

ARTICLE

CONFRONTING THE RETIREMENT SAVINGS PROBLEM: REDESIGNING THE SAVER'S CREDIT

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“It is our future that lays down the laws of our today.”

—Friedrich Nietzsche, *Human, All Too Human* (1878)

Increasing saving for retirement is one of the most important challenges the United States, similarly to many other Western governments, faces: the aging population could render public retirement and pension funds insolvent in the not-so-distant future. The problem of insufficient retirement savings is especially acute among low-income earners. The main policy tool the United States employs in order to enhance retirement savings of low-income earners is the Saver's Credit, which provides a nonrefundable tax credit to low-income earners that save for retirement. Although the federal government has been willing to provide billions of dollars' worth of credits to potential recipients, studies have demonstrated that the actual impact of the credit is fairly limited due to its low take-up rate. The surprising inefficacy of the credit has intrigued scholars, who have attempted to provide explanations for its failure. This Article identifies a central weakness of the Saver's Credit that has not received sufficient attention: the exceptionally high value of the loss of liquidity to low-income earners as a consequence of the sanction on early withdrawals. The high value such earners attribute to the liquidity lost as a result of their participation in the scheme deters them from participating. While the loss of liquidity seems an inherent feature of any scheme incentivizing retirement savings, this Article offers an alternative version of the credit that can overcome these caveats: the Saver's Continuous Credit. The Saver's Continuous Credit is based on an ex ante Pigovian subsidy regime—one that provides a benefit for retirement savings without sanctioning early withdrawals. An ex ante regime subsidizes actions that have increased the expectancy of generating a public good, even if that public good is not ultimately produced. This Article examines the general features of the ex ante Pigovian subsidy regime, which is relevant to a wide set of legal fields. This Article also analyzes other economic and behavioral advantages of the Saver's Continuous Credit.

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INTRODUCTION

Like many other Western countries, increasing collective savings for retirement is one of the most important challenges that the United States faces. The aging population could render public retirement and pension funds insolvent in the not-so-distant future.¹ In order to cope with the unsustainability of public pension funds and insufficient private retirement savings, governments are aiming to incentivize individuals to develop private pension funds, especially low-income earners that tend not to save for retirement.² Retirement savings, especially for low-income individuals, is commonly viewed as a public good that the government should help supply.³ Assuming assistance to individuals in dire economic situations is a public good,⁴ ensuring that individuals do not reach this situation will save public resources. For this purpose, the United States enacted the Saver’s Credit (SC) in 2001 in order to incentivize low-income earners to increase their savings for retirement.⁵ Even though the government provides a significant economic benefit to such contributions, many individuals who are entitled to the benefit do not make the required contribution and thus do not receive the benefit.⁶ The low participation rate of the SC has troubled many scholars.⁷ What is the problem with the SC? Is there any possible way to construct more successful incentives to save for retirement?

In this Article, I tackle these questions from a perspective overlooked by the scholarship. I emphasize a feature of the credit that may have deterred individuals from utilizing the significant benefits provided by the scheme. This feature is the high valuation of liquidity to the low-income individuals targeted by the credit. Essentially, liquidity is the option value of the ability to determine the use of resources. The benefit of contributing toward retire-

¹ JONATHAN GRUBER & DAVID A. WISE, INTRODUCTION TO SOCIAL SECURITY PROGRAMS AND RETIREMENT AROUND THE WORLD: FISCAL IMPLICATIONS OF REFORMS (Jonathan Gruber & David A. Wise eds., 2007). The book devotes a chapter to each of several developed countries with a public retirement system that faces serious solvency problems, including Belgium, Denmark, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom, and the United States.

² Gary Burtless, *Can Improved Options for Private Saving Offer a Plausible Substitute for Public Pensions?* 40 POL. & SOC’Y 81, 88–89 (2012).

³ Amartya K. Sen, *Control Area and Accounting Prices: An Approach to Economic Evaluation*, 81 ECON. J. 486, 493 (1972) (“One reason is the presence of an externality in the form of members of the present generation having some concern for the well-being of future generations which is, therefore, like a public good in the Samuelson Sense.”).

⁴ See MILTON FRIEDMAN, CAPITALISM AND FREEDOM 190 (2002).

⁵ Economic Growth and Tax Relief Reconciliation Act of 2001, Pub. L. No. 107—16, 115 Stat. 38 (2001). The official name of the credit was “Elective Deferrals and IRA Contributions to Certain Individuals.” The term “Saver’s Credit” was coined by the IRS in its explanation of the new law. See IRS Announcement 2001-106, 2001-44 I.R.B. 416–18.

⁶ See *infra* Section II.B.

⁷ *Id.*

ment savings in the SC is coupled with penalties for early withdrawal of funds.⁸ The degree of liquidity of the funds is inversely related to these penalties. Even though the value of the benefit is significant, the high likelihood that these individuals will need these funds and incur an early withdrawal penalty deters these individuals from participating in the scheme.⁹

The penalty element is allegedly an integral part of the scheme.¹⁰ Without it, the scheme would lose its efficacy in increasing the funds available for retirees.¹¹ Yet in this Article, I propose an alternative structure for the credit that addresses the participation problem by eliminating the penalty element. I call this alternative scheme the Saver's Continuous Credit (SCC). Instead of frontloading the credit to the time of the contribution, the SCC spreads the benefit over time, from the individual's contribution to the pension savings account until his retirement, without changing the present value of the credit provided by the SC.

For example, take a taxpayer thirty years from retirement making a \$1,000 contribution to an I.R.A. If under the SC he is entitled to a \$500 tax credit coupled with a penalty on early withdrawal of funds, under the SCC he will instead receive \$30 in each of those thirty years with no penalty on early withdrawals. The present value of the annual credit under the SCC is roughly equivalent to the credit that the SC frontloads to the time of contribution, assuming a two percent interest rate.

The central feature of the SCC's design is that it does not require a penalty on early withdrawals in order to effectively increase the savings toward retirement. In the example above, the individual could withdraw the \$1,000 principal any year he desires without incurring any penalty or returning the annual credits of \$30 per year received to date. This stands in contrast to the commonly held view that increasing retirement savings requires a commitment mechanism.

The SCC and its ability to maintain the option value of funds is founded on a fundamentally different approach toward compensating individuals for generating a positive externality than that of the SC and most other governmental schemes. Such incentives are referred to in the economics literature as Pigovian subsidies. While the SC compensates individuals *ex post*, by providing individuals with a benefit if they have actually generated the positive externality, the SCC compensates individuals *ex ante*, by providing a benefit to those who generate the *expectation* of a positive externality, even

⁸ 26 U.S.C. § 72(t)(1) (2012).

⁹ Regarding the significant deviations in the economic behavior of the poor that justify paying special attention to their unique preferences and forming economic models that are tailored to these unique preferences, see Esther Duflo, *Poor but Rational? in UNDERSTANDING POVERTY* 367 (Abhijit Banerjee et al. eds., 2006) ("The *Homo economicus* at the core of neoclassical economics would behave differently if he were poor than if he were rich.").

¹⁰ *Infra* Section II.A.

¹¹ *Id.*

if the positive externality is not ultimately produced.¹² Every increase in savings in the short-run increases the likelihood that the individual will have spare resources in the long-run. Saving resources in year t_1 increases the likelihood that the resources will be saved in year t_2 and so on, eventually increasing the likelihood that the individual will save the resources in t_r —the year of his or her retirement.¹³ Thus individuals should receive a benefit at the time they make the contribution, which they should not refund even if eventually they withdraw the funds. At the time of contribution they increase the likelihood of having more savings at retirement, which justifies receiving the benefit even if they must withdraw the funds shortly after due to unforeseen circumstances. This Article will analyze this unique *ex ante* approach and its justifications.

Besides the central justification for the SCC—its ability to maintain the option value of resources saved for retirement through the utilization of the *ex ante* approach—there are two additional advantages. The first is its greater inclusion of low-income individuals, including those with no tax liability. The second is its greater ability to overcome some of the behavioral biases that may have caused the lower participation rate in the SC: the penalty aversion and the SC distant horizon.¹⁴

This Article will proceed as follows: Part I will survey the general problem of insufficient resources set aside for retirement. Part II will discuss the SC itself: its legal framework, its inability to solve the problem that it was designed to solve and the causes for this inability. Part III will suggest an additional cause for the surprising failure of the SC: the fact that the SC eliminates the option value of the resources contributed. In order to deal with this problem, the SCC will be introduced. Part IV will illuminate additional advantages of the SCC over the SC. Part V will respond to objections to the SCC scheme. Part VI will conclude.

I. THE PROBLEM OF RETIREMENT SAVING

Many OECD countries, especially the United States, recognize that a significant number of their future retirees may not have sufficient funds for maintaining an adequate standard of living during their retirement.¹⁵ The assumptions of policy makers are based on the central models of normative economics that find that individuals should equalize their post-retirement

¹² Regarding viewing retirement saving as a positive externality and a public good, *see, e.g.*, Sen *supra* note 3; FRIEDMAN *supra* note 4.

¹³ Another way of expressing the link between savings in the short-run and savings in the long-run is through backward induction: it is obvious that the resources one has available in time of retirement— t_r —is a function of the resources one has saved in the previous period, t_{r-1} , which is a function of the resources one has saved in the previous period, t_{r-2} , and so on. As a consequence, any increase in the savings in a period before retirement increases the likelihood that one will have more resources available at the period of retirement.

¹⁴ *See infra* Section IV.B.

¹⁵ Gruber & Weiss, *supra* note 1.

consumption patterns to their pre-retirement consumption. Such a pattern, which was labeled by Milton Friedman as the “permanent income hypothesis,” enables individuals to maximize the utility they derive from their lifetime consumption.¹⁶ Many other economists, such as Franco Modigliani,¹⁷ Richard Brumberg,¹⁸ and Angus Deaton,¹⁹ march along these lines, developing similar models such as “consumption smoothing” or the “life cycle hypothesis.” The main conceptual point of these models is that in order to maximize utility, consumption should be decoupled from income. While some scholars have doubted the assumption that equalizing pre-retirement and post-retirement income is optimal, it still is the dominant view.²⁰

Given these assumptions, there is ample evidence that individuals do not save sufficient resources for retirement.²¹ The key factor in these studies for assessing the sufficiency of savings for retirement is the income replacement rate: the ratio between post-retirement income and pre-retirement income.²² The income replacement rate is based on the life-cycle hypothesis’ normative assumption that smoothing one’s consumption maximizes lifetime utility.²³ In most models, the target income replacement is around 75 percent of one’s pre-retirement income, depending on income and personal status.²⁴

¹⁶ MILTON FRIEDMAN, A THEORY OF THE CONSUMPTION FUNCTION 20–37 (1957).

¹⁷ Franco Modigliani, *The Life Cycle Hypothesis of Saving, the Demand for Wealth and the Supply of Capital*, 33 SOC. RES. 160, 170 (1966).

¹⁸ FRANCO MODIGLIANI & RICHARD BRUMBERG, *Utility Analysis and the Consumption Functions: An Interpretation of Cross-Section Data*, in POST KEYNESIAN ECONOMICS 388 (1954).

