CENTER *for* RETIREMENT RESEARCH *at* BOSTON COLLEGE

Study A: Colorado Secure Savings Plan

Final Report

February 2020

Introduction

Very few workers save for retirement outside of employer-sponsored plans.[1] Yet, in Colorado, over 900,000 workers are with an employer that does not offer a plan. Given this large coverage gap, a state auto-IRA program would be an opportunity to improve retirement security for many workers, while placing minimal responsibility on employers.

At present, three states – Oregon, Illinois, and California – have implemented auto-IRA programs. After two years of operation, OregonSaves – the first program to launch – has over 50,000 funded accounts and about $30 million in account balances. Illinois (after one year of operation) has 42,000 funded accounts and $11 million in account balances, and California (live as of July 2019) has close to 4,000 funded accounts with $1 million in account balances. These assets represent savings for retirement that would not have occurred in the absence of an auto-IRA program. If Colorado decides to introduce a Secure Savings program, it could build on the lessons learned from live programs to help tens of thousands of uncovered workers accumulate meaningful savings for retirement.

The discussion proceeds as follows. The first section provides a market analysis of the Colorado employees and employers that would be affected by a Secure Savings program. The second section presents outcomes from the financial feasibility analysis. The third section concludes that a Colorado Secure Savings program based on accessibility, portability, and simplicity would be well-designed to meet the needs of the target population of uncovered Colorado workers while minimizing the burden on employers. Implementing such an initiative also requires an awareness of how to handle uncertainty and mitigate risks with respect to program finances. Encouragingly, in all the scenarios examined in this report, estimates indicate that the program would represent a very low-risk proposition to the State with the potential to improve the financial security of tens of thousands of Colorado workers.

Market Analysis

A successful auto-IRA program requires the participation of both employees and employers. This market analysis provides an overview on the employees and employers eligible

[1] Although IRAs are available to employees without coverage through their jobs, few workers use these vehicles to actively save. Instead, IRAs tend to be the eventual landing spot for money saved through employer-sponsored 401(k)s. See Chen and Munnell (2017).

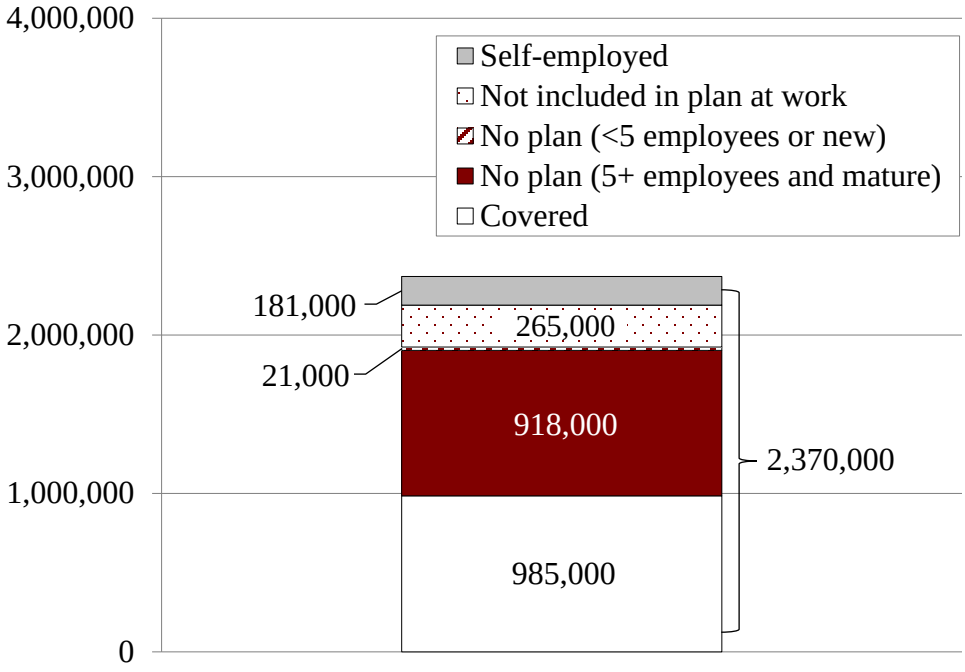
to participate in a potential Colorado Secure Savings program. The first section describes the number and characteristics of the employees who would be affected by Colorado Secure Savings and their likely response to the program. The second section evaluates the characteristics of the employer market in terms of firm size and industry and discusses responsibilities of employers in implementing the program.

Employees

Colorado Secure Savings could help a significant portion of uncovered workers save for retirement. As written, the Colorado Secure Savings legislation would require employers with five or more employees that have been in business for at least two years to automatically enroll employees in a Roth-IRA. Estimates show that approximately 918,000 employees could be directly impacted by the program (see Figure 1). An additional 21,000 employees also have no plan at work, but are excluded from the program because they work at firms that are either new (in business for less than two years) or employ fewer than 5 workers. Self-employed workers (including "1099" contract workers) would not be included because they do not show up in any payroll where automatic deductions could be made. Those who work for an employer with a plan but are not eligible to participate would also not be covered by the Colorado program.[2]

[2] Oregon has plans for a pilot program to test voluntary efforts to reach this group of uncovered workers.

Figure 1. *Number of Colorado Workers by Coverage Status, 2019*



Sources: CRR calculations from U.S. Census Bureau, *Current Employment Statistics* (2019); *Current Population Survey* (2014, 2018); and *Business Dynamics Statistics* (2016).

Demographic Characteristics

Employees without a plan at work are different from covered workers in many ways. Table 1 shows how these two groups compare. The uncovered workers are disproportionately less educated, young, Hispanic, and foreign-born.

Table 1. *Key Demographics of Colorado Workers by Coverage Status, 2019*

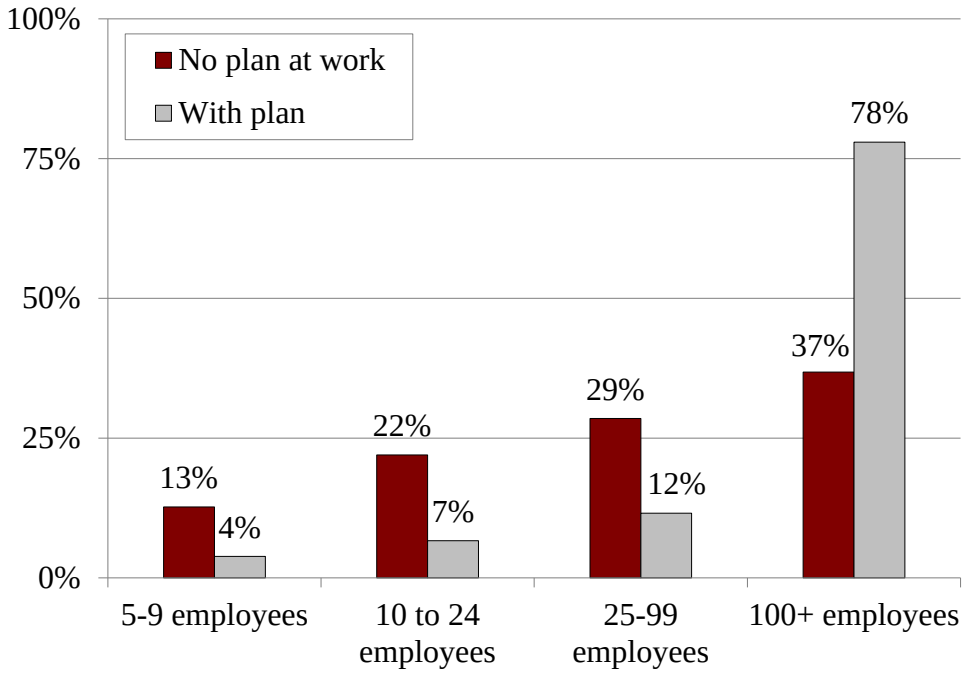
Characteristic	No plan at work		With plan	
	Number	Share	Number	Share
Gender				
Male	510,391	54%	538,549	55%
Female	429,007	46	446,147	45
Age				
Under 18	16,017	2	4,693	0.5
18-24	133,849	14	46,786	5
25-54	643,313	68	700,373	71
55-64	115,094	12	190,415	19
65+	31,127	3	42,429	4
Race				
White	611,331	65	739,712	75
Black	39,220	4	37,415	4
Asian	30,410	3	38,097	4
Hispanic	240,828	26	152,823	16
Other	17,610	2	16,649	2
Nativity				
Native	765,877	82	878,445	89
Foreign-born	173,522	18	106,251	11
Education				
Less than high school	111,764	12	14,245	1
High school only	191,922	20	156,694	16
Some college	263,097	28	268,525	27
Bachelor's or more	372,616	40	545,232	55
Total	939,398	100%	984,696	100%

Notes: For demographics, the CPS March Supplement is unable to extract employees at firms with fewer than 5 employees and does not include a reliable measure for firm age. The 939,398 reflects all employees without a plan at work, regardless of firm size or age.
Sources: CRR calculations from *Current Employment Statistics* (2019); and *Current Population Survey* (2014, 2018).

Employer Size, Industry, and Wages

Figure 2 shows the distribution of Colorado workers with and without a plan at work by employer size. Employees with a plan at work are largely concentrated in firms with 100 employees or more, meaning that those without a plan are predominantly employed by small firms.

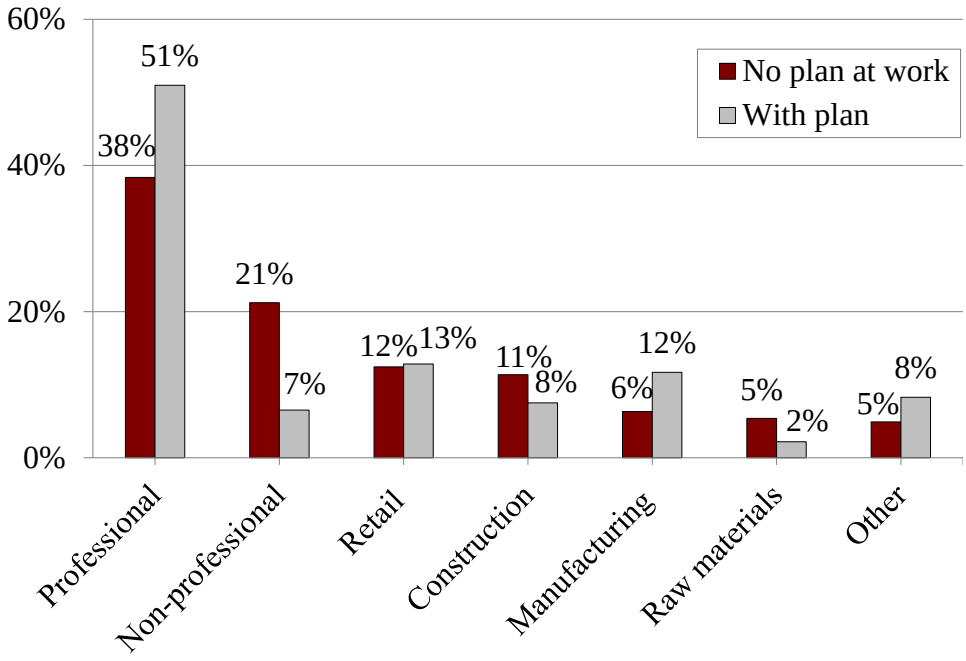
Figure 2. *Employees Affected by Colorado Secure Savings by Firm Size and Coverage Status, 2016*



Sources: CRR calculations from *Statistics of U.S. Businesses* (2016); *Business Dynamics Statistics* (2016); and *National Compensation Survey* (2017).

In terms of industry, Colorado employees with no plan at work are more likely to be employed in non-professional services, construction, and raw materials industries (see Figure 3).

Figure 3. *Industry Distribution of Colorado Workers by Coverage Status, 2017*



Sources: CRR calculations from *Current Population Survey* (2014, 2018).

Another important aspect of the market is workers' full- or part-time status. Part-time workers tend to be less attached to the labor force, and their lower earnings would impact the rate at which the program accumulates assets. In general, workers without a plan in Colorado, like uncovered workers elsewhere in the country, work fewer hours and earn much less than covered workers. Eighty-two percent of workers with no plan at work are employed full time, compared to 95 percent of workers with a plan (see Table 2). Similarly, the median earnings of full-time workers with no plan at work is $34,669 compared to $60,849 for workers with a plan.

Table 2. *Colorado Employee Earnings and Hours Worked by Coverage Status, 2014*

Hours	No plan at work		With plan	
	Share	Median earnings	Share	Median earnings
1-34	18%	$13,274	5%	$35,027
35+	82	$39,296	95	$62,165
Total	100%	$34,669	100%	$60,849

Source: CRR calculations from *Current Population Survey* (2014).

Job Mobility

Table 3 presents results from an analysis that follows the same workers over time – both in Colorado and in the rest of the United States – to see if, approximately one year later, they are working at the same employer, a different employer, or not working.[3] The results illustrate two primary findings. First, uncovered workers have less stable employment than covered workers; they are more likely to have exited their current job for another job after one year and more likely to have exited to non-employment.[4] The share of full-time workers without a plan going to a new job has been 25 percent per year and the share of full-time workers leaving work for non-employment has been 13 percent per year. Second, part-time workers generally have less stable employment than full-time workers.

Table 3. *One-Year Job Mobility Rates for Colorado and U.S. Workers by Full-time/Part-time Status and Coverage, 1997, 2005, and 2009*

	Full-time		Part-time	
	No plan at work	With plan	No plan at work	With plan
I. Colorado				
Same employer	61%	76%	55%	67%
New employer	25	16	20	15
Not working	13	5	25	19
Exit Colorado	1	3	0	0
II. Rest of U.S.				
Same employer	68	80	53	69
New employer	23	15	28	21
Not working	8	4	17	9
Exit state	1	1	2	1

Sources: U.S. Census Bureau, *Survey of Income and Program Participation (*1996, 2004, and 2008 Panels, representing data on mobility for 1997, 2005, and 2009).

