Annex

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Banking the Unbanked

CalAccount Market Study and Feasibility Assessment—Annex II: Potential Benefits, Costs, and Impacts of the CalAccount Program

This publication has completed RAND's research quality-assurance process but was not professionally copyedited.

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About This Annex

This annex presents Appendixes C through F to the RAND report *Banking the Unbanked: CalAccount Market Study and Feasibility Assessment*, available at www.rand.org/t/RRA3117-1. Appendix C presents the benefit-cost analysis, Appendix C details out analysis of modeling CalAccount take-up, Appendix E details the impact of the CalAccount on disparities and savings, and Appendix F examines the potential impacts of CalAccount on longer-run benefits, public safety, and banks.

The study was funded by the California Treasurer's Office and led by Principal Investigator Jonathan Welburn and Project Director Robert Bozick. For all inquiries, email CalAccountProject@rand.org.

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Appendix C. Benefit-Cost Analysis

This appendix provides an economic analysis developed in support of the CalAccount feasibility study mandated in California Assembly Bill (AB) 1177. Specifically, it describes the methodology and findings of a preliminary benefit-cost analysis (BCA) to evaluate the impacts of potential policy options to implement the CalAccount Program. As proposed in AB 1177, the CalAccount Program would offer Californians "access to a voluntary, zero-fee, zero-penalty, federally insured transaction account."[1]

Program Requirements

If implemented, the CalAccount Program will be available to all Californians and funded by taxes from all Californians. The main groups anticipated to be directly impacted by the program include unbanked and underbanked individuals, financial institutions, alternative financial services businesses (e.g., payday lenders), retailers, the California State Treasurer's Office, and the California Department of Financial Protection and Innovation.

Although available to all Californians, only a fraction are likely to use the program because most Californians are already fully banked through the private market. To predict future enrollment rates for the CalAccount Program, this analysis relies on estimates of the unbanked and underbanked populations, survey information about reasons for being unbanked or underbanked, and population projections from the California Department of Finance. Information on the number of California establishments in the financial sector is obtained from the Employment Development Department's Quarterly Census of Employment and Wages (QCEW).[2]

The CalAccount Program would mandate California businesses comply with various requirements and program features to be established in future regulation. Specifically, California Government Code Title 21.1, Section 100104(a)(1) requires a market analysis to determine if it is feasible to implement a CalAccount Program with the characteristics listed in Table C.1.

[1] California Public Banking Option Act, A.B.1177, 2020-2021 Reg. Sess. (Cal. 2021).

[2] California Employment Development Department, "Quarterly Census of Employment and Wages (QCEW - About the Data)." https://labormarketinfo.edd.ca.gov/data/QCEW_About_the_Data.htmlAccessed at https://labormarketinfo.edd.ca.gov/data/QCEW_About_the_Data.html on

Table C.1. CalAccount Program Characteristics as Defined by Title 21.1, Section 100104(a)(1)

Reference Paragraph	Program Feature
A	Access to a no cost, zero-penalty, federally insured transaction account and related payment services
B	State board to administer program
C	Establish a process by which an individual may open an account
D	Establish mechanisms for no-fee deposits
E	Establish process for direct deposit of paychecks or earnings for labor or services by electronic fund transfer
F	Establish process for direct remittance of payroll
G	Establish process for no-fee withdrawals through point-of-sale purchases using a debit card and through cash withdrawals at a "robust and geographically expansive network of ATMs, bank or credit union branches, and other in-network partners"
H	Establish no-fee process for payments to a registered payee using a preauthorized electronic fund transfer
I	Establish process and terms and conditions for becoming a registered payee
J	Establish automatic disbursement rules to assist in managing automated payments to registered payees based on availability of funds
K	Establish processes to facilitate enrollment among people without federal or state government-issued photo identification, permanent housing, and/or persons at least 14 years of age without a cosigner or guarantor
L	Select a program administrator whose duties shall include "provide a secure internet web-based portal and mobile application through which individuals can enroll in the program and entities can become registered payees and through which accountholders can access and manage their CalAccounts
M	Contract with a financial services network whose duties may include coordinating financial services vendors for the program, issuing secure debit cards or other secure means of access, and provide a robust and geographically expansive network while minimizing or eliminating out-of-network fees
N	Develop and negotiate a fair and equitable program fee and program revenue sharing structure between the state and the financial services network administrator
O	Mandate employers with more than 25 employees or hiring entities with more than 25 independent contractors allow workers to participate in the program through their payroll process
P	Mandate landlords or their agents allow tenants to pay rent and security deposits by electronic funds transfer through the program

Source: California Government Code § 100104 (2023)

Several program features are open-ended in scope, in particular the requirements for the financial services network described in paragraph M. This has considerable implications for estimating the upfront and recurring costs of establishing the program. Similarly, outreach efforts to disseminate information and facilitate enrollment in the program are undefined. Outreach will in large part determine how many eligible residents are made aware and ultimately enroll in the program. These program requirements are anticipated to be enacted in any scenario in which the CalAccount Program is established. However, they will require the Commission to develop specific policies for implementing the program.

Methodology

This section describes the methods and approaches used in this preliminary screening analysis to inform the development of a potential regulatory action by identifying and evaluating policy options and future areas of research.[3] This analysis relies on publicly available data and informed assumptions to provide information on the possible direction and magnitude of economic impacts. In the context of California rulemakings, a screening analysis can also help determine if a standardized regulatory impact assessment is needed.[4] At this time there is no proposed regulation establishing the CalAccount Program, therefore the analysis is necessarily more speculative with regard to assumptions about the program structure and requirements for participating financial institutions and individuals as well as other affected groups. It is important to note that the analysis relies on a number of assumptions that could vary significantly from the actual implementation plan for the program.

The analysis generally follows California state guidance for economic impact assessments established by the Department of Finance and codified in the California Code of Regulations and the State Administrative Manual.[5] This analysis also adheres to federal guidance on best practices for government agencies conducting regulatory analyses established in the Office of Management and Budget's (OMB) Circular A-4.[6]

Benefit-Cost Analysis Framework

This analysis identifies three policy options to implement the CalAccount Program and evaluates the benefits and costs that accrue to different groups of stakeholders, including state agencies, businesses, and individuals in California. The goal of any BCA is to produce an estimate of the value to society or the expected net benefit of a policy or program (i.e., the difference between its benefits and costs) relative to the status quo. For this analysis, we also estimate secondary macroeconomic impacts in California, including job gains or losses. To the extent feasible, these impacts are quantified and monetized in dollar terms to allow decisionmakers to evaluate different policy options using a common measure. Where it is not feasible to monetize potential program benefits, we provide qualitative evidence of impacts. We

[3] Additional information on the purpose of a screening analysis is available in Office of the Assistant Secretary for Planning and Evaluation U.S. Department of Health and Human Services, "Guidelines For Regulatory Impact Analysis," January 12, 2017.

[4] California state agencies must conduct a standardized regulatory impact assessment for any regulatory action that will have a statewide economic impact exceeding $50 million. State of California, Administrative Regulations and Rulemaking, 2022. California Government Code § 11342.548 (2023).

[5] A high-level summary this guidance is provided in Metz, David, Benjamin M. Miller, Melissa Kay Diliberti, Weilong Kong, *Guidelines for Conducting California Standardized Regulatory Impact Assessments*, Santa Monica, Calif.: RAND Corporation, RRA1386-1, 2024. See also: 1 CA Code of Regs 2003, and ———, Methodology for Making Estimates, 2003. (California Department of General Services, 2014).

[6] U.S. Office of Management and Budget, Circular A-4: Regulatory Analysis, November 9, 2023.

note that, as a general rule, some important benefits and costs may be difficult to quantify or monetize. Specifically, it can be challenging to monetize impacts associated with a public good that provides benefits that are intangible and difficult to measure, such as financial stability, quality of life, or equity. When it is not possible to monetize all the important benefits and costs, policymakers should consider all the evidence available to determine how important the non-monetized benefits may be in the context of the overall analysis, as the policy with the largest monetized net benefits will not be the policy that most improves social welfare.[7]

This analysis estimates the potential impacts of the CalAccount Program over the first ten years following its implementation. This timeline is intended to be sufficient to capture benefits that may accrue to stakeholders over several years (in comparison to program costs that are more likely to be incurred on an upfront basis) and answer questions about the ability of the program's benefits to "break even" or offset those costs over time.[8] For calculation purposes, this analysis assumes the CalAccount program will launch on January 1, 2026 and the majority of the program's features, including enrollment options, direct deposit, and electronic fund transfers, will be available within the first year.

To compare benefits and costs that accrue in different time periods across each of the policy options, we discount all future impacts using a common discount factor. Discounting reflects individuals' general preferences to receive benefits sooner and to bear costs later in time and recognizes that costs incurred today are more expensive than future costs because businesses must forgo an expected rate of return on investment of capital.[9] In calculating the net benefits of the CalAccount Program, all benefits and costs are discounted at a rate of two percent relative to the anticipated starting year of the program following federal guidance as there is no specific recommended discount rate for California economic impact analyses. The U.S. Office of Management and Budget (OMB) recommends federal agencies discount future benefits and costs to reflect the social rate of time preference (also referred to as "the time value of money") using a discount rate of two percent.[10] This value reflects the real rate of return on long-term U.S. government debt (on a pre-tax basis) over a 30-year period between 1993 and 2022. The rate of return on private capital may differ from the social rate of time preference, and therefore different industries may have different time preferences. For example, OMB previously found that the average rate of return to capital was approximately seven percent as estimated in 1992

[7] U.S. Office of Management and Budget, Circular A-4, November 9, 2023.

[8] This time horizon was selected in response to California Government Code § 100104 (a)(3)(A) (2023), which requires the market analysis "include whether or not CalAccount Program revenue is more likely than not to be sufficient to pay for CalAccount Program costs within six years of the CalAccount Program's implementation."

[9] Circular A-4, November 9, 2023.

[10] U.S. Office of Management and Budget, Circular A-4, November 9, 2023.

and recommended agencies use this value as a base case discount rate. For this study, we rely on the most recent guidance recommending a two percent discount rate.[11]

The BCA framework is utilized as follows:

(1) Establish a demographic and economic baseline that reflects the anticipated behavior of individuals and businesses in California in the absence of the CalAccount Program.
(2) Identify different policy options to achieve the intended objectives of the program.
(3) Identify and describe the benefits and costs of the program for different groups of stakeholders, including state agencies, businesses, and individuals.
(4) Estimate secondary macroeconomic impacts, including impacts on jobs in California.
(5) Compare the benefits and costs of the different policy options.
(6) Evaluate distributional impacts.

Benefits

Our analysis evaluates both monetized and non-monetized benefits to individuals and businesses in California. For CalAccount's target population—the unbanked and underbanked—the immediate impacts of access to a checking account include an insured mechanism for storing money, direct deposit options for tax refunds and paychecks (if offered by employer), and access to a robust and geographically expansive network of participating ATMs to access cash. Longer-term benefits for the unbanked and underbanked include increased household savings and a reduced need to use costly alternative financial services (e.g., cash checking). The estimated benefits to financial institutions administering the program include increased revenues through a return on deposits on new accounts and interchange fees associated with increased debit card use. Other benefits described in this analysis are more challenging to quantify and monetize.

With respect to state agencies, there are potential efficiency gains that could result from establishing CalAccount. Specifically, there is an opportunity to combine the administrative features of other state benefit programs into the CalAccount Program. Beneficiaries could receive an electronic funds transfer of state benefits directly deposited into a CalAccount, potentially saving the state the cost of mailing millions of checks or issuing pre-paid debit cards separately for each state program.

Costs

The estimated costs in our analysis represent the total burden on the economy and include both up-front, one-time (e.g., capital expenditures) and recurring costs (e.g., operations and maintenance) associated with program implementation. The direct program costs include those

[11] The results are not highly sensitive to the choice of discount rate because both benefits and costs are generally spread across several years with only some costs, such as website development, enrollment, and outreach costs incurred primarily on an upfront basis.

incurred by individuals (i.e., the time it takes to enroll in the program), financial institutions not participating in CalAccount (i.e., from loss of fees when underbanked customers transfer to CalAccount),[12] alternative financial services (i.e., from reduced demand for check cashing and other services), retailers (i.e., from fees associated with increased fintech use), landlords (i.e., from fees associated with taking ACH payments), and employers (i.e., from costs associated with maintaining payroll direct deposit). For this analysis, direct cost estimates are based on various industry sources, including interviews with subject matter experts.

Capital Expenditures

Some of the initial program costs will depend on developing and/or acquiring technologies to facilitate enrollment of participants in the CalAccount Program and ensuring access to federally insured transaction accounts and related payment services. These costs are accounted for in the first year of the analysis. For this analysis, information on the costs of capital investments—including but not limited to banking infrastructure, hardware, software, and development of web-based and mobile applications—are obtained through various industry sources described below.

Operations and Maintenance Costs

In addition to the costs of developing new technologies and processes, these systems will have to be updated, supported, and maintained over time. These costs generally scale in proportion to, but represent only a fraction of, the initial acquisition costs. They are estimated to be incurred in each year of the analysis.

Labor Costs and the Value of Time

The program's implementation will require the time of state employees, contractors, bank/credit union staff, and individuals to establish, maintain, and enroll in the CalAccount Program. The Department of Finance does not provide specific guidance on estimating the value of time (i.e., the opportunity cost of the time that an individual spends on a program requirement). But several federal agencies offer guidance on economic methods for valuing time.[13] Standard economic approaches assume that labor activities by employees will displace other work-related tasks and that the average or median value of the employer's cost of labor provides the most reasonable estimate of the value of those activities.[14]

[12] Note we abstract away from the potential competitive effect on pricing in our analysis. Given high switching costs between banks and the presence of low and no-fee banking products currently offered in California, we think this impact is likely low.

[13] See discussion in Metz, David, Benjamin M. Miller, Melissa Kay Diliberti, Weilong Kong, *Guidelines for Conducting California Standardized Regulatory Impact Assessments*, Santa Monica, Calif.: RAND Corporation, RRA1386-1, 2024.

[14] Office of the Assistant Secretary for Planning and Evaluation U.S. Department of Health and Human Services.

For costs associated with employees undertaking administrative activities, this analysis estimates standard wage rates based on California state data reported by the U.S. Bureau of Labor Statistics' Occupational Employment Statistics (OES).[15] These costs are increased by a factor of two to account for fringe benefits and other overhead costs.[16] Table C.2 reports the estimated hourly labor costs for different occupations. These cost estimates are used to monetize all labor activities included in the analysis.

Table C.2. Estimated Hourly Wage Rates for California Employees, by Occupation

Occupation	Median Hourly Wage	Fully Loaded Hourly Labor Cost Estimate
Compliance Officers	$40.86	$81.72
Lawyers	$88.96	$177.92
Financial Managers	$81.62	$163.24
Tellers	$21.26	$42.52
Customer Service Representatives	$22.15	$44.30

SOURCE: May 2023 State Occupational Employment and Wage Estimates – California, accessed at https://www.bls.gov/oes/current/oes_ca.htm on April 3, 2024.

For costs to individuals undertaking administrative tasks (e.g., program enrollment, identification) on their own time, this analysis uses post-tax wages to estimate the marginal value of time. For all California workers, this reflects a median hourly wage of $25.98 based on the OES data. To estimate a post-tax hourly wage rate, this analysis relies on estimates from the U.S. Census Bureau's Current Population Survey, suggesting an average tax rate of approximately 13.9 percent in 2022.[17] Therefore, the median post-tax hourly wage rate is estimated to be $22.38.

Transfers

In addition to quantifying and monetizing the direct benefits and costs of different policy options for the CalAccount Program, this analysis evaluates transfers between affected groups. Generally, transfer payments result in a reallocation of money or resources from one group to

[15] U.S. Bureau of Labor Statistics, "State Occupational Employment and Wage Estimates California," May 2023. As of April 3: https://www.bls.gov/oes/current/oes_ca.htmAcessed at https://www.bls.gov/oes/current/oes_ca.htm on April 3, 2024.

[16] The U.S. Department of Health and Human Services recommends using a factor of two to account for fringe benefits and other overhead costs. Based on information from the U.S. Bureau of Labor Statistics' Employer Costs for Employee Compensation suggests benefits (excluding overhead costs) for the Pacific region, including California, are approximately 41.4 percent of wages and salaries. Accessed at https://www.bls.gov/news.release/ecec.t07.htm on April 3, 2024.

[17] Guzman, Gloria and Melissa Kollar, *Income in the United States: 2022*, United States Census Bureau, P60-279, September 12, 2023.

another group (i.e., when a new policy generates a gain for one group and an equivalent loss for another group).[18] In some cases it is challenging to identify whether impacts should be categorized as benefits, costs, or transfers. Program effects may generally be considered transfers if the impacts on one group are exactly offset by the impacts on another group; however, more complex linkages may also exist. Historically, analyses of transfers have been conducted separately from those of benefits and costs or even excluded because they produce no "net" benefit to society. However, given concerns about the distributional effects of financial inclusion, it may be justified to account for transfers as offsetting benefits and costs. This approach, recommended for federal agencies, may provide additional information and transparency in documenting the impacts to different groups and facilitate a more comprehensive distributional analysis.

In the case of CalAccount, there are several potential countervailing policy impacts including (1) fees that individuals pay for alternative financial services that may be displaced by having access to direct deposit via CalAccount (i.e., a transfer from alternative financial services businesses to individuals), (2) fees that individuals pay associated with traditional bank accounts (e.g., overdraft fees) that may be displaced by having access to a no-fee account (i.e., a transfer of from financial institutions to individuals), and (3) monetary transfers from traditional bank accounts among the underbanked population into CalAccount (i.e., a transfer from one financial institution to another).

Our analysis includes fiscal impacts to state agencies, which represent a transfer between California taxpayers and the State. Fiscal impacts include the costs of establishing and administering the CalAccount program, enforcement, possible fee structures, and potential benefits for the State through any revenue-sharing arrangement(s) with the financial services network administrator(s). Ideally, this would include any cost savings to the state. We estimate program impacts for the three policy options based on various assumptions about the fixed and variable costs of developing administrative policies and procedures, investing in financial technology, conducting enrollment and customer identity verification, staffing, and other costs as well as assumptions about program enrollment.

Policy Options

This BCA uses notional policy options for CalAccount to evaluate the relative cost-effectiveness of potential banking structures the program might take. These policy options are not specific proposals for CalAccount, and they do not endorse specific choices for the Commission. Instead, in lieu of final details on the structure and implementation of CalAccount, they are hypothetical scenarios intended to reflect the scope and magnitude of potential social

[18] U.S. Office of Management and Budget.

and economic impacts (i.e., benefits, costs, and transfers) of CalAccount under different sets of assumptions regarding the general structure of the program.

We model three policy alternatives for CalAccount (see Table C.3) that differ in terms of the scope of the financial network. Specifically, the policy options vary by mode of access, which include mobile banking, ATMs, and bank or credit union branches as well other options for in-person banking. Differences in the available modes of access have implications for the projected enrollment rates, with enrollment rates increasing along with the size of the financial network. In addition, we model multiple scenarios reflecting different levels of program awareness and subsequent enrollment. This reflects the resources (e.g., financial and person-hours) dedicated to maximizing program enrollment via community outreach, advertising, and other public messaging strategies. Other policy decisions may specify administrative measures to operate the program. For example, additional implementation options for the Commission may include identifying and selecting partner financial institutions, FinTech companies, hardware and software providers, and/or web-based or application developers. At this stage, these decisions are outside the scope of the feasibility study and do not inform the estimation of economic impacts.

Table C.3. Potential Policy Options for CalAccount

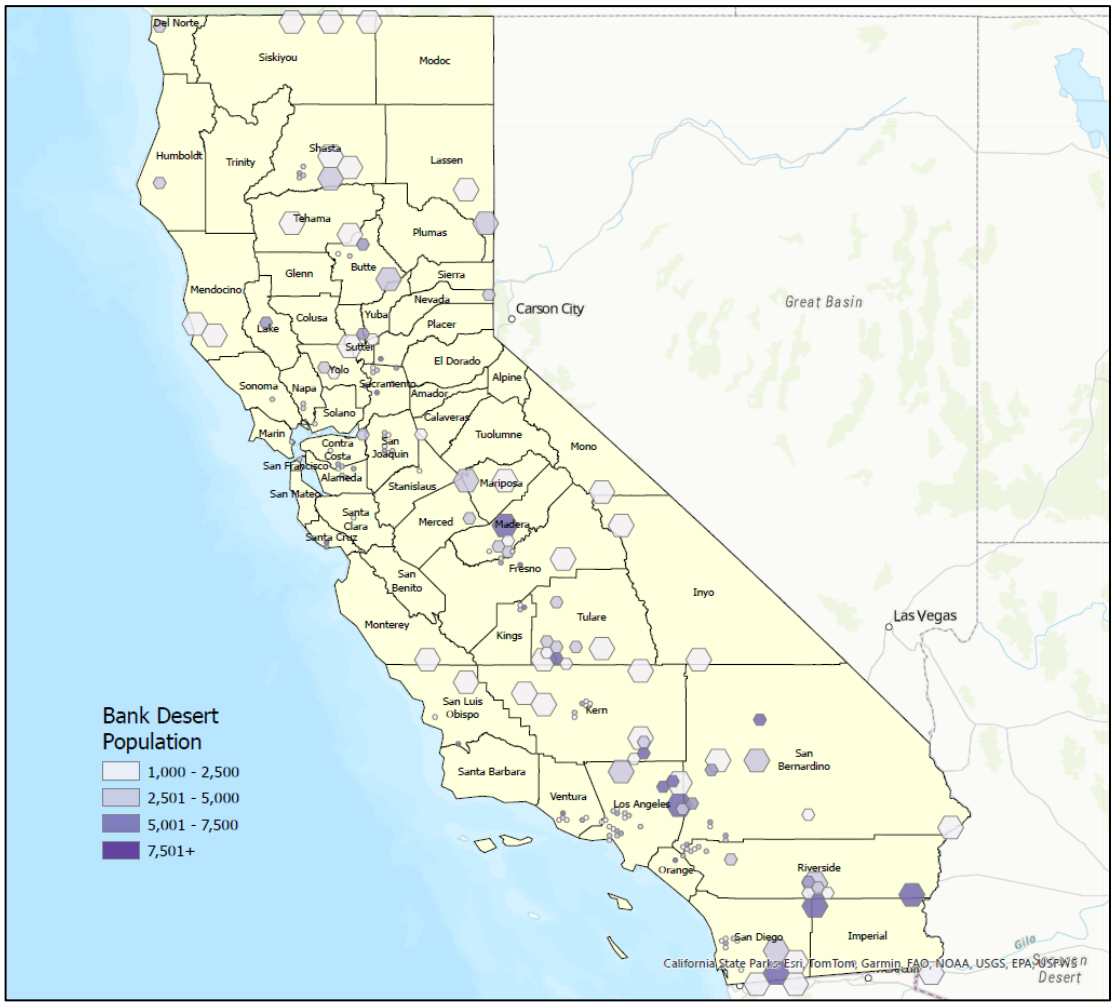
	Scenario 1: Mobile Banking	**Scenario 2: Mobile Banking + Existing Brick-and-Mortar Financial Network**	**Scenario 3: Mobile Banking + Expanded Brick-and-Mortar Financial Network**
Expected enrollments	Low	High	Highest
Size of financial network	Access to a robust and geographically expansive ATM network, with limited or no access to in-person banking	Access to a robust and geographically expansive ATM network, including bank or credit union branches	Access to a robust and geographically expansive ATM network, including bank or credit union branches plus additional state-designated locations

As indicated in Table C.3, the mobile banking option (Scenario 1) would offer limited access to in-person banking and is expected to have the lowest enrollment rate among the policy options identified. The mobile banking plus brick-and-mortar option (Scenario 2) would rely on partnership(s) with existing financial institutions within the State that would increase their capacity for online and in-person banking among previously unbanked and underbanked households. The expanded financial network (Scenario 3) would, in addition, seek to enroll additional participants by utilizing state-designated, non-traditional banking locations, such as post offices and municipal buildings to increase access to financial services.

For Scenario 3, we estimate costs associated with establishing between 25 and 75 additional "banking" locations to increase access to CalAccount. Figure C.1 illustrates potential locations based on a geospatial analysis of banking deserts across California using ArcGIS. To develop this stylized representation, we define a banking desert locale as a city, town/suburban, or rural

area more than 2 miles, 5 miles, and 10 miles away from the closest bank, respectively. For each locale, we generated a hexagonal grid to estimate the population reached and compare locations across various metrics. For each hexagon, using Census block data, we calculated the total population and mean distance to the nearest bank of blocks contained by the hexagon and designated as banking deserts. We also tallied the number of government buildings, such as post offices, located within the grid space. The figure shows candidate locations that meet the following criteria: (1) qualifies as a banking desert; (2) has a population greater than 1,000; (3) the mean distance to the nearest bank is below the 50th percentile; and (4) contains a post office. Without further research, we do not endorse specific candidate locations, but this approach demonstrates one potential methodology for identifying and selecting locations.

Figure C.1. Options for Expanded Banking Access Locations for Scenario 3



Within each of the three policy options, we consider low- and high-end enrollment scenarios. The enrollment estimates are a combination of the scope of the financial network, the disposition towards opening a CalAccount (see Appendix C for full details), and the proportion of the population who become aware of CalAccount presumably through outreach efforts or other information channels. Within each scenario, the main driver of differences in enrollment numbers is driven by variation in the proportion of unbanked and underbanked who become aware of the program. Specifically, we bound the percent of the unbanked and underbanked households that become aware of program between 25 and 75 percent, with 25 percent being a low-awareness outcome and 75 percent being a high-awareness outcome.[19]

Table C.4 summarizes the types of costs, benefits, and transfers associated with the different scenarios, respectively.

Table C.4. Potential Costs, Benefits, and Transfers Associated with Policy Options for CalAccount

	Scenario 1: Mobile Banking	Scenario 2: Mobile Banking + Existing Brick-and-Mortar Financial Network	Scenario 3: Mobile Banking + Expanded Brick-and-Mortar Financial Network
Potential Costs	• Outreach • Enrollment • Issuing debit cards • Customer service • Program management, compliance, and legal • Website and mobile app development	Mobile Banking Costs plus • ATM hardware/software • Physical bank infrastructure	Existing Network of Financial Institutions Costs plus • Lease/construction • Staffing to support expanded financial network
Potential Benefits	• Increased financial inclusion • Increased savings • Improved public safety • Entrepreneurship • Increased revenue to banks through return-on-deposits • Health outcomes • Expansion of financial technology	Mobile Banking Benefits plus • Access to in-person banking options	Existing Network of Financial Institutions Costs plus • Access to enrollment options or other program support in certain state/local government buildings (or other locations)
Potential Transfers	• Avoided fees (e.g., overdraft, check cashing, payday loans) • Additional interchange fees due to increased debit card use • Customers moving deposits between other financial institutions and CalAccount	Same as Mobile Banking Potential Transfers	Same as Mobile Banking Potential Transfers

[19] Given limited information on what the desired level of outreach would be for CalAccount, we chose these percentages to provide a broad range for what awareness level might be achieved for CalAccount. See Appendix C for full details, including tables that allow for calculating how a change in the assumed awareness would impact estimated enrollment.

Economic Baseline

The BCA relies on projections of economic and demographic trends to define a baseline reflecting the anticipated behavior of individuals and businesses in California in the absence of the CalAccount Program. First, it establishes estimates of the number of unbanked and underbanked households in California and characterizes the state of banking in California. Then, it describes trends regarding future estimates of the size and financial characteristics of the impacted groups. For direct comparison, each policy option is evaluated against this same baseline. The analysis assumes that there are no major changes to the structure of or costs facing the banking industry and no major changes in the cost of consumer banking (e.g., overdraft fees) or consumers' attitudes toward the banking industry. Further, it assumes that the ratio of unbanked and underbanked households remains stable relative to the total number of households in California.

Appendix C provides additional detail on assumptions regarding the population of unbanked and underbanked households in California. This provides a maximum upper bound for the target population for the program assuming that there would be little or no demand for no-fee CalAccounts among the fully banked population. Appendix F provides a detailed description of the California banking landscape. For the BCA, we rely on the analysis of fees for traditional banking services and alternative financial services.

Key Assumptions

For this analysis numerous parameters must be estimated, including enrollment rates for the CalAccount Program. Such estimates are derived from several sources, including peer-reviewed articles, published industry statistics, and analyses of the 2021 FDIC National Survey of Unbanked and Underbanked Households (i.e., "the FDIC survey") and the 2023 RAND California Survey of Household Finance (i.e., "the RAND survey"). Furthermore, estimating benefits and costs that accrue to individuals, businesses, and state government agencies requires making various assumptions that ultimately affect the direction (positive or negative) and magnitude (small or large) of the monetized net benefits of the program. This section identifies key assumptions that are most likely to significantly impact the overall estimates of the impacts of the CalAccount Program. Where there is considerable uncertainty regarding specific estimates, sensitivity analyses are conducted using a range (e.g., low- and high-end estimates).

Program Enrollment

The projected enrollment rates for the CalAccount Program are one of the most critical assumptions. These impact various dimensions of the estimates of benefits (e.g., savings) and costs (e.g., enrollment costs) of the program. For the three policy options, separate take-up rates are calculated based on the number of unbanked and underbanked households in California, their reasons for being unbanked and underbanked (e.g., high cost or unpredictability of banking fees,

distance from the nearest bank branch, etc.), and the characteristics of each policy option that addresses these barriers (see Appendix D for full details). For example, for the mobile banking option (Scenario 1) we assume unbanked households who cite high fees as a barrier to banking are likely to enroll, while those who cite a lack of access to nearby bank branches as a barrier are unlikely to enroll. The take-up rate estimates depend crucially on researcher-defined parameters, particularly the assumed responsiveness of the unbanked and underbanked to the CalAccount Program. For consistency with the unit of analysis used in the FDIC Survey and the RAND Survey, we estimate an enrollment rate of one individual per household. Differences in estimated versus realized enrollment rates will substantively impact the cost-effectiveness and potentially the overall feasibility of the CalAccount Program.

Our approach assumes that enrollment in the CalAccount Program will across the three policy options based on the different features (i.e., modes of banking access) available to its users. The mobile banking option (Scenario 1) would likely have the lowest take-up rate of the three options because the lack of access to a physical branch may serve as a barrier to some potential users. The financial network of traditional brick and mortar locations plus mobile banking (Scenario 2) is expected to have a higher take-up rate than Scenario 1 because it offers more modes of access. Finally, the expanded financial network (Scenario 3) is expected to have the highest take-up rate because it provides the most expansive access across the three scenarios.

This approach estimates total CalAccount enrollments in a future steady-state economy but does not assess the length of time it will take to reach the steady-state. Many goods and services, public or private, take years to establish their customer base. To address this issue, we use information from a study of the Interstate Banking and Branching Efficiency Act (IBBEA) of 1994, which made bank branching across states legal.[20] The deregulatory policy encouraged greater competition within the consumer banking industry and, presumably, lowered the price of bank accounts. The study found that deregulation increased the probability that low-income households held a bank account, reaching its steady-state just one year after the deregulation occurred. It, however, presents no estimates on bank account holdings during the first year of deregulation. We conclude that unbanked and underbanked households who are interested in having a bank account and are informed of the program's implementation will respond fairly quickly once given the option. Specifically, we assume the CalAccount Program will reach a near steady-state enrollment level within two years after its implementation and will only grow modestly after that. For simplicity, we assume the rate of adoption will be linear—that is, enrollment will be half of the projected steady-state within one year and at the quasi steady-state within two years. We estimate modest growth in the number of CalAccount users after this

[20] Célerier, Claire and Adrien Matray, "Bank-Branch Supply, Financial Inclusion, and Wealth Accumulation," *The Review of Financial Studies,* Vol. 32, No. 12, April 23, 2019.

period reflecting growth in the projection of the California population aged 14 and up from the California Department of Finance.[21]

Table C.5 reports our midpoint estimates of enrollment under each scenario for the unbanked and underbanked, where the midpoint represents the average of the low- and high-end enrollment estimates. For Scenario 1, we estimate there will be approximately 600,000 enrollments by 2027. For Scenario 2, we estimate there will be more than 710,000 enrollments by 2027. For Scenario 3, we estimate there will be more than 790,000 enrollments in the first two years. These estimates suggest a larger number of enrollments would be gained moving between Scenarios 1 and 2 than between Scenarios 2 and 3 because more households indicated having a physical branch to do their banking was important than indicated distance to the nearest branch was a significant barrier to banking.