¹⁹ ANGUS DEATON, UNDERSTANDING CONSUMPTION 214 (Clarendon Press ed., 1993).

²⁰ For an objection to the view that this equalization of consumption maximizes utility, see Edward P. Lazear, *Some Thoughts on Saving*, in STUDIES IN THE ECONOMICS OF AGING 143 (David A. Wise ed., 1994). Lazear claims that the fact that people do not equalize consumption does not demonstrate that they do not optimize, but rather demonstrates that our assumptions regarding consumption preferences are wrong. One reason for this may be that at an older age, people’s ability to generate utility from a consumption unit declines. A person who loves hiking and nothing else may rationally divert more resources to phases in life in which he is able to go hike. This decrease in the ability to generate utility from a resource unit due to the inability to engage in certain activities may offset the increase of derived utility per-unit due to the decreasing marginal utility of resources and the fact that the individual has fewer resources at his disposal. A similar claim against the life-cycle hypothesis and its neglect of dynamically inconsistent choice is also raised by Bernheim & Rangel. See Douglas Bernheim & Antonio Rangel, *Behavioral Public Economics: Welfare and Policy Analysis with Non-Standard Decision Makers* 18–22 (Nat’l Bureau of Econ. Research, Working Paper No. 11518, 2005), <http://www.nber.org/papers/w11518.pdf> [<https://perma.cc/YX35-SWTW>].

²¹ See *infra* notes 35–38 and accompanying text.

²² Susan Grad, *Earnings Replacement Rates of New Retired Workers*, 53 SOC. SECURITY BULL. 2, 4 (1990).

²³ See *supra* notes 16–19.

²⁴ ALICIA H. MUNNELL ET AL., A NEW NATIONAL RETIREMENT RISK INDEX 3 (CTR. FOR RETIREMENT RESEARCH AT BOSTON COLL., 2006), http://ctr.bc.edu/wp-content/uploads/2006/06/ib_48_508c.pdf [<https://perma.cc/99AY-4C33>]. For a discussion on how income and personal status affect the income replacement ratio target, see *infra* notes 29–32 and accompanying text. While the 75 percent target is commonly accepted in the literature, Allen Steinberg & Lori Lucas argue that this figure does not fully account for inflation. See Allen Steinberg & Lori Lucas, *Shifting Responsibility to Workers: The Future of Retirement Adequacy in the U.S.*,

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There are a few reasons why the target income for retirement is only a fraction of one's pre-retirement income. First, there are usually no taxes on post-retirement income. Therefore, a lower post-retirement income can still equal a higher pre-retirement income once taxes are taken into account.²⁵ Second, one does not have to save toward retirement from one's post-retirement income. In addition it is common for mortgages to be paid off and for additional savings to be accumulated before retirement.²⁶ Third, a significant portion of pre-retirement expenses are work-related—such as clothing and transportation—expenses that will not be required during retirement.²⁷

These reasons also necessitate distinguishing the target replacement income ratio of different individuals. There are two major metrics for differentiation: income level and type of households.²⁸ Because individuals from lower income groups receive a significantly higher retirement benefit from Social Security and other governmental retirement schemes relative to their income, they need to save less in order to fund their retirement consumption. As a consequence, their income replacement ratio target is higher since they have consumed a higher share of their pre-retirement income. According to Alicia Munnell, while the income replacement target is 67 percent for couples in the top third of earners, it is 81 percent for couples in the bottom third of earners.²⁹ The income replacement target for couples in the middle third is 72 percent.³⁰ Other studies have also calculated similar results.³¹

The differentiation in the income replacement target rate based on household type is more limited, affecting the rate by only a few percentage points. For example, for the middle third, the income replacement target for a couple with one earner should be 75 percent; for a two-earner couple, it should be 72 percent; for a single man, 70 percent; and for a single woman, 71 percent.³²

According to most studies, actual savings for retirement do not meet these targets. Studies find that 58 percent of the workforce does not have a

20 BENEFITS Q. 15, 16 (2004). They propose that the proper income replacement ratio target should be much higher: between 85 and 95 percent. *Id.*

²⁵ MUNNELL ET AL., *supra* note 24, at 8.

²⁶ *Id.* at 4–5.

²⁷ *Id.* at 9.

²⁸ *Id.* at 3.

²⁹ *Id.* at 10.

³⁰ *Id.*

³¹ Susan Alford et al., *Affordable Retirement: Light at the End of the Tunnel*, 20 BENEFITS Q. 7, 10 (2004). This study focuses on income levels below \$100,000 because it is based on the Consumer Expenditure Data, which is limited to income of up to \$100,000. *Id.*

³² *Id.* Aon Consulting's 2004 Replacement Ratio Study, conducted in conjunction with Georgia State University, has similar results. According to the study, the replacement income for a single-earner couple earning \$20,000 should be 89 percent, and for a similar couple earning \$90,000, it should be 78 percent. *Id.* The study has focused on income below \$100,000 because it is based on data of the Consumer Expenditure Data, which is limited to income of up to \$100,000. *Id.*

pension plan.³³ As a consequence, 36 percent of households will not have any supplemental private savings for retirement and will be wholly dependent on Social Security.³⁴ This dependence will typically result in roughly a 40 percent income replacement ratio, which is half of their target—ratio 80 percent.³⁵ Other studies have found that the actual median replacement ranges between 66 and 75 percent.³⁶ Ninety-two percent of working families fail to meet a recommended replacement ratio of 85 percent for low-income earners.³⁷ Over 44 percent of the current work force is saving ten percentage points less than their income replacement target.³⁸ While some scholars argue that there is no significant problem of insufficient savings,³⁹ the dominant view is that this problem is widespread.

Lack of collective retirement savings is not only a private problem, but also a public one: many more individuals will need to rely on public welfare programs if private savings are not supplemented. There are three major issues arising from government interactions with retirement savings.

The first and most prominent issue is the projected insolvency of public funds that are supposed to finance retirement benefits, due to the increase in life expectancy⁴⁰ and the tendency of the government to over-provide benefits and under-finance them through tax collection.⁴¹ The insolvency of government-provided retirement programs will have a disproportionate effect on low-income earners as government benefit programs are mostly progressive: low-income earners receive more in benefits than they contribute.⁴² Further-

³³ See, e.g., ALICIA H. MUNNELL ET AL., CTR. FOR RETIREMENT RESEARCH AT BOSTON COLL., *THE PENSION COVERAGE PROBLEM IN THE PRIVATE SECTOR 1* (2012), http://ctr.bc.edu/wp-content/uploads/2012/09/IB_12-16-508.pdf [<https://perma.cc/U4G8-4VD2>]. Although the average target is 75 percent, it is a bit higher for low-income earners and lower for high-income earners.

³⁴ *Id.* at 3.

³⁵ *Id.*

³⁶ See, e.g., Nasrin Dalirazar et al., *Can Americans Afford to Retire? 2* (U.S. Census Bureau, Working Paper, 2010), https://www.census.gov/people/wealth/files/Final%20Draft_Paper_Revised4_5_2011.pdf [<https://perma.cc/QE85-6ERR>].

³⁷ NARI RHEE, NAT'L INST. ON RETIREMENT SEC., *THE RETIREMENT SAVINGS CRISIS: IS IT WORSE THAN WE THINK? 2-14* (2013), http://www.nirsonline.org/storage/nirs/documents/Retirement%20Savings%20Crisis/retirementsavingscrisis_final.pdf [<https://perma.cc/LL73-Y93G>].

³⁸ Gaobo Pang & Mark J. Warshawsky, *Retirement Savings Adequacy of U.S. Workers*, 30 *BENEFITS Q.* 29, 32 (2014). The financial crisis is referenced as a potential primary cause of these findings as well as the change in employers' pension plans, which are now much less generous. *Id.* at 29.

³⁹ John Karl Scholz et al., *Are Americans Saving Optimally for Retirement?*, 114 *J. POL. ECON.* 607 (2006). Scholz et al. argue based on their augmented life-cycle model that households are not undersaving but rather oversaving. Yet even in their study, in which 80 percent of the population oversaves, the 20 percent in the bottom cohort undersaves.

⁴⁰ J. B. Williamson, *The Future of Retirement Security*, in *HANDBOOK OF AGING AND THE SOCIAL SCIENCES* 281 (R.H. Binstock & L.K. George eds., 7th ed. 2011).

⁴¹ See *infra* notes 58-60 and accompanying text.

⁴² Although the financing of Social Security benefits through the payroll tax is regressive, the progressivity in the distribution of benefits offsets the regressive effect of the financing. See Karen E. Smith & Eric J. Toder, *How Progressive are the Combined Net Benefits of Social Security and Tax Benefits for Retirement Saving?* (Urban Institute, Working Paper, 2014),

more, high-income earners supplement their payments into the public fund with private savings, which low-income earners do not tend to do. Low-income earners' reliance on the public scheme is much stronger: while the share of retirement income derived from Social Security for the top fifth of income earners is estimated to be 19 percent, this share is estimated to be 83 percent for the bottom fifth.⁴³ Thus the insolvency of such schemes will have a much greater effect on the projected pensions of low-wage earners than its effect on high-wage earners.

The second issue is the low level of public benefits provided in the United States as well as other OECD countries. Even if public funds are not rendered insolvent, the benefits these programs provide constitute only a small fraction of the funds required for maintaining a decent standard of living.⁴⁴ In such countries, the publicly provided benefits have to be supplemented with private savings in order to reach a decent standard of living during retirement. Sixty percent of the population relies on Social Security for half or more of their retirement income and 31 percent relies on Social Security for 90 percent or more.⁴⁵ The existence of a public retirement scheme causes individuals to treat private retirement saving as a lower priority.⁴⁶ Once again, it is low-income earners who tend not to prioritize personal retirement savings for various reasons. They have fewer spare resources to investigate the level of public benefits provided for them by the government in case of retirement in comparison to their actual assessed needs.

The third issue is the low level of private savings. Even if individuals are aware of their need to supplement public benefits with private savings, they tend to save less than they need to maintain their standard of living during retirement. This is for two main reasons: behavioral biases⁴⁷ and inflated projections of market returns for retirement savings.⁴⁸ The next Sections will examine each of the concerns listed above.

A. Insolvency of Government Retirement Programs.

Each year, the Social Security Board of Trustees releases their annual report, which includes projections for the year that the Social Security Trust

http://crr.bc.edu/wp-content/uploads/2014/06/Panel-1_2-Smith-and-Toder1.pdf [https://perma.cc/FYV2-G8G7].

⁴³ Virginia P. Reno & Joni Lavery, Social Security and Retirement Income Adequacy 7 (Nat'l Acad. of Social Insurance, Social Security Working Paper No. 25, 2007), https://www.nasi.org/usr_doc/SS_Brief_025.pdf [https://perma.cc/X8J4-HYZH].

⁴⁴ See ORG. FOR ECON. COOPERATION & DEV., PENSION AT A GLANCE 2013, 59–63 (2013), <http://www.oecd.org/pensions/public-pensions/OECDPensionsAtAGlance2013.pdf>. [https://perma.cc/2APP-6WUW].

⁴⁵ Reno & Lavery, *supra* note 43, at 6.

⁴⁶ See *infra* Section II.A.

⁴⁷ See *infra* Section I.C.2.