Frequent moves from employment to non-employment will have two effects: 1) individuals will not be contributing to their accounts; and 2) some workers will need to withdraw assets to make ends meet. Workers moving from one job to another can remain active in the

[3] The *Current Population Survey* (used for much of the analysis above) is insufficient in this case, since only a fraction of the dataset can be followed from one year to the next, resulting in a small sample of Colorado workers.
[4] Full-time employees in Colorado tend to have less stable employment than the national average. This difference is more pronounced for workers without a plan.

program if the new employer also participates in Secure Savings. While this feature is a key strength of the program, it also presents a challenge to the program's administrator to keep track of the participant and ensure that contributions through each employer go to the same account.

Financial Capability

Another relevant issue is that uncovered workers in Colorado, like uncovered workers nationally, are under greater financial stress than workers who are covered by an employer plan. Uncovered workers are also less familiar with commercial financial products and have less understanding of basic concepts like compound interest and portfolio diversification.

These issues show up in several ways (see Table 4). First, only 38 percent of uncovered workers say they can come up with $2,000, which suggests that a Colorado Secure Savings program would be the first time many workers will have access to significant assets. Second, 34 percent of uncovered workers appear to be using unconventional, high-interest credit sources like pawn shops and payday lenders. Colorado Secure Savings will not improve participants' overall financial situation if any increases in retirement savings are simply offset by increases in high-interest debt. Thus, agencies in the State that are involved in financial education have the opportunity to highlight the value of using these accounts to meet needs that occur prior to retirement and to provide guidance on when it makes sense to withdraw money from the plan versus using other forms of debt.

Financial capability data offer other lessons for Colorado. Relative to covered workers, uncovered workers are less likely to have a checking account or pay for things online. These data support the need for a user-friendly website to access and navigate the account. In terms of traditional financial education, most uncovered workers struggle with understanding diversification, and over a third appear to have trouble answering a question about compounding interest. These data highlight the importance of offering simple investment options such as target date funds, in addition to simple and concrete educational materials.[5]

[5] According to CRR calculations, uncovered workers in Colorado have slightly lower financial literary compared to uncovered workers in Oregon, emphasizing the need for a robust communication campaign (FINRA 2015).

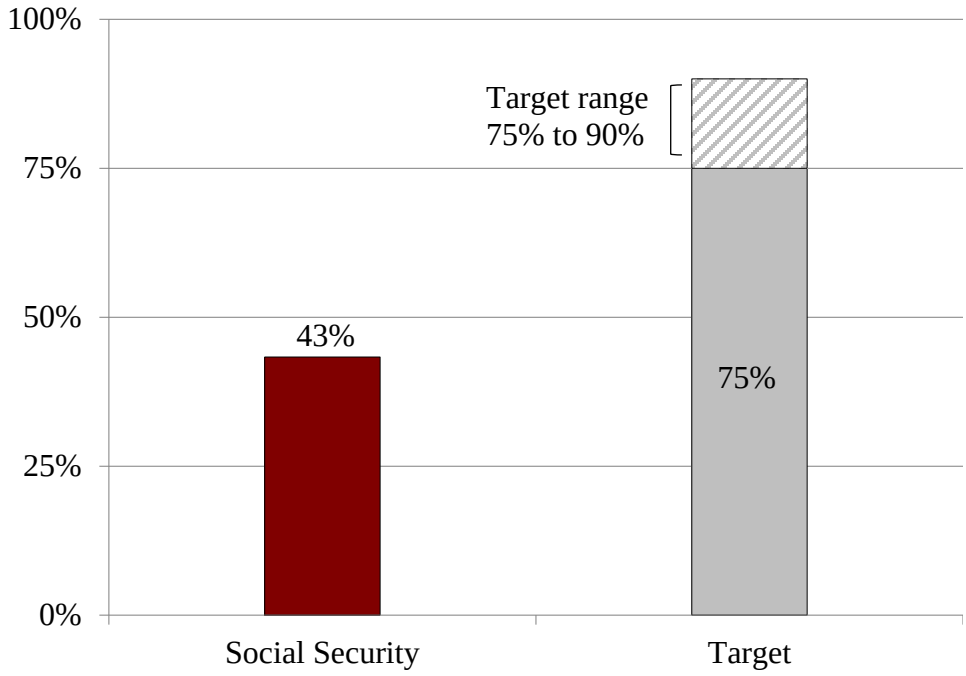
Table 4. *Financial Situation, Interaction, and Literacy by Retirement Plan Coverage in Colorado and the United States, 2015*

	Colorado		United States	
	Not covered	Covered	Not covered	Covered
Financial situation				
Spend more than makes	19%	21%	20%	18%
Can come up with $2,000	38	78	38	79
Receives government transfer	18	13	20	13
Receives money from family	21	22	27	18
Used unconventional credit sources	34	24	32	23
Interaction with the financial system				
Has checking account	90%	99%	81%	98%
Owns non-retirement investments	12	49	9	44
Gets paid in cash or by check	48	20	46	20
Uses credit cards to purchase things	51	86	48	82
Uses debit cards to purchase things	68	72	69	74
Pays for things online	56	88	55	81
Financial literacy				
Understands compounding	64%	79%	67%	83%
Understands diversification	26	57	32	56
Learned about finance at school	11	20	16	21
Learned about finance at work	3	12	4	12

Note: A respondent is covered when they have a retirement plan through their employer or acquire one privately. Uses 2012 data for: gets paid in cash or by check; uses credit or debit cards to purchase things; and pays for things online.
Sources: CRR calculations from Financial Industry Regulatory Authority (FINRA) National Financial Capability Study (2012, 2015).

Despite their limited financial resources and lack of experience with financial institutions, uncovered workers need to save additional income for retirement. While their low earnings allow them to benefit from the progressive structure of the Social Security system, Social Security alone will not provide adequate levels of replacement income. As shown in Figure 4, when a low-earning worker retires at age 65 (and Social Security's Full Retirement Age reaches 67), Social Security will replace 43 percent of his pre-retirement earnings. Standard benchmarks indicate that low earners need 75 to 90 percent of previous earnings to maintain their standard of living. Additional savings through auto-IRAs can help bridge the gap between Social Security benefits and target replacement rates.

Figure 4. *Replacement Rate from Social Security and Target Replacement Rate*



Source: CRR calculations from *Current Population Survey* (2018).

Colorado Secure Savings Well-Designed for Target Population

The plan design features of auto-IRA programs – included in the Colorado Secure Savings legislation – are well-suited to meet the needs of targeted employees. Specifically, the plan's accessibility, portability, and simplicity make an auto-IRA an effective tool to improve retirement security for uncovered workers.

First, a Roth-IRA offers employees access to account balances in the event that funds are needed before retirement. Given that employees without a plan tend to be lower income, one of the key advantages of a Roth-IRA – as opposed to a traditional IRA – is the lack of penalties for early withdrawals of contributions. While these savings are intended to be used during retirement, the primary goal of an auto-IRA is for employees to accumulate meaningful savings that provide additional income security. Therefore, the use of these accounts during financial emergencies that would otherwise result in debt is consistent with ultimate program goals.

Second, the plan is portable across any employer in the State also participating in Secure Savings. Because workers without a plan tend to change jobs relatively frequently, plan portability helps workers consistently save for retirement as they move from one employer to the

next. The plan will become increasingly portable over time as more employers enroll in the program. Ultimately, these highly mobile employees will not only maintain coverage as they change employers, but will be able to save for retirement in one consistent account over time.

Lastly, given the low financial literacy of uncovered workers, the plan's simplicity removes several key barriers that could otherwise impede saving for retirement. Automatically enrolling employees removes the burden of signing up for the program or making decisions on contribution rates and investments. In addition to simplifying the enrollment process, auto-enrollment tends to increase plan participation through harnessing inertia because, once people are in a plan, they tend to stay. Limiting the number and complexity of funds offered (e.g. the use of target date funds) makes the program more approachable to workers once enrolled, and can help in the process of improving financial literacy.

Response of Employees to Colorado Secure Savings

To accumulate meaningful retirement savings from a state-sponsored plan, employees need to stay with the program. The question is what level of participation Colorado should expect. While preliminary data from live auto-IRAs can help inform estimates, this seemingly straightforward question turns out to be complicated. Because of the ongoing rollout and the many ways in which workers can leave and re-enter the program, program participation is not simply the inverse of the opt-out rate.

Preliminary results from Oregon, Illinois, and California provide data on explicit employee opt-out. While the data are still immature, as of December 2019, California's program (active for less than one year) has demonstrated a 30-percent opt-out rate, Illinois' program (active for a full year) has an opt-out rate between 30 and 40 percent, while Oregon's program (active for two years) has demonstrated a 31-percent rate.[6] These rates are slightly higher than the 20 to 30 percent rates typically observed in employer-sponsored 401(k) plans.[7] However, given the many differences between employees with and without a plan at work (e.g., education, earnings, financial literacy), higher opt-out rates are not surprising for participants in auto-IRAs. In addition, these opt-out rates are likely to evolve over time as the programs and data mature.

[6] California State Treasurer (2019); Quinby et al. (2019).
[7] Choi et al (2007, 2001); Clark, Utkus, and Young (2015).

In addition to the opt-out rate, overall program participation is impacted by the many other reasons why employees may not have active accounts. Because of high employee mobility and the data quality issues that are to be expected with an immature program, many employees are either inactive by the time they receive their invitation to enroll or have invalid contact information. Other employees are ineligible to participate due to factors such as age (e.g., under 18), and some accounts are listed as "active" but have no contributions. It is possible that these accounts are at employers that have enrolled but have yet to process payroll deduction.

All told, depending on the interpretation of missing data and who is included as an eligible employee, the participation rate currently observed in Oregon is between about one-half to two-thirds. Once programs mature, better data will become available on what long-term participation rate can be expected.

The question is whether a participation rate of one-half to two-thirds constitutes "successful" participation. A useful baseline is the national participation in IRAs in the absence of a federal auto-IRA program. While IRAs are available to any individual wishing to open a retirement account, as of 2016, only 14 percent of U.S. households contributed to an IRA.[8] These IRA contributors tend to have a college education, additional retirement savings such as a 401(k) through an employer, and higher household earnings. Of the population targeted by auto-IRA programs, very few voluntarily enroll in an IRA. Therefore, relative to this baseline, a 50- to 70-percent participation rate in a state-administered auto-IRA program represents a meaningful expansion of retirement coverage.

Employers

Employer participation is essential to both employee coverage and the financial feasibility of Colorado Secure Savings. As mentioned, Colorado Secure Savings would require any employer with five or more employees and at least two years of business to automatically enroll employees in a state-established Roth-IRA. The data suggest that approximately 21,000 employers could participate in Colorado Secure Savings (see Figure 5).

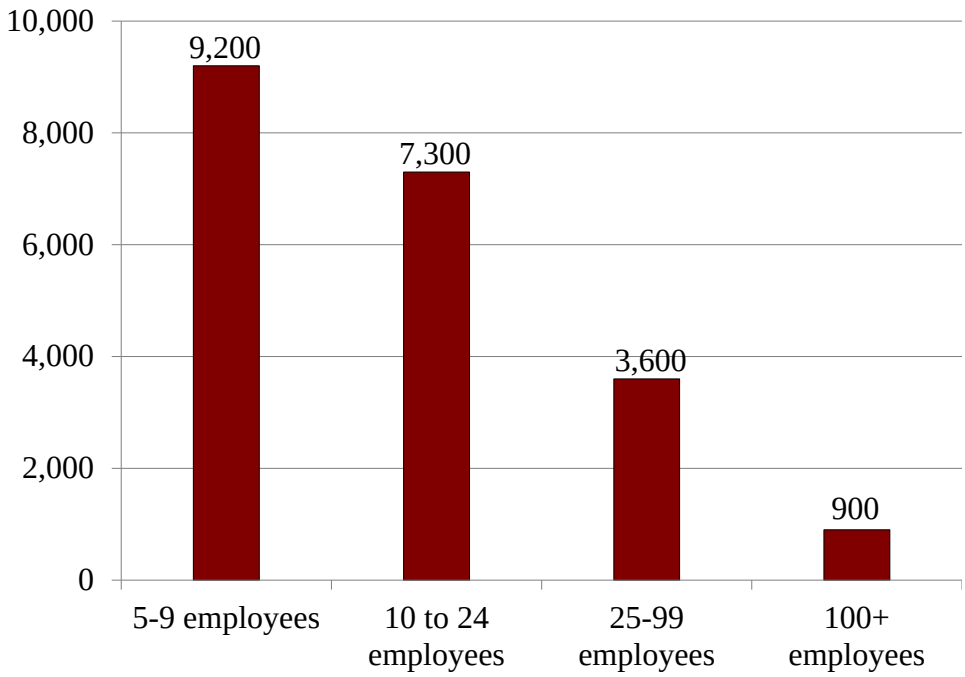
[8] Chen and Munnell (2017).

Figure 5. *Number of Private Sector Employers in Colorado by Coverage Status, 2016*

Sources: CRR calculations from *Statistics of U.S. Businesses* (2016); and *National Compensation Survey* (2017).

Even excluding employers with fewer than 5 employees, most of the employers affected by Colorado Secure Savings are small, with fewer than 100 employees (see Figure 6).

Figure 6. *Number of Employers in Colorado without a Retirement Savings Plan, by Number of Employees, 2016*



Sources: CRR calculations from *Statistics of U.S. Businesses* (2016); and *National Compensation Survey* (2017).

Cost to Employers

Colorado Secure Savings requires employers to complete several key tasks. However, these tasks are minimal compared to what would be required to offer their own plan. Table 5 lists the primary functions for employers participating in Colorado Secure Savings and summarizes factors that affect the cost associated with each function. The burden of these responsibilities is likely to vary by firm size and payroll administration method. Functions that require interpersonal interactions, such as introducing the program or answering employee questions, will likely require more time and effort for large firms. In addition to firm size, the administrative and technical expertise of business owners, as well as the types of workers employed by the firm (e.g. part-time, number of shifts, and number of locations) also appear to drive estimates of employer costs.

