings to avoid unfavorable financial terms or trade-offs when dealing with unexpected expenses. Accumulated savings can also potentially help households to better manage their Social Security benefits, delaying the starting age to achieve a higher expected benefit level over their retirement years.

Government Expenditure Impacts

The retirement readiness of American households also has significant implications for the trajectory of government expenditures on benefit programs. Demographic changes and increasing medical costs create significant fiscal pressure, increasing federal expenditures to maintain consistent service levels at a time when relatively fewer working-age households will constitute the tax base. Under the continuation of current trends, income shortfalls for elderly households will add to the demand for these programs, increasing the rate of expenditure growth.

Elderly households are served by several federal benefit programs. Many senior-serving programs are means-tested for eligibility or benefit levels, and analysis of program data shows that per capita program expenditures on senior households decline significantly as household incomes increase. **Annual federal spending on seniors within selected programs (excluding Social Security and Medicaid, which are not dependent on senior income levels) is estimated to total $110 billion as of 2020**. Several of these programs also have state-funded components, which are estimated to contribute an additional $37 billion in costs as of 2020 (see Figure ES.5).[1]

Figure ES.5: Selected Benefit Program Expenditures for Elderly Residents, 2020

Program	Est. 2020 Federal Expenditures on Elderly ($M)	Est. 2020 State Expenditures on Elderly ($M)
Medicaid	$74,466	$28,443
Medicare Part D Low Income Subsidy	$19,500	$7,169
Supplemental Security Income	$6,864	-
SNAP	$5,746	$841
Low Income Home Energy Assistance	$1,071	-
Supportive Housing for the Elderly (Sect 202)	$594	-
Older Americans Act Programs:		$149
Nutrition Program for the Elderly	$859	$149
Supportive Services & Senior Centers	$366	$63
Caregiver Support	$183	$60
Total	**$109,649**	**$36,725**

Source: Congressional Research Service, ESI Analysis of Program and Demographic Data

Program expenditures for senior-supporting programs are expected to grow materially in the coming years due to the growing senior population and increasing medical costs. Under the continuation of current retirement readiness trends (baseline scenario), federal expenditures on the elderly population within the selected programs are projected to grow to $201 billion by 2040. Modeling of benefits by income level shows that increasing the financial resources available to elderly households would significantly reduce expenditure growth within these programs.

[1] Notably, actual expenditures for Federal Fiscal Year 2020 included the initial six months of the COVID-19 pandemic, which resulted in significantly increased expenditures for many of these programs on an emergency basis. To avoid biasing long-term analysis, an "estimated FY 2020" expenditure was developed for this study by the recent annualized rate of growth for each program to actual expenditures for FY 2019.

Based on the modeled relationship between senior incomes and program expenditures, it is estimated that **achieving the recommended income replacement levels for new retirees by would reduce federal expenditures by an estimated $61 billion in 2040** (see Figure ES.6) **and by $990 billion over the 20-year period from 2021-2040** (see Figure ES. 7).

Figure ES.6: Annual Federal Program Expenditures by Scenario, 2021-2040 ($2020B)

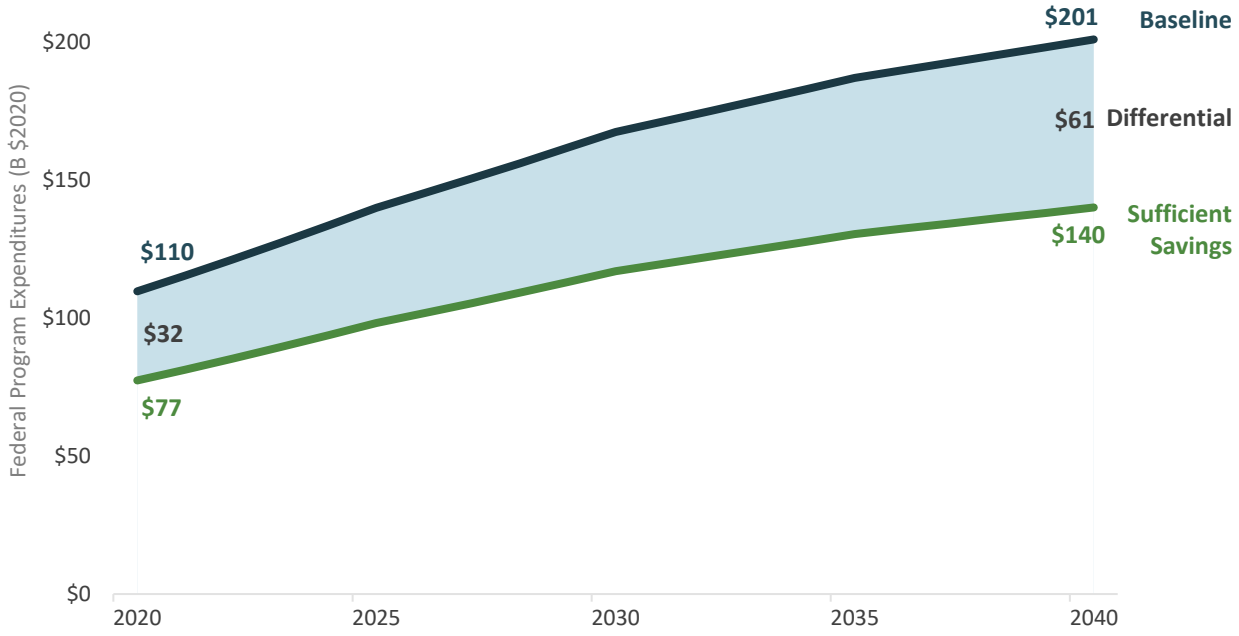
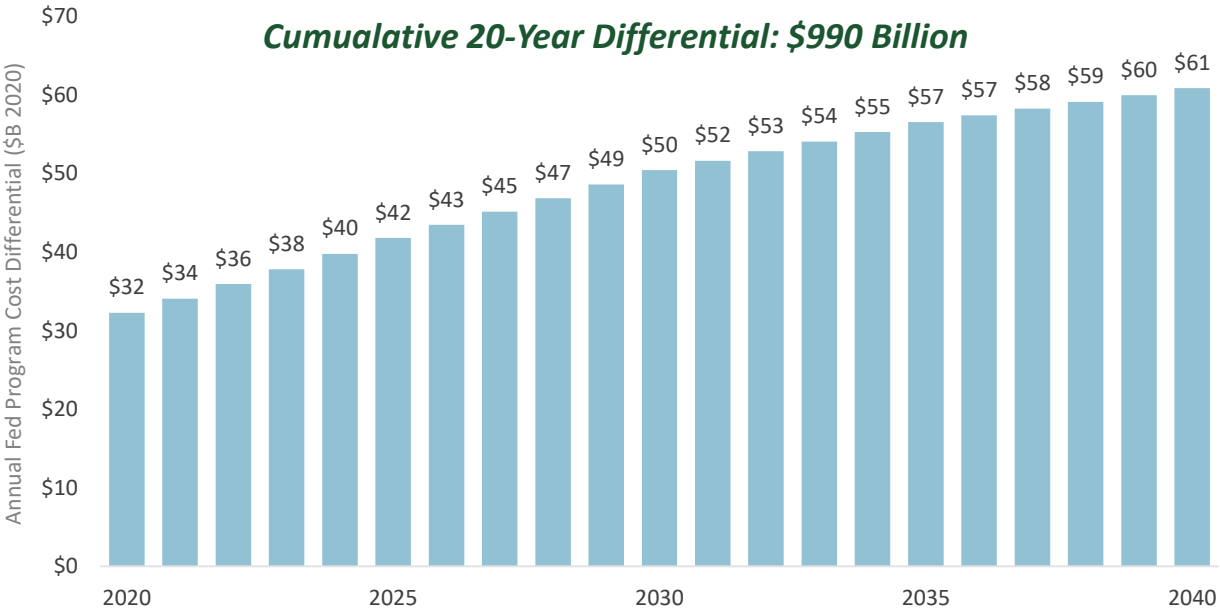


Figure ES.7: Net Federal Expenditure: Baseline and Sufficient Savings Scenarios, 2021-2040 ($2020B)



About Econsult Solutions, Inc.

Econsult Solutions, Inc. provides businesses and public policy makers with consulting services in urban economics, real estate, transportation, public infrastructure, public policy and finance, community and neighborhood development, planning, thought leadership, as well as expert witness services for litigation support. Our technical expertise ranges from big data analysis to GIS based spatial analytics, sophisticated benefit-cost analysis to pro forma based project feasibility analysis.

ESI's government and public policy practice combines rigorous analytical capabilities with a depth of experience to help evaluate and design effective public policies and to benchmark and recommend sound governance practices. ESI has assisted policy makers at multiple levels of government to design and evaluate programs that help citizens increase their economic security.

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1. Introduction: Insufficient Savings and the Cost of Doing Nothing

1.1. Retirement Readiness and Gaps in Access to Savings

A confluence of factors has led to an increased focus by federal and state policymakers on retirement readiness as a crucial economic and policy issue. As the US population ages, the elderly will represent an increasing share of the population and the economy. The changing population composition will lead to increasing benefit program costs to maintain consistent levels of service, and a diminished tax base of working age households relative to the number of elderly households.

Retirement readiness is also impacted by changes in the primary means through which households accumulate retirement savings. While Social Security provides a crucial base for most retiree households, it is not designed to enable elderly households to maintain their living standards in retirement. In recent years, there has been a substantial shift from "defined benefit" or pension-style plans that guarantee a certain level of annual retirement income to a "defined contribution" model, in which assets available in retirement will be a function of worker contributions and market returns. This evolution largely shifts the responsibility onto households to ensure their own retirement preparedness.

The primary means that many households in the workforce use to build retirement savings are "direct deduct" 401(k) and IRA plans operated by their employers, which dedicate a portion of each paycheck towards a tax favored savings account. While this is the dominant private sector savings model, a substantial share of US workers lack access to this type of program through their workplace. While workers have the option to open an account directly through a financial services provider, behavior data shows that they are far less likely to do so than if offered access through their employer. In addition, important disparities exist in access to these workplace accounts, with populations that have historically faced greater challenges in wealth building (such as minorities, workers at small businesses and workers in service occupations) less likely to enjoy access to a retirement savings vehicle through their workplace.

In response to these gaps, several states have authorized "state-facilitated" retirement programs aimed at ensuring universal or near-universal access to workplace retirement savings. Programs in Oregon, Illinois and California have been implemented and have been receiving contributions for multiple years, while programs in several other states are in the process of implementation, program design, or legislative consideration. While models differ by state, these programs generally require private sector employers to either offer a retirement savings plan directly, or to provide their employees with access to a state-facilitated plan, which generally offer after-tax (Roth) IRA accounts with a streamlined number of investment options. Where implemented, these plans have received substantial levels of participation and material contribution levels from participants.

The federal government has considered but not advanced similar proposals to achieve near-universal retirement savings access. However, recent federal legislation has enhanced the options available to savers. Several retirement savings provisions building on the 2019 SECURE Act were included in the December 2022 "Omnibus" government funding legislation. Most notable for low-income savers are a provision to enhance the Saver's tax credit through direct matching contributions into a savings account,

and changes to enable easier access to account withdrawals without penalties in the case of emergencies. These provisions have the potential to help financially fragile households participating in savings programs to build assets for retirement more effectively, and to better manage their financial assets when hit with unexpected costs.

This study considers the issue of retirement readiness through the lenses of demographic change, the implications for savers and retiree households, and government expenditures. The "cost of doing nothing" is a framework to understand the importance of this policy area by evaluating the potential negative consequences of the continuation of current trends. Insufficient access and savings can lead to inadequate income in retirement, which prevents elderly households from maintaining the standard of living that they enjoyed in their working years. It also means that the government absorbs increases in costs for certain benefit programs, at a time when the tax base is diminished by a decreasing share of working age households.

This framework has been implemented by Econsult Solutions, Inc. (ESI) in several states considering the implementation of state-facilitated retirement programs. This study extends the framework to a national level and considers the implications for federal program spending. National analysis is then segmented into state-level analysis of demographic and income trends, savings gaps, and state program spending impacts from insufficient savings.

1.2. Analytical Framework

As the elderly population grows, the financial capacity of households to maintain their living standards in their retirement years has implications for the quality of life enjoyed by elderly residents and the fiscal position of the federal government. This study quantifies the potential magnitude of retiree income savings shortfalls if current trends continue, defines the costs of these potential shortfalls in terms of federal program expenditures, and reviews the potential benefits to households of increased savings levels.

Demographic Change: Retirement Readiness of the Aging Population (Section 2)

The United States is undergoing a period of transition that will create durable changes in the composition of its population. The retirement of the outsized baby boomer cohort will create a significant increase in the number and share of elderly people and households. The increased elderly share is expected to endure for future generations due to long-term trends like increased longevity and reduced birth rates. This demographic shift will have significant impacts for the nation's fiscal position, increasing the number of elderly households for each working age household, which form the bulk of the tax base that supports federal benefit programs.

These demographic changes make it increasingly important for working age households to have the opportunity to build the resources they will need to maintain their quality of living in retirement. Retirement savings goals are typically defined by the ability of households to accrue the resources needed to maintain their standard of living in their retirement years. These targets are often quantified through an income replacement framework, where savings goals are targeted to achieve the availability of a portion of working age income levels (such as 75%) as savings are drawn down during retirement years.

Analysis in this report of income patterns over time shows that current retirees have fallen well short of recommended income replacement standards. Building from Census Bureau population projections and analysis of federal data sets on income patterns by age over time, this study develops two scenarios for population and income change for the nation's elderly residents from 2020-2040:

- A "baseline" scenario in which retirement savings levels remains consistent with current trends;
- A "sufficient savings" scenario in which current and future retiree households achieve recommended savings levels to maintain their standard of living.

The differential between income scenarios represents the anticipated annual income gap for vulnerable elderly households relative to recommended replacement levels if current trends continue without intervention.

Household Impacts from Insufficient Savings (Section 3)

This section considers the implications of retirement income gaps and the potential benefits of enhanced retirement readiness from the perspective of households, demonstrating impacts for representative savers on their financial stability and quality of life in retirement. Financial modeling is used to put the anticipated elderly income shortfalls under current trends in the context of savings behavior, with calculations of annual and monthly savings levels that a representative household would need to achieve recommended income levels under various financial and savings assumptions.

Short of reaching recommended income replacement levels, even modest levels of accumulated savings can provide a "buffer" to help vulnerable households manage their finances more effectively. New federal legislation provides greater flexibility in withdrawing emergency funds from retirement accounts without penalty, enabling households with savings to avoid unfavorable financial terms or trade-offs when dealing with unexpected expenses. Accumulated savings can also potentially help households to better manage their Social Security benefits, delaying the starting age to achieve a higher expected benefit level over their retirement years.

Government Expenditure Impacts from Insufficient Savings (Section 4)

Income gaps for vulnerable elderly households also contribute to the growing costs of federal benefit programs. The growth of the elderly population will by itself lead to increased demand for a variety of benefit programs that serve the elderly population. Many programs (most notably Medicaid) are means-tested for eligibility and/or benefit levels, meaning that holding all else equal, government expenditures would fall if the incomes of elderly Americans increased.

Building from current program data, this section undertakes analysis to estimate the differential in federal government expenditures on these programs between baseline and sufficient savings income scenarios. These calculations show the potential direct fiscal cost of the continuation of current trends in retirement insufficiency.

2. Demographic Change: Retirement Readiness of the Aging Population

Changing demographics increase the salience of retirement preparedness as an economic and policy issue. The continuation of existing savings trends will leave future retirees short of the recommended levels of income to maintain their living standards. This section analyzes population and income trends for the growing elderly cohort.

Projected Growth in the Elderly Population and Households (Section 2.1)

National population projections from the Census Bureau show that the nation's elderly (65+) population is expected to increase by 50% from 2020-2040. This rate of growth is nearly ten times as fast as the non-elderly population, which is projected to increase by only 5% over the same period. The composition of the senior population is also anticipated to change over this period, with the majority (55%) of elderly Americans expected to be 75 or older by 2040.

As the population changes, so too will the relative composition of elderly and non-elderly households. **There are projected to be 54 elderly households for every 100 working age households by 2040, up from 37 elderly households for each 100 working age household in 2020**. This compositional shift will create significant fiscal pressure, since working age households form the core of the federal tax base. The shift is also expected to endure beyond the initial wave of baby boomer retirements, with long-term trends like increased longevity and reduced birth rates cementing this new balance for future generations.

Income Scenarios: Retirement Readiness Gaps (Section 2.2)

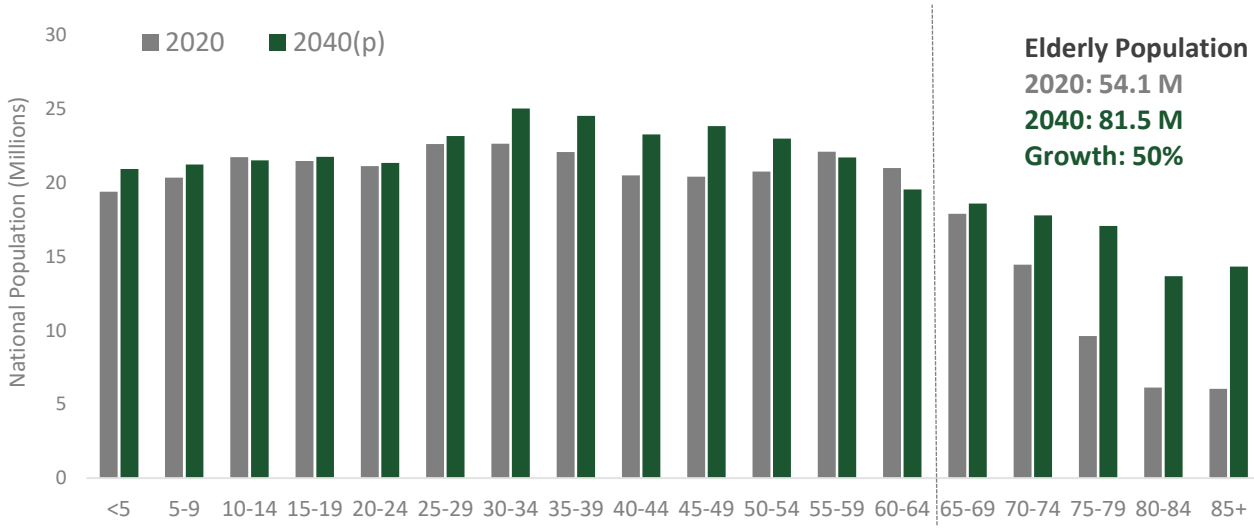
Analysis of income trends over time shows that the current elderly population has fallen short of recommended income replacement benchmarks for their retirement years. These income replacement levels are applied forward to the next generation of retirees and compared to a scenario in which future retirees achieve recommended savings levels. Under the continuation of current trends, 61% of elderly households are projected to have an annual income below $75,000 in 2040. **Among these vulnerable households, the average annual income shortfall relative to recommended replacement levels is projected to be $7,050 in 2040.**

2.1. Projected Growth in the Elderly Population and Households

The US population is undergoing a period of transition that will create durable changes in the balance between the elderly and non-elderly population.

Long-term forecasts from the Census Bureau and data from the 2020 decennial Census indicate a projected increase in the population from 330 million in 2020 to 372 million in 2040.[2] Fueled by the retirement of the baby boomer generation, **the elderly (65+) population is projected to grow by more than 27 million over this time period, from 54 million in 2020 to more than 81 million in 2040** (see Figure 2.1).

Figure 2.1: Projected Population by Age Group, 2020-2040



Source: ESI Analysis of 2020 Decennial Census & U.S. Census Bureau Long-Term Projections

The elderly population is anticipated to grow far more rapidly than the overall population over this two-decade period, creating a significant shift in the population composition. While total population growth is projected at 13%, the non-elderly (under 65) population is projected to grow by just 5% (increasing by 15 million from 276 million in 2020 to 291 million in 2040). Concurrently, **the elderly population is projected to increase by 50%, about ten times as fast as the non-elderly rate of growth**, and accounting for nearly two-thirds of the total population increase. As a result, **elderly Americans are projected to account for 22% of the population in 2040, up from 16% in 2020** (see Figure 2.2).

[2] US Census Bureau Population Projections are drawn from the 2017 National Population Projections data series, which provides national projections by age cohort through 2060. These projections are updated by utilizing 2020 decennial Census population figures to replace 2020 projections, and then applying the projected "progression rate" of each cohort as it ages in 5-year increments to this updated base. See Appendix A.1 for a complete description of the population projection methodology utilized in this analysis.

Figure 2.2: Projected Population Growth – Elderly and non-Elderly

Metric	<65 Population	65+ Population	Total Population
2020 Population (M)	276.2	54.1	330.4
2040 Projected Population (M)	290.9	81.5	372.4
Projected Population Growth (M)	14.7	27.3	42.0
Projected Population Growth (%)	5%	50%	13%
2020 Share of Population (%)	84%	16%	
2040 Share of Population (%)	78%	22%	

Source: ESI Analysis of 2020 Decennial Census & U.S. Census Bureau Long-Term Projections

The acceleration of the elderly population is due to the aging of the baby boomer generation, which began to reach 65 in 2011 and will continue to do so through 2029 (based on the birth years 1946-1964). Long-term factors dictate that the compositional shift and increasing elderly share of the population will be maintained beyond this initial generational wave. Increased longevity, lower birth rates and later child-bearing ages are slowing the rate of generational replacement. By 2060, when the millennial generation will have reached retirement age in full, the elderly population is projected to continue to grow to 93 million, representing 23% of the US population.

These structural changes and the aging of the baby boomer generation will change not just the size but also the composition of the elderly population. As of 2020, just 40% of the elderly population is 75 years of age or older and just 11% is 85 years or older. **Between 2020 and 2040, both the 75+ and 85+ cohorts are expected to more than double in size**, **and the majority (55%) of the elderly population is projected to be 75 or older in 2040** (see Figure 2.3).

Figure 2.3: Projected Age Distribution Among the Elderly Population, 2020-2040

Metric	2020	2040 (p)	Growth 2020-2040 (p)
Total Elderly Population (M)	54.1	81.5	50%
Population 75+ (M)	21.8	45.1	107%
Elderly Population Share 75+ (%)	40%	55%	
Population 85+ (M)	6.0	14.3	137%
Elderly Population Share 85+ (%)	11%	18%	

Source: ESI Analysis of 2020 Decennial Census & U.S. Census Bureau Long-Term Projections

Elderly Household Growth

Similar patterns can be seen in the projected trends for households, which are the base unit of analysis for income and program expenditure trends in this report.

Population projections are translated to household projections by assuming a consistent headship rate (effectively the average household size) for each age cohort going forward.[3] Average household sizes for elderly cohorts are far lower than for younger cohorts, due to lower rates of children in household and higher rates of widowers among the elderly. This dynamic means that the elderly Americans represent a larger share of total households than of the total population. Growth in elderly households is also expected to exceed elderly population growth due to the shift aging effects within the elderly population shown in Figure 2.3 above.

As of 2020 there were an estimated 35 million elderly households, accounting for 27% of the total of more than 128 million. From 2020 to 2040, non-elderly households are projected to grow by just 6%, while elderly households are projected to increase by 53% from 35 million to 53 million. As a result, **elderly Americans are projected to account for 35% of households in 2040, up from 27% in 2020** (see Figure 2.4).

Figure 2.4: Projected Household Growth – Elderly and non-Elderly

Metric	<65 Households	65+ Households	Total Households
2020 Households (M)	93.5	34.9	128.5
2040 Projected Households (M)	99.5	53.3	152.9
Projected Household Growth (M)	6.0	18.4	24.4
Projected Household Growth (%)	6%	53%	19%
2020 Share of Households (%)	73%	27%	
2040 Share of Households (%)	65%	35%	

Source: ESI Analysis of 2020 Decennial Census, U.S. Census Bureau Long-Term Projections & Current Population Survey

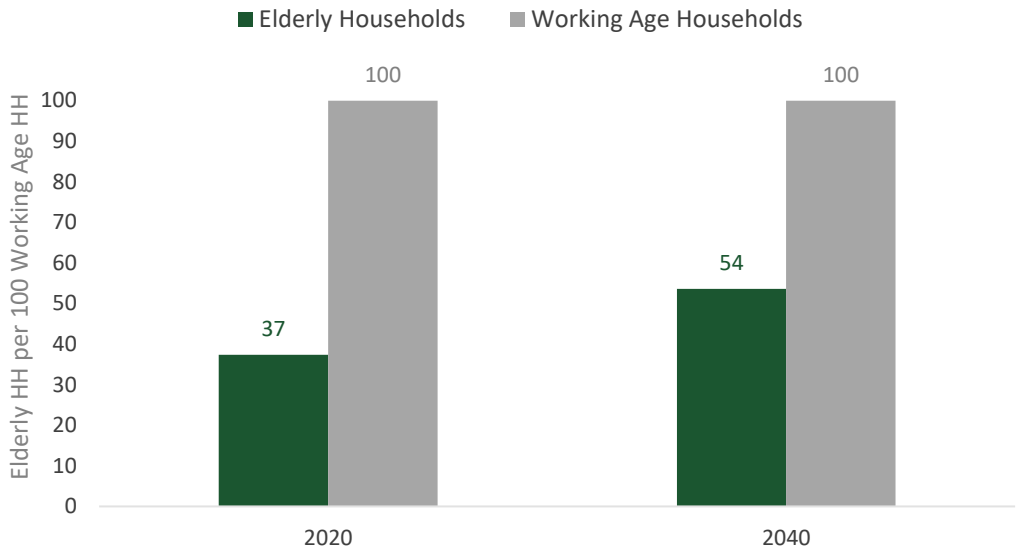
The ratio between elderly and non-elderly (or "working age") households is a crucial indicator of fiscal health for a nation or smaller jurisdiction. Government benefit programs typically involve a degree of intergenerational transfer, with working age households comprising a disproportionate share of the tax base, and elderly households receiving a disproportionate share of the benefits. Changes in the balance between these two groups necessitate future changes to the levels of taxation and benefits associated with these intergenerational transfers.