⁴⁸ See *infra* Section I.C.1.

Fund will become insolvent.⁴⁹ In the last report, the projection has been that the Trust Fund will be insolvent by 2033.⁵⁰ Even when insolvent, the Trust Fund will be able to pay a portion of the benefits based on incoming revenue. It is projected that in the first year of insolvency, the Trust Fund will have sufficient funds to pay 77 percent of the scheduled benefits; by 2089, it will be able to pay only 72 percent of the scheduled benefits.⁵¹

What is the reason for the projected insolvency of Social Security? There are two main reasons: the increase in life expectancy and political barriers to Social Security reform.

1. Increased Life Expectancy

Over the last century, there has been a steep increase in life expectancy; in other words, a decrease in the mortality rate.⁵² According to the Chief Actuary of the Social Security Administration, the total age-sex-adjusted death rate declined at an average annual rate of 1.07 percent between 1900 and 2010.⁵³ While this decline was driven in large part by those under 15 years, a significant decline also took place in the over-65 cohort, whose mortality rate declined at an annual average of 0.79 percent during this time.⁵⁴ Other studies reflect similar conclusions, such as the finding that the average life expectancy increases by one-and-a-half years every decade.⁵⁵

This significant increase in life expectancy and decrease in the mortality rate have had a major effect on the solvency projections of the Social Security Trust Fund. This increases the time in which Social Security pays benefits to individuals without a parallel increase in the time in which individuals contribute to the program. When the Social Security system was designed, these developments were not taken into account.⁵⁶

⁴⁹ SOC. SEC. ADMIN., 2014 ANN. REP. OF THE BOARD OF TRS. OF THE FED. OLD-AGE AND SURVIVORS INS. AND DISABILITY INS. TR. FUNDS (2014), <http://www.socialsecurity.gov/OACT/TR/2014> [<https://perma.cc/DTG9-QHR5>]. The Social Security Trust Fund is, technically speaking, comprised of two separate trust funds: the Disability Trust Fund and the Old Age and Survivor Insurance Trust Fund. Although technically the two funds are separate funds, they are treated as one fund. *Id.* at 4.

⁵⁰ *Id.* The Disability Trust Fund is projected to become insolvent in 2016 and the Old Age and Survivor Insurance Trust Fund is projected to become insolvent in 2034. *Id.* at 4, 11.

⁵¹ For a discussion of the different forms in which partial benefits could be paid (timely but partial payments, or deferred but full payments), see NOAH P. MEYERSON, CONG. RESEARCH SERV., RL33514, SOCIAL SECURITY: WHAT WOULD HAPPEN IF THE TRUST FUNDS RAN OUT? (2014), <https://www.fas.org/sgp/crs/misc/RL33514.pdf> [<https://perma.cc/EW6J-BCZP>].

⁵² The Office of the Chief Actuary at the Social Security Administration mainly focuses on mortality rate due to the fact that changes for low-age individuals have a lesser impact on mortality rate than on life expectancy. See SOC. SEC. ADMIN., *supra* note 49, at 89.

⁵³ *Id.* at 78.

⁵⁴ *Id.*

⁵⁵ Pekka Ilmakunnas et al., *The Grand View on Age and Productivity*, in AGING, HEALTH AND PRODUCTIVITY 160 (Pietro Garibaldi et al. eds., 2010).

⁵⁶ Edgar K. Browning, *Why the Social Insurance is Too Large in a Democracy*, 13 ECON. INQ. 373 (1975).

2. *Political Barriers to Reforming Social Security*

The increase in life expectancy does not itself necessitate the insolvency of the Social Security Trust Fund. The government could have adjusted payment and benefit schemes along the way. Why has this not happened? According to the basic political economy model of Social Security dynamics, it actually *should* have happened: the model projects that reforms increasing payments should take place in aging societies.⁵⁷ According to this model, the crucial factor in determining the likelihood of Social Security reform is the age of the median voter.⁵⁸ In aging societies, the median voter grows older, and as a consequence, the political majority tilts toward increasing payments in order to protect and maintain its expected benefits.⁵⁹ This only reinforces the question: why does reform not take place in order to prevent the collapse of Social Security?

One potential answer is that the distributive impact of Social Security creates heterogeneity within age cohorts.⁶⁰ The income level disparity within any given age cohort frustrates the possibility that that particular age cohort will form a coalition for reforming Social Security. Wealthier individuals within older age cohorts will not cooperate with poorer individuals in increasing payments from younger cohorts that will mainly be directed to the poorer individuals. In other words, Social Security has both an intragenerational distributive function and an intergenerational distributive function, which impedes efforts to form a coalition to reform the program.⁶¹

⁵⁷ *Id.* at 375.

⁵⁸ *Id.*

⁵⁹ Roger D. Congleton & William F. Shughart, *The Growth of Social Security: Electoral Push or Political Pull?*, 28 *ECON. INQ.* 109 (1990). Regarding the reflection of this problem in the realm of state public pension funds, see Jack M. Beerman, *The Public Pension Crisis*, 70 *WASH. & LEE L. REV.* 3 (2013).

⁶⁰ Juan C. Conesa & Dirk Krueger, *Social Security Reform with Heterogeneous Agents*, 2 *REV. ECON. DYNAMICS* 757, 758 (1999). Even without the formation of a coalition between high-income earners and younger generations, high-income earners may effectively veto expanding schemes with a redistributive element due to their option to exit the existing tax jurisdiction and shift their income to other jurisdictions with more limited redistribution schemes. Regarding the inherent problem of redistributing through the tax system or other direct redistributive schemes, see Tsilly Dagan, *Pay as You Wish: Globalization, Forum Shopping and Distributive Justice* (June 20, 2014) (unpublished), available on SSRN http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457212 [<https://perma.cc/K828-YXED>].

⁶¹ Conesa & Krueger, *supra* note 60, at 759. In the case of public pension funds for public employees, insufficient payments may occur due to capture by special interest groups, namely public employee unions that shade away the complex effects of their pension program. See, e.g., Dashle G. Kelley, *The Political Economy of Unfunded Public Pension Liabilities*, 158 *PUB. CHOICE* 121 (2014).

B. *Insufficiency of Government Programs' Payments Compared to the Optimal Retirement Savings Level*

There are two mechanisms by which the government can enforce mandatory retirement savings. The first is the establishment of a public fund to which individuals are required to make a contribution. After their retirement, individuals receive benefits from the fund that are based on the contribution they have made to the fund. The second is a mandate for individuals and their employers to set aside a certain portion of their income into a private retirement account, from which they will only be able to draw funds when they reach retirement age.

In the United States, only the first mechanism is deployed at the federal level, in the form of Social Security.⁶² Individuals must make a contribution through a 6.2 percent payroll tax, which is matched by their employers for a total of 12.4 percent. For 2015, the payroll tax is capped at annual wages of \$118,500.⁶³ In short, the benefit is based on the Average Indexed Monthly Salary (AIME), which uses an average of the individual's highest 35 annual incomes, adjusted for inflation and divided by twelve.⁶⁴ The Primary Insurance Amount (PIA) is derived by multiplying the AIME by three separate salary brackets: the first 826 dollars are multiplied by 0.9, the amount between 827 to 4,980 is multiplied by 0.32, and the amount over 4,980 is multiplied by 0.15.⁶⁵ The maximum possible PIA a retiree can receive from Social Security, given the wage ceiling, is \$2,788. As the steep brackets reflect, the Social Security scheme has a significant progressive distributive function and is heavily tilted toward low-income earners.

There are two main features that differentiate mandated savings through public funds and mandated savings through private funds. The first is that the benefits the individual receives from private funds are tied more closely to the payments made. The second is that individuals are exposed to market

⁶² At the state level, mandated retirement savings schemes are increasingly common. The first state to initiate such a scheme is Illinois, in the Illinois Secure Choice Savings Programs Act, Pub. Act 098-1150. Under the Illinois law, an employer with more than twenty-five employees has to make retirement contributions on behalf of his employees of three percent of the employee's income to a state-operated program, although the employee can decide to contribute more or less. A similar law has been passed in California, but its enactment is conditioned on passing a second legislative vote. See S.B. 1234, 2012 Leg., Reg. Sess. (Cal. 2012), codified in Title 21 of the California Code. One of the main differences between the two laws is that the California program would be implemented for employers with five or more employees. For discussion on and comparison between these two schemes, see Edward Zelinsky, *Retirement in the Land of Lincoln: The Illinois Secure Choice Savings Program Act*, 2016 U. ILL. L. REV. (forthcoming 2016), <http://ssrn.com/abstract=2607389> [<https://perma.cc/7RWA-AR55>].

⁶³ 42 U.S.C. § 430(d) (2012).

⁶⁴ 20 C.F.R. § 404.211 (2016). In order to adjust for inflation, the wages for each year are multiplied by the Adjusted Wage Income (AWI) factor prescribed for each year.

⁶⁵ 42 U.S.C. § 415(a) (2012).

forces in private accounts, enabling them to increase their expected benefits but also subjecting them to market risks.⁶⁶

While the benefits provided by Social Security are significant, they are certainly not sufficient. In the United States, there is considerable need above the income provided by mandatory retirement programs. In 2013, Social Security provided an income replacement rate of 49.5 percent for working individuals earning 50 percent of the average wage rate, 38.3 percent if earning an average wage rate, and 33.4 percent if earning 150 percent of the average wage.⁶⁷ It is clear that there is a significant gap between the target income replacement rates noted above and the actual replacement rate achieved through mandatory government programs. While the actual gap depends on one's average income, the amount of government benefits disbursed generally provides for 40 percent of pre-retirement income. In other words, Social Security provides only approximately half of the income required for the desired retirement benefit level.⁶⁸

The insufficiency of mandated governmental retirement saving schemes for reaching a desired level of pension saving does not necessarily imply a systematic problem with overall retirement savings levels. Mandated savings could be supplemented with voluntary private savings. Not only is this possible, but it is also a reasonable structure for retirement saving. Paternalistic compulsion to set aside savings for retirement is more easily justified for the first marginal dollars of retirement savings than for the last marginal dollars. The social value of the first dollars of retirement saving is very high due to the fact that an individual with no savings will be in such a dire condition in his or her retirement years that the government will be obligated to support

⁶⁶ It is possible that the individual's private account will have similar features to a public account in this respect, in a defined benefit plan. In a defined benefit account, the individual's contributions entitle him to a fixed benefit, disconnecting the benefits he receives from both the amount contributed and the returns the market has generated. Defined benefit plans used to be the most common employer pension plan, but now defined contribution pension plans, in which the saver contributes a fixed amount without any assurance regarding the monthly amount received upon retirement, dominate the market. Although private plans *can* be similarly designed to government plans, the individual still has the possibility to choose over these dimensions.

⁶⁷ ORG. FOR ECON. COOPERATION & DEV., *PENSION AT A GLANCE 2013: OECD AND G20 INDICATORS 137* (2013), <http://www.oecd.org/pensions/public-pensions/OECDPensionsAtAGlance2013.pdf> [https://perma.cc/Z8NS-GLFF] [hereinafter OECD, *PENSION AT A GLANCE*]. The average annual wage in the United States in 2013 was \$56,701 (in 2015 USD). See Org. for Econ. Cooperation & Dev., *Average Annual Wages*, OECD. STAT, http://stats.oecd.org/In dex.aspx?DataSetCode=AV_AN_WAGE [https://perma.cc/6XTD-XERP].