Table 5. *Primary Functions and Costs for Employers to Support Colorado Secure Savings*

Activity	Cost drivers
Introduce CO Secure Savings	
Get informed about CO Secure Savings Hand out program description and automatic enrollment notice on-site.	Number of employees and locations, whether the State provides communication materials, and whether the employer or recordkeeper introduces program.
Register with employer CO Secure Savings self-service portal	
Enter employer ID, number of employees, contact information, and self-service preferences into online portal.	Comfort level with technology.
Provide data for initial enrollment	
Enter employee SSN, name, date of birth, and initial contribution percentage in CO Secure Savings website. Alternatively, send an electronic file (spreadsheet) or allow payroll provider to send this information.	Specific data fields needed, whether the data can be updated from software or payroll vendor, whether recordkeeper can accept the data format.
Facilitate opt out	
Make opt-out form available on-site.	How much advice is associated with opting out, what kind of paperwork needs to be maintained.
Make payroll deductions	
Enter deduction amount into payroll system or process. Write a check or send a direct deposit with total deductions, or send a file that lists the deduction for each employee.	Payroll administration method, number of employees, familiarity of owner with payroll processes.
Internal record maintenance	
Maintain employee enrollment, contribution rate change, and opt-out forms on file.	Number of employees, format in which records must be kept, length of time records need to be kept.
Other potential activities	
Respond to inquiries from CO Secure Savings regarding employee data or payroll deduction errors.	Number of issues that need to be resolved, extent to which employer is responsible for solving problems, number of employees.

A consistent theme in the research on cost drivers is that the way in which employers administer their payrolls will determine, to a large extent, their ultimate financial and administrative investment. Payrolls can be administered in three basic ways: 1) outsourced to a payroll service provider; 2) administered in-house with software; or 3) administered in-house without software. The use of an external payroll provider often requires a per-employee cost per paycheck to have the deductions managed by the provider. However, employers that administer payroll in-house without software are likely to face the highest administrative cost per employee, measured as time, money, or "hassle." While electronic systems can be programmed to automatically exchange and validate data, tasks that involve manual procedures will remain expensive and error prone.

Preliminary results from a survey of employers participating in OregonSaves provide some insight into the payroll administration experience of employers.[9] The survey finds that over half of respondents are satisfied by the time and effort required to administer or set up a payroll for OregonSaves, and that three-quarters of employers do not report any out-of-pocket costs. For the quarter of employers that do report out-of-pocket costs, their expenditures are related to additional staff time and payment to an external payroll provider, as well as printing costs or bank fees associated with payroll processing.

In addition to automating or outsourcing payroll, some factors in the State's control can reduce the time and effort required from employers. Anecdotally, using field representatives to help employers register expedites the process and reduces errors.[10] Employers in Oregon have offered several additional concrete recommendations:

1) make communications materials easy to locate and deliver to employees;

2) make eligibility easy to determine;

3) direct employees to a place other than the employer to answer questions;

4) have a recordkeeper or other entity collect employee elections and opt-out decisions;

5) send employers information on how to manage payroll deductions or provide data;

6) leverage tools employers are familiar with to file reports or provide data to the state;

[9] According to preliminary survey results provided by Pew, approximately 25 percent of sampled employers participating in OregonSaves report out-of-pocket costs. Of those reporting out-of-pocket costs, approximately 70 percent report costs for additional staff time required during the year, and 25 percent report costs to an external payroll provider (October 2019).

[10] Belbase and Sanzenbacher (2018).

7) use state data about eligible employees so employers only have to validate data; and

8) allow electronic transfers of data in common file formats such as Excel.

Program administrators are also taking steps to support employers. One of the most promising initiatives, introduced by Ascensus, the administrator for Oregon, Illinois, and California, involves automatically transferring data between employers' payroll systems and plans' recordkeeping systems.[11] In theory, an automatic data exchange would eliminate most of the employer's administrative responsibilities because payroll systems already have data on employee status and pay, and the plans' recordkeeping systems have information on deduction amounts that need to be processed. With a data exchange, the employer's role could thus be reduced to that of an auditor.

Feasibility Analysis

In addition to the participation of both employees and employers, a successful auto-IRA program must attract a private sector provider and not create undue risks to the State. To evaluate these dual goals, the feasibility analysis uses two key metrics. The first metric is the time it takes the program to cover its operating costs for the administrator and the State – i.e., to become "cash-flow positive." The second metric is the time it takes for the program to become profitable to the administrator and cost-neutral to the State – i.e., to become "net positive." This second metric considers both the start-up costs of the program and initial operating cost shortfalls. Both metrics can be affected by factors currently under the State's control such as the default contribution rate and the initial fee charged on assets. They also can be affected by factors outside the State's control, such as ultimate employer participation or program costs.

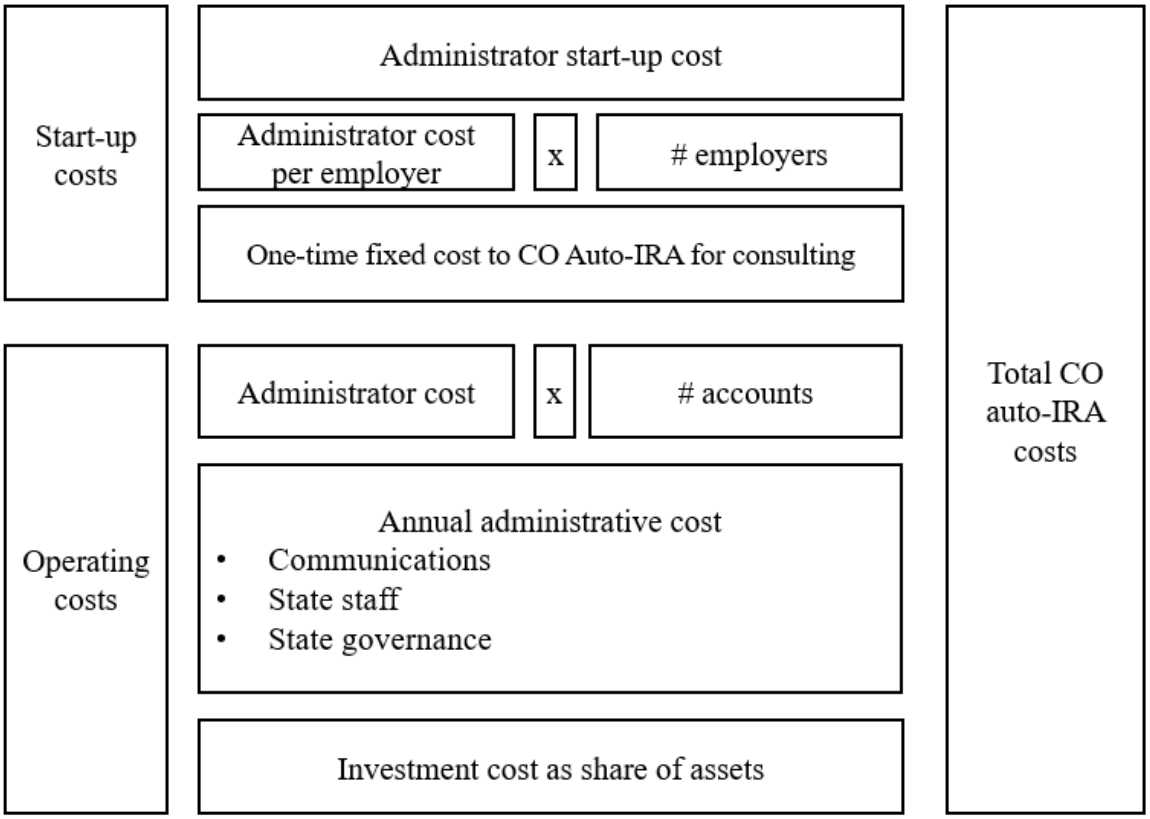
This analysis presents the financial metrics discussed above under a set-up similar to the current legislation – a Roth-IRA with a default contribution rate of 5 percent and an initial fee of 100 basis points reduced to 75 basis points in Year 6 forward – and then shows how outcomes might change under various alternative scenarios.

[11] The initiative, called PASSCI, involves building an application programming interface (API) that allows plan administrators to communicate with any participating payroll system.

The Financial Model and Major Assumptions

Colorado Secure Savings costs can be divided into two categories: 1) the start-up costs associated with creating the program and bringing on employers; and 2) the operating costs associated with maintaining accounts, serving participants, and managing investments. Some of these costs must be borne by the private sector administrator chosen by Colorado and some by the State itself. Figure 7 illustrates these costs schematically.

Figure 7. *Colorado Secure Savings Costs*



Source: CRR illustration.

Start-up Costs

The start-up costs reflect two facts: 1) setting up a program requires considerable work by both the administrator and the State; and 2) the administrator faces considerable costs of connecting with employers. Based on information from OregonSaves, start-up costs have historically been

roughly $1 million for the administrator, with an additional cost of $200 per employer.[12] On the State's side, costs include discussions with program design, investment, and legal consultants, and administering and evaluating Requests for Proposals for the program administrator. The analysis assumes State start-up costs of $730,000, based on the start-up costs observed in OregonSaves adjusted for differences in program size.[13]

Operating Costs

The other cost component is operating costs. From the administrator's perspective, operating costs include the per-account recordkeeping cost to keep track of account funds, provide statements, cover call centers, and maintain the program's website for account-holders. Also included are the transaction costs associated with contributions and distributions. Ongoing communication costs are generally shared by the State and the administrator. Communication costs refer to marketing efforts to increase employer or employee interest in the program; these activities can involve field representatives or advertising campaigns. After consultation with the provider for OregonSaves, this report assumes a per-account cost of $35 per year.

For the administrator, the total cost of account administration therefore depends on the number of accounts, both active and inactive. An account is considered "active" when an individual is working for an employer and contributing to the plan. Inactive accounts are held by someone who is no longer employed at an eligible employer but who has not closed out his account. Importantly, both types of accounts carry a cost to the administrator, since disbursements must be made, statements provided, and the possibility exists that either type of account-holder will need assistance through a call center.

For the State, the costs of operating the program are relatively fixed from its inception. The analysis assumes that the administrative and governance structure of Colorado Secure Savings is consistent with Oregon's experience. The costs include staff salaries, payments for audits of program governance, communication with employers, and payment to legal and

[12] Conversations with OregonSaves administrator. These costs may be subject to change across other potential third-party administrators entering the market.

[13] The $730,000 is equal to OregonSaves start-up costs ($500,000) multiplied by 1.47 (Colorado's private sector workforce (2,370,700) divided by Oregon's (1,614,500). These data are from *Current Employment Statistics* (2019).

financial firms.[14] Because operating costs for OregonSaves have been consistent with initial start-up costs, this analysis assumes annual operating costs of $730,000. However, OregonSaves is still undergoing employer roll out, and long-term operating costs could decline once a program is fully mature. In the absence of data on a mature program, the analysis assumes short- and long-term operating costs are constant.

The final operating cost is the fee that must be paid to the investment manager. This cost is typically structured as a fraction of participants' total account assets under management. Because Colorado Secure Savings will have investment options with limited management (such as a target date fund with indexed components), these costs are assumed to be relatively low, at one-tenth of a percent (or 10 basis points).

Financial Results

The model for Colorado Secure Savings incorporates two major updates in assumptions to reflect experience in OregonSaves. First, the percentage of inactive participants in OregonSaves has been higher than initially projected, primarily due to employee mobility as well as employee characteristics that precluded eligibility (e.g., younger than 18). This update to the model reduced the number of active accounts projected and increased the number of inactive accounts projected. Second, better information is now available on the length of time required for employer roll-out. The initial deadlines set for employer roll-out in OregonSaves were largely aspirational and somewhat arbitrary, in the absence of data on what a reasonable employer timeline should look like. With better data on the pace of employer enrollment, this update assumes employers gradually enroll over an initial four-year period. The analysis also builds in alternative scenarios to reflect lower than anticipated ultimate employer participation due to potential non-compliance issues or improper identification of employer eligibility.

The analysis begins with a baseline scenario that projects program outcomes under the most likely program parameters based on current Secure Savings legislation. All scenarios assume that employers with five or more employees and two or more years of active business are eligible to participate. The baseline scenario assumes a 5-percent default employee contribution

[14] Oregon currently has staff overseeing the Oregon Savings Network, which includes OregonSaves, Oregon College Savings Plan, the MFS Savings Plan, and ABLE Savings Plan. This team includes an executive director as well as staff for policy, operations, communications, investments, and administration. Illinois' program relies on two full-time staff members – a director and an outreach coordinator.

rate and a fee structure of 100 basis points in Years 1-5 and 75 basis points in Year 6 forward. The baseline assumes a 10/15/75% revenue division across the investment manager, State, and administrator, consistent with Oregon's current structure. Start-up costs and annual ongoing costs are set at $730,000 based on Oregon's experience scaled up to reflect Colorado's program size. And the baseline scenario assumes no reimbursement for small employers. Appendix A includes a summary of the plan design features of Oregon, Illinois, and California.

The analysis explores how program outcomes are affected by changes to program design (the default contribution rate and the financial arrangement) and tests the sensitivity of program outcomes across two elements of uncertainty (employer participation and State program costs). The analysis concludes with an assessment of program sensitivity to a potential small employer reimbursement program. Table 6 shows the assumptions included in the program's baseline and alternative scenarios.