Table C.5. Estimated CalAccount Enrollments for Each Scenario, by Year

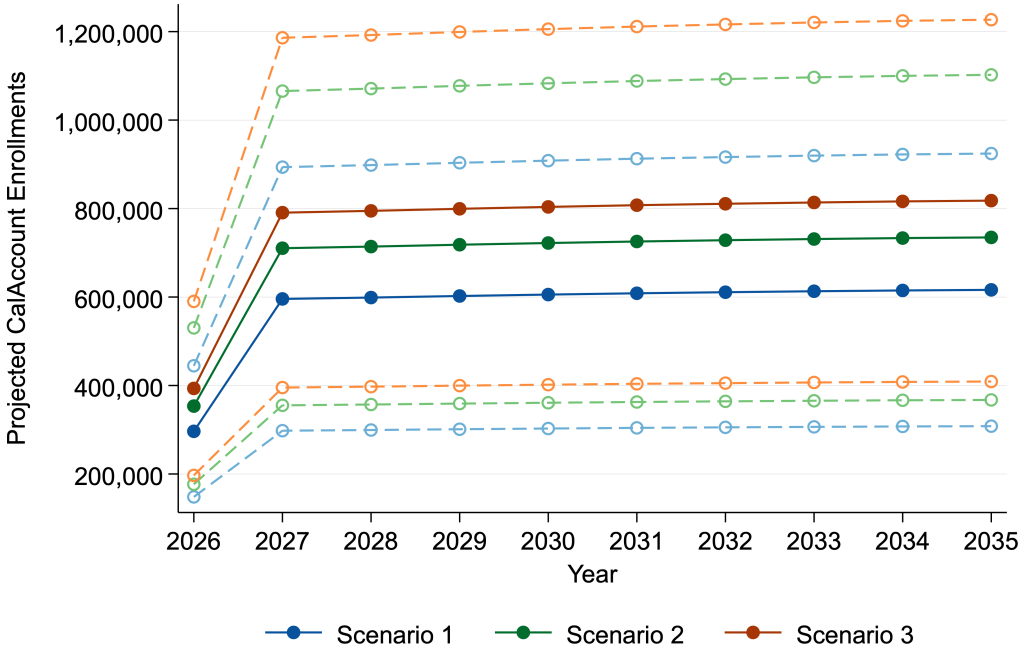
Year	Scenario 1			Scenario 2			Scenario 3		
	Unbanked	Underbanked	Total	Unbanked	Underbanked	Total	Unbanked	Underbanked	Total
2026	71,678	224,765	296,443	83,506	269,990	353,496	89,836	303,633	393,469
2027	144,051	451,712	595,762	167,822	542,602	710,424	180,543	610,215	790,758
2028	144,796	454,048	598,843	168,690	545,407	714,097	181,477	613,371	794,848
2029	145,646	456,711	602,357	169,680	548,607	718,287	182,542	616,969	799,510
2030	146,419	459,138	605,556	170,581	551,521	722,102	183,511	620,247	803,758
2031	147,128	461,362	608,490	171,407	554,192	725,599	184,401	623,251	807,651
2032	147,711	463,189	610,899	172,086	556,387	728,473	185,131	625,719	810,849
2033	148,247	464,871	613,117	172,711	558,408	731,118	185,803	627,991	813,793
2034	148,688	466,253	614,940	173,224	560,068	733,292	186,355	629,857	816,212
2035	149,002	467,237	616,238	173,590	561,250	734,840	186,749	631,187	817,936

NOTE: This table reports the midpoint enrollment estimates, which are calculated as the average of the low- and high-end estimates. These estimates assume 25 percent (low-end) to 75 percent (high-end) of unbanked and underbanked households become aware of the CalAccount Program.

To illustrate uncertainty underlying these estimates, Figure C.2 shows the projected enrollment rates for each scenario under different assumptions regarding the anticipated level of program awareness and ultimate success of marketing/outreach. The low-end, midpoint, and high-end enrollment projections are presented for Scenario 1 (blue), Scenario 2 (green), and Scenario 3 (orange). The upper and lower bounds are plotted using dashed lines above and below the midpoint estimates.

[21] State of California, Department of Finance, "Projections." As of April 18: https://dof.ca.gov/forecasting/demographics/projections/

Figure C.2. CalAccount Projected Enrollments by Year, Low- and High-end Estimates



NOTE: The solid lines reflect the midpoint enrollment estimates, while the dashed lines represent the low- and high-end estimates. These estimates assume 25 percent (low-end) to 75 percent (high-end) of unbanked and underbanked households become aware of the CalAccount Program.

Cost of Outreach

A second key assumption that substantially impacts the calculation of net benefits is the cost of acquiring CalAccount users. Enrollment rates will depend on the program's ability to make potential users aware of its existence and generate demand for its use. Estimating the cost of outreach is difficult as communication campaigns can involve many different activities, e.g., online, billboard, television, and radio advertisements in addition to partnerships with community-based, faith-based, and organized labor groups. While a line-by-line costing of these activities may be feasible, it is not known which outreach activities the CalAccount Program will ultimately use. Rather than constructing a specific outreach campaign and costing each activity, we estimate the cost of outreach on a per-enrollment basis. Although this strategy simplifies the costing within the analytic framework, there remains uncertainty about what this cost will ultimately be. This analysis considers information from the banking industry as well as from other state-run programs.

Other Important Assumptions

This analysis relies on many assumptions. While not comprehensive, below we list other important assumptions:

- Number of participating financial institutions: AB 1177 does not define the number of financial institutions intended to participate in the CalAccount Program. The selection of one or more financial services network administrators will impact the accessibility of the CalAccount Program to potential users as well as the costs of contract negotiations, program fees, and revenue-sharing structure. A smaller financial network might imply that additional branch locations or ATMs are needed to serve new customers, while a larger financial network may have a sufficient physical presence in many locations. For direct comparison of policy options, the costs of each scenario are estimated assuming there is one financial services network administrator.

- Number of users, amount, and frequency of financial transactions: Estimating program benefits requires calculating the number of users of different traditional banking and non-bank financial services, the average number of financial transactions, and any associated fees (e.g., overdraft fees, check cashing fees). Other program impacts are associated with debit cards, which are subject to interchange fees paid by merchants. Additional assumptions are required on the extent to which debit card use would replace other financial transactions (e.g., cash, check, or Venmo payments).

- Additional branch locations (Scenario 3): Estimates of the number and range of banking service made available at non-traditional locations made available to support the CalAccount Program and the costs to open and staff them will substantially affect the estimated total cost. For this scenario, we estimate costs associated with establishing between 25 and 75 additional "banking" locations to increase access to the program.

Direct Benefits

In this section, we evaluate the potential benefits of the CalAccount Program. The CalAccount Program would provide a state-subsidized banking option to increase financial inclusion among the underserved California population. The economic literature on financial inclusion, which includes access to direct deposit and debit cards, suggests there are a number of direct benefits to low-income populations. To assess these impacts, we examine evidence from similar programs to quantify and monetize benefits where feasible. We then qualitatively describe additional benefits that we could not monetize. For individuals, the monetized benefits of financial inclusion include the avoidance of both traditional banking fees (e.g., monthly maintenance fees and overdraft fees) and fees for alternative financial services (e.g., check cashing, money orders, and prepaid cards) regularly incurred by unbanked and underbanked households as well as an increase in household savings. Additional benefits to individuals that cannot be easily monetized include impacts on health outcomes, income stability, and public safety.

For financial institutions, those entities (i.e., banks or credit unions) that administer the CalAccount Program would see increased revenues through a return on deposits on new accounts and interchange fees associated with debit card use. Additional impacts that cannot be monetized include potential downstream benefits that could expand the future customer base of banks and

credit unions and indirect network externalities such as retail merchants adopting financial technologies, such as point-of-sale (POS) systems, in response to increased debit card use that could increase their sales and profits.

Monetized Benefits

This section describes the monetized benefits of the CalAccount program to individuals and businesses in California. The CalAccount Program is expected to increase financial inclusion by reducing barriers to opening and maintaining a checking account and through community outreach efforts to increase participation. The immediate benefits of having access to a checking account include an insured mechanism for storing money, direct deposit options for tax refunds and paychecks (if offered by employer), and access to a robust and geographically expansive network of participating ATMs to access cash. The longer-run impacts on financial outcomes include increased savings (and wealth) and decreased reliance on alternative financial services. Benefits to businesses include increased revenues from deposits and interchange fees.

Benefits to Individuals

Avoided Fees

To estimate the potential increase in household income from avoided fees, we rely on industry data on one-time or recurring fees calculated on an average annual basis and information on the incidence of those fees among unbanked and underbanked households based on information collected from household surveys. Below we note the data sources and assumptions used to develop these estimates. Table C.6 summarizes the estimated annual cost and incidence of fees for unbanked and underbanked households in California.

- **Check cashing:** We use an average check cashing fee of $4.50, based on a median fee of $2.25 for a $100 check and $6.75 for a $500 check, multiplied by an estimated 26 checks cashed per year. This equates to $117 = $4.50 x 26.
- **Money orders:** We use a median fee of $1 multiplied by 2 transactions per month. This equates to $24 per year.
- **Pre-paid debit cards:** Based on findings in Wilshusen et al., 2013, we calculate the mean costs (including cardholder fees and ATM surcharges) incurred over the life of the prepaid card divided by the mean active life (in months) for general-purpose reloadable cards sold via the web, retailers, or financial institutions.[22] We then weight the values for each card type by the distribution of cards by issuer and multiply by 12 months. This is calculated as $110.79 = ($10.54 × 38.5% + $8.76 × 57.7% + $3.16 ×

[22] Wilshusen, Stephanie, et al., "Consumers' Use of Prepaid Cards: A Transaction-Based Analysis," paper presented at FDIC 3rd Annual Consumer Research Symposium, Federal Reserve Bank of Philadelphia, October 17, 2013.

3.8%) × 12. We adjust this value to 2023 dollars using the GDP implicit price deflator by multiplying by a factor of 1.364 for an estimate of approximately $151.[23]

- **Overdrafts:** We use a median overdraft fee of $29 multiplied by an estimated 4 overdrafts per year.[24] This equates to an annual cost burden of $116.
- **Account maintenance:** We use a median monthly maintenance fee of $7.88 multiplied by 12. This equates to an annual cost burden of approximately $95.
- **ATM fees:** We use an average fee of $4.73, which includes the average surcharge of $3.15 levied by the ATM owner along with the average fee of $1.58 charged by one's own bank for using an out-of-network ATM.[25] We assume 1 transaction per calendar quarter for an estimate of approximately $19 per year.
- **Payday loans:** Based on information in DFPI (2022), we take total fees on payday loans in California ($224M) divided by the total number of payday loans (5,359,132) to calculate an average fee per loan ($41.84).[26] We multiply this by an average of 6 loans per customer for an estimate of approximately $258 per year.
- **Pawn shop loans:** We use the national average pawn shop loan, $150 for about 30 days, at a fixed rate established by the California Financial Code at $15 for loans between $150 and $174.99 (2022 California Code Financial Code, Chapter 2, Section 21200.5). We assume three loans per year for a cost of $45 = $15 × 3.
- **Refund anticipation check or loan:** For loans, we calculate fees on an average loan amount of $500 for about 90 days assuming an annual percentage return (APR) of approximately 36 percent based on the average of rates from Intuit, H&R Block, and Jackson Hewitt. We note some tax preparation services offer no fee refund advance loans if one files taxes with them, which can come with a tax preparation fee. For refund anticipation checks, most providers have a fee of between $25 and $60 for federal tax refunds.[27] Therefore, we estimate an average cost of approximately $45 for either method.

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[23] _____.

[24] Greene, Meghan, Wanjira Cheg, MK Falgout, and Necati Celik, *FinHealth Spend Report 2023*, Financial Health Network, June 2023.

[25] Bennett, Karen and Matthew Goldberg, "Survey: ATM fees hit record high while overdraft and NSF fees fell sharply," edited by Beers, Brian: Bankrate. https://www.bankrate.com/banking/checking/checking-account-survey/.

[26] Castro Ramírez, Lourdes M., Clothilde V. Hewlett, Gregory Young, and Mona Elsheikh, *Annual Report of Payday Lending Activity Under the California Deferred Deposit Transaction Law*, California Department of Financial Protection and Innovation, July 2023.

[27] Jones, Maggie R., *A Loan by any Other Name: How State Policies Changed Advanced Tax Refund Payments*, U.S. Census Bureau, Working Paper 2016-04 June, 2016.

Table C.6. Estimated Annual Fees for the Unbanked and Underbanked in California

Financial Product	Population	Incidence of Fees				Estimated Annual Cost
		FinHealth Network[1]	FDIC Survey[2]	RAND Survey[3]	Average	
Transaction and Deposit Services						
Check cashing (non-bank)	Unbanked	--	18%	31%	25%	$117
	Underbanked	--	17%	28%	22%	
Money orders	Unbanked	--	28%	32%	30%	$24
	Underbanked	--	54%	53%	53%	
Pre-paid debit cards	Unbanked	--	23%	--	23%	$151
	Underbanked	--	10%	--	10%	
Overdraft fees	Underbanked	46%	--	--	46%	$116
Account maintenance fees	Underbanked	35%	--	--	35%	$95
ATM fees	Underbanked	56%	--	--	56%	$19
Credit Services						
Payday loans	Financially Vulnerable Households	12%	3%	15%	10%	$258
Pawn shop loans	Financially Vulnerable Households	15%	5%	11%	10%	$45
Refund anticipation check or loan	Financially Vulnerable Households	7%	4%	2%	4%	$45
Transaction and Deposit Services						**--**
Unbanked						**$70**
Underbanked						**$150**
Credit Services						**$30**

SOURCE: (1) Financial Health Network, FinHealth Spend Report 2023, accessed at https://finhealthnetwork.org/wp-content/uploads/2023/06/FinHealth-Spend-Report-2023.pdf on May 6, 2024; (2) 2021 FDIC National Survey of Unbanked and Underbanked Households; (3) 2023 RAND California Survey of Household Finance.

Based on evidence in the economic literature, we estimate benefits associated with avoided fees for transaction and deposit services. As shown above, we estimate California households would avoid average annual fees of $70 for the unbanked or $150 for the underbanked are as result of increased financial inclusion. Among the underbanked, approximately $100 in avoided fees are associated with traditional banking fees and $50 are associated with alternative financial services. There is insufficient evidence that increased financial inclusion would eliminate reliance on credit services, such as payday loans and pawn shop loans. However, to the extent that enrollment in CalAccount would reduce demand for alternative credit services, this would result in an additional average annual savings of $30 per household.

Savings

The CalAccount program would afford households access to online banking, which would provide real-time account monitoring, access to a debit card, access to any money stored in a checking account, and an insured vehicle for holding savings. In the context of benefit-cost analysis, Dupas and Robinson, 2013 note:

> *Savings accounts only improve welfare if they make it more likely that money is spent where it has the highest return (for example, if it allows a relatively high-return entrepreneur to increase investment) or if it reduces money spent on consumption that people later regret (temptation goods, for example).*[28]

Much of the benefits of financial inclusion literature relies on evidence from developing countries.[29] While the literature shows benefits from financial inclusion, it may be difficult to generalize these results to the United States. This feasibility study relies on evidence from larger economies to illustrate the types of benefits linked to financial inclusion. In one intervention in Mexico, debit cards were randomly issued to some bank account holders that received assistance payments.[30] The modal behavior without a debit card was to withdraw the entire balance after each assistance deposit. The study found beneficiaries with a debit card had accumulated savings equivalent to 2 percent of their annual income two years later. The authors identified two mechanisms explaining this effect: (1) debit cards reduced transaction costs of accessing money and (2) having access to checking accounts reduced monitoring costs, which led beneficiaries to check their accounts frequently and build trust in the bank.

From 2003 to 2005, the United Kingdom introduced an account ownership mandate as prerequisite to receive public benefits, including a tax-free subsidy afforded to all families with children—the Child Benefit. Beneficiaries could either open a government-sponsored, low-fee checking account with participating banks or maintain a transaction account through the postal service. Fitzpatrick (2015) estimated the causal effect of the electronic transfer mandate and owning a checking account on asset accumulation for previously unbanked households with

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[28] Dupas, Pascaline and Jonathan Robinson, "Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya," *American Economic Journal: Applied Economics,* Vol. 5, No. 1, 2013.

[29] Prina, Silvia "Banking the poor via savings accounts: Evidence from a field experiment," *Journal of Development Economics,* Vol. 115, 2015. ; Brune, Lasse, Xavier Giné, Jessica Goldberg, and Dean Yang, "Facilitating Savings for Agriculture: Field Experimental Evidence from Malawi," *Economic Development and Cultural Change,* Vol. 64, No. 2, January 2016. ; Dupas, Pascaline, Dean Karlan, Jonathan Robinson, and Diego Ubfal, "Banking the Unbanked? Evidence from Three Countries," *American Economic Journal: Applied Economics,* Vol. 10, No. 2, April 2018.

[30] Bachas, Pierre, Paul Gertler, Sean Higgins, and Enrique Seira, "How Debit Cards Enable The Poor To Save More," *The Journal of Finance,* Vol. 76, No. 4, August 2021.

children.[31] The study found no change in the likelihood of beneficiaries having a relatively large amount of assets (£1,500 or approximately $3,190 in 2023 U.S. dollars) but did find a statistically significant increase in the likelihood of having at least £10 in assets (approximately $21) and at least £100 (approximately $212) in assets. For beneficiaries, bank account ownership was associated with a 137 percent increase in total assets.

We use these two studies to estimate a range of potential savings benefits for the CalAccount Program. To use these estimates, we rely on two measures of household finances. First, to estimate California household income, we rely on the 2021 FDIC Survey. This survey reported median household income of $22,500 for the unbanked and $40,000 for the underbanked. Second, to estimate average household savings, we rely on national statistics from the Board of Governors of the Federal Reserve System's 2022 Survey of Consumer Finances.[32] Data show that households below the 20th income percentile, which includes the representative unbanked household in California, had a median value of $900 in transaction accounts (i.e., checking, savings, money market, call accounts, and prepaid debit cards). Households between the 20th and 40th income percentile, which includes the representative underbanked household in California, had a median value of $2,550 in transaction accounts. In this study, we only estimate a savings benefit for currently unbanked households. To the extent that reduced banking fees and increased financial literacy would result in additional savings for underbanked households, this impact may be higher. Table C.7 reports the estimated savings impact for unbanked households in California that enroll in the CalAccount Program.

Table C.7. Estimated Increase in Household Savings for Previously Unbanked CalAccount Participants

Bounds	Impact	Estimated savings per household	Source
Low-end	Increase in savings equal to 2 percent of annual income within 2 years	$450 = 2% × $22,500 median household income for the unbanked in California	• Bachas et al. (2021) • FDIC (2021)
High-end	137% increase in total financial assets	$1,233 = 137% × $900 median value of transaction accounts for households below the 20th income percentile	• Fitzpatrick (2015) • Federal Reserve (2023)

NOTE: (Bachas); (Federal Deposit Insurance Coporation); (Fitzpatrick); (Federal Reserve)

This amount of savings has the potential to have a significant impact on the well-being of low-income households. In 2022, the Federal Reserve found that only 63 percent of households could cover an emergency expense of $400 using cash, savings, or a credit card that could be

[31] Fitzpatrick, Katie, "Does "banking the unbanked" help families to save? Evidence from the United Kingdom," *Journal of Consumer Affairs,* Vol. 49, No. 1, Spring 2015.

[32] Federal Reserve, "2022 Survey of Consumer Finances." https://www.federalreserve.gov/econres/scfindex.htm

paid off at the next statement.[33] Increased savings of even $450 could potentially ease the household burden of financial insecurity and reduce the need for short term lending in emergencies (e.g., a car repair or medical bill).

Benefits to Businesses

Financial institutions that participate in the CalAccount Program would realize benefits through two mechanisms. First, new enrollments would increase deposits, which could increase a bank or credit union's ability to lend. In a high-interest rate environment, loans may be relatively more profitable to financial institutions. Second, increased use of debit cards issued by a bank or credit union would increase interchange fees paid by retailers. As previously noted, some portion of these "benefits" would be direct transfers from other groups, such as from other financial institutions whose customers enroll and transfer funds into CalAccounts and retailers who pay interchange fees on debit card purchases. These offsetting impacts are also included in the estimated "costs" of the CalAccount Program. However, new deposits from previously unbanked households, increased savings, and increased use of debit cards in lieu of cash transactions would result in direct benefits for financial institutions.

To estimate the magnitude of these impacts, we look at historical evidence from banks. To estimate the typical amount of household assets for the California unbanked and underbanked populations, we use the median value of transaction accounts from the 2022 Survey of Consumer Finances. We then estimate the bank's rate of return on those deposits. Between 2017 and 2023 banks had an average annual return on assets of 1.10 percent. We estimate that financial institutions participating in the CalAccount Program would make loans or buy securities on new deposits less their capital requirements, which we assume to be approximately 8 percent—although they could be higher for systemically important banks.[34] We estimate the bank's average annual return on deposits would be between approximately $9 and $26 per account.

To estimate the benefits associated with revenues from interchange fees due to increased debit card use, we rely on several assumptions. First, we estimate the average interchange fee per transaction. In 2022, the average interchange fee on single-message transactions—this is the typical debit card transaction—was $0.25 per transaction.[35] We then estimate the typical number of monthly/annual transactions for the unbanked and underbanked population. The Federal Reserve Bank of Atlanta reports that the unbanked population that used debit cards reported an average of 3.7 transactions per month (44.2 per year) compared to the entire population of debit card users that reported an average of 14.4 transactions per month (172.5 per year) in 2022.[36]

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[33] _____, *Economic Well-Being of U.S. Households in 2022*, May 2023.

[34] _____, *Large Bank Capital Requirements*, Board of Governors of the Federal Reserve System, July 2023.

[35] The average single-message transaction value across all networks was $44.25. The typical interchange fee was approximately 0.57% of the average transaction value; (_____, *Regulation II (Debit Card Interchange Fees and Routing)*, Board of Governor's of the Federal Reserve System, 2023.)

[36] Federal Reserve Bank of Atlanta, *2022 Survey and Diary of Consumer Payment Choice*, August 3, 2023.

Recent evidence suggests that debit card use has increased substantially over the last several years. The 2022 Federal Reserve Payments Study shows that between 2015 and 2021 debit card transactions increased by more than 50 percent—or an annualized rate of approximately 6.045 percent.[37] We estimate that this trend will continue as some businesses continue to move away from cash transactions—a many did during the COVID-19 pandemic—and more businesses rely on point of sale (POS) systems. Increased debit card use in underserved communities could potentially accelerate this trend in financial technology adoption.[38] Figure C.3 shows the estimated annual number of debit card transactions for unbanked households versus the entire population of debit card users through 2035.

Figure C.3. Projected Annual Number of Debit Card Transactions

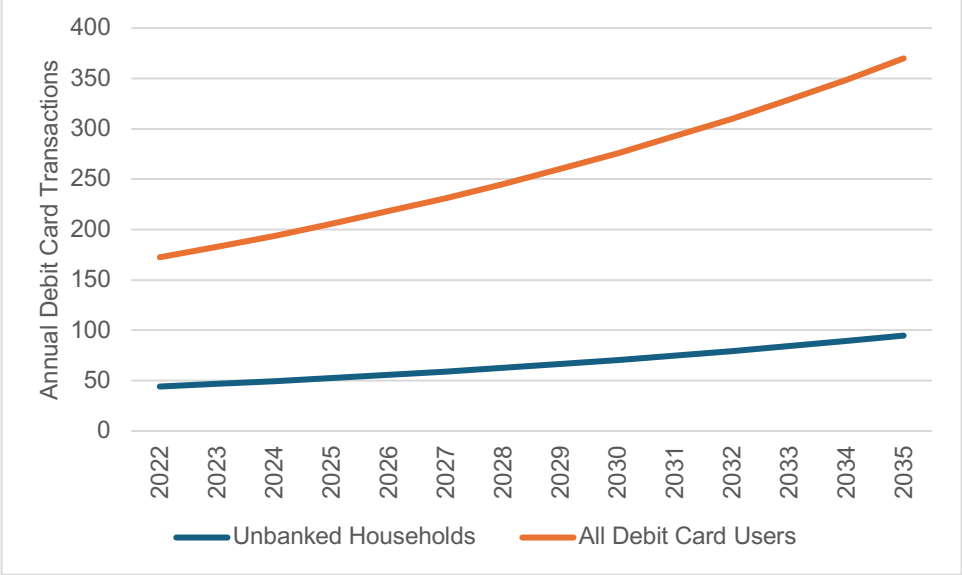

Table C.8. reports the estimated revenues of financial institutions participating in the CalAccount Program. While these revenues are reported as "benefits to businesses" in this section, AB 1177 mandates participating financial institutions have a revenue-sharing arrangement with the State that will be reviewed on an annual basis. This model would potentially be similar to the administration of the Employment Development Department's (EDD) unemployment insurance pre-paid debit card program.[39] The revenue-sharing arrangements between the State and any financial institutions are unknowable at this time and subject to change throughout the program if and when the CalAccount Program is implemented.

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[37] Federal Reserve, *2022 Federal Reserve Payments Study*, Board of Governors of the Federal Reserve System, July 27, 2023.

[38] Higgins, Sean, *Financial Technology Adoption: Network Externalities of Cashless Payments in Mexico* Northwestern University: Department of Finance, December 23, 2022.

[39] Hepler, Lauren, "How EDD and Bank of America make millions on California unemployment," in *CalMatters*, February 5, 2021.

Table C.8. Estimated Financial Institution Revenues Associated with CalAccounts

Outcome	Impact	Estimated revenue per account	Source
Return on deposits	1.10% return on assets less capital requirements	$9.11 = 1.10% rate of return × $900 in transaction accounts × 92% of assets after capital requirements (unbanked) $25.81 = 1.10% rate of return × $2,550 in transaction accounts × 92% of assets after capital requirements (underbanked)	• FDIC (2024) • Federal Reserve (2023a) • Federal Reserve (2023b)
Interchange fee revenue	Average interchange fee of $0.25 per transaction on new debit cards	$14 to $27 = $0.25 avg. interchange fee × estimated number of debit card transactions per year	• Federal Reserve Bank of Atlanta (2023) • Federal Reserve Payments Study (2023) • Federal Reserve Regulation II (2023)

Note: (Federal Reserve Bank of Atlanta); (Federal Reserve); (Federal Reserve)

Non-monetized Benefits

Additional benefits to individuals and businesses that cannot be easily monetized include impacts on financial outcomes (e.g., income stability),[40] health outcomes,[41] and public safety.[42]

[40] Barr, Michael S., "Financial Services, Savings And Borrowing Among Low-And Moderate-Income Households: Evidence From The Detroit Area Household Financial Services Survey," *Journal of Labor Economics,* Vol. 36, No. 4, 2008. ; Célerier.; Despard, Mathieu R., Shenyang Guo, Michal Grinstein-Weiss, Blair Russell, Jane E. Oliphant, and Anna deRuyter, "The mediating role of assets in explaining hardship risk among households experiencing financial shocks," *Social Work Research,* Vol. 42, No. 3, September 2018. ; Gjertson, Leah, "Emergency saving and household hardship," *Journal of Family and Economic Issues,* Vol. 37, December 2014. ; Hardy, Bradley L., "Income Instability and the Response of the Safety Net," *Contemporary Economic Policy,* Vol. 35, No. 2, April 2017.

[41] Aguila, Emma, Marco Angrisani, and Luisa R. Blanco, "Ownership of a bank account and health of older Hispanics," *Economics Letters,* Vol. 144, July, 2016. ; Eisenberg-Guyot, Jerzy, Caislin Firth, Marieka Klawitter, and Anjum Hajat, "From payday loans to pawnshops: Fringe banking, the unbanked, and health," *Health Affairs,* Vol. 37, No. 3, March 2018. ; Fitzpatrick, Katie, "Bank accounts, nonbank financial transaction products, and food insecurity among households with children," *Journal of Consumer Affairs,* Vol. 51, No. 3, Fall 2017.

[42] Agan, Amanda Y., and Michael D Makowsky, "The Minimum Wage, EITC, and Criminal Recidivism," *Journal of Human Resources,* Vol. 58, No. 5, September 2023. ; Armey, Laura E., Jonathan Lipow, and Natalie J. Webb, "The impact of electronic financial payments on crime," *Information Economics and Policy,* Vol. 29, December 2014. ; Bogar, Sandra and Kirsten Beyer, "Green Space, Violence, and Crime: A Systematic Review," *Trauma, Violence & Abuse*, March 2015. ; Branas, Charles C., Eugenia South, Michelle C. Kondo, Bernadette C. Hohl, Philippe Bourgois, Douglas J. Wiebe, and John M. MacDonald, "'"Citywide cluster randomized trial to restore blighted vacant land and its effects on violence, crime, and fear,"'" *Proceedings of the National Academy of Sciences,* Vol. 115, No. 12, February 2018. ; Chalfin, Aaron, Benjamin Hansen, Jason Lerner, and Lucie Parker, "Reducing Crime Through Environmental Design: Evidence from a Randomized Experiment of Street Lighting in New York City," *Journal of Quantitative Criminology* Vol. 38, No. 1, 2022, pp. 127-157. ; Foley, C. F., "Welfare Payment and Crime," *The Review of Economics and Statistics,* Vol. 93, No. 1, February 2011. ; Freedman

Other potential benefits of the CalAccount Program could include increased trust in banks by historically marginalized groups, improved financial literacy, an increase in household savings, and increased adoption of financial technology by retailers.[43] The State's outreach efforts to enroll a substantial number of unbanked and underbanked households would also subsidize and complement the marketing efforts of participating financial institutions. Banks report that the average acquisition cost of a new customer is approximately $500 (Fiworks, n.d.), while the state could likely reach a larger audience at a lower cost per enrollment based on similar outreach programs for other state government programs. Table C.9 summarizes the non-monetized benefits of the CalAccount Program.

Table C.9. Summary of Non-monetized CalAccount Impacts

Category	Description
Financial outcomes	Financial inclusion has been shown to promote savings, wealth, financial literacy, and trust in banks as well as reduce financial insecurity. Research also shows that financial inclusion can ease financial hardship during natural disasters. Conversely, the use of alternative financial services is associated with lower financial literacy as well as increased difficulty paying rent, mortgage, and utility bills, higher rates of public assistance usage, and higher rates of missed childcare payments. However, research shows that loss of access to payday loans is correlated with a higher likelihood of bank overdrafts and late bill payments and deterioration in self-reported financial condition.
Health outcomes	Research also links banked status to improved health and lower food insecurity. Use of alternative financial services has been linked with worse health outcomes. Within the armed forces, use of payday loans has been associated with lower job performance, readiness, and retention.
Public safety	While the literature generally suggests that increased income reduces crime, the income benefit to individuals migrating from transaction-based financial services to formal banking is likely small in comparison to other cash transfer programs. Furthermore, the evidence is limited. Additionally, there is no causal evidence linking "fringe" banks with crime, although alternative financial services tend to be concentrated in areas with elevated crime rates. Reducing the circulation of physical cash, such as through increased use of debit cards, direct deposit, and electronic money transfers, could potentially decrease the prevalence of street crimes.
Financial technology	Evidence suggests the increased use of debit cards led small retailers (e.g., corner stores) to increase adoption of POS systems (Higgins, 2022). When program beneficiaries switched from using cash to debit cards, an indirect network externality was that more corner stores adopted POS systems—as a result, plausibly due to the added convenience, other (wealthier) consumers shifted 13% of their typical supermarket consumption to small retailers, whose sales and profits increased. There was no observed effect on supermarkets, which generally already used POS systems. Similar effects were noted with adoption of mobile payment technologies (Agarwal, et al. 2022).

Freedman, Matthew, and Emily G. Owens, "Low-income housing development and crime," *Journal of Urban Economics,* Vol. 70, No. 2, September-November 2011. ; Kubrin, Charis E., and John R. Hipp, "Do Fringe Banks Create Fringe Neighborhoods? Examining the Spatial Relationship between Fringe Banking and Neighborhood Crime Rates," *Justice Quarterly,* Vol. 33, No. 5, 2016. ; Palmer, Caroline, David C. Phillips, and James X. Sullivan, "Does emergency financial assistance reduce crime?," *Journal of Public Economics,* Vol. 169, January 2019. ; Tuttle, Caroline, "Snapping Back: Food Stamp Bans and Criminal Recidivism," *American Economic Journal: Economic Policy,* Vol. 11, No. 2, May 2019. ; Varjavand, Reza, "Growing Underground Economy: The Evidence, the Measures, and the Consequences," *Journal of International Management Studies,* Vol. 11, 2011. ; and Wright Wright, Richard, Erdal Tekin, Volkan Topalli, Chandler McClellan, Timothy Dickinson, and Richard Rosenfeld, "Less Cash, Less Crime: Evidence from the Electronic Benefit Transfer Program," *The Journal of Law and Economics,* Vol. 60, No. 2, 2017, pp. 361-383.

[43] Higgins.

Summary of Benefits

Monetized benefits are estimated for individuals and businesses in California. The impacts to individuals include avoided fees and increased household savings. Based on our stated assumptions, the savings impact largely occurs in program years 2 through 4 as households transition to a permanent higher level of precautionary savings. The impacts to businesses include increased revenue through returns on deposits and interchange fees. Some of the increased business revenues of financial institutions that participate in the CalAccount Program may be split with the State as part of the revenue-sharing mandate in AB 1177. That financial arrangement will be negotiated between the parties on an ongoing basis and reviewed each year. For transparency, these monetized impacts are reported below as a benefit to businesses. Potential revenue sharing between financial institutions and the State will be discussed further below. Table C.10 summarizes the estimated monetized benefits of the CalAccount Program by year. This table reports the midpoint estimates, which are calculated as the average of the low- and high-end estimates, for each policy option or scenario. Additional sensitivity analyses are included later in this report.