Elderly residents are expected to represent 27% of households in 2020 and 35% of households in 2040, while working age households are projected to fall in share from 73% in 2020 to 65% in 2040. This creates a significant increase in the "**dependency ratio**," which represents the number of elderly

[3] Headship rates are derived from analysis of Current Population Survey (CPS) data on householders by age. See Appendix A.1 for a complete description of the population and household projection methodology utilized in this analysis.

households for each working age household within the population. **In 2020, there were 37 elderly households for every 100 working age households. By 2040, that number is projected to grow to 54 elderly households for every 100 working age households. This information can otherwise be expressed as a dependency ratio of 0.37 in 2020 and a projected dependency ratio of 0.54 in 2040.**

Figure 2.5: Projected Dependency Ratio - Elderly Households per 100 Working-Age Households



Source: ESI Analysis of 2020 Decennial Census, U.S. Census Bureau Long-Term Projections & Current Population Survey

State Level Analysis

A similar demographic analysis was performed for all 50 states as well as Washington D.C., yielding projections of the elderly and non-elderly population and households from 2020-2040.[4] Figure 2.6 below shows the projected change in elderly and non-elderly households for each state over the 2020-2040 period, while Figure 2.7 shows the change in the dependency ratio of elderly to working age households over the same period by state.

[4] A detailed methodology for state level demographic projections can be found in Appendix A.3

Figure 2.6: Elderly and Non-Elderly Household Populations for 2020 and 2040

	Non-Elderly Households (<65)			Elderly Households (65+)		
State	**<65 HH 2020**	**<65 HH 2040**	**% Chg**	**Elderly HH 2020**	**Elderly HH 2040**	**% Chg**
National	**93,524,000**	**99,544,500**	**6%**	**34,927,000**	**53,348,900**	**53%**
Alabama	1,401,300	1,357,500	-3%	557,500	776,400	39%
Alaska	206,100	209,500	2%	59,500	92,900	56%
Arizona	1,942,000	2,241,900	15%	826,600	1,546,600	87%
Arkansas	825,400	840,700	2%	333,300	471,600	41%
California	11,392,100	11,871,800	4%	3,735,100	5,891,200	58%
Colorado	1,680,700	2,067,100	23%	542,100	948,600	75%
Connecticut	1,029,100	937,000	-9%	408,600	571,400	40%
Delaware	274,500	293,400	7%	123,600	192,000	55%
Florida	5,984,700	7,335,900	23%	2,879,300	4,957,200	72%
Georgia	3,046,900	3,321,600	9%	980,600	1,658,500	69%
Hawaii	392,300	407,500	4%	177,200	263,400	49%
Idaho	497,600	588,500	18%	191,900	330,900	72%
Illinois	3,651,700	3,257,900	-11%	1,324,800	1,764,300	33%
Indiana	1,884,400	1,883,200	0%	699,000	985,500	41%
Iowa	866,100	899,800	4%	356,600	498,400	40%
Kansas	791,300	777,900	-2%	307,100	427,400	39%
Kentucky	1,260,200	1,262,100	0%	484,100	680,800	41%
Louisiana	1,302,600	1,334,000	2%	476,900	635,800	33%
Maine	387,600	361,800	-7%	185,100	263,500	42%
Maryland	1,776,900	1,828,300	3%	627,500	928,400	48%
Massachusetts	2,033,800	2,123,200	4%	762,400	1,122,700	47%
Michigan	2,826,100	2,644,400	-6%	1,142,700	1,553,300	36%
Minnesota	1,609,100	1,710,100	6%	596,600	929,200	56%
Mississippi	815,400	761,000	-7%	310,900	428,100	38%
Missouri	1,713,200	1,671,800	-2%	681,000	946,900	39%
Montana	296,000	343,000	16%	133,700	194,500	45%
Nebraska	530,000	579,700	9%	201,800	292,900	45%
Nevada	891,100	1,043,500	17%	320,100	656,900	105%
New Hampshire	400,900	378,600	-6%	165,200	261,400	58%
New Jersey	2,681,200	2,573,000	-4%	985,100	1,385,300	41%
New Mexico	573,200	552,900	-4%	244,300	366,000	50%
New York	5,819,800	5,634,600	-3%	2,195,900	2,857,300	30%
North Carolina	2,922,300	3,191,500	9%	1,114,500	1,822,300	64%
North Dakota	204,400	294,500	44%	78,300	120,600	54%
Ohio	3,303,300	3,153,600	-5%	1,320,800	1,759,100	33%
Oklahoma	1,081,500	1,165,800	8%	405,800	570,500	41%
Oregon	1,207,400	1,403,800	16%	492,000	761,900	55%
Pennsylvania	3,665,900	3,447,200	-6%	1,555,600	2,071,600	33%
Rhode Island	313,100	315,800	1%	124,600	172,600	39%
South Carolina	1,415,400	1,620,300	14%	597,200	938,000	57%
South Dakota	237,100	272,600	15%	97,200	149,200	53%
Tennessee	1,954,200	2,097,900	7%	739,800	1,120,800	52%
Texas	8,201,800	10,392,700	27%	2,392,700	4,349,200	82%
Utah	867,600	1,115,300	29%	239,000	460,000	92%
Vermont	179,700	167,300	-7%	82,700	117,700	42%
Virginia	2,442,200	2,604,900	7%	878,200	1,348,000	53%
Washington	2,216,800	2,691,600	21%	779,400	1,291,400	66%
West Virginia	497,300	448,900	-10%	234,800	282,200	20%
Wisconsin	1,654,400	1,596,800	-3%	659,800	975,400	48%
Wyoming	158,500	162,000	2%	64,000	90,700	42%
Washington D.C.	212,900	308,700	45%	54,400	68,700	26%

Figure 2.7: Dependency Ratio (Elderly Households: Non-Elderly Households) by State, 2020-2040

State	Dependency Ratio 2020	Dependency Ratio 2020	% Chg
National	**0.37**	**0.54**	**46%**
Alabama	0.40	0.57	44%
Alaska	0.29	0.44	54%
Arizona	0.43	0.69	62%
Arkansas	0.40	0.56	39%
California	0.33	0.50	51%
Colorado	0.32	0.46	42%
Connecticut	0.40	0.61	54%
Delaware	0.45	0.65	45%
Florida	0.48	0.68	40%
Georgia	0.32	0.50	55%
Hawaii	0.45	0.65	43%
Idaho	0.39	0.56	46%
Illinois	0.36	0.54	49%
Indiana	0.37	0.52	41%
Iowa	0.41	0.55	35%
Kansas	0.39	0.55	42%
Kentucky	0.38	0.54	40%
Louisiana	0.37	0.48	30%
Maine	0.48	0.73	52%
Maryland	0.35	0.51	44%
Massachusetts	0.37	0.53	41%
Michigan	0.40	0.59	45%
Minnesota	0.37	0.54	47%
Mississippi	0.38	0.56	48%
Missouri	0.40	0.57	42%
Montana	0.45	0.57	26%
Nebraska	0.38	0.51	33%
Nevada	0.36	0.63	75%
New Hampshire	0.41	0.69	67%
New Jersey	0.37	0.54	47%
New Mexico	0.43	0.66	55%
New York	0.38	0.51	34%
North Carolina	0.38	0.57	50%
North Dakota	0.38	0.41	7%
Ohio	0.40	0.56	40%
Oklahoma	0.38	0.49	30%
Oregon	0.41	0.54	33%
Pennsylvania	0.42	0.60	42%
Rhode Island	0.40	0.55	37%
South Carolina	0.42	0.58	37%
South Dakota	0.41	0.55	33%
Tennessee	0.38	0.53	41%
Texas	0.29	0.42	43%
Utah	0.28	0.41	50%
Vermont	0.46	0.70	53%
Virginia	0.36	0.52	44%
Washington	0.35	0.48	36%
West Virginia	0.47	0.63	33%
Wisconsin	0.40	0.61	53%
Wyoming	0.40	0.56	39%
Washington D.C.	0.26	0.22	-13%

2.2. Retirement Income Gaps

With the increasing number and share of elderly households, the retirement readiness and income available to the elderly becomes an increasingly important economic and policy concern.

Data on the household incomes for the elderly (65+) population is drawn from the Current Population Survey, which compiles a variety of potential income types (including investment income and Social Security) and is the source of the nation's official poverty statistics. Households are divided into "income bands" (which start in increments of $10,000 and grow larger as incomes grow) for the purpose of analysis and data visualization.

As of 2020, the median elderly household income was around $52,000 per year, with 48% of elderly households (17 million) with incomes below $50,000. **Nearly two-thirds (65%) of elderly households (23 million) have a household income below $75,000** (see Figure 2.8). This group is defined as potentially "vulnerable households" for the purpose of this study, and the income, savings, and government expenditure analysis that follows focuses on elderly households with less than $75,000 in annual income.

Figure 2.8: Income Distribution of Elderly Households, 2020

HH Income Band ($000s)	Share of Households (%)	Cumulative Share of HH (%)	Households (M)	Cumulative Households (M)
<$10	4.8%	5%	1.66	1.7
$10-$20	11.8%	17%	4.11	5.8
$20-$30	12.0%	28%	4.18	9.9
$30-$40	10.9%	39%	3.80	13.7
$40-$50	9.0%	48%	3.14	16.9
$50-$60	7.8%	56%	2.73	19.6
$60-$75	9.1%	**65%**	3.17	**22.8**
$75-$100	10.9%	76%	3.82	26.6
$100-$150	11.9%	88%	4.15	30.8
$150-$250	8.3%	96%	2.89	33.6
>$250	3.7%	100%	1.28	34.9

Source: ESI Analysis of Current Population Survey (CPS) Data and Census 2020

Insufficient Retirement Income

Financial planners and retirement experts typically define targets for financial security in retirement years based on the maintenance of the basic living standards enjoyed by households during their working years. This concept can be translated to an "income replacement" target, which is set as a percentage of working-age income, and therefore will vary by household. This analysis develops two scenarios for income replacement levels for the purpose of quantifying the degree to which current and future elderly residents fall short of recommended retirement income targets:

1. A "baseline" scenario in which savings behavior remains consistent with current levels
2. A "sufficient savings" scenario in which current and future retiree households achieve recommended savings levels to maintain their standard of living.[5]

Using longitudinal analysis of income patterns, income distributions are developed for elderly households under baseline and sufficient savings scenarios in 2020 and 2040.[6] The baseline scenario is estimated by applying the observed replacement rates of the current generation of elderly Americans to extrapolate incomes for the nation's elderly residents as of 2040. The sufficient savings scenario is defined with an income replacement target of 75% (consistent with established industry benchmarks), with adjustments at the low and high end of the income distribution.[7]

The differential between these scenarios represents the gap between the income levels that retirees are anticipated to achieve under the current trends, and the typically recommended income replacement levels. In other words, it illustrates the expected shortfall in elderly incomes due to insufficient retirement savings. Comparing these scenarios for 2020, households below $75,000 faced an average annual income shortfall of $6,740 relative to recommended savings levels.

Under the continuation of current trends (baseline scenario), 61% of elderly households are projected to have an annual income below $75,000 in 2040. **Among these vulnerable households, the average annual income shortfall is projected to be $7,050 in 2040** (see Figure 2.9)**.**[8]

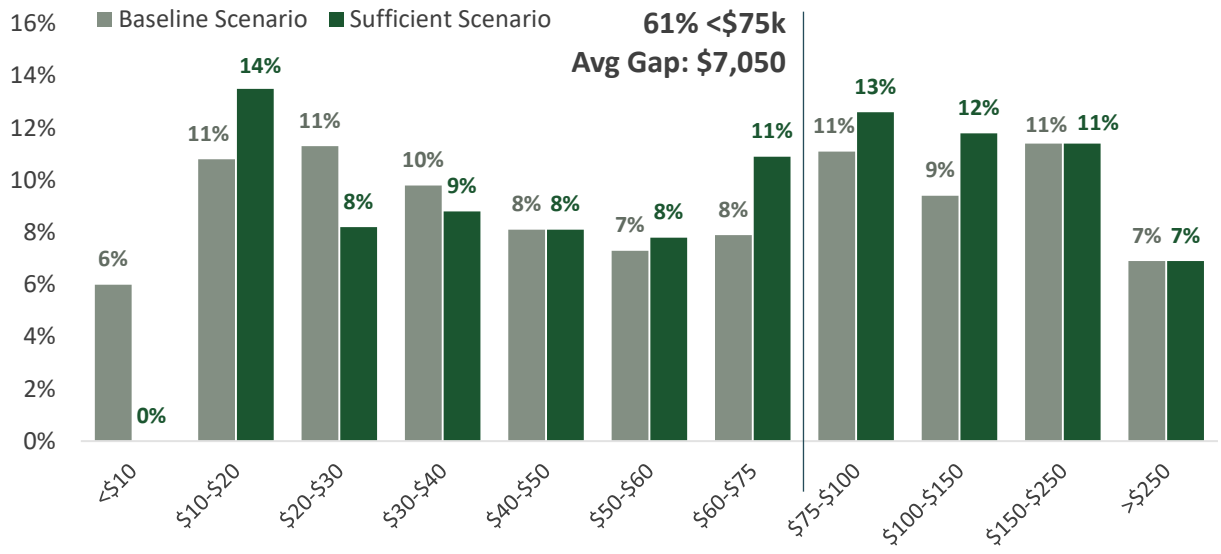
[5] Note that this report does not assume or evaluate any policy intervention or the level of additional retirement savings that it would generate. This scenario should be understood as a benchmark, rather than a projection associated with any specific policy approach.

[6] This replacement rate framework should be understood as a mathematical benchmark for the purpose of quantifying the magnitude of savings shortfalls and their impacts. ESI does not represent this benchmark as the ideal level of savings for any given household from a financial planning perspective.

[7] Adjustments are made in this scenario to apply an "income floor" by defining the Federal Poverty Level (FPL) as the minimum household income level, and an "income ceiling" by considering all households with more than $75,000 in annual retirement income to have achieved "sufficient savings" regardless of their exact income replacement level. These adjustments are discussed further in Appendix A.1.

[8] Note that all financial calculations through this report are expressed in $2020 for the purpose of appropriate comparison. Projected increases in savings gaps and government expenditures therefore represent "real growth," rather than growth driven purely by inflation. Appendix A.1 provides further information on the methodology used to develop these scenarios.

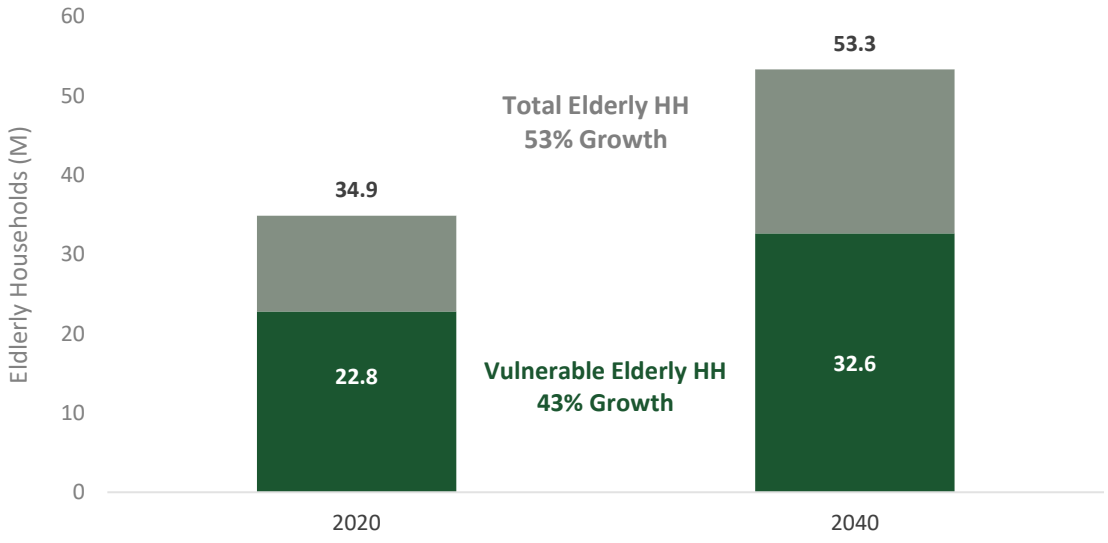
Figure 2.9: Projected Income Distribution of Elderly Households by Scenario – 2040 (in $2020)



Source: ESI Analysis of Current Population Survey (CPS) Data

The increasing elderly population and continuation of current income replacement trends would lead to a significant increase in the number of potentially vulnerable elderly households (those with annual incomes below $75,000). **Under current trends, the number of vulnerable elderly households is projected to grow by nearly 10 million from 22.8 million in 2020 to 32.6 million in 2040, an increase of 43%** (see Figure 2.10).

Figure 2.10: Projected Increase in Vulnerable Elderly Households, 2020-2040



Source: ESI Analysis of 2020 Decennial Census, U.S. Census Bureau Long-Term Projections & Current Population Survey

State Level Retirement Income Gaps

Income gaps were also calculated for each state, using CPS income data and a parallel approach to defining baseline and sufficient income scenarios.[9] An additional step is implemented to account for cross-state migration of near-retiree and elderly households and its impact on the income comparison of age cohorts within a state as they age.

Figure 2.11 below shows the projected income gap by state for elderly households in 2040.[10]

[9] A detailed methodology can be found in Appendix A.3

[10] A table of estimated elderly income gaps by state in 2020 can be found in Appendix A.3

Figure 2.11: Elderly Households and Income Gaps by State (Projected 2040)

State	Projected Elderly HH 2040	Elderly HH <$75,000	Share of Elderly HH <$75,000	Among HH <$75,000 Avg Income Elderly HH	Among HH <$75,000 Savings Gap Elderly HH
Alabama	776,400	548,900	71%	$29,430	$8,560
Alaska	92,900	46,800	50%	$36,310	$3,840
Arizona	1,546,600	955,800	62%	$34,340	$5,140
Arkansas	471,600	340,900	72%	$33,090	$5,860
California	5,891,200	3,340,300	57%	$34,550	$6,850
Colorado	948,600	510,300	54%	$37,940	$4,340
Connecticut	571,400	283,400	50%	$37,180	$5,480
Delaware	192,000	115,200	60%	$38,600	$5,020
Florida	4,957,200	3,480,000	70%	$33,270	$7,160
Georgia	1,658,500	1,126,100	68%	$32,340	$8,520
Hawaii	263,400	119,800	46%	$37,180	$3,340
Idaho	330,900	220,700	67%	$36,360	$6,900
Illinois	1,764,300	1,060,300	60%	$35,750	$9,700
Indiana	985,500	639,600	65%	$36,010	$6,880
Iowa	498,400	290,100	58%	$38,750	$4,020
Kansas	427,400	277,400	65%	$36,040	$8,440
Kentucky	680,800	505,800	74%	$31,340	$10,140
Louisiana	635,800	466,000	73%	$30,110	$9,220
Maine	263,500	167,100	63%	$35,060	$5,870
Maryland	928,400	426,100	46%	$34,880	$6,760
Massachusetts	1,122,700	591,700	53%	$34,920	$10,820
Michigan	1,553,300	1,070,200	69%	$35,080	$9,030
Minnesota	929,200	507,300	55%	$38,380	$7,290
Mississippi	428,100	342,900	80%	$28,460	$9,270
Missouri	946,900	601,300	64%	$34,620	$6,880
Montana	194,500	122,300	63%	$37,370	$2,540
Nebraska	292,900	175,100	60%	$38,590	$7,350
Nevada	656,900	435,500	66%	$34,730	$5,590
New Hampshire	261,400	125,200	48%	$42,250	$3,840
New Jersey	1,385,300	749,500	54%	$33,960	$11,230
New Mexico	366,000	250,700	69%	$33,630	$3,860
New York	2,857,300	1,691,500	59%	$33,800	$7,770
North Carolina	1,822,300	1,273,800	70%	$33,400	$8,540
North Dakota	120,600	69,600	58%	$37,210	$5,820
Ohio	1,759,100	1,187,400	68%	$34,460	$9,200
Oklahoma	570,500	397,600	70%	$34,370	$6,470
Oregon	761,900	427,400	56%	$36,830	$2,790
Pennsylvania	2,071,600	1,240,900	60%	$36,420	$6,950
Rhode Island	172,600	103,400	60%	$34,080	$9,090
South Carolina	938,000	654,800	70%	$33,800	$4,790
South Dakota	149,200	91,900	62%	$35,860	$7,040
Tennessee	1,120,800	742,000	66%	$34,580	$5,180
Texas	4,349,200	2,679,100	62%	$34,440	$6,120
Utah	460,000	230,400	50%	$40,510	$2,980
Vermont	117,700	66,900	57%	$37,440	$4,540
Virginia	1,348,000	733,300	54%	$34,350	$7,790
Washington	1,291,400	684,500	53%	$37,660	$4,810
West Virginia	282,200	210,800	75%	$33,240	$5,020
Wisconsin	975,400	640,800	66%	$38,010	$9,100
Wyoming	90,700	57,500	63%	$38,260	$3,860
Washington D.C.	68,700	36,400	53%	$25,970	$9,350

3. Household Impacts from Insufficient Savings

As demographic changes make retirement readiness an increasingly important national issue, policymakers are considering levers to encourage greater savings participation and accumulation. This section considers the implications of retirement income gaps and the potential benefits of enhanced retirement readiness from the perspective of households, demonstrating impacts for representative savers on their financial stability and quality of life in retirement.

Retirement Savings Access and Readiness Gaps (Section 3.1)

Workers have been asked to take greater responsibility for their retirement readiness through the predominance of defined contribution accounts. However, many private sector workers lack access to a retirement savings vehicle through their workplace, and access gaps are larger among groups like minorities, part-time workers, employees at small businesses, and workers in the service sector. State-facilitated automated savings programs have shown early promise in closing access gaps among private sector workers, helping to generate meaningful levels of savings and reaching underrepresented populations.

Financial modeling is used to put in context the relationship between the anticipated income gaps estimated in Section 2 and the savings levels observed in automated savings programs. The estimated "income gap" between anticipated and targeted retiree income is translated to the level of annual savings that a representative household would need to achieve recommended income levels under various financial assumptions. Under mid-point assumptions, this analysis indicates that the average household with less than $75,000 in income would need to contribute approximately **$140 per month, or $1,685 annually, over a thirty-year period to close the average annual retirement income gap of around $7,050**. Additional modeling shows the potential impact of the enhanced Saver's Credit and the importance of early savings in helping households to achieve income targets and maintain their established standard of living.

Financial Management Benefits for Vulnerable Households (Section 3.2)

Even with enhanced access and incentives, not all savers will be able to accumulate savings levels to achieve income targets. However, **even modest levels of accumulated saving can help vulnerable households to manage their finances more effectively, improving financial outcomes and their quality of life**. New federal legislation provides greater flexibility in withdrawing emergency funds from retirement accounts without penalty, enabling households to use retirement savings accounts more effectively as a "buffer" to help them avoid unfavorable financial terms or trade-offs when they have unexpected expenses. In addition, accumulated savings can help households better manage their Social Security, potentially delaying the starting age of their benefits in order to achieve a higher expected benefit level.

3.1. Retirement Savings Access and Readiness Gaps

With the decades long transition from defined benefit to defined contribution plans as the dominant private sector retirement savings model, workers are increasingly asked to take greater responsibility for ensuring their own retirement readiness. Private sector savings are meant as a supplement to Social Security, which by itself is not sufficient for households to maintain their standard of living in retirement, replacing around 40% of working-age income for a "medium" earner, according to a recent Social Security Administration study.[11]

However, many private sector workers that bear this responsibility lack access to a retirement savings vehicle through their workplace. While government data sources vary on the exact extend of the gap in private sector access to retirement savings through the workplace, sources agree that a substantial portion of private sector workers lack access to coverage, and that these access gaps are correlated with wealth disparities among groups and sectors.

Based on analysis published by AARP in July 2022:[12]

- **57 million private sector workers (48% of the private sector workforce) lack access to a retirement savings plan through the workplace.**
- Coverage gaps for Hispanic (63%) and Black (53%) workers are significantly higher than the gaps for Asian (45%) and White (41%) workers.
- Access rates decrease with employer size, with 78% of workers at businesses under 10 employees and 64% at businesses between 10-24 employees lacking access compared to 34% among businesses with 1,000 or more employees, while workers at the smallest businesses are the least likely to have workplace access.
- Access also increases significantly with higher levels of education and higher levels of earnings.

Similar analysis by the Harkin Institute at Drake University relying primarily on a different data source (the Bureau of Labor Statistics 2021 National Compensation Survey) finds similar disparities in access by race and employer size. [13]

- In addition, this analysis shows that access is also far lower among part-time workers than among full-time workers.
- Access also varies by industry, with the lowest rates in the service sector and construction and maintenance occupations, and the highest rates in management and professional occupations.