Table 6. *Inputs for Colorado Secure Savings Baseline Scenario and Alternatives*

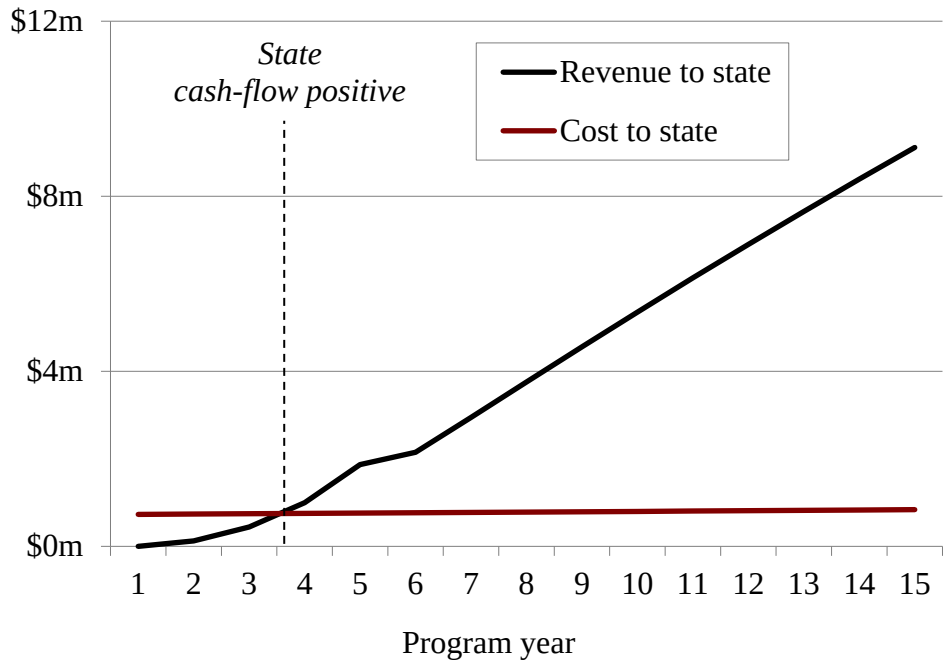
Parameter	Baseline assumption	Alternatives
Employer participation	100%	80%; 50%
Default employee contribution rate	5% fixed	3% fixed, 5% with auto-escalation to 8%
Fee structure	Year 1-5: 100 bps; Year 6+: 75 bps	Year 1-5: $25/account; Year 6+: 75 bps
Revenue division (Invest/State/Admin)	10/15/75%	10/5/85%; 5/5/90%
Start-up costs for State	$730k	1.5x; 2.0x
Ongoing costs	$730k/year	1.5x; 2.0x
Small employer reimbursement		
• Start-up	None	$200; $600
• Ongoing	None	$20; $40/month

Notes: While preliminary results from Pew provide an estimate of the proportion of employers paying out-of-pocket costs generally, limited data are available on the level of costs paid. In the absence of reliable data, the alternative scenarios for the small employer reimbursement should be interpreted only as thresholds used to test the program's sensitivity to employer reimbursements of various sizes.
Source: CRR assumptions based on program design features outlined in Colorado Secure Savings legislation and the experience of OregonSaves.

Baseline Scenario

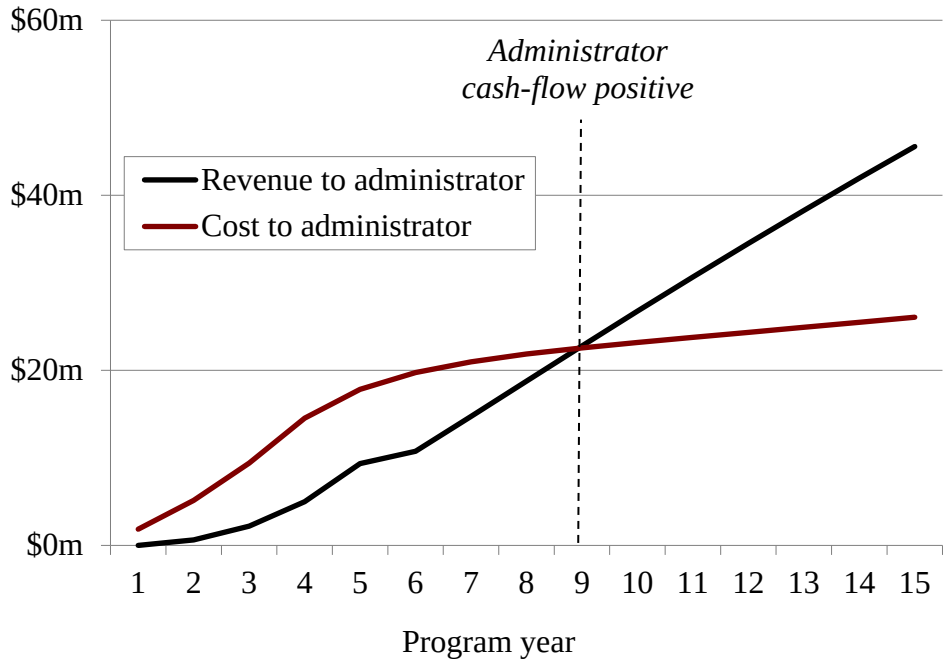
The first metric of financial feasibility is the length of time it takes for program revenue to cover operating costs – i.e., to become cash-flow positive. Under the baseline scenario, Colorado Secure Savings will require four years for the State and nine years for an administrator to become cash-flow positive (see Figures 8 and 9). That is, operating costs are projected to exceed revenues until the fourth year of the program for the State, and the ninth year for the administrator. Initial revenue growth is slow because it is generated from a fee as a percentage of assets under management, and account balances are low at the outset of the program.

Figure 8. *Revenue and Operating Costs for State under Baseline Scenario, Years 1-15*



Note: The analysis assumes that employers are enrolled equally across the first four years of the program.
Source: CRR calculations.

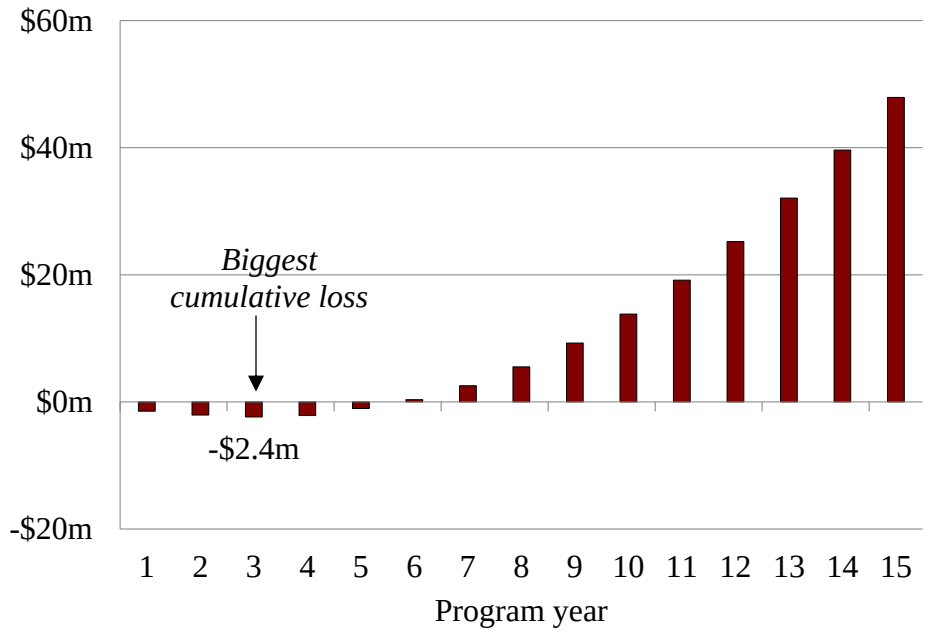
Figure 9. *Revenue and Operating Costs for Administrator under Baseline Scenario, Years 1-15*



Note: The analysis assumes that employers are enrolled equally across the first four years of the program.
Source: CRR calculations.

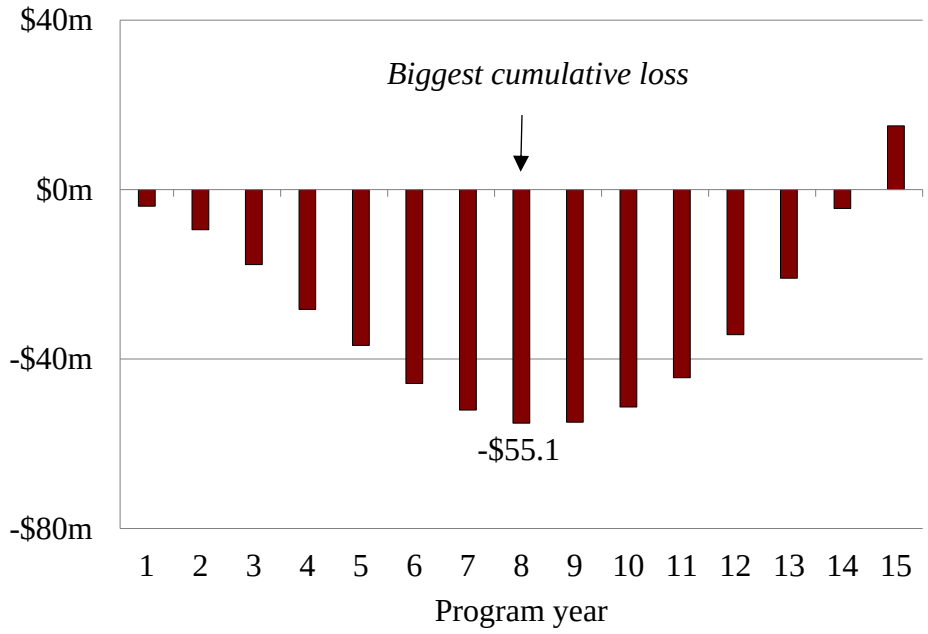
The next question is how many years it takes to recover initial losses and pay off start-up costs – i.e., to become net positive. Figures 10 and 11 illustrate the net revenue under the baseline scenario for the State and administrator. Under its current program design, Colorado Secure Savings will require 6 years to become net positive to the State and 15 years for the administrator. During this process, the largest potential deficit is projected to be $2.4 million for the State and $55.1 million for the administrator. This maximum deficit serves both as a measure of risk to the two parties as well as the size of a loan the program might require to support early operations.

Figure 10. *Net Revenue for the State under Baseline Scenario, Years 1-15*



Source: CRR calculations.

Figure 11. *Net Revenue for the Administrator under Baseline Scenario, Years 1-15*



Source: CRR calculations.

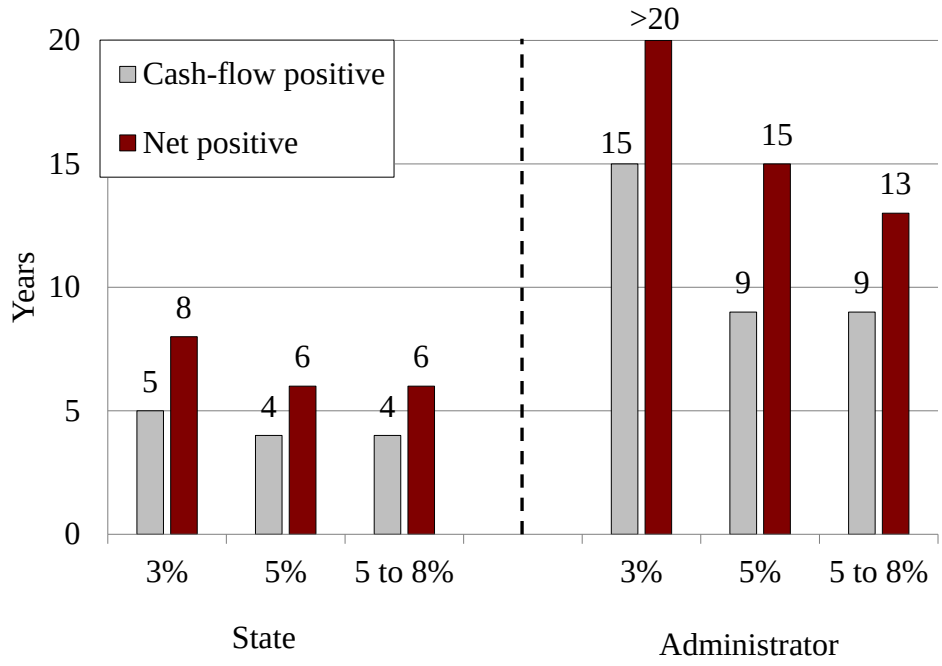
The State and administrator follow different timelines because they rely on different cost structures. For the State, as the program rolls out and revenue is generated, costs remain constant. For the administrator, as the program rolls out and revenue is generated, costs grow due to per-employer and per-account expenses that offset early program revenue.

Alternative Scenarios

Colorado controls two primary levers that impact program outcomes for the State and administrator. The first lever is the default employee contribution rate. The default contribution rate is powerful because it dictates account balance growth, which in turn, dictates program revenue growth. The second lever in the State's control is the financial arrangement of the program. The financial arrangement dictates the division of revenue between the investment manager, State, and administrator, as well as the fee structure used to generate revenue (percentage of assets under management versus per-account fees).

Default Employee Contribution Rate: The default employee contribution rate is a key program design element. A higher default contribution rate grows account balances more quickly, which increases the revenue earned in fees and reduces the timeline for both the State and administrator. The use of a 5-percent contribution rate – the rate currently proposed by Colorado – is necessary for program feasibility. Figure 12 shows that a 3-percent contribution rate would require 8 years for the State to become net positive and over 20 years for the administrator. In contrast, the addition of auto-escalation to the 5-percent baseline shortens the administrator's timeline, but not to the same degree as the shift from 3 to 5 percent.

Figure 12. *Years until Cash-flow Positive and Net Positive for State and Administrator by Default Employee Contribution Rate*



Source: CRR calculations.

