REPORT OF
CHRISTOPHER NEWPORT UNIVERSITY

Feasibility Study of Retirement Savings Programs for Virginia (HJR 103, 2018)

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THE GENERAL ASSEMBLY OF VIRGINIA

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Feasibility Study of Retirement Savings Programs for Virginia

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* This study was conducted under contract with AARP-Virginia.

Summary of Key Findings

The goal of this study is to assess the potential market size, start-up cost, continued running costs, and point at which a voluntary multiple employer retirement savings plan for the Commonwealth of Virginia will become self-sustaining. Previous research[4] shows that Virginia could save as much as $326 million on public assistance programs through 2030 if lower income retirees increase their net worth in retirement by 10%. In order to achieve this, a voluntary retirement savings program must achieve several goals:

1) An easily accessible multiple employer retirement savings program must be available;
2) A significant percentage of eligible workers must choose to participate in the program and remain enrolled over time;
3) Enrolled workers must contribute enough to meet a significant portion of their retirement income needs and to build enough assets to make the program financially feasible for the Commonwealth to operate; and
4) Virginia employers must be able to comply with the program's requirements without incurring significant costs.

A summary of the report and its main findings is below.

1. Estimating Market Size: Over half (53%) of all employees in Virginia lack a retirement plan. Of this percentage, the vast majority (84%) do not have a retirement plan because their employer does not offer one. A smaller number work for an employer that offers a plan, but are not included in the plan, and an even smaller number are self-employed without a plan. The vast majority of uncovered workers are in the three big metro areas of Virginia: Northern Virginia, Hampton Roads, and Richmond. Over half (58%) of all firms that do not offer a retirement plan employ less than 100 workers, while 27% of firms that do not offer a retirement plan employ more than 1,000 workers. Three industry groups account for over a third of all firms that do not offer a retirement plan to workers: healthcare and social assistance (14%), retail trade (12%), and accommodations and food services (12%). Nearly three-fourths (70%) of workers who work for an employer that does not offer a retirement plan work 40 or more hours per week.

2. Estimating New Enrollment and Enrollment Persistence: With the implementation of an auto-enroll multiple employer retirement savings plan an estimated 1,168,356

[4] Yu, Jia and Quentin Kidd, 2016. "The Cost of Retiring in Virginia: Estimating the Fiscal Benefits of a Work and Save Plan on State Expenditures for Retires. December 15. The Wason Center for Public Policy at Christopher Newport University.

employees would be enrolled, and with an estimated 20% voluntary opt-out rate and estimated 934,684 would remain enrolled.

3. Estimated Start-up Costs: It is estimated that the cost to a start a multiple employer retirement savings plan in Virginia would be in the range of $2 million. Following the example of other states that have considered voluntary retirement savings programs, these start-up costs would be expected to be paid back to the Commonwealth at the point at which the program becomes self-sustaining.

4. Estimated Cost to do Request-For-Proposals: The cost for RFP will depend on which state agency is tasked with this responsibility. We estimate the cost of to hire an outside consultant to be $71,592.

5. Estimated Ongoing Operating Costs: Assuming the ongoing operating costs are divided as: 10% to investment firms, 10% to the state agency overseeing program, and 80% for the cost of the record keeper, we estimate the annual ongoing operating costs for the first 5 years while the program works toward financial self-sufficiency to be between $3.4 million and $7.2 million per year.

6. Estimates on Administrative Costs to Employer: There is a list of responsibilities that employers could be tasked with, including: introducing the program to employees, providing data to enroll employees automatically into the program, collecting opt-out decisions from employees, processing and funding payroll auto-deductions, basic record-keeping, and resolving errors/issues.

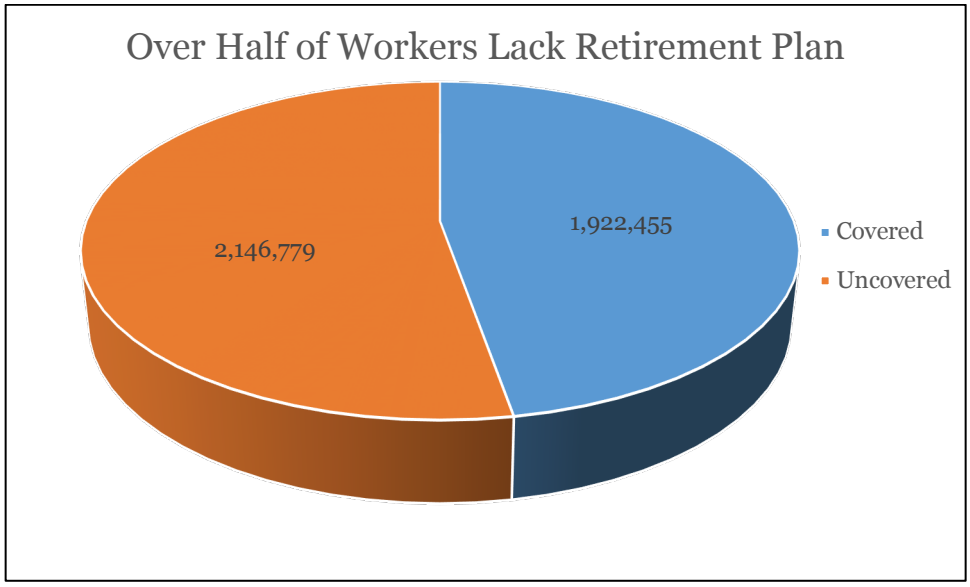
7. Projected Timeline to Financial Self-Sufficiency: MEP: Based upon two scenarios, one generally for employees making over $25,000 per year and a stable economic outlook (the best outlook) and the other generally for employees making less than $25,000 and a poor economic outlook (the worst outlook), we estimate the two extremes of financial self-sufficiency. For the first scenario, financial self-sufficiency would be achieved between year 5 and year 6, depending upon the enrollment strategy pursued. For the second scenario, financial self-sufficiency would be achieved between year 9 and year 10 depending upon the enrollment strategy pursued.

8. Projected Timeline to Financial Self-Sufficiency: IRA: Based upon two types of IRA programs, the Traditional and the Roth, we estimate the Traditional program will reach running profitability in year 6 and the Roth program will reach running profitability in year 7. The difference in profitability is driven by the income contribution limits of the Roth program.

Section 1: Estimated Market Size for A Pre-Tax Employment-Based Retirement Program in Virginia

According to the Census Bureau's March 2016 *Current Population Survey*, just over half (53%) of Virginia's current workforce of 4,069,234 workers are not participating in a pre-tax, employment-based retirement savings program. The large majority of workers who lack an employment-based pre-tax retirement plan report that they do not have access to an employer-sponsored plan (84% or 1.8 million uncovered workers). Of the remaining 342,000 uncovered workers, 188,000 of them (just under 9% of total uncovered workers) do not qualify for their employer's plan and 155,000 (7% of total uncovered workers) are self-employed and do not administer a plan for themselves (see Figures 1 & 2 and Table 1).

Figure 1: Distribution of Virginia's Workforce by Coverage Status



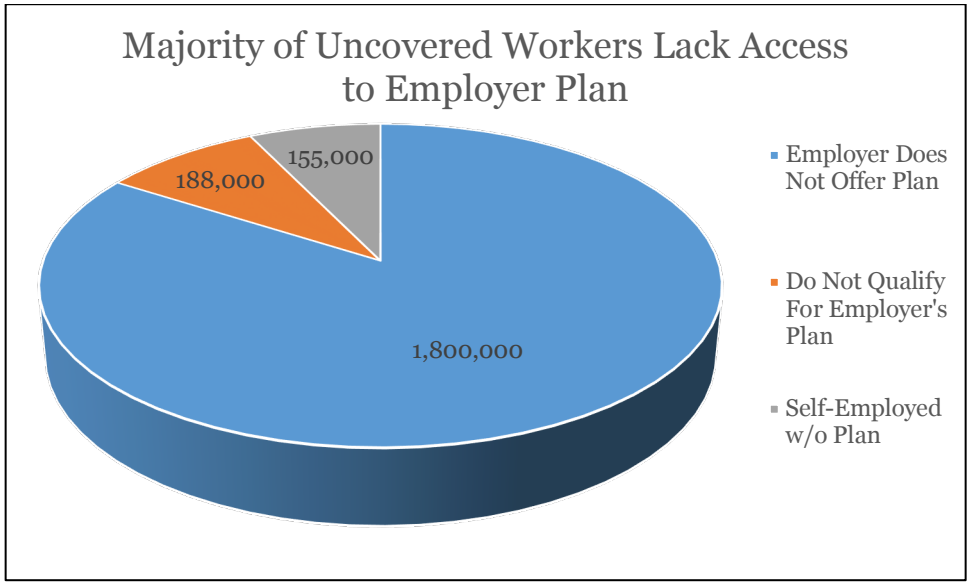
Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

Table 1: Workers in Virginia by Coverage Status and Reason for Lack of Coverage

Reason for not having coverage	Number of workers	Share of total workforce
All Virginia workers	4,069,234	100%
Uncovered workers	2,146,779	52.75%
Employer does not offer a plan	1,804,260	44.34%
Employer offers plan, not included	188,144	4.62%
Self-employed without plan	154,375	3.79%

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

Figure 2: Uncovered Workers in Virginia by Reason for Lack of Coverage



Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

A. Demographic distribution

Table 2 provides a breakdown of the demographic composition of covered and uncovered workers. The gender breakdown for workers covered by a plan is 52% female and 48% male. Less than 1% of covered workers are under the age of 18, 6% are between 18-24, 21% are 25-34, 27% are between 35-44, 24% are 45-54, 15% are between 55-64, and 5% are over the age of 64.