Table C.10. Summary of Monetized Benefits for Individuals and Businesses by Year ($ Millions)

Year	Scenario 1		Scenario 2		Scenario 3	
	Individuals	Businesses	Individuals	Businesses	Individuals	Businesses
2026	$38.7	$10.6	$46.3	$12.7	$51.8	$14.2
2027	$115.0	$22.2	$136.4	$26.5	$150.8	$29.6
2028	$152.6	$23.6	$180.2	$28.1	$197.9	$31.4
2029	$116.2	$24.7	$137.8	$29.4	$152.3	$32.8
2030	$79.2	$25.4	$94.7	$30.3	$105.9	$33.8
2031	$79.6	$26.2	$95.3	$31.2	$106.5	$34.8
2032	$80.0	$27.0	$95.7	$32.2	$107.0	$35.9
2033	$80.2	$27.8	$96.0	$33.2	$107.4	$37.0
2034	$80.5	$28.7	$96.3	$34.2	$107.7	$38.1
2035	$80.7	$29.6	$96.6	$35.3	$108.0	$39.3

Note: A portion of the monetized benefits to financial institutions participating in the CalAccount Program may be subject to a revenue-sharing agreement with the state to be negotiated between the parties and reviewed each year. This table reports midpoint estimates, which are calculated as the average of the low- and high-end estimates. These estimates assume 25 percent (low-end) to 75 percent (high-end) of unbanked and underbanked households become aware of the CalAccount Program.

Direct Costs

In this section, we evaluate the potential costs of implementing the CalAccount Program to individuals and businesses. Several groups of stakeholders are likely to be impacted by the implementation of the program: individuals, financial institutions, alternative financial services, and merchants. As discussed above, many of the "benefits" realized by some groups are direct monetary transfers from other groups. For example, some banks and credit unions will lose customer deposits and the revenues associated with those accounts if those customers enroll and transfer funds into CalAccounts. The costs of establishing the CalAccount Program, including marketing/outreach, as well as other costs to California state agencies are discussed in the next section on fiscal impacts.

Costs to Individuals

The CalAccount Program would provide a no-fee checking account to unbanked or unbanked Californians. Therefore, the primary cost to individuals would be the time it takes to enroll in the program. We assume individuals would undertake this task on their own unpaid time. Thus, we calculate the value of time using estimates of the median post-tax wages of California workers, or $22.38 per hour. We multiply this value by the average time it would take an individual to open a CalAccount. We estimate it would take participants about 15 minutes, on average, to open an account assuming there are several options for enrollment such as online or in-person at a retail bank location. We also account for the time it would take for an individual to travel to/from the nearest available bank branch, if needed—assuming approximately 30 minutes on average. For underbanked individuals, we double this estimate from 45 minutes to 90 minutes to account for the additional time it would take to visit two bank locations and request to transfer funds from another checking account to a CalAccount. Overall, we estimate this one-time burden to be between approximately $17 and $34 per individual.

Costs to Financial Institutions

First, we estimate the costs to financial institutions that are not participating in the CalAccount Program. The program would provide an alternative to traditional banks and credit unions that provide a basic checking accounts and generally charge certain fees. Specifically, it would compete against other low-fee or no-fee checking accounts available to California households. We assume underbanked households that enroll in the program would transfer any existing funds in basic checking accounts into their CalAccount. Therefore, the potential costs to other financial institutions would be the loss of any fees associated with those accounts (e.g., maintenance or overdraft fees), the loss of interchange fees on debit cards tied to those accounts, and the loss of the returns on those deposits. These impacts are all considered transfers because they are equally offset by gains to another party—either financial institutions that administer the CalAccount Program, the state of California through any revenue-sharing agreement associated

with the program, or account holders themselves. In a traditional BCA framework these direct impacts are considered to have no net impact on social welfare. However, later in this report we discuss reasons that these transfers, specifically those to unbanked and underbanked households, are socially desirable—even from a welfare perspective.

As we note in the discussion of benefits to individuals, the average underbanked household pays approximately $100 in banking fees per year. This loss of fee revenue would likely be distributed across many financial institutions and is unlikely to produce a significant burden on any individual bank or credit union. However, the financial institution(s) that administer the CalAccount Program stand to gain from both the transfer of underbanked deposits and the state-sponsored outreach campaign to increase program enrollment among the unbanked. Overall, these transfers among financial institutions and between financial institutions, account holders, and merchants would total in the tens of millions of dollars per year, or higher, depending on enrollment rates. Importantly, they do not reflect new economic activity in California but rather a reallocation of assets and redistribution of income.

Costs to Alternative Financial Services Providers

Similar to financial institutions that are not participating in the CalAccount Program, providers of alternative financial services would bear the cost of customer attrition to the extent that the program reduced demand for check cashing and other transaction services. As we note in the discussion of benefits to individuals, the average household pays between approximately $50 (underbanked) and $70 (unbanked) in fees each year for alternative transaction services—plus about $30 per year in fees for alternative credit services (e.g., payday loans and pawn shop loans). In total, households likely to enroll in the CalAccount Program pays tens of millions of dollars each year in fees for alternative financial services that could potentially be avoided as a result of increased financial inclusion.

Costs to Merchants

In communities with a larger proportion of unbanked households, many individuals likely rely primarily on cash for most retail transactions. The average unbanked household conducts an average of 20.4 cash transactions per month with an average transaction value of $53 compared with an average of 8.7 cash transactions per month with an average transaction value of $35 for all households.[44] Increased debit card use among CalAccount users may increase demand for financial technology (i.e., POS systems) and would increase fees paid by retailers to process those transactions. As noted above, in 2022, the average interchange fee for debit cards was $0.25 per transaction.[45] These costs would be borne by retailers and would ultimately reduce their profits or be passed onto consumers through higher prices. We estimate that these

[44] Federal Reserve Bank of Atlanta.

[45] Federal Reserve.

interchange fees, in aggregate, would likely be in the range of $1 million to $6 million per year accounting for only the unbanked population—noting that in the baseline we expect debit card use to increase over time for all households given recent historical trends.

Costs to Landlords

AB 1177 states that landlords that currently do not accept all payment methods would be required to accept payment of rent and/or security deposit by an electronic funds transfer from a CalAccount. Data from the Boston Federal Reserve show that, as of 2014, approximately 50 percent of U.S. households pay their monthly rent by check, bank account number payment, or online bank payment; approximately 3 percent pay by credit card, debit card, or deduction from income; and 3 percent pay by another method.[46] The remaining payment methods, cash (22 percent) or money order (16 percent), could presumably be paid from a CalAccount instead. The relatively high use of cash or money orders may suggest that in some cases landlords do not accept payment by electronic funds transfer or tenants are unwilling to pay using these methods. However, it is challenging to disentangle the reasons tenants are not using an electronic funds transfer to pay rent and whether they would change their behavior given additional payment options, such as having a bank account. California laws reflect a general intent to allow tenants to pay rent via a method of their choosing.[47] The law limits landlords' ability to require tenants to only pay rent electronically or only pay in cash. Banks may charge landlords a fee for taking ACH payments, particularly if there is a third party payment processor, but many banks do not.[48] Notably, ACH fees tend to be less than fees associated with accepting card payments. We anticipate that a relatively small number of California landlords would be impacted, and those impacts would be small and negative – but could be positive if landlords who received payment via electronic funds transfer avoided other costs (e.g., late rent checks or debit card transaction fees). For this analysis, we estimate this will be a *de minimis* cost to landlords because relatively few landlords are likely to be impacted.

Costs to Employers

AB 1177 requires employees with more than 25 employees or independent contractors to maintain payroll direct deposit that would enable voluntary participation in the CalAccount Program. Nacha, previously the National Automated Clearinghouse Association, estimates that 93 percent of American workers are paid via direct deposit.[49] For those that do not, several

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[46] Zhang, David, "How Do People Pay Rent?," *Federal Reserve Bank of Boston Research Data Reports,* Vol. 16, No. 2, June 13, 2016.

[47] Cal. Civ. Code § 1947.3

[48] Ewin, Brad, "ACH fees - how much does ACH cost?," edited by Foster, Paul, GoCardless, 2023.

[49] Nacha, "Nacha Launches New Campaign Highlighting the Many People Benefiting from Direct Deposit," February 28, 2024.

payroll services providers list rates at approximately $40 per month plus $5 or $6 per employee per month.[50] According to the Employment Development Department, more than 90 percent of California firms have less than 20 employees.[51] For this analysis, we estimate there will be a *de minimis* cost to employers because most California employers already use payroll services for direct deposit.

Summary of Costs

Table C.11 summarizes the costs to individuals, financial institutions, alternative financial services, and merchants by year.

Table C.11. Summary of Costs, by Group and Year ($ Millions)

Year	Scenario 1				Scenario 2				Scenario 3			
	Ind.	FI	AFS	Retail	Ind.	FI	AFS	Retail	Ind.	FI	AFS	Retail
2026	$8.7	$31.4	$16.3	$1.0	$10.5	$37.7	$19.3	$1.2	$11.7	$41.6	$21.5	$1.2
2027	$8.8	$63.5	$32.7	$2.1	$10.6	$76.3	$38.9	$2.5	$11.8	$84.1	$43.1	$2.5
2028	$0.1	$64.3	$32.8	$2.3	$0.1	$77.2	$39.1	$2.7	$0.1	$85.0	$43.4	$2.7
2029	$0.1	$65.1	$33.0	$2.4	$0.1	$78.2	$39.3	$2.8	$0.1	$86.1	$43.6	$2.8
2030	$0.1	$65.9	$33.2	$2.6	$0.1	$79.1	$39.5	$3.0	$0.1	$87.2	$43.9	$3.0
2031	$0.1	$66.7	$33.4	$2.8	$0.1	$80.1	$39.7	$3.2	$0.1	$88.3	$44.1	$3.2
2032	$0.1	$67.5	$33.5	$2.9	$0.1	$81.1	$39.9	$3.4	$0.1	$89.4	$44.2	$3.4
2033	$0.1	$68.3	$33.6	$3.1	$0.1	$82.0	$40.0	$3.6	$0.1	$90.4	$44.4	$3.6
2034	$0.1	$69.1	$33.7	$3.3	$0.1	$83.0	$40.1	$3.9	$0.1	$91.5	$44.5	$3.9
2035	$0.0	$69.9	$33.8	$3.5	$0.0	$83.9	$40.2	$4.1	$0.1	$92.6	$44.6	$4.1

NOTE: This table reports midpoint estimates, which are calculated as the average of the low- and high-end estimates. These estimates assume 25 percent (low-end) to 75 percent (high-end) of unbanked and underbanked households become aware of the CalAccount Program.
Ind. = Individuals
FI = Financial Institutions
AFS = Alternative Financial Services
Retail = Merchants

Fiscal Impacts

This section describes the costs to the California General Fund and California state agencies. According to AB 1177, the Board would identify and select a program administrator and a financial services network administrator. The costs of establishing the CalAccount Program would be shouldered by a depository financial institution (or institutions) but funded through a

[50] Hoory, Leeron, "Payroll Service Cost Guide (2024)," *Forbes Advisor*. As of May 10, 2024:.

[51]

contract (or contracts) with the State. Financial institutions that field proposals to administer the CalAccount Program will be best informed of the program's costs anticipated costs. Those institutions we interviewed suggested that such information (e.g., average enrollment cost) is proprietary and could not be shared for this report.

For this analysis, we develop notional program cost estimates for three scenarios: (1) mobile or online-only banking with access to an ATM network, (2) access to mobile or online banking and traditional brick-and-mortar bank or credit union branches, and (3) an expanded network that includes all of the above as well as banking access in non-traditional locations, such as federal, state, and/or city-owned buildings (e.g., town halls or post offices). The program costs are estimated based on various assumptions about the fixed and variable costs of developing administrative policies and procedures, investing in financial technology, conducting enrollment and customer identity verification, staffing, and other costs. All of these costs are estimated under both low- and high-end estimates of enrollment. Not all of these costs to financial institutions will necessarily be passed on to the State. For example, banks typically waive monthly maintenance fees for customers with account balances above a certain threshold. Financial institutions that participate in the CalAccount Program may also factor in anticipated revenues through projected returns on deposits and revenue from interchange fees when developing cost proposals to administer and maintain CalAccounts. The terms of the contract would be negotiated between the state and the participating financial institution(s).

First, we estimate the costs of establishing the CalAccount Program. Then we discuss possible fee structures and potential benefits for the State through the revenue-sharing arrangement with the financial services network administrator. Finally, we discuss other impacts to state and local agencies (e.g., enforcement costs). We do not anticipate that there will be any direct costs to state or local entities as businesses or employers.

Establishing the CalAccount Program

We first identify the primary features associated with the CalAccount Program and estimate their costs. Table C.12 summarized the notional costs of establishing the program. These costs include:

- **Developing policies and procedures:** Financial institutions we interviewed indicated that setting up the program and contracting with the state of California would take a significant amount of time and resources. Notionally, we represent this cost as the fully burdened labor hours of a dedicated program manager, compliance officer, and attorney for approximately 3 to 6 months for each participating financial institution.[52] We estimate this labor cost to be approximately $220,000 to $440,000.

[52] We rely on estimated hourly wage rates from the BLS OES for California workers described in the section on labor costs adjusted by a factor of two to account for fringe benefits and overhead.

- **Website development and maintenance:** Industry sources suggest the cost to develop software for a banking website is approximately $150,000.[53] We estimate the annual IT maintenance cost is approximately 20 percent of the upfront cost.
- **Mobile app development and maintenance:** Industry sources suggest the cost of developing a banking app is between $300,000 and $500,000.[54] We estimate the annual IT maintenance cost is approximately 20 percent of the upfront cost.
- **Bank infrastructure (e.g., ATMs):** We use the cost of acquiring and installing ATMs as a proxy for the physical infrastructure banks would need to accommodate new customers while providing a robust and geographically expansive network of ATMs. Specifically, we estimate the cost of a 10 percent expansion of an ATM network of between 850 and 2,500 branch locations.[55] We estimate the unit cost of a new ATM to be between $30,000 and $44,000 including installation. We estimate the annual IT maintenance cost is approximately 20 percent of the upfront cost.
- **Alternative banking locations (Scenario 3):** We estimate the cost of expanding physical access to banking services at non-traditional locations, such as a post office. First, we estimate the cost of a sub-lease for a small (200 sq. ft.) office or kiosk at an average cost of approximately $8,200/year (assuming an average $41 per sq. ft. lease for California Class B or C office space).[56] Then we estimate the fully burdened labor cost of a full time equivalent (FTE) state employee at approximately $100,000 per year, including fringe benefits and overhead.[57] Finally, we estimate the cost of a freestanding or stand-alone ATM at approximately $3,000 (including installation),

[53] FI GROW Solutions, 2023 Olmstead, Elizabeth, "Episode 58 - How Much Should Your Bank or Credit Union REALLY Spend on a New Website?," in *Hit Record*: figrow. https://www.figrow.com/blog/how-much-should-your-bank-or-credit-union-really-spend-on-a-new-website;A, Hasna and Brian Fajar Mauladhika, "How Much Does It Cost to Build a Website in 2024?," in *Hostinger Tutorials*. https://www.hostinger.com/tutorials/website-cost; WebFX WebFX, "How Much Should a Website Cost in 2024?." https://www.webfx.com/web-design/pricing/website-costs/.

[54] Srivastava, Sudeep, "How much does it cost to create an app in 2024? A detailed guide," Appinventiv. https://appinventiv.com/guide/mobile-app-development-cost/. ; Anonymous, "Native Application Vs Hybrid Application: A Detail Guide," in koombea. https://www.koombea.com/blog/native-application-vs-hybrid-application-a-detail-guide/; Osypenko, Anastasia, "How Much Does it Cost to Develop a Mobile Banking App?," in *MadAppGang*. https://madappgang.com/blog/banking-app-development-cost/, n.d.

[55] This estimate is based on the number of retail branches among the three largest banks in California, which have a combined 2,500 branches in the state or an average of approximately 850 branches per bank. FDIC, Summary of Deposits, n.d. (Federal Deposit Insurance Coporation, "Deposit Market Share Reports - Summary of Deposits," UndatedAs of Feburary 12, 2024:

https://www7.fdic.gov/sod/ Accessed at https://www7.fdic.gov/sod/ on February 12, 2024.

[56] CommercialCafe, "Los Angeles Office Rent Price & Sales Report," Undated.

[57] Based on the CalHR State of California Civil Service Pay Scale (2020) we calculate the average salary for potentially similar level occupations, including Business Service Assistant, Benefit Program Specialist, and Library Technical Assistant.

cash replenishing services of approximately $700 per year, and maintenance costs of approximately $500 per year.[58]

- **Call center staffing:** We assume that any bank or credit union that might act as a financial agent for the CalAccount Program has existing call center infrastructure. Therefore, we only estimate the incremental labor cost of staffing up to handle the increase in customer volume due to CalAccount enrollments. To estimate potential staffing needs, we look at call volume data for the Bureau of the Fiscal Service's Direct Express® Debit MasterCard® program.[59] The program handled about 7.8 million calls a year between 2021 and 2023 for approximately 3.8 million accounts. Assuming that each call lasted between 5 and 10 minutes (a typical target for U.S. retail banks), this implies that each call center FTE equivalent worker would sufficiently cover 25,000 to 50,000 customers per year. Based on this estimate and the projected enrollments for the CalAccount Program, we calculate that call centers would need to staff a minimum of 6 to 25 additional FTE staff at a cost of approximately $700,000 to $2.1 million per year.[60] Given projected enrollments, we anticipate existing call centers and staff would be able to accommodate some of the increased call volume, so we do estimate costs associated with establishing a new dedicated call center.
- **Enrollment:** We estimate CalAccount Program enrollment costs as a direct function of the take-up rate among unbanked and underbanked households. Numerous stakeholders indicated that customer identity verification would be a significant barrier to implementing the program. Therefore, we estimate enrollment costs based on information collected on financial institution compliance with existing know your customer (KYC) requirements. The U.S. Government Accountability Office (GAO) conducted a case study of 11 banks to analyze the burden associated with Bank Secrecy Act/anti-money laundering (AML) compliance activities. GAO estimated the

[58] Osypenko, Anastasia, "How Much Does it Cost to Develop a Mobile Banking App?," in MadAppGang. https://madappgang.com/blog/banking-app-development-cost/, n.d.;

Smusin, Mitya, "How Much Does it Cost to Develop a Mobile Banking App? The Full Guide," February 17, 2023. https://yellow.systems/blog/how-much-does-mobile-banking-app-development-cost.

[59] See Bureau of the Fiscal Service, *Direct Express® Program Financial Agent Selection Process: Requirements Document and Solicitation of Services*, December 13, 2023.

[60] These costs may be higher. Comerica Bank spent approximately $7.8 million for improvements to call centers for the Direct Express program, which had up to 4 million beneficiaries. (Office of Inspector General, *Fiscal Service Needs to Improve Program Management of Direct Express* Treasury, Department of, OIG-14-031, March 26, 2014) For California's EDD program, Bank of America saw employment in call centers jump from 300 to 6,000 by the end of 2020 amid record unemployment claims and rampant fraud during the COVID-19 pandemic (Hepler, Lauren, "Bank of America says it lost 'hundreds of millions' on California's unemployment fiasco," in *CalMatters*, Januray 28, 2021. https://calmatters.org/economy/2021/01/bank-of-america-lost-hundreds-of-millions-on-california-unemployment-fiasco/).

average cost of customer due diligence was approximately $20 per new account (in 2023 dollars).[61]

- **Account Maintenance:** This category accounts for various administrative tasks associated with maintaining a customer checking account, including ongoing customer due diligence activities. Various industry sources suggest it costs banks, on average, between $175 and $400 per year to maintain a customer account.[62] However, these costs are generally offset by fees or revenue associated with the account, for example by issuing loans or purchasing securities. Banks that charge monthly maintenance fees have a median fee of $7.88, or approximately $95 per account per year. We do not explicitly include this cost in the estimate of the total program costs because we believe it would double count costs that are already included elsewhere.
- **Issuing debit cards:** We estimate that financial institutions would incur costs to issue debit cards to new customers; however, we note that many financial institutions do not charge customers for new or replacement debit cards. Those banks that assess fees generally charge a few dollars based on their posted fee schedules; most banks charge fees for expedited/overnight delivery. Similarly, Higgins (2022) found it cost banks approximately $3 to issue a debit card with a secure Europay, Visa, and Mastercard (EMV) chip.[63]

Table C.12. Notional Costs of Establishing the CalAccount Program

Unit Cost	Upfront Cost	Recurring Costs
Fixed Costs		
Program Mgmt., Legal, Compliance	$220,000 to $440,000	N/A
Website Development & Maintenance	$150,000	$30,000 (20% of upfront cost)
Mobile App Development & Maintenance	$300,000 to $500,000	$60,000 to $100,000 (20% of upfront cost)
Bank Infrastructure (e.g. ATMs)	$30,000 to $44,000 per ATM, incl. installation	$4,400 to $6,800 per ATM (20% of upfront cost, ex. Installation)

[61] U.S. Government Accountability Office, Anti-Money Laundering: Opportunities Exist to Increase Law Enforcement Use of Bank Secrecy Act Reports, and Banks' Costs to Comply with the Act Varied, GAO-20-574, September 22, 2020.

[62] Branton, Mike and Tyler Spaid, "The Profitability of the Average Checking Account," BankDirector, April 22, 2013. https://www.bankdirector.com/article/the-profitability-of-the-average-checking-account/ and Moebs, Mike, "What does your checking service cost?," in *BankingExchange*, February 3, 2017. https://www.bankingexchange.com/community-banking/item/6689-what-does-your-checking-service-cost.

[63] Higgins.

Unit Cost	Upfront Cost	Recurring Costs
Alternative Banking Locations	$8,200/year (lease) plus $3,000 per ATM	$100,000 staff + $540 per ATM (20% of upfront cost, ex. Installation)
Variable Costs		
Call Center Staffing	N/A	$650,000 to $2.1M
Enrollment (i.e., KYC)	$20 per enrollment	New enrollments only
Issue Debit Cards	$3 per enrollment	$3 replacement every 3 years

Fee Structure

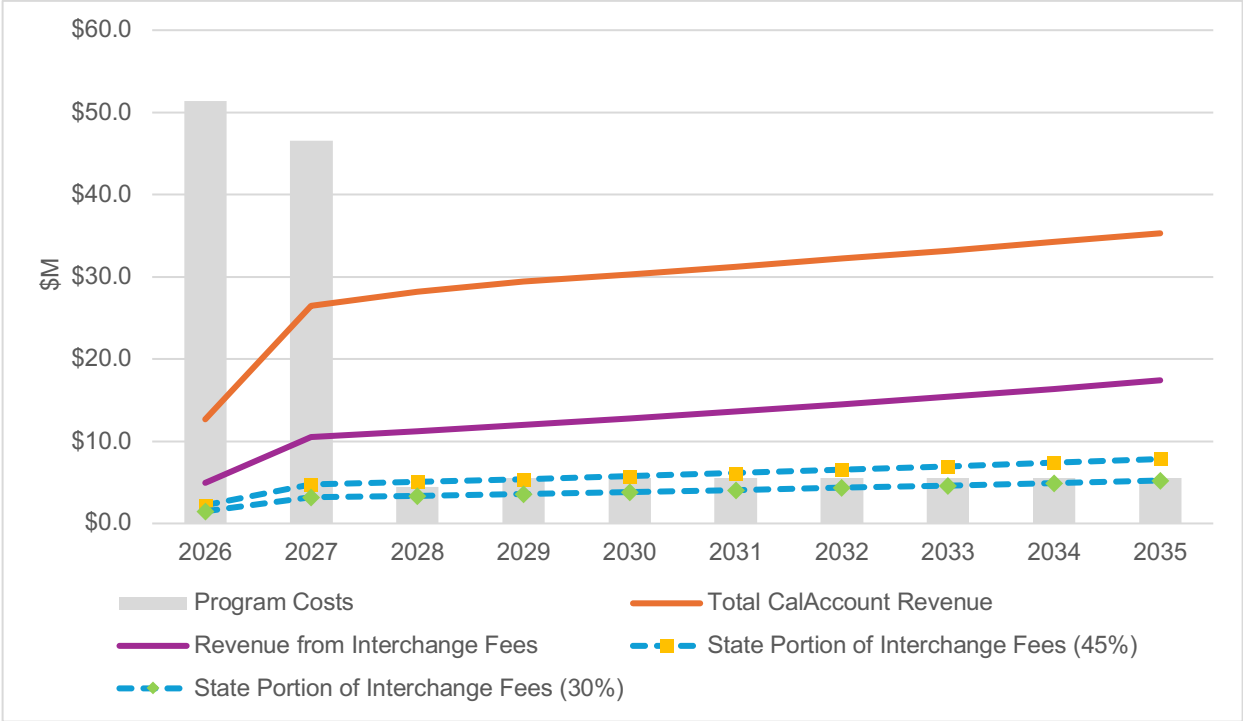
There are various possible fee structures for the CalAccount Program. As an example, in 2008 the Bureau of the Fiscal Service contracted with Comerica Bank to establish the Direct Express® Debit MasterCard® program (Direct Express).[64] The program allowed beneficiaries to receive federal benefit payments electronically using a prepaid debit card. The financial agreement stated Comerica would not charge any fees to the government and could charge cardholders only prescribed card usage fees. The primary source of revenue for Comerica was interchange fees on debit card transactions. As a result of the Treasury's mandate in December 2010 that all recipients of federal non-tax payments receive payment by electronic fund transfer, the Fiscal Service anticipated the number of Direct Express cardholders would increase from over 1 million to 3 to 4 million and reassessed the financial agent agreement. Comerica submitted three compensation proposals to the Fiscal Service, which amended the agreement in March 2011 to pay Comerica $5 per new enrollment processed and up to $20 million for infrastructure development. The Office of Inspector General report identified several risks and recommendations for the Fiscal Service that could apply to similar arrangements.

The terms of the revenue sharing agreement between the CalAccount Program's financial services network administrator and the State—and ultimately the program's enrollment numbers—will affect whether or not the program will be financially sustainable. Based on this preliminary assessment we show that, using the midpoint estimate for Scenario 2, if the State's portion of all interchange fees collected was 30 percent, the program would be revenue-neutral within about 10 years. If that portion was 45 percent, the program would be revenue-neutral with regard to the state budget within about 5 years. Therefore, there is a potential fee structure that would be sufficient to cover all ongoing CalAccount Program costs with six years of the program's implementation. However, the significant upfront costs in the first two years, which include establishing the program (an estimated cost of approximately $8 to $24 million) and marketing/outreach (an estimated cost of approximately $20 to $120 million), suggest that the

[64] Office of Inspector General.

program would be unlikely to recoup these initial costs. In the relatively higher cost expanded financial network described in Scenario 3, the State would not be able to cover estimated program costs with less than a 60 percent share of the program's anticipated interchange fees.

Figure C.4. Estimated State Revenues Under Scenario 2 using Midpoint Estimate



NOTE: This figure is based on our midpoint enrollment estimates, which are calculated as the average of the low- and high-end estimates. These estimates assume 25 percent (low-end) to 75 percent (high-end) of unbanked and underbanked households become aware of the CalAccount Program.

Marketing and Outreach Strategy

The success of the CalAccount Program will depend on an effective engagement strategy and high enrollment rates among unbanked and underbanked households. While fees or minimum balance requirements are often cited as a barrier for the unbanked, some Californians choose not to have a bank account because they have little interest in the service. For example, the RAND Survey found that approximately 18 percent of unbanked and underbanked households "do not trust banks or credit unions" and 35 percent "prefer to handle transactions in cash." CalAccount outreach must not only create awareness of the program but, to maximize its adoption, increase demand for banking services—objectives that may result in substantial outreach costs.

This analysis does not prescribe a specific marketing and outreach strategy for the CalAccount Program. Such a strategy may involve both traditional media and digital media campaigns as well as joint-outreach with community-based and faith-based organizations. Stakeholder engagement may also involve outreach where individuals access public services, such as libraries, community colleges, and public universities. Rather than calculate the costs of these individual activities, which are uncertain, we examine other estimates of customer

acquisition costs across the banking industry and the outreach costs of other California programs. We then estimate outreach costs on a per enrollment basis.

The first option is to use data form the banking industry, which estimates the average cost of acquiring a new customer is around $500 (FI Works, n.d.; Datatrac, n.d.).[65,66] However, this cost may reflect the challenges of competing with other banks for a limited consumer base and appealing to customers that are already fully banked. This figure may also include certain enrollment costs that are already accounted for in the analysis, such as issuing debit cards. We do not expect CalAccount to face competition among the fully banked population as it will likely draw its users almost entirely from unbanked and underbanked households; thus, it is unlikely to face similar acquisition costs. The second option is to find existing programs that face similar marketing and outreach challenges to CalAccount and use their costs to inform our analysis.

Using the latter approach, we consider Covered California, a health care marketplace that connects eligible individuals to federally subsidized insurance plans, as an exemplar. While Covered California differs in terms of the target populations and services provided, it shares similar marketing objectives and hurdles: potential users must be made aware of the program and voluntarily enroll, and individual biases influence the demand for both health insurance and consumer banking. In the case of health insurance, these include loss aversion bias, optimism bias, etc. and for consumer banking, a misunderstanding of the risks and benefits of bank use and/or distrust in the banking industry at large. CalAccount, like Covered California, must stimulate demand for a service that its consumers often undervalue. However, Covered California also differs in that consumers must pay to enroll, re-enroll each year, and make difficult decisions in selecting among healthcare plans—so there is reason to suspect that outreach costs may be higher due to the increased administrative burden of the healthcare program. The marketing and outreach budget for Covered California is approximately $110 to $150 million per year. Table C.13 reports Covered California's budgeted marketing and outreach costs and total enrollments from 2021 to 2023. The average cost per enrollment ranges from $62.95 to $96.95.

Table C.13. Covered California's Marketing Budget and Enrollment, 2021-2023

	2021	2022	2023
Marketing Budget (in millions)	$157.6	$129.7	$109.5
Total Enrollment	1,625,546	1,777,442	1,739,360
Marketing cost per enrollment	$96.95	$72.97	$62.95

SOURCE: Covered California Fiscal Year 2022-2023 Budget, June 16, 2023, accessed at https://hbex.coveredca.com/financial-reports/PDFs/2022/fy-2022-23-annual-report-final.pdf on April 24, 2024. Enrollment figures from Covered California Press Release on March 9, 2023, accessed at https://www.coveredca.com/newsroom/news-releases/2023/03/09/ on April 24, 2024.

[65] fiworks, "Statistics," Undated. As of April 24, 2024: https://www.fiworks.com/resources/statistics.

[66] Datatrac, "Deposit & Loan Acquisition Cost / ROI Calculator," Undated. As of April 24: https://solutions.datatrac.net/roicalculator.

A second example from a smaller program is the California Franchise Tax Board's marketing campaign for the California Earned Income Tax Credit (CalEITC). The state funded tax credit targets low-income households: for the 2022 tax year, nearly 3.5 million California households claimed the CalEITC benefit. The marketing and outreach budget for the CalEITC program is approximately $6.3 million per year.[67] It is unclear how many tax filers directly interacted with marketing for the program or were made aware through their tax preparer. Since there is no "enrollment" and individuals may only become aware of their ability to claim the benefit when they file their taxes, it is challenging to estimate the marketing costs on a per individual basis. However, this program implies a lower-cost outreach strategy has the potential to reach a large number of households.

Based on this analysis, as a proxy for the outreach costs of the CalAccount Program, we use a high-end estimate of $100 per enrollment and a low-end estimate of $50 per enrollment. In contrast with Covered California, we assume the CalAccount Program would have a one-time customer acquisition cost since households do not need to re-enroll after they establish an account. Therefore, we estimate that outreach costs will be incurred in the initial program years while the need for marketing will significantly decrease once a sustainable level of enrollment is achieved. Further, we estimate the level of financial investment in marketing and outreach will be directly proportional to enrollment in the CalAccount Program. Thus, a financially limited outreach will likely result in fewer enrollments, while a robust investment in outreach will likely result in more enrollments.

Based on the population estimates described in the CalAccount Enrollment section above, we estimate a low-end cost estimate of approximately $9.7 million per year = $50 per enrollment × approximately 195,000 households per year until the target enrollment level is reached in about two years. The estimate of approximately 390,000 enrollments is based estimates from the FDIC Survey applied to the "low-end" enrollment parameters for Scenario 3. We then calculate a high-end cost estimate of approximately $58.3 million per year = $100 per enrollment × approximately 580,000 households per year until the target enrollment level is reached is about two years. The estimate of approximately 1.170 million enrollments is based on analysis of the FDIC Survey applied to the "high-end" enrollment parameters for Scenario 3. We use the same parameters for all three scenarios given uncertainty about the overall effectiveness of any marketing and outreach strategy.