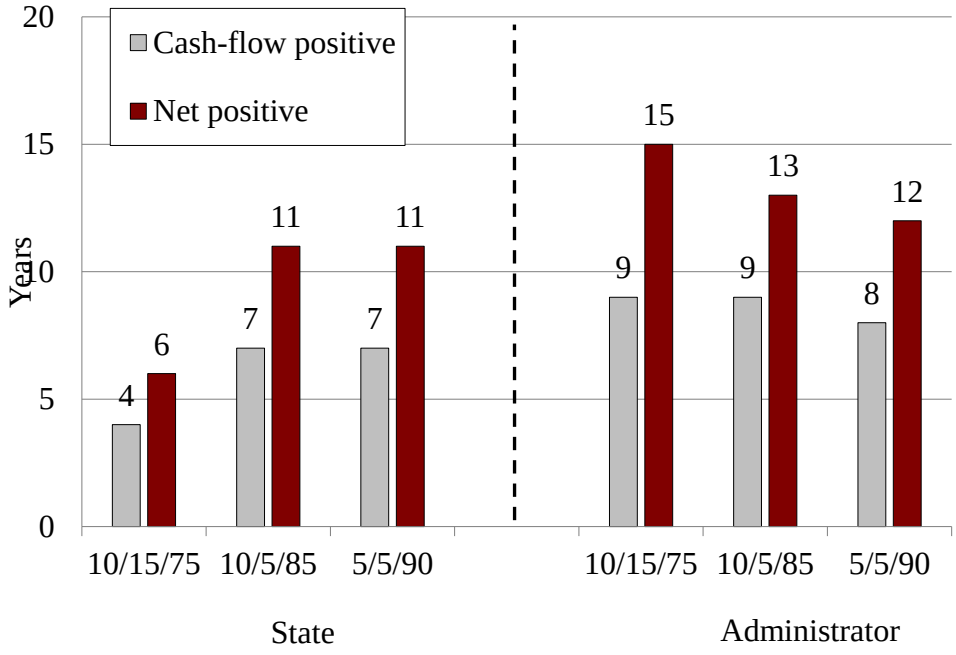
Financial Arrangement: The financial arrangement of the program, the other key design element, has two components: 1) the division of revenue between the investment manager, State, and administrator; and 2) the fee structure (percentage of assets under management versus per-account fees). Currently, the legislation does not specify the division of revenue, but does impose a fee cap of 100 basis points in Years 1-5 and 75 basis points thereafter.

1) Division of Revenue

The division of revenue dictates the proportion of program revenue received by the investment manager, State, and administrator. Figure 13 shows that allocating a greater percentage of revenue to the administrator reduces the number of years it takes for an administrator to become profitable. The "10/15/75" scenario – currently used by Oregon today – reflects a division of 10 percent of program revenue to the investment manager, 15 percent to the State, and 75 percent to the administrator. The "10/5/85" scenario – used by Oregon during the program's launch – shifts 10 percent of program revenue from the State to the administrator. Not surprisingly, the State's timeline increases while the administrator's decreases.

The "5/5/90" scenario shifts 5 percent of program revenue from the investment manager to the administrator, reducing the administrator's timeline further. Illinois and California both vary the proportion of revenue earned by the investment manager depending on the investment fund chosen. For Illinois, annual fees are set at 75 basis points, with 5 basis points consistently allocated to the State. The remaining 70 basis points are shared between the administrator (58 to 68 bps) and investment manager (2 to 12 bps) depending on the investment fund chosen. California similarly varies the level of fees paid to the investment manager (2.5 to 15 bps), but fees paid to the State and administrator remain constant (5 bps and 75 bps, respectively). Any savings from a more passively managed fund is passed on to participants.[15]

Figure 13. *Years until Cash-flow Positive and Net Positive for State and Administrator by Revenue Division*



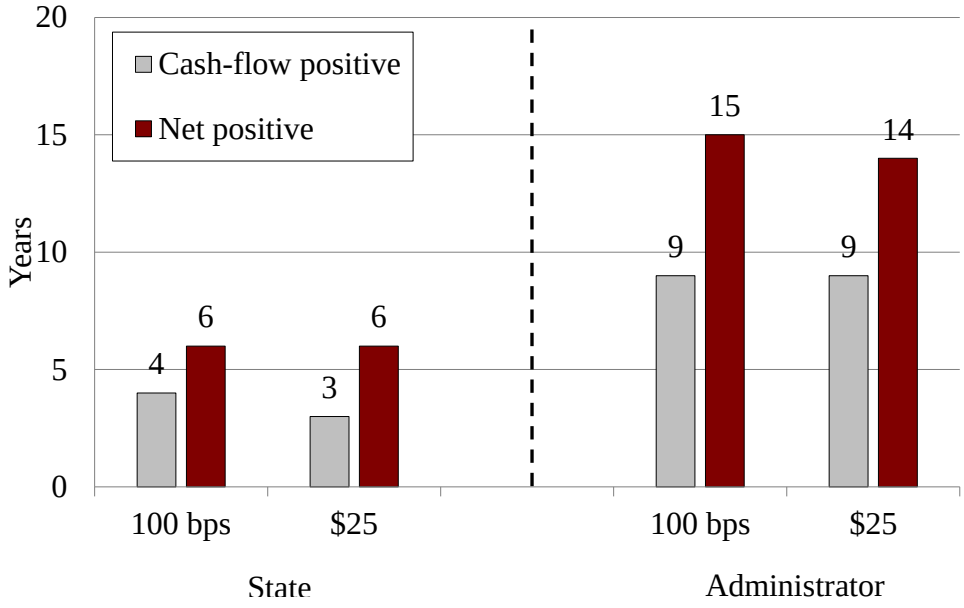
Notes: 10/15/75 represents a revenue split across the investment manager (10%), State (15%), and administrator (75%). Scenarios assume a 100-basis point fee in Years 1-5, and a 75-basis point fee in Years 6+.
Source: CRR calculations.

[15] CalSavers total annual fees range between 82 and 95 basis points.

2) Fee Structure

Fees used to generate revenue for auto-IRA programs are typically structured as a percentage of assets under management. An alternative way to generate program revenue is a per-account fee – a flat dollar amount deducted from active account balances each year. Fee structures can either be blended (e.g., a fixed fee in addition to a percentage of assets under management) or varied as the program matures (e.g., per-account fees in early years and fees as a percentage of assets in later years). Figure 14 shows the impact of charging a $25 per-account fee in Years 1-5 instead of 100 basis points as shown in the baseline. Both scenarios transition to 75 basis points from Year 6 forward. The use of a $25 per-account fee in the early years shortens the State and administrator's timelines modestly.

Figure 14. *Years until Cash-flow Positive and Net Positive for State and Administrator by Year 1-5 Fee Structure*

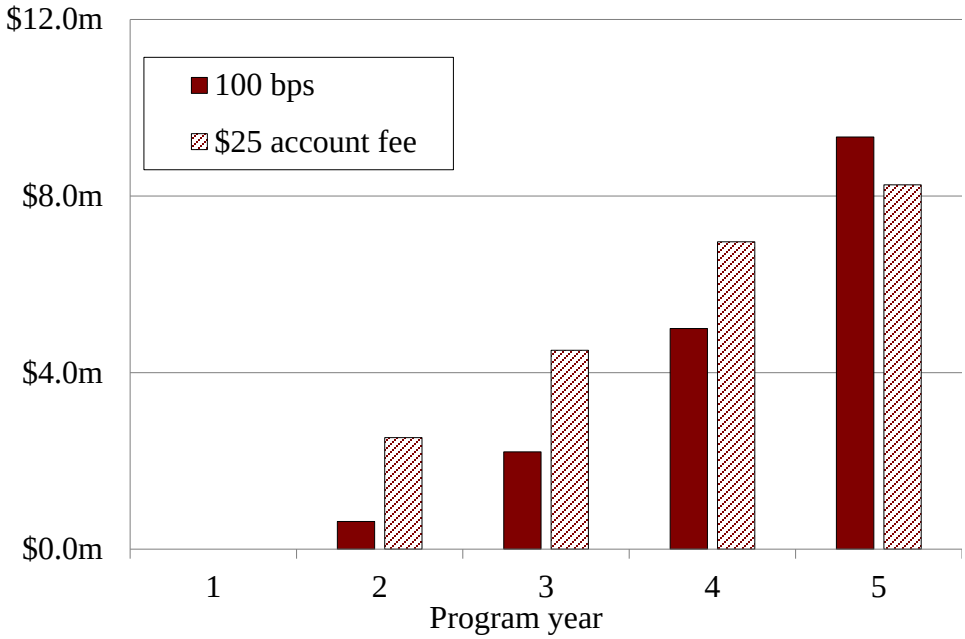


Notes: Both scenarios assume a 10/15/75 revenue split across the investment manager (10%), State (15%), and administrator (75%); and 75 basis points in fees in Years 6+.
Source: CRR calculations.

While per-account fees in Years 1-5 have only a modest effect on the administrator's timeline, they front-load program revenue, which reduces the administrator's largest loss. Fees as a percentage of assets under management generate minimal revenue in the early years of the program when account balances are small. The use of a flat per-account rate in the first few

years of a program would help mitigate this issue. Figure 15 shows that program revenue generated from a $25 per-account fee exceeds revenue from fees as a percentage of assets under management in Years 2-4 of the program. By Year 5 of the program, account balances have grown and more revenue can be generated through the use of a basis-point fee structure.

Figure 15. *Projected Administrator Revenue under Alternative Fee Structures in Years 1-5*

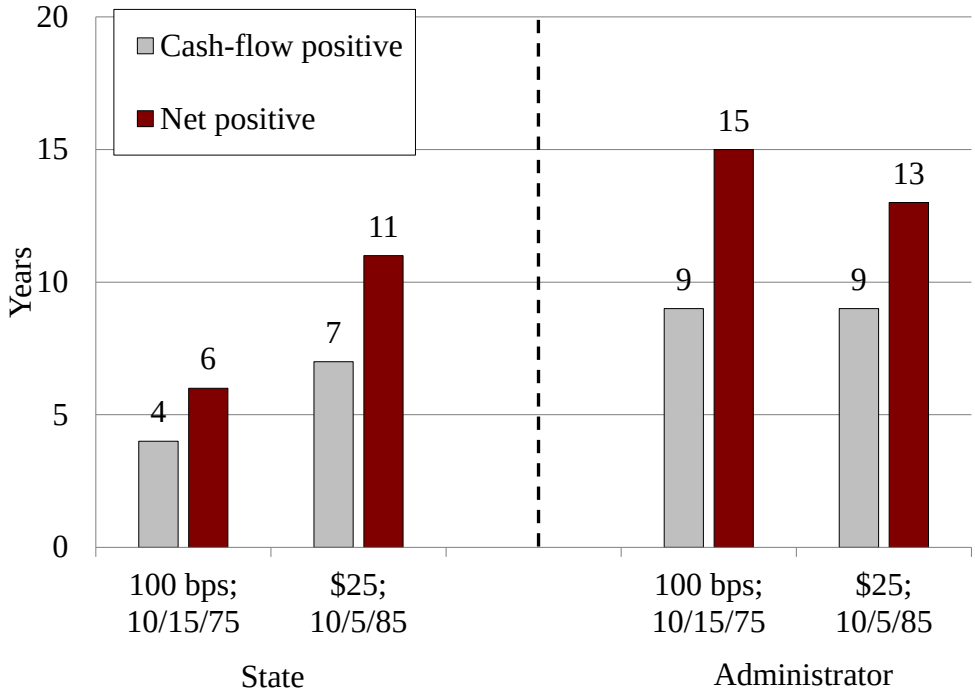


Note: Both scenarios assume a 10/15/75 revenue split across the investment manager (10%), State (15%), and administrator (75%).
Source: CRR calculations.

A combination of revenue sharing and per-account fees could be used jointly to reduce the administrator's timeline to net positive. Figure 16 shows an alternative scenario that applies a $25 per-account fee in Years 1-5 and a 10/5/85 revenue division, which allocates more revenue to the administrator. Put together, the administrator's timeline is reduced to 13 years to reach net positive, while the State's timeline is extended to 11 years. Importantly, even with increased revenue sharing, the State's largest loss would be less than half of 1 percent of total state expenditures.[16]

[16] The largest loss incurred by the State under the scenario presented in Figure 16 is $3.0 million, representing less than one percent of Colorado's $18.7 billion in direct operating expenses for 2017 (U.S. Census Bureau).

Figure 16. *Years until Cash-flow Positive and Net Positive for State and Administrator by Alternative Fee Structure in Years 1-5 and Revenue Division*



Note: Both scenarios assume 75 basis points in fees in Years 6+.
Source: CRR calculations.

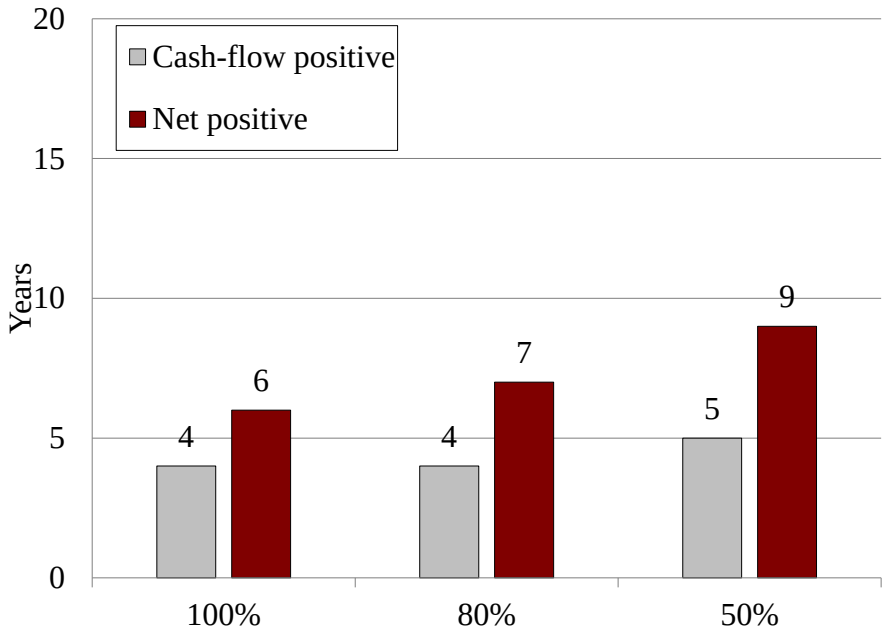
However, two risks remain. Ultimate employer participation could be lower than expected, and program costs could be higher than expected.