The racial demographics of covered workers are 67% White, 16% Black or African-American, 9% Asian, and 7% Hispanic or Latino. Just over 83% of covered workers are native born while 17% are foreign born. Just under 78% of covered workers have at least some college education, with 54% having a college degree, 23% having some college, 19% having a high school degree, and 4% not have a high school degree. Two-thirds (66%) of covered workers are employed in the private sector and 33% are employed in the public sector.

Less than 1% of covered workers are self-employed. Firm size appears to be a strong indicator of retirement coverage. Firms with more than 1,000 employees make up 63% of the covered pool. The next strongest coverage category of firm size are firms with less than 100 employees. Just over one-in-five (21%) of covered workers report working for a small firm. Just over six-in-ten (61%) of the covered pool earn more than $40,000 per year with the 39% of them earning more than $63,000.

The uncovered pool is more evenly divided along gender lines. The gender composition of the uncovered pool is 49% female and 51% male. The age breakdown of the uncovered pool is like that of the covered pool: 3% of uncovered

workers are under 18, 12% are ages 18-24, 22% are ages 25-34, 23% are 35-44, 20% are age 45-54, 14% are age 55-64, and 7% are over the age of 65. The racial composition of the uncovered pool is 55% White, 19% Black or African American, 16% Asian, and 9% Hispanic or Latino. White Americans are underrepresented in the pool of uncovered workers while ethnic and racial minorities are overrepresented, relative to their portion of the overall population of the country. We also find that the percent of uncovered workers who are foreign born (17%) is also slightly higher than their portion of the population (13%).[5]

In terms of education, 12% of uncovered workers have less than a high school education, 27% have a high school degree, 30% have some college, and 31% have a bachelor's degree or more. Just over three-fourths (78%) of uncovered workers are employed in the private sector and just 9% are employed in the public sector, with another 13% being self-employed. An important distinction between the uncovered and covered pool is the percentage employed in the public sector, where 33% are employed in the public sector in the covered pool but only 9% in the uncovered pool.

Table 2: Key Demographics of Workers by Coverage (2016 estimates)

	Covered by a plan		**Not covered by a plan**	
Total	47.2%	1,922,454	52.8%	2,146,780
Gender				
Male	52.1%	1,001,027	50.9%	1,092,687
Female	47.9%	921,427	49.1%	1,054,093
	Covered by a plan		**Not covered by a plan**	
Age	%	Number	%	Number
Under 18	0.6%	12,061	3.1%	67,539
18-24	6.1%	118,194	11.7%	250,860
25-34	21.5%	412,471	22.0%	472,774
35-44	27.1%	521,016	22.9%	492,071
45-54	24.3%	467,950	20.3%	436,592
55-64	15.2%	291,866	14.0%	301,514
64+	5.1%	98,897	5.8%	125,430
Race				
White	67.6%	1,300,129	54.9%	1,179,523
Black	15.9%	306,338	19.1%	410,059
Asian	8.9%	171,260	16.5%	354,581
Hispanic	6.8%	130,254	8.7%	185,733
Other	0.8%	14,473	0.8%	16,885

[5] See United States Census Quick Facts available at https://www.census.gov/quickfacts/fact/table/US/PST045217

Table 2: Key Demographics of Workers by Coverage (2016 estimates), Cont.

	Covered by a plan		Not covered by a plan	
Nativity				
Native	83.4%	1,604,055	77.0%	1,652,297
Foreign-born	16.6%	318,399	23.0%	494,483
Education				
Less than HS	3.9%	74,775	12.2%	262,920
HS	18.6%	356,993	26.9%	576,495
Some college	23.2%	446,241	30.2%	648,858
Bachelor's or more	54.3%	1,044,445	30.7%	658,507
Job classification				
Private	66.5%	1,278,420	78.1%	1,676,418
Government	32.7%	629,561	8.8%	188,145
Self-employment	0.8%	14,473	13.0%	279,805
Firm Size				
<100	21.3%	410,059	56.4%	1,210,880
100-499	11.0%	212,266	9.4%	202,617
500-999	4.8%	91,660	4.0%	86,836
1000+	62.9%	1,208,468	30.1%	646,446
Earnings Quintile				
$14,000 or less	10.4%	200,457	23.9%	513,097
$14,001 to $25,000	10.2%	195,627	19.6%	421,127
$25,001 to $40,000	18.3%	352,611	19.8%	425,968
$40,001 to $63,500	22.5%	432,311	16.8%	360,620
Over $63,500	38.6%	741,449	19.8%	425,968

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

In terms of firm size, we see another important distinction between the covered pool and uncovered pool, where 57% of uncovered workers are employed in small firms and a much smaller share (30%) are employed in large firms. Around 42% of uncovered workers are low income, earning less than $25,000 a year and 62% earn less than $40,000 a year. Still, high earners ($65,000+) make up 20% of the uncovered pool.

B. Geographic distribution

Table 3 provides a breakdown of uncovered workers by geographic region. Not surprisingly, the two largest employment regions in the Commonwealth are the northern Virginia and Hampton Roads regions. The next two largest employment regions are the Richmond and Roanoke areas.

The table shows the regional variation in terms of reasons for lack of coverage. Those workers in the "self-employed without a plan" category are more heavily represented in cities in the western part of the state. Of the 1,804, 260 workers who indicate that their employer does not offer a plan, 27% come from the Northern Virginia metro area, 23% from Hampton Roads, 22% from Richmond, 6% from Roanoke, 5% from Lynchburg, 3% from Charlottesville, 2% from the Blacksburg area, less than 1% each from Winchester and Harrisonburg, and 10% came from rural areas. Among workers who indicate that their employer offers a plan but they are not eligible for it, 23% come from the Northern Virginia metro area, 37% from Hampton Roads, 17% from Richmond, 13% from Roanoke, 3% from Lynchburg, 4% from Charlottesville, 4% from the Blacksburg area,

Table 3: Distribution of workers by employment and retirement savings plan coverage (2016 estimates)

	All workers	**Employer does not offer a plan**		**Employer offers plan, not eligible**		**Self-employed without plan**	
	Number	**Number**	**%**	**Number**	**%**	**Number**	**%**
Total	**4,069,233**	**1,804,260**	**100%**	**188,145**	**100%**	**154,375**	**100%**
Metro area							
Northern Virginia	841,806	495,269	27%	43,217	23%	40,276	26%
Hampton Roads	807,650	419,671	23%	69,951	37%	32,203	21%
Richmond	639,143	405,056	22%	31,357	17%	26,352	17%
Roanoke	146,735	107,353	6%	24,121	13%	20,733	13%
Lynchburg	122,283	89,491	5%	5,494	3%	19,266	12%
Charlottesville	108,337	57,917	3%	7,236	4%	6,299	4%
Blacksburg, Christiansburg, Radford	83,869	38,611	2%	6,773	4%	9,247	6%
Winchester	63,850	7,217	-	-	-	-	-
Harrisonburg	63,231	2,346	-	-	-	-	-
Other	1,192,330	181,328	10%	-	-	-	-

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).
Percent/numbers may not add to totals due to rounding.

and less than 1% each from Winchester, Harrisonburg, and rural areas. Of workers who are self-employed without a plan 26% come from the Northern Virginia metro area, 21% from Hampton Roads, 17% from Richmond, 13% from

Roanoke, 12% from Lynchburg, 4% from Charlottesville, 6% from the Blacksburg area, and less than 1% each from Winchester, Harrisonburg, and rural areas.

In Virginia, there are an approximately 98,404 total firms and 65% of them do not offer their employees retirement plans. These 64,196 firms account for 84% of all uncovered workers in the Commonwealth. Not surprisingly, metro areas of the state have the largest number of firms. Table 4 shows the breakdown of the number of firms by region and the estimated share of the firms by region that do not offer a retirement plan. These data reveal significant coverage gaps in each metro area due to lack of an employer sponsored plan.

Table 4: Firms not offering plans, by Metro Area

	# of Firms	# not offering plan	Share of affected firms
VA Total	**98,404**	**64,196**	**100%**
Metro area			
Northern Virginia	20,357	13,280	21%
Hampton Roads	19,531	12,741	20%
Richmond	15,456	10,083	16%
Roanoke	3,548	2,315	4%
Lynchburg	2,957	1,929	3%
Charlottesville	2,620	1,709	3%
Blacksburg-Christiansburg-Radford	2,028	1,323	2%
Winchester, VA-WV	1,544	1,007	2%
Harrisonburg	1,529	998	2%
Others	28,830	18,810	29.30%

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data). Note: Number of affected firms is estimated by applying non-coverage rates from the *Current Population Survey* within each metro area by firm size. Excludes firms with zero employment.