[11] AARP Questions and Answers: How much of my income will Social Security replace? Based on analysis from:

Social Security Administration Actuarial Note. Replacement Rates for Hypothetical Retired Workers. (2022)

[12] David John, Gary Koenig and Marissa Malta for AARP Public Policy Institute. Payroll Deduction Retirement Programs Build Economic Security. (2022). AARP analysis is based on a method developed by John Sabelhaus of the Wharton Pension Research Center to blend major data sets (including the Current Population Survey, IRS Statistics of Income, and Survey of Consumer Finances) in order to capitalize on the strengths of each data set. See: John Sabelhaus, Wharton Pension Research Center. The Current State of U.S. Workplace Retirement Plan Coverage. (2022)

[13] Rayna Stoyacheva, Harkin Institute at Drake University. Closing the Retirement Savings Gap: An Update on State Initiatives. (2022)

AARP's research found a small gender gap in access between women (49% without access) and men (46%), which may be associated with greater rates of part-time work among women. Other research does not identify a direct gender gap in workplace access to retirement savings. However, gender disparities in wealth building and retirement readiness persist, tied to the persistence of the gender pay gap.[14] These disparities are exacerbated by the greater longevity of women, which implies that women require greater rather than lesser accumulated savings to maintain their standard of living in retirement.

Broadly, access gaps align with well-established gaps between demographic groups in generational wealth and retirement readiness.

State-Facilitated Automated Savings Programs

In the absence of successful federal legislation to materially close access gaps, several states have pursued policy models designed to increase access and savings among private sector workers.

States have considered, studied, and implemented a range of approaches to increase retirement savings access. The most common approach has been an "automated savings programs" model. This framework requires some or all employers to either offer their employees retirement savings access directly through a financial provider, or to enable their employees to participate in a "state-facilitated" savings program. These programs generally offer after-tax (Roth) IRA accounts with a streamlined set of investment options, and often include features like auto-enrollment and auto-escalation (with opt-outs) to encourage participation and savings. 11 states have passed some form of an automated savings programs model as of early 2023:[15]

- Programs have been implemented and running for multiple years in Oregon (launched 2017), Illinois (launched 2018) and California (launched 2019).
- Programs have been recently launched in Maryland, Connecticut, Colorado, and Virginia.
- Legislation has been passed and implementation is in the planning phase in New Jersey, Maine, New York, and Delaware.

Additional models passed or under consideration in other states include voluntary IRAs, multiple employer plans, and retirement marketplaces.

Early evidence from the active programs in Oregon, Illinois and California shows that these plans have received substantial levels of participation and material contribution levels from participants in their initial years. Average contributions levels to date in each of these states exceed 5% of participant income. Program data from December 2022 indicates that **contribution levels range from around $130 to $170 per month, an annualized amount of around $1,500 to $2,000** (see Figure 3.1).

[14] See for example: National Institute on Retirement Savings (NIRS). Still Shortchanged: An Update on Women's Retirement Preparedness. (2020).

Department of Labor Advisory Council on Employee Welfare and Pension Benefit Plans. Gaps in Retirement Savings Based on Race, Ethnicity and Gender. (2021)

[15] See: Center for Retirement Research at Boston College. Closing the Coverage Gap: State Initiatives.

Figure 3.1: Annual Savings Levels under Existing State Programs

Metric	OregonSaves	Illinois Secure Choice	CalSavers
Funded Accounts	115,900	116,200	396,000
Total Assets ($M)	$168.7 M	$98.5 M	$373.0 M
Average Contribution Rate (% of income)	6.0%	5.5%	5.1%
Average Monthly Contribution	**$157**	**$131**	**$169**
Average Annualized Contribution	**$1,880**	**$1,570**	**$2,030**

Source: Program Data as of December 2022, via Georgetown Center for Retirement Initiatives

Research indicates that the participating population for these programs is helping to close the demographic and industry disparities in savings access.

Notably, these state-facilitated automated savings programs contain "auto-escalation" features, which increase the contribution as a share of earnings from the initial default level of 5% to higher levels in future years (with the option for savers to opt-out or choose a different percentage). This feature is likely to increase contribution levels for savers gradually over time, enhancing the ability of the programs to help typical savers generate the level of assets needed to address shortfalls in retirement adequacy.

Many of those participating in the Illinois Secure Choice retirement savings program for private sector workers expressed positive views of the program in a survey conducted for The Pew Charitable Trusts.[16] Among participants in the program, 38% say that Illinois Secure Choice has made them feel more financially secure. And workers appear to be happy with the program. Nearly all participants—about 96%—said they were satisfied or neutral with their program experience, and nearly two-thirds (62%) reported that they were either very or somewhat satisfied. Pew research examining employer attitudes about a similar program in Oregon, known as OregonSaves, found that 73% of participating businesses were satisfied or had a neutral experience.[17] Combined, these results suggest that satisfaction is strong for businesses and employees participating in automated savings programs.

[16] The Pew Charitable Trusts, 2022, "Many in Illinois Retirement Savings Program Feel Their Financial Security Is Improving,"

[17] The Pew Charitable Trusts, 2021, "OregonSaves Auto-IRA Program Works for Employers."

Financial Modeling: Savings Levels Needed to Address the Income Gap

Achieving the observed contribution levels from automated savings programs states on a national basis would significantly narrow the anticipated retirement income gaps estimated in this report, helping future retirees to maintain the quality of life they enjoyed during their working years.

Simple financial modeling can be used translate the income gap between baseline and sufficient savings levels (defined in Section 2) into a "savings gap" by estimating the level of incremental annual savings needed to make this additional income available under standard financial assumptions. These assumptions can then be modified to benchmark results under different conditions or isolate the impact of certain policy aspects or financial strategies that low-income households may be able to employ to build retirement assets. Four key variables are used to estimate the ongoing stream of savings necessary to support a given level of retirement income:

- Savings Period: The number of years of savings is a crucial input to wealth accumulation, both because longer tenures generate greater account contribution levels and because the power of compounding returns are applied over a greater number of years. This analysis assumes regular contributions (in real terms) over a savings period of 25-35 years.
- Annual Return: Market returns over the savings period drive the accumulation of savings. While returns for any period are variable, long-term market averages can be used to define expectations over the savings period. This analysis assumes a real rate of return (net of inflation and fees) of 4-6% per year.
- Annuity / Drawdown Rate: A "lump sum" asset amount at retirement can be converted to an annual income stream via either a financial product such as a lifetime annuity, or through management of annual withdrawals. This analysis assumes an annual payout rate of 5-7% of the lump sum amount at retirement.
- Saver's Credit Contributions: Federal legislation passed in December 2022 enables qualifying low-income households to receive a direct 50% matching contribution (up to $1,000) into their savings accounts starting in 2026. This analysis models employee contributions with and without these matching contributions.[18]

These inputs are combined in a compounding growth calculation to determine the annual level of savings that would yield the targeted lump sum amount to close the average estimated income gap in 2040 for elderly households with less than $75,000 in income. Based on the mid-point of the assumed range for each financial input, addressing the projected income gap of around $7,050 requires a lump sum savings of around $117,500 available at retirement. Over a 30-year time horizon at standard market returns, achieving this level of assets requires **an annual savings level of $1,685, or about $140 per month**. **With access to Saver's Credit matching contributions, the annual savings required falls to $1,120, or about $95 per month** (see Figure 3.2).

[18] A more complete discussion of the enhanced Saver's Credit and its potential impacts for low-income households is undertaken below.

Figure 3.2: Savings Needed to Close the Retirement Income Gap for HH <$75,000

	Analyzed Range	Midpoint Assumption	w/Saver's Credit Match
Savings Period	25-35 years	30 years	30 years
Annual Return	4-6%	5%	5%
Annuity Rate	5-7%	6%	6%
Avg. Income Differential (HH <$75k)		$7,050	$7,050
Avg. Asset Amount to Close Income Gap		$117,500	$117,500
Annual Savings to Close Income Gap		**$1,685**	**$1,125**
Monthly Savings to Close Income Gap		**$140**	**$95**

Source: ESI Financial Modeling

State Level Savings Gaps

Financial modeling is run state-by-state using the mid-point assumptions outlined above. Figure 3.3 below shows for each state the annual and monthly contributions needed to close the potential income gaps for 2040 in each state (estimated in Section 2 above) based on these standard financial assumptions.

Figure 3.3: Savings Needed to Close the Retirement Income Gap by State (among HH $<75,000)

	Midpoint Assumptions		With Saver's Credit Match	
State	Annual Savings (30 Yrs)	Monthly Savings	Annual Savings (30 Yrs)	Monthly Savings
National	**$1,685**	**$140**	**$1,125**	**$95**
Alabama	$2,045	$170	$1,045	$85
Alaska	$920	$75	$610	$50
Arizona	$1,225	$100	$820	$70
Arkansas	$1,400	$115	$935	$80
California	$1,635	$135	$1,090	$90
Colorado	$1,035	$85	$690	$60
Connecticut	$1,310	$110	$875	$75
Delaware	$1,200	$100	$800	$65
Florida	$1,710	$145	$1,140	$95
Georgia	$2,035	$170	$1,035	$85
Hawaii	$800	$65	$530	$45
Idaho	$1,650	$140	$1,100	$90
Illinois	$2,315	$195	$1,315	$110
Indiana	$1,645	$135	$1,095	$90
Iowa	$960	$80	$640	$55
Kansas	$2,015	$170	$1,015	$85
Kentucky	$2,425	$200	$1,425	$120
Louisiana	$2,200	$185	$1,200	$100
Maine	$1,400	$115	$935	$80
Maryland	$1,615	$135	$1,075	$90
Massachusetts	$2,585	$215	$1,585	$130
Michigan	$2,155	$180	$1,155	$95
Minnesota	$1,745	$145	$1,160	$95
Mississippi	$2,215	$185	$1,215	$100
Missouri	$1,645	$135	$1,095	$90
Montana	$605	$50	$405	$35
Nebraska	$1,755	$145	$1,170	$100
Nevada	$1,335	$110	$890	$75
New Hampshire	$915	$75	$610	$50
New Jersey	$2,685	$225	$1,685	$140
New Mexico	$920	$75	$615	$50
New York	$1,855	$155	$1,240	$105
North Carolina	$2,040	$170	$1,040	$85
North Dakota	$1,390	$115	$925	$75
Ohio	$2,200	$185	$1,200	$100
Oklahoma	$1,545	$130	$1,030	$85
Oregon	$665	$55	$445	$35
Pennsylvania	$1,660	$140	$1,105	$90
Rhode Island	$2,170	$180	$1,170	$100
South Carolina	$1,145	$95	$765	$65
South Dakota	$1,685	$140	$1,120	$95
Tennessee	$1,240	$105	$825	$70
Texas	$1,460	$120	$975	$80
Utah	$710	$60	$475	$40
Vermont	$1,085	$90	$725	$60
Virginia	$1,860	$155	$1,240	$105
Washington	$1,150	$95	$765	$65
West Virginia	$1,200	$100	$800	$65
Wisconsin	$2,175	$180	$1,175	$100
Wyoming	$925	$75	$615	$50
Washington D.C.	$2,235	$185	$1,235	$105

Each of the key financial parameters will vary for each individual and time period, and future market rates are by definition unknown. Given this uncertainty, a sensitivity analysis can be useful to understand the variance in savings levels required to address the income gap under different financial scenarios.[19] Figure 3.4 below shows the monthly savings levels required to generate the $7,050 in additional annual retirement income for vulnerable elderly households under various assumptions. For each variable (each row in the table), results under low-end and high-end assumptions for that parameter are shown (with mid-point assumptions retained for each other parameter). Under these scenarios, the monthly savings required to address the anticipated income gap for the average vulnerable household ranges from $105 to $195 (see Figure 3.4).

Figure 3.4: Savings Gap – Sensitivity Analysis

	Range	Monthly Savings Needed – Low	Monthly Savings Needed – High
Average Income Differential (HH <$75k)	$7,050	$7,050	$7,050
Savings Period	25-35 years	$195	$105
Annual Return	4-6%	$170	$115
Annuity Rate	5-7%	$170	$120

Source: ESI Financial Modeling

Enhanced Saver's Credit

The Saver's Tax Credit is a mechanism in the federal tax code to encourage savings among low-income households. Created by Congress in 2001, the Saver's Credit has been structured as a tax credit against federal income tax liability that "matches" a portion of retirement savings contributions. The lowest income households are eligible for a 50% match up to a maximum credit of $1,000 for an individual and $2,000 for a couple, with the match percentage reducing and phasing out as income levels rise.

Many retirement savings advocates have viewed the structure and administration of the Saver's Credit as a limiter to its ability to increase retirement savings assets for low-income households. Utilization of the credit has been low, due to the complexity of applying and due to its non-refundable structure, which means that households must have an income tax liability in order to realize the benefit from the credit. An AARP analysis of IRS data found that from 2008-2013, about 10% of returns were eligible for the credit, but less than 5% of filers claimed it,[20] while a CBO analysis of 2006 returns found that 18% of filers met the income criteria but had no income tax liability.[21]

To address these concerns, provisions of the SECURE Act 2.0 included in the December 2022 Omnibus legislation passed by Congress are designed to enhance the Saver's tax credit. Starting January 1, 2027, the "matching" funds from the Saver's Credit will function as a contribution to an eligible saver's account, rather than a credit against federal income tax liability. This change in program design will make

[19] Parameters utilized in this sensitivity analysis represent the bounds of the range of values for each parameter reviewed above, which are broadly consistent with historic performance. These parameters do not represent the outer bounds of potential future conditions.

[20] Jennifer Brown and David John, AARP Public Policy Institute. Improving the Saver's Credit for Low- and Moderate-Income Workers. (2017).

[21] Congressional Budget Office (CBO), The Use of Tax Incentives for Retirement Saving in 2006. (2011)

the credit accessible to more households (as those without federal income tax liability will no longer be ineligible) and will help beneficiaries build retirement assets by directing the funds into savings accounts.

If program participants are eligible for the matching funds, the redesigned Saver's credit can effectively serve as a "multiplier" on programs that enhance workplace access and savings through employee contributions. The effects of the matching contribution on asset accumulation and income available in retirement can be illustrated by modeling returns to a representative low-income household with and without the credit. For an individual saving $1,000 per year, the 50% match would create an effective contribution of $1,500 per year. Over a 30-year savings horizon, based on the standard financial assumptions outlined above, this household would **accumulate assets of nearly $100,000 at retirement with the Saver's Credit match, compared to around $66,000 without it**. This increased asset amount would support nearly $6,000 in annual income at a standard annuity rate, compared to $4,000 per year without the credit (see Figure 3.5).

Figure 3.5: Impacts of the Saver's Credit Match for a Representative Low-Income Household

	With Enhanced Saver's Credit	Without Saver's Credit
Annual Saver Contribution	$1,000	$1,000
Saver's Credit Match Contribution	$500	--
Effective Total Annual Contribution	$1,500	$1,000
Modeled Contribution Period	30 years	30 years
Modeled Annual Return	5%	5%
Asset Amount at Retirement	**$99,660**	**$66,440**
Modeled Annuity Rate	6%	6%
Annual Income Available	**$5,980**	**$3,990**

Source: ESI Financial Modeling

Closing the Income Gap by Saving Early

Households can also enhance their retirement readiness and asset building potential by starting to save early in their careers. Even if households are not able to continue regular contributions throughout the duration of their careers, developing a base of retirement savings early in a career increases the number of years of compounding returns that a saver enjoys. This effect significantly reduces the level of contributions needed for an average household to close the retirement income gap (which is reduced further still if paired with the enhanced Saver's credit match).

Figure 3.6 below calculates the respective monthly and annual contribution amounts needed to close the income gap for a late career saver, an early career saver, and an early career saver accessing a 50% saver's credit match. Each of these savers is modeled to make regular contributions over a 20-year period. However, the late career saver reaches retirement at the end of the 20-year period, while the early career savers are assumed to have an additional 15 years of market returns following their 20 years of contributions.

Even though the early career saver makes no further contributions during this period, the accumulation of their assets during this period significantly reduces the level of savings needed during the contribution

period to achieve the targeted retirement income level. **A late career saver needs to contribute $282 per month, or $3,390 per year over 20 years, while the early career saver can contribute $136 per month, or $1,630 per year, to achieve the same level of retirement income available. This leaves an early saver with an additional $1,760 of income for everyday needs merely by saving earlier.** If accessing the 50% Saver's credit match, the amount needed for the early career saver to close the income gap falls to $90 per month, or $1,090 annually (see Figure 3.6).

Figure 3.6: Impacts of Early Career Savings for a Representative Low-Income Household

	Late Career Saver	Early Career Saver	Early Career Saver (w/Enhanced Saver's Credit)
Monthly Saver Contribution	**$282**	**$136**	**$90**
Annual Saver Contribution	**$3,386**	**$1,628**	**$1,086**
Saver's Credit Match Contribution (50%)	--	--	$543
Effective Total Annual Contribution	$3,386	$1,628	$1,628
Modeled Contribution Period	20 years	20 years	20 years
Modeled Annual Return	5%	5%	5%
Asset Amount at end of Contribution Period	$117,542	$56,540	$56,540
Additional Years Before Retirement	--	15 years	15 years
Modeled Annual Return	--	5%	5%
Asset Amount at Retirement	$117,500	$117,500	$117,500
Modeled Annuity Rate	6%	6%	6%
Annual Income Available	**$7,050**	**$7,050**	**$7,050**

Source: ESI Financial Modeling

Notably, this "early career saver" would achieve even greater retirement security if they are able to continue their contributions throughout the duration of their working years. In the example above, if the early career saver is able continue monthly contributions of $136 for an additional 15 years (achieving a total contribution period of 35 years), their estimated lump sum amount at retirement would grow to $152,600, supporting annual income of around $9,060.

3.2. Financial Management Benefits for Vulnerable Households

Even short of reaching recommended savings levels, vulnerable households can derive significant financial and quality of life benefits from modest levels of accumulated savings. Accumulated savings can serve as "buffer" to improve financial resiliency by enabling insecure households to avoid a range of potential financial losses and social costs from unexpected expenses, and better manage their Social Security benefits.

A substantial share of Americans lacks the financial reserves to cover a moderate unexpected expense, and an even larger share would be unable to endure a larger economic disruption. When faced with a hypothetical unexpected expense of $400, 32% of American adults report that they would not be able to cover it using cash or its equivalent.[22]

This financial insecurity is associated with a variety of economic and quality of life costs for households. Financially fragile households face a range of potential social costs that may result from a lack of available savings to address a financial emergency. **Many of the strategies utilized by financially fragile individuals to cope with an unexpected expense come at a high cost, both financial and otherwise**.[23]

A provision of the SECURE Act 2.0 that was included in the December 2022 Omnibus legislation will make it easier for retirement accounts to be used to address unexpected needs by expanding the conditions under which emergency withdrawals can be made from retirement accounts penalty free. Withdrawals of up to $1,000 per calendar year can be made penalty free to cover emergency expenses,[24] provided they are repaid within 3 years. This provision could reduce hesitancy around utilizing retirement savings vehicles for financially fragile households by making their funds more liquid, while still maintaining a focus on retirement readiness through the requirement to replace the withdrawn amount. The available emergency funds could also have a significant impact by helping insecure households avoid unattractive alternatives when an emergency need arises.

Social and Monetary Costs of Financial Fragility

High-Interest Financial Products

The most frequently cited strategy among Americans who cannot cover an emergency expense is to use a credit card.[25] While this strategy may be effective in addressing the short-term needs, it can generate significant additional overall costs through interest payments over time, since the same dynamics that make it difficult to cover an unexpected expense also make it difficult to repay credit card debt immediately, with interest rates even for households with "good credit" surpassing 20%.[26]

[22] The Federal Reserve Bank's "Economic Well-Being of U.S. Households in 2021"

[23] Institute for Research on Poverty at the University of Wisconsin, "Emergency Savings for Low-Income Consumers

[24] Defined loosely as " unforeseeable or immediate financial needs relating to necessary personal or family emergency expenses", S.4808 - EARN Act

[25] The Federal Reserve: Economic Well-Being of U.S. Households in 2021

[26] Alina Comoreanu "Credit Card Landscape Report – Terms, Trends & More

In addition, one in five American households is considered unbanked or underbanked, meaning they either do not have a bank account or had to turn to an alternative financial service in the last year.[27] As such, many households do not have access to credit cards, and must turn to short-term alternatives, such as payday loans, or risky alternatives, like title pawn loans. These kinds of debt instruments are currently allowable in most jurisdictions, although an increasing number of states, having recognized the potential harms, are enacting laws to cap APR at 36%.[28]

Indebtedness is also a significant determinant of future financial fragility with many households reporting that one financial shock has led to long-term effects on their financial health and quality of life.[29] Financially insecure households that are able to use small amounts of accumulated retirement savings as a buffer to cover unexpected costs and avoid these debt instruments thus gain both potential short-term and long-term financial benefits. In the short-term, **avoiding high-interest financial products creates a lower true cost to cover the unexpected expense, with the required make-up payments to the savings account in effect meaning that households are repaying themselves, rather than a high-interest lender**. Second, by avoiding accumulating indebtedness, reductions in credit scores, and other negative financial cycles, households are positioned to maintain financial stability over the long-term.

Quality of Life Impacts

Households faced with unexpected expenses often resort to alternative payment strategies which significantly degrade their quality of life. Borrowing from family and friends is a common approach, but it carries heavy social costs and is often not available to lower income households. Another option is to work longer hours or to acquire an additional job, both of which can have negative effects on health. Finally, the most desperate households might try to leverage their remaining assets, in many cases a car, for Pawn or Auto Title Pawn financing. This is the riskiest option as failure to repay carries devastating long-term consequences like loss of transportation, related job insecurity, and further financial hardship.

To avoid indebtedness from high-cost financial services, many Americans defer household expenses such as food or medical expenses, which has obvious health and well-being implications. In 2021, 24% of American went without some form of medical care because of an inability to pay, and 15% carried debt from their own medical care or that of a family member.[30] Delaying or forgoing medical care because of financial hardship is likely to result in even more costly care being necessary in the future.

[27] FDIC National Survey of Unbanked and Underbanked Households

[28] Predatory Installment Lending in the States (2022), National Consumer Law Center

[29] Global Financial Literacy Excellence Center, "Financial Fragility In the US: Evidence and Implications"

[30] The Federal Reserve Bank's "Report on the Economic Well-Being of U.S. Households in 2021"

Social Security Delay

For many elderly Americans, Social Security represents their most important income stream. According to the Congressional Research Service, nearly half of older Americans receive 50% or more of their income from Social Security while more than one in four (29%) receive 75% or more of their income from Social Security.[31] As they reach retirement age, low-income households face difficult decisions about when to begin their Social Security benefits. Households that lack adequate private savings may be forced to begin their Social Security benefits prior to the "Normal Retirement Age" in order to meet their short-term needs, reducing their annual benefit levels for the remainder of their lives. By contrast, households with a buffer from private savings may be able to delay the start of their Social Security benefits, potentially increasing their annual and lifetime income and their quality of life once their benefits begin.

Social Security Benefits by Starting Age

The level of monthly benefits an individual receives from Social Security depends on both earnings level during working years as well as the age at which benefits start. The earnings level component is calculated by examining inflation adjusted earnings over a period of up to 35 years.[32] The age component depends on the age of the individual when he or she elects to start receiving benefits. Electing to receive benefits prior to the "Normal Retirement Age" of 67, will result in lower monthly payouts, while electing to start receiving benefits after this age will result in higher monthly payouts.[33] It is important to note that these payout levels continue for the remainder of the benefit period and include eligible survivors such as widows.

Lifetime Social Security benefits are a function of the benefit amount, the starting date, and the duration of time in which benefits are received. This means that optimal financial strategies will vary from individual to individual. However, on average, research suggests that, for most people, delaying Social Security benefits will lead to an increased expected present value of retirement savings.[34]

Despite the clear financial advantages of delaying Social Security benefits, data from the Social Security Administration from 2021 indicates that 25% of retirees elect to start receiving benefits at age 62 (the earliest possible age), and nearly half (49%) of retirees do so by age 65. [35] Benefit levels rise with the starting age, with an average monthly benefit of $1,223 for those starting at age 62 compared to $1,877 at age 66 and $2,762 at age 70 (see Figure 3.7). These benefit disparities are reflective of both the financial capacity of higher income households to delay their benefit date through the availability of other assets (or continued earned income), as well as the effect of the delay itself on increasing benefit levels.

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[31] Congressional Research Service, 2022, *Income for the Population Aged 65 and Older: Evidence from the Health and Retirement Study (HRS)*

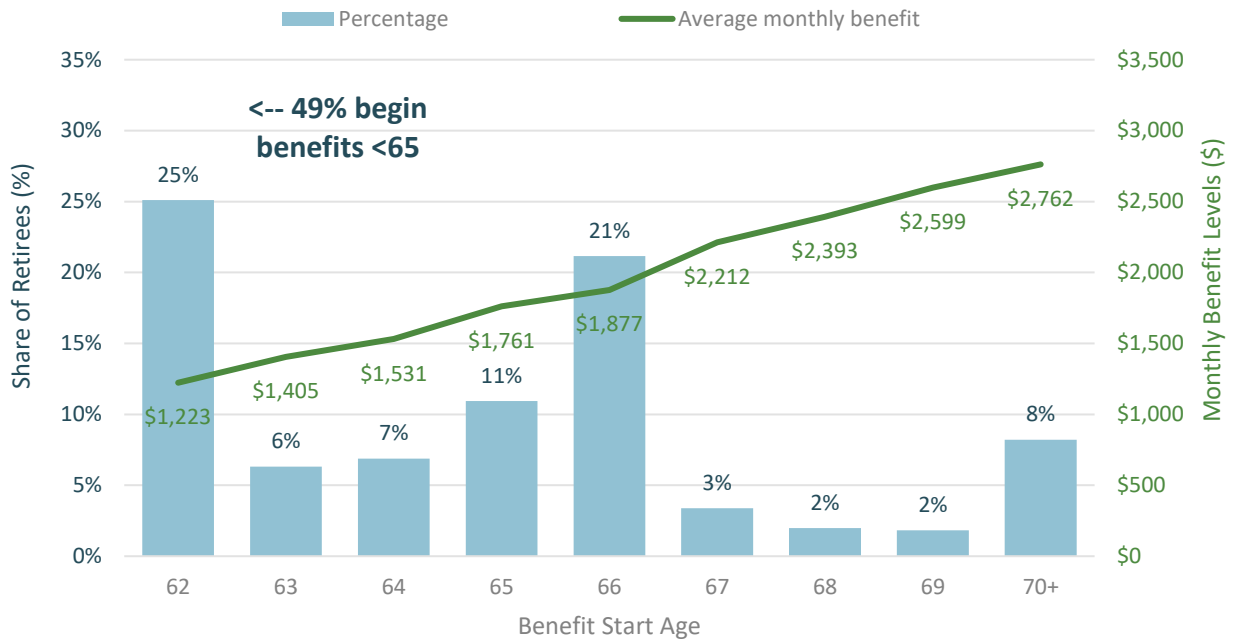
[32] See: Social Security Benefits Amounts, Social Security Administration

[33] The Normal Retirement Age is set at 67 for individuals born in 1960 or later. This benchmark is utilized for the purpose of the examples modeled in this analysis.