Enforcement

This section covers enforcement costs related to the requirements of the CalAccount Program as written in AB 1177. At least three state and local agencies would potentially be responsible

[67] State of California Franchise Tax Board, *Budget Change Proposal - Cover Sheet* DF-46 (REV 10/20) https://www.ftb.ca.gov/about-ftb/meetings/board-meetings/2022/march-2022/5a3.pdf

for enforcing mechanisms associated with the CalAccount Program: the Department of Financial Protection and Innovation (DFPI), the Division of Labor Standards Enforcement (DLSE), and the Office of the Attorney General.

Department of Financial Protection and Innovation

DFPI is responsible for the regulation of financial services, businesses, and products in California, including oversight of banks and credit unions, payday lenders, and money transmitters. DFPI would likely have enforcement responsibilities related to customer complaints and issues related to fraud associated with CalAccounts. We estimate DFPI would require an additional 5 to 10 full-time staff at an average annual cost of approximately $140,000 per FTE, including fringe benefits and overhead. However, it is also feasible that a large number of customers moving away from alternative financial services to traditional financial institutions could reduce DFPI's oversight burden associated with cash checking services and payday lenders.

Division of Labor Standards Enforcement

DLSE is responsible for enforcing California labor laws. AB 1177 requires employers or hiring entities with more than 25 employees or contractors to provide direct deposit for labor earnings to allow employees to voluntarily deposit funds into a CalAccount. DLSE would likely need to address employee complaints related to access to direct deposit. However, this issue may fall under the existing responsibilities of DLSE. Nacha estimates that 93 percent of U.S. workers are already paid via direct deposit.[68] This analysis assumes any incremental state burden associated with investigating and resolving direct deposit issues related to the CalAccount Program would be met under DLSE's existing budget and capabilities.

Office of the Attorney General

The Office of the Attorney General has a broad range of duties in enforcing civil rights laws, prosecuting illegal business practices, and promoting community safety. Certain housing issues (i.e., landlord-tenant payment disputes), including unfair and illegal activities that victimize consumers, may fall under the jurisdiction of the Attorney General. AB 1177 requires landlords to accept payment of rent and deposit of security by an electronic funds transfer from a CalAccount. Plausibly some disputes over this requirement may result in investigations or legal action by the Office of the Attorney General. This analysis assumes any incremental state burden associated with this requirement would be met under the office's current budget and responsibilities.

[68] Nacha.

Costs to Local Agencies

There are no anticipated costs associated with the CalAccount Program to local agencies.

Benefits to State Agencies

There are additional potential efficiency gains that could result from establishing the CalAccount Program. Specifically, there is an opportunity to roll the administrative features of other state benefit programs into the CalAccount Program. Beneficiaries could receive electronic funds transfer of state benefits directly deposited into a CalAccount, potentially saving the state the costs of mailing checks or issuing pre-paid debit cards separately for each state program. This could also consolidate various program oversight functions into a single state agency or office for a greater cost savings to the state.

Macroeconomic Impacts

This section summarizes the macroeconomic impacts of the CalAccount Program on the California economy. For this analysis, we use IMPLAN's input-output (I-O) model, which provides a representation of the California economy using social accounting matrices, to evaluate regional economic impacts. I-O tables represent the linkages between sectors of the economy, capturing the flow of goods and services among industries and to consumers.[69] For any industry to fulfill the demand for its goods and services with production outputs, it requires labor and inputs from suppliers, generating indirect demand through the supply chain and in the labor market. I-O tables map these interdependent relationships between industries by tracking the flow of money and commodities in all transactions using data from multiple government agencies including the Bureau of Labor Statistics and the Bureau of Economic Analysis.

I-O models have been widely used in industry and academia—and frequently in the analysis of California regulations—to estimate the overall impact of policy shocks (e.g., private investment, fiscal spending) to a state or regional economy. Such effects are measured as changes in the number of jobs and value added (akin to regional gross domestic product). Due to the linkages across the economy, a one-dollar increase in output in one sector can have more than a one-dollar impact on the overall economy, a concept commonly referred to as the 'multiplier effect.' However, in a regional economic framework, there are also leakages (e.g., some local demand is met by out-of-state imports) so the direct effects to the California economy may be less than the direct inputs. Overall, this modeling framework allows for a relatively simple analysis of economic impacts for a wide variety of policy changes.

[69] I-O tables were first developed by Wassily Leontief in the late 1930s, for which he was awarded the Nobel Memorial Prize in Economic Sciences in 1973. Leontief, Wassily, *Input-Output Economics*: Oxford University Press, 1966.

I-O models analyze how changes in final demand ripple throughout the economy via direct, indirect, and induced effects. Direct economic effects are changes in production that result from the initial upfront investments and behavioral changes due to a policy change. Indirect effects capture the changes in expenditures and production caused in turn by the direct effects, such as the business-to-business transactions that result from the supply chain effects of the initial expenditures. Finally, induced effects are the household purchases as a result of changes in wages, after removal of taxes, savings, and commuter income.[70] The I-O model's representation of a regional economy relies on built-in assumptions to simplify a set of complex economic interdependencies and interactions. These assumptions pose certain limitations:

- **Static Relationships**: The interdependent relationships between industries in an I-O model are static, providing only a snapshot of the economy in a given year. IMPLAN does not account for price elasticity (i.e., there is no mechanism to capture price changes), so the prices of goods and services are not affected by shocks to the economy. If the price of an input rises, output costs also rise due to the fixed ratios of inputs. The Leontief production functions do not allow for substitution across inputs to production.

- **Linearity**: The relationships between industries and households/institutions are linear. I-O models assume constant returns to scale—capacity and capital do not play a role in the production.[71] Specifically, Leontief production functions assume that outputs require fixed ratios of specific inputs, implying that there is no substitution across inputs, even in the long term. Thus, the further out a forecast is made, the greater potential for error.

- **Limited Tracking**: There are limits to how far IMPLAN tracks the flow and circulation of money in the economy. Once money flows into certain accounts, it is considered "lost" to the economy and cannot generate additional economic activities. Such accounts include income tax, sales tax, and retained earnings (i.e., savings) that may be saved in one year and spent in subsequent years.

As a potential modeling alternative, computable general equilibrium (CGE) models are commonly used to overcome limitations of linearity and static relationships as they allow for relative price changes, substitution effects, and an assessment of a larger set of economic impacts. In doing so, however, the models are significantly more complex and less transparent than I-O models. While some California state agencies rely on CGE models to estimate the economic impact of major regulations, many tend to rely on I-O models, such as IMPLAN and the U.S. Bureau of Economic Analysis' Regional Input-Output Modeling System (RIMS II). The

[70] Demski, Joe, "Understanding IMPLAN: Direct, Indirect, and Induced Effects," in *IMPLAN Blog*, June 18, 2020. https://blog.implan.com/understanding-implan-effects.

[71] Christ, Carl F., "A Review of Input-Output Analysis," *Input-Output Analysis: An Appraisal*: Princeton University Press, 1955, pp. p.137-182.

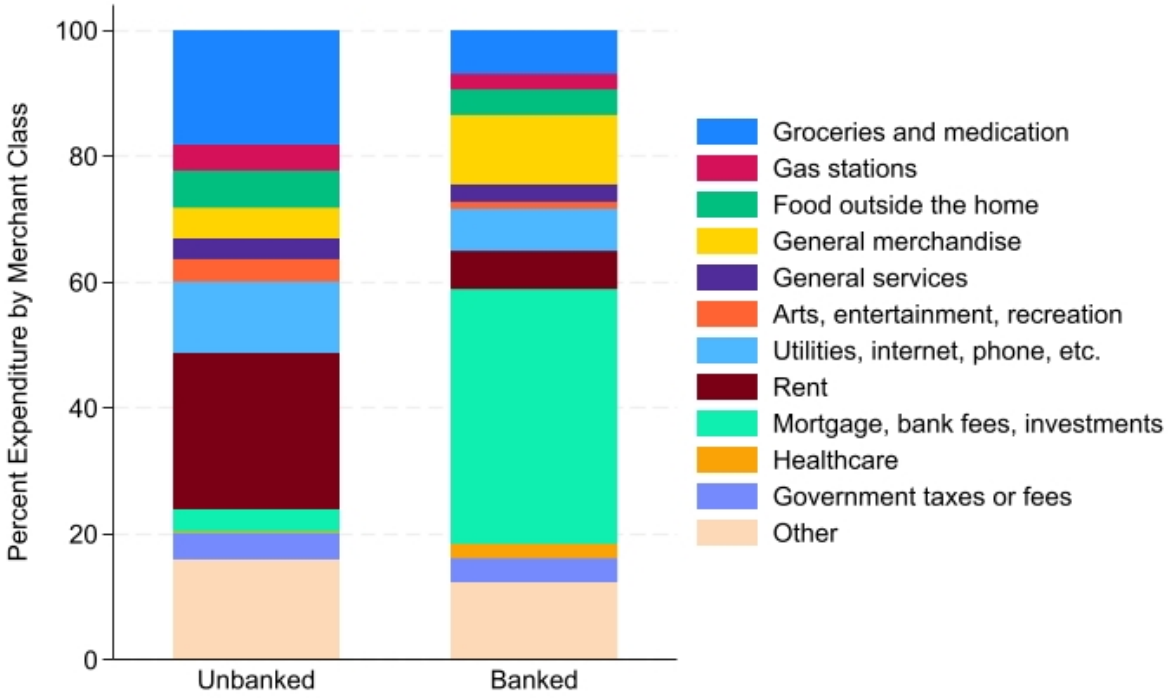
simplicity of the I-O model is preferred in this analysis as the policy impacts are not expected to substantially change final demand or result in changes in the underlying production functions.

In our analysis, increased financial inclusion will result in changes in household savings and consumption, business revenues, and income earned by employees. These changes will affect employment, investment, and output for businesses that provide goods and services to financial institutions and alternative financial services that are directly impacted by the changes in behavior among unbanked and underbanked households. These impacts will also result in induced effects, such as changes in personal income that also affect consumer spending. We model impacts for the entire state of California; thus our, analysis is not specific to any region or locale.

For this analysis, we relied on IMPLAN's 2018 data set for California. Note that the economic estimates in this data set reflect economic conditions in 2018—before the COVID-19 pandemic significantly impacted the California and U.S. economy. Several more recent IMPLAN model years (2020, 2021, and 2022) may reflect impacts of the pandemic, including: business closures, labor shortages, and increased federal benefits. Therefore, we use the earlier data so as not to confound our results with the impacts of the COVID-19 pandemic.

We use IMPLAN's industry classification system to construct accounts for affected industries and households. For example, for the unbanked population we use "households earning between $15,000 and $30,000" and for the underbanked population we use "households earning between $40,000 and $50,000" because these groups have different household expenditure profiles. This has distributional consequences for the California economy in terms of where avoided fees for transaction and deposit services will be spent instead. For example, Figure B.5 shows the composition of household expenditures for the unbanked population in comparison to the fully banked population. As shown, a significantly greater proportion of the expenditures of unbanked households goes toward rent, utilities, food and groceries, and healthcare.

Figure C.5. Percent of Household Expenditures by Merchant Class



Source: Federal Reserve Bank of Atlanta (2023).

To estimate impacts associated with increased debit-card use, we model the loss of merchant revenues due to interchange fees across multiple economic sectors as a change in proprietor income. IMPLAN cannot directly account for price changes; therefore, this impact is modeled as a cost to businesses rather than a cost that is passed on to consumers. This approach may overestimate costs to merchants because the change in proprietor income is modeled as having a local purchasing percentage of 100 percent. In IMPLAN, regional purchasing coefficients (RPC) represent the percent of total demand that is met by local supply for a given commodity in the state. Generally, for this analysis we use local purchasing percentages for California rather than the default value of 100 percent to reflect that some portion of total demand will be met through out-of-state expenditures. We simultaneously estimate positive shocks to the economy (e.g., increased household consumption via avoided fees for financial services, investments in financial technology, state marketing/outreach costs) and negative ones (e.g., increased household savings modeled as a reduction in consumption, loss of business revenues).

Results of the Macroeconomic Assessment

There are two major types of impacts associated with implementing the proposed CalAccount Program—those that will have a positive contribution to overall economic activity in California and those that will have a negative contribution.

- **Positive contribution to the economy:** The positive impacts include (1) increased household consumption associated with avoided fees for traditional banking and alternative financial services; (2) state spending on advertising and community outreach partnerships with labor and civic organizations to promote the program; (3) hiring by state agencies and financial institutions to implement the program; and (4) revenues from the CalAccount Program collected by financial institutions.
- **Negative contribution to the economy:** The negative impacts include (1) reduced fee revenues collected by financial institutions and alternative financial services due to decreased demand; (2) increased fees (or reduced profits) from merchants associated with increased debit card transactions; and (3) increased household savings, which results in a decrease in household consumption.

The most significant economic impact of the program is anticipated to be an increase in consumption by unbanked and underbanked household due to avoided fees. Table C.14 summarizes the macroeconomic impacts in the first year of the CalAccount Program.

Table C.14. Summary of Macroeconomic Impacts in the First Year, by Scenario ($2023, millions)

Impact Type	Scenario 1			Scenario 2			Scenario 3		
	Jobs	Labor Income	Total Value Added	Jobs	Labor Income	Total Value Added	Jobs	Labor Income	Total Value Added
Direct Effect	88	$2.4	$4.1	79	$1.2	$2.7	69	-$0.2	$0.1
Indirect Effect	23	$1.3	$2.1	19	$0.9	$1.5	12	$0.3	$0.6
Induced Effect	257	$18.7	$35.2	298	$21.7	$40.8	325	$23.6	$44.5
Total Effect	**368**	**$22.4**	**$41.4**	**396**	**$23.9**	**$45.1**	**406**	**$23.8**	**$45.1**

Source: Analysis conducted using 2018 IMPLAN data for California.
Note: Numbers presented in Table C.14 are rounded values.

The CalAccount Program is projected to generate a net jobs gain for the California economy in the first year of the program's implementation. The jobs gain is primarily attributable to spending by the state for marking/outreach, spending by financial institutions (also funded by the state) to implement the program, and increased household consumption due to avoided fees being spent elsewhere in the economy. In total, the implementation of the CalAccount Program is expected to support between 370 and 410 jobs in the first year depending on the program's structure as characterized across the three scenarios. Wages from employment are also projected to increase by $22 to $24 million in the first year. Overall, the program is estimated to contribute approximately $41 to $45 million to the California economy during the first year of the CalAccount Program.

Table C.15 summarizes the average annual macroeconomic impacts for each subsequent year of the analysis after the implementation of the CalAccount Program.

Table C.15. Summary of Macroeconomic Impacts in Subsequent Years, by Scenario ($2023, millions)

Impact Type	Scenario 1			Scenario 2			Scenario 3		
	Jobs	Labor Income	Total Value Added	Jobs	Labor Income	Total Value Added	Jobs	Labor Income	Total Value Added
Direct Effect	-145	-$20.3	-$44.9	-184	-$25.5	-$55.3	-207	-$28.6	-$61.6
Indirect Effect	-120	-$11.2	-$17.2	-147	-$13.7	-$21.0	-164	-$15.3	-$23.3
Induced Effect	359	$26.3	$49.9	424	$31.1	$58.9	476	$34.9	$66.1
Total Effect	**94**	**-$5.3**	**-$12.2**	**93**	**-$8.2**	**-$17.4**	**106**	**-$9.0**	**-$18.8**

Source: Analysis conducted using 2018 IMPLAN data for California.

While the CalAccount Program is likely to sustain a net jobs gain after the first year, the direct, indirect, and induced effects are likely to result in a net loss of labor income and an overall decrease in economic activity in the state. This impact is largely attributable to the loss of fee revenue by financial institutions and alternative financial services as well as a small reduction in household spending due to an increase in saving. In total, the CalAccount Program is expected to result in a net jobs gain of between 90 and 110 jobs. However, the program is expected to result in a net loss in labor income and overall economy activity in California because the gains to households from avoiding fees comes from a loss of revenue to the financial services sector.

Creation or Elimination of Jobs in California

In total, the implementation of the CalAccount Program is expected to support between 370 and 410 jobs in the first year depending on the program's structure as described in the three stylized policy scenarios. Over time, transfers from other financial institutions to CalAccounts and decreased demand for alternative financial services would likely result in job losses in the financial services sector and its suppliers—this impact is estimated to be between 265 and 370 jobs. However, the program would likely result in job gains across other sectors of the economy through induced effects, totaling between 360 and 480 jobs. Thus, the program would sustain a net jobs gain of between 90 and 110 jobs over the next decade.

Creation of New Businesses or the Elimination of Existing Businesses within the State

The proposed CalAccount Program is not anticipated to result in the creation of new businesses in California. The availability of CalAccounts is expected to reduce the reliance of unbanked and underbanked households on alternative financial services. This decrease in demand may result in the elimination of some existing businesses in California. Evidence from past policies on the creation or elimination of businesses is mixed. Policies to regulate or limit payday loans cite as impetus the high cost of payday loans, the tendency for payday loans to contribute to consumer debt spirals, and the targeting of lending to financially vulnerable populations.[72] Approximately 20 states and the District of Columbia have passed laws to cap

[72] Edmiston, Kelly D., "Could Restrictions on Payday Lending Hurt Consumers?," *Federal Reserve Bank of Kansas City Economic Review*, 2011.

payday lending rates at an APR of around 36 percent or implement other measures to limit more predatory lending, such as excessively burdensome interest rates or financing terms. These policies have had a varying degree of impact on payday lenders. Zinman (2010) found Oregon's restrictions on the permissible terms of consumer loans led to a mass exodus of payday lenders from the state.[73] In contrast, Fekrazad (2020) found that no businesses exited the market after rate caps were lowered from 15 percent to 10 percent in Rhode Island.[74] The CalAccount program does not directly regulate payday lenders but may impact demand for short-term credit.

Competitive Advantages or Disadvantages for California Businesses

The proposed CalAccount Program is unlikely to result in significant competitive advantages or disadvantages for California businesses. If there is a significant shift in consumer behavior among unbanked and underbanked households to using debit cards in lieu of cash transactions, there are potential impacts to merchants across the state. In Mexico, increased use of debit cards due to a policy intervention to increase financial inclusion led small retailers (e.g., corner stores) to increase adoption of POS systems, which led both program beneficiaries and other consumers to spend more at small retailers, whose sales and profits increased.[75]

Increase or Decrease of Investment in California

The CalAccount Program is unlikely to have a significant impact on investment in California. Increased household savings among unbanked and underbanked households is unlikely to result in significant new investment as it is more likely to be used for emergency spending. However, in other contexts access to savings and credit are associated with an increase in entrepreneurship.

The Incentives for Innovation in Products, Materials, or Processes

The proposed CalAccount Program may incentivize investment in financial technologies to provide mobile banking and web-based banking access to previously unbanked or underbanked households. Increased financial inclusion may allow for more financial transactions via electronic funds transfer, such as direct deposit of labor earnings into a CalAccount and payment of rent and deposit of security from a CalAccount. Increased mobile banking may lead to an expansion of P2P payment services for other transactions. Additionally, there is an opportunity to combine the administrative features of other state benefit programs with the CalAccount Program. Beneficiaries could receive electronic funds transfer of state benefits directly deposited into their CalAccount, potentially saving the state the costs of mailing checks or issuing pre-paid debit cards separately for each state program.

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[73] Zinman, Jonathan, "Restricting Consumer Credit Access: Household Survey Evidence on Effects Around the Oregon Rate Cap," *Journal of Banking & Finance,* Vol. 34, No. 3, 2010.

[74] Fekrazad, Amir, "Impacts of Interest Rate Caps on the Payday Loan Market: Evidence From Rhode Island," *Journal of Banking & Finance,* Vol. 113, 2020.

[75] Higgins.

State and Local Tax Impacts

Table C.16 reports the costs to the State to implement the CalAccount Program. Funding for the program will come from the State General Fund and must be met through taxes paid by all Californians. Over the first two years, the largest cost to the state will be those associated with marketing/outreach to increase awareness and enrollment in the program. The upfront program costs also include the costs to the financial institution(s) to develop the necessary banking software, mobile apps, and websites and enroll users. While these program costs are included in the first two years of the table, they will likely be distributed over a multi-year contract with the financial services network administrator(s). The program sustainment costs in later years may be offset through a revenue-sharing agreement with the financial institution(s) participating in the CalAccount Program. As discussed above, potential revenue-sharing options could make the program revenue-neutral to the state budget within the first 10 years after implementation but would likely not be large enough to offset the upfront marketing/outreach costs.

Table C.16 State Costs to Administer CalAccount Program ($2023, millions)

Year	Scenario 1	Scenario 2	Scenario 3
2026	$44.4	$51.4	$58.0
2027	$44.2	$46.6	$53.2
2028	$3.4	$4.4	$10.2
2029	$4.3	$5.6	$11.4
2030	$4.3	$5.6	$11.4
2031	$4.3	$5.6	$11.4
2032	$4.3	$5.5	$11.4
2033	$4.3	$5.5	$11.4
2034	$4.3	$5.5	$11.4
2035	$4.3	$5.5	$11.4
10-Year Cost (undiscounted)	**$121.9**	**$141.2**	**$201.1**

The CalAccount Program will have other tax implications for California. Table C.17 reports the overall tax impacts of the CalAccount Program based on the IMPLAN analysis described in the discussion of macroeconomic impacts. The primary tax impacts in the first year are an increase in revenue from sales, property, and income taxes. After the first year, we expect to see an increase in household savings, which results in a modest decrease in consumption and a corresponding reduction in tax collections. However, these savings may result in future consumption so these losses may be overestimated.

Table C.17. State and Local Tax Impacts in the First Year and Subsequent Years ($2023, millions)

	Scenario 1	Scenario 2	Scenario 3
First Year Impacts			
Sales Tax	$1.3	$1.5	$1.6

	Scenario 1	Scenario 2	Scenario 3
Property Tax	$1.2	$1.4	$1.5
Income Tax	$0.7	$0.8	$0.8
Corporate Profits Tax and Dividends	$0.2	$0.2	$0.2
Other Taxes	$0.5	$0.6	$0.6
Total State and Local Tax	**$4.0**	**$4.4**	**$4.6**
Recurring Impacts			
Sales Tax	$1.0	$1.6	$1.2
Property Tax	$0.9	$1.5	$1.2
Income Tax	-$0.2	-$0.4	-$0.3
Corporate Profits Tax and Dividends	-$0.1	-$0.2	-$0.2
Other Taxes	$0.2	$0.2	$0.2
Total State and Local Tax	**$1.7**	**$2.8**	**$2.1**

Comparison of Benefits and Costs

Summarizing the analyses reported above, the overall societal benefits of CalAccount likely exceed its costs over a 10-year period given sufficient program enrollment. Table C.18 reports our midpoint estimate (i.e., the average of the low- and high-end enrollment estimates) of the benefits and costs for each of the policy options described in this study. As shown, the costs are generally higher in the first two years of the program, which reflects the costs of website and mobile app development, developing new banking policies and procedures, enrollment, and outreach. However, the permanent loss of fee revenue for some financial services providers and ongoing operations and maintenance costs associated with the program imply that costs will be spread across multiple years, in perpetuity. Benefits will also accrue over multiple years—these include avoided fees, which are calculated on an ongoing annual basis, and a one-time increase in household savings estimated to occur within two years after the initial enrollment with a one-year lag. Note that initial enrollments are estimated to be evenly split across the first two years of the program. Once an account holder has built a new precautionary level of savings (i.e., the new steady state), no additional savings impacts are estimated. Benefits are estimated to decline slightly over time because there are fewer projected new enrollments in each subsequent year.

As shown in the table, Scenario 2 provides the greatest net benefits to society. This reflects that enrollment in Scenario 1 (the mobile banking option) would potentially be limited due to lack of access to high-speed Internet, lack of trust in financial technology, or consumer preferences to bank at a physical branch location. Scenario 3 provides the greatest total benefits but the least *net* benefits because while it would likely provide the most access to banking services, the cost of staffing alternative banking options in non-traditional locations (e.g., post offices or municipal buildings) would exceed the monetized benefits associated with households

who would be unlikely to enroll otherwise (e.g., those for who distance to the nearest branch was a significant barrier to banking, such as those in banking deserts).

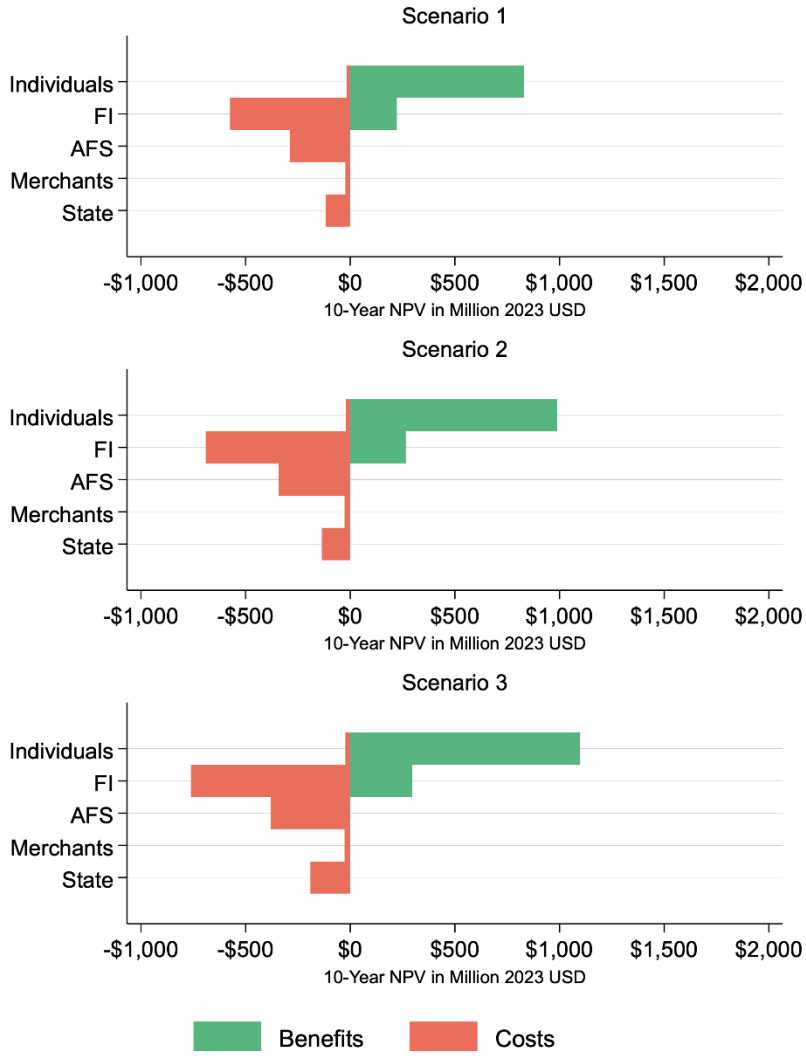
Table C.18. Summary of Benefits and Costs by Year Using a 2 Percent Discount Rate ($ Millions)

Year	Scenario 1			Scenario 2			Scenario 3		
	Benefits	Costs	Net Benefits	Benefits	Costs	Net Benefits	Benefits	Costs	Net Benefits
2026	$49.3	$101.8	-$52.4	$59.0	$120.1	-$61.1	$66.0	$134.0	-$68.0
2027	$134.5	$148.4	-$13.9	$159.7	$171.4	-$11.6	$176.8	$190.9	-$14.1
2028	$169.3	$98.8	$70.5	$200.3	$118.7	$81.6	$220.3	$135.9	$84.5
2029	$132.7	$98.9	$33.8	$157.6	$118.7	$38.9	$174.4	$135.8	$38.6
2030	$96.6	$98.0	-$1.4	$115.5	$117.6	-$2.1	$129.1	$134.5	-$5.4
2031	$95.8	$97.1	-$1.3	$114.6	$116.6	-$2.0	$128.0	$133.2	-$5.2
2032	$95.0	$96.1	-$1.1	$113.6	$115.4	-$1.8	$126.9	$131.9	-$5.0
2033	$94.1	$95.2	-$1.2	$112.5	$114.3	-$1.8	$125.7	$130.5	-$4.9
2034	$93.2	$94.3	-$1.1	$111.4	$113.2	-$1.8	$124.5	$129.2	-$4.7
2035	$92.3	$93.3	-$1.0	$110.3	$112.0	-$1.6	$123.3	$127.8	-$4.6
10-Year PV	$1,053	$1,022	$30.9	$1,254	$1,218	$36.6	$1,395	$1,384	$11.2
Annualized Value	$114.9	$111.5	$3.4	$136.9	$132.9	$4.0	$152.2	$151.0	$1.2

Figure C.6 displays our estimates of the program's net present value (NPV) by group across each of the three scenarios. The exact values vary by scenario; however, the results show that the greatest benefits accrue to unbanked and underbanked households participating in CalAccount. The monetized benefits to individuals total between approximately $800 million and $1.1 billion depending on the policy option. The participating financial institutions, noted as FI in Figure B.6, also accrue benefits from revenue generated by banking services (i.e., revenue from deposits and interchange fees on debit card transactions). However, the present value of costs are projected to exceed the present value of benefits for participating financial institutions. That is, the costs of establishing a CalAccount Program, enrolling individuals, and covering operating expenses is likely to exceed the average revenues from those accounts. The figure also shows costs incurred by alternative financial service providers due to a loss of business, costs incurred by merchants from increased transaction costs, and costs incurred by the State of California from administering the program. [76]

[76] Hayashi, Fumiko, "Cash or Debit Cards? Payment Acceptance Costs for Merchants," August 5, 2021.

Figure C.6. Projected 10-Year NPV of Benefits and Costs by Group



SOURCE: Authors' calculations.
NOTES: "FI" = Financial Institutions, "AFS" = Alternative Financial Services.

Sensitivity Analysis

For this analysis we made various assumptions in our estimates of the potential impacts of the CalAccount Program. Uncertainty inherent in these estimates implies that the actual net benefits to society may be less than or greater than those calculated. Both Federal and California State guidance recommend using sensitivity analyses to explore critical assumptions and their effects on both the direction (e.g., positive or negative) and magnitude (e.g., small or large) of the estimates. This section presents a sensitivity analysis, which varies several parameters in the BCA, but most critically the projected enrollment rates in the CalAccount Program. The magnitude of the benefits are directly proportional to the number of unbanked and underbanked

households that ultimately enroll in the program. For participating individuals, benefits include avoided fees and increased household savings. For participating financial institutions, benefits include increased revenue through the return on deposits and interchange fees associated with debit cards.

Many costs associated with the CalAccount Program, on the other hand, are largely fixed (e.g., program development costs, legal and compliance review, and software development). This suggests if the CalAccount Program fails to enroll a sufficient number of Californians, the fixed program costs will exceed its benefits, resulting in a net welfare loss (or a negative return on investment) from a societal perspective. This would make the program less desirable to policymakers and stakeholders, and less justifiable to California taxpayers. Therefore, we conduct a bounding analysis that varies the number of enrollments to reflect uncertainty in our primary estimate (as shown above in Figure C.2). We then calculate benefits and costs using the low- and high-end enrollment estimates. Table C.19 reports the program's net benefits using the low-end enrollment estimates.

Table C.19. Summary of Benefits and Costs, Low-end Estimates, Using a 2 Percent Discount Rate ($ Millions)

Year	Scenario 1			Scenario 2			Scenario 3		
	Benefits	Costs	Net Benefits	Benefits	Costs	Net Benefits	Benefits	Costs	Net Benefits
2026	$24.7	$44.5	-$19.9	$29.5	$53.3	-$23.8	$33.0	$60.2	-$27.2
2027	$56.8	$67.8	-$10.9	$67.7	$79.2	-$11.4	$75.3	$89.0	-$13.6
2028	$64.1	$50.1	$14.0	$76.2	$60.0	$16.3	$84.4	$68.6	$15.9
2029	$56.0	$50.1	$5.8	$66.7	$59.9	$6.7	$74.2	$68.5	$5.7
2030	$47.9	$49.7	-$1.8	$57.3	$59.4	-$2.1	$64.0	$67.9	-$3.8
2031	$47.5	$49.2	-$1.7	$56.8	$58.8	-$2.0	$63.5	$67.2	-$3.7
2032	$47.1	$48.7	-$1.6	$56.3	$58.3	-$2.0	$62.9	$66.5	-$3.6
2033	$46.6	$48.2	-$1.6	$55.8	$57.7	-$1.9	$62.3	$65.8	-$3.5
2034	$46.2	$47.7	-$1.6	$55.2	$57.1	-$1.9	$61.7	$65.1	-$3.4
2035	$45.7	$47.2	-$1.5	$54.7	$56.5	-$1.8	$61.1	$64.4	-$3.3
10-Year NPV	$483	$503	-$20.8	$576	$600	-$24.1	$643	$683	-$40.7
Annualized Value	$52.7	$54.9	-$2.3	$62.9	$65.5	-$2.6	$70.1	$74.6	-$4.4

Table C.20 reports the program's net benefits using the high-end enrollment estimates.