Table 5 shows the distribution of uncovered workers by firm size and by reason for lack of coverage and firm size. Firm size is a major factor in whether the employer offers a retirement benefit. The vast majority of uncovered workers who indicate that their employer does not offer a plan hail from the smallest and largest firms. Half of uncovered workers whose employer does not offer a plan are employed by firms with 50 employees or less and an additional 27% are employed at large firms with more than 1,000 employees. Combined this accounts for 77% of uncovered workers lacking access to an employment-based pre-tax retirement plan via their employer. Among self-employed individuals, 92% of uncovered workers are employed in or running a small business.

Table 5: Distribution of Uncovered workers by firm size (2016 estimates)

	Employer does not offer a plan		Employer offers plan, not included		Self-employed without plan	
	Number	**%**	**Number**	**%**	**Number**	**%**
<10	463,126	26%	9,648	5%	142,315	92%
10-49	441,417	24%	2,412	1%	4,824	3%
50-99	142,315	8%	0	0%	4,824	3%
100-499	192,969	11%	9,648	5%	0	0%
500-999	72,363	4%	12,061	6%	2,412	2%
1000+	492,071	27%	154,375	82%	0	0%
Total	**1,804,260**	**100%**	**188,145**	**100%**	**154,375**	**100%**

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

C. Industry distribution

Table 6 provides a breakdown of each reason for lack of coverage, by industry. For employers that do not offer a pre-tax retirement plan, retail accounts for 12% of uncovered workers, healthcare for 14% of uncovered workers, accommodations and food services for 12% of uncovered workers, scientific and technical assistants for 10% of uncovered workers, and construction accounts for 9% of uncovered workers. Two industries contribute more than 60% of workers whose employer offers a plan, but they are not included: educational services (30%) and public administration (33%). Uncovered workers who are self-employed, without a plan are more dispersed than other categories. 19% come from construction, 22% from professional/scientific /technical combined with waste management, 9% from art, entertainment, and recreation, and 8% from "other" services.

An important take away from the industry type analysis is how little certain industries contribute to Virginia's uncovered pool. Few employees from industries such as non-durable goods manufacturing, wholesale trade, utilities, information, finance, and real estate are uncovered. This suggests that efforts to expand access to retirement plans by introducing a public option are most needed in specific industries.

Table 6: Uncovered workers by industry, 2016 estimates

	Employer does not offer a plan		Employer offers plan, not included		Self-employed without plan	
Industry	**Number**	**%**	**Number**	**%**	**Number**	**%**
Agriculture, forestry, fishing and hunting	26,533	1%	0	0%	10,930	7%
Mining	4,824	<1%	0	0%	0	0%
Construction	171,260	9%	0	0%	29,918	19%
Durable goods manufacturing	77,188	4%	3,782	2%	0	0%
Non-durable goods manufacturing	33,770	2%	0	0%	0	0%
Wholesale trade	38,594	2%	0	0%	0	0%
Retail trade	214,678	12%	0	0%	4,461	3%
Transportation and warehousing	79,600	4%	11,749	6%	13,106	9%
Utilities	4,824	<1%	0	0%	0	0%
Information	41,006	2%	0	0%	3,643	2%
Finance and insurance	48,242	2%	0	0%	4,693	3%
Real estate and rental and leasing	31,357	2%	0	0%	7,503	5%
Professional, scientific, and technical	183,321	10%	2,521	1%	16,529	11%
Management, admin. Support, and waste management	127,842	7%	3,556	2%	11,536	8%
Educational services	62,715	3%	68,560	36%	0	0%
Healthcare and social assistant	258,096	14%	25,851	14%	26,506	17%
Art, entertainment, and recreation	45,830	3%	0	0%	7,348	5%
Accommodations and food service	214,678	12%	0	0%	5,866	4%
Private households	12,061	<1%	0	0%	0	0%
Other services, except private households	127,842	7%	0	0%	12,335	8%
Public Administration	0	0%	69,087	37%	0	0%
Armed Forces and active military	0	0%	3,048	2%	0	0%
Total	**1,804,260**	**100%**	**188,145**	**100%**	**154,375**	**100%**

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

As seen in Table 7, the variation among industries is not likely caused by higher or lower numbers of part time employees. An analysis of lack of coverage based on number of hours worked reveal that employees working 40 or more hours per a week make up a majority of uncovered workers overall, and make up at least a plurality in each of the three non-coverage categories. Nearly three quarters (70%) of workers whose employer does not offer a plan work fulltime as do 82% of workers who do not qualify for their employer's plan. The self-employed, without a plan category is better dispersed, although a plurality of these workers (48%) work fulltime. Of this group, 9% work less than 10 hours, 12% work between 10-19 hours, 17% work between 20-29 hours, and 13% work between 30-39 hours.

Table 7: Hours worked per week of uncovered workers

Total Hours Worked	**Employer does not offer a plan**		**Employer offers plan, not included**		**Self-employed without plan**	
1-9	45,830	3%	2,412	1%	14,473	9%
10-19	89,248	5%	4,824	3%	19,297	12%
20-29	205,030	11%	9,648	5%	26,533	17%
30-39	202,617	11%	16,885	9%	19,297	13%
40+	1,261,535	70%	154,375	82%	74,775	48%
Total	**1,804,260**	**100%**	**188,145**	**100%**	**154,375**	**100%**

Source: *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

Section 2: Projections of Employee Enrollments in A Virginia Voluntary Retirement Savings Plan Over Time

The Virginia General Assembly recently considered legislation to create a voluntary retirement plan for employees of private employers called the *My Virginia Plan Program*. [6] Under the program, private employers who do not offer a pre-tax, employment-based retirement plan to their employees would be eligible to enroll in a state-sponsored program offering pre-tax retirement plans to their employees. The program would be administered by a board of directors, which would be authorized to hire a director and staff, and to retain financial institutions to serve as third-party administrators for the management of the assets of the program.

Even though this legislation has not been successful, as the most recent effort to create such a program in Virginia, it serves as a useful blueprint for how a public-option retirement program for the Commonwealth might be constructed and can therefore be used to produce baseline estimates for anticipated projections of enrollment over time. Following the methodology of the feasibility study of South Carolina's Voluntary Multi-Employer Plan, [7] enrollment projections are determined using the following formula:

*The yearly rate of new enrolled employees for year n = rate of employer enrollment for year n * number of employees per enrolled employer * percent of employees of enrolled employers that choose to remain enrolled.*

A. Estimate for the rate that employers will sign up, by year

Based on a nationwide survey of small business owners conducted by Lake Research Partners and The Terrance Group in 2011, nearly 69% of small business owners (defined as firms with less than 49 employees) expressed interest in some kind of retirement plan for their own business, including a solid majority (59%) of small business owners who do not currently provide any retirement benefits to their employees.[8]

Using this estimation as a basis of analysis, an estimated 60% of the eligible 64,196 business owners in Virginia currently not offering a retirement plan could reasonably be expected to take advantage of such a program in Virginia within the first two years, resulting in an additional 38,518 businesses offering their employees tax-deferred retirement plans.

[6] In the 2017 session, HB 2204 and SB1076 were introduced by Delegate Luke Torian and Senator Frank Ruff respectively, and in the 2018 session HB 1049 was introduced by Delegate Torian.

[7] See Cecchini, Mark, Mark Ferguson, and Sunny Park, 2018. "Feasibility Study of South Carolina's Voluntary Multi-Employer Plan (SCVs)". May 22. Darla Moore School of Business, University of South Carolina.

[8] See the report at http://www.retirementsecurityforall.org/document.php?f=small-biz

Once a critical mass of small business joins the Virginia program, it is expected there will be competitive pressure to attract good employees for the remaining firms to also join the program. We estimate this number to be an additional 5,000 participating businesses for a total of 42,000 businesses (68%). Estimating the yearly growth in participation is difficult. However, a potential relevant comparison is the yearly rate of adoption of the Virginia 529 College Saving Plans. If the same advertising and outreach efforts are expanded for a Virginia retirement plan for employees of private employers as were deployed for the Virginia 529, it is reasonable to expect a similar adoption rate.[9]

Table 8 shows forecasted growth of Virginia 529 plans over the next 5 years. Although growth varies significantly from year to year, growth is always positive and in the double digits. The 5-year growth rate of Virginia's 529 plan is 53%.