[34] Gila Bronshtein, Jason Scott, John B. Shoven, and Sita N. Slavov. (2020). "*Leaving Big Money on the Table: Arbitrage Opportunities in Delaying Social Security.*" The Quarterly Review of Economics and Finance, Available online 3 June 2020.

[35] Note that the Normal Retirement Age has been 66 for those born between 1943 and 1959 and was 65 for earlier beneficiaries. This benchmark likely explains the high frequency of current beneficiaries starting their benefits at age 66.

Figure 3.7: Percentage and Average Monthly Benefit for Retired Workers, 2021



Source: Social Security Administration (2021)

Delaying Benefits through a Retirement Savings Buffer

The level of assets required to address the average retirement income gap may exceed what some households are able to accumulate. However, even more modest retirement asset levels can still provide an important boost to retirement income by allowing retirement age individuals to delay their Social Security benefits, increasing their annual benefit level for the remainder of their lifespan.

Based on 2021 data, the average retiree who elects to begin receiving Social Security benefits at 62 receive $1,223 a month, or about $14,700 per year.[36] Financial modeling below shows the potential lifetime benefit levels that could be achieved by delaying Social Security benefits, with different scenarios depending on their longevity. While the considerations of when to begin accessing benefits varies by household, financial modeling indicates that delay Social Security will often result in higher expected lifetime benefits.

Retirees receive permanent reductions in monthly and annual payments for collecting benefits prior to the Normal Retirement Age. By delaying the start of entitlement, Social Security payments increase over time from $1,223 per month if benefits start at age 62 to $1,747 per month if benefits start at age 67, an increase of 43%.

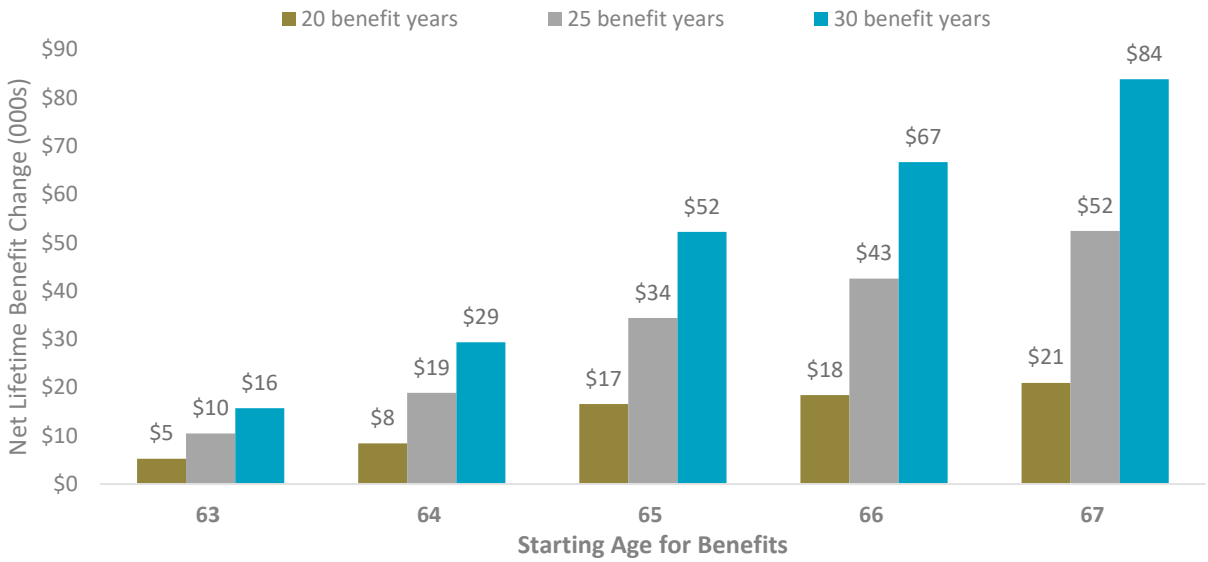
Figure 3.9 below presents a range of lifetime income outcomes for a 62-year-old individual, depicting the net differences in lifetime Social Security benefits from delaying to a later start date relative to starting

[36] Social Security Administration: Annual Statistical Supplement, 2021

benefits at age 62. Results are shown for different potential durations of the receipt of lifetime benefits (i.e. longevity). A positive expected return means that lifetime benefit levels with the delay would exceed those levels realized by starting at age 62.

In this representative example, delaying the onset of Social Security benefits, will realize an increase in lifetime benefits for any lifespan exceeding 20 years from age 62 (see Figure 3.8).[37] Current life expectancy tables published by the Social Security Administration indicate an average additional life expectancy at age 62 of 21.5 years for men and 24.4 years for women.[38] Benefit periods for a household may also exceed beneficiary lifespans through survivors' benefits.

Figure 3.8: Net Change in Social Security Benefits by Starting Year and Duration relative to Starting at Age 62 (in $000s)



Source: ESI Analysis of Social Security Administration Data

The level of accumulated retirement savings that a household has available may be an important determinant in their Social Security planning as they approach retirement age. The buffer provided by savings may give a household greater comfort in delaying their benefit start date, potentially enabling them to achieve higher lifetime benefit levels. A household could also more explicitly tap into accumulated savings as a replacement source of income for foregone benefits in order maintain the same level living standards without starting benefits early. With the increasing longevity of the elderly population, the financial management strategies enabled by available savings grow in importance in helping to support quality of life for elderly households with modest resources.

[37] The exact "breakeven" life expectancies range from 15.0 years in a delay to age 63 to 16.7 years in a delay to age 67.

[38] Social Security Administration.: Retirement & Survivors Benefits: Life Expectancy Calculator. Accessed December 2022.

4. Government Expenditure Impacts from Insufficient Savings

The retirement readiness of households also has significant implications for the trajectory of government expenditures on benefit programs. Demographic changes and increasing medical costs create significant fiscal pressure, increasing federal expenditures to maintain consistent service levels at a time when relatively fewer working-age households will constitute the tax base. Under the continuation of current trends, income shortfalls for elderly households will add to the demand for these programs, increasing the rate of expenditure growth.

Benefit Programs for Elderly Americans (Section 4.1)

Elderly households are served by several federal benefit programs. Many senior-serving programs are means-tested for eligibility or benefit levels, and **analysis of program data shows that per capita program expenditures on senior households decline significantly as household incomes increase**. Annual federal spending on seniors within selected programs (excluding Social Security and Medicaid, which are not dependent on senior income levels) is estimated to total $110 billion as of 2020.

Expenditure Growth from Insufficient Savings (Section 4.2)

Program expenditures for senior supporting programs are expected to grow materially in the coming years due to the growing senior population and increasing medical costs. Under the continuation of current retirement readiness trends (baseline scenario), expenditures on the elderly population within the selected programs is projected to grow to $201 billion by 2040. Modeling of benefits by income level shows that increasing the financial resources available to elderly households would significantly reduce expenditure growth within these programs. **Achieving the recommended income replacement levels for new retirees by 2040 (sufficient savings scenario) would reduce federal expenditures by an estimated $61 billion in 2040, and by $990 billion over the 20-year period from 2021-2040.**

4.1. Benefit Programs for Elderly Americans

The federal government administers several benefit programs that provide services to elderly residents ranging from medical care to housing to nutritional support. These programs rely on a mix of state, local and federal funds, and many are means-tested for either eligibility or benefit levels. This design means **that shortfalls in retirement savings and income impact the level of expenditures on these programs.**

Among the broad range of government programs, this analysis focuses on those that are administered by the federal government and relate specifically to the needs and means of the elderly population (excluding generalized programs like infrastructure and public safety that cover all residents). Two categories of programs are reviewed below:

- **Means-tested programs** for which eligibility and benefit levels are impacted by the level of savings and annual income available to elderly households.
- **Senior-targeted programs** which do not require means-testing, but for which demand and outlays are impacted by the size of the nation's elderly population and the retirement income levels of elderly residents.

Means-Tested Programs

Many programs serving elderly residents are means-tested to determine program eligibility and/or program benefit levels. The inverse correlation between income level and state assistance costs means that insufficient retiree savings have a significant impact on state expenditures for these programs.

Medicaid: Medicaid is a jointly funded federal/state program to provide medical services to eligible low-income populations. There are two cohorts of aged populations in the U.S. served by Medicaid:

- "Full Dual Eligible" adults 65 who are enrolled in Medicare but meet the resource guidelines to qualify for full Medicaid benefits, including long term care and prescription drug coverage.
- "Partial Dual Eligible" beneficiaries 65 and older who qualify to have Medicaid pay certain expenses they incur under Medicare, generally through cost sharing or coverage of Medicare premiums.

In aggregate, federal Medicaid expenditures for elderly Americans are estimated at approximately 15% of the nation's overall Medicaid spending, or $74.5 billion in FY 2020, excluding covid related spending.[39]

Medicare Part D Low Income Subsidy: Medicare Part D is a federal program designed to lower the costs of prescription drugs for low income and elderly people on Medicare. The voluntary program is provided by private insurers that contract with the federal government. The Medicare Part D **Low-Income Subsidy (LIS) program** provides additional prescription drug cost assistance to Medicare recipients with incomes less than 150% of the poverty line.

Administering Agency: The Centers for Medicare & Medicaid Services (CMS)

[39] Based on analysis of the 2018 Actuarial Report on the Financial Outlook of Medicaid and the 2022 CRS- Low Income Programs Update Analysis.

Supplemental Security Income: The Supplemental Security Income (SSI) program provides monthly benefit payments to income eligible who are over the age of 65 or are disabled. Unlike Social Security benefits, SSI is not tied to prior work or social security taxes. The SSI benefits rate is calculated by finding the difference between the SSI Federal Benefits rate ($841) and an individual's "countable income." Individuals with a greater countable income than $841 are not eligible for the program.[40] In addition to income limits (FIND) the program has an asset limit of $2,000 per individual and $3,000 for couples. Assets can include cash, bank accounts, stocks, land, vehicles, personal property, life insurance, and goods that could be converted into cash and used for food or shelter.

Administering Agency: Social Security Administration

SNAP: The Supplemental Nutrition Assistance Program, formerly known as the Food Stamps Program, provides nutritional support for low-income working families, low-income people over 60, and people with disabilities. SNAP recipients receive benefits on an Electronic Benefits Transfer card, that can be used like a debit card at authorized food stores and retailers. To qualify, households must have an income below 130% of the federal poverty line, however, households with a member 60 years or older can exceed this limit. Additionally, households may not have assets above $2,500 for households without elderly members, and $3,750 for households with older members.

Administering Agency: USDA – Food and Nutrition Services

Low Income Home Energy Assistance: The Low-Income Home Energy Assistance Program (LIHEAP) is a federal program created to assist low-income households with the cost of their home energy needs. The program offers assistance for heating and cooling energy costs, bill payment assistance, energy crisis assistance, weatherization, and energy-related home repairs. The program targets low-income households with elderly, disabled, and young children that spend a disproportionate amount of their monthly income on heating and cooling bills. Eligible Households must have an income less than 150% of the federal poverty guideline (FPG) or 60% of the state median income (SMI) level.

Administering Department: Office of Community Services

Supportive Housing for the Elderly (Section 202): The HUD Section 202 program provides affordable and supportive housing assistance to elderly persons. To stimulate the creation of affordable housing for low-income elderly households, HUD disperses interest free capital advances to nonprofit. Additionally, HUD provides rental assistance Section 202 tenants, to ensure they pay a maximum of 30% of their monthly

[40] Countable incomes can vary from an individual's total monthly income. Certain forms of income are excluded from the countable income calculation including: value of SNAP received, first $64 of earning and one half of earning over $65 received in a month, income tax refunds, home energy assistance, small amounts of irregular income, scholarships, etc.

income. To reside in Section 202 housing households must have at least one person of at least 62 years of age and qualify as a very low-income household (no more than 50% of area median income).

Administering Agency: Department of Housing and Urban Development

Older Americans Act Congregate Nutrition & Home-Delivered Nutrition Programs: The Older Americans Act Congregate Nutrition Program and the Home-Delivered Nutrition Program provide meals, nutritional services, and important socialization opportunities. The Congregate Nutrition Program provides meals in group settings and the Home-Delivered Nutrition Services Program delivers to homebound individuals. The program targets individuals aged 60 and older, specifically those who are classified as low-income, minority, living in rural communities, having limited English proficiency, and/or are at risk of institutional care.

Administering Agency: Administration on Aging

Older Americans Act Supportive Services & Senior Centers: The Older Americans Act Supportive Services and Senior Centers program is aimed at keeping seniors in their own homes by providing individuals funding for services that enable them to age in place, like home health, personal care, and transportation. Participants must be at least 60 years of age, there is no income limit for program participation.

Administering Agency: Administration on Aging

Older Americans Act Caregiver Support: The Older American Act Caregiver Support program provides services to informal caregivers of older adults and older relative caregivers (55+) who are responsible for the primary caregiving of an individual with a disability. The services range from home chore assistance, counseling, support groups, case management, and more. The program is available to caregivers of elderly individuals and disabled individuals across all income levels.

Administering Agency: Administration on Aging

Federal Benefit Program Spending

Analysis of the federal budget was undertaken to establish the magnitude of these programs, and to estimate federal spending for these programs supporting elderly households as of 2020. Notably, actual expenditures for Federal Fiscal Year 2020 included the initial six months of the COVID-19 pandemic, which resulted in significantly increase expenditures for many of these programs on an emergency basis. To avoid biasing long-term analysis, an "estimated FY 2020" expenditure was developed by applying the recent annualized rate of growth for each program to actual expenditures for FY 2019. This process produces a benchmark of expenditure levels for FY 2020 absent the pandemic.

Program and demographic data are then analyzed to estimate the share of expenditures from these programs that are attributable to elderly (65+) residents.[41] **Federal FY 2020 expenditures on elderly residents for these programs estimated at $109.7 billion** (see Figure 4.1).

Figure 4.1: Federal Program Expenditures on Elderly Residents

	Total Federal Expenditures ($M)	% Total Expenditures	Est. Federal Expenditures on Elderly ($M)	% Elderly Expenditures
Medicaid	$489,955	75%	$74,466	68%
Medicare Part D Low Income Subsidy	$30,917	5%	$19,500	18%
Supplemental Security Income	$62,929	10%	$6,864	6%
SNAP	$60,894	9%	$5,746	5%
Low Income Home Energy Assistance	$3,707	1%	$1,071	1%
Supportive Housing for the Elderly (Sect 202)	$720	0%	$594	1%
Older Americans Act Programs:				0%
Nutrition Program for the Elderly	$928	0%	$859	1%
Supportive Services & Senior Centers	$393	0%	$366	0%
Caregiver Support	$190	0%	$183	0%
Total	**$650,633**		**$109,649**	

Source: CRS- Low Income Programs Update Analysis 2008-2020, ESI Analysis of Program and Demographic Data

Program Spending by Income Level

Participation and spending within these benefit programs varies significantly by income level. Estimates of per capita program expenditures were developed for the country's current elderly population based on a mix of administrative data and program rules.[42] Figures 4.2 shows the breakdown of per capita expenditures on elderly Americans of different income levels. Per capita costs fall rapidly from more than $20,000 in the lowest income band ($0-$10,000) to around $13,000 in the next income band ($10,000 -

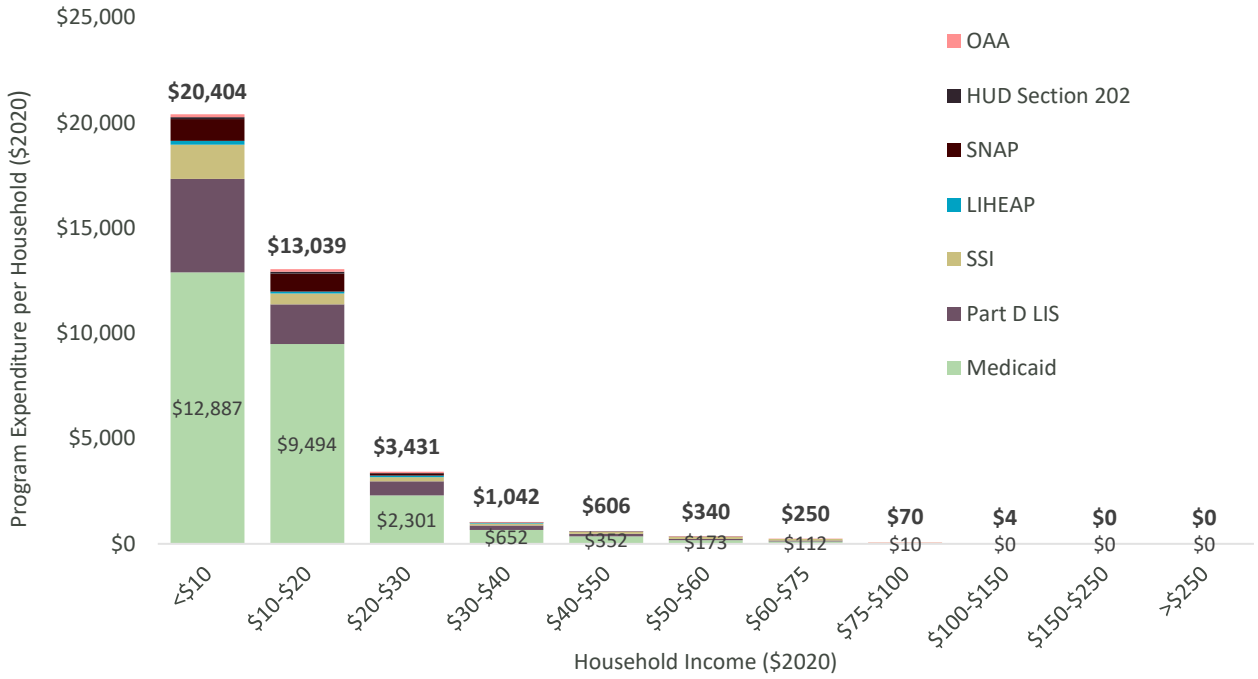
[41] Estimates are derived from the 2022 CRS- Low Income Programs Update Analysis, with publicly available demographic program data and/or anonymized participant data from the relevant administering agencies was used to estimate the proportion of total funding for each program attributable to elderly.

[42] Appendix A.3 provides detail on the methodology used to estimate state expenditures by income band. Importantly, statewide expenditures are allocated to income bands using a "top down" approach that ensures that total expenditures on the elderly reconcile to budget estimates for each program.

$20,000), a 36% decrease. Per capita expenditures decrease most significantly from the $10,000 - $20,000 income band to $20,000 - $30,000 income band, with a drop of nearly $10,000.

The majority of elderly program expenditures across lower income households are within the Medicaid program. Medicaid expenditures reach over $12,000 for elderly households earning less than $10,000, comprising 63% of all program expenditures at that income level. Total Medicaid expenditures per household, as well as the proportion of expenditures, decreases as income levels increase. Medicaid comprises roughly 15% of modeled elderly program expenditures for households with incomes ranging from $75,000-$100,000.

Figure 4.2: Program Expenditures per Elderly Household by Income Band, 2020



Source: ESI analysis of budget and program data

Excess Medical Cost Growth

In the decades to come, benefit program expenditures are expected to increase due to excess medical cost growth. Over the last several decades, medical costs have consistently grown faster than inflation. This differential has diminished but is nonetheless expected to continue, with program costs for Medicaid and Medicare expected to grow 0.9% faster per year than inflation as projected by the Congressional Budget Office (CBO).[43] This means that the cost to provide a consistent level of service is increasing over time, in real terms.

[43] Congressional Budget Office ((CBO). The 2022 Long-Term Budget Outlook.

The growth rates anticipated by CBO are applied to the Medicaid and Medicare Part D components reviewed above to estimate per household program expenditures by income band in 2040. Expenditures per household for non-medical programs are assumed to grow with inflation and are therefore unchanged in real terms. **Excess medical cost growth is anticipated to drive medical costs higher across all income bands**, with a particular impact on the lowest income band, where per capita costs grow by more than $3,300 per household.

Figure 4.3: Est. Total Expenditures per Elderly Household by Income Band, 2020 and 2040

Source: ESI analysis of budget and program data (in $2020)

This differential represents the expected real increase in the cost to deliver a consistent level of benefits and services to elderly households at each income level in 2040. This study assumes that program parameters, such as eligibility criteria and spending level, remain constant over the 2020-2040 period. Furthermore, the method used in this analysis excludes the possibility of benefits cuts for per capita program expenditures.

4.2. Expenditure Growth from Insufficient Savings

The level of financial resources of current and future retiree households impacts the degree to which they will rely on government benefit programs to provide essential services. The relationship between income levels and program spending established in Section 4.1 can be used to estimate the level of government expenditures that would be needed to maintain current benefit levels on a per capita basis for each income group under different elderly income scenarios. This exercise provides a representation of the fiscal "cost of doing nothing" to the federal government over time.

Per household benefit levels are first applied to the baseline scenario for the elderly population and income distribution to extrapolate spending trends through 2040. **If current retirement savings trends continue (as represented in the baseline scenario), government expenditures on the selected programs are anticipated to grow from $110 billion in 2020 to $201 billion by 2040.** The growth in costs in the baseline scenario is driven primarily by anticipated growth in the nation's elderly population, as well as excess medical inflation.

The same per household spending assumptions are then applied to the "sufficient savings" scenario, which is associated with higher incomes for the elderly population in both 2020 and 2040 (see Section 2.2). It is estimated that at this sufficient savings level, government expenditures on the selected programs would have totaled $77 billion in 2020, a savings of more than $32 billion relative to the $109 billion estimated under the baseline scenario. Moving forward, **if retirement savings levels were enhanced to recommended levels across all elderly households (as represented in the sufficient savings scenario), program expenditures in 2040 are estimated at $140 billion, a savings of $61 billion relative to the baseline scenario** (see Figure 4.4).

Figure 4.4: Growth in Program Expenditures from Insufficient Savings, 2020-2040 ($2020M)

Program	Baseline 2020 ($M)	Sufficient 2020 ($M)	Net Differential 2020 ($M)	Baseline 2040 ($M)	Sufficient Scenario 2040 ($M)	Net Differential 2040 ($M)
Medicaid	$74,466	$54,368	$20,098	$138,711	$101,037	$37,674
Medicare Part D Low Income Subsidy	$19,500	$12,148	$7,352	$37,435	$22,350	$15,086
Supplemental Security Income	$6,864	$4,241	$2,623	$11,079	$6,371	$4,708
SNAP	$5,746	$4,258	$1,488	$8,979	$6,702	$2,276
Low Income Home Energy Assistance	$1,071	$712	$359	$1,667	$1,085	$583
Supportive Housing for the Elderly (Sect 202)	$594	$456	$138	$917	$716	$201
Nutrition Program for the Elderly	$859	$762	$97	$1,266	$1,129	$137
Supportive Services & Senior Centers	$366	$283	$83	$559	$431	$127
Caregiver Support	$183	$146	$37	$280	$209	$71
Total	**$109,649**	**$77,373**	**$32,275**	**$200,892**	**$140,030**	**$60,863**

Source: ESI Analysis of CRS and Program Data

Cumulative Federal Expenditures

Comparing the path of program costs under the baseline and sufficient savings scenarios over the analysis period gives a representation of the fiscal costs of failing to achieving recommended savings levels on federal expenditures for the selected programs.

The estimated program expenditures under the baseline and sufficient savings scenarios for 2020 and 2040 are further analyzed to develop an annualized expenditure trend. This extrapolation is based in part on the projected rate of demographic change.[44]

The annual expenditures in the baseline scenario are then compared to the annual expenditures in the sufficient savings scenario to develop a year-by-year estimate of the cost of insufficient savings. Under this approach, **excess program expenditures from insufficient savings grow from $32 billion in 2020 to $61 billion in 2040, and total $990 billion cumulatively over the twenty-year period** from 2021-2040 (see Figure 4.4 and Figure 4.5).

[44] Expenditure increases attributable to the increase in elderly households are phased-in at the projected rate of household growth, while differentials attributable to excess medical inflation or changes in income profiles by scenario are phased-in at an even rate across the twenty-year analysis period (2021-2040).