⁶⁸ This gap between governmental programs and the desired retirement benefit level exists in many other OECD countries, but it is particularly pronounced in the United States. The U.S. income replacement ratio generated by mandatory retirement saving, both public and private, is well below the OECD average. The U.S. ratio is 20 percentage points less than the OECD average ratio for income that is half the average wage—70 percent. See OECD, *PENSION AT A GLANCE*, *supra* note 67. The U.S. ratio is similarly below OECD average ratios for middle- and high-income groups. *Id.* In fact, the U.S. income replacement ratio generated by mandated retirement savings is one of the lowest among all 34 OECD countries. For income half the average wage, there are only two OECD countries with lower replacement rates: Poland, with 48 percent, and Germany, with 42 percent. *Id.*

him. This is not true for the higher marginal dollar. Even if these dollars are still below the target for retirement, the social value of these dollars is not as high and may not justify “strong compulsion” but only “soft compulsion,” perhaps through subsidies. The marginal dollars around the retirement savings target do not justify government intervention due to their relatively low impact on the individual’s welfare, and their use can reasonably be left to the full discretion of the individual. In other words, the justification for paternalistic compulsion of saving for retirement weakens as more savings are contributed toward the target. The fact that strong compulsion mechanisms such as mandated saving fall considerably short of the retirement savings target is fully justifiable as long as most individuals still approach the target through voluntary savings. However, as the next Section will demonstrate, these voluntary savings should not be taken for granted.

C. Insufficiency of Voluntary Private Savings Compared to the Optimal Retirement Savings Level

There is ample data regarding the insufficient private savings for retirement.⁶⁹ While some scholars argue that these findings are skewed by the financial crisis,⁷⁰ which certainly has caused a significant decrease in the value of retirement accounts,⁷¹ there have been similar findings regarding the insufficiency of private retirement savings in pre-crisis studies.⁷² Thus these findings likely reflect a broad phenomenon of insufficient savings.

What are the sources of individuals’ under-saving for retirement? Why is there a need for any government interference regarding retirement savings? If saving for retirement maximizes individuals’ overall utility, why are we unable to count on individuals to maximize their utility as with general

⁶⁹ See *supra* notes 35–39.

⁷⁰ Pang & Warshawsky, *supra* note 38, at 8.

⁷¹ Jack VanDerhei, *A Post-Crisis Assessment of Retirement Income Adequacy for Baby Boomers and Gen Xers*, (Employee Benefits Issue Brief No. 354, 2011), http://www.ebri.org/pdf/briefspdf/ebri_02-2011_no354_post-crisis_ret-incad.pdf [https://perma.cc/XW8P-M34W].

⁷² Daniel Shaviro, *Multiple Myopias, Multiple Selves and the Under-Savings Problem*, 47 CONN. L. REV. 1215 (2015). Some of these studies have not analyzed the savings level directly, but have focused on the consumption level during retirement, which savings are targeted to maintain. The decrease in consumption reflects the fact that the savings level was insufficient under the life-cycle consumption assumption. See, e.g., James Banks et al., *Is There a Retirement-Savings Puzzle?*, 88 AM. ECON. REV. 769 (1998); B. Douglas Bernheim et al., *What Accounts for the Variation in Retirement Wealth Among US Households?*, 91 AM. ECON. REV. 832 (2001); Daniel S. Hamermesh, *Life-Cycle Effects on Consumption and Retirement*, 2 J. LABOR ECON. 353 (1984); John Ameriks et al., *Retirement Consumption: Insights from a Survey* (Nat’l Bureau of Econ. Research, Working Paper No. 8735, 2002); Steven J. Haider & Melvin Stephens Jr., *Is There a Retirement-Consumption Puzzle? Evidence Using Subjective Retirement Expectations* (Nat’l Bureau of Econ. Research, Working Paper No. 10257, 2004); Sarah Smith, *The Retirement-Consumption Puzzle and Involuntary Early Retirement: Evidence from the British Household Panel Survey* (Univ. of Bristol Ctr. for Mkt. & Pub. Org., Working Paper No. 06/138, 2006), <http://www.bristol.ac.uk/media-library/sites/cmpo/migrated/documents/wp138.pdf> [https://perma.cc/ES53-TMSD].

consumption? We do not mandate or even nudge an individual to buy vanilla ice cream, knowing that it is the taste that will maximize her utility and fearing she would make the suboptimal choice of buying chocolate for various reasons. Why do we not rely on the individual's choice when it comes to retirement savings? Is it only because the decision regarding retirement savings has negative externalities for society? Past a certain level of retirement savings, virtually no negative externalities are generated, yet we still nudge individuals to save more for retirement. Why is this so?

There are two categories of answers to these questions. One is based on conventional economic analysis and identifies limited planning ability and information asymmetries as the possible causes for such an outcome. The other is based on behavioral economic analysis, pointing to various biases and framings that might make the optimal choice regarding retirement savings less attractive.

1. *Explaining Insufficient Voluntary Private Retirement Savings through a Conventional Economic Lens*

The decision regarding how much one should contribute toward retirement is complex. Various studies have demonstrated the limited planning ability and low financial and economic literacy that individuals exhibit in decisions regarding retirement.⁷³ Even if an individual demonstrates economic and financial literacy, a few elements may impede her retirement planning. Even if she has clearly defined the resources needed on a monthly basis in order to have a comfortable retirement, there are two parameters that must be taken into account to determine the monthly contribution that will return sufficient resources at retirement: the amount of time an individual will live while retired and the expected market return on the capital saved.

When an individual contemplates retirement savings, goals are not set based on the amount of funds saved at retirement, but on the monthly amount she will receive when retired, which depends on the period in which she will have to fund her stipend. This introduces uncertainty regarding the exact savings target to reach by retirement. The solution seems straightforward—the individual should utilize the data regarding life expectancy, and design the contributions around the assumption that she will reach the average life expectancy. In fact, there is evidence indicating that this is what people actually do.⁷⁴ Yet this calculation has left people with insufficient funds for reaching their desired monthly retirement stipend.⁷⁵ As noted above, life expectancy is not static and constant but rather a dynamic factor that increases over time at an approximate pace of one year per decade.

⁷³ Shaviro, *supra* note 72, at 1245; Bernheim & Rangel, *supra* note 20, at 19.

⁷⁴ Hongbin Li et al., *Effects of Longevity and Dependency Rates on Saving and Growth: Evidence from a Panel of Cross Countries*, 84 J. DEV. ECON. 138, 140 (2007).

⁷⁵ See Shaviro, *supra* note 73, at 1240–41.

Thus, someone who has calculated the contribution required to obtain a certain stipend based on the average life expectancy at 1980 will find herself with insufficient funds for expenses given that her life expectancy has increased by three years.

The second parameter is the expected market return on capital. On the surface, incorporating this parameter seems quite simple: rely on historical data regarding the market's average return. This method is especially helpful in the case of retirement saving, since performance typically regresses toward the mean. Initial retirement savings are exposed to market returns for a period of approximately forty years. This diversification over time increases the chance that one's actual average market return will ultimately approximate the long-term average.

This method raises a problem similar to the method incorporating life expectancy: the average is deceiving due to a dynamic effect. Many scholars, the leading of which is Larry Summers, have pointed to the possibility of a "secular stagnation."⁷⁶ Secular stagnation refers to a future outlook in which the demand for investments will be rather low and will not absorb all household saving.⁷⁷ In this era, the average return on capital will be much lower than in the past.⁷⁸ According to such a view, basing one's assessment of future market returns on historical market returns will lead to an overly optimistic prediction regarding returns on capital.

According to economists supporting the "secular stagnation" thesis, individuals' contributions to their retirement will not be sufficient to meet their targets.⁷⁹ While individuals could take these dynamic models into account, it seems that they do not.⁸⁰ There are two main reasons why individuals do not take these dynamic dimensions into account. The first is that it may be beyond their capacity to factor a dynamic element into an already complex decision. The second is that individuals may be more conservative and not update their projections based on indications of future changes in trends.

These explanations are congruent with the finding that insufficient saving for retirement is especially prevalent among low-income earners. There is a correlation between level of income and financial savviness.⁸¹ It is rea-

⁷⁶ Lawrence H. Summers, *U.S. Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound*, 49 *BUS. ECON.* 65 (2014). Summers claims that decrease in the natural real rate of interest due to lower demands for capital provides an additional explanation for the low federal interest rates in the last few years. *Id.* at 68–69.

⁷⁷ *See id.* at 65–69.

⁷⁸ *See id.* at 69.

⁷⁹ Larry Polivka & Baozhen Luo, *The Neoliberal Political Economy and Erosion of Retirement Security*, 55 *THE GERONTOLOGIST* 183, 187 (2015).

⁸⁰ There is no indication in the retirement savings data for any responsiveness in the saving rate to expected changes in market return. *See supra* notes 33, 38. This data does not necessarily imply that people do not take dynamic models into account—it may be that they are unaware of such data or that they agree with the views that the secular stagnation hypothesis is erroneous.

⁸¹ *See, e.g.*, John Y. Campbell et al., *Consumer Financial Protection*, 25 *J. ECON. PERSPECTIVES* 91, 94 (2011).

sonable to assume that low-income earners will suffer more from the exclusion of these dynamic features in their projections. Even if individuals *do* take dynamic features into account, past contributions would still have been based on projections that did not take into account these dynamic effects in order to justify soft government involvement. Individuals may not have the financial capabilities to correct for years of under-funding of retirement savings, and thus government subsidies are required in order to meet their initial target.⁸²

2. *Explaining Insufficient Voluntary Private Savings through a Behavioral Lens*

Market return and life expectancy concerns notwithstanding, the primary explanation for the low level of private voluntary savings is behavioral; the decision to save for retirement suffers from several biases that cause individuals to save less than the optimal amount. This section will focus on three central behavioral phenomena that may cause sub-optimal retirement saving: myopia, omission bias, and hyperbolic discounting.

a. *Myopia*

Myopia describes a behavioral phenomenon of agents that prefer to consume excessively in the present at the expense of future consumption. Such a consumption pattern clearly does not maximize their lifetime utility from consumption.⁸³ It is possible to differentiate two types of myopia.⁸⁴ The first is cognitive: immediate consumption is preferred over future consumption in a way that is not in line with an individual's overall utility function. This has been labeled naïve myopic behavior,⁸⁵ considered the canonical

⁸² If an individual's annual benefits during retirement are of primary importance, he can easily shield himself from life expectancy and market return concerns by buying an annuity. When one buys an annuity, the seller of the annuity absorbs the risk involved with life expectancy and market return. Thus, if an individual buys an annuity, individual assessment of these factors would not necessitate government intervention. While in theory it is true that an annuity can solve these problems, this is not borne out in practice. There are many indicators that there is a market failure in the annuities sector, including the high premiums financial institutions charge for annuities. See generally Liran Einav et al., *The Welfare Cost of Asymmetric Information: Evidence from the U.K. Annuity Market* (Nat'l Bureau of Econ. Research Retirement Research Center, Paper No. NB 07-16, 2007). The central reason for the market failure is adverse selection. It is expected that individuals that have private information regarding their low life expectancy will be the ones most interested in buying an annuity. As a result, the premiums for the annuity will be significantly high, even for those who do not necessarily have a lower life expectancy. These individuals will not want to buy the annuity and will exit the market, further decreasing the average life expectancy of those buying an annuity, leading to a self-reinforcing cycle that results in an increase in the price of annuities.