Table 8: Annual Enrollment Growth Rate of Virginia 529 Plans

Year	2019	2020	2021	2022	2023
Average Growth Rate (529 plans)	-	19.5%	17.70%	15%	12.23%
# of firms	21,218	25,356	29,844	34,321	38,518
# of employees	457,292	569,974	668,505	768,781	862,803

B. Estimate for number of firms and employees expected to enroll

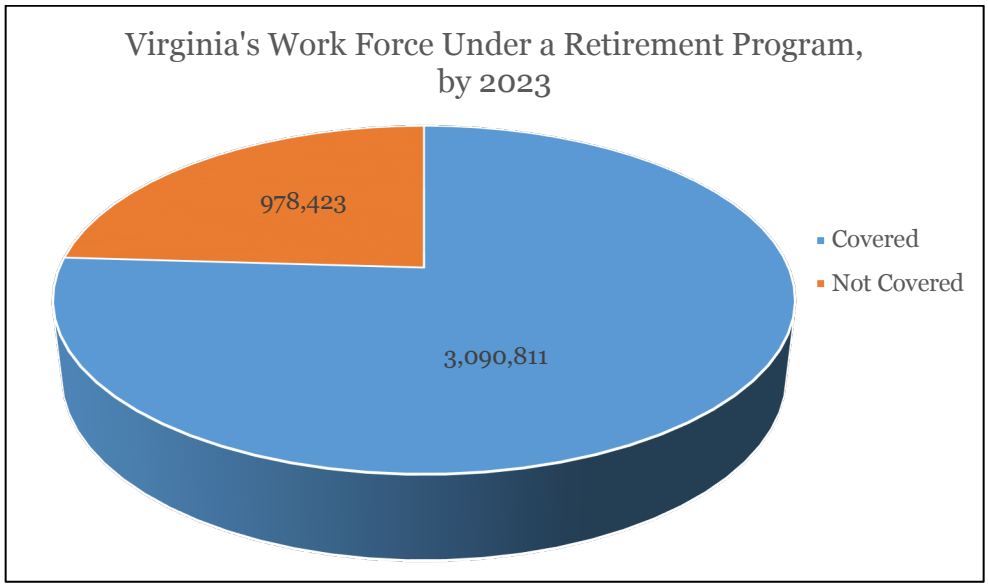
Given the high level of interest expressed by business owners in the survey we expect roughly 38,500 businesses would join a Virginia voluntary retirement saving program within the first four years of the program, which could translate into retirement coverage for more than 1 million currently uncovered workers. This estimate is arrived at by obtaining an average firm size for the 64,196 businesses that do not currently offer a plan, and assuming a baseline of a 65% participation rate from those 64,196 firms.

[9] See http://jlarc.virginia.gov/pdfs/oversight/VA529/2017_VA529-Pres.pdf

The average number of employees per firm = 1,804,260/64,196 = 28 employees/firm.
64,196/.65=41,727 participating firms
*41,727 * 28=1,168,356 covered workers*

There are currently 2,146,779 uncovered workers in the Commonwealth. Our estimates suggest that the rate of uncovered workers could be reduced by more than 50% through implementation of a Virginia retirement savings program if enrollment is automatic. As illustrated in Figure 3 this would present a dramatic reduction in the number of uncovered workers in the Commonwealth of Virginia and could potentially avoid the state's current trajectory towards a retirement savings crisis. Currently, only 1,922455 workers in Virginia are enrolled in an employment-based, tax-free 401K retirement plan. This analysis finds that through the implementation of a public retirement plan program and estimated 1,168,356 additional Virginia workers would participate in actively saving for their retirement, leaving the state with less than a million otherwise legible workers not participating in any sort of retirement program.

Figure 3: Projected Retirement Coverage of Virginia's Workforce



C. Estimate for the percent of employees who will opt-out

Of all employees auto enrolled into voluntary retirement savings program, it is estimated that 80% will remain enrolled in a plan. This translates into an expected 934,684 covered workers (see Figure 4). This estimate is derived following the guidelines established in the South Carolina feasibility study, [10] In that study, Cecchini, Ferguson, and Park estimated market response by utilizing a variety of sources including surveys and experiments, data from studies conducted on 401(k) participant behavior, automatic enrollment response in similar programs in the United Kingdom, and data on participant behavior based on OregonSaves Auto IRA plan. As the authors point out, OregonSaves is an auto-enrolled IRA plan while the proposed Virginia plan would be an auto-enrolled 401(k) plan, the targeted population of the OregonSaves plan is very similar to the target population of a Virginia voluntary retirement savings program.

This methodology estimates that between 20% and 30% of employees would choose to "opt out" of the plan. As such, a key administrative function will need to focus on enrollee retention. In order to maximize customer retention, plan administrators will need to develop and implement customer retention best practices such as frequent communications that highlights both short and long-term advantages of continued participation in the plan. Studies on opt-out behavior find that employees over the age of 50[11] as well as women, and minorities are more likely to opt out than men and whites.[12] As such, retention efforts that take into account this fact may be more successful than demographics-blind retention efforts.

Should the public option pre-tax, employment plan not include automatic enrollment, enrollment numbers will be significantly reduced. On the employee end, enrollees must agree to sign away a set percent of their paychecks. Some employees, particularly those earning less than $40,000 a year, will elect not to participate when they are tasked with initiating the process. Attention should be paid to the variable deferral rate, particularly the initial or "entry" deferral rate. Although studies show that many 401(k) enrollees are offered an initial deferral rate that is too low and that plans are most effective when the deferral rate is automatically increased over time[13], many low-income workers may be pushed to withdraw if the withholding amount is too large.

Although an initial rate of 6% or a lower initial rate with automatic-escalation to as high as 10% of income has been found to not affect participation rates[14] it may

[10] See Cecchini, Mark, Mark Ferguson, and Sunny Park, 2018.

[11] Clark, Robert L., Melinda Sandler Morrill, and Steven G. Allen. 2012. "Effectiveness of Employer-Provided Financial Information: Hiring to Retiring." *The American Economic Review* 102(3): 314-318.

[12] Craig Copeland. 2012. "Individual Account Retirement Plans: An Analysis of the 2010 Survey of Consumer Finances," *Issue Brief* 375. Washington, DC: Employee Benefit Research Institute.

[13] Benartzi, Shlomo and Richard H. Thaler. 2013. "Behavioral Economics and the Retirement Savings Crisis." *Science* 339(6): 1152-1153

[14] Choi, James J., David Laibson, and Brigitte C. Madrian. 2007. "Reducing the Complexity Costs of 401(k) Participation Through Quick Enrollment." In *Developments in*

be better to start with a lower initial rate more conducive to low income participants or to structure the plan so that the initial rate is based on salary or pay. Although it is the case that a design like this might leave some participants under-saving for retirement because of a low deferral rate off of a lower income, under-savings is likely preferable to no retirement savings so long as deferral rates are large enough to offset plan administration expenses both for the state and the participating employer. Additionally, automatic deferral rate adjustments should have a ceiling because although the ideal deferral rate for most participants is in excess of 10% of income, opt-out rates increase dramatically at 10% or higher.[15]

When designing a plan for Virginia it may be ideal to offer a plan to accommodate two types of potential participants, those that are earning more than $40,000 a year but don't participate largely due to access to an employer plan (either because their employer does not offer a plan or they are self-employed) and those who do not participate in a plan because their income is too low for them to qualify for the plan offered by their employee or employees who are unwilling to depart with even a small portion of their paycheck due to low income.

Finally, if the enrollment process is time consuming or unduly complicated, some potential enrollees may get deterred from participating or staying in the program.[16] We see automatic enrollment as a key feature to success for a public option retirement program. As such, special consideration will be needed in terms of attracting participating employers. This will require a significant marketing effort by plan administrators.

Retention will also be challenged by high rates of job mobility, particularly among some industries and among some types of workers. Certain industries such as the retail and service industries experience turnover rates at or above 65% [17] and younger workers display higher job mobility numbers than older workers.[18] It is not possible to accurately estimate the effect that worker mobility will have on retention rates after a plan is implanted but the issue of worker turnover and mobility needs heavy consideration in the formation of any public option, pre-tax, employment-based retirement plan.

the Economics of Aging, edited by David A. Wise, 57-82. Chicago, IL: University of Chicago Press

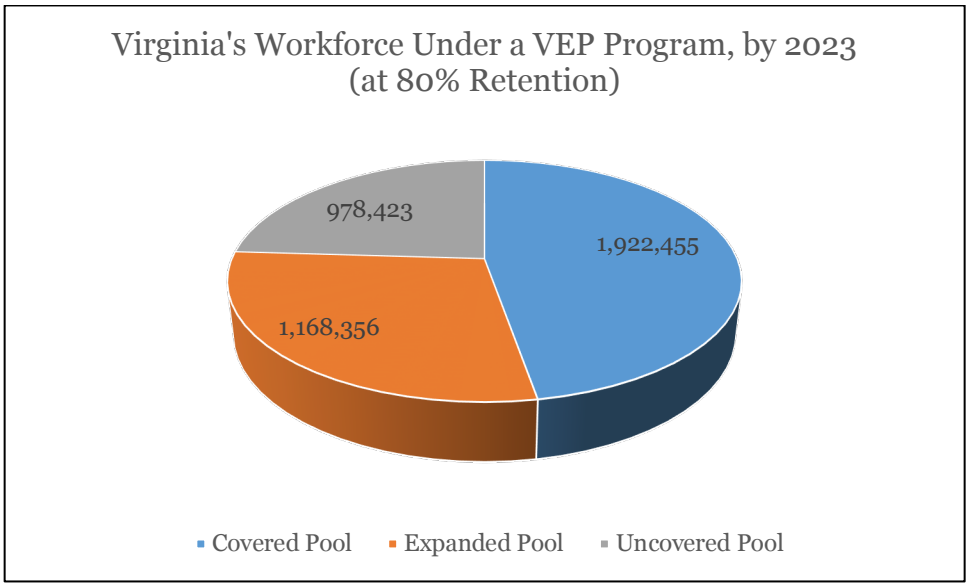
[15] Beshears, John, James J. Choi, David Laibson, and Brigitte C. Madrian. 2010. "The Impact of Employer Matching on Savings Plan Participation under Automatic Enrollment." In *Research Findings in the Economics of Aging*, 311-327. Chicago, IL: University of Chicago Press

[16] Choi, James J., David Laibson, and Brigitte C. Madrian. 2007. "Reducing the Complexity Costs of 401(k) Participation Through Quick Enrollment." In Developments in the Economics of Aging, edited by David A. Wise, 57-82. Chicago, IL: University of Chicago Press.