Employer Participation: As mentioned above, initial employer enrollment observed in OregonSaves has been slower than anticipated, but the program is still being rolled out to employers. However, in the long term, ultimate employer participation could be lower than expected due to compliance issues or if many of the employers who were identified as eligible were actually exempt from the program (i.e., they already offer a plan to employees). The analysis tests the sensitivity of program outcomes across various levels of ultimate employer participation.

Figure 17 shows that the number of years it takes for the State to become cash-flow and net positive increases as fewer employers participate in the program. If 80 percent of the employers identified ultimately participate, it will require 7 years to become cost neutral. Similarly, if 50 percent of eligible employers participate, it will require 9 years. Under this

scenario, the largest loss for the State would increase to $2.9 million (see Appendix Table B1). If an alternative financial arrangement is used, and half of eligible employers ultimately participate, the timeline to net positive will increase to 18 years (see Appendix Table B2).

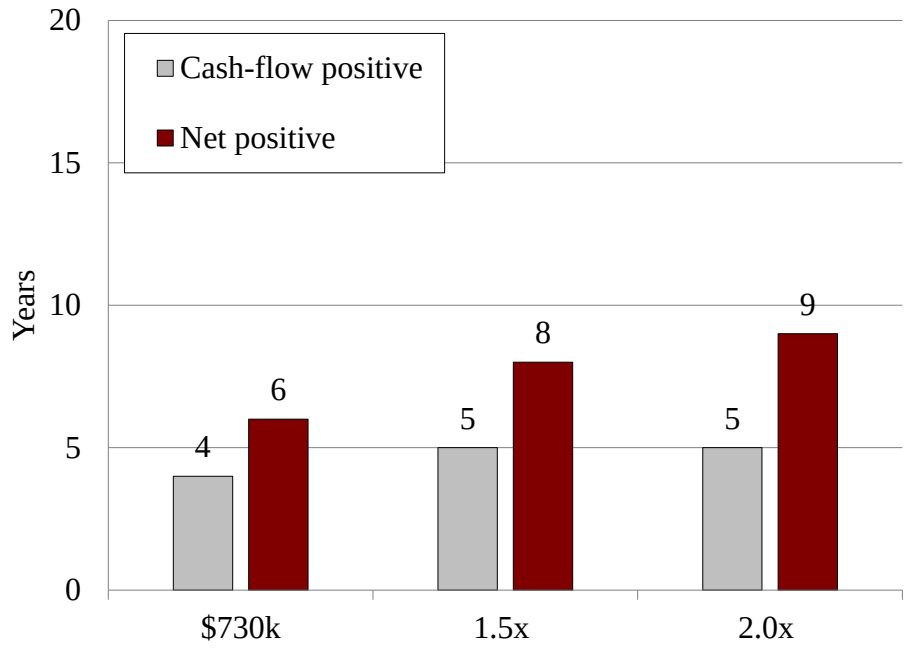
Figure 17. *Years until Cash-flow and Net Positive by Ultimate Employer Participation Rate*



Source: CRR calculations.

Costs: The second risk for the State is the ultimate program cost. As noted, program costs are based on experience observed in Oregon, scaled up to reflect Colorado's program size. However, costs could be higher if more marketing or outreach is necessary, and the costs of a mature program are unknown. The scenarios presented below show the sensitivity of State outcomes across program costs. Figure 18 shows that if both start-up and ongoing costs are 1.5-times higher than assumed, it will require 5 years to cover ongoing costs, and 8 years to become net positive. If costs are doubled, it will require 9 years to reach net positive. Under this scenario, the largest loss would grow to $5.8 million (see Appendix Table B3). If an alternative financial arrangement is used, and costs are doubled, the timeline to net positive would grow to 18 years (see Appendix Table B4).

Figure 18. *Years until Cash-flow and Net Positive for State by Program Cost*



Source: CRR calculations.

Small Employer Reimbursement

The analysis to this point does not reflect an employer reimbursement. Colorado would be the first state to reimburse employers for costs associated with the program. Maryland also incorporates a financial incentive in their upcoming (MarylandSaves) program, but in the form of a $300 waiver for the state's annual report filing fee, rather than a reimbursement for costs related to program participation.[17]

Reimbursement costs will depend on the type and size of reimbursement covered, as well as the number of employers paying out-of-pocket costs. Employers can have two types of out-of-pocket costs: 1) start-up costs (a one-time expense related to program enrollment); and 2) ongoing costs (monthly expenses for additional staff time, payment to payroll vendors, etc.). While preliminary results from Pew provide an estimate of the proportion of employers paying out-of-pocket costs generally, limited data are available on the level of costs paid. In the absence

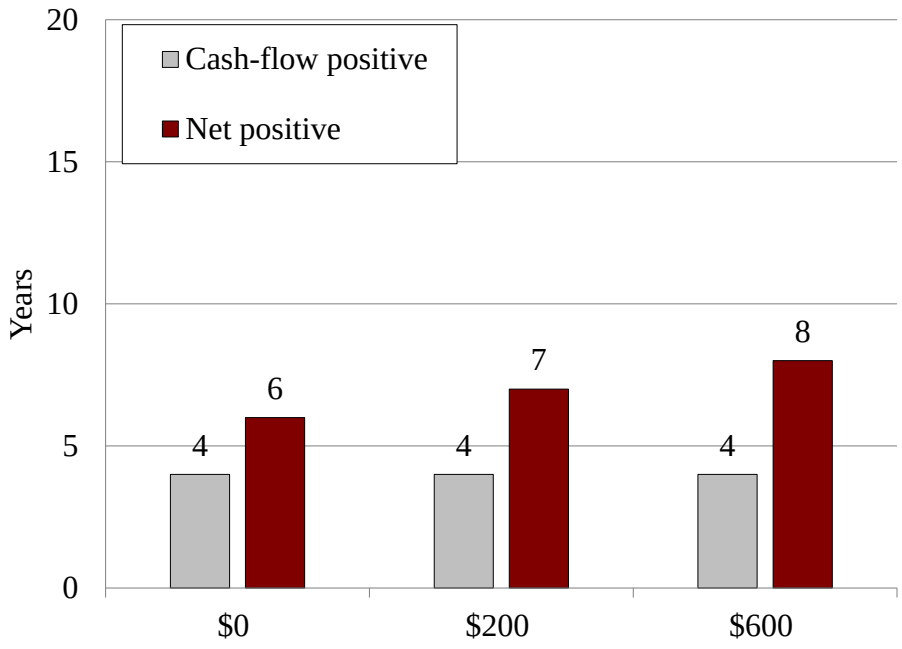
[17] Maryland plans to waive the $300 Maryland Business Annual Report fee for participating employers or employers that offer a qualified retirement plan. Maryland is in the process of administering a formal RFP for a program administrator (MarylandSaves Board Presentations, December 2019).

of reliable data, the scenarios presented below should be interpreted only as thresholds used to test the program's sensitivity to employer reimbursements of various sizes.

1) Start-up cost reimbursement

Figure 19 illustrates that State finances are not very sensitive to a one-time reimbursement for employer start-up costs. Assuming that only one quarter of small employers pay out-of-pocket costs, a reimbursement level of up to $600 per affected employer extends the timeline to cost neutrality by two years. A reimbursement level of up to $600 would grow the largest loss from $2.4 to $5.0 million (see Appendix Table B5). If an alternative financial arrangement is used, a reimbursement of up to $200 would require 12 years to become net positive, while a reimbursement of up to $600 would require 13 years (see Appendix Table B6).

Figure 19. *Years until Cash-flow and Net Positive for State by Start-Up Cost Reimbursement*



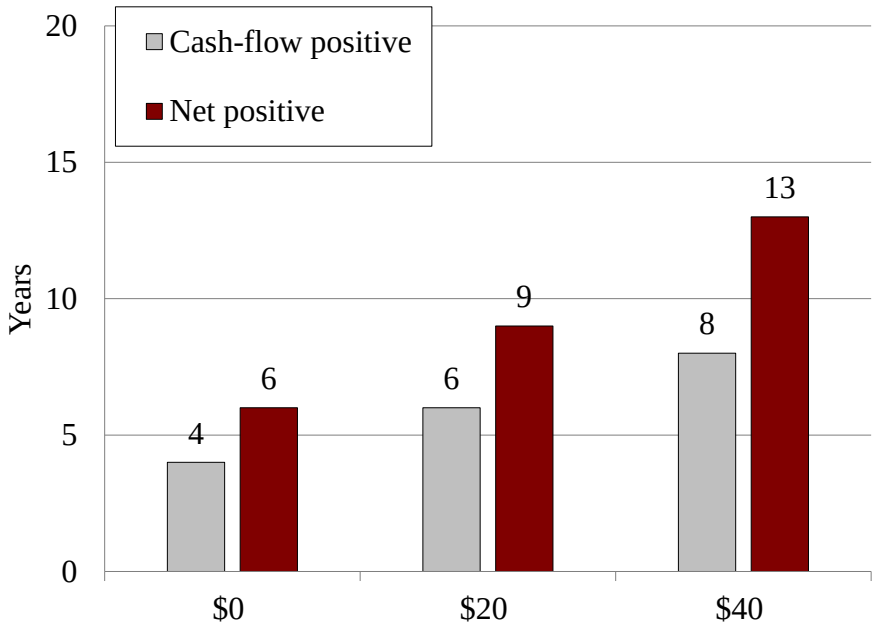
Note: Scenarios assume 25 percent of employers with fewer than 50 employees are affected.
Source: CRR calculations.

2) Ongoing cost reimbursement

Conversely, Figure 20 shows that State finances are relatively sensitive to reimbursing ongoing costs. Assuming only one quarter of small employers pay out-of-pocket costs, a $20

monthly reimbursement would require 9 years for the State to become net positive, while a $40 reimbursement would require 13 years. Under this scenario, the largest loss would increase from $2.4 to $10.6 million (see Appendix Tables B7). If more than 25 percent of employers request reimbursement for out-of-pocket costs, these finances would be further impacted. And if an alternative financial arrangement is used, a monthly reimbursement of up to $40 would require over 20 years to reach net positive (see Appendix Table B8).

Figure 20. *Years until Cash-flow and Net Positive for State by Ongoing Cost Reimbursement*



Note: Scenarios assume 25 percent of employers with fewer than 50 employees are affected.
Source: CRR calculations.

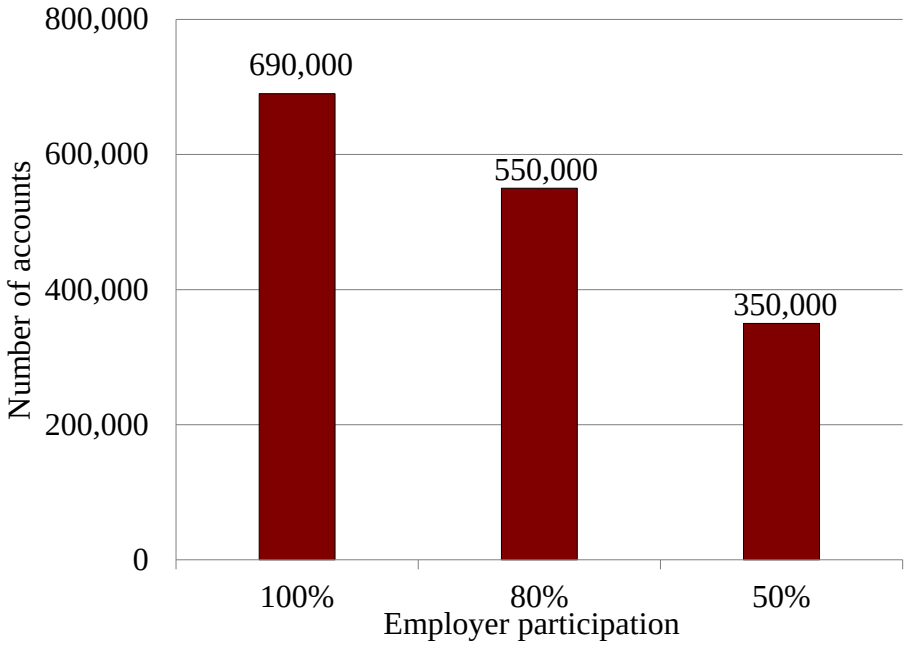
Employee Results

A successful program relies on both the financial feasibility of the program, as well as the number of employees reached and the account balances employees are able to accumulate.

Figure 21 shows that under the baseline scenario, Colorado Secure Savings is estimated to create accounts for approximately 690,000 employees by Year 20. If 80 percent of employers ultimately participate, Secure Savings will create 550,000 accounts, and if 50 percent participate, the program will create 350,000 accounts. Ultimate employee reach is dependent on ultimate employer participation, which emphasizes the importance of active employer outreach to help

with enrollment and manage compliance. However, across all three scenarios, Secure Savings has the potential to expand access to retirement savings to a significant number of uncovered Colorado employees.