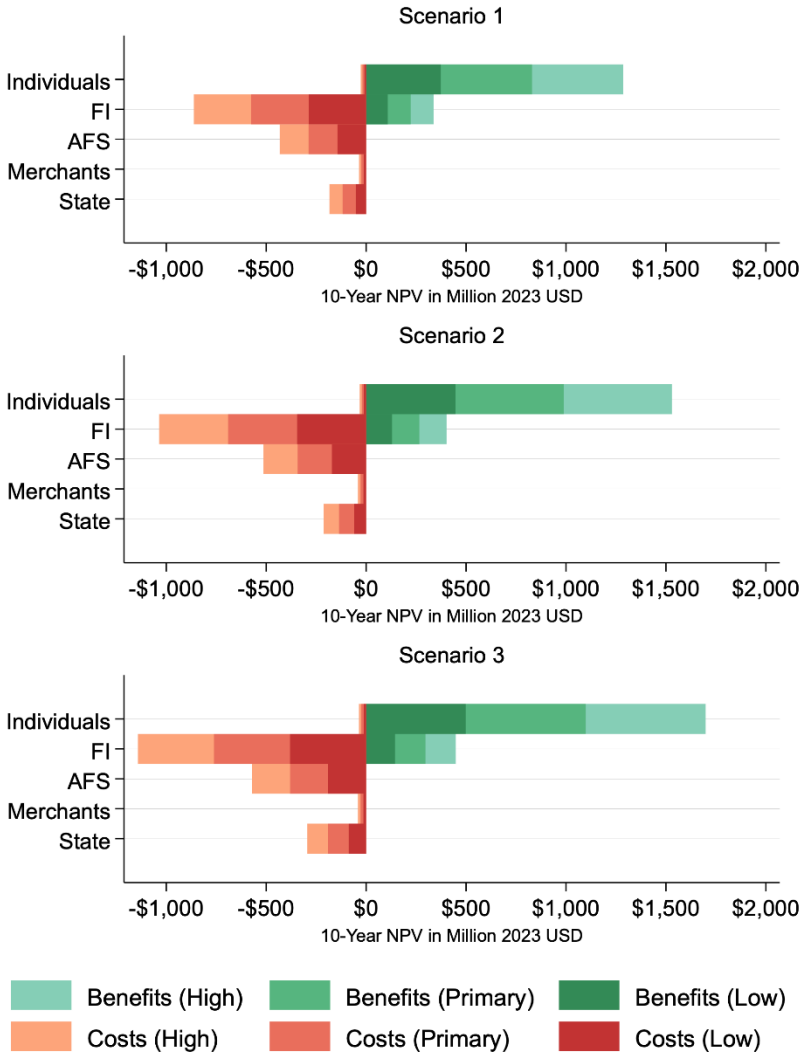
Table C.20. Summary of Benefits and Costs, High-end Estimates, Using a 2 Percent Discount Rate ($ Millions)

	Scenario 1			Scenario 2			Scenario 3		
Year	**Benefits**	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**
2026	$74.0	$159.0	-$85.0	$88.5	$186.9	-$98.4	$99.0	$207.7	-$108.7
2027	$212.2	$229.0	-$16.9	$251.8	$263.6	-$11.8	$278.3	$292.9	-$14.6
2028	$274.5	$147.6	$126.9	$324.3	$177.4	$146.9	$356.2	$203.2	$153.1
2029	$209.4	$147.6	$61.8	$248.5	$177.5	$71.0	$274.6	$203.1	$71.5
2030	$145.3	$146.3	-$1.0	$173.7	$175.9	-$2.1	$194.1	$201.2	-$7.0
2031	$144.2	$145.0	-$0.8	$172.4	$174.3	-$1.9	$192.6	$199.2	-$6.7
2032	$142.9	$143.5	-$0.6	$170.9	$172.6	-$1.7	$190.9	$197.2	-$6.3
2033	$141.5	$142.2	-$0.7	$169.2	$170.9	-$1.7	$189.0	$195.2	-$6.2
2034	$140.1	$140.8	-$0.6	$167.6	$169.2	-$1.6	$187.2	$193.2	-$6.0
2035	$138.8	$139.3	-$0.5	$166.0	$167.4	-$1.5	$185.4	$191.2	-$5.8
10-Year NPV	$1,623	$1,540	$82.6	$1,933	$1,836	$97.2	$2,147	$2,084	$63.2
Annualized Value	$177.1	$168.1	$9.0	$210.9	$200.3	$10.6	$234.4	$227.5	$6.9

As shown in the sensitivity analysis, under lower enrollment projections the CalAccount Program would result in a net social loss (i.e., a negative return on investment) as the program's costs would exceed its benefits in all three policy scenarios. Under the high-end enrollment projections, the program's benefits would significantly outweigh its costs. We note that the midpoint estimate also yields a positive net benefit. This bounding analysis affirms that the overall societal value and financial sustainability of the CalAccount Program hinges on its widespread adoption. We estimate the enrollment threshold at which the program would generate a net gain (i.e., a positive return on investment) would be between approximately 400,000 (in Scenario 1) and 600,000 (in Scenario 3). If the CalAccount Program cannot enroll a sufficient number of Californians, the program will result in a net welfare loss. This would also result in participating financial institutions and the state incurring greater net losses to administer the program as they could not generate sufficient revenue to offset the program's costs.

As describe above, the benefits and costs of the program would accrue to different groups. Figure C.7 shows the 10-year NPV for each group across the low-end, midpoint, and high-end estimates. Note, while the graphs show monetized benefits of the CalAccount Program accruing only to financial institutions, these parties would be required as indicated in AB 1177 to negotiate a revenue-sharing agreement with the state. This fee structure is discussed in more detail in the section on Fiscal Impacts.

Figure C.7. Projected 10-Year NPV of Benefits and Costs by Group, Bounding Analysis



SOURCE: Authors' calculations.
NOTES: "FI" = Financial Institutions, "AFS" = Alternative Financial Services.

Supplemental Analysis Using Distributional Weights

Given the significance of distributional impacts associated with the proposed CalAccount Program, we conduct a supplemental analysis applying distributional weights to the benefit-cost analysis presented in this appendix. First, we provide a brief discussion of conceptual issues related to distributional analysis and utility weights in benefit-cost analysis. Then, as a supplemental analysis, we report the results of a weighted benefit-cost analysis for the CalAccount Program using distributional weights that reflect estimates of society's preferences

for the overall distribution of income. Although federal guidance recommends government agencies analyze the distribution of policy impacts as well as their total costs and benefits, little progress has been made in formally incorporating distributional analysis into policymaking over the last several decades.[77,78] Distributional analysis can be conducted independently from benefit-cost analysis, which focuses on economic efficiency, or the two methods can be combined using a weighted benefit-cost analysis. Economic literature dating back to the 1950s proposes addressing equity concerns by incorporating distributional weights directly into traditional benefit-cost analysis.[79,80] This approach involves adjusting the monetary value of the benefits and costs that accrue to different subgroups within the population. For example, using distributional weights could mean assigning relatively greater monetary value to benefits that accrue to low-income households, marginalized communities, or particular geographic areas.[81] Insights from the welfare economics literature suggest several options for determining the magnitude of these changes. While stratification could theoretically be based on any group, such as by age, gender, geography, household size, marriage status, or race/ethnicity, the most widely recommended approach uses income-based distributional weights.[82, 83, 84, 85] Income-based distributional weights are relatively straightforward to implement, they arguably require less subjective judgement because they draw on evidence in the economic literature, and they are more likely to be viewed as socially acceptable to the public.

Distributional weights are intended to allocate investments to where they provide the greatest impact on social well-being, rather than where they maximize economic efficiency—or the most cost-effective return on investment. Kind, Wouter Botzen, and Aerts (2017) demonstrate that including distributional weights to evaluate flood risk management projects would lead to

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[77] Robinson, Lisa A., James K. Hammitt, and Richard J. Zeckhauser, "Attention to Distribution in U.S. Regulatory Analysis," *Review of Environmental Economics and Policy,* Vol. 10, No. 2, 2016.

[78] Similarly, Cal. Code Regs. Tit. 1, § 2003 directs California agencies to address distributional effects, "including how the effects of the regulation are distributed, for example, by industry, income, race, sex, or geography" if there are significant differences in the incidence of benefits or costs among groups, although many standardized regulatory impact assessments have inadequately addressed disparate impacts.

[79] Adler, Matthew A., "Benefit–cost analysis and distributional weights: An overview," *Review of Environmental Economics and Policy,* Vol. 10, No. 2, 2016.

[80] Fleurbaey, Marc, and Rossi Abi-Rafeh, "The use of distributional weights in benefit–cost analysis: Insights from welfare economics," *Review of Environmental Economics and Policy* Vol. 10, No. 2, 2016.

[81] Bohmholdt, Andrea, et al., *Guidance on Assessing Distributional Effects*, The MITRE Corporation, December 2021.

[82] Boadway, Robin W. and Neil Bruce, *Welfare Economics*: Wiley-Blackwell.

[83] Dreze, Jean and Nicholas Stern, "Chapter 14: The Theory of Cost-Benefit Analysis," *Handbook of Public Economics*, 1987, pp. pp 909-989.

[84] Layard, Richard and Stephen Glaister, eds., *Cost-Benefit Analysis*, 2nd ed.: Cambridge University Press, 1994.

[85] Acland, Daniel J., David H. Greenberg, "Distributional weighting and welfare/equity tradeoffs: a new approach," *Journal of Benefit-Cost Analysis,* Vol. 14, No. 1, 2023.

different conclusions on who to target, what to do, and how much to invest—while generally benefiting lower-income and socially vulnerable populations.[86] However, there are trade-offs in considering whether to use weighted benefit-cost analysis in decision making. These trade-offs include added technical complexity, increased reliance on subjective moral judgment in the choice of weights, the potential for various actors to manipulate weights to achieve desired outcomes, de-prioritization of "efficiency" (or cost-effectiveness) measures in unweighted (traditional) benefit-cost analysis, and unintended consequences that further disadvantage underserved communities.[87]

In November 2023, the U.S. Office of Management and Budget revised Circular A-4, its guidance on federal benefit-cost analysis, for the first time in 20 years, in part, to address distributional impacts of policy decisions more holistically. The updated guidance provides several options for government agencies to demonstrate how impacts are distributed among specified sub-populations in any benefit-cost analysis. Specifically, it states "agencies may choose to conduct a benefit-cost analysis that applies weights to the benefits and costs accruing to different groups in order to account for the diminishing marginal utility of goods when aggregating those benefits and costs."[88] This estimate can be treated as a primary estimate of net benefits or as a sensitivity analysis. This approach requires two additional steps beyond an unweighted (traditional) benefit-cost analysis. First, it requires estimating how the benefits and costs are distributed across each of the groups included in the analysis. Then, it required re-weighting those benefits and costs in the calculation of net benefits.

For this analysis, the groups directly impacted by the CalAccount Program are the unbanked and underbanked. We make the simplifying assumption that no fully banked Californians would enroll in the CalAccount Program. In an unweighted (traditional) benefit-cost analysis, all monetized benefits and costs are implicitly equally weighted. To conduct a weighted benefit-cost analysis, we re-weight the benefit and costs incurred by unbanked and underbanked households according to their median household income relative to the median California household income. This is designed to reflect the varying utility effects of a benefit or cost. The calculation of weights is motivated by the concept of diminishing marginal utility, an economic theory stating that additional consumption of goods or services will provide ever-smaller increases in the usefulness or enjoyment a consumer will receive form those goods or services as they acquire more. For example, a $100 payment to a household with an annual income of $25,000 may substantially improve the household's well-being, but the same transfer to a household with an annual income of $500,000 will be subjectively valued less.

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[86] Kind, Jarl, W.J. Wouter Botzen, and Jeroen C.J.H. Aerts, "Accounting for risk aversion, income distribution and social welfare in cost-benefit analysis for flood risk management," *Wiley Interdisciplinary Reviews: Climate Change,* Vol. 8, No. 2, March 2017.

[87] While we use the term "unweighted" benefit-cost analysis, traditional benefit-cost analysis simply applies equal weights to all groups.

[88] U.S. Office of Management and Budget.

The methodology for calculating distributional weights comes from OMB Circular A-4.[89] We provide a brief summary of the approach and describe its implementation. The equation for the weights to be used in a distributional analysis is given as:

$$w_i = \left(\frac{\bar{y}_i}{y_{med}} \right)^{-\epsilon} \quad \text{(C.1)}$$

where $\bar{y}_i$ is the median household income of the specified sub-population (e.g., the unbanked or underbanked); y_{med} is the median Californian household income; and ϵ is the absolute value of the elasticity of marginal utility. OMB recommends using a value of 1.4 for the elasticity of marginal utility. We estimate median household income using the FDIC survey results for the California population, where respondents report income data in bins (e.g., $15,000 to $30,000), rather than continuous values (e.g., $17,379). Following Hippel et al. (2017), we use the midpoints of bins to estimate the median income of unbanked and underbanked households.[90] This provides a median income of $22,500 for unbanked households and $40,000 for underbanked households compared with the median California household income of $91,551,[91] which yields utility weights of 7.1 and 3.2 for the unbanked and underbanked, respectively. Since the benefits and costs to other groups will be borne all or in part California taxpayers directly through taxes or indirectly through higher prices, we estimate the burden for the median California household and use a weight of 1.0 for all other groups.

Using these values, we recalculate the results for the "weighted" benefit-cost analysis. This approach explicitly incorporates the diminishing marginal utility of income and an estimate of society's preference improving the welfare of the poor. Since this prioritizes social well-being over economic efficiency, it is plausible that some scenarios that had a negative net benefit would have a positive net benefit after applying the distributional weights. In this case, the unweighted benefit-cost analysis showed a negative net benefit for the "low-end" estimate, while the weighted benefit-cost analysis shows a positive net benefit. Therefore, policymakers might decide that the net welfare gain of financial inclusion for the unbanked and underbanked using the distributional weights outweighs the risk of a net social loss in the unweighted benefit-cost analysis under the low-end enrollment projections.[92]

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89 _____.

90 von Hippel, Paul T., David J. Hunter, and McKalie Drown, "Better Estimates from Binned Income Data: Interpolated CDFs and Mean-Matching," *Sociological Science,* Vol. 4, November 15, 2017.

91 United States Census Bureau, "Explore Census Data." As of April 8:

https://data.census.gov/

92 A net social loss was calculated for the low-end estimates for all three policy options due to low enrollment projections. A net social gain was calculated for the midpoint and high-end estimates in the unweighted benefit-cost analysis.

Furthermore, using distributional weights may change the ranking of policy options when comparing net benefits. Using this set of utility weights, Scenario 3 has the greatest net social benefit as opposed to Scenario 2 in the unweighted benefit-cost analysis. This suggests that using distributional weights to inform policy decisions would prioritize maximizing enrollment over the maximizing the relative cost-effectiveness of the CalAccount Program. Policymakers may compare the unweighted and weighted benefit-cost analysis to better understand the trade-off between these policy options. As described above, the weighted benefit-cost analysis prioritizes social welfare, while the unweighted benefit-cost analysis prioritizes economic efficiency.

Table C.21 reports our midpoint estimates of the benefits and costs of the CalAccount Program using distributional weights and applying a 2 percent discount rate. Table C.22 reports the low-end estimates and Table C.23 reports the high-end estimates using distributional weights.

Table C.21. Summary of Benefits and Costs by Year Using Distributional Weights and a 2 Percent Discount Rate ($2023, Millions)

Year	Scenario 1			Scenario 2			Scenario 3		
	Benefits	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**
2026	$153.9	$125.7	$28.2	$183.5	$148.5	$34.9	$204.2	$165.5	$38.7
2027	$564.0	$172.0	$391.9	$665.4	$199.5	$465.8	$729.3	$222.2	$507.1
2028	$810.4	$99.1	$711.3	$952.3	$118.9	$833.4	$1,038	$136.2	$901.6
2029	$549.3	$99.1	$450.2	$648.1	$119.0	$529.0	$710.3	$136.2	$574.2
2030	$294.0	$98.2	$195.8	$350.6	$117.9	$232.7	$390.1	$134.8	$255.3
2031	$290.8	$97.3	$193.5	$346.7	$116.8	$229.8	$385.7	$133.5	$252.2
2032	$287.2	$96.3	$190.9	$342.4	$115.6	$226.7	$380.9	$132.1	$248.9
2033	$282.9	$95.4	$187.5	$337.3	$114.5	$222.8	$375.3	$130.7	$244.5
2034	$278.9	$94.4	$184.5	$332.5	$113.3	$219.2	$369.9	$129.3	$240.6
2035	$275.0	$93.4	$181.7	$327.9	$112.1	$215.8	$364.8	$127.9	$236.9
10-Year NPV	$3,786	$1,071	$2,715	$4,486	$1,276	$3,210	$4,948	$1,448	$3,500
Annualized Value	$413.2	$116.9	$296.4	$489.7	$139.3	$350.4	$540.1	$158.1	$382.0

Table C.22. Summary of Benefits and Costs by Year Using Distributional Weights and a 2 Percent Discount Rate, Low-end Estimate ($2023, Millions)

Year	Scenario 1			Scenario 2			Scenario 3		
	Benefits	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**
2026	$76.9	$56.5	$20.5	$91.7	$67.5	$24.2	$102.1	$76.0	$26.1
2027	$208.3	$79.6	$128.7	$246.8	$93.2	$153.6	$272.3	$104.6	$167.7
2028	$260.6	$50.2	$210.4	$307.7	$60.1	$247.7	$337.7	$68.7	$269.0
2029	$203.0	$50.2	$152.7	$240.5	$60.1	$180.4	$265.3	$68.7	$196.6
2030	$146.6	$49.8	$96.8	$174.8	$59.5	$115.2	$194.5	$68.0	$126.5
2031	$144.8	$49.3	$95.5	$172.6	$59.0	$113.7	$192.1	$67.3	$124.8
2032	$142.9	$48.8	$94.1	$170.4	$58.4	$112.0	$189.6	$66.6	$123.0
2033	$140.9	$48.3	$92.5	$167.9	$57.8	$110.2	$186.9	$65.9	$121.0
2034	$138.8	$47.8	$91.0	$165.5	$57.2	$108.4	$184.2	$65.2	$119.0
2035	$136.8	$47.3	$89.5	$163.1	$56.6	$106.6	$181.6	$64.5	$117.1
10-Year NPV	$1,600	$528	$1,072	$1,901	$629	$1,272	$2,106	$716	$1,391
Annualized Value	$174.6	$57.6	$117.0	$207.5	$68.7	$138.8	$229.9	$78.1	$151.8

Table C.23. Summary of Benefits and Costs by Year Using Distributional Weights and a 2 Percent Discount Rate, High-end Estimate ($2023, Millions)

Year	Scenario 1			Scenario 2			Scenario 3		
	Benefits	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**	**Benefits**	**Costs**	**Net Benefits**
2026	$230.8	$194.9	$35.9	$275.2	$229.6	$45.6	$306.3	$255.0	$51.3
2027	$919.7	$264.5	$655.2	$1,084	$305.8	$778.1	$1,186.2	$339.7	$846.5
2028	$1,360	$147.9	$1,212	$1,597	$177.8	$1,419	$1,738	$203.7	$1,534
2029	$895.7	$148.0	$747.6	$1,056	$178.0	$877.7	$1,155	$203.6	$951.7
2030	$441.5	$146.6	$294.9	$526.4	$176.3	$350.1	$585.8	$201.6	$384.1
2031	$436.7	$145.3	$291.5	$520.7	$174.6	$346.0	$579.3	$199.7	$379.7
2032	$431.5	$143.8	$287.7	$514.4	$172.9	$341.5	$572.3	$197.5	$374.7
2033	$424.9	$142.4	$282.5	$506.6	$171.2	$335.4	$563.7	$195.5	$368.1
2034	$418.9	$141.0	$277.9	$499.4	$169.4	$330.0	$555.7	$193.5	$362.2
2035	$413.2	$139.4	$273.8	$492.6	$167.6	$325.0	$548.1	$191.4	$356.7
10-Year NPV	$5,973	$1,614	$4,359	$7,072	$1,923	$5,148	$7,791	$2,181	$5,609
Annualized Value	$651.9	$176.1	$475.8	$771.8	$209.9	$561.9	$850.3	$238.1	$612.2

Limitations

This appendix presents a preliminary screening analysis to identify and evaluate policy options for the CalAccount Program based on information from the FDIC Survey and RAND Survey, readily available public data (e.g., FDIC and the Federal Reserve Board of Governors), academic literature, bank and credit union websites, industry blogs, and interviews with stakeholders. It is intended to provide an initial assessment of the groups impacted as well as the direction and magnitude of benefits, costs, and transfers to inform future decisionmaking. This analysis is necessarily speculative because there is no proposed regulation establishing the CalAccount Program and many decisions on the program structure are yet to be made. The key limitations of this BCA include:

- **The CalAccount Program features are not yet defined.** We use stylized scenarios to represent potential policy options for the structure of the program. However, limited information was available at the time of this study on specific program features, including how the program will identify, function with, and oversee financial agents. Therefore, the administrative costs to the state may be over- or underestimated.

- **Quantifying and monetizing benefits of financial inclusion is challenging.** The monetized benefits estimated in this report are based on programs developed in other countries that had similar features but were not identical to the CalAccount program. Since they targeted a similar unbanked or underbanked population using similar mechanisms, we believe they are appropriate analogs. However, the estimated program impacts may over- or underestimate the monetary impacts of financial inclusion. Other benefits, such as public safety and health outcomes, could not be easily monetized due to lack of available information. Therefore, this analysis may understate the social benefits of the financial inclusion.
- **Projected enrollment rates are highly uncertain.** Throughout this report we include various robustness checks to illustrate how key source of uncertainty might impact benefits or costs. As shown, the calculated net benefits are highly sensitive to estimates about enrollment in the CalAccount Program. Ultimately, the structure and features of the program as well as the success of marketing/outreach will impact how many unbanked and underbanked Californians will enroll.
- **Attrition rates are also uncertain.** This analysis does not make explicit assumptions regarding future attrition from the CalAccount Program. However, banks typically experience non-trivial attrition rates associated with customers closing accounts or transferring funds to other banks or credit unions. Even if overall enrollment levels remained constant, significant attrition would increase program costs associated with new enrollments (e.g., KYC requirements) and issuing new debit cards.
- **Banking fee structures are generally proprietary information and limited data were available.** While we rely on several assumptions to estimate the costs of developing policies and procedures, investing in financial technologies, and enrolling new customers, these may over- or underestimate the costs for participating financial institutions to administer the CalAccount Program. Financial institutions may consider a wide range of factors beyond those included in this analysis and will ultimately determine whether it is financially feasible to offer CalAccounts.
- **Input-output models do not reflect price changes in the economy and do not account for diminishing returns.** The I-O modeling framework we use to estimate macroeconomic impacts does not allow for substitution across inputs to production or changes in the production function and does not capture the impacts of relative price changes. I-O models assume a constant return to scale, so they do not account for capacity and capital constraints to growth.

Findings

Under the assumptions presented in this preliminary analysis, the overall societal benefits of CalAccount likely exceed its costs over a 10-year period given sufficient program enrollment.

Under our midpoint enrollment estimates the net benefits are calculated to be around $4 million (or less) on an annual basis, while they are negative under our low-end enrollment projections. However, not all of the benefits of the program can be monetized, and this estimate may understate the net benefits of the program. The non-monetized benefits of the program include increased financial inclusion and financial literacy, improved household financial stability, enhanced health and public safety outcomes, and opportunities for financial innovation, such as increased adoption of financial technology and partnerships between financial institutions and community-based organizations.

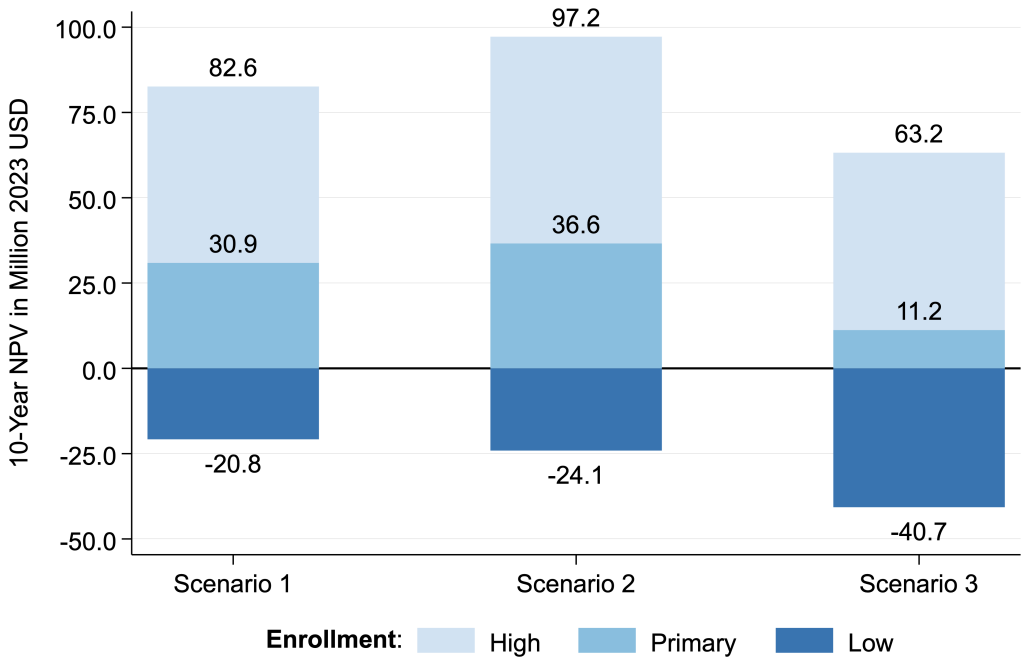
The societal benefits of the program accrue primarily to unbanked and underbanked households in California, while participating financial institutions would benefit from increased revenue from new deposits and interchange fees due to increased debit card use. The state would benefit from a revenue-sharing agreement with the financial services network administrator, but the significant upfront program costs and outreach costs would be a burden on California taxpayers. Notably, the largest impact of the program would be a significant income transfer from traditional financial institutions, alternative financial services, and taxpayers to unbanked and underbanked households in California. Specifically, the avoidance of customer fees would reduce industry profits in the financial services sector while boosting household disposable income. We estimate unbanked and underbanked households, on average, would avoid fees associated with transaction and deposit services totaling $70 to $150 per year. We also estimate that unbanked households would increase their overall level of household savings by approximately $450 to $1,200. This amount of savings could have a significant impact on the well-being of low-income households, easing the burden of financial insecurity and reducing the need for short-term lending in an emergency (e.g., a car repair or medical bill). On a net basis, the program would likely result in job losses in the financial services sector and its suppliers, but an overall gain in employment across other sectors of the economy—resulting in about 100 new jobs in California.

We find the cost of operating the CalAccount program may not be economically feasible for a financial services network administrator barring the state subsidy. Given the estimated average value of deposits in a CalAccount, the total estimated program revenues are less than $50 per account per year. Our review of various industry sources suggests that it costs banks, on average, between $175 and $400 per year to maintain a customer checking account. These figures suggest that CalAccount Program revenues may not be sufficient to cover the basic costs of account maintenance. This reflects that unbanked and underbanked households have less in total assets and make fewer (and lower value) debit card transactions relative to the fully banked population. However, presumably financial institutions interested in this partnership would be accounting for building longer-term relationships with previously unbanked and underbanked customers. Those customers, once more comfortable and familiar with their own bank, may open other accounts or seek to use more traditional credit services (e.g., car loan or mortgage).

Furthermore, a financial institution may realize economies of scale in providing a large number of accounts (up to 1.2 million households) to justify administering the program—particularly because of the State's investment in marketing/outreach for the program would reduce the bank's customer acquisition costs. However, if the State were to partner with more than one bank or credit union, it would: (1) raise the overall costs because multiple financial institutions would need to invest in financial technologies and implement policies and procedures to administer the program, (2) split the program revenues between multiple parties thus reducing the financial benefit to each entity, and (3) increase the state oversight burden because there are multiple financial agents. Nonetheless, this may reduce risk to the State if one bank were to become financially stressed or fail due to factors external to the CalAccount Program. For the state, there are potential revenue-sharing arrangements that could make the program revenue-neutral with regard to operating costs within 5 to 10 years—however, the state would likely not recoup the significant outreach costs needed to reach a sustainable level of enrollment.

As noted, the feasibility of the CalAccount Program is highly dependent on enrollment. Figure B.8 provides a sensitivity analysis across the three policy options using the low-end, midpoint, and high-end enrollment estimates presented in this study. Since many of the program's costs are fixed and its benefits are variable, under the low-enrollment projections we predict the costs of the program will exceed its benefits and it will produce a negative return on investment. For the midpoint and high-end enrollment estimates, we estimate the program's benefits over the first 10 years will exceed the costs, producing a positive social return on investment. This finding highlights the importance of marketing/outreach as actual enrollment will depend on generating awareness of the program.

Figure C.8. Projected 10-Year Net Present Value by Scenario and Enrollment Level



Using a traditional benefit-cost framework, Scenario 2 provides the greatest net social benefits. This reflects that under Scenario 1 (the mobile banking option) enrollment would potentially be limited due to lack of access to high-speed Internet, lack of trust in financial technology, or a preference to bank at a physical branch location. While the program costs of Scenario 2 are higher—for example, existing branches will have to invest in retail space and technology to accommodate new customers—it will provide the most cost-effective option for expanding financial inclusion from a societal perspective. Further, while Scenario 3 provides the greatest total benefits, it yields the smallest *net* benefit because the cost of staffing alternative banking options in non-traditional locations (e.g., post offices) would likely exceed the benefit of incrementally increasing access to banking services at the margins. The relatively low number of unbanked and underbanked households that indicated distance to the nearest branch was a significant barrier to banking suggests such an approach would have to be done in a more cost-effective manner, such as through temporary or mobile enrollment centers.

Given the significance of distributional impacts associated with the CalAccount Program, we conducted a supplemental analysis applying distributional weights that reflect estimates of society's preferences for the overall distribution of income. Using these values, we recalculate the results to produce a "weighted" BCA. Whereas the unweighted BCA showed a negative net benefit for the low-end enrollment projection, the weighted BCA shows a positive net benefit.[93] This provides some evidence for policymakers to consider that the welfare gain associated with

[93] In the unweighted benefit-cost analysis, for all three policy options a net social loss was calculated for the low-end enrollment estimate, while a net social gain was calculated for the midpoint and high-end enrollment estimates.

financial inclusion for the unbanked and underbanked may outweigh the risk of a net social loss under a lower enrollment scenario. Furthermore, using distributional weights changes the ranking of policy options. In the weighted BCA, Scenario 3 (mobile banking plus an expanded brick-and-mortar financial network) yields the greatest net social benefit as opposed to Scenario 2 in the unweighted BCA. This suggests that using distributional weights to inform policy decisions would prioritize increasing enrollment over the relative cost-effectiveness of the CalAccount Program in order to maximize societal well-being.

Overall, we find the success of CalAccount hinges most on enrollment. If CalAccount does not reach a sufficient level of uptake, the program's costs are likely to outweigh its benefits. If it does, the benefits are likely to outweigh the costs contributing to meaningful savings for customers and significant reductions in unbanked disparities. An informed comparison of policy options for implementing the CalAccount Program will then help decisionmakers weigh potential trade-offs between program cost-effectiveness and societal welfare in banking the unbanked in California.

Appendix D. Modeling CalAccount Take-Up

In this Appendix, we describe how CalAccount take-up rates are 3estimated. We first provide a high-level overview of our methodology and present the estimated take-up rates across the three scenarios. Next, we provide details on the methodology used to estimate the take-up rates.

Take-Up Rates Overview

In this section, we describe how take-up rates are estimated for the different CalAccount scenarios considered in this report. Take-up rates are derived by leveraging information collected in the RAND California Survey of Household Finance which oversamples the unbanked and underbanked in California, resulting in a rich repository of information on this population of interest. Next, with take-up rates in hand, we investigate how the CalAccount program could impact disparities in unbanked and underbanked rates by different demographic characteristics. This illuminates how the CalAccount program could affect enrollment differentially across demographic groups. Finally, we estimate the immediate savings to CalAccount participants by demographics associated with no longer using transactional alternative financial services.

The RAND CalAccount Market Study and Feasibility Assessment considers six different CalAccount structures that vary in terms of access and awareness. Estimated take-up is a function of access, awareness, and interest, and is estimated separately for unbanked and underbanked populations:

1. Access is the percentage of unbanked and underbanked who are predicted to have access to a CalAccount based on location and internet access. Access under the mobile banking only option is assumed to be 85 percent, which is the percentage of California households with high-speed internet in 2021.[94] Under scenario 2, the mobile banking option with existing financial network, we assume that 95 percent have access. Under scenario 3, the mobile banking option with expanded brick-and-mortar financial network, we assume that 100 percent of unbanked and underbanked would have access.
2. Awareness is the percentage of the unbanked and underbanked population that is aware of the CalAccount program. We assume two awareness scenarios, 25 percent and 75 percent.
3. Interest is the percentage of the unbanked and underbanked population that are potentially interested in opening a CalAccount based on responses to the RAND California Survey of Household Finance questions about interest in CalAccount features and reasons for being unbanked and underbanked. For the unbanked population, interest also incorporates

[94] Starr, Darriya, Joseph Hayes, and Niu Gao, "Broadband access has grown in recent years, but many still lack access," *Public Policy Institute of California*. As of June 2023:
https://www.ppic.org/publication/californias-digital-divide/.

responses from a question posed only to the unbanked about their interest in opening a checking or savings accounts.