⁸³ See *supra*, notes 16–19.

⁸⁴ See Shavero, *supra* note 72, at 1246–48.

⁸⁵ James J. Choi et al., *Passive Decisions and Potent Defaults* (Nat'l Bureau of Econ. Research, Working Paper No. 9917, 2003), <http://www.nber.org/papers/w9917.pdf> [<https://perma.cc/TSU2a59PX>].

case of irrationality.⁸⁶ In contrast, sophisticated myopia manifests as an inability to resist consuming as much as possible in the present.⁸⁷ This type of myopia is exemplified in the Greek myth of Odysseus and the Sirens. Odysseus ties himself to the mast of his ship in order to prevent himself from jumping into the water to near-certain death to pursue the Sirens. Instead of fulfilling his present-time desire, Odysseus chooses to maintain the future-time desire of living. This type of myopia is motivational in nature—it is the result of an individual's inability to execute his inter-temporal preferences.⁸⁸ This “weakness of the will” problem typically implicates present consumption much more than future consumption.

Both types of myopia may have a considerable effect on saving for retirement. Individuals are likely to attribute less weight to consumption during retirement than its actual impact on their overall utility. Even if individuals have internalized the full value of consumption during retirement, sophisticated myopia may drive them to consume more in the present at the expense of future consumption. The classic solution for overcoming these problems is mandating saving for retirement. Yet it is possible to address these behavioral problems through nudges.

Two forms of nudges could be utilized in this context. The first is a price nudge: subsidizing retirement saving or taxing present consumption and thus changing the effective price of saving for retirement. An alteration of the price of retirement saving may overcome naïve myopia, which attributes an abnormally high discount rate to present consumption. Under this inflated discount rate, the price of retirement saving must decline in order for the value of the retirement saving to be higher than the value of present consumption. Although the individual might be affected by the change in price, the governmental dollar for subsidizing retirement may be spent in vain.⁸⁹ It may be that the individual uses a practically infinite discount rate for future consumption. If this is the case, altering the price would only waste governmental resources.

If the price nudge does not seem to solve naïve myopia, it certainly does not solve sophisticated myopia. Here, the individual does not exhibit any cognitive problem—she understands that saving for retirement is better for her than consuming resources in the present. Her problem is instead motivational. Thus increasing the value of future consumption that a margi-

⁸⁶ See Shaviro, *supra* note 72, at 1253.

⁸⁷ *Id.* at 1248.

⁸⁸ RICHARD THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 48–49 (2008). The example they discuss is of Christmas Clubs. Although people attribute greater weight in terms of their utility to consumption in the future holidays compared to consumption in the present, they still have a problem abstaining from consuming in the present. In order to deal with this problem, people develop commitment mechanisms, one of which is Christmas Clubs, savings programs that enable them to have resources available for consumption during the holidays even though the clubs pay below-market interest rates.

⁸⁹ See Shaviro, *supra* note 72, at 1248.

nal dollar can buy will most likely not alter the individual's decision. Even without the price alteration, the individual realizes that it is better for her to save for retirement. The only problem is the execution of her preferences. While intensifying the preference for later consumption might assist in overcoming the motivational problem, the valuation of later consumption is not this individual's larger problem.

The second possible nudge is a default nudge. This nudge makes saving for retirement the default option from which the individual must opt out. While this kind of nudge has been found to be very effective in inducing people to save for retirement and may assist in dealing with other biases,⁹⁰ it is not likely to overcome the two types of myopia. Default saving does not alter the individual's valuation or motivation for saving for retirement. It does not enhance one's attentiveness to the decision made. Default nudges overcome issues of procrastination and enable circumvention of decision-making costs. Put another way, defaults do not affect the decisionmaking process; they function instead as direct mandates disconnected from the individual's choice-making.⁹¹ Thus, while defaults have a significant effect on the outcome, they do not mend the effects of myopia on rational decisionmaking.

b. Omission Bias

In addition to the bias toward present consumption, individuals tend to favor harms caused by an omission rather than equivalent harms caused by commission.⁹² Various experiments have confirmed this theory.⁹³ The implications of the omission bias in the legal field have also been examined ex-

⁹⁰ Raj Chetty et al., *Active vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark*, 129 Q.J. ECON. 1141, 1145 (2014).

⁹¹ Ryan Bubb & Richard H. Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 HARV. L. REV. 1593, 1616 (2014). Cf. Shaviro, *supra* note 72, at 1274–76. Shaviro notes that it is possible that default rules may overcome both kinds of myopia to some extent. They may assist in ameliorating naïve myopia by reducing the immediate decision cost for retirement saving. They may also assist in overcoming sophisticated myopia; the agent may have a motivational problem to perform an action, but will not have a motivational problem for deciding to leave things as is. Yet the evidence that Bubb and Pildes supply supports the claim that the default rule circumvents any decisionmaking from the side of the agent and does not merely assist the agent to overcome the biases in order to make rational decisions. Bubb & Pildes, *supra*, at 1618.

⁹² Daniel Kahneman & Amos Tversky, *The Psychology of Preferences*, 246 SCI. AM. 160, 173 (1982). Kahneman and Tversky demonstrated omission bias using a hypothesis with two scenarios. In the first scenario, Paul owns stock in *A* and considers switching to *B*. Paul sticks with *A*, but later learns that, had he switched to *B*, he would have made an additional \$1,200. In the second scenario, George owns stock in *B*, and considers sticking with it, but ultimately decides to switch to *A*. He later learns that had he not made the switch, he would have made an additional \$1,200. Kahneman and Tversky showed that the individual in the second scenario would be more upset even though both economic outcomes were the same.

⁹³ See, e.g., Ilana Ritov & Jonathan Baron, *Reluctance to Vaccinate: Omission Bias and Ambiguity*, 3 J. BEHAV. DECISION MAKING 263, 275–76 (1990) (demonstrating how people consider the risks associated with vaccinations to be more serious than the risks associated with foregoing vaccinations even if the actual risks of foregoing vaccinations are greater).

tensively,⁹⁴ as has its relevance to the context of retirement savings.⁹⁵ “[T]he tendency for acts of commission to be psychologically more costly than acts of omission” explains, for example, the stickiness of enrollment defaults in employer-run retirement savings plans.⁹⁶ Thus, if an individual has to actively make contributions in order to save for retirement, the omission bias will work against actively making the contribution.

The omission bias and its effect on limiting contributions for retirement appear easy to overcome. All that is needed is to shift the default from a no-contribution default to one under which a portion of income is set aside for retirement. Such a change in the default rules of contributions towards retirement has actually taken place,⁹⁷ and it is celebrated as a successful application of behavioral scholarship to public policy.⁹⁸ Changing the default rule for retirement savings contributions has increased the overall number of individuals that save for retirement.

Changing the default rule seems to be a win-win: increasing contributions for retirement savings without directly mandating contributions and limiting choice. Yet scholars have noted that this might not be the case, with some claiming that changing the default has not obtained either of these objectives.⁹⁹ The shifting of the default rule has actually decreased the overall level of retirement savings. The default rule did increase the number of individuals saving for retirement by nudging individuals who have not saved previously to save the default amount. Yet it decreased the level of savings for many individuals who would have opted to save a higher percentage and reduced their savings level to the default percentage.¹⁰⁰

Furthermore, while supporters of the reform in default contributions have hailed it as preserving individual choice, the default functions similarly to a direct mandate. While in the case of a direct mandate there is careful deliberation over the exact level mandated, there is not always a deliberative process with default rules due to the illusion that the individual can opt out.¹⁰¹ This reinforces the importance of methods that increase the agent’s attentiveness toward the various aspects of his decision in order to maintain choice rather than manipulating the default.

⁹⁴ See Eyal Zamir & Ilana Ritov, *Loss Aversion, Omission Bias, and the Burden of Proof in Civil Litigation*, 41 J. LEGAL. STUD. 165 (2012) (finding that the actual burden of proof is higher than 51 percent, most likely due to omission bias).

⁹⁵ See Erin Todd Bronchetti et al., *When a Nudge Isn’t Enough: Defaults and Saving Among Low-Income Tax Filers*, 66 NAT’L TAX J. 609 (2013).

⁹⁶ See *id.* at 613; see also Choi et al., *supra* note 85, at 3.

⁹⁷ The Pension Protection Act of 2006 has enabled automatic enrollment to 401(k) plans by shielding employers from fiduciary liability for such plans in which up to three percent of one’s income is automatically contributed to his 401(k) plan. See Pension Protection Act of 2006, Pub. L. No. 109-280, 120 Stat. 780 (codified at 29 U.S.C. § 1104(c)(5) (2012)); 29 C.F.R. § 2550.404c-5 (2013).

⁹⁸ See CASS R. SUNSTEIN, *SIMPLER: THE FUTURE OF GOVERNMENT* 105 (2013).

⁹⁹ Bubb & Pildes, *supra* note 91, at 1618.

¹⁰⁰ *Id.*

¹⁰¹ *Id.* at 1616.

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c. Hyperbolic Discounting

Individuals' discount rates are not consistent over time. Discount rates are relatively high over short horizons and relatively low over long horizons.¹⁰² This discount structure sets up a conflict between today's preferences and the preferences that will be held in the future.¹⁰³ The discount rate between two periods in the future— t_2 and t_3 —will be lower in the present than two points with the same time gap but closer to present: t_1 and t_2 . As a result, while in the present time, t_1 , an individual is willing to postpone consumption from t_2 to t_3 for a rate of return X , when period t_2 arrives, the individual may not be willing to postpone consumption for the same period of time, i.e. until t_3 , for the same rate of return X .

The phenomenon of hyperbolic discounting was first formalized by George Ainslie.¹⁰⁴ Significant welfare gains can be generated by commitment mechanisms in a hyperbolic discount structure.¹⁰⁵ In most periods of time both before and after period t_1 , the individual would prefer postponing consumption to period t_2 for a given rate of X return. The individual would only prefer to forfeit the X rate of return shortly before t_2 . Overall, when taking into account the individual's dynamic preferences over time, postponing consumption to t_2 would increase his overall welfare significantly. This justifies developing a commitment mechanism that would require the individual to postpone consumption in period t_1 . While it will decrease the aggregate lifetime welfare as perceived at the time the contribution is made, it will increase the aggregate lifetime welfare as perceived both before and after this period.

II. THE SAVER'S CREDIT AND ITS EFFECT ON RETIREMENT SAVING

The United States has acknowledged the problems regarding insufficient savings for retirement, especially among low-income earners. Its primary policy tool to deal with this problem is the Saver's Credit. This scheme is one of the primary federal expenditures for low-income individuals: besides the EITC, it is responsible for the greatest government expenditure targeted toward low-income individuals.¹⁰⁶

¹⁰² See Richard H. Thaler, *Some Empirical Evidence on Dynamic Inconsistency*, 8 *ECON. LETTERS* 201, 205 (1981).