Figure 4.5: Annual Federal Program Expenditures by Scenario, 2021-2040 ($2020B)

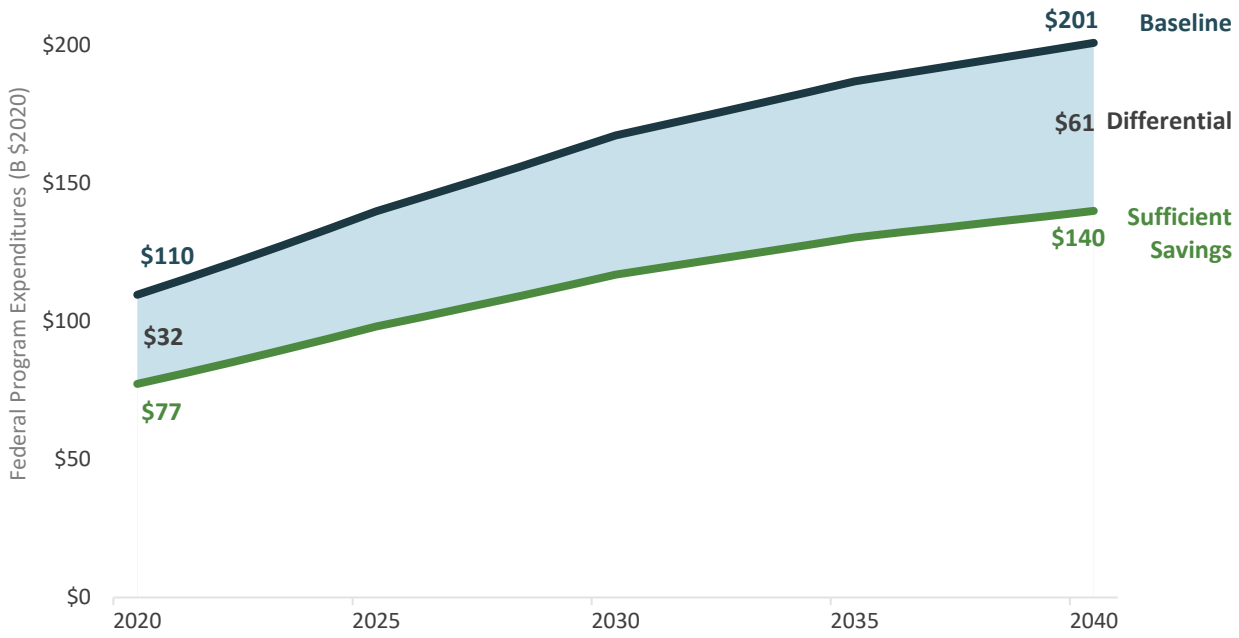
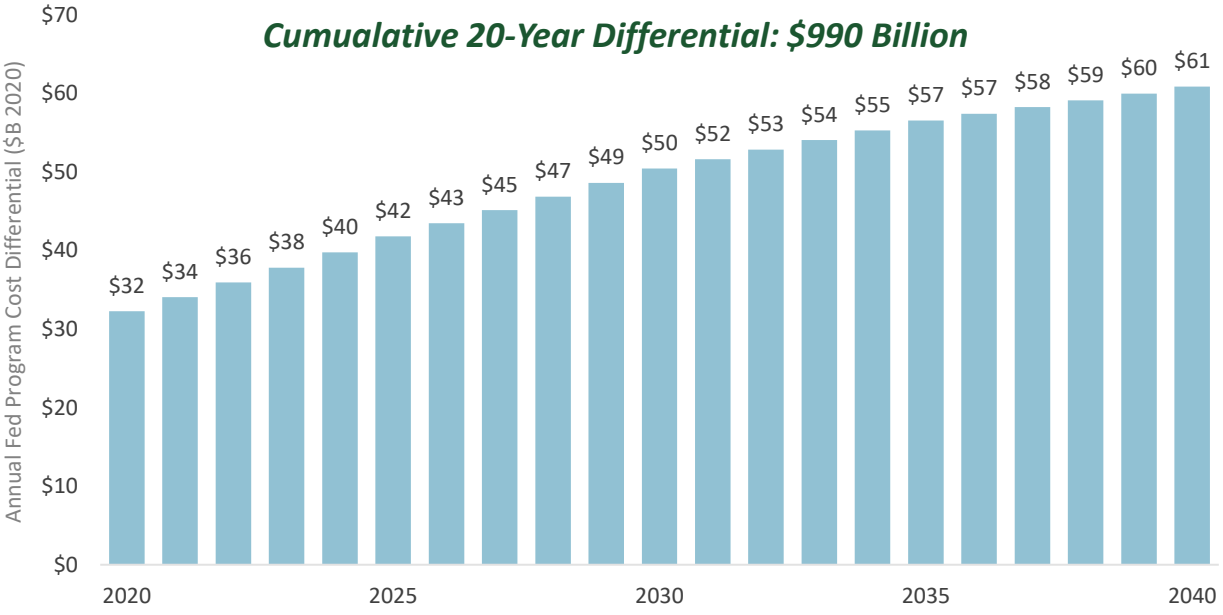


Figure 4.6: Net Federal Expenditure: Baseline and Sufficient Savings Scenarios, 2021-2040 ($2020B)



Alternative Framework

An alternative framework is developed below to conceptualize the program costs associated with insufficient savings. Under this alternative, elderly households begin with the observed (baseline) income levels in 2020, and transition over time to the recommended (sufficient) levels by 2040. This framework effectively models a scenario in which *new* retirees between 2020 and 2040 achieve recommended savings levels (while the scenario above effectively assumes that *all* retirees achieve these levels starting in 2020).

This alternative framework assumes as its endpoints the baseline scenario in 2020 and the sufficient savings scenario in 2040. Annual expenditures in between these endpoints are extrapolated based on a combination of the projected pattern of demographic change and a linear application of excess medical inflation.[45]

The annual expenditures in this alternative scenario of sufficient savings for new retirees are then compared to the baseline expenditure trend to develop a year-by-year estimate of the cost of insufficient savings. Under this method, the expenditure gap begins at $4 billion in 2021, and grows over time to $61 billion in 2040 as new cohorts reach retirement age. Within this alternative framework, excess program expenditures from insufficient savings total $755 billion cumulatively over the twenty-year period from 2021-2040 (see Figure 4.7 and Figure 4.8).

[45] Expenditure increases attributable to the increase in elderly households are phased-in at the projected rate of household growth, while differentials attributable to excess medical inflation or changes in income profiles by scenario are phased-in at an even rate across the twenty-year analysis period (2021-2040). Within this scenario, demographic change represents a combination of elderly household growth, which increases expenditures, and improved elderly incomes, which is a counterbalancing force reducing program expenditure growth.

Figure 4.7: Annual Federal Program Expenditures: Baseline and Sufficient Savings – Alternative Framework, 2021-2040 ($2020B)

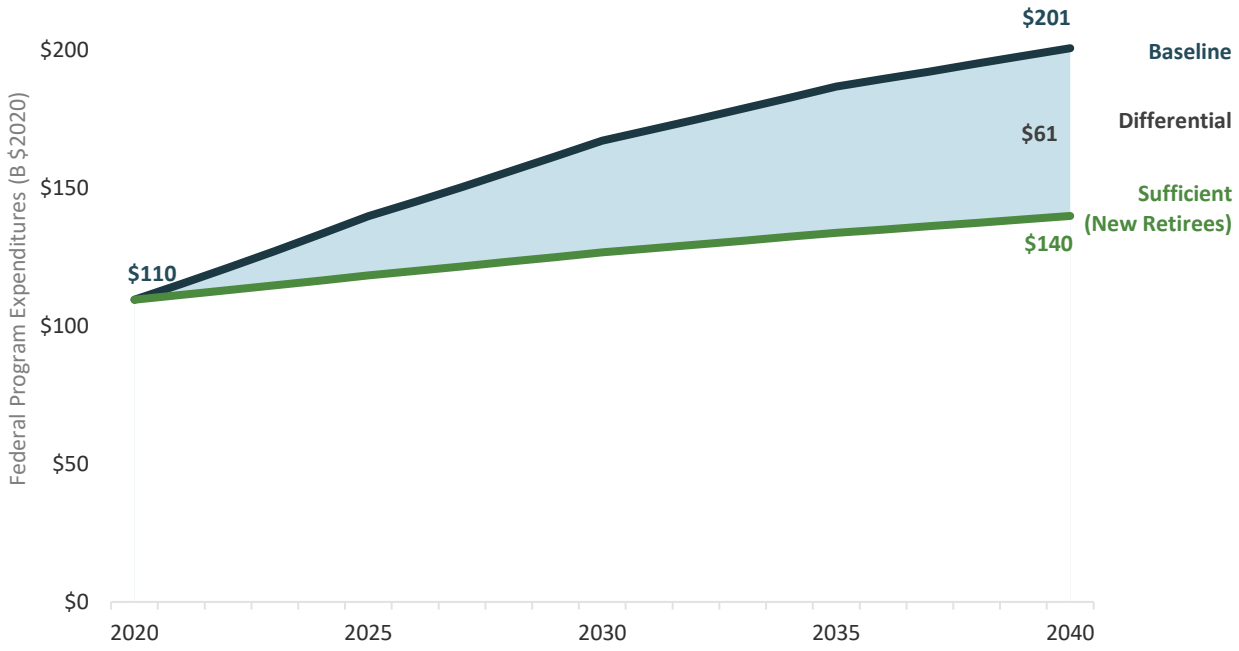
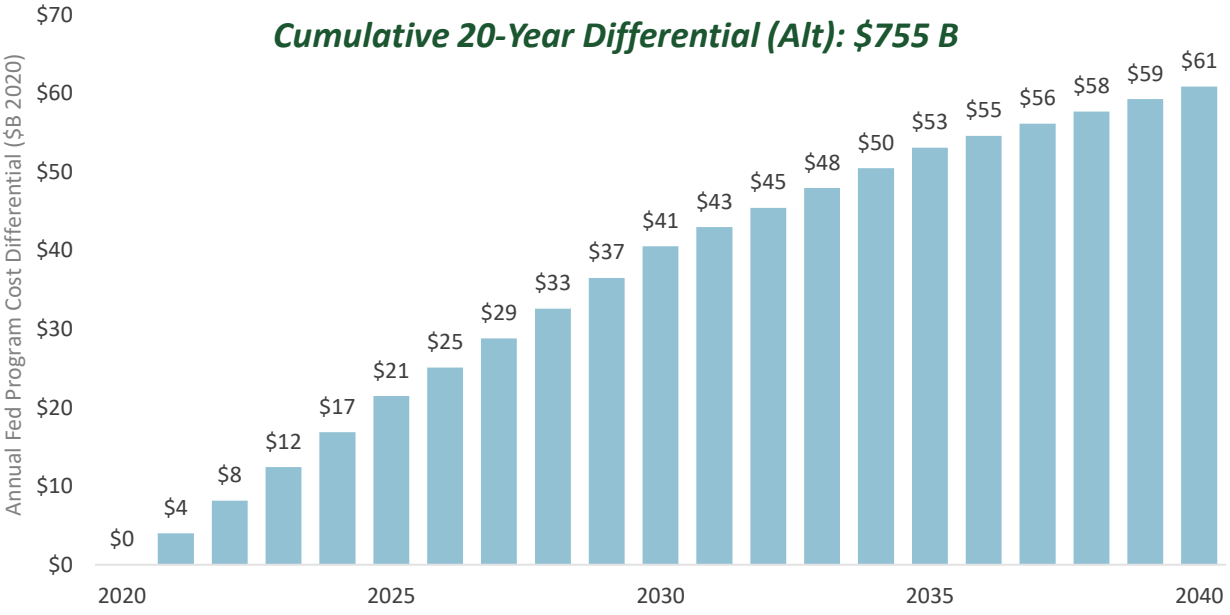


Figure 4.8: Net Federal Expenditures: Alternative Framework, 2021-2040 ($2020B)



Federal Program Expenditure Impacts by State

As described above, federal program expenditures from insufficient savings grow from $32 billion in 2020 to $61 billion in 2040, and total $990 billion cumulatively over the twenty-year period from 2021-2040 (see Figure 4.5). Federal expenditures are definitionally 'funded' by the contributions from taxpayers across the nation through a variety of different types of assessments.

This study relies on existing analysis of the "balance of payments" between states and the federal governments conducted by the Rockefeller Institute of Government to estimate the relative contribution of the taxpayers of each state to federal expenditures.[46] These proportions are then applied to the estimated $990 billion in excess costs to represent the federal program costs borne by the taxpayers of each state due to insufficient savings (see Figure 4.9). These costs are shown in the aggregate and are also calculated per working age household (under 65) household for each state.

[46] Laura Shultz for the Rockefeller Institute of Government. Giving or Getting? New York's Balance of Payments with the Federal Government, 2021 Report

Figure 4.9: Estimated Expenditures Required to Fund Sufficient Savings Scenarios

State	Share of Federal Tax Base	Est. 20-Yr Taxpayer Costs due Insufficient Savings ($B)	<65 Households (2020-2040 Avg) (M)	Cost per <65 Household
National	**100%**	**$989.84**	**95.69**	**$10,300**
Alabama	1.09%	$10.79	1.37	$7,900
Alaska	0.21%	$2.09	0.20	$10,300
Arizona	1.77%	$17.51	2.09	$8,400
Arkansas	0.68%	$6.72	0.83	$8,100
California	14.01%	$138.71	11.54	$12,000
Colorado	1.89%	$18.71	1.85	$10,100
Connecticut	1.58%	$15.69	0.97	$16,100
Delaware	0.28%	$2.73	0.28	$9,700
Florida	6.58%	$65.12	6.62	$9,800
Georgia	2.72%	$26.91	3.16	$8,500
Hawaii	0.39%	$3.88	0.39	$9,800
Idaho	0.42%	$4.18	0.54	$7,800
Illinois	4.21%	$41.66	3.42	$12,200
Indiana	1.70%	$16.83	1.87	$9,000
Iowa	0.84%	$8.34	0.88	$9,500
Kansas	0.81%	$8.03	0.78	$10,300
Kentucky	1.02%	$10.10	1.25	$8,100
Louisiana	1.08%	$10.65	1.30	$8,200
Maine	0.34%	$3.39	0.37	$9,200
Maryland	2.03%	$20.14	1.78	$11,300
Massachusetts	2.96%	$29.26	2.06	$14,200
Michigan	2.72%	$26.90	2.71	$9,900
Minnesota	1.83%	$18.14	1.64	$11,100
Mississippi	0.58%	$5.77	0.79	$7,400
Missouri	1.59%	$15.76	1.68	$9,400
Montana	0.29%	$2.90	0.31	$9,200
Nebraska	0.58%	$5.71	0.55	$10,400
Nevada	0.92%	$9.06	0.96	$9,500
New Hampshire	0.47%	$4.67	0.39	$12,100
New Jersey	3.52%	$34.88	2.60	$13,400
New Mexico	0.45%	$4.50	0.56	$8,000
New York	7.91%	$78.31	5.67	$13,800
North Carolina	2.64%	$26.15	3.04	$8,600
North Dakota	0.24%	$2.34	0.25	$9,300
Ohio	3.03%	$29.97	3.20	$9,400
Oklahoma	0.93%	$9.18	1.11	$8,200
Oregon	1.18%	$11.71	1.30	$9,000
Pennsylvania	3.90%	$38.63	3.52	$11,000
Rhode Island	0.32%	$3.17	0.30	$10,400
South Carolina	1.21%	$12.03	1.51	$8,000
South Dakota	0.26%	$2.62	0.25	$10,400
Tennessee	1.75%	$17.35	2.01	$8,600
Texas	8.14%	$80.62	9.22	$8,700
Utah	0.81%	$8.05	0.99	$8,100
Vermont	0.18%	$1.81	0.17	$10,500
Virginia	2.74%	$27.12	2.50	$10,900
Washington	2.68%	$26.57	2.42	$11,000
West Virginia	0.37%	$3.62	0.47	$7,700
Wisconsin	1.67%	$16.53	1.61	$10,300
Wyoming	0.20%	$1.94	0.16	$12,300
Washington D.C.	0.24%	$2.40	0.25	$9,400

Source Rockefeller Institute (2021), New York Comptroller's Office (2020), ESI Program Analysis & HH Projections

State Program Expenditure Impacts

Of the seven federal programs analyzed in this report, four of them have significant state expenditure components that occur consistently across all states. Program expenditures for Medicaid, Medicare Part D, SNAP, and the various Older Americans Act programs, largely hinges on the income levels of elderly residents.[47] State spending on these programs originates from administrative costs, required state match formulas, or supplemental state spending.

Through a mix of state-level demographic, enrollment, and program spending data, state program expenditure estimates are developed for each of the four programs described above. Estimates of baseline (2020) state expenditures relative to federal expenditures for these programs are used to derive estimates of state costs from insufficient savings over the analysis period of this report.[48] **Excess state program expenditures from insufficient savings grow from $10.6 billion in 2020 to $20.5 billion in 2040, and total $334 billion cumulatively over the twenty-year period** from 2021-2040 (see Figure 4.10)

Figure 4.10: Federal Programs Included in the State Spending Analysis

Program	Federal - Baseline 2020 ($M)	State - Baseline 2020 ($M)	State Differential 2020 ($M)	State Differential 2040 ($M)	State Cumulative 2021-2040 ($M)
Medicaid	$74,466	$28,443	$7,677	$14,553	$237,894
Medicare Part D Low Income Subsidy	$19,500	$7,169	$2,703	$5,534	$88,598
Supplemental Security Income	$6,864	-	-	-	-
SNAP	$5,746	$824	$244	$381	$6,661
Low Income Home Energy Assistance	$1,071	-	-	-	-
Supportive Housing for the Elderly (Sect 202)	$594	-	-	-	-
Nutrition Program for the Elderly (OAA)	$859	$149	$17	$24	$421
Supportive Services & Senior Centers (OAA)	$366	$63	$14	$22	$372
Caregiver Support (OAA)	$183	$60	$12	$23	$382
Total	**$109,649**	**$36,708**	**$10,667**	**$20,538**	**$334,328**

Figure 4.11 below combines estimates of excess state program costs with the estimates developed in Figure 4.9 above with the taxpayer contributions for each state to excess federal expenditures. These two figures combine to represent the costs borne by taxpayers in each state from insufficient retirement savings, which totals $1.3 billion across all 50 states and DC (see Figure 4.11).[49]

[47] Many states operate additional state support programs for elderly residents, or customized supplements to federal programs (such as SSI). Analysis of these individualized state efforts is beyond the scope of this study. As a result, expenditures on these programs are above and beyond the state expenditure estimates developed in this report.

[48] See Appendix A.3 for a detailed description of the approach to the state program expenditure analysis.

[49] State costs associated with the Medicare Part D "clawback" provisions are one of the revenue sources for the federal Medicare Part D Low Income Subsidy program. The state portion of federal revenues (around 11%) are conservatively excluded from the federal portion of this additive analysis of state and federal costs to avoid potential double counting.

Figure 4.11: Program Costs due to Insufficient Savings by State, 2021-2040 ($B)

State	Taxpayer Contributions to Federal Costs ($B)*	State Program Costs ($B)	Combined (Fed Contribution + State Costs) ($B)	<65 Households (2020-2040 Avg) (M)	Cost per <65 Household (20-Year)
National	**$963.53**	**$334.33**	**$1,297.86**	**95.69**	**$13,600**
Alabama	$10.50	$3.78	$14.28	1.37	$10,400
Alaska	$2.04	$0.71	$2.74	0.20	$13,500
Arizona	$17.04	$4.08	$21.12	2.09	$10,100
Arkansas	$6.54	$2.74	$9.29	0.83	$11,200
California	$135.03	$63.00	$198.03	11.54	$17,200
Colorado	$18.22	$5.37	$23.59	1.85	$12,700
Connecticut	$15.27	$6.51	$21.78	0.97	$22,400
Delaware	$2.65	$1.10	$3.75	0.28	$13,400
Florida	$63.39	$16.98	$80.37	6.62	$12,100
Georgia	$26.20	$8.05	$34.25	3.16	$10,800
Hawaii	$3.77	$1.15	$4.93	0.39	$12,500
Idaho	$4.07	$1.15	$5.22	0.54	$9,700
Illinois	$40.56	$8.86	$49.41	3.42	$14,400
Indiana	$16.38	$6.86	$23.24	1.87	$12,400
Iowa	$8.11	$1.98	$10.10	0.88	$11,500
Kansas	$7.82	$2.02	$9.84	0.78	$12,700
Kentucky	$9.83	$3.58	$13.41	1.25	$10,700
Louisiana	$10.37	$3.55	$13.93	1.30	$10,700
Maine	$3.30	$1.63	$4.94	0.37	$13,400
Maryland	$19.60	$4.77	$24.37	1.78	$13,700
Massachusetts	$28.49	$13.94	$42.43	2.06	$20,600
Michigan	$26.18	$11.15	$37.33	2.71	$13,800
Minnesota	$17.65	$5.50	$23.16	1.64	$14,200
Mississippi	$5.62	$4.12	$9.74	0.79	$12,400
Missouri	$15.34	$3.41	$18.75	1.68	$11,200
Montana	$2.82	$0.74	$3.56	0.31	$11,300
Nebraska	$5.56	$1.02	$6.58	0.55	$12,000
Nevada	$8.82	$1.80	$10.62	0.96	$11,100
New Hampshire	$4.55	$0.95	$5.49	0.39	$14,300
New Jersey	$33.95	$11.00	$44.96	2.60	$17,300
New Mexico	$4.38	$2.30	$6.68	0.56	$12,000
New York	$76.23	$26.87	$103.10	5.67	$18,200
North Carolina	$25.46	$9.91	$35.37	3.04	$11,600
North Dakota	$2.27	$0.69	$2.96	0.25	$11,800
Ohio	$29.17	$11.80	$40.97	3.20	$12,800
Oklahoma	$8.94	$2.68	$11.62	1.11	$10,400
Oregon	$11.40	$3.36	$14.75	1.30	$11,400
Pennsylvania	$37.60	$19.10	$56.70	3.52	$16,100
Rhode Island	$3.08	$0.46	$3.54	0.30	$11,600
South Carolina	$11.71	$7.26	$18.97	1.51	$12,600
South Dakota	$2.55	$0.38	$2.92	0.25	$11,700
Tennessee	$16.89	$7.27	$24.16	2.01	$12,000
Texas	$78.48	$20.80	$99.28	9.22	$10,800
Utah	$7.84	$1.04	$8.88	0.99	$9,000
Vermont	$1.76	$0.78	$2.54	0.17	$14,800
Virginia	$26.40	$5.95	$32.34	2.50	$13,000
Washington	$25.87	$3.89	$29.76	2.42	$12,300
West Virginia	$3.52	$2.27	$5.80	0.47	$12,300
Wisconsin	$16.10	$4.53	$20.63	1.61	$12,800
Wyoming	$1.89	$0.47	$2.36	0.16	$15,000
Washington D.C.	$2.33	$0.98	$3.31	0.25	$13,000

** Federal costs adjusted to remove state funded portion of Medicare Part D to avoid potential double counting of impacts*

Technical Appendix

This technical appendix details the methodology used to model the impacts of insufficient savings on the country. This appendix is intended as a supplement to the results presented within the body of the report, providing additional detail on the study framework, inputs and calculations presented within. Results for many calculations are presented with greater granularity than is shown within the main report.

The appendix is organized as follows:

A.1 Demographic and Income Modeling describes the technical methodology supporting projections of household growth and retirement readiness gaps reviewed in Section 2 of the report.

A.2 Government Expenditure Modeling describes the framework and calculations supporting the analysis of benefit program spending on elderly households and the government expenditure impacts from insufficient savings reviewed in Section 4 of the report.

A.3 State Level Analysis reviews the steps taken to generate state-level analysis for many of the metrics calculated on a national basis in Appendix A.1 and Appendix A.2.

A.1 Demographic and Income Modeling

Demographic scenarios of projected population and income patterns form the foundation of the analysis of the potential impact of the continuation of current savings trends.

- First, population and household estimates for the 2020-2040 period are developed based on projections from the Census Bureau Long-Term Projections, which are reconciled with data from the 2020 decennial census and the American Community Survey.
- Next, federal income data sets are used to define income scenarios for elderly households under current trends ("baseline") and under an alternative in which households achieve recommended income-replacement levels ("sufficient savings").

The differential between these scenarios provides the basis for household and federal expenditure impact modeling that follow.

Population and Household Growth

Population

National population projections by age cohort are drawn from the U.S. Census Bureau's Long Term Population Projections.[50] These forecasts provide estimates of the population in 5-year increments from 2020 to 2060 in 5-year age cohort (under 5, 5-9, 10-14, etc.).

Projections are based on population estimates as of 2017. The population "base year" of 2020 is updated with official population counts from the 2020 decennial Census, which are available in year by year increments and are aggregated to the same 5 year age cohorts.[51] To reconcile the two forecasts sets, a projected "progression rate" is

[50] US Census Bureau Population Projections are drawn from the 2017 National Population Projections data series, which provides national projections by age cohort through 2060. These projections are updated by utilizing 2020 decennial Census population figures to replace 2020 projections, and then applying the projected "progression rate" of each cohort as it ages in 5-year increments to this updated base.

[51] US Census Bureau. State Population by Characteristics.

calculated for each five-year age cohort as it advances into the next five-year age band for all age cohorts 5 years old and up.[52] This progression rate is then applied forward to extrapolate the base population estimates as of 2020 forward to 2040.

Households

Next, population forecasts are converted to projections of households, which form the base unit of analysis for benefit program eligibility and expenditures and income modeling undertaken throughout this report. The Annual Social and Economic Supplement to the Current Population Survey (CPS ASEC) provides annual estimates of the number of U.S. households by age cohort.[53] Household estimates by age cohort for 2020 are divided by the population estimates from the 2020 census to compute an average household size for each age cohort. This ratio (also known as the "headship rate") is held constant for each age cohort across the analysis to translate population estimates to household estimates for 2020 and 2040. For elderly cohorts, headship rates are estimated uniquely for the 65-74 population (61.9%) and for the 75+ population (68.4%), with the resulting calculation summed to the total estimate of elderly households (65+).[54]

Income Scenarios

The relative preparedness of coming generations of retirees is a heavily studied topic, and the subject of robust academic and policy debate. Researchers utilize several conceptual frameworks and data sources to evaluate retirement adequacy levels and the body of literature includes differing views on the extent and urgency of the US retirement savings crisis.[55] Major analytical challenges in assessing retirement adequacy include accurately accounting for income available to retirees, defining what constitutes an "adequate" level of consumption or available for retirees, and addressing variation in circumstances across households and across demographic and socioeconomic groups.