[17] Mastroberte, Tammy. "Convenience Stores Tackle Turnover Through Employee Engagement." https://csnews.com/c-stores-tackle-turnover-through-employee-engagement. 7/12/2017

[18] Parkinson, Cody. "Using the job mobility of young workers to assess the U.S. labor market." https://www.bls.gov/opub/mlr/2017/beyond-bls/using-the-job-mobility-of-young-workers-to-assess-the-us-labor-market.htm. 2/2017.

Figure 4: Projected Retirement Coverage of Virginia's Workforce under VEP Program, with 80% Retention Rate



Section 3. Estimated Start-Up Costs of a Virginia Voluntary Retirement Savings Plan Over Time

Start-up estimates assume the state of Virginia will have primary responsibility for advertising, outreach, website and database management, and a help center to assist participating employers. Start-up costs reflect two realities. Because similar voluntary retirement savings programs are currently only established for employees of 14 public colleges and universities, no current program exists for private sector employers and the administrative infrastructure of the program will need to be built. Additionally, the program will need to be advertised to employers.

Start-up costs include the one-time fixed costs of administratively creating and staffing the program. Post start-up ongoing costs include the cost of recordkeeping (which will grow over time as the number of accounts grows), annual administrative costs associated with the existence of the program, and investment costs associated with managing the program. In total, the ongoing costs will vary from year to year, but will grow over time as program participation grows.

Estimated startup costs for six similar state facilitated voluntary retirement savings programs provide a general guide[19] to what might be expected for Virginia and range from a low of $500,000 to as high as $4.5 million. The

[19] The six include the Connecticut Retirement Security Program, the Illinois Secure Choice Savings Program, the Maryland Small Business Retirement Savings Program Trust, the West Virginia Voluntary Employee Retirement Accounts Program, the Washington Small Business Retirement Marketplace, and the Oregon Retirement Savings Plan.

average startup cost for these six programs is in the $2 million range, which is the cost we will use in the scenarios below. For all programs except Washington's Small Business Retirement Marketplace, enabling legislation required all startup costs to be loaned to the program and repaid within a set period of time or within a set period of time after the program became self-sustaining.

Section 4. Estimated Costs for Request-For-Proposals

Two Requests-For-Proposals (RFPs) are assumed – one for an investment consultant and one for a record keeper – with an estimated cost of approximately $71,592 (Virginia average) to hire an outside consultant to help design the RFPs and evaluate the submitted proposals. The actual cost of the RPF will depend on which state agency is tasked with this responsibility.

Section 5. Estimated Ongoing Operating Costs

The main driver of ongoing operating costs is the record keeping costs. These costs include the per-account administration cost, which the record keeper charges to keep track of account funds, providing statement, covering call center, and maintaining the program's website for account holders. The OregonSaves feasibility study assumes a per-account cost of $30 per year. In this study, two types of accounts exist: active and inactive. In active account, an individual is employed at an employer without a plan and is contributing to the plan. Inactive accounts are maintained by someone who is no longer employed at an eligible employer by still has an open account.

The total ongoing operating costs includes plan oversight (borne by the record keeper and the state agency that oversees the program), and the investment management costs (borne by the investment management firms). Like the South Carolina study, this study uses Oregon's methodology, assuming the operating costs will include 10% costs to the investment management firms, 10% costs to the state agency overseeing the program, and 80% costs to the record keeper.

The ultimate objective of a Virginia voluntary retirement savings program is to encourage high participation rates from uncovered workers with a goal of enrolling 1,168,356 of Virginia's 2,146,779 currently uncovered workers. Because each participant requires an annual administrative cost it is assumed that ongoing operation costs as well as additional costs related to the annual operation of the program and marketing the estimated cost would range between $17 million and $36 million for the first 5 years of the program while the program works towards financial self-sufficiency (see Section 7).

Section 6. Estimates for The Administrative Cost to Employer to Set Up Program and Payroll Deduction

There is a list of responsibilities that employers could be tasked with depending upon the specific operating model decided upon by the board. Potential employers' responsibilities include:

1. Introducing Virginia voluntary retirement savings program to employees;
2. Providing data to enroll employees automatically in the system;
3. Collecting opt-out decisions;
4. Processing and funding payroll auto-deduction;
5. Keeping records;
6. Resolving errors.

Employers may be concerned about intangible costs and benefits associated with running a retirement plan. One concern they may have regards regulatory burden, since the program has no relationship with their core business and the employers may fear legal liabilities. Another concern relates to data security and the possibility of increasing costs for data security. A state-sponsored Virginia voluntary retirement savings program must be designed to decrease the responsibilities and risk for employers.

The main administrative costs for employers are signing up costs and setting up a payroll deduction. A Virginia voluntary retirement savings program would a state-facilitated program; therefore, the initial setup would be as simple as providing employers and their employees' information about the program and helping employers setup the auto payroll deduction. The state would provide help and encouragement at the initial stage of the program. To encourage employers to sign up the program, there will be no cost to participate in the program for the participating employers. For companies with a payroll service there would be virtually no additional cost to setting up the payroll deduction, as the payroll companies generally offer this service. Companies without a payroll service will undergo some initial effort to set up a payroll deduction or incur costs to sign up with a payroll service to allow for an automatic payroll deduction. As pointed out in the South Carolina study, the record keeper has incentive to assist employers in order to enroll as many participating employers as possible. The costs for the companies without payroll system will be calculated into the cost for record keeping. The program should be designed to allow benefits of participation to outweigh any administrative costs for participating employers.

Section 7. Projected Time to Financial Self-Sufficiency: MEP

The projected time to financial self-sufficiency for a multiple employer retirement savings plan (MEP) is built upon several assumptions: the start-up costs, the terms of the agreement with the record keeper, the adoption rate over time for both employers and employees, the salaries of the employees that adopt the plan, the investment percentage of the employees that adopt the plan, the rate of return on investments, and the withdrawal rate of the participating employees. All of these factors that will impact the program's timeline toward fiscal self-sufficiency. Building off the South Carolina study, we provide timelines based on two different scenarios, one in which the program is targeted at wage earners most likely to participate (workers earning more than $25,000 annually) and in which the state's economic performance is stable and one targeted only at the Commonwealth's lowest wage earners (workers earning less than $25,000 annually) and in which the state's economic performance is unstable. This creates self-sufficiency outlooks for two extremes, one with the most optimal conditions and one with the least optimal conditions, while recognizing actual conditions will most like fall somewhere in between these two scenarios.

A. Scenario One

In scenario one we assume that we are targeting employees that are making over $25,000 in annual income to participate in a Virginia voluntary retirement savings program and that the economic outlook for Virginia for the next 15 years is stable.

Scenario one specific assumption are as follows:

- Number of employees per firm: 1,070,978/35,564 = 30
- Opt-out rate: 20%
- Average annual income per employee: $68,714
- Average saving (contribution) rate to the voluntary retirement savings program: 5%
- Annual economy growth rate in Virginia (income growth rate): 2%
- Money in the voluntary retirement savings program is invested in a fund with an average rate of return: 5% (average 401k rate of return)
- Expense Ratio (the annual fee that all funds charge their shareholders): 1%
- Job mobility rate: 10%
- One-time fixed cost: $2,071,592
- Cost per employer: $120
- Ongoing operating costs: 100 basis points (1%)