¹⁰³ David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 *Q.J. ECON.* 443, 444–45 (1997).

¹⁰⁴ GEORGE W. AINSLIE, *PICOECONOMICS: THE STRATEGIC INTERACTION OF SUCCESSIVE MOTIVATIONAL STATES WITHIN THE PERSON* 56–95 (1st ed. 1992).

¹⁰⁵ Laibson, *supra* note 103, at 444.

¹⁰⁶ Although the SC is a nonrefundable tax credit and not a direct government expenditure, it operates as a tax expenditure in practice. See STANLEY S. SURREY, *PATHWAYS TO TAX REFORM: THE CONCEPT OF TAX EXPENDITURES* 6 (1st ed. 1973). The concept of tax expenditure includes any tax benefit that has a normative purpose besides defining a comprehensive tax base. See Daniel Shavero, *Rethinking Tax Expenditures and Fiscal Language*, 57 *TAX L. REV.* 187 (2003).

A. *The Legal Framework of the Saver's Credit*

The SC offers a 50 percent nonrefundable credit on funds up to \$2,000 for individuals (\$4,000 for married couples filing jointly) deposited into a retirement savings account—such as a 401(k), IRA account, or Roth IRA account—for households with low incomes.¹⁰⁷ Effectively, the credit matches the contribution of the savers: the taxpayer makes an out-of-pocket contribution of \$1,000 netted the credit for the \$2,000 he deposits. The tax benefit provided by the SC is in addition to the standard tax benefits provided to retirement contributions, which exempt the investment income from taxation of capital income in Roth IRA accounts¹⁰⁸ or defer tax collection to time of withdrawal for contributions to IRA accounts by enabling a deduction at the time of contribution.¹⁰⁹

In many cases the actual match rate to the saver's contribution may even exceed the generous 100 percent federal match rate through the SC, as many contributions have a 100 percent match rate by the employer that together with the SC adds up to a 300 percent match rate.¹¹⁰ For example, the \$2,000 employee contribution is matched by a \$2,000 contribution by the employer. If the employee is entitled to a 50 percent credit under the SC, his out-of-pocket contribution is only \$1,000 because he receives a \$1,000 tax credit (50 percent of his \$2,000 contribution). All in all, his out-of-pocket expense for a \$4,000 contribution on his behalf is limited to \$1,000—a 300 percent matching rate. On top of this, the contributing individual also receives the standard benefit of tax-free capital gains.

A married couple filing jointly is entitled to the 50 percent credit if their AGI is less than \$36,500.¹¹¹ Higher earners are also entitled to the credit, but for a lower rate of their contribution. Married couples filing jointly are entitled to a 20 percent credit if their AGI is between \$36,501 and \$39,500.¹¹² The third and last credit level is 10 percent of the capped contribution level, which married couples filing jointly are entitled to if their AGI is between \$39,001 to \$60,000.¹¹³ Filers with an AGI that exceeds this cap are not entitled to any credit. There are a few additional eligibility restrictions: one has

¹⁰⁷ 26 U.S.C. § 25B(a) (2012).

¹⁰⁸ *Id.* § 408A(d)(1) (2012). Contribution to Roth IRA accounts are not deductible, but qualified distributions are excluded from gross income. *Id.*

¹⁰⁹ *Id.* § 219(a) (2012).

¹¹⁰ See William G. Gale et al., *The Saver's Credit: Issues and Options*, 103 TAX NOTES 597, 601 (2004).

¹¹¹ 26 U.S.C. § 25B(b)(1) (2012). A head of household is entitled to a credit if her AGI is no more than \$27,375 and all other filers are entitled to the credit if their AGI is not more than \$18,250. *Id.*

¹¹² *Id.* § 25B(b)(B) (2012). A head of household is entitled to this credit if their AGI is between \$27,376 and \$29,625. All other filers are entitled for this credit if their AGI is between \$18,251 and \$19,750. *Id.*

¹¹³ *Id.* § 25B(b)(C) (2012). This applies to heads of households with an AGI between \$29,251 and \$45,000 and all other filers with an AGI between \$19,501 and \$30,000. *Id.*

to be 18 years old or older,¹¹⁴ not a full-time student,¹¹⁵ and not claimed as a dependent on any other person's return.¹¹⁶ The steep declines in the credit level create notches—points at which making an additional dollar will trigger an effective tax that is greater than 100 percent. A rational taxpayer would try to keep his income just below the notch. These notches also have an effect on reporting behavior: due to the steep increases in the effective tax rate, there is a strong incentive for individuals to report income levels just below the “cliff” in the credit rate, a phenomenon known as “bunching.”¹¹⁷

An important element of the SC is the general 10 percent penalty in addition to taxation of capital returns imposed on early withdrawals before the age of 59.5.¹¹⁸ For a certain type of account—SIMPLE IRA accounts—the penalty might be as high as 25 percent of the funds withdrawn in addition to taxing the capital returns that otherwise would have been tax-free.¹¹⁹ Although the penalty for early withdrawal is a general provision not specifically linked to the SC, the SC is built on the early withdrawal penalty. Without a penalty for early withdrawals, the SC cannot be effective: individuals could contribute to retirement savings to receive the credit and immediately withdraw the funds.

The magnitude of the penalty—which in most cases is lower than the credit—would suggest that the penalty is not effective; it is still profitable for individuals to withdraw immediately after receiving the credit, even though they will have to pay the penalty. They still have a net gain from the withdrawal. Yet as the data regarding take-up rates of the SC shows, there is little or no such exploitation of the SC.¹²⁰ The next Section will provide different explanations for the penalty's efficacy despite its low level relative to the SC's benefits.

B. The Enigma: The Limited Actual Effect of the Saver's Credit

The limited success of the program in incentivizing saving for retirement has been well documented.¹²¹ Much of the analysis focuses on the nonrefundable nature of the credit, which renders it applicable only to low-earner individuals with a positive tax liability.¹²² Yet even among individuals with sufficient tax liability to make use of the credit, the take-up rate is

¹¹⁴ *Id.* § 25B(c)(1) (2012).

¹¹⁵ *Id.* § 25B(c)(2)(B) (2012).

¹¹⁶ *Id.* § 25B(c)(2)(A) (2012).

¹¹⁷ Emmanuel Saez, *Do Taxpayers Bunch at Kink Points*, 2 *AM. ECON. J.* 180 (2010).

¹¹⁸ 26 U.S.C. § 72(t)(1) (2012).

¹¹⁹ *Id.*

¹²⁰ See *infra* Section II.B.

¹²¹ See, e.g., Gale et al., *supra* note 110, at 604–10; Shanthi Ramnath, *Taxpayers' Responses to Tax-Based Incentives for Retirement Savings: Evidence from the Saver's Credit Notch*, 101 *J. PUB. ECON.* 77, 89 (2013).

¹²² See, e.g., William E. Basset et al., *How Workers Use 401(k) Plans: The Participation, Contribution and Withdrawal Decisions*, 51 *NAT'L TAX J.* 263 (1998); Gale et al., *supra* note 110, at 604–10.

extremely low. Given the generous matching rate of the SC, the low take-up rate seems fairly surprising. It is even more surprising when one takes into account that in many cases it is supplemented by an employer's matching contribution, which makes the effective matching contribution astonishingly high.¹²³ Thirty-four percent of eligible taxpayers fail to claim the credit, and almost \$500 million of potential credits have not been claimed.¹²⁴ The most comprehensive study exposing the failure of the SC in incentivizing savings examined H&R Block data and found a difference of merely 1.4 percent in the take-up rate between individuals entitled to a 20 percent credit and individuals entitled to a 50 percent credit.¹²⁵ The difference in the take-up rates between individuals entitled to a 10 percent credit and those entitled to a 20 percent credit was even more modest: 0.3 percent.¹²⁶ A similarly insignificant difference—0.4 percent—was also found between individuals not entitled to any credit and individuals entitled to a 10 percent credit.¹²⁷ The actual difference is lower when tax filers with an AGI around the \$30,000 cliff separating the 20 percent and 50 percent credit are excluded. The reason for excluding tax filers around the cliff is the “bunching effect” below the cliff that indicates that a large share of those claiming an AGI just below \$30,000 have artificially manipulated their AGI to take advantage of this benefit.¹²⁸ When excluding tax filers between \$29,501 and \$30,500, the difference in the take-up rates decreases to 1.0 percent.¹²⁹

Some scholars argue that it is possible that the only effect of the SC is in creating these cliffs by incentivizing individuals to report incomes a bit lower than the income in which there is a notch in the SC.¹³⁰ There may not be any increase in contributions around the SC notch besides the constant

¹²³ See Gale et al., *supra* note 110, at 604–610.

¹²⁴ Gary Koenig & Robert Harvey, *Utilization of the Saver's Credit: An Analysis of the First Year*, 58 NAT'L TAX J. 787, 801 (2005).

¹²⁵ Esther Duflo et al., *Saving Incentives for Low- and Moderate-Income Families in the United States: Why is the Saver's Credit Not More Effective?* 5 J. EURO. ECON. ASSN. 647, 656 (2007).

¹²⁶ *Id.* at 656–57.

¹²⁷ *Id.*

¹²⁸ The bunching effect underscored by other important studies is a phenomenon in which an especially high number of individuals report an AGI just lower than the AGI at which there is a notch in the effective tax rate. See Raj Chetty, *Bounds on Elasticities with Optimization Friction: A Synthesis of Micro and Macro Labor Supply*, 80 ECONOMETRICA 969 (2012); Duflo et al., *supra* note 125, at 656. The SC creates such a notch, especially around the AGI of \$30,000: the cliff at which the credit drops from 50 percent of the contribution to 20 percent of the contribution. If an individual with an AGI of \$30,000 and a \$2,000 contribution toward retirement reports an additional dollar of income, he pays an additional \$600 in taxes. See Ramnath, *supra* note 121, at 78.

¹²⁹ See Duflo et al., *supra* note 125, at 657. Even this meager difference in contributions between the different levels of AGI may be attributed to the greater propensity of higher income earners to save for retirement and not necessarily a result of the higher credit rates. This possibility is refuted by the authors by comparing the retirement saving rate of individuals with the same AGI but who are not entitled to the credit because they have no tax liability. *Id.* at 652.

¹³⁰ Ramnath, *supra* note 121, at 87.

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increase in contributions as a factor of the increase of income.¹³¹ The increase in contributions around the notch could be solely explained by the under-reporting of income around the notch while contributions as a function of income remain constant. Thus, even the meager effect of the SC found in other studies may be otherwise explainable,¹³² making the effect of the SC potentially nonexistent.¹³³

There is an additional reason for why the SC's actual effect on retirement saving is even weaker than the low take-up rate reflects. It is unclear whether those that do take advantage of the SC actually increase their savings for retirement. Many scholars hold the position that schemes for incentivizing savings do not actually increase the overall savings for retirement; their primary effect is in shifting the resources from one account to another.¹³⁴ While most of these scholars agree that among low-income earners, the scheme's effect of increasing contributions is stronger than its substitution effect—the shifting of savings from an account that does not entitle a tax benefit to an account that does¹³⁵—the rate of individuals that actually increase their contribution for retirement is even lower than this relatively low take-up rate.¹³⁶

The central explanation for this low take-up rate is the general insensitivity to price mechanisms. Studies analyzing employers' matching schemes found that they had a limited and weak effect on employee contributions.¹³⁷ This is also consistent with studies examining the effect of matching on savings of low-income earners in general. Non-profit organizations offer Individuals Development Accounts: accounts that encourage low-income earners to save toward a particular purpose, such as buying a house or a car.¹³⁸ These organizations offer to match the contribution made by the individuals to these accounts. While these programs have a high take-up rate, half of the participants either never contribute or eventually withdraw the funds for non-matchable purposes.¹³⁹

¹³¹ *Id.* at 88.