In addition to expected variations in data sources and assumptions, different studies have posed somewhat different questions in seeking to evaluate the general question of retirement adequacy. For instance, major studies have been specified to estimate how many households will achieve a specified replacement rate of working age income,[56] how many will attain sufficient preparedness to reach the end of life with available funds,[57] and whether households are optimizing their consumption across time periods.[58]

[52] For example, in order to estimate the 2025 population of the "40-44" age group, the ratio between the "35-39" age cohort in 2020 and the "40-44" cohort in 2025 in the forecast data set is applied to the 2020 population base for the "35-39" age cohort from the decennial census. Projections for the "0-4" age cohort are updated by calculating the ratio between the "0-4" age cohort and the age 15-44 cohorts in the previous 5 year period (which are anticipated to represent the vast majority of child bearing households) and applying this ratio to the updated projection of the 15-44 year old population.

[53] Historical Household Tables: HH-3: Households by the Age of Householder, 1960-Present

[54] The headship rate is calculated as (households) / (population). It is also equivalent to the inverse of average household size.

[55] Literature reviews like those by McKenzie for CFA Institute Research Foundation (2020) and by Bajtelsmit and Rappaport for the Society of Actuaries (2018) provide a helpful summary of the different approaches, goals and methods employed across this body of research. See: George A. (Sandy) Mackenzie for CFA Institute Research Foundation, Is There a Retirement Crisis? An Exploration of the Current Debate. 2020. Vickie Bajtelsmit and Anna Rappaport for the Society of Actuaries, Retirement Adequacy in the United States: Should We Be Concerned? 2018.

[56] See for example: Nari Rhee and Ilana Boivie for the National Institute for Retirement Security. The Continuing Retirement Savings Crisis. 2015.

[57] See for example: Jack VanDerhei for the Employee Benefits Research Institute. "Short" Falls: Who's Most Likely to Come up Short in Retirement, and When? 2014.

[58] See for example: John Karl Scholz, Ananth Seshadri, and Surachai Khitatrakun in the Journal of Political Economy. Are Americans Saving "Optimally" for Retirement? 2006.

These differing framing of the issue of retirement adequacy have naturally led to different analytical choices in their assessment. For example, approaches that emphasize consumption have pursued sophisticated approaches to understanding how consumption patterns and levels change across the life cycle. Complex simulation models focused on the possibility running out of funds during their lifespan often use stochastic approaches to assign probabilities to various outcomes to simulate more realistically the variation and range of outcomes for individual households.

Unsurprisingly, different analytical questions, approaches, and data sets yield varied views about the extent of the current and future challenge posed by retirement inadequacy. This debate is to some degree focused on the extent to which retirement savings challenges are generalizable to the full population, with nearly all researchers acknowledging concerns about the retirement preparedness of lower income households, and of households not participating in any savings programs.

The intent of this study is neither to fully summarize nor to resolve these challenging research questions. Rather, this study seeks to develop a framework for evaluating retirement adequacy that is situated within existing research and policy frameworks and facilitates analysis of the relationship between insufficient savings and fiscal impacts through benefit program spending.

This study adopts the commonly used "income replacement" framework to model retiree incomes and define retirement "insufficiency." This approach benchmarks the level of income achieved by a household during their working years and sets a proportion of that income as an annual target during retirement. The function of this reference point is to enable a household to maintain living standards enjoyed during their working years, with replacement targets typically set below 100% of working age income to account for the reduced consumption needs of elderly households.

The income replacement framework has both supporters and detractors among researchers and financial planners. The framework is valuable in its simplicity and the practicality of application across populations in addition to individuals. Detractors accurately note that it fails to account for situation variation in household needs and may not accurately address resources needed in cases of unexpected expenses or unusual longevity. This study adopts the income replacement framework due to its practical applicability to population-level analysis and its clarity in describing the illustrative conditions of "average" future retirees.

Baseline Incomes

Incomes for the Country's elderly households are estimated using data from the U.S. Census Bureau's Current Population Survey (CPS). This CPS is the source of the Census Bureau's official poverty statistics.

Survey responses from several years are aggregated, with an inflation adjustment utilized to bring all data into common currency ($2020). The Census Bureau defines money income as "income received on a regular basis (exclusive of certain money receipts such as capital gains) before payments for personal income taxes, social security, union dues, Medicare deductions, etc."[59]

Notably, benefits received through government programs outside of Social Security are generally excluded from this income calculation. This approach is the subject of considerable debate among poverty researchers, as it bears on the extent to which benefit programs are able to impact official poverty statistics, and supplemental measurements of poverty have been developed that take alternative income specification approaches.[60] Within

[59] U.S. Census Bureau: About Income

[60] For a non-technical review of the debate on differing approaches to measuring poverty, see:
Dylan Matthews for Vox, Why even brilliant scholars misunderstand poverty in America. 2023

this analysis, the exclusion of most benefit programs from income provides clarity, since benefit levels (estimated in Appendix A.2) are largely segmented from (and therefore additive to) reported income levels.

In addition, it is important to note that income is reported in the CPS on a "pre-tax" basis. To the degree that income streams from savings accounts use a post-tax (Roth) savings, the effective consumption enabled by this income may be higher than typical. Tax situations vary widely for retiree households based on their composition, financial profile, location, and many other factors, and are not accounted for directly in this study.

After analyzing the income distribution of current elderly households based on CPS data, additional income scenarios are developed as a means of understanding the impact of retirement savings on the nation's economy and its fiscal position. First, elderly household incomes are projected to 2040 under a "baseline" scenario in which retirement savings behavior remains consistent.

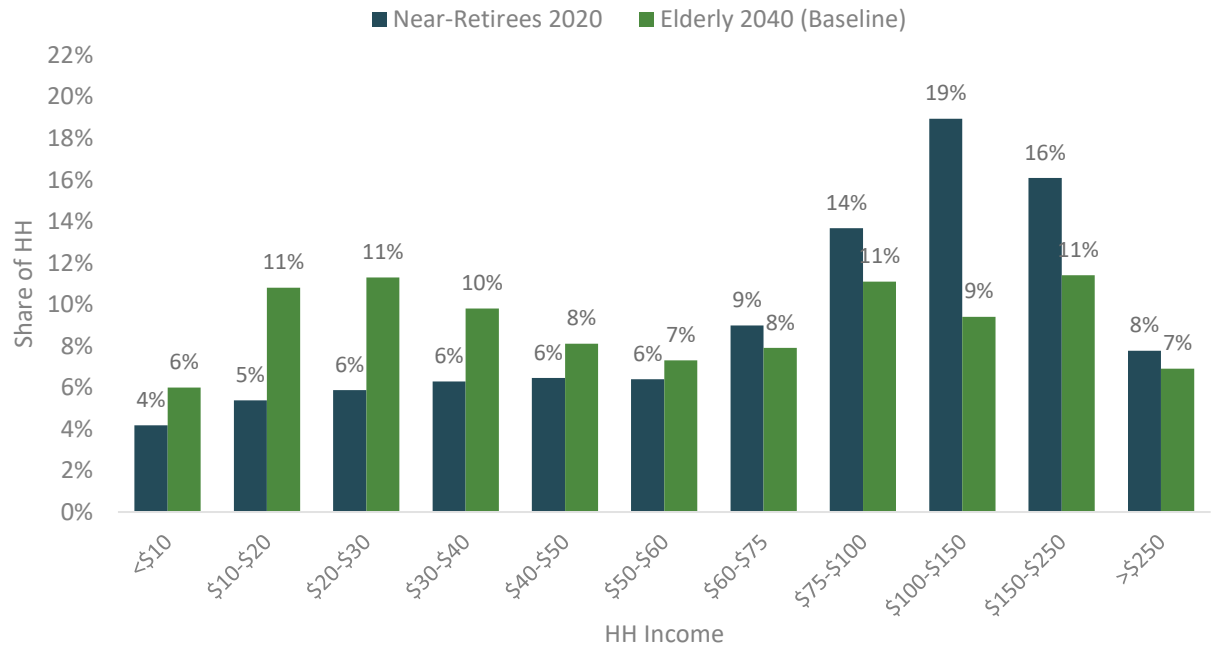
This baseline scenario is developed by observing income replacement levels (using CPS data) for near-retirees (ages 45-64) in 2000 and its elderly residents (65+) in 2020 (see Figure A.1). The changes in income observed for this cohort over the twenty-year period are then applied to the incomes of the current cohort of near retirees (45-64) as of 2020 to project the income distribution of the nation's elderly population as of 2040 (see Figure A.2). All results are expressed in consistent dollar terms ($2020), meaning that differentials reflect changes in real purchasing power.

Notably, this approach to developing the baseline scenario does not assume that elderly incomes remain constant over the 2020-2040 period, but rather that the relationship between working-age and retirement income remains constant from the prior generation of retirees. Since near-retiree households in 2020 are observed to have somewhat higher incomes (in inflation-adjusted terms) than the near-retiree households in 2000, this cohort is projected to have a higher level of income in retirement when holding income replacement levels constant. This method does not constitute a true "simulation" approach that would seek to analyze the path of individual households and introduce stochastic changes. The more simplified approach employed in this study compares cohorts over time to apply a replacement rate framework across the population and does not seek to ascribe an outcome or probability range of outcomes to any specific household.

Figure A.1: Income Distribution of Near-Retiree (45-64) Households in 2000 and Elderly Households (65+) in 2020 (in $2020)

Source: ESI Analysis of Current Population Survey Data

Figure A.2: Projected Income Distribution of Near-Retiree (45-64) Households in 2020 and Elderly Households (65+) in 2040 (in $2020)



Source: ESI Analysis of Current Population Survey Data

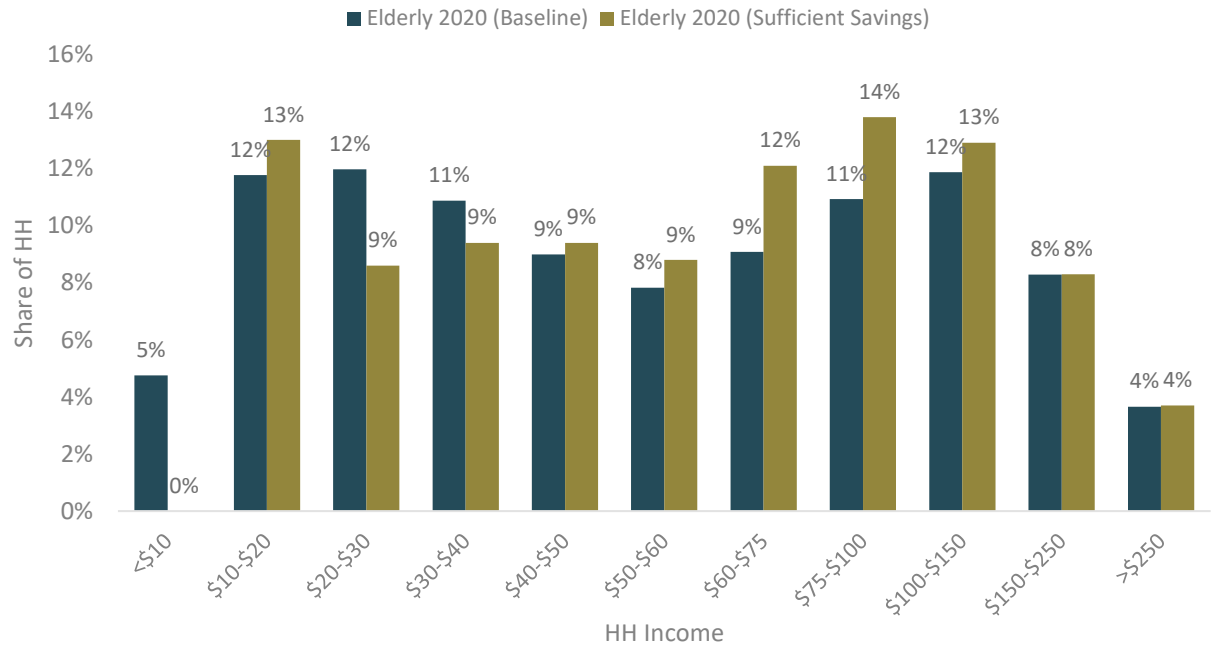
Next, alternative scenarios are developed in which elderly households meet the generally recommended levels of retirement savings as reflected by "income replacement" standards. This analysis adopts an income replacement target of 75% of working age (age 45-64) income to define a "sufficient savings" scenario. Further adjustments are made in this scenario to apply an "income floor" by defining the Federal Poverty Level (FPL) as the minimum household income level, and an "income ceiling" by considering all households with $75,000 or more in annual retirement income to have achieved "sufficient savings" regardless of their exact income replacement level.

Elderly households with incomes below $75,000 are also defined as potentially "vulnerable" households and are the focus of the income and savings analysis in this study. This threshold is definitionally the suggested income replacement level for a household earning $100,000 in their working years. This benchmark should be understood as a general threshold to focus the income replacement analysis, as desired income levels will in practice vary based on cost-of-living factors like location and household circumstances.

This approach is used to model an alternative income distribution for elderly households in 2020 (based on near-retiree incomes in 2000) and to project forward incomes for elderly households in 2040, based on near-retiree incomes in 2020.

Figure A.3 below shows the gap between the baseline and sufficient savings elderly income scenarios as of 2020, while the scenarios for 2040 are shown as Figure 2.9 in the body of the report. From an analytical standpoint, this gap represents the degree of savings shortfall that is used to define the impacts of insufficient savings on households and on state expenditures in this study.

Figure A.3: Income Distribution of Elderly Households by Scenario – 2020



Source: ESI Analysis of Current Population Survey Data

A.2 Federal Expenditure Modeling

The following analyses are undertaken to quantify the impact of insufficient retirement savings levels on program expenditures:

- **Quantifying Expenditures on Elderly Residents** – Congressional Research Service reports, budget documents and program data are used to isolate the portion of total program expenditures flowing to elderly Americans.
- **Allocating Per Capita Expenditures by Income Level** – Total program expenditures on elderly residents are allocated across the baseline income distribution of elderly households using program budget and demographic data as well as program eligibility guidelines. From this allocation, per household expenditures by income level are derived.
- **Expenditure Impacts Between Scenarios** – Per household program costs are matched to the population and income scenarios to produce estimates of assistance program costs from 2020 to 2040 under the "baseline" and "sufficient savings" income scenarios (holding benefit levels constant for each household at a given income level). The net difference in program costs between scenarios represents the incremental spending associated with insufficient retirement savings levels.

Methods and data sources for each of these components are reviewed below.

Program Expenditures on Elderly Residents

To quantify the impact of increased retirement savings levels on federal benefit program costs, a range of programs which are means-tested or otherwise materially impacted by the income levels of the elderly population are selected. Studies from the Congressional Research Service (CRS) and Congressional Budget Office (CBO) as well as a detailed review of program eligibility and outlay guidelines informed the program selection.[61]

The analysis framework largely excludes two programs which provide significant outlays to the elderly population due to the nature of program eligibility/outlays: Medicare and Social Security. Medicare is excluded (except for the Part D Low Income Subsidy Program) due to the program's universal eligibility for the senior population. For Social Security, program benefit levels are dependent on working age income rather than savings levels and therefore are not impacted by increased retirement savings levels. Generalized federal spending on items (defense, infrastructure, etc.) which benefit both the elderly and non-elderly population and are not materially impacted by the income levels of elderly residents are also excluded.

Annual total federal expenditure levels are defined for the identified programs using Federal Fiscal Year (FFY) 2020 budget data presented by the Congressional Research Service.[62] The data presented by the Congressional Research Service, is inclusive of COVID-19 related stimulus spending. In order to model FY2020 spending in an absence of the COVID-19 pandemic, the average program level year-over-year growth rate for 2015-2019 was applied to the FY2019 spending. The exception to this method was SNAP, which experienced both a significant spending increase following the 2008 recession and a dramatic decrease in usage and spending due to rising incomes in the five years prior to FY2020. To control for the volatility of SNAP spending and to estimate the FY2020 non-covid spending, a ten-year average of the year-over-year growth rate was applied to the FY2019 SNAP spending.

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[61] Congressional Budget Office, The Budget and Economic Outlook: 2022 to 2032, 2022
Congressional Research Service, Federal Spending on Benefits and Services for People with Low Income: FY2008-FY2020 Update, 2021
Congressional Research Service, 'Need-Tested Benefits: Estimated Eligibility and Benefit Receipt by Families and Individuals', 2015

[62] Congressional Research Service, *Federal Spending on Benefits and Services for People with Low Income: FY2008-FY2020 Update*

Next, the most recent budget and program data (ranging from FY18-FY20) are used to isolate expenditures from federal funds on the elderly population (65 years and older). Data from previous fiscal years is used to define the relationship between total federal expenditures and expenditures on elderly residents due to the lagged availability of demographic data for the selected assistance program.

Figure A.4 below identifies the program data sources utilized to isolate the level of program expenditures on elderly residents.

Figure A.4: Data Sources Utilized to Determine Federal Funding Allocation to the Elderly Population (65+)

Program	Data Source(s) Utilized
Medicaid	Office of the Actuary, Centers for Medicare & Medicaid Services, United States Department of Health & Human Services, *'2018 Actuarial Report on the Financial Outlook for Medicaid.'*
Medicare Part D Low Income Subsidy	Centers for Medicare & Medicaid Services, Office of Enterprise Data and Analytics, *CMS Chronic Conditions Data Warehouse* (2020).
Supplemental Security Income	U.S. Social Security Administration, Office of Retirement and Disability Policy, Office of Research, Evaluation, and Statistics, *Supplemental Security Income Annual Statistical Report* (2020).
SNAP	United States Department of Agriculture, 'Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2019.'
	U.S. Census Bureau, 2020 American Community Survey 1-Year Estimates, Population by Age and Sex, *Table S0101*.
Low Income Home Energy Assistance	U.S. Department of Health & Human Services, Administration for Children and Families, *LIHEAP Performance Measurement Data Warehouse* (2020).
	U.S. Census Bureau, 2020 American Community Survey 1-Year Estimates, Population by Age and Sex, *Table S0101*.
Supportive Housing for the Elderly (Sect 202)	U.S. Department of Housing & Urban Development, *Picture of Subsidized Households – Section 202 Households* (2020).
Older Americans Act:	
Nutrition Program for the Elderly	Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *National Survey of OAA Participants Public Use Files – Congregate Meals & Home-Delivered Meals (2018 and 2020).*
Supportive Services & Senior Centers	Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *National Survey of OAA Participants Public Use Files – Homemaker, Case Management & Transportation (2018 and 2020).*
Caregiver Support	Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *National Survey of OAA Participants Public Use Files – Caregiver (2018 and 2020).*

The estimated share of program spending on the elderly (65 and older) population in FFY2020 is applied to the base of extrapolated program expenditures for Federal Fiscal Year 2020. Federal spending on these programs is estimated to total over $650 billion in 2020, over $109 billion of which is estimated to be allocated to the elderly population. The largest of these program expenditures is from Medicaid spending which accounts for over $74 billion of federal spending on the elderly. Figure 4.1 in section 4 summarizes anticipated federal expenditures in FFY2020 for each of the identified programs and the portion of these expenditures attributable to the elderly population.

Program Expenditures by Income Level

Next, the federal program expenditures on elderly residents identified are allocated to the 2020 income distribution of senior households (based on CPS data as described throughout this report). Demographic program data from administering departments and other public data sources as well as program eligibility requirements are used to estimate the proportion of program expenditures on elderly households in each income band.

Figure A.5 below details the data sources utilized for each program to estimate the distribution of federal benefit spending across income bands. This allocation incorporates the number of households in each income band (as defined by the 2020 Baseline scenario) and ensures that the current allocation aligns with the total estimated federal expenditures for elderly residents for each program.

Figure A.5: Data Sources Utilized to Allocate Federal Spending on the Elderly by Income Band

Program	Data Source(s) Utilized
Medicaid	Centers for Medicare & Medicaid Services, Office of Enterprise Data and Analytics, Medicare Current Beneficiary Survey Data Public Use File – Selected Characteristics of Dual Eligible (Medicare-Medicaid) Beneficiaries, Fall 2020 Sample
Medicare Part D Low Income Subsidy	Centers for Medicare & Medicaid Services, Office of Enterprise Data and Analytics, Medicare Current Beneficiary Survey Data Public Use File – Selected Characteristics of Medicare Part D LIS Beneficiaries, Fall 2020 Sample
Supplemental Security Income	U.S. Social Security Administration, Office of Retirement and Disability Policy, Office of Research, Evaluation, and Statistics, *Supplemental Security Income Annual Statistical Report* (2020) Office of Retirement and Disability Policy; Office of Research, Evaluation, and Statistics; Characteristics of Noninstitutionalized DI and SSI Program Participants, 2016 Update [63]
SNAP	United States Department of Agriculture, 'Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2019.'
Low Income Home Energy Assistance	U.S. Department of Health & Human Services, Administration for Children and Families, *LIHEAP Performance Measurement Data Warehouse* (2020).
Supportive Housing for the Elderly (Sect 202)	U.S. Department of Housing & Urban Development, *Picture of Subsidized Households – Section 202 Households* (2020).
Older Americans Act:	
Nutrition Program for the Elderly	Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *National Survey of OAA Participants Public Use Files – Congregate Meals & Home-Delivered Meals (2018 and 2020).*
Supportive Services & Senior Centers	Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *National Survey of OAA Participants Public Use Files – Homemaker, Case Management & Transportation (2018 and 2020).*
Caregiver Support	Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *National Survey of OAA Participants Public Use Files – Caregiver (2018 and 2020).* Mathematica Policy Research, *'Supporting Family Caregivers Through Title III of the OAA'* (2011) Administration for Community Living; Aging, Independence, and Disability Program Data Portal, *OAA Title III Characteristics - U.S. Totals* (2018 and 2020)

Analysis of the above-outlined demographic program data provides an estimate of the proportion of spending for each program in each income band. These proportions are then applied to the federal expenditure amounts on the elderly outlined to yield the estimated federal expenditures per program in each income band to ensure that data by income band reconcile with total federal spending estimates for the elderly population. These total expenditure

[63] Income groupings for SSI beneficiaries in 2016 are presented as ratio of Federal Poverty Level guidelines in 2016. These shares and bands are matched to updated Federal Poverty Level guidelines to estimate the income distribution in current terms, holding constant the portion of beneficiaries in each outlined proportional FPL band.

amounts per program per income band are then divided by the number of elderly households within each income band to yield the per capita (per elderly household) expenditure from federal funds for each program and in aggregate (see Figure A.6). Aggregate federal program costs for elderly residents start at more than $20,000 for the lowest income band and fall rapidly as incomes increase.

Figure A.6: Benefit Program Expenditures per Household by Income Band, 2020

Program	<$10	$10-$20	$20-$30	$30-$40	$40-$50	$50-$60	$60-$75	$75-$100	$100-$150	$150-$250	>$250
LIHEAP	$179	$87	$75	$26	$2	$0	$0	$0	$0	$0	$0
SNAP	$1,035	$853	$114	$9	$3	$1	$0	$0	$0	$0	$0
HUD Section 202	$92	$87	$19	$1	$0	$0	$0	$0	$0	$0	$0
SSI	$1,638	$516	$189	$99	$91	$82	$65	$35	$2	$0	$0
OAA Caregiver Support	$26	$7	$5	$6	$6	$5	$5	$3	$2	$0	$0
OAA Nutrition	$61	$73	$43	$21	$19	$14	$14	$14	$0	$0	$0
OAA Supportive Services	$50	$40	$14	$8	$4	$2	$2	$2	$0	$0	$0
Part D LIS	$4,435	$1,881	$672	$220	$129	$63	$52	$5	$0	$0	$0
Medicaid	$12,887	$9,494	$2,301	$652	$352	$173	$112	$10	$0	$0	$0
TOTAL	**$20,404**	**$13,039**	**$3,431**	**$1,042**	**$606**	**$340**	**$250**	**$70**	**$4**	**$0**	**$0**

Expenditure Growth from Excess Medical Cost Growth

In comparisons between scenarios and extrapolations forward from 2020 to 2040, this analysis holds constant the level of demand and the level of services received on a per-household basis. For non-medical programs, per household program spending by income band is therefore held steady over time since results are expressed in $2020 terms. For medical programs an adjustment is applied to account for excess medical inflation, which is anticipated to increase the real cost of medical care relative to other goods and services over time.

In the 2022 long-term federal budget outlook, the Congressional Budget Office projected a growth in "excess medical costs" for the Medicaid and Medicare programs of 0.9% per year from 2022 to 2052.[64] These increases are applied to the estimated per household spending for Medicare and Medicaid services outlined in the following section to model program expenditures out to 2040.

Projected demographic changes combined with increases in medical costs will yield significant increases in Medicaid and Medicare spending over the modeled timeframe, independent of any changes in retirement saving behavior. This cost growth over time is incorporated into expenditure estimates under the baseline scenario as well as the modeled program scenarios over the study period.

Figure A.7 shows modeled per household expenditures by income band for 2040 by program and in aggregate, expressed in $2020. Per household expenditures for Medicaid and Medicare Part D are modeled to increase in real terms by the excess growth rates reviewed above, while per household expenditures by income band for all other programs are unchanged (consistent with the implicit assumption of a continuation of current policy, and the use of consistent $2020 throughout the analysis). Aggregate per household expenditures for the lowest income band are estimated to grow to more than $23,800.