Figure 4: Scenario One Adoption Rate Asset Growth, by Year

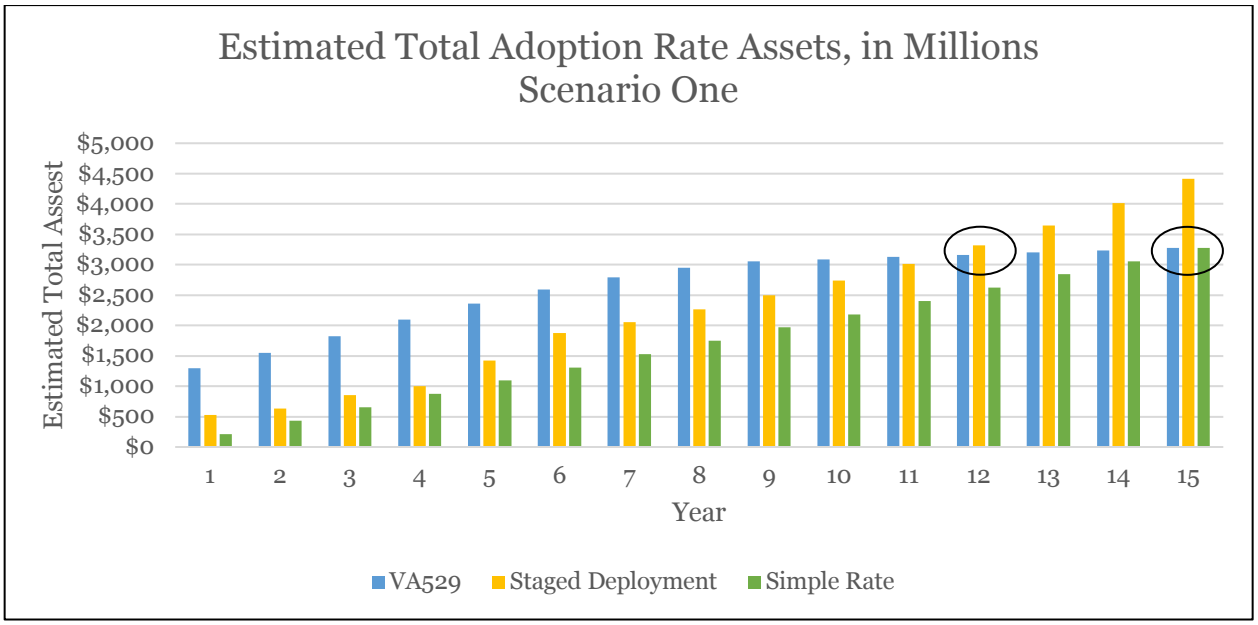


Figure 5: Scenario One Profitability, by Year

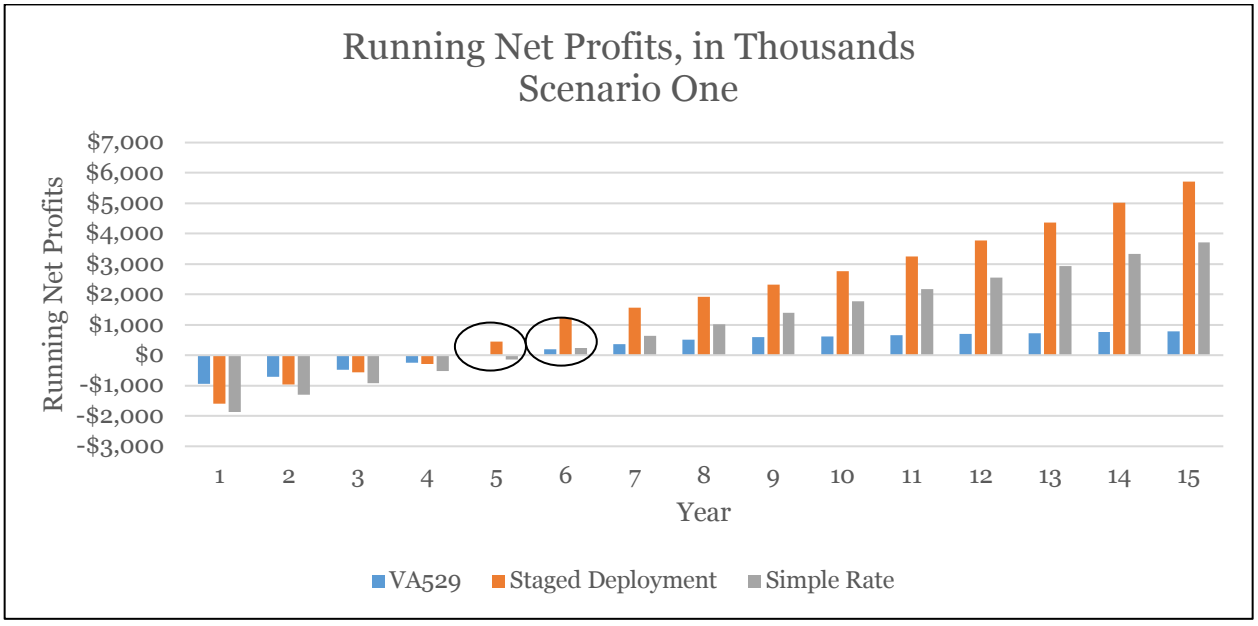


Figure 4 shows Scenario One estimated total adoption rate assets under three assumptions: using the rate of adoption of Virginia's 529 plans; using a staged deployment by firm size (with firms of 1000+ employees being targeted during the initial year of deployment followed by firms of between 500-999 employees, then by firms of between 100-499 employees, then by firms of between 50-99 employees, then by first of between 10-49 employees, and finally by firms of less than 10 employees); and using a simple rate adoption model. Under the staged deployment model, adoption rate assets exceed the Virginia 529 plan assets in year 12 and under the simple rate model they match the 529 plan in year 15. As Figure 5 demonstrates, the staged deployment model reaches running profitability in year 5 and the simple rate model reaches running profitability in year 6.

B. Scenario Two

In scenario two we are targeting employees that make under $25,000 in annual income to participate in a voluntary retirement savings program and the Virginia economic outlook for the next 15 years is poor. Scenario two specific assumptions are as follows:

- Number of employees: 738,106/28,632 = 26
- Opt-out rate: 30%
- Average annual income per employee: $11,492
- Average saving (contribution) rate to the voluntary retirement savings program: 5%
- Annual economy growth rate in Virginia (income growth rate): 1.26%
- Money in the voluntary retirement savings program is invested in a fund with an average rate of return of: 2% (annually)
- Expense ratio: 1%
- Job mobility rate: 20%
- One-time fixed cost: $2,071,592
- Cost per employer: $120
- Ongoing operating costs: 100 basis points (1%)