The estimated take-up rates are the product of multiplying together access, awareness, and interest. We estimate the take-up rates separately for migrant and non-migrant households. As a result, the take-up rate for non-migrant households is applied to the number of unbanked and underbanked households in California from the 2021 FDIC National Survey of Unbanked and Underbanked Households and the take-up rate for migrant households is applied to the number of unbanked and underbanked migrant households reported in the RAND California Survey of Household Finance (54,886 unbanked migrant households and 128,863 underbanked migrant households).[95] Additional details about assumptions and methods used to derive the take-up rates can be found in Appendix E.

Table D.1 reports the overall estimated take-up rates and counts of households predicted to participate in CalAccount, including both migrant and non-migrant households. Across all the scenarios considered, the take-up rate ranges from 9.0 to 33.7 percent among the unbanked and 10.3 to 41.8 percent among the underbanked. The overall take-up rates range from 9.9 percent to 39.6 percent.[96] As expected, take-up increases with access and awareness. In the most limited scenario considered, mobile banking only with 25 percent awareness, we predict a total of over 290,000 households would participate in CalAccount. In the most expansive scenario considered, mobile banking with expanded brick and mortar financial network, with 75 percent awareness, we predict that a total of nearly 1.2 million households would participate in CalAccount.

[95] *Federal Deposit Insurance Act: Regulators' Use of Systemic Risk Exception Raises Moral Hazard Concerns and Opportunities Exist to Clarify the Provision*, General Accounting Office, GAO-10-100, April 2010. https://www.gao.gov/assets/gao-10-100.pdf, Federal Deposit Insurance Coporation, "2021 FDIC National Survey of Unbanked and Underbanked Households," July 24, 2023.

[96] The Bank On program is the most similar program to the CalAccount. While take-up rates for Bank On are not available, we can make some rough approximations from the limited data available to provide insight on whether the estimated take-up rates for the CalAccount are reasonable. Using data from the St. Louis Federal Reserve Bank On data hub, we estimate that in 2019, there were about 1.9 million accounts opened and approximately 7.1 million unbanked households, for an implied take-up rate of 27 percent. In 2021, there were about 3.4 million Bank On accounts opened, and approximately 5.9 million unbanked households, corresponding to a take-up rate of around 58 percent. Note, that only a subset of institutions that offer a Bank On account report their data. Specifically, there were 28 reporting institutions in 2021 and 10 institutions reporting in 2019. The total number of institutions offering a Bank On account each year is not recorded so while we know the account numbers reported are underestimates of the total number of accounts, we do not know how the limited sample of institutions affect the rough estimates of take-up. Our CalAccount take-up rates under high awareness are within range of the estimated 27 to 58 percent take-up for Bank On. The CalAccount take-up rates under low awareness are below the Bank On take-up range.

Table D.1. CalAccount scenario take-up rates

	Unbanked Households Estimated to Participate in CalAccount	Unbanked Take-up rate	Underbanked Households Estimated to Participate in CalAccount	Underbanked Take-up rate	Total Households Estimated to Participate in CalAccount	Take-up rate
Scenario 1 Low Awareness	70,819	9.0%	222,074	10.3%	292,893	9.9%
Scenario 1 High Awareness	212,457	26.9%	666,221	30.9%	878,678	29.8%
Scenario 2 Low Awareness	82,506	10.4%	266,758	12.4%	349,264	11.9%
Scenario 2 High Awareness	247,518	31.3%	800,273	37.2%	1,047,791	35.6%
Scenario 3 Low Awareness	88,760	11.2%	299,999	13.9%	388,758	13.2%
Scenario 3 High Awareness	266,280	33.7%	899,996	41.8%	1,166,275	39.6%

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.

Methodology for estimating CalAccount take-up rates

We decompose take-up into three factors; access to CalAccount, knowledge of CalAccount, and interest in CalAccount. To estimate take-up of the CalAccount program under each scenario, we make assumptions about three parameters: 1) percentage of unbanked and underbanked population with access to CalAccount (access), 2) the percentage of unbanked and underbanked who are informed about the CalAccount (awareness), and 3) the percentage of unbanked and underbanked who would be interested in the CalAccount (interest). These three parameters are multiplied together to get the CalAccount take-up rate, i.e., the percentage of unbanked and underbanked predicted to participate in the CalAccount program. To estimate the estimated number of households who would participate, we multiply the take-up rate with the number of unbanked and underbanked households in California from the 2021 FDIC National Survey of Unbanked and Underbanked Households.

Our estimates of take-up only include unbanked and underbanked households. We assume fully banked households would not open a CalAccount because a small share of banked households, 4 percent by recent estimates, are documented to switch banks, and on average, U.S.

adults tend to stay with the same checking account for an average of over 17 years. [97,98] Moreover, there are accounts offered by banks including non-California banks (e.g., Ally Bank, Capital One) that are interest bearing and have limited to no fees.

Access assumptions

We assume access to the CalAccount will be the lowest under the online only model and highest under the expanded network option. For scenario 1 which is the online account only model, we assume that 85 percent of the unbanked and underbanked population would have access. This assumption is based on U.S. Census American Community Survey data that estimated 85 percent of California households had high-speed internet at home in 2021.[99] For scenario 3, which is the mobile banking plus expanded brick-and-mortar financial network, we assume that 100 percent of the unbanked and underbanked population would have access. For scenario 2, the mobile banking plus brick-and-mortar using existing financial network, we assume that 95 percent of the unbanked and underbanked population would have access.

Awareness assumptions

For each CalAccount scenario, we assume two different awareness levels. Under the low awareness option, we assume 25 percent of the unbanked and underbanked households would learn about the CalAccount program. Under the high awareness options, we assume 75 percent of unbanked and underbanked households would learn about the CalAccount program. Given limited information on what the desired level of outreach would be for the CalAccount, we chose these percentages to provide a broad range for what awareness level might be achieved for the CalAccount.

Interest assumptions

We derive levels of interest in the CalAccount program separately for underbanked and unbanked using key survey questions from the RAND California Survey of Household Finance. For the unbanked, interest levels are based on questions about reasons for not having a checking or savings account (Question P2 in the RAND California Survey of Household Finance), interest in a checking or savings account (P3), and interest in opening a checking or savings account by account feature (M1). For the underbanked, interest levels are based on questions about reason for using alternative financial services (U3) and interest in opening a checking or savings

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[97] J.D. Power, "Ten Years After Great Recession, Innovation Overcomes Reputation as Bank Switching Hits Record Low, J.D. Power Finds," April 25, 2019. https://www.jdpower.com/business/press-releases/2019-us-retail-banking-satisfaction-study

[98] Wisniewski, Mary, "Survey: Consumers stick with the same checking account for an average of 17 years," January 4, 2022. https://www.bankrate.com/banking/how-long-people-keep-their-checking-savings-accounts/

[99] Starr.

account by account feature (M1). We assume interest among unbanked households will be higher among those who express higher interest in opening a checking or savings account, who express higher interest in account features that would be offered by the CalAccount, and who report a reason for not having a bank account that is directly addressed by the CalAccount. We assume interest among underbanked households will be higher among those who express higher interest in account features that would be offered by the CalAccount, and who report a reason for using alternative financial services that is directly addressed by the CalAccount.

To estimate average interest for the unbanked and underbanked populations, we split each population into four interest levels and into two bins based on whether or not the stated reason for their current status (unbanked or underbanked) is directly addressed by CalAccount. We create four interest categories based on questions covering interest (Questions P4 and M1 in the RAND California Survey of Household Finance for unbanked and M1 for underbanked), and two reason categories to indicate whether the CalAccount would directly address the stated reasons for being unbanked and underbanked (P2 for unbanked and U3 for underbanked). We then assign each interest-by-reason bin a subjective probability of taking up the CalAccount. The details are provided below.

Defining interest categories

To define the four interest categories (high interest, some interest, unclear interest, and not interested) for the unbanked, we use the following two questions from the RAND California Survey of Household Finance:

1. Question P4: How interested are you in having a checking or savings account? Response categories include not interested, somewhat interested, very interested, and don't know.
2. Question M1: We understand that currently do not have a checking or savings account at a traditional bank or credit union. However, if you were offered the opportunity to open a checking or savings account, what features might convince you to take advantage of the opportunity?
    a. The account has no fees or penalties of any kind. That means you will NOT be charged a fee for overdrawing your account, for paying bills, for taking cash out at an ATM, or for using your debit card.
    b. The account does not require you to keep a minimum amount of money in it.
    c. The account does not require you to have a government issued ID.
    d. The account allows you to deposit income from any source no questions asked.
    e. The account is at a bank that has a physical location where you can go and receive in-person service

    Respondents to M1 can choose the following options for each of features: I would not consider opening this account, I might consider opening this account, and I would likely consider opening this account. For scenario 1 (online banking only), interest is based on features a through d. For scenarios 2 and 3, interest is based on all features.

For the underbanked, we use the underbanked version of Question M1 where the beginning part of the question says "We understand that you currently have a checking or savings account…" to define the four interest categories. About five percent of unbanked respondents did not respond to question M1. For these respondents, we define interest based on their responses to P4 where the responses map one-to-one to the four interest categories (i.e., those who respond very interested in opening a checking or savings account are put in the high interest category, those response somewhat interested are put in the some interest category, those who respond don't know are put in the unclear interest category, and those who respond not interested are put in the not interested category). Unbanked who do not respond to M1 and P4 and underbanked who do not respond to M1 are put in the unclear interest category.

Tables D.2 provides the definitions of the interest categories under each of the three scenarios for the unbanked and underbanked. Note that the division of response categories across the four interest categories for the unbanked is exhaustive of all the response combinations to M1 and P4.

Table D.2 RAND California Survey of Household Finance question responses used to define interest categories for unbanked and underbanked

		Definition of interest categories
Unbanked		
High interest	Scenario 1	Respond "I would likely consider opening account" to all four CalAccount features a-e in M1 and any response to P4, OR, if did not answer M1, respond "Very interested" to P4
	Scenario 2 and 3	Respond "I would likely consider opening account" to four out of five CalAccount features in M1 and any response to P4, OR, if did not answer M1, respond "Very interested" to P4
Some interest	Scenario 1	Respond "I would likely consider opening account" or "I might consider opening this account" to at least 1 CalAccount feature a-e in M1 and "very interested", "somewhat interested," or "don't know" to P4, OR, if did not answer M1, respond "Somewhat interested" to P4
	Scenario 2 and 3	Respond "I would likely consider opening account" or "I might consider opening this account" to at least 1 CalAccount feature in M1 and "very interested", "somewhat interested," or "don't know" to P4, OR, if did not answer M1, respond "Somewhat interested" to P4
Unclear interest	Scenario 1	Respond "I would likely consider opening account" or "I might consider opening this account" to at least 1 CalAccount feature a-e in M1 and "Not interested" to P4, OR Respond "I would not consider opening this account" to CalAccount features a-e in M1 and "very interested" to P4, OR, if did not answer M1, respond "don't know" to P4, OR, did not answer M1 and P4

		Definition of interest categories
	Scenario 2 and 3	Respond "I would likely consider opening account" or "I might consider opening this account" to at least 1 CalAccount feature in M1 and "Not interested" to P4, OR Respond "I would not consider opening this account" to all CalAccount features in M1 and "very interested" to P4, OR, if did not answer M1, respond "don't know" to P4, OR, did not answer M1 and P4
Not interested	Scenario 1	Respond "I would not consider opening this account" to CalAccount features a-e in M1 and "not interested," "somewhat interested," or "don't know" to P4
	Scenario 2 and 3	Respond "I would not consider opening this account" to all five CalAccount features in M1 and "not interested, "somewhat interested," or "don't know" to P4
Underbanked		
High interest	Scenario 1	Respond "I would likely consider opening account" to CalAccount features a-e in M1
	Scenario 2 and 3	Respond "I would likely consider opening account" to at least four CalAccount features in M1
Some interest	Scenario 1	Respond "I would likely consider" or "I might consider" opening account to features a-e in M1
	Scenario 2 and 3	Respond "I would likely consider" or "I might consider" opening account to all features in M1
Unclear interest	Scenario 1	Responded "I would not consider opening this account" to at least one, but not all, features a-e in M1, OR, M1 missing
	Scenario 2 and 3	Responded "I would not consider opening this account" to at least one, but not all, features in M1, OR, M1 missing
Not interested	Scenario 1	Respond "I would not consider opening this account" to CalAccount features a-e in M1
	Scenario 2 and 3	Respond "I would not consider opening this account" to all CalAccount features in M1

Determining whether CalAccount addresses unbanked and underbanked reason

To define whether the CalAccount addresses unbanked and underbanked reasons, we use questions in the RAND California Survey of Household Finance that asked about reasons for being unbanked and underbanked as shown in Tables D.3 and D.4. In scenario 1, we assume reasons for not having an account related to bank fees, minimum balance requirements, personal identification requirements, and past history will be directly addressed by CalAccount. In scenario 2, we expand that list of reasons to include confusion about how to open an account. In scenario 3, we further expand the list to include inconvenient bank or credit union locations and

lack of trust in banks or credit unions. Similarly for the underbanked, who are asked about reasons for using alternative financial services, we assume reasons related to fees will be directly addressed by CalAccount. In scenario 3, we additionally assume the expanded network of locations will directly address reasons related to inconvenient locations and trust in banks and credit unions.

Table D.3. RAND California Survey of Household Finance question responses used to determine that the CalAccount addresses unbanked reasons under each scenario

What is the main reason why you do not have a checking or savings account? (P2)	Scenario 1	Scenario 2	Scenario 3
Bank or credit union locations are inconvenient			Y
Bank or credit union account fees and service charges are too high	Y	Y	Y
Bank or credit union account fees are too unpredictable	Y	Y	Y
Bank or credit unions do not offer the products or services you need			
You don't trust banks or credit unions			Y
You don't have enough money to meet minimum balance requirements	Y	Y	Y
Avoiding a bank or credit union gives you more privacy			
You don't have the personal identification required to open an account	Y	Y	Y
You cannot open an account due to problems with past banking or credit history	Y	Y	Y
It is not easy for you to speak with bank or credit union staff in your language			
Banks or credit unions do not feel welcoming or comfortable for people like you			
Information given by banks or credit unions on account rules and fees are confusing			
You do not have enough money to need a bank or credit union account			
Banks and credit unions take too long to clear checks			
Banks and credit unions may close unexpectedly and you might lose all your money			
You do not need to write enough checks to make it worthwhile to have a bank or credit union account			
The people and businesses you usually make payments to only accept cash			
You are not sure how to open and/or to manage a bank or credit union account		Y	Y
You keep your savings in another country			
You prefer to handle your transactions with cash			

Table D.4 RAND California Survey of Household Finance question responses used to determine that the CalAccount addresses underbanked reasons under each scenario

What is/are the reasons why you used a nonbank money order or a nonbank check casher (U3)	Scenario 1	Scenario 2	Scenario 3
Your bank or credit union location is inconvenient			Y
Your bank or credit union's account fees and service charges are too high	Y	Y	Y
Your bank or credit union's account fees are too unpredictable	Y	Y	Y
Your bank or credit union does not offer the product or service you need for certain transactions			
You don't trust banks or credit unions			Y
Avoiding a bank or credit union gives you more privacy			
It is not easy for you to speak with bank or credit union staff in your language			
Banks or credit unions do not feel welcoming or comfortable for people like you			
Banks or credit unions take too long to clear checks			
The people and businesses you usually make payments to only accept cash			
You keep your savings in another country			
You prefer to handle your transactions with cash			
Other			

Calculating average interest

We create the cross of the 4 interest by 2 reason bins for each of the three scenarios as shown in Tables D.5 to D.6. We compute a weighted probability of interest that accounts for interest in an account like CalAccount and whether the CalAccount directly addresses the reason why a respondent is unbanked and underbanked we multiply the share of the unbanked and underbanked in each of the eight bins with that bin's assumed probability of take-up.

The third column shows the distribution of unbanked (or underbanked) across the eight groups, tabulated using the RAND California Survey of Household Finance. Comparing this column across scenarios illustrates how the differences in the scenarios impact the share of the population that would be highly likely (row 1 – high interest and reason for unbanked and underbanked status addressed by CalAccount) or highly unlikely (row 8 – not interested and reason for unbanked and underbanked status not addressed by CalAccount).

The fourth column are assigned probabilities of interest based on the eight different groupings where those with more interest and with unbanked reasons that are directly addressed by the CalAccount are assigned greater probabilities of interest. Unlike our use of the RAND California Survey of Household Finance data to classify the unbanked and underbanked into

different possible take-up levels by scenario, the assignment of the subjective probabilities to each of those bins is arbitrary because we do not have data with which to base these assumptions. The assigned probability of 1 to the most dispensed group and probability of 0 to the least dispensed group are extreme values. A narrower range of subjective probabilities across the eight bins would result in smaller differences in probability of take-up across the scenarios. Adopting a wide scale of subjective probabilities, including the endpoints, is meant to highlight how the different likelihood bins, and in particular how the share of the population in those bins varies by scenario, may impact overall take-up. We use the same subjective probability for each scenario and population so that differences in overall average interest are not driven by the subjective probability scale, and instead driven by differences in how the population is divided across the eight bins. We provide some sensitivity analysis to our chosen subjective probability scale below and describe how results would be qualitatively similar. Additionally, the tables below allow for recalculation of a weighted interest level by adjusting the subjective probabilities assigned to each bin.

The fifth column shows the weighted probability for each category (i.e., multiplication of columns 3 and 4). In the bottom row, we list the list the total estimated interest used to estimate CalAccount take-up, which is the sum of the weighted probabilities of interest.

Table D.5. Defining Interest in CalAccount, Non-Migrant Households, Unbanked Scenario 1

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	6.7%	1	6.7%
High interest	No	2.3%	0.8	1.8%
Some interest	Yes	9.3%	0.7	6.5%
Some interest	No	29.4%	0.5	14.7%
Unclear interest	Yes	10.7%	0.5	5.3%
Unclear interest	No	15.0%	0.3	4.5%
Not interested	Yes	14.4%	0.2	2.9%
Not interested	No	12.4%	0	0.0%
Overall				42.4%

Table D.6. Defining Interest in CalAccount, Non-Migrant Households, Unbanked Scenario 2

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	9.4%	1	9.4%

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	No	2.4%	0.8	1.9%
Some interest	Yes	11.0%	0.7	7.7%
Some interest	No	27.3%	0.5	13.6%
Unclear interest	Yes	8.1%	0.5	4.1%
Unclear interest	No	15.0%	0.3	4.5%
Not interested	Yes	14.9%	0.2	3.0%
Not interested	No	11.9%	0	0.0%
Overall				44.2%

Table D.7. Defining Interest in CalAccount, Non-Migrant Households, Unbanked Scenario 3

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	9.9%	1	9.9%
High interest	No	1.9%	0.8	1.5%
Some interest	Yes	12.2%	0.7	8.5%
Some interest	No	26.2%	0.5	13.1%
Unclear interest	Yes	8.2%	0.5	4.1%
Unclear interest	No	14.9%	0.3	4.5%
Not interested	Yes	17.7%	0.2	3.5%
Not interested	No	9.1%	0	0.0%
Overall				45.1%

Table D.8. Defining Interest in CalAccount, Non-Migrant Households, Underbanked Scenario 1

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	6.6%	1	6.6%
High interest	No	9.5%	0.8	7.6%
Some interest	Yes	9.8%	0.7	6.9%
Some interest	No	17.4%	0.5	8.7%

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
Unclear interest	Yes	20.1%	0.5	10.0%
Unclear interest	No	27.0%	0.3	8.1%
Not interested	Yes	2.7%	0.2	0.5%
Not interested	No	6.8%	0	0.0%
Overall				48.5%

Table D.9 Defining Interest in CalAccount, Non-Migrant Households, Underbanked Scenario 2

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	9.7%	1	9.7%
High interest	No	14.8%	0.8	11.8%
Some interest	Yes	7.8%	0.7	5.4%
Some interest	No	15.6%	0.5	7.8%
Unclear interest	Yes	19.3%	0.5	9.6%
Unclear interest	No	23.7%	0.3	7.1%
Not interested	Yes	2.6%	0.2	0.5%
Not interested	No	6.7%	0	0.0%
Overall				51.9%

Table D.10. Defining Interest in CalAccount, Non-Migrant Households, Underbanked Scenario 3

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	14.1%	1	14.1%
High interest	No	10.3%	0.8	8.3%
Some interest	Yes	12.1%	0.7	8.5%
Some interest	No	11.2%	0.5	5.6%
Unclear interest	Yes	27.4%	0.5	13.7%
Unclear interest	No	15.5%	0.3	4.7%
Not interested	Yes	3.3%	0.2	0.7%
Not interested	No	6.0%	0	0.0%

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
Overall				55.5%

Table D.11. Defining Interest in CalAccount, Migrant Households, Unbanked Scenario 1

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	4.3%	1	4.3%
High interest	No	0.0%	0.8	0.0%
Some interest	Yes	21.7%	0.7	15.2%
Some interest	No	17.4%	0.5	8.7%
Unclear interest	Yes	0.0%	0.5	0.0%
Unclear interest	No	34.8%	0.3	10.4%
Not interested	Yes	4.3%	0.2	0.9%
Not interested	No	17.4%	0	0.0%
Overall				39.6%

Table D.12. Defining Interest in CalAccount, Migrant Households, Unbanked Scenario 2

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	4.3%	1	4.3%
High interest	No	0.0%	0.8	0.0%
Some interest	Yes	26.1%	0.7	18.3%
Some interest	No	13.0%	0.5	6.5%
Unclear interest	Yes	0.0%	0.5	0.0%
Unclear interest	No	34.8%	0.3	10.4%
Not interested	Yes	4.3%	0.2	0.9%
Not interested	No	17.4%	0	0.0%
Overall				40.4%

Table D.13. Defining Interest in CalAccount, Migrant Households, Unbanked Scenario 3

Interest Categories	Does CalAccount Address Unbanked Reason?	% of unbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	4.3%	1	4.3%
High interest	No	0.0%	0.8	0.0%
Some interest	Yes	30.4%	0.7	21.3%
Some interest	No	8.7%	0.5	4.3%
Unclear interest	Yes	0.0%	0.5	0.0%
Unclear interest	No	34.8%	0.3	10.4%
Not interested	Yes	8.7%	0.2	1.7%
Not interested	No	13.0%	0	0.0%
Overall				42.2%

Table D.14. Defining Interest in CalAccount, Migrant Households, Underbanked Scenario 1

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	7.4%	1	7.4%
High interest	No	11.1%	0.8	8.9%
Some interest	Yes	7.4%	0.7	5.2%
Some interest	No	33.3%	0.5	16.7%
Unclear interest	Yes	5.6%	0.5	2.8%
Unclear interest	No	27.8%	0.3	8.3%
Not interested	Yes	0.0%	0.2	0.0%
Not interested	No	7.4%	0	0.0%
Overall				49.3%

Table D.15. Defining Interest in CalAccount, Migrant Households, Underbanked Scenario 2

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	11.1%	1	11.1%
High interest	No	22.2%	0.8	17.8%
Some interest	Yes	7.4%	0.7	5.2%

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
Some interest	No	27.8%	0.5	13.9%
Unclear interest	Yes	1.9%	0.5	0.9%
Unclear interest	No	22.2%	0.3	6.7%
Not interested	Yes	0.0%	0.2	0.0%
Not interested	No	7.4%	0	0.0%
Overall				55.6%

Table D.16. Defining Interest in CalAccount, Migrant Households, Underbanked Scenario 3

Interest Categories	Does CalAccount Address Underbanked Reason?	% of underbanked	Assigned probability of interest	Weighted probability of interest
High interest	Yes	24.1%	1	24.1%
High interest	No	9.3%	0.8	7.4%
Some interest	Yes	9.3%	0.7	6.5%
Some interest	No	25.9%	0.5	13.0%
Unclear interest	Yes	3.7%	0.5	1.9%
Unclear interest	No	20.4%	0.3	6.1%
Not interested	Yes	3.7%	0.2	0.7%
Not interested	No	3.7%	0	0.0%
Overall				59.6%

Take-up rates

Tables D.17-D.19 present our assumptions on access, awareness, and interest across the three scenarios separately by survey sample (non-migrant and migrant households) for the unbanked and underbanked, respectively. The ultimate take-up rates are equal to the multiplication of the access rate, awareness rate, and interest rate. The estimated number of non-migrant participating households is equal to the take-up rate multiplied by the total number of California households who are unbanked and underbanked, respectively, the later calculated from the 2021 FDIC National Survey of Unbanked and Underbanked Households which show that there were 735,572 unbanked and 2,024,543 underbanked households in California in 2021, all of which are

assumed to be non-migrant farm worker households.[100] The estimated number of migrant household participants is equal to the take-up rate multiplied by the total number of California households who are unbanked and underbanked, respectively, using data from the RAND California Survey of Household Finance which show that there are 54,886 unbanked and 128,863 underbanked migrant households in California.

Table D.17. CalAccount scenario take-up rate assumptions, Non-Migrant Households, Unbanked

	Access	Awareness	Interest	Take-up rate	Estimated number of participants
Scenario 1 Low Awareness	85.0%	25.0%	42.4%	9.0%	66,204
Scenario 1 High Awareness	85.0%	75.0%	42.4%	27.0%	198,613
Scenario 2 Low Awareness	95.0%	25.0%	44.2%	10.5%	77,235
Scenario 2 High Awareness	95.0%	75.0%	44.2%	31.5%	231,706
Scenario 3 Low Awareness	100.0%	25.0%	45.1%	11.3%	82,973
Scenario 3 High Awareness	100.0%	75.0%	45.1%	33.8%	248,919

NOTE: Take-up rate is the product of access, awareness, and interest. Estimated number of participants is the product of take-up rate and the number of unbanked non-migrant households in California according to the 2021 FDIC National Survey of Unbanked and Underbanked Households.

Table D.18. CalAccount scenario take-up rate assumptions, Non-Migrant Households, Underbanked

	Access	Awareness	Interest	Take-up rate	Estimated number of participants
Scenario 1 Low Awareness	85.0%	25.0%	48.5%	10.3%	208,585
Scenario 1 High Awareness	85.0%	75.0%	48.5%	30.9%	625,754
Scenario 2 Low Awareness	95.0%	25.0%	51.9%	12.3%	249,755
Scenario 2 High Awareness	95.0%	75.0%	51.9%	37.0%	749,264
Scenario 3 Low Awareness	100.0%	25.0%	55.5%	13.9%	280,788
Scenario 3 High Awareness	100.0%	75.0%	55.5%	41.6%	842,365

NOTE: Take-up rate is the product of access, awareness, and interest. Estimated number of participants is the product of take-up rate and the number of underbanked non-migrant households in California according to the 2021 FDIC National Survey of Unbanked and Underbanked Households.

[100] The CPS is a household level survey and is prone to undercounting migrant agricultural workers (Gabbard, Susan M., Richard Mines, R., and Jeffery Perloff, *A Comparison of the CPS and NAWS Surveys of Agricultural Workers*, Institute for Research and Labor Employment, June 1, 1991.) to the extent that the National Agriculture Worker Survey was enacted specifically to collect information on employment and health for this population (United States Department of Labor, "National Agricultural Workers Survey," Undated. https://www.dol.gov/agencies/eta/national-agricultural-workers-survey).

Table D.19. CalAccount scenario take-up rate assumptions, Migrant Households, Unbanked

	Access	Awareness	Interest	Take-up rate	Estimated number of participants
Scenario 1 Low Awareness	85.0%	25.0%	39.6%	8.4%	4,615
Scenario 1 High Awareness	85.0%	75.0%	39.6%	25.2%	13,844
Scenario 2 Low Awareness	95.0%	25.0%	40.4%	9.6%	5,271
Scenario 2 High Awareness	95.0%	75.0%	40.4%	28.8%	15,813
Scenario 3 Low Awareness	100.0%	25.0%	42.2%	10.5%	5,787
Scenario 3 High Awareness	100.0%	75.0%	42.2%	31.6%	17,361

NOTE: Take-up rate is the product of access, awareness, and interest. Estimated number of participants is the product of take-up rate and the number of unbanked migrant households in California according to the RAND California Survey of Household Finance.

Table D.19. CalAccount scenario take-up rate assumptions, Migrant Households, Underbanked

	Access	Awareness	Interest	Take-up rate	Estimated number of participants
Scenario 1 Low Awareness	85.0%	25.0%	49.3%	10.5%	13,489
Scenario 1 High Awareness	85.0%	75.0%	49.3%	31.4%	40,467
Scenario 2 Low Awareness	95.0%	25.0%	55.6%	13.2%	17,003
Scenario 2 High Awareness	95.0%	75.0%	55.6%	39.6%	51,008
Scenario 3 Low Awareness	100.0%	25.0%	59.6%	14.9%	19,210
Scenario 3 High Awareness	100.0%	75.0%	59.6%	44.7%	57,630

NOTE: Take-up rate is the product of access, awareness, and interest. Estimated number of participants is the product of take-up rate and the number of underbanked migrant households in California according to the RAND California Survey of Household Finance.

Sensitivity of take-up rates to subjective probability scale

In this subsection, we present sensitivity analysis for our estimated number of households that would participate in CalAccount based on the probabilities assigned to our 4 by 2 cross of interest in a CalAccount and whether CalAccount directly address the reason for current banked status. Table D.20 presents four alternative probability assignments, as well as the probability assignments used in our main estimates. The first alternative column maintains the same ordering as our main estimates but with lower overall interest in CalAccount as the probability of take-up for each group is no greater than the main estimate probabilities. The last column maintains the same ordering as our main estimates but with higher overall interest in CalAccount as the probability of take-up for each group is at least as large as the probabilities used in our main estimates. The other two alternatives – more weight on CalAccount reason addressed and more weight on interest bin – maintain the same overall raw probability of take-up as the probabilities used in our main estimates in that the sum of the raw probabilities is the same for each column.

The alternative that puts more weight on interest bin has different probabilities of take-up based solely on interest bin, with no variation in probability of take-up within interest bin across whether or not the reason for current banked status is directly addressed by CalAccount. The alternative that puts more weight on whether the reason for current status is directly addressed by CalAccount has some differences in probability across interest bins, but larger differences within interest bin between whether the reason for current status is directly addressed by CalAccount. While these alternatives are in no way exhaustive of the different possibilities, they allow for some illustration of the sensitivity to our overall take-up numbers to different assumptions on the likelihood of participation. Table D.21 presents the total number of households estimated to take-up CalAccount under each alternative probability scheme, with the main estimates bolded for comparison. Compared to our main estimates, the lowest estimated take-up results in between 29-30 percent fewer participating households, depending on scenario and awareness level, and the highest estimated take-up results in 12-13 percent more households participating in CalAccount. Shifting the weight of the likelihood of take-up to depend more on if CalAccount directly address the reason for current banked status or to depend more on interest bin has relatively little impact on the estimates of take-up, changing the estimated number of households by 2 percent fewer to 4 percent more compared to our main estimates. Using these alternative assigned probabilities of interest has no qualitative impact on the results of the impact of CalAccount on disparities in unbanked and underbanked rates.

Additionally, adjusting the subjective probabilities has no qualitative impact on whether CalAccount results in a net societal benefit or cost. Appendix C estimates the number of participating households needed for the CalAccount to generate a net social gain by scenario. 400,000 enrollments are needed for Scenario, 1,500,000 enrollments are needed for Scenario 2, and 600,000 enrollments are needed for Scenario 3. Using any of the alternative assigned probabilities of interest, we find similar results as those presented in the RAND CalAccount Market Study and Feasibility Assessment in which the low awareness scenarios would not achieve the minimum enrollments necessary for CalAccount to break even while the high awareness scenarios would exceed the minimum thresholds needed for the CalAccount to generate a net social gain.