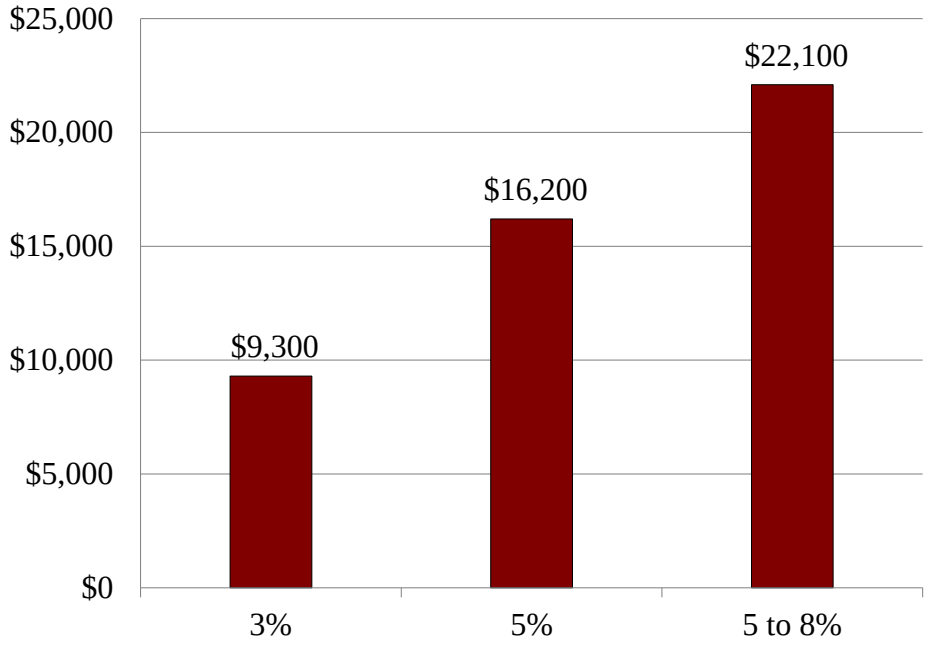
Figure 21. *Number of Accounts in Year 20 across Employer Participation Rates*



Source: CRR calculations.

In addition to the number of accounts, the account balances generated by the program are of equal importance. Account balance growth is critical to both the program's financial feasibility and employee retirement security. The default employee contribution rate is the most easily manipulated and impactful tool to increase account balances. Figure 22 shows that increasing the default contribution rate from 3 to 5 percent increases the average account balance in Year 20 from $9,300 to $16,200, and to $22,100 with auto-escalation. Appendix B includes preliminary employee outcome data for Oregon, Illinois, and California.

Figure 22. *Average Account Balances in Year 20 of Program under Default Contribution Rates*



Note: "5 to 8%" represents a 5-percent default contribution rate auto-escalating to 8 percent.
Source: CRR calculations.

Conclusion

Evidence from state auto-IRA initiatives that have already been launched suggest that these programs have great potential to provide uncovered workers with access to a simple and effective workplace-based retirement savings vehicle. After two years in operation, OregonSaves has over 50,000 funded accounts and about $30 million in total account balances. Within a single year of operation, Illinois has 42,000 funded accounts (totaling $11 million) and, in less than a year, California has close to 4,000 funded accounts (totaling $1.4 million). While these data are very preliminary, these accounts and account balances represent savings for retirement that would not have been accumulated in the absence of an auto-IRA program.

Colorado Secure Savings is an opportunity to build on the lessons learned from live programs to date to expand retirement access to tens of thousands of uncovered workers in Colorado. These workers tend to be lower income, highly mobile, and less educated. And the program design of Secure Savings – offering accessibility to account balances, portability across employers, and program simplicity – is well-suited to meet the needs of this population.

Updating the model to adjust for the higher than expected inactive accounts and slower than expected employer roll-out, as observed in Oregon, projects a timeline of 6 years for the State and 15 years for an administrator to reach net positive. Alternative financial arrangements, such as a revenue division weighted more to the administrator, or per-account fees, can be used to reduce the administrator's timeline. However, under an alternative financial arrangement, the State's finances become more sensitive to changes in employer participation, program costs, and particularly the level and type of small employer reimbursement introduced.

In all cases, estimates show that State costs amount to less than one percent of total State expenditures – representing a very low-risk proposition to improve the retirement security of tens of thousands of Colorado workers. Experience to date shows that auto-IRAs have successfully created close to 100,000 employee accounts across the three states with implemented programs. And once mature, these programs are designed to be self-sustaining and to recoup start-up costs. Overall, Secure Savings would be well positioned to achieve its goals of helping people build their own assets for retirement at a minimal cost and risk to both employers and the State.

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Appendix A: Program Design and Preliminary Outcomes for OregonSaves, Illinois Secure Choice, and CalSavers

Three state-administered auto-IRA programs are currently live: OregonSaves, Illinois Secure Choice, and CalSavers. The programs have followed different timelines for launch and utilized various plan design elements. Early data on participants, employers, and account balances are now available on all three programs.

OregonSaves

Table A1 provides an overview of the timeline, plan design, and early program results for OregonSaves. In 2017, Oregon became the first state to implement an auto-IRA program. The pilot study began in July 2017 and the program officially launched in November that year. The program is being rolled out across six waves of employers broken down by employer size. The first wave in November 2017 began with employers with 100 or more employees. The final wave is scheduled for January 2021 for employers with fewer than 5 employees.

All employers in the state of Oregon that do not offer a qualified retirement plan are required to participate. The program uses a 5-percent default employee contribution rate, auto-escalating to 10 percent over a five-year period. Fees are set at 100 basis points, initially using a 10/5/85 revenue division at program launch (investment manager, state, administrator), transitioning to the 10/15/75 division used today. The program is introducing penalties for employer non-compliance in 2020, set at $100 per employee annually, with a $5,000 annual cap.

Preliminary data from OregonSaves as of September 2019 indicate that 7,994 employers are currently enrolled. Of those, 3,039 have processed payroll. The data show a 31-percent opt-out rate and 57,137 accounts with a positive balance. Total program assets equal approximately $28.8 million, producing an average account balance of $504 per funded account.

Table A1. *Timeline, Plan Design, and Results for OregonSaves, September 2019*

Timeline	
Launch date	Pilot July 2017; First wave Nov. 2017
Roll-out schedule	6 waves: 100+ (Nov. 2017); 50-99 (May 2018); 20-49 (Dec. 2018); 10-19 (May 2019); 5-9 (Nov. 2019); 4 or fewer (Jan. 2021)
Plan design	
Eligible employers	All employers that do not offer a qualified retirement plan to employees
Default employee contribution rate	5% auto-escalating to 10%
Fees	100 bps
Revenue division	10/5/85 at launch; 10/15/75 currently
Penalties	$100/employee/year ($5,000 cap) in 2020
Early program outcomes	
Employers registered	7,994
Opt-out rate	31%
Funded accounts	57,137
Total assets	$28.8m
Average account balance	$504*

* $28.8 million divided by 57,137 accounts equals a $504 average account balance.
Source: Quinby et al. (2019). Funded accounts measured as of December 2019.

Illinois Secure Choice

Table A2 provides an overview of the timeline, plan design, and very preliminary program outcomes for Illinois Secure Choice. Illinois was the first state to authorize an auto-IRA program (signed into law in 2015) and the second state to implement (pilot launched in July 2018). At this time, Illinois Secure Choice has only been live for one year. The program officially rolled out its first wave of employers in November 2018. The deadline for the third and final wave of employers – which includes the majority of eligible employees – was November 2019.

Employers with 25 or more employees that have been in business at least two years and do not offer a qualified retirement plan are required to participate. The program enrolls employees at a default contribution rate of 5 percent. Total annual fees are set at 75 basis points,

of which the State consistently receives 5 basis points. The remaining 70 basis points are shared between the administrator (58 to 68 bps) and investment manager (2 to 12 bps) depending on the investment fund chosen. The program charges $250 per employee to employers that have not registered by their deadline in the first year of non-compliance, increasing to $500 in subsequent years. Compliance is enforced by the Illinois Department of Revenue.

As of December 2019 (one year into implementation), 5,217 employers have registered for the program.[18] The data show an opt-out rate of 35 to 40 percent, and the program currently has 42,000 funded accounts. Total program assets equal over $11 million, representing approximately $260 on average per account.

Table A2. *Timeline, Plan Design, and Results for Illinois Secure Choice, December 2019*

Timeline	
Launch date	Pilot July 2018; first wave Nov. 2018
Roll-out schedule	3 waves: 500+ (Nov 2018); 100-499 (July 2019); 25-99 (Nov 2019).
Plan design	
Eligible employers	Employers with 25+ employees and 2+ years of business that do not offer a qualified retirement plan
Default employee contribution rate	5%
Fees	75 bps
Revenue division	2-12 bps (inv. manager); 5 bps (state); 58-68 bps (admin.)
Penalties	$250/employee/year first year; $500/employee/year second year
Early program outcomes	
Employers registered	5,217
Opt-out rate	35 – 40%
Funded accounts	42,000
Total assets	$11.0m
Average account balance	$260*

* $11.0 million divided by 42,000 accounts equals a $260 average account balance.
Source: Personal communication with Illinois Secure Choice (December 16, 2019).

[18] Due to the November deadline, as of December 2019 (the period measured in Table A2), the vast majority of employers in wave three had yet to have the opportunity to start running payroll.

CalSavers

Table A3 provides an overview of the timeline, plan design, and early program results for CalSavers. CalSavers is the most recent auto-IRA implemented. The program's pilot launched in November 2018, and opened to all eligible employers in July 2019. Employer enrollment deadlines are set in three waves, beginning with employers with more than 100 employees in June 2020, employers with more than 50 employees in June 2021, and employers with 5 or more employees in June 2020.

Any employer with 5 or more employees that does not offer a qualified retirement plan is required to participate. Employees are enrolled at a 5-percent contribution rate that will auto-escalate to 8 percent over a three-year period. Fees range between 82 to 95 basis points depending on the investment fund chosen. The State always receives 5 basis points and the administrator always receives 75 basis points. The investment manager receives between 2.5 and 15 basis points, depending on the investment option. The program will charge employers $750 per employee annually if employers are not enrolled by their wave's deadline.

As of December 2019, 628 eligible employers have enrolled in CalSavers. Of the employers enrolled, 142 have started payroll deductions. The data show a 30-percent opt-out rate, and 3,762 funded accounts. Total program assets equal approximately $1.4 million, producing an average account balance of $378 per funded account.

Table A3. *Timeline, Plan Design, and Results for CalSavers, December 2019*

Timeline	
Launch date	Pilot Nov. 2018; open to all eligible employers in July 2019
Roll-out schedule	3 waves: 100+ (June 2020); 50+ (June 2021); 5+ (June 2022)
Plan design	
Eligible employers	Employers with 5+ employees that do not offer a qualified retirement plan
Default employee contribution rate	5% auto-escalating to 8%
Fees	82-95 basis points
Revenue division	2.5-15 bps (inv. manager); 5 bps (state); 75 bps (admin.)
Penalties	$750/employee/year in 2020 for employers 100+, 2021 for 50+, 2022 for 5+
Early program outcomes	
Employers registered	628
Opt-out rate	30%
Funded accounts	3,762
Total assets	$1.4m
Average account balance	$378

Source: CalSavers Retirement Savings Program Participation & Funding Snapshot (Dec. 2019).

Appendix B: Sensitivity of State Finances

Sensitivity of State Finances to Employer Participation

Table B1. *Years until Cash-flow and Net Positive and Largest Loss for State by Ultimate Employer Participation Rate*

Outcome	100%	80%	50%
Years			
Cash-flow positive	4	4	5
Net positive	6	7	9
Largest loss (millions)	$2.4	$2.5	$2.9

Note: Scenarios assume a 10/15/75 revenue split, with 100 bps fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Table B2. *Years until Cash-flow and Net Positive and Largest Loss for State by Ultimate Employer Participation Rate, under Alternative Financial Arrangement*

Outcome	100%	80%	50%
Years			
Cash-flow positive	7	7	10
Net positive	11	13	18
Largest loss (millions)	$3.0	$3.5	$4.6

Note: Scenarios assume a 10/5/85 revenue split with $25 per-account fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Sensitivity of State Finances to Program Costs

Table B3. *Years until Cash-flow and Net Positive and Largest Loss for State by Program Cost*

Outcome	$730k	1.5x	2.0x
Years			
Cash-flow positive	4	5	5
Net positive	6	8	9
Largest loss (millions)	$2.4	$4.0	$5.8

Note: Scenarios assume a 10/15/75 revenue split, with 100 bps fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Table B4. *Years until Cash-flow and Net Positive and Largest Loss for State by Program Cost, under Alternative Financial Arrangement*

Outcome	$730k	1.5x	2.0x
Years			
Cash-flow positive	7	8	10
Net positive	11	14	18
Largest loss (millions)	$3.0	$5.8	$9.2

Note: Scenarios assume a 10/5/85 revenue split with $25 per-account fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Sensitivity of State Finances to Start-up Cost Reimbursement

Table B5. *Years until Cash-flow and Net Positive and Largest Loss for State by Start-Up Cost Reimbursement*

Outcome	$0	$200	$600
Years			
Cash-flow positive	4	4	4
Net positive	6	7	8
Largest loss (millions)	$2.4	$3.1	$5.0

Note: Scenarios assume 25 percent of employers with fewer than 50 employees are affected, and use a 10/15/75 revenue split, with 100 bps fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Table B6. *Years until Cash-flow and Net Positive and Largest Loss for State by Start-Up Cost Reimbursement, under Alternative Financial Arrangement*

Outcome	$0	$200	$600
Years			
Cash-flow positive	7	7	7
Net positive	11	12	13
Largest loss (millions)	$3.0	$4.0	$5.9

Note: Scenarios assume 25 percent of employers with fewer than 50 employees are affected, and use a 10/5/85 revenue split with $25 per-account fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Sensitivity of State Finances to Ongoing Cost Reimbursement

Table B7. *Years until Cash-flow and Net Positive and Largest Loss for State by Ongoing Cost Reimbursement*

Outcome	$0	$20	$40
Years			
Cash-flow positive	4	6	8
Net positive	6	9	13
Largest loss (millions)	$2.4	$5.1	$10.6

Note: Scenarios assume 25 percent of employers with fewer than 50 employees are affected, and use a 10/15/75 revenue split, with 100 bps fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Table B8. *Years until Cash-flow and Net Positive and Largest Loss for State by Ongoing Cost Reimbursement, under Alternative Financial Arrangement*

Outcome	$0	$20	$40
Years			
Cash-flow positive	7	12	18
Net positive	11	>20	>20
Largest loss (millions)	$3.0	$10.9	$25.8

Note: Scenarios assume 25 percent of employers with fewer than 50 employees are affected, and use a 10/5/85 revenue split with $25 per-account fees in Years 1-5 and 75 bps thereafter.
Source: CRR calculations.