[64] Congressional Budget Office, 2022 Long-Term Budget Outlook. July 2022.

Figure A.7: Benefit Program Expenditures per Household by Income Band, 2040 (in $2020)

Program	<$10	$10-$20	$20-$30	$30-$40	$40-$50	$50-$60	$60-$75	$75-$100	$100-$150	$150-$250	>$250
Medicaid	$15,416	$11,357	$2,752	$780	$421	$207	$134	$12	$0	$0	$0
Medicare Part D Low Inc Subsidy	$5,306	$2,250	$804	$263	$155	$76	$63	$7	$0	$0	$0
Supplemental Security Income	$1,638	$516	$189	$99	$91	$82	$65	$35	$2	$0	$0
SNAP	$1,035	$853	$114	$9	$3	$1	$0	$0	$0	$0	$0
LIHEAP	$179	$87	$75	$26	$2	$0	$0	$0	$0	$0	$0
Supportive Housing for the Elderly	$92	$87	$19	$1	$0	$0	$0	$0	$0	$0	$0
Nutrition Program for the Elderly	$61	$73	$43	$21	$19	$14	$14	$14	$0	$0	$0
Supportive Serv & Senior Centers	$50	$40	$14	$8	$4	$2	$2	$2	$0	$0	$0
Caregiver Support	$26	$7	$5	$6	$6	$5	$5	$3	$2	$0	$0
TOTAL	**$23,803**	**$15,271**	**$4,014**	**$1,213**	**$701**	**$386**	**$282**	**$73**	**$4**	**$0**	**$0**

Expenditures Growth from Insufficient Savings

Program expenditures per household by income level for 2020 and 2040 are then applied to the population and income scenarios:

- The “baseline scenario” in which retirement savings behavior remains consistent with current levels, as reflected by a continuation of observed replacement rates of working-age income in retirement.
- The “sufficient savings scenario” in which current and future retiree households achieve recommended levels of retiree savings (as a function of their working age incomes).

The population and income profiles associated with each of these scenarios are reviewed in detail in Appendix A.1 above. For any year, program expenditure differentials between the baseline and sufficient savings scenarios are purely a function of changes in the income distribution, with the total number of households and the per household spending for each income band held constant between scenarios.

Calculations are first undertaken for the end point years of 2020 and 2040, based on the population and income scenarios and program spending calculations outlined above. Annualized program cost growth is then extrapolated for the intervening years, based on methods described below.

Net Differential: Baseline & Sufficient Savings Scenarios, 2020-2040

The first analysis developed in the report compares the differences between baseline and sufficient savings scenarios each year over the analysis period. The net differential in federal expenditures between the baseline and sufficient savings scenarios grows from $32 billion in 2020 to $61 billion in 2040, as detailed in Section 4.2 of the main report.

Analysis is then undertaken to estimate the annual pattern of incremental expenditures between these two endpoints. Growth in net expenditures over time is function of growth in the senior population (which is projected on an annual basis), excess medical inflation (which is projected as a linear annual growth rate) as well as changes in the income profiles by scenario (which are projected at the study endpoints). A variable annual growth rate is calculated for each year based on a combination of the “phase-in” of senior population growth (which occurs disproportionately in the early years of the analysis period) and a consistent growth rate for excess medical inflation and income changes.

The resulting federal expenditure levels on elderly residents for the selected programs over the 2020-2040 timeframe in the baseline and sufficient savings scenarios are summarized in Figure A.8. The net differential in government expenditures between scenarios represents the incremental spending attributable to insufficient savings, when holding constant the level of services or benefits provided to each household at a given income level. Over the 20-year period from 2021-2040, cumulative expenditures in the baseline scenario total $3.29 trillion, while cumulative expenditures under the sufficient savings scenario total $2.30 trillion. The 20-year net differential between these scenarios totals a cumulative $990 billion (see Figure A.8)

Figure A.8: Annual Federal Program Expenditures: Net Differential Between Baseline and Sufficient Savings Scenarios (in $2020 B)

Year	Baseline Scenario ($B 2020)	Sufficient Savings Scenario ($B 2020)	Net Differential ($B 2020)
2020	$110	$77	$32
2021	$115	$81	$34
2022	$121	$85	$36
2023	$127	$89	$38
2024	$134	$94	$40
2025	$140	$98	$42
2026	$145	$102	$43
2027	$151	$105	$45
2028	$156	$109	$47
2029	$162	$113	$49
2030	$167	$117	$50
2031	$171	$120	$52
2032	$175	$122	$53
2033	$179	$125	$54
2034	$183	$128	$55
2035	$187	$130	$57
2036	$190	$132	$57
2037	$192	$134	$58
2038	$195	$136	$59
2039	$198	$138	$60
2040	$201	$140	$61
20 Year (2021-40)	**$3,290**	**$2,300**	**$990**

Alternative Framework: Sufficient Savings for New Retirees

The scenario above analyzes the net difference starting between observed and anticipated federal expenditures (the baseline scenario) and a scenario in which recommended income levels had been achieved starting in 2020 and are maintained through 2040 (the sufficient savings scenario). This general framework and comparison (often with a 15-year analysis period) has been utilized by ESI to define the cost of insufficient savings in several states considering automated savings programs (Pennsylvania, Colorado, Virginia, and Hawaii).[65]

An alternative framework to define the "cost of doing nothing" is to develop a scenario in which elderly households begin with observed (baseline) income levels in 2020, and transition over time to the recommended (sufficient) income levels by 2040. By "phasing in" the transition to the sufficient savings scenario over the analysis period, rather than applying it immediately as of the starting point, this construct in effect analyzes the effect of achieving sufficient income levels for *new* retirees during the analysis period, rather than applying those levels to all elderly households. In this formulation, increased retiree savings slow the rate of growth in benefit program costs over time. This alternative scenario is referred to as "sufficient savings (new retirees)" within this report.

To extrapolate the annual trend for this alternative, the differential in program costs between the Baseline scenario in 2020 ($109.7 billion) and the Sufficient Savings scenario in 2040 ($140.0 billion) is broken down into its contributing parts: excess medical inflation (which accounts for an increase of $18.4 billion) and demographic change (which accounts for an increase of $11.9 billion). Demographic change in this instance is a combination of two countervailing factors – a growing elderly population (which increases expenditures), and an improved income distribution for the elderly population in the sufficient savings scenario (which decreases expenditures). The net effect of these two factors is an increase in expenditures over the 20-year period (due to the 53% increase in senior households), but a significant slowing in the rate of growth relative to the baseline income distribution. The annual "phase-in" of this cost growth is modeled based on a linear growth rate for medical inflation and based on the projected pattern of household growth for demographic change.

Applying this approach produces an annual projection for the "Sufficient – New Retirees" scenario that totals a cumulative $2.54 trillion in expenditures on elderly residents within the selected programs over the 20-year period from 2021-2040. This scenario is then compared to the baseline scenario, which totals $3.29 trillion in expenditures over the same period. The 20-year net differential between these scenarios totals a cumulative $755 billion (see Figure A.9).

[65] Econsult Solutions, Inc. (ESI):
Report on the Proceedings of the Pennsylvania Treasury Department Private Sector Retirement Security Task Force (2018)
Colorado Secure Plan Savings Board Recommendations to Increase Retirement Savings in Colorado (2020)
Report of the Virginia College Savings Plan. Report on State-Facilitated Private Retirement Plan Programs: Encouraging Citizens to Save for Retirement (2020)
Findings and Recommendations of the Hawai'i Retirement Savings Task Force (2021)

Figure A.9: Annual Government Expenditure Costs: Alternative Framework (in $2020 M)

Year	Baseline Scenario ($M 2020)	Sufficient – New Retirees ($M 2020	Net Differential ($2020 M)
2020	$110	$110	$0
2021	$115	$111	$4
2022	$121	$113	$8
2023	$127	$115	$12
2024	$134	$117	$17
2025	$140	$118	$21
2026	$145	$120	$25
2027	$151	$122	$29
2028	$156	$123	$33
2029	$162	$125	$37
2030	$167	$127	$41
2031	$171	$128	$43
2032	$175	$130	$45
2033	$179	$131	$48
2034	$183	$132	$50
2035	$187	$134	$53
2036	$190	$135	$55
2037	$192	$136	$56
2038	$195	$138	$58
2039	$198	$139	$59
2040	$201	$140	$61
20 Year (2021-40)	**$3,290**	**$2,535**	**$755**

A.3 State Level Analysis

Additional analysis has been undertaken to extend several of the metrics and calculations conducted at the national and federal level in this report to the state level. All calculations are derivatives of and reconciled with the national report, meaning that state level metrics sum to the national calculation in the aggregate. Methods for the estimation of state level results seek to follow the framework of the national analysis as closely as possible, with modifications where additional data sources are needed for state level information, or where state demographic or program dynamics differ in nature from national ones.

Population and Household Growth

Population

US Census population forecasts are available only at the national level, meaning that an additional source is required for state level analysis. State population projections by age cohort are drawn from the University of Virginia's Demographics Research Group.[66] These forecasts provide estimates of the population in 5-year increments from 2020 to 2040 in 5-year age cohort (under 5, 5-9, 10-14, etc.).

Projections are based on population estimates as of 2018. The population "base year" of 2020 is updated with official population counts from the 2020 decennial Census, which are available in year by year increments and are aggregated to the same 5 year age cohorts.[67] To reconcile the forecasts set with the observed starting point from the 2020 Census, a projected "progression rate" is calculated for each five-year age cohort as it advances into the next five-year age band for all age cohorts 5 years old and up. This progression rate is then applied forward to extrapolate the base population estimates as of 2020 forward to 2040. Finally, population projections for each state are scaled so that their sum equals the national projection, using a universal scalar factor across all states and the District of Columbia.

Population estimates for the elderly and non-elderly population of each state derived from this method are shown below in figure A.10.

[66] University of Virginia Weldon Cooper Center for Public Service, Demographic Research Group. National Population Projections.

[67] US Census Bureau. State Population by Characteristics.

Figure A.10: Projected Elderly and non-Elderly Population Growth by State, 2020-2040

	Non-Elderly Population (<65)			Elderly Population (65+)		
State	**<65 Pop 2020**	**<65 Pop 2040**	**% Chg**	**Elderly Pop 2020**	**Elderly Pop 2040**	**% Chg**
National	**276,214,400**	**290,919,200**	**5%**	**54,136,600**	**81,457,800**	**50%**
Alabama	4,147,800	3,942,100	-5%	864,700	1,187,100	37%
Alaska	619,600	620,300	0%	93,000	141,200	52%
Arizona	5,853,300	6,672,300	14%	1,279,800	2,362,100	85%
Arkansas	2,491,000	2,464,600	-1%	516,300	721,300	40%
California	33,606,600	35,252,500	5%	5,787,400	8,995,800	55%
Colorado	4,894,100	5,978,900	22%	843,200	1,446,900	72%
Connecticut	2,968,900	2,671,200	-10%	632,000	868,700	37%
Delaware	794,800	848,800	7%	191,800	292,500	52%
Florida	17,032,400	20,611,400	21%	4,446,600	7,588,400	71%
Georgia	9,126,600	9,873,500	8%	1,523,600	2,537,700	67%
Hawaii	1,139,100	1,163,800	2%	274,200	400,800	46%
Idaho	1,537,600	1,782,300	16%	298,200	504,100	69%
Illinois	10,740,100	9,484,100	-12%	2,052,400	2,689,400	31%
Indiana	5,700,400	5,581,200	-2%	1,084,100	1,503,500	39%
Iowa	2,638,100	2,648,700	0%	552,000	758,500	37%
Kansas	2,440,100	2,335,900	-4%	475,700	650,000	37%
Kentucky	3,739,800	3,649,100	-2%	751,400	1,041,100	39%
Louisiana	3,901,900	3,866,500	-1%	740,300	972,300	31%
Maine	1,074,200	981,200	-9%	287,300	401,100	40%
Maryland	5,173,300	5,268,700	2%	972,800	1,415,800	46%
Massachusetts	5,845,200	6,013,400	3%	1,181,000	1,712,800	45%
Michigan	8,302,600	7,652,100	-8%	1,772,600	2,366,300	33%
Minnesota	4,781,400	4,956,500	4%	924,400	1,413,100	53%
Mississippi	2,466,300	2,247,700	-9%	482,500	654,700	36%
Missouri	5,083,900	4,864,400	-4%	1,054,800	1,443,500	37%
Montana	873,300	969,700	11%	207,600	295,800	42%
Nebraska	1,642,900	1,731,200	5%	312,500	446,000	43%
Nevada	2,596,900	3,032,400	17%	497,300	1,003,400	102%
New Hampshire	1,120,300	1,045,500	-7%	256,600	397,500	55%
New Jersey	7,757,200	7,384,000	-5%	1,524,500	2,113,000	39%
New Mexico	1,726,200	1,615,800	-6%	379,100	556,600	47%
New York	16,783,200	16,152,100	-4%	3,397,900	4,358,400	28%
North Carolina	8,604,100	9,363,600	9%	1,729,600	2,786,400	61%
North Dakota	650,900	863,400	33%	121,100	184,100	52%
Ohio	9,744,800	9,128,200	-6%	2,047,700	2,682,100	31%
Oklahoma	3,311,700	3,466,500	5%	628,800	872,000	39%
Oregon	3,471,500	3,959,900	14%	764,300	1,161,700	52%
Pennsylvania	10,591,600	9,811,200	-7%	2,408,200	3,155,900	31%
Rhode Island	900,900	1,385,200	54%	192,900	262,800	36%
South Carolina	4,154,200	4,684,700	13%	927,800	1,435,200	55%
South Dakota	732,600	808,300	10%	150,900	226,800	50%
Tennessee	5,742,700	6,087,600	6%	1,148,100	1,714,400	49%
Texas	25,310,200	31,581,000	25%	3,715,800	6,668,400	79%
Utah	2,896,400	3,583,100	24%	371,100	703,300	90%
Vermont	514,500	460,500	-10%	128,400	178,900	39%
Virginia	7,168,700	7,529,200	5%	1,362,100	2,058,100	51%
Washington	6,445,800	7,712,300	20%	1,210,800	1,970,100	63%
West Virginia	1,429,300	1,244,000	-13%	364,200	431,300	18%
Wisconsin	4,868,800	4,587,300	-6%	1,023,400	1,483,300	45%
Wyoming	474,600	437,200	-8%	99,500	137,800	39%
Washington D.C.	602,100	864,000	43%	84,300	105,900	26%

Source: ESI Analysis of Census Bureau and UVA Demographics Research Center Population Projections

Households

Next, population forecasts are converted to projections of households, which form the base unit of analysis for benefit program eligibility and expenditures and income modeling undertaken throughout this report. Headship rates by age cohort used in the national analysis (derived from Current Population Survey data) are applied uniformly and are held constant for each age cohort and for each state across the analysis to translate state population estimates to state household estimates for 2020 and 2040.

Income Scenarios

Baseline Incomes

Incomes for each state's elderly households are estimated using the same base data utilized in national analysis, sourced from the Census Bureau's Current Population Survey (CPS). Survey responses from several years are aggregated, with an inflation adjustment utilized to bring all data into common currency ($2020). The Census Bureau defines money income as "income received on a regular basis (exclusive of certain money receipts such as capital gains) before payments for personal income taxes, social security, union dues, Medicare deductions, etc."[68]

Mirroring the national analysis, additional income scenarios are developed for each state's elderly households as a means of understanding the impact of retirement savings on the state's economy and its fiscal position. Elderly household incomes are projected to 2040 under a "baseline" scenario in which retirement savings behavior remains consistent. This baseline scenario is developed by observing income replacement levels (using CPS data) for each state's near-retirees (ages 45-64) in 2000 and its elderly residents (65+) in 2020. The changes in income observed for this cohort over the twenty-year period are then applied to the incomes of the state's current cohort of near retirees (45-64) as of 2020 to project the income distribution of its elderly population as of 2040.

For state level analysis, an additional step is implemented to account for population migration between states over the retrospective (2000-2020) analysis period. Migration effects imply that the cohort of near-retirees in a state as of 2000 is an imperfect comparison point to estimate income replacement rates for a state's elderly population as of 2020, particularly for states at the low and high end of the income distribution, for which in-migrants may be expected to have a different income profile than the average in-state residents.

To account for this effect, estimates are developed of the share of the 2020 elderly population in each state that have migrated from outside of the state since the year 2000. This analysis is undertaken using American Community Survey (ACS) annual estimates by age band of the number of people residing in each state who moved from outside the state within the past year. This data is available from 2010-2019 and is extrapolated back to 2000 using average annual proportions from the observed years. These estimates are adjusted to account for the possibility of multiple moves, and to account for attrition using CDC mortality rates.[69]

For the purpose of estimating income replacement rates, the share of the population estimated to be migrating from out of state is assigned the average national income profile for near retiree households in 2000. A revised income profile for near-retirees as of 2000 is estimated for each state, weighting the observed income profile of in-state residents with the national profile assigned to "migrants." This revised profile is used as the starting point in the comparison of replacement rates for the 2020 elderly population, which in turn is projected forward to the

[68] U.S. Census Bureau: About Income

[69] In-migration to each state is modeled on an annual basis from 2000-2019. For the in-migrant cohort for a given year, the national rate of annual cross-state moves for their age cohort is applied across each of the remaining years in the analysis period to account for the possibility that the person will subsequently move out of state, and the annual mortality rate for their age cohort is applied in each of the remaining years of the analysis period to account for the possibility that the person will no longer be alive by 2020.

current near-retiree population to estimate retiree incomes in each state as of 2040 under the continuation of current income replacement trends (baseline scenario).

Alternative Income Scenarios

Next, as in the national analysis, alternative scenarios are developed in which elderly households meet the generally recommended levels of retirement savings as reflected by "income replacement" standards. This analysis adopts an income replacement target of 75% of working age (age 45-64) income in order to define a "sufficient savings" scenario. Further adjustments are made in this scenario to apply an "income floor" by defining the Federal Poverty Level (FPL) as the minimum household income level, and an "income ceiling" by considering all households with $75,000 or more in annual retirement income to have achieved "sufficient savings" regardless of their exact income replacement level. This approach is used to model alternative income distributions for elderly households in 2020 (based on near-retiree incomes in 2000) and to project forward incomes for elderly households in 2040, based on near-retiree incomes in 2020.

For each state, the gap between baseline and sufficient elderly income scenarios is calculated as of 2020 and 2040. Dubbed the 'Elderly Savings Gap', from an analytical standpoint, this gap represents the degree of income shortfall that is used to define the impacts of insufficient savings on households and on state expenditures in this study. Financial calculations consistent with those used in the national analysis (described in Section 3.1) are then undertaken to determine the level of additional savings needed to address this retirement income gap for the average household <$75,000.

State level estimates of income and savings gaps by state as of 2040 resulting from this method are shown in report Figure 2.11 (Income Gap) and Figure 3.3 (Savings Gap).

Balance of Payments and Distribution of Federal Expenditures

Program expenditure impacts due to insufficient savings by state are derived based on two different frameworks. First, a "balance of payments" calculation is undertaken to understand the implications of additional federal expenditures for the taxpayers of each state, based on each state's relative contribution to the federal tax base. Second, state program expenditures are calculated for those federal programs with a shared state and federal component.

The "balance of payments" allocation of the additional federal expenditures for the 50 states and District of Columbia is conducted using the following inputs:

1) Program expenditure gaps between the baseline and sufficient savings scenarios[70]
2) Population and household estimates[71]
3) Data on the State Distribution of Federal Receipts and Expenditures

Distribution of Federal Receipts and Expenditures

Federal receipts and expenditures data was drawn from analysis by the Rockefeller Institute of Government.[72] Federal Fiscal Year 2019 was the latest data available that was unaffected by the events of the COVID-19 pandemic and are used as the basis for the analysis in this study.

[70] See section 4.2 Expenditure Growth from Insufficient Savings

[71] See section 2.1 Projected Growth in the Elderly Population and Households, and Appendix A3 State Level Analysis

[72] Giving or Getting? New York's Balance of Payments with the Federal Government, 2021 Report. Washington D.C data was from this source.

The Rockefeller Institute uses a collection of direct payments, grants, Medicaid, contracts, procurements, and wages to calculate federal expenditures. In addition, the Institute uses insurance data, income tax, estate taxes, gifts taxes, and other excises to calculate receipts. The bulk of Federal receipts were generated from individual income and employment taxes. Rockefeller's published analysis covers only the 50 states. This method was extrapolated to cover Washington D.C. data using parallel data published in a report for the from the New York Comptroller's Office.[73]

Each state's proportion of the federal tax base is multiplied by the estimates of the total federal cost of insufficient savings to yield estimated allocations for each state. This figure is also divided by the average number of non-elderly (<65) households in each state over the 2021-2040 period (derived from population modeling above) to express results on a per household basis.

The proportions of the federal tax base attributed to each state and resulting federal cost apportionment from insufficient savings for each state can be found in report Figure 4.9.

State-Level Program Expenditures

To quantify the impact of increased retirement savings levels on state program costs, a subset of the programs analyzed at the federal level that had applicable state spending components was selected. Studies from the Congressional Research Service (CRS), Congressional Budget Office (CBO), as well as a detailed review of budgets and funding structures informed the program selection (see Figure A.11).

Figure A.11: State Components of Federal Programs Analyzed – Program Included in Analysis

Federal Program	State Spending Components
Medicaid	State-level Medicaid spending occurs in the form of state match spending of federal payments. State level match payments are determined by a federal funding formula based on states' per capita income, resulting in higher federal payments in states with lower income residents.
Medicare Part D Low Income Subsidy	State-level Medicare Part D Spending occurs in the form of a "State Sharedown" or "Clawback" payment to the Federal government for a portion of the federal expenditures on all dual eligibles, regardless of LIS status.
SNAP	The Federal Government pays for 100% of SNAP benefits issued and covers 50% of program administrative costs. States must cover the remaining 50% of administrative costs.
Older Americans Act	Each segment of Title III of the Older American Act requires a state-level match of federal expenditures on each program.
Nutrition for the Elderly	Nutrition Services for the Elderly, requires a 15% state match to federal spending
Supportive Services and Senior Centers	Supportive Services and Senior Centers, requires a 15% state match to federal spending
Caregiver Support	Caregiver Support requires a 25% state match to federal spending.

[73] New York's Balance of Payments in the Federal Budget, Federal Fiscal Year 2019

The state analysis framework excludes three programs that are included in the federal analysis, Supplemental Security Income, Low Income Home Energy Assistance, and Supportive Housing for the Elderly (Section 202). Reasons for their exclusion are detailed below in Figure A.12 below.

Figure A.12: State Components of Federal Programs Analyzed – Excluded Programs

Federal Program	State Components
Low Income Home Energy Assistance (LIHEAP)	Federal Funds cover the programmatic and administrative costs of LIHEAP. LIHEAP statutes permits States to use up to 10% of federal LIHEAP funds on program planning and administrative costs. This enables states to shift the spending burden of this program entirely, or almost entirely, onto the federal government.
Section 202 - Supportive Housing for the Elderly	Section 202 is a fully federally funded program, without requirements for state matches.
Supplemental Security Income	Supplemental Security Income is administered in a variety of ways. In addition to the federal supplement, 45 states (including D.C), operate some form of an additional, optional state supplement program. Of the 45 states with optional programs, 33 of these programs are administered by their respective state governments, six are administered through the federal government for a small per payment fee, and six states split the administrative responsibility of payment disbursement between the state and the federal government, depending on program eligibility criteria. The highly varied disbursement and administrative processes of this program and lack of aggregate sources for state data which makes a uniform modeling approach infeasible. Therefore, this program has not been included in the state level analysis.

The Medicaid, Medicare Part D, SNAP, and the Older Americans Act (Title III service) are then analyzed to determine the level of current and projected expenditure savings derived from sufficient savings levels. The most recent budget and program data (ranging from FY18-FY20) are used to isolate expenditures from federal funds on the elderly population (65 years and older).

Figure A.13 below identifies the program data sources utilized to isolate the level of program expenditures on elderly residents.

Figure A.13 : Data Sources Utilized to Determine State Funding Allocation to the Elderly Population (65+)

Program	Data Source(s) Utilized
Medicaid	KFF. State Health Facts, Medicaid Enrollment by Age (2019). Medicaid.gov. Medicaid Per Capita Expenditures (2019) MACMAC. MACStats Medicaid and CHIP Data Book December (2021)
Medicare Part D	Corrected Calendar Year (CY) 2020 Jan - Sep Phased-down State Contribution Final PerCapita Rates. Department of Health and Human Services (2019) Center for Medicare & Medicaid Services. CMS Program Statistics - Medicare Part D (2020) MedPAC MACPAC Dually Eligible Data Book CY 2019. (2022)
SNAP	United States Department of Agriculture, 'Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2019.' United States Department of Agriculture, 'Supplemental Nutrition Assistance Program: State Activity Report Fiscal Year 2019.'
Older Americans Act:	
Nutrition Program for the Elderly	Administration for Community Living. OAA Title III Grants for State and Community Programs on Aging (FY 2020) Administration for Community Living. SPR Data (FY 2020)
Supportive Services & Senior Centers	Administration for Community Living. OAA Title III Grants for State and Community Programs on Aging (FY 2020) Administration for Community Living. SPR Data (FY 2020)
Caregiver Support	Administration for Community Living. OAA Title III Grants for State and Community Programs on Aging (FY 2020) Administration for Community Living. SPR Data (FY 2020)

Modeling of state program expenditure impacts from insufficient savings is implemented through a multi-step procedure:

1) Program-specific data by state is utilized to estimate the ratio of state program spending to federal program spending as of 2020, and to estimate the share of overall state expenditures for each state and the District of Columbia

2) A uniform modeling approach is used to apply these proportions to estimates of federal program costs insufficient savings from 2020 and 2040, and to estimate state costs accordingly over this period.