¹³² See Gale et al., *supra* note 110; Koenig & Harvey, *supra* note 124; Duflo et al., *supra* note 125.

¹³³ See Ramnath, *supra* note 121, at 90.

¹³⁴ See, e.g., William G. Gale & John Karl Scholz, *IRAs and Household Saving*, 84 AM. ECON. REV. 137 (1994); Eric M. Engen et al., *The Illusory Effects of Saving Incentives on Saving*, 10 J. ECON. PERSPECTIVES 113 (1996).

¹³⁵ Eric M. Engen & William G. Gale, *The Effects of 401(k) Plans on Household Wealth: Differences Across Earning Groups* 22 (Nat'l Bureau of Econ. Research, Working Paper No. 8032, 2000), <http://www.nber.org/papers/w8032.pdf> [<https://perma.cc/3FEM-KEJR>].

¹³⁶ Ramnath, *supra* note 121.

¹³⁷ See Chetty et al., *supra* note 90.

¹³⁸ See Michael Sherraden et al., *Income, Institutions and Saving Performance in Individual Development Accounts*, 17 ECON. DEV. Q. 95, 95–96 (2003).

¹³⁹ See Gregory Mills et al., *Effects of Individuals Development Accounts on Asset Purchases and Saving Behavior: Evidence from a Controlled Experiment*, 92 J. PUB. ECON. 1509, 1510 (2008); MARK SCHREINER ET AL., CTR. FOR SOC. DEV., SAVINGS AND ASSET ACCUMULATION IN INDIVIDUAL DEVELOPMENT ACCOUNTS (2001), https://csd.wustl.edu/Publications/Documents/R01-23_ADDReport_2001.pdf [<https://perma.cc/SDD4-8C2Q>].

An additional explanation for the low take-up rate is lack of knowledge about the credit, especially given that it is not an independent scheme but an additional element within the tax system. There is a significant gap between the take-up rate of taxpayers who used a professional tax preparer or computer software and taxpayers that completed their taxes on their own. Among the former group, 75.6 percent of those entitled to the credit have claimed it, compared to only 44.4 of those entitled to the credit among the latter group.¹⁴⁰ A recent survey reinforces the claim that lack of knowledge of the program is one of the primary reasons for the low take-up rate. Only 19 percent of the individuals surveyed have knowledge of the SC.¹⁴¹ Although this survey includes individuals to which the credit is not relevant due to their high income, and the knowledge of the program among low-income earners may well be higher, it still implies a significantly low rate of individuals that are aware of the SC.

The complexity of the scheme is also a possible explanation for the low take-up rate of the SC.¹⁴² In a survey of 1,000 low-income earners, only 6 percent of the respondents report to have ever claimed the credit.¹⁴³ Fifty-nine percent of those who have never claimed the credit mentioned that they do not know whether they are eligible, 54 percent are uncertain regarding financial gain from the credit, and 49 percent mentioned that they do not understand exactly how the credit works.¹⁴⁴ These responses indicate that the complexity of the SC is one of the main impediments for not claiming the credit. Some scholars that have also mentioned complexity as the main barrier preventing wider participation in the SC called for the simplification of the SC by eliminating all but the 50 percent rate.¹⁴⁵

While these studies have illuminated important factors that might explain the low take-up rate for the SC, they overlook an additional important factor. Many of the low-income earners have no short-term savings since they have little disposable income. This is a significant fact when facing the decision of what one should do with one's few dollars of disposable income. When one does not have any cushion for emergencies, it is rational for one to be especially reluctant to commit to long-term saving. Within the context of the SC, an individual must give up the option of being able to spend the

¹⁴⁰ Koenig & Harvey, *supra* note 124, at 803.

¹⁴¹ Jade Shipman Bevans, *Retirement Savings Among Lower-Income Populations: Challenges and Opportunities to Improve the Effectiveness of the Saver's Tax Credit* 8 (EARN Research Brief, 2013), https://www.earn.org/wp-content/uploads/2015/03/Report_Savers_Tax_Credit1.pdf [<https://perma.cc/DZ94-87Q9>].

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 9.

¹⁴⁵ Jonathan Spader et al., *Encouraging the Use of the Saver's Credit Through VITA Sites: Evidence from a Pilot Demonstration in Two Cities* 57 (Center for Financial Security, Working Paper No. 11-7, 2011), <https://centerforfinancialsecurity.files.wordpress.com/2011/10/2011-encouraging-the-use-of-the-savers-credit-through-vita-sites-paper.pdf> [<https://perma.cc/SWH4-GW3X>]. As noted above, a 50 percent credit essentially implies that the government matches the individual's contribution.

marginal dollar on emergencies or vital expenses that might come up before she reaches the age of 59.5 without a penalty.¹⁴⁶ Such an option is of very high value and might be worth more than saving for retirement, even for an individual who is fully aware of the need to save for retirement.

III. ANALYSIS AND RESPONSE TO THE SAVER'S CREDIT PUZZLE: THE SAVER'S CONTINUOUS CREDIT

Many scholars have provided explanations for the limited impact of the SC on retirement savings of low-income earners.¹⁴⁷ There is no doubt that some of these answers are reasonable, yet they provide only a partial account for the phenomenon. I argue that the attempts to solve the SC have overlooked an important element of the scheme that may significantly deter low-income earners from participating in the scheme. This element is the elimination of the option value of funds, which is especially high for low-income earners. While there is always a tradeoff between the commitment to save and the forgone liquidity and flexibility, the high option value for low-income earners make them especially sensitive to the degree of commitment to save. The discussion regarding the SC leaves the commitment element fixed, assuming this is a necessary element for retirement saving schemes, and focuses exclusively on the incentives required to increase one's commitment to save for retirement. In this Part, I outline an alternative scheme intended to promote the same goal as the SC, but without imposing a commitment requirement or eliminating the option value of funds. I question the hidden assumption regarding retirement saving schemes: that they have to eliminate the saver's option value from funds and impose commitment mechanisms, such as early withdrawal penalties. Retirement saving is about making sure that individuals will have resources for future consumption, and at least to some extent, the option to consume the resources in the present *has* to be forfeited. The Saver's Continuous Credit (SCC) scheme I suggest challenges this assumption. It would incentivize retirement saving without eliminating the option value of the funds. The SCC also has additional advantages, discussed later. First, I illustrate how the SCC maintains the option value of funds and why this is so important.

A. *The Cause of the Enigma: Option Value of Funds*

Numerous studies have examined the enigmatic low participation rate in the SC despite the very generous benefits it offers.¹⁴⁸ This scholarship has overlooked a central element that explains the low take-up rate of the SC:

¹⁴⁶ See 26 U.S.C. § 72(t)(1) (2012).

¹⁴⁷ See Mills et al., *supra* note 139; Koenig & Harvey, *supra* note 124; Bevans, *supra* note 141, and accompanying text.

¹⁴⁸ See, e.g., Gale et al., *supra* note 110 at 604–10; Ramnath, *supra* note 121; Koenig & Harvey, *supra* note 124; Duflo et al., *supra* note 125.

the commitment mechanism it imposes on savers through the penalty on early withdrawals. Low-income earners place a high value on the option value of funds, and thus the elimination of option value deters them from participating in the SC.¹⁴⁹ While the trade-off between liquidity and commitment is an inherent feature of any savings scheme, the high option value of funds for low-income earners increases the importance of liquidity and thus makes trade-offs with commitment mechanisms highly unattractive for would-be savers.

The SC eliminates option value by merely providing a credit—it does not eliminate anything. However, the SC only works in a legal context in which there is some sanction on early withdrawal of funds from a retirement or pension account. Otherwise, people would deposit funds, receive the credit, and withdraw them immediately. The legal sanction against early withdrawal of funds from a retirement account before the age of 59.5 is a 10 percent addition to tax of the funds withdrawn, and in some cases, even a 25 percent tax.¹⁵⁰ The deterrence effect of the penalty causes individuals to treat funds in the retirement account as unavailable for use until retirement. This may seem surprising: why does a penalty that is usually lower than the benefit have such a deterrence effect? In most cases, contributing and withdrawing money immediately would still create a net tax benefit because the amount of the credit outweighs the cost of the penalty.

There are three reasons for the efficacy of the penalty in deterring early withdrawals despite its low level. The first is economic in the narrow sense. A penalty of 10 or 25 percent of all funds withdrawn, including the tax-free capital return of the initial deposits, is a heavy price. For individuals receiv-

¹⁴⁹ This special attention to the unique preferences of the poor is justified according to the “poor but neoclassical” approach. It stands in contrast to the “poor but efficient” approach espoused by economist Theodore Schultz according to which there is no reason for economic theory to pay special attention in economic models to the poor—there is nothing special and unique about them. See Duflo, *supra* note 9.

¹⁵⁰ There is a 10 percent penalty on early withdrawal from most retirement accounts and a 25 percent penalty on withdrawals from SIMPLE IRA accounts in the first two years with an exclusion only for certain emergencies. See *supra*, notes 118–119. The penalty is especially significant for the lion’s share of individuals to which the Saver’s Credit applies, who only receive a 10 percent credit. It may seem that this is not really a penalty for individuals who receive a 20 percent or 50 percent credit—the penalty is significantly lower than the credit they receive. See *supra*, notes 111–113. Yet even in these cases, in which it seems that there is no effective economic penalty on early withdrawal, individuals may yet be deterred on behavioral grounds from the framing of the early withdrawal as a penalty. There is some evidence for such a behavioral effect from the fact that even individuals entitled to the 50 percent credit who have a tax liability that can be offset do not take the credit. See Spader et al., *supra* note 145. Only 14 percent of individuals who are entitled to a credit and have a positive tax liability utilize the credit. See Koenig & Harvey, *supra* note 124. These individuals will gain economically even if they simply deposit the funds and immediately withdraw them: the credit is greater than the penalty. A possible explanation for why individuals do not take advantage of this is behavioral—the framing of early withdrawal as a penalty deters them from utilizing such an option, even when it would be economically beneficial to them. The scheme I suggest in this Article omits the need for any kind of penalty.

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ing the lowest 10 percent credit, the benefit of the early withdrawal does not cover the significant cost they would incur.