Figure 6: Scenario Two Adoption Rate Asset Growth, by Year

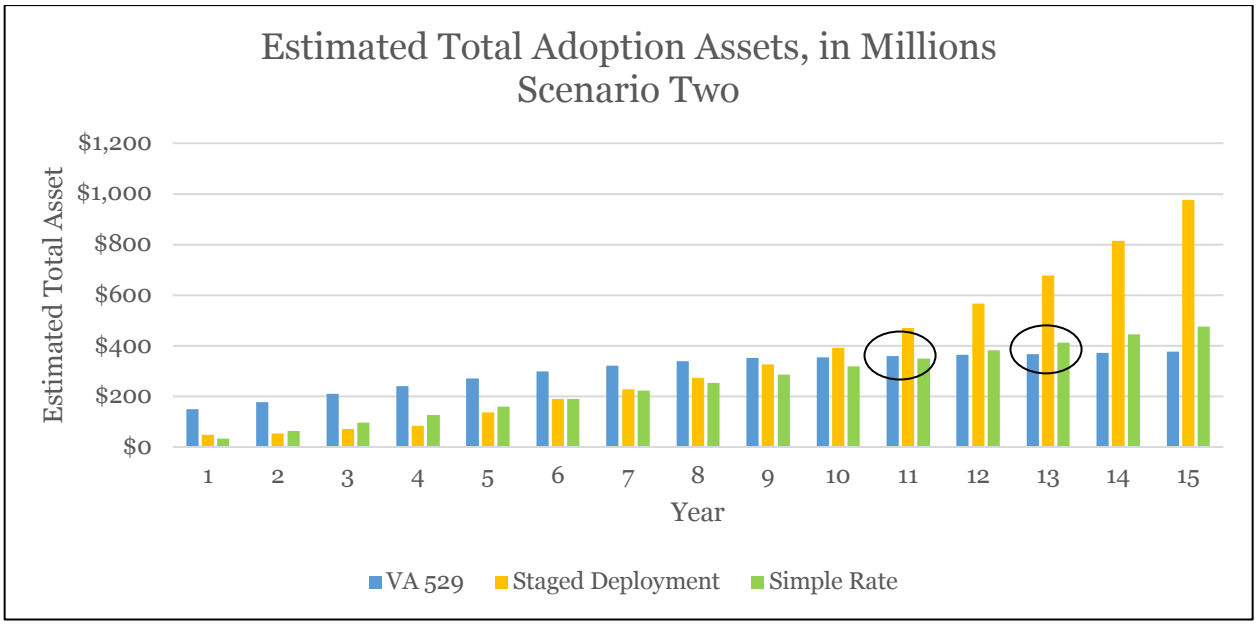


Figure 7: Scenario Two Profitability, by Year

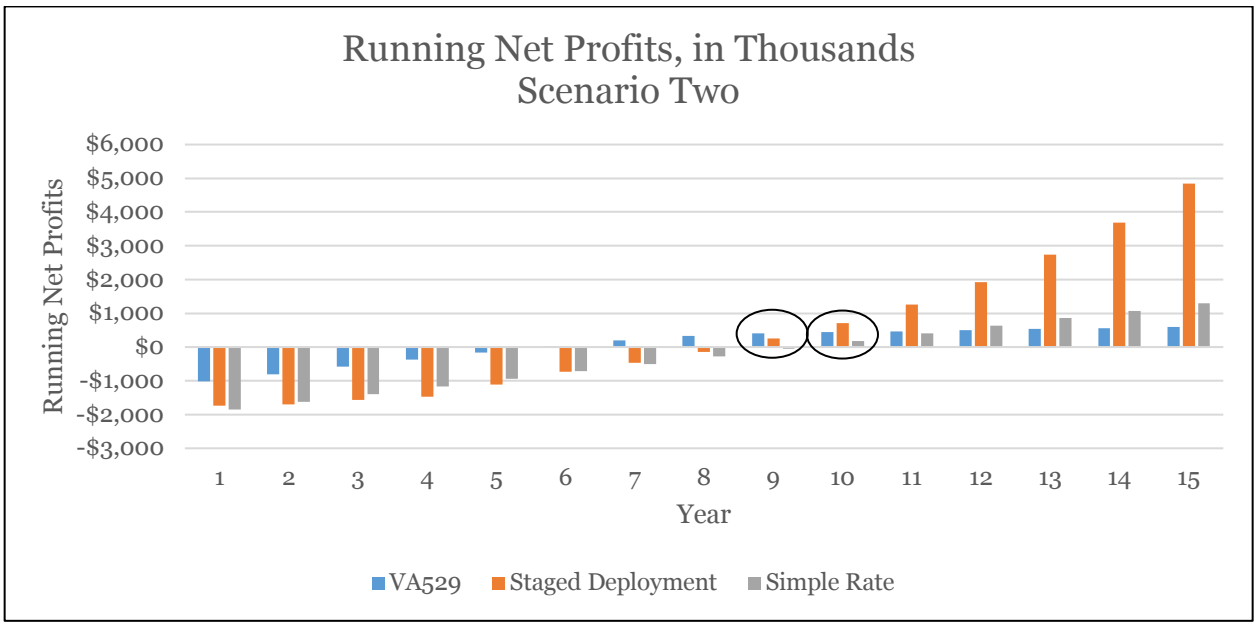


Figure 6 shows Scenario Two estimated total adoption rate assets under the same three assumptions as in Scenario One: using the rate of adoption of Virginia's 529 plans; using a staged deployment by firm size (with firms of 1000+ employees being targeted during the initial year of deployment followed by firms of between 500-999 employees, then by firms of between 100-499 employees, then by firms of between 50-99 employees, then by first of between 10-49 employees, and finally by firms of less than 10 employees); and using a simple rate adoption model. Under the staged deployment model, adoption rate assets exceed the Virginia 529 plan assets in year 10 and under the simple rate model they match the 529 plan in between years 11 and12. As Figure 5 demonstrates, the staged deployment model reaches running profitability in year 9 and the simple rate model reaches running profitability in year 10.

Section 8. Auto-IRA Retirement System

Individual Retirement Accounts (IRAs) are typically set up, controlled, and funded by an individual, not their employer. The individual controls the account and may invest in just about anything, including mutual funds, stocks, bonds, or other financial products. The contributions are tax-deductible and tax penalties apply to "early" withdrawals. It is within the state's regulatory ability to decide whether employer participation is mandatory or voluntary. Figure 8 demonstrates anticipated coverage under mandatory participation. Additionally, state-sponsored retirement plans must be established by the state and require employer participation to be able to use auto-enrollment and auto-escalation. All states that have established state-sponsored IRA programs require employer participation. [20] Employers are not permitted to make contributions to any payroll deduction IRA. The traditional IRA is pre-tax deduction while the Roth IRA is post-tax deduction, and with both employee contributions are limited to between $5,500 and $6,500 per year (See Table 9 below).

[20] These include California, Connecticut, Illinois, Maryland, and Oregon

Figure 8: Projected Retirement Coverage of Virginia's Workforce, with 80% Retention Rate

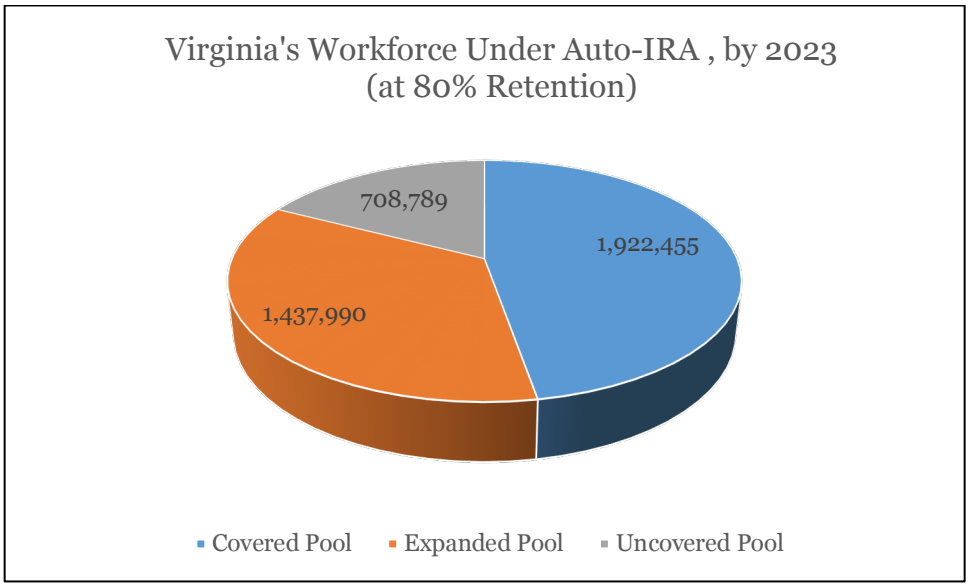


Table 9: Income and Contribution Limits and Tax Deduction Status of IRAs

	Traditional IRA	Roth IRA
Income Limits	None	Single: $116 – 131k Married, filling joint: $183 -193k
Contribution Limits	$5,500 (<50 years old) $6,500 (50+ years old)	$5,500 (<50 years old) $6,500 (50+ years old)
Tax deductible	Pre-tax	Post-Tax

A. Roles, Responsibilities, and Rights of the Participants:

The state and employer each has important roles and responsibilities to play in the program, while the employee has certain specific rights.

The State:

- The program must be established pursuant to state law;
- The state must decide which employers and employees are covered by participation mandates (such as, employers that do not offer other workplace retirement savings arrangements);
- The program is implemented and administrated by the state either via direct state management or via authority granted to a third-party;
- The state must be responsible for the security of payroll deductions and employee savings;
- The state must adopt measures to ensure that employees are notified of their rights under the program and create the mechanism for enforcing those rights.

The Employer:

- The employer's role must be limited to ministerial activities (collecting payroll deductions and remitting them to the program). Such duties include: maintaining records of the payroll deductions and remittance of payments, providing information to the state necessary for the operation of the program, and distributing program information from the state program to employees;
- Employers cannot contribute employer funds to the IRAs;
- To the extend employees will be auto-enrolled, employer participation in the program must be required by state law.

The Employee:

- Employee participation in the program must be voluntary;
- If the program requires automatic enrollment, employees must be given adequate notice and have the right to opt-out;
- Employees must be notified of their rights under the program, including the mechanism for the enforcement of those rights.

B. Projected Time to Financial Self-Sufficiency

In this analysis, since the IRA is a mandatory program for all small-to-medium-sized firms, we estimate that all small-to-medium-sized firms in Virginia would participate in the program within 5-years (64,196). [21] The employee participation rate for each firm is estimated to be 80%. [22] Additional assumptions and estimates include:

- Average uncovered employees' salary: $43,314
- Increasing rate of small-to-medium sized firm: 1.5%[23]
- Estimated number of participating employees under 50 years old (1st year): 300,850
- Estimated number of participated employee older than 50 years (1st year): 461,303
- Opt-out rate: 20%[24]
- Employee contribution rate: 5%[25]
- Estimated start-up costs: same as MEP
- Estimated costs for request-for-proposal: same as MEP

In estimating ongoing operating costs, we assume the record keeper only needs to cover the call centers and maintaining the website. We also assume the pre-account cost is half of MEP's cost, $15 per year. It will be the responsibility of investment companies to maintain and secure individual's account information.

[21] Where comparative data are needed for this analysis that data is drawn from the available information from the five states that have enacted laws establishing mandatory IRA programs. Virginia-specific data comes from *Current Population Survey, March Supplement* 2016 (reflecting 2015 calendar year data).

[22] Average of California, Connecticut, and Oregon.

[23] Average annual GDP growth rate in Virginia in the most recent 15 years.

[24] Average of California and Oregon.

[25] Average of California, Illinois, and Oregon.

The ongoing operating costs would range between $6.5 million and $18 million.

In estimating the administrative cost to employer, including the following responsibilities: (1) introducing the IRA program to employees; (2) Processing and funding payroll auto-deduction; (3) Keep records; and (4) resolve errors. The main costs for the employer is assisting the Commonwealth in promoting the program and setting up/maintaining the payroll deduction.