The methodology below describes program-specific calculations for each modeled program, then describes the uniform procedure to estimate state costs from insufficient savings across each program.

Medicaid

Information on Medicaid enrollment by age and by state is available as of Calendar Year 2019 through data published by the Kaiser Family Foundation (KFF).[74] This data set indicates Medicaid enrollment among the elderly (65+) population of around 8.5 million. Per capita expenditures by state for the aged Medicaid population are drawn from data published by the Center for Medicaid and CHIP services within CMS.[75] These per capita costs include both federal and state expenditures. Combining enrollment and per capita expenditure estimates provides an initial benchmark estimate for total Medicaid spending (federal and state) for the elderly population of each state, which is also expressed as the share of total Medicaid spending occurring in each state.

Analysis is then conducted of the federal and state share of Medicaid expenditures in each state based on data published by MACPAC.[76] This data set is scaled to the estimate of federal Medicaid spending for FY 2020 without the effects of the COVID-19 pandemic developed in the federal analysis above and adjusted to remove spending occurring in territories outside of the 50 states and District of Columbia.[77]

The state share of total expenditures in each state is drawn from the dataset and applied to the scaled estimates of total spending to estimate state Medicaid expenditures for each state. Aggregate state Medicaid expenditures for the elderly population total an estimated $34.4 billion, or 32% of overall (Federal + State) spending.

Medicare Part D

The relationship between federal and state funding for Medicare Part D differs from the other programs analyzed. While the federal government is the primary payer for the Medicare Part D program, states make payments that fund a portion of Medicare Part D beneficiary expenditures. These state payments are referred to as "clawback payments" and represent a portion of expenditures previously covered by states prior to the enactment of Part D in 2003. State payments for Medicare Part D are not exclusive to LIS participants and as such the state spending analysis in this report reflects the total state payments for all Medicare Part D participants.

Medicare clawback payments for each state are based on a formula dictated by the number of dual-eligibles (Medicare and Medicaid) enrolled in Part D and the average drug costs by state. As a result, state payment levels are impacted by the demographic and income profile of their elderly residents and can be estimated based on differentials between the demographic and income scenarios developed in this report. However, since state payments serve as a revenue source for federal program expenditures, rather than a unique program expenditure, these state costs are excluded from this analysis when summing the federal and state costs of retirement insufficiency to avoid potential double counting.

Information on the total state Medicare Part D sharedown spending is derived from the *2021 Annual Report Of The Boards Of Trustees Of The Federal Hospital Insurance And Federal Supplementary Medical Insurance Trust Funds*[78]. As of FY2020, States paid more than $11 billion to the federal government in sharedown payments. To estimate the

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[74] Kaiser Family Foundation (KFF). *Medicaid Enrollment by Age (2019).*

[75] Center for Medicaid and CHIP Services Analysis of Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF). Per Capita Expenditures, 2019.

[76] MACPAC EXHIBIT 16. Medicaid Spending by State, Category, and Source of Funds

[77] Non-state spending occurs in American Samoa, Gum, Northern Mariana Island, Puerto Rico and the Virgin Islands. Among these territories, the vast majority of spending occurs in Puerto Rico. Overall, more than 99% of federal spending is accounted for among the 50 states and District of Columbia.

[78] THE BOARDS OF TRUSTEES, FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS. *2021 ANNUAL REPORT OF THE BOARDS OF TRUSTEES OF THE FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS* (2021)

Sharedown spending by state, the formula detailed in The Medicare Prescription Drug Improvement and Modernization Act of 2003, and described by KFF, was utilized to estimate spending.[79] The basics of the formula are below:

State Monthly Payment = (1/12) x Per Capita Expenditures x Dual Eligibles x Phase-Down Percentage

The data needed for this formula can be found in various publicly available datasets including:

1. The CMS Program Statistics for Medicare Part D for FY2020 per capita expenditures by state[80]
2. The MACPAC Dually Eligible Data Book for FY2019 dual eligible enrollment by state[81]
3. The Phase-Down Percentage for FY2020 was 25% (as detailed by KFF)

The calculation listed above is initially performed for dual-eligibles of all ages to confirm the validity of the formula, and then performed exclusively for elderly dual-eligibles. The number of elderly duals was estimated by applying the federal share of elderly duals to state level duals. The ratio of elderly estimated state expenditures to total estimated state expenditures was then applied to the total reported state sharedown payment of $11 billion, to estimate the portion being spent on elderly duals ($7.2 billion). The ratio of individual state spending to the sum of state spending is then used to allocate the estimated expenditures attributed to the elderly to each state.

Supplemental Nutrition Assistance Program (SNAP)

Data on SNAP enrollment by age and by state is available as of FY 2019 through the USDA Food and Nutrition Service Department.[82] This data details the number of elderly participants (Aged 60+) in the program, this number is then adjusted to participants Aged 65+ by applying the federal share of households aged 65+ of households aged 60+ using ACS 2020 data. This calculation yields an estimate of around 3.8 million SNAP participants aged 65+ nationwide.

Average SNAP issuance by participant, as well as average state and average federal administrative costs by participant is available at the state through the USDA Food and Nutrition Service Department.[83] Combining enrollment and per capita expenditure estimates provides an initial benchmark estimate for state and federal SNAP expenditures for the elderly population of each state, which is also expressed as the share of total SNAP spending occurring in each state. This data set is scaled to the previously developed estimate of federal SNAP spending for FY 2020 without the effects of the COVID-19 pandemic developed in the federal analysis above and adjusted to remove spending occurring in territories outside of the 50 states and District of Columbia (based on further data from the SNAP FY 19 state activity report.

The state share of total expenditures in each state is drawn from the dataset and applied to the scaled estimates of total spending to estimate state SNAP expenditures for each state. Aggregate state SNAP expenditures for the elderly population total an estimated $900 million, or 13% of overall (Federal + State) spending.

[79] Kaiser Family Foundation. *Closing the Medicare Part D Coverage Gap: Trends, Recent Changes, and What's Ahead*. (2018)

[80] CMS Program Statistics

[81] MACPAC Data Bool. *Beneficiaries Dually Eligible for Medicare and Medicaid*. Feb 2022.

[82] USDA Food and Nutrition Service Department. *Characteristics of SNAP Households: FY 2019*

[83] USDA Food and Nutrition Service Department. *Supplemental Nutrition Assistance Program State Activity Report Fiscal Year 2019*

Older Americans Act: Nutrition Services, Supportive Services, and Caregiver Support

Information on FY2020 OAA federal spending allocation by state, excluding COVID-19 transfers and reallotment, is available from the Administration for Community Living.[84] This dataset details the state-level allocation of federal spending on all Title III OAA Services. State spending is then calculated from these figures by applying the state match per program (15% per supportive services, 15% for nutrition services, and 25% for caregiver support).

State spending per program is then adjusted to exclude the non-elderly portion of program participants, and to exclude the portion of spending allocated to areas outside of the 50 states and the District of Columbia. The national shares of elderly participants by OAA program (Supportive Services, Nutrition Services, and Caregiver Support) are applied to the state level spending to estimate the portion of OAA program spending on participants over the age of 65. Through this calculation, it is estimated that states spend and aggregate of $63 million on Supportive Services, $149 million on Nutrition Services, and $60 million on Caregiver Support on program costs associated with elderly residents.

Uniform Modeling of State Program Expenditure Impacts from Insufficient Savings

For each program outlined above, Estimates are developed for each state of the share of federal expenditures, the ratio of state to federal expenditures, and expenditures per elderly household. The federal costs from insufficient savings estimated for 2020 (based on the net differential between baseline and sufficient savings scenarios) are allocated to each state based on its estimated share of federal costs. State expenditures from insufficient savings are then estimated by applying the federal to state expenditure ratio in each state.

To estimate costs impacts as of 2040, the growth in federal expenditures on the elderly population within each program is estimated nationally on a per household basis and rescaled to account for projected shifts in the elderly population between states to match the federal expenditure estimate for 2040 established above. Shares of federal expenditures by state are also used to allocate the federal expenditure impacts from insufficient savings.

The ratio between federal and state expenditures for each state is assumed to be held constant over the analysis period. This ratio is applied to the total federal spending on the elderly population in each state to estimate state program expenditures, and to the net federal expenditures due to insufficient savings in each state to estimate corresponding state expenditure impacts from insufficient savings.

Finally, an annual trend is estimated in order to extrapolate a cumulative 20-year cost of insufficient savings in each state from the endpoint (2020 and 2040) estimates developed above. For medical programs (Medicaid and Medicare Part D), analysis is conducted on the portion of the federal expenditure increase from insufficient savings attributable to demographic change (about 80%) and the portion attributable to excess medical cost growth (about 20%). A blended growth rate is then calculated for each state based on its path of anticipated elderly household growth and the excess medical cost growth component, which is assumed to grow at a linear rate across all states. This blended rate is used to calculate the rate at which the cost increases between the 2020 and 2040 endpoints are “phased-in” for each state to develop annual estimates of state programs costs due to insufficient savings. For non-medical programs, only the demographic change factor is utilized to estimate the "phase-in" of cost growth.

These annual estimates are then summed to develop an estimate of cumulative state costs due to insufficient savings over the 20-year period from 2021-2040 for each program. Net additional state program costs due to insufficient savings are shown by state in the figures below. Figure A.14 shows net costs in 2020, Figure A.15 net costs in 2040, and Figure A.16 shows cumulative net costs over the 20-year period from 2021-2040.

[84] Administration for Community Living. *State Allocation Tables: Title III*

Figure A.14: State Program Costs from Insufficient Savings: 2020 (in $M)

	Medicaid	Medicare Part D	SNAP	OAA - Nutrition Services	OAA - Supportive Services	OAA - Caregiver Support	Net State Total 2020 ($M)
Total	**$7,677**	**$2,703**	$246	**$17**	**$14**	**$12**	**$10,669**
Alabama	$67	$55	$2	$0.3	$0.2	$0.2	**$125**
Alaska	$15	$5	$1	$0.1	$0.1	$0.1	**$21**
Arizona	$62	$49	$3	$0.4	$0.3	$0.3	**$115**
Arkansas	$61	$29	$1	$0.2	$0.1	$0.1	**$92**
California	$1,586	$337	$44	$1.8	$1.5	$1.3	**$1,972**
Colorado	$127	$25	$4	$0.3	$0.2	$0.2	**$156**
Connecticut	$155	$52	$4	$0.2	$0.2	$0.1	**$212**
Delaware	$25	$8	$1	$0.1	$0.1	$0.1	**$34**
Florida	$306	$196	$8	$1.3	$1.1	$1.0	**$513**
Georgia	$141	$92	$4	$0.5	$0.4	$0.3	**$239**
Hawaii	$27	$9	$2	$0.1	$0.1	$0.1	**$38**
Idaho	$23	$10	$1	$0.1	$0.1	$0.1	**$33**
Illinois	$201	$89	$6	$0.6	$0.5	$0.5	**$298**
Indiana	$166	$55	$4	$0.3	$0.3	$0.2	**$225**
Iowa	$46	$18	$1	$0.2	$0.2	$0.1	**$65**
Kansas	$50	$15	$1	$0.1	$0.1	$0.1	**$66**
Kentucky	$67	$47	$3	$0.2	$0.2	$0.2	**$118**
Louisiana	$56	$60	$3	$0.2	$0.2	$0.2	**$119**
Maine	$31	$20	$1	$0.1	$0.1	$0.1	**$52**
Maryland	$106	$39	$6	$0.3	$0.3	$0.2	**$152**
Massachusetts	$364	$80	$5	$0.4	$0.3	$0.3	**$450**
Michigan	$285	$77	$7	$0.5	$0.5	$0.4	**$370**
Minnesota	$139	$27	$4	$0.3	$0.2	$0.2	**$170**
Mississippi	$95	$42	$1	$0.1	$0.1	$0.1	**$138**
Missouri	$65	$44	$2	$0.3	$0.3	$0.2	**$112**
Montana	$17	$6	$1	$0.1	$0.1	$0.1	**$24**
Nebraska	$23	$9	$1	$0.1	$0.1	$0.1	**$33**
Nevada	$31	$15	$1	$0.1	$0.1	$0.1	**$48**
New Hampshire	$20	$7	$0	$0.1	$0.1	$0.1	**$28**
New Jersey	$294	$56	$15	$0.5	$0.4	$0.3	**$365**
New Mexico	$50	$21	$1	$0.1	$0.1	$0.1	**$72**
New York	$599	$286	$38	$1.0	$0.9	$0.7	**$925**
North Carolina	$208	$87	$7	$0.5	$0.4	$0.4	**$304**
North Dakota	$18	$3	$1	$0.1	$0.1	$0.1	**$22**
Ohio	$297	$92	$7	$0.6	$0.5	$0.5	**$398**
Oklahoma	$57	$30	$1	$0.2	$0.2	$0.1	**$89**
Oregon	$78	$21	$7	$0.2	$0.2	$0.2	**$106**
Pennsylvania	$516	$117	$11	$0.7	$0.7	$0.5	**$646**
Rhode Island	$3	$10	$1	$0.1	$0.1	$0.1	**$15**
South Carolina	$185	$42	$1	$0.3	$0.2	$0.2	**$229**
South Dakota	$7	$4	$0	$0.1	$0.1	$0.1	**$12**
Tennessee	$161	$67	$4	$0.3	$0.3	$0.3	**$233**
Texas	$411	$176	$9	$1.1	$1.0	$0.8	**$599**
Utah	$21	$7	$1	$0.1	$0.1	$0.1	**$29**
Vermont	$18	$6	$1	$0.1	$0.1	$0.1	**$25**
Virginia	$135	$45	$6	$0.4	$0.3	$0.3	**$188**
Washington	$69	$41	$6	$0.4	$0.3	$0.3	**$117**
West Virginia	$59	$21	$1	$0.1	$0.1	$0.1	**$82**
Wisconsin	$99	$38	$4	$0.3	$0.3	$0.2	**$142**
Wyoming	$13	$2	$0	$0.1	$0.1	$0.1	**$15**
District of Columbia	$23	$12	$2	$0.1	$0.1	$0.1	**$37**

Figure A.15: State Program Costs from Insufficient Savings: 2040 (in 2020 $M)

	Medicaid	Medicare Part D	SNAP	OAA - Nutrition Services	OAA - Supportive Services	OAA - Caregiver Support	State Total 2040 ($M)
Total	**$14,553**	**$5,534**	$383	**$24**	**$22**	**$23**	**$20,540**
Alabama	$118	$104	$3	$0.3	$0.3	$0.3	**$227**
Alaska	$29	$11	$1	$0.1	$0.1	$0.1	**$42**
Arizona	$147	$123	$6	$0.7	$0.6	$0.7	**$279**
Arkansas	$109	$56	$2	$0.2	$0.2	$0.2	**$167**
California	$3,158	$723	$72	$2.6	$2.4	$2.5	**$3,961**
Colorado	$281	$59	$6	$0.4	$0.4	$0.4	**$348**
Connecticut	$274	$99	$6	$0.3	$0.2	$0.2	**$379**
Delaware	$48	$18	$1	$0.1	$0.1	$0.1	**$68**
Florida	$665	$458	$14	$2.1	$1.9	$2.2	**$1,143**
Georgia	$302	$212	$7	$0.7	$0.7	$0.7	**$523**
Hawaii	$50	$18	$3	$0.1	$0.1	$0.1	**$71**
Idaho	$49	$23	$1	$0.1	$0.1	$0.1	**$74**
Illinois	$338	$161	$9	$0.8	$0.7	$0.7	**$510**
Indiana	$295	$106	$5	$0.4	$0.4	$0.4	**$407**
Iowa	$81	$34	$1	$0.2	$0.2	$0.2	**$117**
Kansas	$88	$27	$2	$0.2	$0.2	$0.2	**$118**
Kentucky	$119	$90	$5	$0.3	$0.3	$0.3	**$215**
Louisiana	$94	$109	$4	$0.3	$0.3	$0.3	**$207**
Maine	$55	$39	$1	$0.1	$0.1	$0.1	**$96**
Maryland	$198	$79	$10	$0.4	$0.4	$0.4	**$288**
Massachusetts	$676	$160	$8	$0.5	$0.5	$0.5	**$845**
Michigan	$488	$142	$10	$0.7	$0.6	$0.7	**$643**
Minnesota	$273	$57	$6	$0.4	$0.4	$0.4	**$336**
Mississippi	$164	$78	$2	$0.2	$0.2	$0.2	**$245**
Missouri	$114	$84	$3	$0.4	$0.4	$0.4	**$201**
Montana	$31	$12	$1	$0.1	$0.1	$0.1	**$44**
Nebraska	$42	$18	$1	$0.1	$0.1	$0.1	**$61**
Nevada	$80	$42	$3	$0.3	$0.3	$0.3	**$126**
New Hampshire	$41	$16	$1	$0.1	$0.1	$0.1	**$58**
New Jersey	$521	$106	$22	$0.6	$0.6	$0.6	**$651**
New Mexico	$95	$43	$1	$0.2	$0.1	$0.2	**$139**
New York	$984	$505	$52	$1.2	$1.2	$1.2	**$1,544**
North Carolina	$430	$194	$11	$0.8	$0.7	$0.8	**$638**
North Dakota	$35	$7	$1	$0.1	$0.1	$0.1	**$43**
Ohio	$500	$167	$10	$0.8	$0.7	$0.7	**$678**
Oklahoma	$102	$57	$2	$0.3	$0.2	$0.2	**$162**
Oregon	$153	$44	$11	$0.3	$0.3	$0.3	**$209**
Pennsylvania	$867	$211	$16	$0.9	$0.9	$0.9	**$1,097**
Rhode Island	$6	$18	$2	$0.1	$0.1	$0.1	**$27**
South Carolina	$367	$89	$2	$0.4	$0.4	$0.4	**$460**
South Dakota	$14	$9	$1	$0.1	$0.1	$0.1	**$23**
Tennessee	$307	$138	$6	$0.5	$0.4	$0.5	**$453**
Texas	$943	$435	$18	$1.9	$1.8	$1.8	**$1,401**
Utah	$51	$18	$1	$0.2	$0.2	$0.2	**$71**
Vermont	$32	$13	$1	$0.1	$0.1	$0.1	**$46**
Virginia	$262	$94	$10	$0.6	$0.5	$0.6	**$368**
Washington	$144	$93	$10	$0.6	$0.5	$0.5	**$248**
West Virginia	$90	$34	$1	$0.1	$0.1	$0.1	**$126**
Wisconsin	$185	$76	$7	$0.4	$0.4	$0.4	**$269**
Wyoming	$23	$4	$0	$0.1	$0.1	$0.1	**$27**
District of Columbia	$36	$21	$2	$0.1	$0.1	$0.1	**$60**

Figure A.16: State Cumulative Program Costs from Insufficient Savings: 2021-2040 (in 2020 $M)

	Medicaid	Medicare Part D	SNAP	OAA - Nutrition Services	OAA - Supportive Services	OAA - Caregiver Support	Net State Total 2021-2040 ($M)
Total	**$237,894**	**$88,598**	**$6,661**	**$421**	**$372**	**$382**	**$334,328**
Alabama	$1,989	$1,713	$59	$6	$5	$6	**$3,779**
Alaska	$492	$189	$20	$2	$2	$2	**$708**
Arizona	$2,167	$1,784	$100	$11	$9	$10	**$4,082**
Arkansas	$1,795	$907	$32	$4	$3	$3	**$2,744**
California	$50,339	$11,313	$1,221	$46	$40	$41	**$63,000**
Colorado	$4,341	$904	$106	$7	$6	$6	**$5,371**
Connecticut	$4,716	$1,678	$101	$5	$4	$4	**$6,508**
Delaware	$788	$283	$21	$2	$2	$2	**$1,097**
Florida	$9,948	$6,718	$220	$34	$30	$34	**$16,983**
Georgia	$4,672	$3,224	$121	$12	$11	$11	**$8,052**
Hawaii	$813	$285	$48	$2	$2	$2	**$1,152**
Idaho	$765	$360	$16	$2	$2	$2	**$1,147**
Illinois	$5,894	$2,759	$165	$15	$13	$13	**$8,859**
Indiana	$4,980	$1,758	$95	$8	$7	$7	**$6,856**
Iowa	$1,388	$562	$22	$4	$4	$4	**$1,984**
Kansas	$1,508	$465	$38	$4	$3	$3	**$2,020**
Kentucky	$1,990	$1,486	$91	$6	$5	$5	**$3,582**
Louisiana	$1,616	$1,853	$71	$5	$5	$5	**$3,555**
Maine	$939	$662	$26	$2	$2	$2	**$1,633**
Maryland	$3,286	$1,293	$172	$7	$6	$7	**$4,771**
Massachusetts	$11,185	$2,594	$137	$9	$8	$8	**$13,941**
Michigan	$8,490	$2,436	$190	$13	$11	$12	**$11,151**
Minnesota	$4,470	$912	$102	$7	$6	$6	**$5,504**
Mississippi	$2,783	$1,299	$31	$4	$3	$3	**$4,122**
Missouri	$1,940	$1,401	$50	$8	$7	$7	**$3,412**
Montana	$521	$198	$15	$2	$2	$2	**$740**
Nebraska	$694	$298	$23	$2	$2	$2	**$1,022**
Nevada	$1,151	$592	$48	$4	$4	$4	**$1,803**
New Hampshire	$669	$257	$13	$2	$2	$2	**$946**
New Jersey	$8,819	$1,763	$391	$11	$10	$10	**$11,005**
New Mexico	$1,574	$695	$26	$3	$2	$3	**$2,303**
New York	$17,178	$8,674	$956	$23	$21	$21	**$26,873**
North Carolina	$6,712	$2,977	$186	$14	$12	$12	**$9,913**
North Dakota	$562	$103	$16	$2	$2	$2	**$687**
Ohio	$8,715	$2,863	$179	$15	$13	$13	**$11,797**
Oklahoma	$1,696	$938	$34	$5	$4	$4	**$2,681**
Oregon	$2,465	$688	$188	$6	$5	$5	**$3,356**
Pennsylvania	$15,127	$3,633	$295	$17	$16	$16	**$19,104**
Rhode Island	$105	$309	$36	$2	$2	$2	**$456**
South Carolina	$5,818	$1,390	$35	$7	$6	$6	**$7,263**
South Dakota	$224	$139	$10	$2	$2	$2	**$379**
Tennessee	$4,958	$2,176	$110	$9	$8	$8	**$7,268**
Texas	$14,067	$6,363	$283	$32	$28	$27	**$20,800**
Utah	$756	$257	$20	$3	$3	$3	**$1,042**
Vermont	$545	$213	$19	$2	$2	$2	**$782**
Virginia	$4,245	$1,504	$169	$10	$9	$9	**$5,947**
Washington	$2,260	$1,437	$170	$10	$9	$8	**$3,894**
West Virginia	$1,629	$612	$24	$2	$2	$2	**$2,272**
Wisconsin	$3,125	$1,270	$117	$8	$7	$7	**$4,535**
Wyoming	$391	$72	$6	$2	$2	$2	**$475**
District of Columbia	$592	$342	$36	$2	$2	$2	**$975**

Interrelation of Results Presented

National and state-level analysis in this report presents several estimates of household and population level economic and fiscal impacts from potential levels of retirement inadequacy. These costs or benefits may fall upon different populations and may occur at different points in the life cycle, making it difficult to readily compare their magnitudes. As a result, this analysis does not include a "net impact" inclusive of both household and government impacts. However, this section seeks to present a framework to consider the interrelationship between many of the key metrics presented in this report from the perspective of a state economy and of the public "return" on enhanced savings.

Over the life cycle of a program to enhance private retirement savings, a participant will first see a decrease in income otherwise available for consumption in their working years through savings, followed by an increase in available income accumulated from this earier saving during retirement. This saver may also see a reduction in their receipt of public benefits during their retirement years due to their strengthened financial condition. From an economic perspective, this benefit "loss" is in effect a transfer, since a reduction in program costs results in commensurate savings for taxpayers.

In policy terms, the desirability of transfers between different segments of the population (whether by age or income group) is a subjective question within the political process. However, the intent of a well-functioning program to enhance savings is for participating households to achieve material increases in their lifetime incomes through the power of compounding returns on their savings. If these accumulations support an annual income stream in excess of the sum of the initial savings contributions and any public benefits lost, savers will have benefitted from their participation in terms of their lifetime resources. At the same time, other households within the jurisdiction benefit from the cost reduction associated with program savings. This creates the potential for beneficial outcomes for both program participants and the broader base of taxpayers. Stated in the inverse, the "cost" of insufficient savings falls on both the households experiencing insufficiency, and the broader set of households comprising the tax base.

These net impacts can be illustrated through the federal calculations presented in this report under the baseline and sufficient savings scenarios. This analysis estimates that under baseline conditions, elderly residents in 2040 will receive $201 billion in benefits from the analyzed programs compared to $140 billion if they achieve sufficient savings, a differential of $61 billion (as shown in Figure 4.7). The annual "income gap" between these scenarios is above $7,000 (as shown in Figure 2.9). Closing this gap for the 32.6 million vulnerable elderly households would generate around $230 billion in additional income for these households. This indicates that the modeled income gains to saver households well exceed modeled benefit losses in retirement, while the reduced benefit spending constitutes a savings to the broader universe of taxpayers. Similar conceptual comparisons can be developed with the state level information in this report.

Importantly, this framework should be understood as illustrative of the impacts of achieving retirement sufficiency for all low-income households. It does not assume or evaluate a specific policy mechanism to achieve that outcome or assess its feasibility or likelihood.

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