Table D.20. Alternative Assigned Probabilities of Interest

Interest Categories	Does CalAccount Address Underbanked Reason?	Lower overall take-up interest	More weight on reason addressed	Main estimates	More weight on interest bin	Higher overall take-up interest
High interest	Yes	0.7	0.9	1	0.9	1
High interest	No	0.6	0.6	0.8	0.9	0.85
Some interest	Yes	0.5	0.9	0.7	0.6	0.8
Some interest	No	0.4	0.5	0.5	0.6	0.6

Interest Categories	Does CalAccount Address Underbanked Reason?	Lower overall take-up interest	More weight on reason addressed	Main estimates	More weight on interest bin	Higher overall take-up interest
Unclear interest	Yes	0.3	0.6	0.5	0.4	0.6
Unclear interest	No	0.2	0.2	0.3	0.4	0.3
Not interested	Yes	0.1	0.3	0.2	0.1	0.25
Not interested	No	0	0	0	0.1	0.1

Table D.21. Number of Households Participating in the CalAccount using Alternative Assigned Probabilities of Interest

	Lower overall take-up interest	More weight on reason addressed	**Main estimates**	More weight on interest bin	Higher overall take-up interest
Scenario 1 Low Awareness	206,523	290,307	**292,893**	306,635	331,654
Scenario 1 High Awareness	619,570	870,920	**878,678**	919,906	994,961
Scenario 2 Low Awareness	247,406	338,138	**349,264**	363,651	390,856
Scenario 2 High Awareness	742,217	1,014,414	**1,047,791**	1,090,954	1,172,568
Scenario 3 Low Awareness	271,031	394,343	**388,758**	382,970	435,023
Scenario 3 High Awareness	813,093	1,183,029	**1,166,275**	1,148,909	1,305,068

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.

Appendix E. Impact of the CalAccount on Disparities and Savings

In this Appendix, we provide estimates of the impact of the CalAccount on disparities and savings. We first provide a high-level overview of our methodology and present the estimated impacts of the CalAccount on disparities and savings. Next, we provide details on the methodology used to construct these estimates and provide additional detailed results.

Impact on disparities

One of the primary goals of the CalAccount program is to reduce disparities in unbanked and underbanked rates. In this section, we use the 2021 FDIC National Survey of Unbanked and Underbanked Households and the RAND California Survey of Household Finance to examine the potential impact of the CalAccount program on disparities in unbanked and underbanked rates.[101] Specifically, we compare unbanked and underbanked rates by:

1. Race/ethnicity[102]: Categories include White non-Hispanic households, non-White (including Black and Hispanic) households, Hispanic households, and non-Hispanic households.[103]
2. Household structure: Categories include married, unmarried, within unmarried - unmarried female, and unmarried male.
3. Metropolitan statistical area (MSA) status: MSA provides a measure of urbanicity and is used to compare unbanked and underbanked rates between those living in urban areas compared to those living in less densely populated areas. An MSA must either 1) consist of one or more counties that include a city with at least 50,000 residents, or 2) contain a U.S. Census defined urbanized area and have a total population of at least 100,000 (or 75,000 in New England).[104]
4. Household income: Categories include households with annual income below $30,000 and households with income above $30,000.

[101] We note that the estimates of unbanked and underbanked rates may be noisy for certain demographic groups because of small respondent counts in the FDIC Survey. For example, there are only 4 unbanked respondents and 11 respondents in non-Metropolitan Statistical Areas.

[102] We note that our disparity analysis does not include breakdowns by certain races like Black households or Asian households. Almost half of the unbanked and underbanked population in the RAND California Survey of Household Finance report "Other" as race. In order to include as many respondents as possible, the race disparity considered is White households versus Non-White households.

[103] Race/ethnicity of the household in the FDIC survey is based on household head. In the RAND California Survey of Household Finance race/ethnicity is based on the respondent.

[104] United States Bureau of the Census, *Geographic Areas Reference Manual*, United States Department of Commerce, November 1994.

Table E.1 presents baseline unbanked and underbanked rates by the key characteristics of interest in the disparity analysis. Overall, in 2021, the unbanked rate was 5.1 percent and the underbanked rate was 13.9 percent in California. Table 2 shows that there are disparities in unbanked and underbanked rates by race and ethnicity. The unbanked and underbanked rates of non-White households (6.6 percent unbanked and 19.5 percent underbanked) are more than double the unbanked and underbanked rate of White households (3.1 percent unbanked and 6.9 percent underbanked). The unbanked and underbanked rates of Hispanic households (7.7 percent unbanked and 22.7 percent underbanked) are also more than double the unbanked and underbanked rates of White non-Hispanic households (3.9 percent unbanked and 9.9 percent underbanked).

In terms of household structure, married households (3.7 percent unbanked and 13.4 percent underbanked) have lower unbanked and underbanked rates than unmarried households (6.2 percent unbanked and 14.3 percent underbanked). Unmarried female households have similar underbanked rates than unmarried male households (14.4 percent compared to 14.1 percent) but have lower unbanked rates compared to male households (5.5 percent versus 6.9 percent).

Underbanked rates for households in MSAs (13.9 percent) are lower than those not in a MSA (14.9 percent). In contrast, unbanked rates in MSAs (5.1 percent) are higher than households not in a MSA (4.3 percent). The unbanked and underbanked disparities are greatest between low income households and households without low incomes, where low income is defined as households with less than $30,000 in annual household income. The unbanked rate for low income households is 15.0 percent which is six times the rate of households who are not low income (2.5 percent). The underbanked rate for low income households is 21.8 percent which is just under double the underbanked rate for households with annual income above $30,000 (11.9 percent).

Table E.1. Unbanked and Underbanked Rates in California by Demographics, 2021

	# Underbanked Households	% Underbanked	# Unbanked Households	% Unbanked
Race/Ethnicity				
White households	449,276	6.9%	199,393	3.1%
Non-White households	1,575,267	19.5%	536,179	6.6%
Hispanic households	1,033,152	22.7%	348,622	7.7%
Non-Hispanic households	991,391	9.9%	386,949	3.9%
Household Structure				
Married households	899,818	13.4%	247,896	3.7%
Unmarried households	1,116,255	14.3%	481,417	6.2%
Unmarried male households	493,922	14.1%	242,648	6.9%
Unmarried female households	622,333	14.4%	238,769	5.5%
MSA Status				
Households in MSAs	1,944,907	13.9%	712,410	5.1%

	# Underbanked Households	% Underbanked	# Unbanked Households	% Unbanked
Households not in MSAs	79,636	14.9%	23,161	4.3%
Household Income				
Low income households	634,926	21.8%	439,081	15.0%
Not Low income households	1,389,617	11.9%	296,491	2.5%
Total	2,024,543	13.9%	735,572	5.1%

NOTE: Authors' tabulations using the 2021 FDIC National Survey of Unbanked and Underbanked Households. Tabulations are weighted by household weights. MSA is metropolitan statistical area. Low income are households with less than $30,000 in annual household income while those who are not low income have annual household income above $30,000. Table excludes migrant households.

We estimate how the CalAccount would impact unbanked and underbanked disparities based on estimated take-up of the program under each scenario. For a given disparity comparison (e.g., White households vs. non-White households), we begin with the take-up estimates in Table 1 and allocate participants proportionally across the two groups. The allocation that each group receives is a function of first, how large each group's unbanked and underbanked population is (e.g., a larger unbanked and underbanked population means more potential CalAccount customers), and second, each group's interest in the CalAccount (e.g., more interest means higher take-up).

We note that we are unable to apply the same approach to the impact of CalAccount on disparities in unbanked and underbanked rates by MSA status because the questions that are used to derive the take-up rates come from the RAND California Survey of Household Finance, which only contains respondents in MSAs. As such, we use an alternative approach that provides upper and lower bounds of the impact of the CalAccount on disparities in unbanked and underbanked rates by MSA status. This approach first assumes that CalAccount participants come solely from unbanked and underbanked populations in MSAs and then assumes that CalAccount participants come solely from those not in MSAs. In this latter case, because there are so few unbanked and underbanked households living outside of MSAs, all unbanked and underbanked household that are not in MSAs become banked and unbanked and underbanked households in MSAs are moved into the CalAccount to achieve the overall take-up rate.

To estimate the impact of the CalAccount on disparities between migrant and non-migrant households, we first apply the take-up rates estimated for migrant households to the migrant sample in the RAND California Survey of Household Finance and calculate unbanked and underbanked rates under each CalAccount scenario. We compare these to the unbanked and underbanked rates of the non-migrant households, where non-migrant households are represented by the California household sample in the FDIC Survey of Unbanked and underbanked.[105] The RAND California Survey of Household Finance estimates that 19.8 percent of migrant households are unbanked and 46.6 percent are underbanked. These rates are much

[105] Federal Deposit Insurance Coporation.

larger than the non-migrant households unbanked and underbanked rates reported in the FDIC Survey of the Unbanked and underbanked of 5.1 and 13.9 percent, respectively, translating to baseline disparities in unbanked and underbanked rates of 14.8 and 32.6 percentage points.

Tables E.2 present the disparity results for the three scenarios and by high and low awareness. The baseline disparities are in percentage points. For example, the non-White vs White household unbanked disparity is 3.6 percentage points, meaning that the unbanked rate for non-White households is 3.6 percentage points greater than the unbanked rate for White households. Table E.2 presents the percentage change in disparities. For example, the percentage change in the non-White vs White household unbanked disparity is 9 percent under scenario 1 with low awareness. This means that the 3.6 percentage point baseline disparity in unbanked rates fell by 9 percent to approximately 3.2 percentage points. Except for the underbanked disparity between unmarried households and married couples, there are (generally substantial) reductions in disparities from each of the CalAccount scenarios considered, with the reduction in disparities being greatest in the high awareness case, and in scenario 2 and 3. versus the low awareness case and with each subsequent scenario.

Table E.2. Impact of CalAccount on Disparities in Unbanked and underbanked Rates

	Baseline Disparity	Percent Change in Disparity, Low Awareness			Percent Change in Disparity, High Awareness		
		Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
Unbanked							
Race/Ethnicity							
Non-White vs White households	3.6	-9.0%	-10.4%	-11.2%	-26.9%	-31.3%	-33.7%
Hispanic vs Non-Hispanic households	3.8	-10.1%	-11.8%	-12.7%	-30.4%	-35.5%	-38.1%
Household Structure							
Unmarried vs Married households	2.5	-5.7%	-6.6%	-7.1%	-17.0%	-19.8%	-21.3%
Unmarried Female vs Unmarried Male households	-1.4	-1.0%	-1.2%	-1.3%	-3.0%	-3.5%	-3.8%
Household Income							
Low income vs Not Low income households	12.5	-8.2%	-9.5%	-10.2%	-24.5%	-28.6%	-30.7%
Underbanked							
Race/Ethnicity							
Non-White vs White households	12.6	-10.8%	-12.9%	-14.6%	-32.3%	-38.8%	-43.7%

	Baseline Disparity	Percent Change in Disparity, Low Awareness			Percent Change in Disparity, High Awareness		
		Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
Hispanic vs Non-Hispanic households	12.8	-10.8%	-13.0%	-14.6%	-32.5%	-38.9%	-43.7%
Household Structure							
Unmarried vs Married households	0.9	2.2%	2.6%	2.9%	6.6%	7.8%	8.8%
Unmarried Female vs Unmarried Male households	0.3	-4.6%	-5.7%	-6.6%	-13.9%	-17.1%	-19.7%
Household Income							
Low income vs Not Low income households	9.8	-8.3%	-9.9%	-11.1%	-24.8%	-29.7%	-33.4%

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White unbanked disparity = Non-White unbanked rate minus White unbanked rate). Negative signs indicate the disparity gets smaller in magnitude, whereas positive signs indicate the disparity gets larger in magnitude. High awareness assumes 75 percent of the unbanked and underbanked population know about the CalAccount program and low awareness assumes 25 percent of the unbanked and underbanked population know about the CalAccount program. The samples are restricted to non-migrant households.

Disparities by Race/Ethnicity

The non-White household versus White household unbanked and underbanked rate disparity is 3.6 percentage points and 12.6 percentage points, respectively, in the baseline case without the CalAccount program. We estimate that the unbanked disparity between Non-White households and White households would decrease by 26.9 to 33.7 percent in the high awareness scenario and by 9.0 to 11.2 percent in the low awareness scenario. The underbanked disparity between Non-White households and White households would decrease by 32.3 to 43.7 percent in the high awareness scenario and by 10.8 to 14.6 percent in the low awareness scenario.

The baseline unbanked disparity between Hispanic households and Non-Hispanic households is 3.8 percentage points while the underbanked disparity is 12.8 percentage points. The CalAccount program would reduce unbanked disparities by at least 30.4 percent with high awareness and at least 10.1 percent with low awareness while underbanked disparities would fall by at least 32.5 percent with high awareness and 10.8 percent with low awareness. Under the most expansive CalAccount option (Scenario 3 with high awareness), the unbanked and underbanked disparities by Hispanic ethnicity would fall by 38.1 percent and 43.7 percent, respectively.

Disparities by Household Structure

The unbanked and underbanked rate disparity between unmarried and married households are 2.5 percentage points, and 0.9 percentage points, respectively. The CalAccount program is estimated to reduce the unbanked disparity between unmarried and married households by 17.0 to 21.3 percent in the high awareness scenario and by 5.7 to 7.1 percent in the low awareness scenario. We estimate the CalAccount program would increase the disparity in underbanked rates between unmarried and married households. In particular, with high awareness, the underbanked disparity increases by 6.6 to 8.8 percent, and with low awareness, the disparity increases by 2.2 to 2.9 percent. The increase in the underbanked disparity arises from the fact that while the two groups are similar in terms of the proportion that is underbanked, married households express greater interest in the CalAccount than unmarried households.

Disparities by Low Income Status

The unbanked rate for low income households is 12.5 percentage points greater than the unbanked rate for households with income above $30,000. The CalAccount program is estimated to reduce this disparity by 24.5 to 30.7 percent under the high awareness scenario and by 8.2 to 10.2 percent under the low awareness scenario.

The underbanked rate for low income households is 9.8 percentage points greater than the underbanked rate for households with income above $30,000. The CalAccount program is estimated to reduce this disparity by as little as 8.3 percent under the low awareness case for scenario 1 and as much as 33.4 percent under the high awareness case for scenario 3.

Disparities by MSA Status

As discussed earlier, we present the lower bound and upper bound disparity estimates under each scenario and by high and low awareness to analyze the potential impact of the CalAccount on disparities by MSA status. The baseline differences in unbanked rates reveal that those who are not in a MSA have a lower unbanked rate than those who are in a MSA although the difference is small at 0.7 percentage points. Consequently, the bounding estimates under the low awareness case show that the non-MSA unbanked rates would continue to be greater than those in MSAs across the three scenarios as shown in Table E.3. With high awareness, upper bound estimates show that the CalAccount program could cause unbanked rates among those in MSAs to exceed those who are not in MSAs with the difference ranging from 0.7 to 1.0 percentage points across the three scenarios.

Those who are not in a MSA have a higher underbanked rate than those who are in a MSA with the difference being 1.0 percentage points. The lower bound estimates which allocate take-up to those who are not in a MSA first show that the CalAccount could cause underbanked rates for those in a MSA to exceed those who are not in a MSA. The upper bound estimates show how much the disparity in underbanked rates between those who are and are not in a MSA could be

exacerbated by the CalAccount with the disparity ranging from 2.5 percentage points to 7.0 percentage points.

Table E.3. Impact of CalAccount on Disparities in Unbanked Rates Non-MSA households vs MSA households

	Lower Bound Disparity (in percentage points)	Upper Bound Disparity (in percentage points)
Unbanked		
Scenario 1		
High Awareness	-3.8	0.7
Low Awareness	-4.8	-0.3
Scenario 2		
High Awareness	-3.6	0.9
Low Awareness	-4.7	-0.2
Scenario 3		
High Awareness	-3.5	1.0
Low Awareness	-4.7	-0.2
Underbanked		
Scenario 1		
High Awareness	-10.0	5.5
Low Awareness	-12.9	2.5
Scenario 2		
High Awareness	-9.1	6.4
Low Awareness	-12.7	2.8
Scenario 3		
High Awareness	-8.4	7.0
Low Awareness	-12.4	3.0

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-MSA vs MSA disparity = Non-MSA unbanked and underbanked rate minus MSA unbanked and underbanked rate).

Disparities by migrant status

Table E.4 summarizes the estimated impact of the CalAccount program on unbanked and underbanked rates of migrant households and disparities in unbanked and underbanked rates between migrant and non-migrant households. The CalAccount is estimated to reduce disparities in unbanked and underbanked rates between migrant and non-migrant households by 8.2 to 30.9 percent and 9.1 to 40.8 percent, respectively.

Table E.4. Impact of CalAccount on Disparities in Unbanked and underbanked Rates by Migrant Household Status

	Unbanked Rate	Unbanked Disparity (in percentage points)	Percent Change in Unbanked Disparity	Underbanked Rate	Underbanked Disparity (in percentage points)	Percent Change in Underbanked Disparity
Scenario 1 Low Awareness	18.2%	13.6	-8.2%	41.7%	29.7	-9.1%
Scenario 1 High Awareness	14.8%	11.1	-24.6%	31.9%	23.7	-27.4%
Scenario 2 Low Awareness	17.9%	13.4	-9.3%	40.4%	28.8	-11.9%
Scenario 2 High Awareness	14.1%	10.7	-27.9%	28.1%	21.0	-35.8%
Scenario 3 Low Awareness	17.7%	13.3	-10.3%	39.6%	28.2	-13.6%
Scenario 3 High Awareness	13.6%	10.2	-30.9%	25.7%	19.3	-40.8%

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the migrant household rate minus the non-migrant household rate. High awareness assumes 75 percent of the unbanked and underbanked population know about the CalAccount program and low awareness assumes 25 percent of the unbanked and underbanked population know about the CalAccount program. The samples are restricted to non-migrant households.

Summary of disparity analysis

The disparity analysis reveals that the CalAccount program could have a sizeable impact on reducing disparities in unbanked and underbanked rates for demographic groups of interest. Specifically, we estimate that there could be large reductions in disparities between minority and non-minority groups, low-income and non-low-income households, and migrant and non-migrant households. We also estimate large reductions in disparities in unbanked and underbanked rates between unmarried and married households. Although these benefits are not directly quantifiable, these benefits should be taken into consideration when evaluating the costs and benefits of the CalAccount program. However, the CalAccount is not estimated to eliminate disparities in unbanked and underbanked rates in any scenario considered, and at most, disparities are reduced by about 45 percent.

Savings from participating in the CalAccount by demographics

One of the goals of CalAccount is to provide banking services that eliminate the need for the unbanked and underbanked to rely on alternative financial services and to reduce costs associated with high fees among underbanked. In this section, we estimate the savings from no longer needing to use certain alternative financial services and from reduced fees among participants in the CalAccount by demographics. For alternative financial services, we consider

the annual savings from nonbank check cashing and money orders only, which are two transactional alternative financial services that can be replaced via the CalAccount. We exclude international remittances, another alternative financial service, because it is unclear whether that service would be offered by the CalAccount, or if so, whether the CalAccount would offer these services for a lower fee than nonbank institutions. We also exclude credit product alternative financial services since the CalAccount will not be offering credit products. We use the same method as the cost benefit analysis to estimate avoided fees. For nonbank check cashing and nonbank money orders, we take the average incidence by demographics between the FDIC National Survey of Unbanked and underbanked and the RAND California Survey of Household Finance.[106] For prepaid card use, we use the FDIC National Survey of Unbanked and underbanked to estimate incidence by demographics (prepaid care use was not collected in the RAND California Survey of Household Finance).[107] For overdraft fees, account maintenance fees, and ATM fees, we use the rates assumed in the cost-benefit analysis since these rates are not available by demographics for unbanked and underbanked households. We assume the fees associated nonbank check cashing, nonbank money orders, prepaid cards, overdraft fees, account maintenance fees, and ATM fees are the same as those used in the cost benefit analysis. To derive the average cost per household by demographic, we multiply incidence of each fee by the estimated fee and take the sum across all the fees considered. Specific assumptions used to estimate savings by demographics can be found in Tables E.12-E.15.

The analysis on the impact on disparities provides ranges for how the CalAccount could impact disparities when considering pairs of characteristics in isolation (e.g., White vs non-White households, etc.). Although we do not know what the final demographic distribution of CalAccount participants would be, we can impute the savings from not having to pay fees to CalAccount participants using the estimated number of households participating in the CalAccount derived from the disparity analysis. For this part of the analysis, we calculate savings under CalAccount Scenario 2, which is the mobile banking option with brick-and-mortar using the existing financial network, and for high awareness.

Table E.5 presents the estimates of savings in year 2027, which is when the CalAccount program has reached a steady state and the full take-up rate has been reached. The table includes savings per household and total savings across households by demographic group. For example, we estimate that average savings to non-White unbanked households who participate in the CalAccount would be $62 and estimated savings to all non-White unbanked households who participate would be $10.5 million. Table 6 shows that the savings per unbanked household varies from $41 dollars among households who are not low income up to $101 among unmarried

106 _____.

107 For migrant households, we assume the average incidence of prepaid card use among unbanked and underbanked used in the cost benefit analysis.

male households. Savings per underbanked household varies from $131 among unmarried male households up to $185 among non-Hispanic households.

Table E.5. Estimated Savings to Unbanked and underbanked Households Participating in CalAccount by Demographics, Scenario 2, High Awareness, 2027

	Per household savings, Unbanked participants	Total household savings, Unbanked participants ($ Millions)	Per household savings, Underbanked participants	Total household savings, Underbanked participants ($ Millions)
Non-White households	$62	$10.5	$148	$88.9
White households	$85	$5.4	$158	$25.5
Non-Hispanic households	$84	$10.0	$185	$67.4
Hispanic households	$61	$7.1	$156	$61.6
Married households	$37	$3.3	$140	$49.7
Unmarried male households	$101	$6.2	$131	$24.5
Unmarried female households	$79	$5.8	$171	$39.7
Low income households	$87	$11.5	$172	$37.9
Not Low income households	$41	$4.2	$164	$87.0
Migrant households	$72	$1.2	$133	$6.9

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Savings refers to savings from avoided fees associated with nonbank check cashing, nonbank money order fees, prepaid card fees, overdraft fees, account maintenance fees, and ATM fees. Estimates assume the CalAccount program has reached a steady state and that the CalAccount program includes mobile banking and brick-and-mortar using an existing financial network with 75 percent awareness.

Detailed methodology for estimating the impact of the CalAccount on Disparities

Estimating the intermediate cases in the disparity analysis

Our calculation of the intermediate cases shown in the disparity analysis in the main text represents our best estimate of how each disparity would be impacted by CalAccount given the overall number of participants and differential interest in participating across demographic subgroups. We begin with the total number of projected CalAccount participants. To determine how these participating households are divided between two subgroups, we conduct the following steps:

1. Calculate the proportional sizes of the unbanked and underbanked populations between two subgroups. Intuitively, a larger group should translate to more potential customers. As an extreme illustrating example, consider that there are nearly two million underbanked households living in metro areas (95 percent) and just 80,000 living in non-

metro areas (5 percent). If roughly 240,000 individuals are projected to take up CalAccount, the vast majority of these customers should come from metro areas.

2. Calculate the subgroup-specific interest levels. This process mirrors that of the interest calculation process for the general population. Intuitively, subgroups with higher relative interest should account for a greater proportion of the CalAccount participant base.

3. Combine these two subgroup-specific calculations to determine what percent of the projected customer base is allocated to each group. The specific ratio is determined based on the following formula (using White vs. Non-White households as an illustrating example):

$$Ratio\ White = \frac{P(White) \cdot P(Interest \mid White)}{P(White) \cdot P(Interest \mid White) + P(NonWhite) \cdot P(Interest \mid NonWhite)} \quad \text{(C.2)}$$

In words, the equation calculates what percent of "total interest" in CalAccount is accounted for by White households. The $P(Interest \mid White)$ comes from step 2 and the $P(White)$ comes from step 1. The ratio for non-White households is calculated by accordingly adjusting the numerator. The sum of the two ratios will equal 1. These ratios (e.g., White households vs. non-White households) inform the allocation of participating households across the two subgroups.

4. Calculate the group-specific take-up numbers by multiplying the group-specific ratios by the total number of participating households.

5. Determine the new number of unbanked and underbanked households by group by subtracting the number of new CalAccount customers from the original number of unbanked and underbanked households by group.

6. Divide the new unbanked and underbanked household count by the overall number of households for each group. This gives the new unbanked and underbanked rates for each group. The new, intermediate disparity is the difference between the rates for the two groups.

Bounding exercise

In addition to estimating the impact of the CalAccount on disparities by incorporating differential interest by demographic characteristics of interest, we conduct a bounding exercise to estimate the maximum potential impact of the CalAccount on disparities in unbanked and

underbanked rates. This method is applied to unbanked and underbanked by MSA status in the main report, and here we provide additional details about the bounding methodology and present results for other characteristics of interest. The intermediate cases represent a middle ground between the two extreme cases of full adoption among a single subgroup. To construct the extreme case bounds, for each demographic characteristic of interest, we first assume all CalAccount participants come from the group that would exacerbate the disparity and recalculate the unbanked and underbanked rates.[108] Second, we assume all CalAccount participants come from the group that would minimize the disparity and recalculate the unbanked and underbanked rates.[109] For instance, when examining the White versus non-White disparities in unbanked and underbanked rates, we first assume all participants of the CalAccount would come from White households. Then we assume all participants of the CalAccount would come from Non-White households. In each case, we then re-estimate the respective unbanked rates and the new resulting disparity.

Tables E.6 through E.11 provide the lower and upper bound estimates of the impact of the CalAccount program on disparities. These provide the extreme cases on how CalAccount could exacerbate disparities and the best case for how much it could reduce disparities across the three scenarios and by high and low awareness.

Table E.6. Impact of CalAccount on Disparities in Unbanked and underbanked Rates, Scenario 1, High Awareness

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unbanked				
Race/Ethnicity				
Non-White vs White households	3.6	1.1	6.6	2.6
Hispanic vs Non-Hispanic households	3.8	-0.6	5.8	2.7
Household Structure				
Unmarried vs Married households	2.5	0.0	5.4	2.1
Unmarried Female vs Unmarried Male households	-1.4	-4.1	1.9	-1.3
Household Income				

[108] CalAccount participants are first selected from the group that would make the disparity larger. If there are not enough participants from this group, the remaining participants are selected from the group that would make the disparity smaller.

[109] CalAccount participants are first selected from the group that would make the disparity smaller. If there are not enough participants from this group, the remaining participants are selected from the group that would make the disparity larger.

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Low income vs Not Low income households	12.5	5.7	14.2	9.4
Underbanked				
Race/Ethnicity				
Non-White vs White households	12.6	4.8	17.3	8.5
Hispanic vs Non-Hispanic households	12.8	-0.9	19.1	8.7
Household Structure				
Unmarried vs Married households	0.9	-7.1	10.2	1.0
Unmarried Female vs Unmarried Male households	0.3	-7.4	9.8	0.3
Household Income				
Low income vs Not Low income households	9.8	-11.3	15.1	7.4

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White households unbanked disparity = Non-White households unbanked rate minus White households unbanked rate). Disparities are given in percentage points (e.g., the non-White vs. White households baseline unbanked disparity is 3.6 percentage points). High awareness assumes 75 percent of unbanked and underbanked population know about the CalAccount program.

Table E.7. Impact of CalAccount on Disparities in Unbanked and underbanked Rates, Scenario 1, Low Awareness

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unbanked				
Race/Ethnicity				
Non-White vs White households	3.6	2.8	4.6	3.2
Hispanic vs Non-Hispanic households	3.8	2.4	4.5	3.4
Household Structure				
Unmarried vs Married households	2.5	1.6	3.5	2.3
Unmarried Female vs Unmarried Male households	-1.4	-2.3	-0.3	-1.4
Household Income				
Low income vs Not Low income households	12.5	10.2	13.1	11.5
Underbanked				

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Race/Ethnicity				
Non-White vs White households	12.6	10.0	15.8	11.2
Hispanic vs Non-Hispanic households	12.8	8.3	14.9	11.5
Household Structure				
Unmarried vs Married households	0.9	-1.7	4.0	0.9
Unmarried Female vs Unmarried Male households	0.3	-2.2	3.5	0.3
Household Income				
Low income vs Not Low income households	9.8	2.8	11.6	9.0

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White households unbanked disparity = Non-White households unbanked rate minus White households unbanked rate). Disparities are given in percentage points (e.g., the non-White vs. White households baseline unbanked disparity is 3.6 percentage points). Low awareness assumes 25 percent of unbanked and underbanked population know about the CalAccount program.

Table E.8. Impact of CalAccount on Disparities in Unbanked and underbanked Rates, Scenario 2, High Awareness

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unbanked				
Race/Ethnicity				
Non-White vs White households	3.6	0.7	6.3	2.4
Hispanic vs Non-Hispanic households	3.8	-1.3	6.1	2.5
Household Structure				
Unmarried vs Married households	2.5	-0.4	5.9	2.0
Unmarried Female vs Unmarried Male households	-1.4	-4.5	2.4	-1.3
Household Income				
Low income vs Not Low income households	12.5	4.6	14.5	8.9
Underbanked				
Race/Ethnicity				
Non-White vs White households	12.6	3.3	15.8	7.7
Hispanic vs Non-Hispanic households	12.8	-3.6	20.3	7.9

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Household Structure				
Unmarried vs Married households	0.9	-8.6	12.0	1.0
Unmarried Female vs Unmarried Male households	0.3	-9.2	12.1	0.3
Household Income				
Low income vs Not Low income households	9.8	-11.0	16.2	6.9

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White households unbanked disparity = Non-White households unbanked rate minus White households unbanked rate). Disparities are given in percentage points (e.g., the non-White vs. White households baseline unbanked disparity is 3.6 percentage points). High awareness assumes 75 percent of unbanked and underbanked population know about the CalAccount program.

Table E.9. Impact of CalAccount on Disparities in Unbanked and underbanked Rates, Scenario 2, Low Awareness

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unbanked				
Race/Ethnicity				
Non-White vs White households	3.6	2.6	4.7	3.2
Hispanic vs Non-Hispanic households	3.8	2.1	4.6	3.4
Household Structure				
Unmarried vs Married households	2.5	1.5	3.6	2.3
Unmarried Female vs Unmarried Male households	-1.4	-2.4	-0.1	-1.4
Household Income				
Low income vs Not Low income households	12.5	9.9	13.2	11.3
Underbanked				
Race/Ethnicity				
Non-White vs White households	12.6	9.5	16.4	10.9
Hispanic vs Non-Hispanic households	12.8	7.4	15.3	11.2
Household Structure				
Unmarried vs Married households	0.9	-2.3	4.6	1.0

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unmarried Female vs Unmarried Male households	0.3	-2.8	4.3	0.3
Household Income				
Low income vs Not Low income households	9.8	1.4	11.9	8.8

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White households unbanked disparity = Non-White households unbanked rate minus White households unbanked rate). Disparities are given in percentage points (e.g., the non-White vs. White households baseline unbanked disparity is 3.6 percentage points). Low awareness assumes 25 percent of unbanked and underbanked population know about the CalAccount program.

Table E.10. Impact of CalAccount on Disparities in Unbanked and underbanked Rates, Scenario 3, High Awareness

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unbanked				
Race/Ethnicity				
Non-White vs White households	3.6	0.5	6.1	2.4
Hispanic vs Non-Hispanic households	3.8	-1.7	6.3	2.4
Household Structure				
Unmarried vs Married households	2.5	-0.7	6.1	2.0
Unmarried Female vs Unmarried Male households	-1.4	-4.8	2.8	-1.3
Household Income				
Low income vs Not Low income households	12.5	4.0	14.6	8.7
Underbanked				
Race/Ethnicity				
Non-White vs White households	12.6	2.1	14.6	7.1
Hispanic vs Non-Hispanic households	12.8	-5.7	21.2	7.2
Household Structure				
Unmarried vs Married households	0.9	-9.8	13.4	1.0
Unmarried Female vs Unmarried Male households	0.3	-10.6	13.8	0.3
Household Income				

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Low income vs Not Low income households	9.8	-10.2	17.0	6.5

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White households unbanked disparity = Non-White households unbanked rate minus White households unbanked rate). Disparities are given in percentage points (e.g., the non-White vs. White households baseline unbanked disparity is 3.6 percentage points). High awareness assumes 75 percent of unbanked and underbanked population know about the CalAccount program.

Table E.11. Impact of CalAccount on Disparities in Unbanked and underbanked Rates, Scenario 3, Low Awareness

	Baseline Disparity	Lower Bound Disparity	Upper Bound Disparity	Intermediate Case
Unbanked				
Race/Ethnicity				
Non-White vs White households	3.6	2.5	4.8	3.2
Hispanic vs Non-Hispanic households	3.8	2.0	4.6	3.3
Household Structure				
Unmarried vs Married households	2.5	1.4	3.7	2.3
Unmarried Female vs Unmarried Male households	-1.4	-2.5	0.0	-1.4
Household Income				
Low income vs Not Low income households	12.5	9.7	13.2	11.2
Underbanked				
Race/Ethnicity				
Non-White vs White households	12.6	9.1	16.9	10.7
Hispanic vs Non-Hispanic households	12.8	6.7	15.6	11.0
Household Structure				
Unmarried vs Married households	0.9	-2.7	5.1	1.0
Unmarried Female vs Unmarried Male households	0.3	-3.3	4.8	0.3
Household Income				
Low income vs Not Low income households	9.8	0.3	12.2	8.7

SOURCE: Authors' analysis using the RAND California Survey of Household Finance and 2021 FDIC National Survey of Unbanked and Underbanked Households.