Additional specific assumption in projecting time to financial self-sufficiency are as follows:

- Number of employees per firm: 1,804,260/64,196=28 employee/firm
- Opt-out rate: 20%
- Employee participation rate: 80%
- Average annual income per employee: $43,314
- Contribution Rate: 5%
- Annual economy growth rate in Virginia: 2%
- Rate of Return: 5%
- Expense Ratio: 1%
- Job mobility rate: 10%
- One-time fixed cost: $2,071,592
- Ongoing operating costs: 1%

Figure 9: Asset Rates Traditional and Roth IRA, by Year

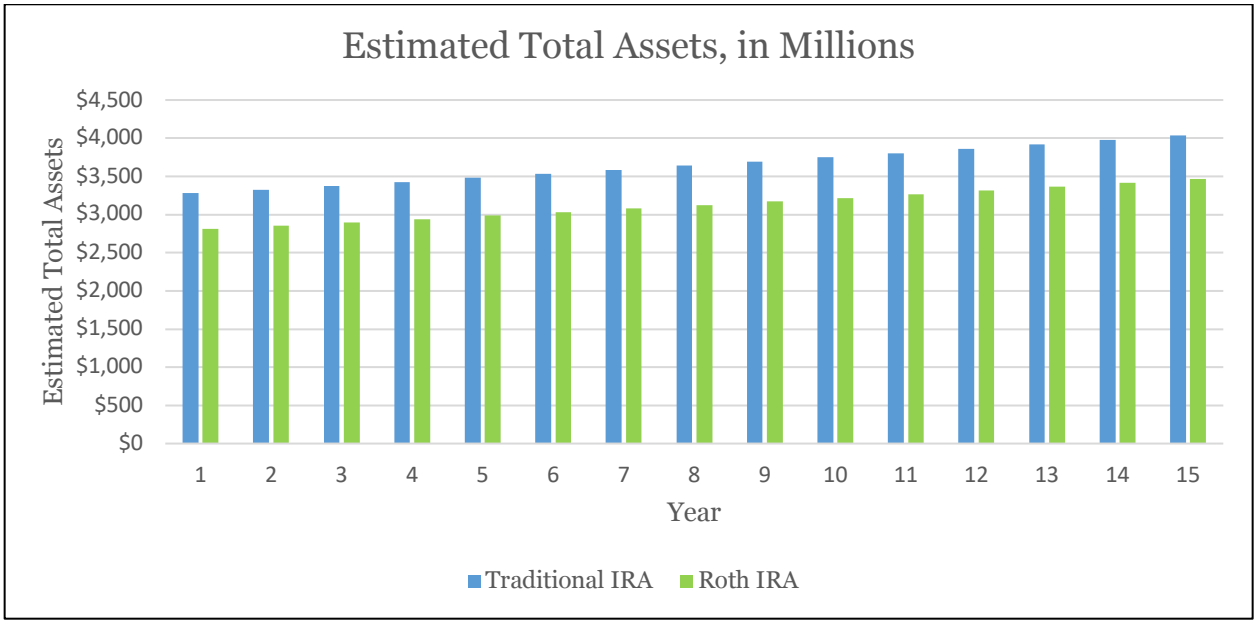


Figure 10: Running Net Profits Traditional and Roth IRA, by Year

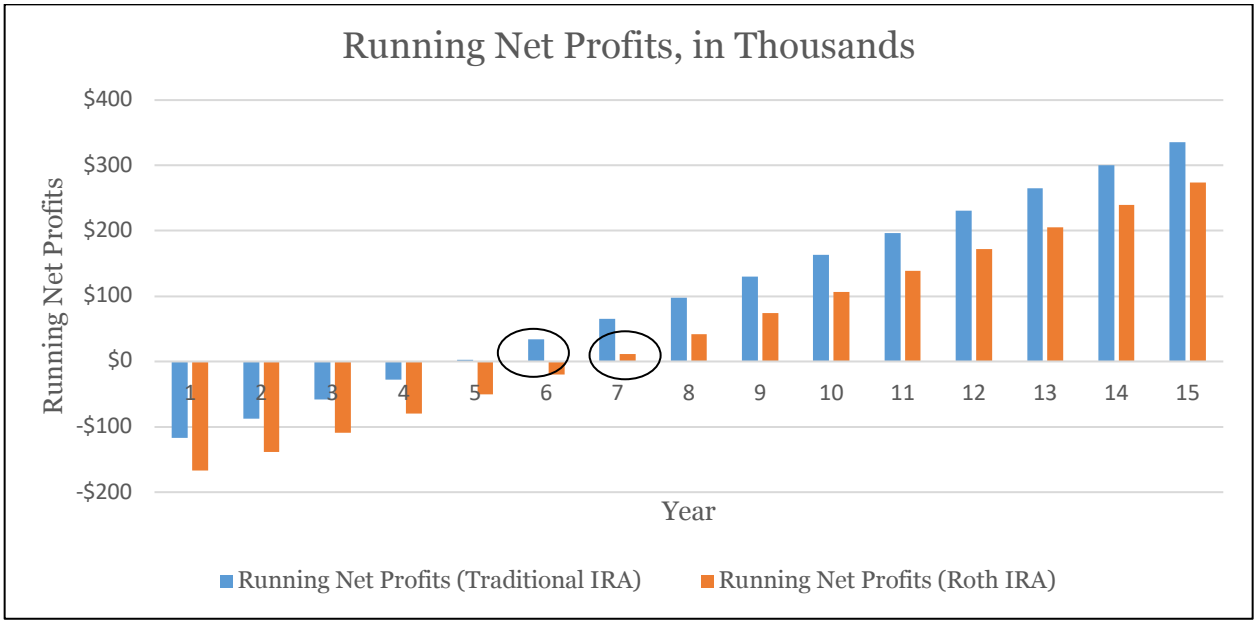


Figure 8 shows the estimated total assets for both the Traditional IRA and Roth IRA, using the Virginia economic growth rate to indicate the increasing rate of small-to-medium-sized firms. Figure 8 illustrates the difference between Traditional IRA and Roth IRA, with Traditional IRAs usually having higher total assets because of Roth IRA's income limits. Due to the contribution limit (i.e., the total contribution amount cannot exceed $5,500 for individuals 50 and under and $6,500 for individuals 50 and older) and the mandatory requirement, the estimated total assets for the IRA plan will be similar or even higher than the MEP plan. Within 15 years, in our estimation model, there will be 27% of uncovered employees turning 50 and older and paying the highest limit of contribution.[26]

As Figure 9 demonstrates, the Traditional IRA reaches a break-even point in year 5 and running profitability in year 6 and the Roth IRA reaches running profitability in year 7. Both steadily increase over the next several years.

[26] It should be noted that because individuals can choose how to invest in the IRA program but not in the MEP program (which is managed professionally), some variation related to individual decision making in terms of investing might be expected in the IRA program that might not necessarily be expected in the MEP program.

Section 9. Conclusion

Currently, less than half of Virginia's workforce is actively saving for their inevitable retirement via a pre-tax, employment-based retirement place. This puts the state on precarious long-term financial footing because of the immense burden that will be placed on the state's taxpayers to assist those who lack their own financial resources in retirement. Able-bodied seniors who lack a retirement nest egg will stay in their jobs long past the retirement of their peers. This will impede employment for younger generations who will find themselves competing in compressed job markets with fewer vacancies enjoyed by Baby Boomers, whose parents and grandparents were more likely to retire due to receipt of pensions.

Presumably, many of the Commonwealth's workers not currently saving for retirement will need to rely on social security as their only source of income in retirement. The average social security payment in 2018 is $1,404 pre-tax per a month. This means that tomorrow's seniors who lack personal retirement savings will be living in poverty and will require massive back-end investments from the state and federal government including food, housing, and medical assistance. Although implementing and operating a public pre-tax, employment-based retirement plan requires a significant front-end investment by the state, failure to act now, preemptively will harm the state's long-term fiscal outlook, perhaps significantly. A recent study estimated that the cost through 2030 of government-funded retirement support could reach as high as $5.1 billion in Virginia, but a 10% increase in net worth of retirees (for instance, via retirement savings) could save taxpayers in Virginia as much as $326 million in reduced costs of government-funded benefits to retirees who lack sufficient resources of their own.[27]

According to results of an AARP survey of Virginia residents conducted in 2018, more than two-thirds of Virginia registered voters report feeling anxious over their retirement savings. This analysis finds that of Virginia's more than 2 million uncovered workers, the vast majority, 84%, report that they currently lack access to an employer-sponsored plan. If given the option of an employer-sponsored plan, this analysis estimates that Virginia could reduce the ranks of its uncovered workforce by more than half. Like Virginia's successful 529 college savings plan, a voluntary retirement savings program is expected to be well-received by the public and be on firm financial footing within a decade of being launched. By heading off this fiscal crisis, the state can put itself on solid financial footing and mitigate a future public health and welfare issue.

[27] Yu, Jia and Quentin Kidd, 2016.