Appendix C: Technical Details on Assumptions and Methods

Appendix C lays out the assumptions used to derive the number of active and inactive accounts, the number of account closures, and the dollar value of account balances.

Active and Inactive Accounts

The CRR estimates the number of active accounts (participants who are currently contributing) and inactive accounts (workers who have accumulated assets in an account but have left their employer and are no longer eligible to contribute).

Number of active accounts

The CRR estimates the total number of active accounts beginning with the total number of private sector employees in 2019 reported by the U.S. Bureau of Labor Statistics *Current Employment Statistics* (CES) (see Table C1).[19] To isolate the population targeted by Colorado Secure Savings, the analysis removes private sector employees at firms with fewer than 5 employees or less than 2 years of business based on proportions from the *Business Dynamics Statistics.* The CRR then applies a 58-percent access rate to the remaining private sector workforce as derived from the *Current Population Survey* (2014) to isolate the 918,245 employees without a plan at work in Colorado who would be eligible for Secure Savings.[20]

[19] CES population value as of July 2019.
[20] This access rate is derived from 2014 CPS data because the CPS underwent a significant re-design in 2014, and many researchers are skeptical about the accuracy of CPS participation numbers after the re-design.

Table C1. *Number of Private Sector Employees with No Plan at Work, 2019*

Employee group	Value
Total private sector employees	2,370,700
Private sector employees in large/mature firms	
Proportion	91%
Number	2,161,649
Private sector employees with no plan at work in large firms	
Proportion	42%
Number	918,245

Note: "Large/mature" firms refer to employers with 5 or more employees in business for 2 or more years. The analysis assumes that all self-employed workers are at firms with fewer than 5 employees. Due to limitations on firm size categories in the CPS, the proportion of private sector employees with no plan at work includes employees at firms with 10 or more employees.
Sources: U.S. Bureau of Labor Statistics, *Current Employment Statistics* (CES) (2019); *Business Dynamics Statistics* (2016); and *Current Population Survey* (CPS) (2014).

In addition to the 918,245 employees without a plan at work, there are two additional groups of uncovered workers: those who are not eligible for a plan offered by their employer, and those who are self-employed (as shown in Figure 1 of the full report). As discussed in the full report, these workers are not targeted by Colorado Secure Savings. Due to slight differences between total population counts in the CPS and CES, for both of these estimates, proportions from the CPS are applied to the CES total private sector employee count.[21]

Experience from live auto-IRAs has shown that employer enrollment – and therefore, employee enrollment – is gradual. The analysis assumes that a quarter of participating employers enroll each year during the first four years of the program. In the absence of data on the relationship between employer size and enrollment, the analysis assumes that the enrollment behavior of medium and large employers is not inherently different. Given this assumption, employee enrollment follows the same schedule as employer enrollment in the analysis.

Some employees at eligible employers are not able to participate in Secure Savings due to employee characteristics. Specifically, workers under the age of 18 as well as any unauthorized workers in the State of Colorado would not be eligible for the program. To adjust for workers under the age of 18, the analysis removes 2 percent of the population based on data from the CPS (2018). To adjust for unauthorized workers, the analysis removes an additional 17 percent of the

[21] The CPS (2018) reports a total of 2,286,236 private sector employees in Colorado, compared to 2,370,700 reported by the CES (2019).

population as estimated by Pew (2017).[22] Together, these estimates remove 19 percent of employees working at eligible employers from the starting population.

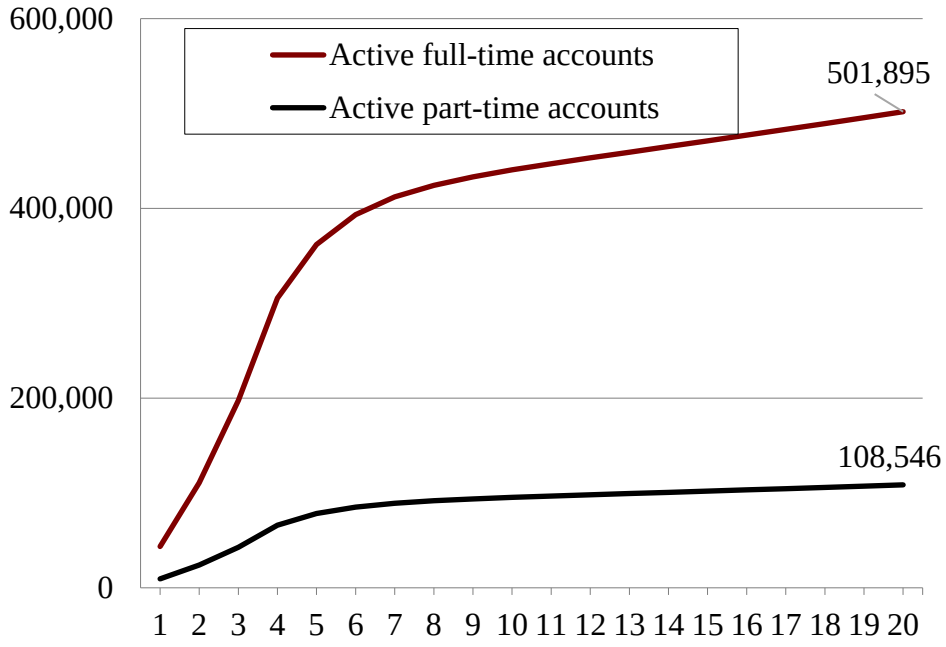
Of the employees that remain, the analysis assumes that 30 percent will choose to opt out. In addition to the opt-out rate, overall program participation is impacted by the many other reasons why employees may not have active accounts. As a conservative estimate, the analysis assumes that an additional 27 percent – based on 2019 OregonSaves data – have not explicitly opted out, but are not actively contributing to the program. Combined with the opt-out rate, the analysis assumes that 43 percent of eligible employees actively participate.[23]

The number of active accounts – i.e., the number of accounts where an individual is currently making a contribution to their account – is arrived at by multiplying the number of eligible employees by the employee participation rate. Once the number of participating employees is determined, the feasibility model divides this population between full-time and part-time workers. This division of workers is important for two reasons stemming from our research: 1) part-time workers are more mobile than full-time workers; and 2) part-time workers earn less than full-time workers. Based on an analysis of CPS data for Colorado, the feasibility study assumes that roughly 80 percent of workers without a plan at work are full-time workers (defined as 30 or more hours per week) and the remainder are part-time workers.

Based on the assumptions on the number of eligible employees, the gradual adoption of employers, and the participation rates discussed above, Figure C1 shows the number of full- and part-time active participants over the first 20 years of the program. Participation quickly increases during the first four years of the program as more employers enroll, and participation continues to grow in line with population growth. The report assumes population growth in Colorado of 1.3 percent per year over the next 20 years, which is equal to the average growth in Colorado's private sector workforce since the year 2000.[24]

[22] See "Unauthorized Immigrant Population Trends for States, Birth Countries, and Regions," available at: https://www.pewresearch.org/hispanic/interactives/unauthorized-trends/. The analysis assumes that all unauthorized workers are at employers with no plan at work.
[23] An additional 5 percent of Oregon employees have a positive balance and a positive deferral rate but are inactive.
[24] CES (2000-2019).

Figure C1. *Active Full- and Part-time Accounts in Colorado Secure Savings, Years 1-20*



Source: CRR calculations.

Number of inactive accounts

Inactive participants are participants formerly eligible and participating in Colorado Secure Savings who have either become unemployed or switched to a job not covered under the program but have maintained their account. Three factors influence the number of inactive accounts. The first is the level of mobility between jobs and non-employment among active participants. The second is the rate at which participants who switch jobs end up employed at an employer offering a qualified plan. The third is the rate at which workers making these transitions close their accounts.

To estimate worker mobility – the first two measures – longitudinal data are required to follow individual workers who would currently be eligible for Colorado Secure Savings to see their transition rates. For this purpose, the report uses the *Survey of Income and Program Participation* (SIPP), a study that follows individuals for two to five years and asks detailed information about retirement plans and tracks an individual's place of employment. In particular, the study identifies a sample of workers who would be eligible for Secure Savings and then follows them for one year to see if they: 1) remain at the same job; 2) switch jobs; 3)

become non-employed; or 4) leave the state. The study assumes workers who switch jobs or become non-employed have the chance to become inactive participants, while workers exiting the State will close their accounts.

Table C2 shows the mobility rates for Colorado workers applied in the model.[25] These numbers can be used to estimate the rate at which workers either remain covered by Colorado Secure Savings or transition out of the program. For example, because approximately 61 percent of eligible full-time workers remain at the same job, and another 18 percent switch jobs but to an employer also eligible for Secure Savings, the study assumes just under 80 percent of active accounts remain active year-over-year.[26] Of the remaining employees, 7 percent are assumed to switch jobs to employers ineligible for Secure Savings (i.e., to employers that offer their own plan). In the absence of reliable data on the likely rate of account closures, the study assumes 20 percent of these employees close their account and 80 percent maintain it. An additional 13 percent of workers are assumed to leave their job for non-employment. Of these, we assume 30 percent retire (based on the age profile of Colorado workers), while 70 percent look for work and have a choice as to whether to maintain their account. Again, we assume 20 percent of these workers close their accounts while 80 percent maintain them.

[25] In the SIPP 2008 data, the survey asks people two different times one year apart about their employer's pension offerings while the other panels ask these questions only once. This design allows the study to estimate the rate at which employees who switch jobs end up at an employer offering a qualified plan. This estimate was determined by examining the pension coverage of workers who said they were not covered by a retirement plan in 2009 when they were first interviewed, but who said that they were covered in 2010. The study finds that 74 percent of eligible workers who switched jobs still did not have a retirement savings plan at their second job.

[26] The proportion of active accounts remaining active year to year is lower during employer roll-out. An active employee who moves to a new job in the first few years of the program is less likely to remain active when changing jobs because few employers initially participate. As more employers enroll, the model assumes a gradual increase in the proportion of movers who are able to remain active in the program.

Table C2. *Mobility Rates for Colorado Workers with No Plan at Work*

	Full time	Part time
Remain at job	61.2%	54.5%
Move to new job	24.8	20.0
Share of movers staying in program	18.4	14.8
Share of movers out of program	6.5	5.2
To not working	12.7	25.5
Due to retirement	3.8	7.6
Due to other reasons	8.9	17.8
Out of state	1.2	0.0

Note: The analysis assumes that three-quarters of those moving to a new job stay in the program (18.4 percent) and one-third of those exiting employment do so because of retirement (3.8 percent). During the first four years of the program, a higher proportion of movers are assumed to leave the program due to limited employer participation.
Source: SIPP (2008) and CRR assumptions.

The net result of these assumptions is that, in any period, about 12 percent of active accounts become inactive – 5 percent become inactive due to switching to an ineligible employer (80 percent of the 6.5 percent) while another 7 percent of active accounts will become inactive due to non-employment (80 percent of the 8.9 percent).[27]

Account Closures

Workers who transition to an ineligible employer or who cease working temporarily can also close their accounts. The numbers presented above can be used to calculate the rate of account closures in a straightforward way. Because 20 percent of workers who move to an ineligible employer are assumed to close their accounts, approximately 1 percent (20 percent of the 6.5 percent) of active accounts will be closed annually by these workers. Another 2 percent (20 percent of the 8.9 percent) will be closed by workers who cease working temporarily. Finally, we assume all workers retiring or leaving Colorado close their accounts. This assumption results in an additional 5 percent of active accounts closing each year – 4 percent due to retirement and 1 percent due to moving out of the State. On the whole, about 8 percent of active accounts are assumed to close each year.[28]

[27] These results are for full-time workers. Part-time workers have an active-to-inactive rate of 18 percent, due to higher rates of job mobility and transitions to not working.
[28] These results are for full-time workers. Part-time workers have a closure rate of 12 percent, due to their higher rates of job mobility and transitions to not working.

Inactive accounts returning to active

The last transitional feature of the model is that some inactive accounts again become active. In particular, the model assumes that all unemployed workers "churn" back into the market the next year, since spells of not working are usually brief. Of the inactive accounts held by workers at ineligible employers, a small fraction re-enter Colorado Secure Savings each year as they transition back to participating employers. About 16 percent of workers with a plan at work switch jobs in a given year and, of these, the analysis assumes one-third switch to a job without a plan.[29] Thus, each year about 5 percent of inactive accounts held by workers outside of Colorado Secure Savings re-enter the program.[30]

Account Balances

Individual account balances expand and contract each year due to several factors. Account balances grow due to employee contributions and investment returns. Account growth due to contributions is equal to the default contribution rate multiplied by the average salary of Colorado employees ($42,685 for full-time workers, and $14,684 for part-time workers based on 2018 data).[31] Annual growth due to investment returns is set equal to 5 percent of assets. Account balances decline each year due to lump-sum withdrawals, in-service leakages, and investment fees paid to managers. Based on experience in Oregon, the analysis assumes that 20 percent of leavers withdraw account balances in a lump sum, and that active balances decline by $100 annually due to in-service leakages. Investment fees vary across scenarios.

[29] CRR calculations from the SIPP (2008).
[30] This assumption is consistent across both full- and part-time workers.
[31] CRR calculations from the CPS (2018).