NOTE: Disparities are the differences between the first category's unbanked and underbanked rate and the second category's unbanked and underbanked rate (e.g., Non-White vs White households unbanked disparity = Non-White households unbanked rate minus White households unbanked rate). Disparities are given in percentage points (e.g., the non-White vs. White households baseline unbanked disparity is 3.6 percentage points). Low awareness assumes 25 percent of unbanked and underbanked population know about the CalAccount program.

Assumptions used to calculate savings by demographic group

Tables E.12-E.14 contains the assumptions used to estimate savings from avoided nonbank check cashing fees, nonbank money order fees, and prepaid card fees. As in the cost-benefit analysis, we assume that the per person savings from nonbank cash checking would be $117, the savings from nonbank money orders would be $24, the savings from prepaid cards would be $151, the savings from overdraft fees would be $116, the savings from account maintenance fees would be $95 and the savings from ATM fees would be $19. We use the percentages of unbanked and underbanked by demographic group who report using nonbank check cashing and money transfers to estimate these savings. The counts of unbanked and underbanked participants are based on the intermediate case considered for scenario 2 with high awareness in 2027 and reported in Table E.15.

Table E.12. Incidence of nonbank check cashing use by demographic group

	Unbanked			Underbanked		
	FDIC Survey	RAND Survey	Average	FDIC Survey	RAND Survey	Average
Non-White households	19%	31%	25%	18%	28%	23%
White households	17%	18%	18%	12%	27%	20%
Non-Hispanic households	14%	43%	28%	16%	30%	23%
Hispanic households	24%	27%	25%	17%	27%	22%
Married households	11%	32%	22%	14%	25%	20%
Unmarried male households	22%	47%	35%	27%	35%	31%
Unmarried female households	22%	23%	22%	12%	29%	20%
Low income households	22%	33%	28%	22%	25%	24%
Not Low income households	12%	22%	17%	14%	31%	23%
Migrant households		30%	30%		59%	59%

SOURCE: Authors' calculations using the RAND California Survey of Household Finance and the 2021 FDIC National Survey of Unbanked and Underbanked Households.

Table E.13. Incidence of nonbank money orders use by demographic group

	Unbanked			Underbanked		
	FDIC Survey	RAND Survey	Average	FDIC Survey	RAND Survey	Average
Non-White households	27%	29%	28%	52%	52%	52%
White households	29%	40%	35%	59%	68%	63%
Non-Hispanic households	22%	47%	35%	54%	62%	58%
Hispanic households	34%	27%	31%	53%	50%	52%
Married households	20%	26%	23%	48%	49%	48%
Unmarried male households	25%	22%	23%	55%	67%	61%
Unmarried female households	40%	39%	40%	61%	53%	57%
Low income households	31%	38%	34%	68%	48%	58%
Not Low income households	23%	22%	22%	47%	60%	54%
Migrant households		9%	9%		65%	65%

SOURCE: Authors' calculations using the RAND California Survey of Household Finance and the 2021 FDIC National Survey of Unbanked and Underbanked Households.

Table E.14. Incidence of prepaid card use by demographic group

	Unbanked	Underbanked
Non-White households	17%	7%
White households	38%	19%
Non-Hispanic households	28%	15%
Hispanic households	16%	5%
Married households	4%	8%
Unmarried male households	36%	15%
Unmarried female households	29%	9%
Low income households	31%	15%
Not Low income households	10%	8%
Migrant households	17%	7%

SOURCE: Authors' calculations using the 2021 FDIC National Survey of Unbanked and Underbanked Households.

Table E.15 Number of households participating in CalAccount in 2027

	Unbanked	Underbanked
Non-White households	169,830	601,274
White households	62,781	160,855
Non-Hispanic households	119,104	364,237
Hispanic households	116,546	395,985
Married households	89,691	353,967
Unmarried male households	61,820	186,440
Unmarried female households	73,957	231,929
Low income households	131,645	219,794
Not Low income households	102,421	531,502
Migrant households	16,082	51,877

SOURCE: Authors' calculations using the 2021 FDIC National Survey of Unbanked and Underbanked Households.
NOTES: Assumes the same population growth as that used in the cost benefit analysis.

Appendix F. The Potential Impacts of CalAccount on Longer-Run Benefits, Public Safety, and Banks

In this appendix, we investigate potential qualitative benefits of CalAccount. Specifically, we evaluate potential long run benefits, impacts on public safety, and impacts on banks.

Potential longer run benefits

Here, we explore the potential longer run benefits from participating in the CalAccount program by exploring literature on the benefits of financial inclusion and the disadvantages of using alternative financial services. For this literature review, we searched peer-reviewed research and policy documents for studies on these two topics. The summary below is not meant to cover all the papers written on these topics but is meant to be illustrative of the possible benefits (and drawbacks) from being banked through a CalAccount.

Implications from financial inclusion and alternative financial services (AFS) literature

The CalAccount program is expected to increase financial inclusion through both the reduction in barriers to maintaining a checking account and through community outreach efforts. The immediate benefits of having a checking account include an insured mechanism for storage of money, direct deposit options for tax refunds and paychecks (if offered by employers), and access to associated ATM branches to access cash. The longer run impacts on financial outcomes could include increased savings and wealth and a decreased reliance on alternative financial services. In this section, we study the potential long run implications on increased financial inclusion and decreased reliance on AFS. To do so, we summarize past literature documenting both the benefits of financial inclusion and the impacts of AFS usage.

Impacts of financial inclusion on financial outcomes

This subsection summarizes previous literature on the mechanisms through which financial inclusion can impact financial outcomes. While there is numerous documentation on the association of banked status, for example, and other positive outcomes, we focus on studies that attempt to uncover a causal impact of financial inclusion.

Using the United States interstate branching deregulation act of 1994, Celerier and Matray estimated that financial inclusion was previously limited by bank branch access.[110] Once inclusion was extended, banked households had average wealth $6,914 higher and were 40 percent more likely to have positive wealth than unbanked households. Banked households were

[110] Célerier.

more likely to own vehicles and less likely to undergo financial strain after a layoff compared to unbanked households.[111] While numerous studies show an association between banked status and economic outcomes, this study used plausibly independent changes in bank access to estimate a causal impact of financial inclusion.

A field experiment that randomly provided identification cards to Mexican immigrants in the U.S. showed that not only were the cards successful at encouraging Mexican migrants to open a bank account, but that those migrants increased their savings rate as a percent of income by 9 percentage points, an average savings increase of $364 over five months. While this experiment was conducted in one small city, this is evidence that extending bank access can raise savings in a low income minority population.[112]

In a large survey in Detroit, Barr (2008) found that there is an appetite for financial services among low and middle income households.[113] Seventy-five percent stated a desire to be banked, 33 percent had looked for an account in the last year, and 67 percent said having a bank account would help them save. While over half of the banked respondents reported having to pay some type of bank fee – overdraft, minimum balance, or insufficient funds – 85 percent of banked households stated that having a bank account helped them save.

Not all expansions of bank access led to improved outcomes. Celerier and Tak (2022) examine historic records relating to the Freedman's Savings Account and concluded that the program constituted a transfer of wealth from Black households to White households.[114] This is because, while depositors, who were almost exclusively Black, lost over 80 percent of their assets, whole loanees, who were almost exclusively White, defaulted on loans with no oversight or repercussions.[115] Frederick Douglas, once a hopeful proponent of the bank, decried its failure and W.E.B. Du Bois (2008) wrote, "Not even ten additional years of slavery could have done so much to throttle the thrift of the freedman as the mismanagement and bankruptcy of the series of savings banks chartered by the Nation for their especial aid."[116]

Much of the benefits of financial inclusion literature uses experiments from developing countries.[117] While this literature shows benefits from financial inclusion, it may be difficult to

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111 _____.

112 Chin, Aimee, Leonie Karkoviata, and Nathaniel Wilcox, "Impact of bank accounts on migrant savings and remittances: evidence from a field experiment," 2010.

113 Barr.

114 Célérier, Claire, and Purnoor Tak, *Exploiting Minorities through Advertising: Evidence from the Freedman's Savings Bank*, Rotman School of Management: University of Toronto, October 2022.

115 _____.

116 Du Bois, W. E. Burghardt, *The Souls of Black Folk*: Oxford University Press.

117 Brune, Lasse, Xavier Giné, Jessica Goldberg, and Dean Yang, "Facilitating Savings for Agriculture: Field Experimental Evidence from Malawi," *Economic Development and Cultural Change*, Vol. 64, No. 2, January 2016; Dupas, Pascaline, Dean Karlan, Jonathan Robinson, and Diego Ubfal, "Banking the Unbanked? Evidence from Three Countries," *American Economic Journal: Applied Economics*, Vol. 10, No. 2, April 2018; Prina, Silvia

generalize these results to the United States. A couple experiments from larger economies are illustrative of the types of benefits linked to financial inclusion. In an experiment in Mexico, debit cards were randomly issued to some bank account holders who receive assistance payments.[118] The modal behavior without a debit card was to withdraw the entire balance after each assistance deposit. Having a debit card increased savings by 2 percent of annual income two years later. Having a mechanism to monitor their bank account increased users' trust in banks.[119] In the United Kingdom, Fitzpatrick (2015) used an electronic transfer mandate for families with children in the UK Child Benefit Program.[120] The mandate created an increase in bank account ownership among families with children. Using this increase to estimate the effect of being banked on savings behavior, she finds no change in the likelihood of holding 1,500L but a statistically significant increase in the likelihood of having either 10L or 100L in savings, and an increase in total assets of over 100 percent.[121] The CalAccount program would afford households access to online banking, which would allow real-time account monitoring; access to a debit card, facilitate access to any money stored in a checking account, and an insured vehicle for holding savings. From these two experiments, possible long-term benefits of CalAccount participation could include an increased trust in banks by historically marginalized groups, and an increase in savings. Actively saving is associated with a lower risk of missing a housing or utility payment, a lower risk of having a phone disconnected, and a lower incidence of food insecurity in low-income households with children.[122] Having liquid savings is similarly associated with a lower risk of missing a housing or utility payment, and a lower incidence of experiencing material hardship in the wake of an income shock for low and moderate income households.[123,124]

Having access to a bank account to store money can mitigate the deleterious impacts of a natural disaster. In the wake of a natural disaster, residents may become displaced and businesses may close. Unbanked households do not have access to direct deposit and may have difficulty retrieving a check from an employer, and both unbanked and underbanked households who use check cashing businesses may have difficulty accessing funds. While numerous financial safety

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"Banking the poor via savings accounts: Evidence from a field experiment," *Journal of Development Economics*, Vol. 115, 2015.

[118] Bachas.

[119] _____.

[120] Fitzpatrick.

[121] _____.

[122] Gjertson.

[123] Despard et al. (2018) define material hardship as a construct based on seven indicator variables; missed a rent or mortgage payment, missed or was late on a bill payment, forwent the preferred type or amount of food, skipped necessary medical care, skipped a needed dentist appointment, did not fill a needed prescription, and stated difficulty in covering ongoing typical monthly expenses (Despard.)

[124] _____.

nets are in place to ensure FDIC insured institutions are available after a natural disaster, no such safeguards exist to ensure AFS establishments remain available.[125] As natural disasters are feared to be increasing both in frequency and intensity, and as low-income communities and communities of color encounter the most difficulty in recovering from natural disasters, having access to a bank account may be an increasingly important tool to mitigate the financial hardships experienced by the most vulnerable populations in the wake of a disaster.[126,127]

Banked status is a household measure and being banked or more broadly financial inclusion can have impacts for the entire household. Using plausibly random variation in the presence of financial institutions across reservations, Brown et al. (2019) find that Native American children who grew up with access to financial institutions had higher credit scores and were more likely to be banked as adults than Native American adults who did not have exposure to financial institutions as children.[128] They attribute this effect to increased financial literacy and trust in financial institutions.[129] The CalAccount program's elimination of fees found most pernicious by consumers and extension of financial inclusion to lower income households, which in turn are disproportionately racial and ethnic minority households, could thus foster the next cohort of bank customers and improve disparities in financial access for generations to come.[130,131]

Impacts of financial inclusion on health outcomes

The benefits of financial inclusion can have impacts beyond financial outcomes. Using longitudinal household data from the Health and Retirement Survey, which allows for examination of within household changes over time, Aguila et al. (2016) found that among

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[125] Cheney, Julie S., and Sherrie L.W. Rhine, "How effective were the financial safety nets in the aftermath of Katrina?," *Consumer Interest Annual,* Vol. 52, 2006.

[126] Douris, James and Geunhye Kim, *Wmo Atlas of Mortality and Economic Losses From Weather, Climate and Water Extremes (1970–2019)*, World Meteorlogical Organization, WMO-No. 1267, 2021.

[127] Clancy, Noreen, Lloyd Dixon, Jessica Welburn Paige, Sam Morales, Brian Wong, Andrew M. Parker, and Katherine Grace Carman, *Improving the Financial Resilience of Public Entities and Individuals for Natural Disasters: A Resource Guide for State and Local Government*, Homeland Security Operational Analysis Center operated by the RAND Corporation, RR-A1770-3, 2023. https://www.rand.org/pubs/research_reports/RRA1770-3.html. Clancy, Noreen, Lloyd Dixon, Jessica Welburn Paige, Sam Morales, Brian Wong, Andrew M. Parker, and Katherine Grace Carman, *Improving the Financial Resilience of Public Entities and Individuals for Natural Disasters: A Resource Guide for State and Local Government*, Homeland Security Operational Analysis Center operated by the RAND Corporation, RR-A1770-3, 2023. https://www.rand.org/pubs/research_reports/RRA1770-3.html.

[128] Brown, James R., J. Anthony Cookson, and Rawley Z. Heimer, "Growing up without finance," *Journal of Financial Economics,* Vol. 134, No. 3, December 2019.

[129] _____.

[130] Collins, J. Michael, Sarah Halpern-Meekin, Melody Harvey, and Jill Hoiting, "'I Don't Like All Those Fees' Pragmatism About Financial Services Among Low-Income Parents," *Journal of Family and Economic Issues,* Vol. 44, No. 4, November 2022.

[131] Shrider, Emily A. and John Creamer, *Poverty in the United States: 2022*, Washington, D.C.: U.S. Census Bureau, P60-280, September 2023.

Hispanic households aged 51 to 90 years old, those that opened a checking account saw improved mental health, and that those mental health benefits were especially prevalent in Hispanics in lower income neighborhoods.[132] While being banked may thus improve mental health, being unbanked is associated with a 17 precent higher incidence of being in poor or fair health (as opposed to good or excellent health) compared to banked individuals with similar demographics.[133] Using nationally representative census data, Fitzpatrick (2017) finds that unbanked and underbanked low and moderate income households with children experience higher rates of food insecurity than their banked counterparts, with the greatest disparities for previously banked households compared to currently banked households.[134] While these studies are more descriptive in nature as neither the decision to open a bank account nor bank status are likely randomly assigned and may be correlated with other factors that can impact health, they suggest the ability of financial security in the form of a bank account to positively impact health outcomes from children to elderly individuals.

Impacts of alternative financial services (AFS) on financial outcomes

Both unbanked and underbanked households use alternative financial services for a variety of financial dealings. While AFS institutions are heavily concentrated in lower income and minority-majority neighborhoods, many of these neighborhoods tend to have access to bank branches.[135,136] Birkenmaier and Fu (2016, 2018) show that usage of AFS is correlated with unbanked status net of differences in financial access, and that determinants of AFS usage are complex.[137] Survey data and ethnographic research illustrates a preference for AFS institutions over bank branches for the perceived salience of fees, as well as the collegial and welcoming nature.[138,139] While there is both a stated and revealed preference for AFS among low income and historically marginalized groups, AFS usage has also been correlated with lower financial literacy indicating that outreach efforts to improve financial education and literacy may decrease

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[132] Aguila.

[133] Eisenberg-Guyot.

[134] Fitzpatrick.

[135] Gong, Cynthia, *Location, Location, Location: An Exploration of Geographic Disparities in Bank and Alternative Financial Service Access in Los Angeles County*, University of California Los Angeles.

[136] Sakong, Jung and Alexander Zentefis, "Bank Branch Access: Evidence from Geolocation Data," May 15, 2024.

[137] Birkenmaier, Julie, and Qiang Fu, "The association of alternative financial services usage and financial access: Evidence from the National Financial Capability Study," *Journal of Family and Economic Issues,* Vol. 37, September, 2016. ; ———, "Household Financial Access And Use Of Alternative Financial Services In The Us: Two Sides Of The Same Coin?" " *Social Indicators Research,* Vol. 139, October, 2018.

[138]

[139] Collins.

AFS usage.[140] The Chicago First Accounts program provides an example of just that. Almost three-quarters of First Account participants reported using check cashing services prior to participation. That rate fell to 18 percent for participants who attended financial education workshops and opened an account, and participants who attended the workshop but did not open an account reported lower usage rates of check cashers.[141] As CalAccount may similarly hope to decrease usage of AFS, it is important to understand the measured impacts of AFS usage beyond the associated fees for services.

AFS can be dichotomized into transaction AFS and credit AFS. Transaction AFS include money orders, check cashing, and other financial services focused on converting or transferring currency. Credit AFS include payday loans, pawn shop usage, and other financial services generally focused on obtaining liquid funds via loans or using non-liquid assets. Credit AFS, and in particular payday loans, have been linked to negative outcomes. Using arguably independent variation in access to payday loans for low-income families, Melzer (2011, 2018) shows that proximity to payday lending is associated with increased difficulty paying rent or mortgage, increased difficulty paying utility bills, higher rates of public assistance usage, and higher rates of missed childcare payments.[142] On the other hand, comparing Oregon households that lost access to payday loans to Washington households that maintained access, Zinman (2010) finds that lost access to payday loans resulted in increased likelihood of bank overdrafts and late bill payments, as well as a deterioration in self-reported financial condition.[143] This literature sheds light on both the financial risks of using credit AFS as the high interest rates associated with payday loans may mean households prioritize payday loan payments over other payments as well as the need for financial services as bank overdraft fees may be a more costly outcome than payday loans.[144,145]

Impacts of alternative financial services (AFS) on other outcomes

The potential impacts of payday lending have been shown to extend beyond financial outcomes. Chang (2019) finds that access to payday lending increases the likelihood of household food insecurity, and Eisenberg-Guyot and coauthors (2018) find that households that

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[140] Robb, Cliff A., Patryk Babiarz, Ann Woodyard, and Martin C. Seay, "Bounded rationality and use of alternative financial services," *Journal of Consumer Affairs,* Vol. 49, No. 2, Summer 2015.

[141] Marzahl, David, O.S. Owen, Steve Neumann, and Joshua Harriman, "First accounts: a US Treasury Department program to expand access to financial institutions," *Profitwise News and Views*, February 2006.

[142] Melzer, Brian T., "The real costs of credit access: Evidence from the payday lending market," *The Quarterly Journal of Economics,* Vol. 126, No. 1, February 2011. ; ———, "Spillovers from Costly Credit," *The Review of Financial Studies,* Vol. 31, No. 9, September, 2018.

[143] Zinman, Jonathan, "Restricting consumer credit access: Household survey evidence on effects around the Oregon rate cap," *Journal of Banking & Finance,* Vol. 34, No. 3, March 2010.

[144] Melzer.

[145] Zinman.

used credit AFS had a 38 precent higher prevalence of poor or fair health than households with otherwise similar characteristics who had not used credit AFS.[146,147] Comparing Airmen across bases with differential access to payday loans, Carrell and Zinman (2014) find that access to payday loans decreases job performance, readiness, and retention.[148]

Summary

In this section, we summarize the benefits of financial inclusion and the impacts of alternative financial services. Table F.1 shows that the benefits of financial inclusion include promoting wealth, savings, financial literacy, and trust in banks and reducing financial insecurity. The literature also shows that financial inclusion can help provide protection against financial hardship during natural disasters and promote banking status of children. In terms of health outcomes, financial inclusion has been positively correlated with better health and lower food insecurity. Table F.2 summarizes the impacts of alternative financial services. AFS is correlated with lower financial literacy and credit AFS has specifically been correlated with difficulty paying rent, mortgage, and utility bills, higher rates of public assistance usage, and higher rates of missed childcare payments. Simultaneously, the loss of access to credit AFS is also correlated with higher likelihood of bank overdrafts and late bill payments and deterioration in self-reported financial condition. The use of credit AFS has also been linked to worse health outcomes and, among military personnel, worse job outcomes.

Table F.1. Summary of benefits of financial inclusion

Outcome	Description
Financial outcomes	Literature shows financial inclusion can promote wealth, savings, financial literacy, and trust in banks as well as reduce financial insecurity. Studies also show that financial inclusion can help protect accountholders from financial hardship during natural disasters and promote banking status of children.
Health outcomes	Studies link banked status to improved health and lower food insecurity.

Table F.2. Summary of impacts of alternative financial services

Outcome	Description
Other outcomes	Use of credit alternative financial services has been linked with worse health outcomes. Among Airmen, use of payday loans has been associated with lower job performance, readiness, and retention.

[146] Chang, Yunhee, "Does Payday Lending Hurt Food Security in Low-Income Households?," *Journal of Consumer Affairs,* Vol. 53, No. 4, Winter 2019.

[147] Eisenberg-Guyot.

[148] Carrell, Scott, and Jonathan Zinman, "In harm's way? Payday loan access and military personnel performance," *The Review of Financial Studies,* Vol. 27, No. 9, September 2014.

Potential impact on public safety

CalAccount program adoption potentially shapes public safety through several different channels. First, AFS products—which typically charge fees and high interest rates in exchange for liquidity and convenience—increase financial strain for low-income households. These high-stress conditions could potentially affect decision-making and lead to higher crime rates in low-income areas. Second, AFS vendors (sometimes called "fringe banks") may have place-based criminogenic impacts, concentrating and elevating crime rates in the places where they are located. Third, reducing the circulation of physical cash could potentially decrease the prevalence of street crimes. We summarize the potential of the CalAccount program to affect public safety through each of these three mechanisms in Table E.3 below. As a caveat, given that the CalAccount program is not designed to replace credit-based AFS products such as payday lending, we abstract away from literature linking credit services and criminal activity. Overall, our interpretation of the literature and its application to the proposed CalAccount program suggests that the largest crime reductions would arise from the third mechanism: a decrease in cash circulation.

Impacts on public safety via increases in disposable income

First, a broad range of literature links income with crime and recidivism. Some studies focus on receipt of in-kind benefit programs such as the Supplemental Nutrition Assistance Program (SNAP) and housing vouchers. Tuttle (2019) finds that a ban on SNAP receipt for drug traffickers led to a 9 percent increase in recidivism; on the other hand, Jacob et al. (2014) find that receipt of housing vouchers had no impact on crime.[149,150] In terms of programs which transferred cash directly to households, an emergency financial assistance hotline in Chicago for individuals at imminent risk of homelessness led to a massive decrease in crime by 51 percent—with the caveat that the study's sample of interest represents a particularly high-risk group of individuals.[151] A recent paper by Agan and Makowsky (2021) finds that a $0.50 increase in state minimum wage (equivalent to $1,000 for somebody who works 2,000 hours per year at minimum wage) decreases recidivism by 2.15 percent.[152]

The CalAccount program's impact on public safety through an increase in disposable income is likely to be small. First, the direct financial benefit to CalAccount customers may not compare well to many of the programs studied above, which offer benefits worth thousands of dollars in

[149] Tuttle.

[150] Jacob, Brian A., Max Kapustin, and Jens Ludwig "The Impact of Housing Assistance on Child Outcomes: Evidence from a Randomized Housing Lottery," *The Quarterly Journal of Economics,* Vol. 130, No. 1, February 2015.

[151] Palmer.

[152] Agan, Amanda Y. and Michael D Makowsky "The Minimum Wage, EITC, and Criminal Recidivism," *Journal of Human Resources* Vol. 58, No. 5, September 23, 2023.

value. Second, while the preponderance of evidence supports the notion that income transfers decrease crime, we specifically highlight the null impacts from housing vouchers studied in Jacob et al. (2014)—the study with the strongest identification strategy (randomized controlled trial) and the program with the largest benefit amount for participants.[153] Given these two factors, we cannot confidently conclude that the CalAccount program would have meaningful impacts on crime via increasing disposable income for its participants.

Impacts on public safety via decreased reliance on "fringe banks"

The second mechanism addresses the question of whether "fringe banks" cause crime—and specifically whether decreasing AFS demand would decrease the criminogenic impacts of these places. The causal literature demonstrate that environmental features of cities such as streetlights, green spaces, urban blight, and housing can affect nearby crime rates.[154,155,156,157] However, to the best of our knowledge, there is no causal evidence linking fringe banks with crime rates. The key analytical challenge is that fringe banks tend to locate in neighborhoods with higher baseline exposure to crime. It is therefore difficult to disentangle how much of nearby crime rates ought to be attributed to the presence of fringe banks as opposed to other features of the surrounding environment.

The most relevant study is by Kubrin and Hipp (2016), who correlate the relationship between the presence of fringe banks and crime rates in Los Angeles at the block level, controlling for residential demographics, socioeconomic characteristics, and land use characteristics.[158] For their findings to have a causal interpretation, we would need to assume that after accounting for their list of control variables, any remaining correlation between crime rates and fringe bank presence is not contaminated by other unobserved neighborhood characteristics. We note that this is a potentially unrealistic assumption. Focusing on their analysis of check cashers (and setting aside their findings for pawnshops and payday lenders), the authors document that the presence of a check casher is associated with 70 percent more robberies, 40 percent more aggravated assaults and larcenies, and 15 percent more burglaries and motor thefts. These effects decay spatially; association with crime effectively goes to zero outside of 800 feet of the check casher.

Overall, it is difficult to pin down how much the CalAccount program would affect crime rates through a reduction in use of fringe banking services. First, we know little about how the CalAccount program would affect demand for fringe banking services—while demand for

[153] Jacob.

[154] Chalfin.

[155] Bogar.

[156] Branas.

[157] Freedman.

[158] Kubrin.

services such as check cashing and money orders would likely decrease with the launch of CalAccount, demand for credit-based services such as payday lending might remain unaffected. Second, evidence on the relationship between fringe banks and crime does not credibly disentangle the impacts of fringe banks from confounding attributes of the places where they are located. The first issue decreases the likely impact of this mechanism; the second makes it more uncertain. We therefore conclude that the overall impact on public safety is likely small, but remains uncertain.

Impacts on public safety via decreased circulation of cash

Finally, the availability and circulation of cash itself can affect local crime rates. Criminologists and economists have long recognized that cash—given its liquidity and transactional anonymity—is valuable to criminals.[159] A study by Wright et al. (2017) examines the causal impact of replacing cash welfare benefits with the Electronic Benefits Transfer (EBT) program during the late 1990's.[160] The authors find that overall crime decreased by 9.2 percent in response to the transition to the EBT program, with impacts greatest for larceny, burglary, and assault. CalAccount—if widely adopted—could greatly reduce cash circulation through 1) greater prevalence of direct deposit, 2) electronic bill pay and money transfer, and 3) the availability of a secure debit card. The overall impact on public safety is unambiguously positive in this case and could lead to moderate to large impacts depending on the degree to which cash (or other physical stores of value) are replaced with card and electronic payments.

Table F.3. Summary of CalAccount impacts on public safety

Mechanism	Potential impact	Explanation
Increase in disposable income	Small	While the literature generally suggests that more income reduces crime, the actual amount that individuals save when migrating from transaction-based AFS products to CalAccount is likely small compared to programs/interventions studied in the literature. The highest-quality study in this literature shows no effect of housing vouchers on crime.
Less demand for fringe banks	Small/unknown	The literature on this mechanism remains largely correlational. Even if demand for transaction services such as check cashing and money orders decreases, demand for credit-based services such as payday lending will likely remain unchanged
Less cash in circulation	Moderate	CalAccount will likely reduce the amount of cash in circulation as users adopt debit cards and other banking services such as direct deposit and electronic bill pay/money transfer.

Potential impact on banks

[159] Armey.; Foley Foley.; Varjavand.

[160] Wright.

To explore the potential impact of the CalAccount Program on banks, we reviewed literature and held subject matter expert (SME) discussions. There are three broad viewpoints that emerged when we explored the potential impact of the CalAccount Program on banks. The first viewpoint is that people who open a CalAccount will experience downstream benefits that could expand the future customer base of banks. The second viewpoint is that both participating and nonparticipating banks would be harmed by the CalAccount program. The third viewpoint is that banks would either directly benefit or be unaffected by the CalAccount program. We note that the majority of SMEs felt that that the CalAccount program was not desirable to banks, at least not as currently specified, and only a minority of SMEs described ways that the program could directly benefit the banking industry.

SMEs as well as existing literature describe potential benefits to account holders that could, in theory, translate to benefits to banks. However, we note that we do not have direct evidence connecting downstream benefits of potential CalAccount participants to outcomes of banks. The literature shows that financial inclusion can promote wealth, savings, financial literacy, and trust in banks as well as increase the likelihood that children of newly banked individuals are banked in the future.[161] SMEs said the CalAccount program could create financial stability for low income participants and expand the long term market for banks. SMEs also described the importance of leveraging community organizations and state agencies for outreach which suggest that participating banks would form partnerships with these entities. These findings from the literature and SMEs could suggest that promoting financial inclusion through the CalAccount program would potentially increase the customer base of banks— possibly even increasing demand for additional financial products such as loans, insurance, and investment products. However, it has been documented that switching banks is a rare event, suggesting any expansion in customer base would come from the unbanked population.[162]

SMEs discussed two different ways that the CalAccount program could harm banks. First, multiple SMEs described how the CalAccount program would compete with banks that already provide banking options to low income populations, including credit unions, community banks, and banks offering Bank On accounts. SMEs also felt the CalAccount program would be redundant because there are similar products on the market and that a better way forward would be to augment existing services. Second, many SMEs expressed concerns about the risks and costs that banks would experience if they were to offer a CalAccount. SMEs discussed how an incentive or a revenue source would be needed to entice banks to participate. SMEs described how Bank On is not profitable, despite the ability to charge some fees for the account, and that the banks cover the costs of offering Bank On themselves.

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[161] Bachas. ; Barr, ———.;Brown.; Célerier.; Chin.; Fitzpatrick.

[162] Shevlin, Ron, "Why People Don’t Switch Banks Anymore," May 1, 2019. https://www.forbes.com/sites/ronshevlin/2019/05/01/why-are-fewer-consumers-switching-banks-because-checking-accounts-have-become-paycheck-motels/?sh=611db2302aa9

In terms of benefits to banks, some SMEs thought that offering a CalAccount would help banks improve their Community Reinvestment Act (CRA) ratings, conferring a variety of modest regulatory benefits. Other SMEs believed that certain types of banks, like credit unions, might not need help with CRA because they already serve disadvantaged communities. Furthermore, because online and mobile banking institutions do not have physical footprints, they are currently not beholden to the CRA. A proposed CRA rule change would incorporate these institutions in 2026. SMEs mentioned that the CalAccount program could improve the reputation of participating banks while others felt that there would be little to no impact. The program could potentially yield important insights on consumer behavior among previously unbanked populations, allowing participating banks to leverage these insights to tailor products and services more effectively to customer needs.

Other potential impacts

Participating in the CalAccount program would create immediate savings for participants by reducing the need to use costly transactional alternative financial services. In this section, we briefly summarize the literature on cash transfers to describe implications for potential impacts of the CalAccount, while caveating that cash transfers operate differently from savings. There are numerous studies demonstrating that the EITC and family income positively impacts child outcomes such as student achievement, college enrollment, and future employment and earnings of children in adulthood.[163] The cash transfer literature also documents positive effects of the tax credits on maternal and child health and positive effects of economic stimulus payments on

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subjective well-being.[164] Research has demonstrated that cash transfers, in the form of economic stimulus payments, impact recipients' savings, debt, and spending.[165]

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Abbreviations

AFS	Alternative Financial Services
ATM	Automated Teller Machine
AFS	Alternative Financial Services
ATM	Automated Teller Machine
BCA	Benefit Cost Analysis
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
CGE	Computable General Equilibrium
CRA	Community Reinvestment Act
DFPI	Department of Financial Protection and Innovation
DLSE	Division of Labor Standards Enforcement
EBT	Electronic Benefits Transfer
EGTRRA	Economic Growth and Tax Relief Reconciliation Act
EITC	Earned Income Tax Credit
ESA08	Economic Stimulus Act of 2008
FDIC	Federal Deposit Insurance Corporation
FTE	Full Time Equivalent
GAO	Government Accountability Office
I-O	Input Output
IBBEA	Interstate Banking and Branching Efficiency Act
KYC	Know Your Customer
MSA	Metropolitan Statistical Area
NPV	Net Present Value
OMB	Office of Management and Budget
POS	Point of Sale
QCEW	Quarterly Census of Employment and Wages
RIMS II	Regional Input Output Modeling System
RPC	Regional Purchasing Coefficient
SIPP	Survey of Income and Program Participation
SME	Subject Matter Expert
SNAP	Supplemental Nutrition Assistance Program

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