The second reason for deterrence is incomplete information. Individuals know that there is a penalty on early withdrawals, but do not have complete information regarding the penalty and its exact level. Even though individuals could acquire the information and details regarding penalty level, acquiring such information, as with any legal information and especially tax information, is costly.¹⁵¹ Individuals incur the cost of obtaining the information only if the expected benefit from obtaining the information is greater than the cost.¹⁵² It is reasonable to assume that the expected gains from acquiring the information regarding the details of the penalty are less than the cost. Individuals realize that the legislators' objective is to increase savings for retirement and thus assume that a significant penalty is imposed so that contributions will not be removed. Individuals likely assume that if there is a penalty, the legislators chose an amount that would be an effective penalty to deter early withdrawals. As a result of their rational likely assumption that the sanctions are heavier than they are in reality, savers abstain from making contributions for retirement, even when the benefit provided is larger than the actual cost of the sanction.

The third is a behavioral explanation. Individuals may have a strong aversion to any payment framed as a penalty, even when the absolute size of the payment is small. This "penalty aversion" will be discussed later in this Article.¹⁵³

The exact reason why the penalty deters individuals is not necessarily important for the purposes of this Article. The crucial fact is that, empirically, the penalty is effective and prevents individuals from withdrawing funds from retirement accounts.¹⁵⁴

The penalty may be the feature that deters individuals from opting into the SC and exacerbates the low take-up rate. Although they receive a credit in the present, they understand that by depositing funds into the accounts, they are effectively losing the option to make use of the funds in the near future. This may seem an inherent feature of saving for retirement—losing the option to consume in the present. It is not. A saver does not have to forgo the option of consuming in the present. He may have the option to spend the resources in the present, but may choose not to exercise this option and instead continue to save.

¹⁵¹ Regarding costs of obtaining legal information regarding sanctions, especially in the field of taxation, see Louis Kaplow, *Optimal Deterrence, Uniformed Individuals and Acquiring Information About Whether Acts are Subject to Sanctions*, 6 J. L. ECON. & ORG. 93 (1990).

¹⁵² Regarding the influence of the likelihood of justifying the cost of obtaining the information regarding the legal rule, see Louis Kaplow, *A Model of the Optimal Complexity of Legal Rules*, 11 J. L. ECON. & ORG. 150, 161 (1995).

¹⁵³ See *infra* Section IV.B.1.

¹⁵⁴ See Koenig & Harvey, *supra* note 124; Duflo et al., *supra* note 125; Chetty, *supra* note 128; Ramnath, *supra* note 121; Gale et al., *supra* note 110.

Although saving does not require forgoing the option to consume in the present, the sanction is seemingly necessary for governmental schemes incentivizing retirement savings. Individuals should be provided with a benefit only if they are willing to save for retirement. If they have the option to withdraw the funds with no sanction, the scheme will lose its efficacy; individuals will deposit the funds without any intention of saving for retirement, receive the benefit, and withdraw the funds immediately.

In order to prevent such a scenario, however, there is no need for a sanction; it is sufficient to require the individual to return the benefit received to prevent him from exploiting the SC. It is possible to view the existing sanctions as doing exactly that: aiming at taking away the benefit received without penalizing in the strong sense. Yet it seems that the scheme and the sanction have different purposes. The benefit is not given for an action that enables retirement savings, but for the *commitment* to save for retirement. As noted above, there are many impediments to saving for retirement, both behavioral impediments, such as myopia,¹⁵⁵ and rational ones, such as the costs of constant decision making and the problem of different selves.¹⁵⁶ In order to overcome these problems, the government provides a benefit to individuals who are willing to *commit* to saving for their retirement. In other words, the government pays an individual for forfeiting her option to consume her resources in the present. The government is not interested in giving the individual the option of refunding the benefit and consuming the resources in the present. Such a system would undermine the central objective of the scheme: committing the individual to save for retirement. For that reason, the government penalizes the individual for early withdrawal, not only to reclaim the benefit she receives to prevent her from exploiting the SC, but also to *deter* her from withdrawing the funds, even if she now values present consumption of those resources more than future consumption.

The commitment element of the SC is what undermines the scheme and causes its ineffectiveness and low participation rate. Although it is designed to enhance retirement saving by imposing an effective sanction on withdrawals, this sanction can backfire. The individuals the scheme targets—low-income earners—place a very high value on the option to consume in the present. There is ample data regarding the low overall savings of these groups.¹⁵⁷ Many of the targeted individuals of the SC do not have any other savings besides their potential SC contributions.¹⁵⁸ Having no financial cush-

¹⁵⁵ See *supra* Section I.C.2.a.

¹⁵⁶ Shaviro, *supra* note 72, at 44–45.

¹⁵⁷ See, e.g., Rebecca M. Blank & Michael S. Barr, *Savings, Assets and Banking Among Low-Income Households: Introduction and Overview*, in *INSUFFICIENT FUNDS: SAVINGS, ASSETS, CREDIT, AND BANKING AMONG LOW-INCOME HOUSEHOLDS* (Rebecca M. Blank & Michael S. Barr eds., 2011); Annamaria Lusardi et al., *Financially Fragile Households: Evidence and Implications* (Nat'l Bureau of Econ. Research, Working Paper No. 17072, 2011), <http://www.nber.org/papers/w17072.pdf> [<https://perma.cc/47P5-ESCS>].

¹⁵⁸ Bevans, *supra* note 141, at 10.

ion at all in the present, the value of the ability to use these resources in the present skyrockets. Since the individual has no other financial resources available, the decreasing marginal value of money makes these dollars extremely valuable to low-income earners. The value of the option to use these dollars is therefore also extremely high. Although the law attempts to address this problem by excluding withdrawals made for certain expenses from the penalty,¹⁵⁹ a *numerus clausus* cannot entirely solve this problem. There will always be scenarios and expenses not included in the list under which the impact of these first dollars on the individual's utility level will be extremely high. Furthermore, obtaining information about these exceptions might be costly, as tax information generally tends to be, and thus individuals might not obtain this information. What prevents these individuals from participating in the SC is not necessarily the desire to consume the resources at the present time. Instead, the primary concern may be maintaining the option of consuming these resources in the future.

Some studies reinforce this assertion. A survey of low-income earners finds that their top purpose for saving is for an emergency or "just in case." Eighty-three percent of the respondents prioritize this reason, while only 70 percent mention retirement as a saving priority.¹⁶⁰ Other priorities for savings trail by a large margin: only 57 percent mentioned saving for a specific event like a wedding or a vacation, 49 percent mentioned saving for a big purchase like a home or a car, and only 45 percent have mentioned education or training for members of the family.

An experiment examining Volunteer Income Tax Assistance (VITA) sites provides evidence that the ability to make use of the resources in case of an emergency is an important factor specifically effecting the low take-up rate of the SC.¹⁶¹ One of the main reasons cited by approximately a third of the participants for not participating in the scheme was the inability to withdraw funds in an emergency.¹⁶² This factor trailed the matching rate by less than two percentage points as the most important factor in retirement savings decisions.¹⁶³ The central element of the SC that impedes early withdrawal is the penalty, although the survey did not reference it explicitly.¹⁶⁴

These findings support the conclusion that in order to strengthen the incentive to save among low-income earners, there is a need to cancel or significantly reduce the penalty for a large set of withdrawals.¹⁶⁵

Is it possible to design a scheme that incentivizes these individuals to save for retirement without *committing* them to save for retirement? As noted above, reducing the penalty may not be sufficient. Both for behavioral

¹⁵⁹ 26 U.S.C. § 72(t)(2) (2012).

¹⁶⁰ Bevans, *supra* note 141, at 10.

¹⁶¹ Spader et al., *supra* note 145, at 85.

¹⁶² *Id.* at 85.

¹⁶³ *Id.*

¹⁶⁴ *Id.* at 8.

¹⁶⁵ *Id.* at 37.

and rational reasons, any payment required upon withdrawal of funds may deter entering the scheme. On the behavioral level, any requirement of payment, even a low payment, may be perceived as a penalty and thus deter individuals from acting in a way that may later cause them to incur a “punishment.” But even without assuming irrational behavior, such payment may deter the individual from participating in the scheme. The payment may be a strong signal to the individual that the government is pushing him to save for retirement, especially knowing that it may have an interest in committing him to saving. The signal may be strong enough to justify not incurring the costs of obtaining the information regarding the penalty and weighing it against potential benefits.¹⁶⁶

Therefore, the question should be rephrased: is it possible to design a credit that incentivizes individuals to save for retirement without imposing *any* payment on pre-retirement withdrawal? How can one design such a credit without leaving it exposed to manipulation? I propose exactly that kind of scheme: one that provides an incentive for retirement saving without imposing any penalty on pre-retirement withdrawal, yet which is not susceptible to manipulation.

B. The Solution to the Enigma: The Saver’s Continuous Credit

1. The Basic Design of the Saver’s Continuous Credit

The SCC is designed to provide a solution that incentivizes retirement saving but does not impose any commitment element, such as a payment on early withdrawals. Instead, it changes the timing of the credit, making it impossible to nefariously take advantage of the scheme even without requiring a payment upon withdrawal. Instead of receiving the credit in the same year that the contribution is made, it spreads the credit over the years until retirement while enabling the taxpayers to withdraw the funds at any time without penalty. This design does not require additional resource expenditure by the government and could be budget-neutral.

For example, assume an individual has 20 years until her retirement and the real interest rate is two percent. Instead of enabling the taxpayer to take a credit of \$1,000 in the year she makes the contribution, one solution could provide her with a \$60 credit every year she continues to leave the \$1,000 contribution saved, which would be equivalent in present value. This annual credit could be provided by a special savings account, in which the government tracks the money going in and out without penalizing withdrawals. In other words, the government will effectively add, in this example, a six percent return in addition to the market’s yield every year until the age of retirement.

¹⁶⁶ See *supra* notes 140–141 and accompanying text.

Under such a benefit scheme, the credit is transformed from a binary credit that rewards the individual only if funds are locked up until retirement to a graded benefit that provides a credit every year the saver participates. The central feature of this scheme is that it does not require the saver to forgo the option of using the funds in the present. She could withdraw the funds at any moment with no strings attached.

This raises the question of how effective the scheme can be in incentivizing retirement savings. It preserves the option value more effectively than other schemes, but hasn't it sacrificed the central objective of incentivizing saving for retirement? The fact that funds can be withdrawn at any time raises the concern that it will not increase retirement savings at all. An individual could take advantage of the premium for a few years and then spend the funds saved, including the premiums received, long before retirement.

This is not the case with the SCC, because it uses a fundamentally different approach toward Pigovian government subsidies for the generation of public goods.¹⁶⁷ While most government programs, including the SC, subsidize public goods ex post, the SCC subsidizes public goods ex ante. In other words, most governmental programs subsidize public goods according to the quantity of goods actually produced. The SCC subsidizes a behavior that is *expected* to produce a public good or has a positive effect on the production of the public good, even if the public good does not ultimately materialize. The logic behind such a scheme is that if there is a statistical correlation between the behavior and the production of the public good, it is sufficient to incentivize the behavior to increase the production of the public good without needing to tally the public goods that have been produced. Incentivizing actions that have a positive impact will increase the amount of the desired public good. The rationale of the ex ante approach is that an individual who withdraws the funds, including the premiums, much before retirement has not taken advantage of the credit. According to the scheme, it is fully justified that the individual should receive the benefit of the premium. Although he has not generated additional retirement savings, he has generated an *expectation* for additional retirement savings, a positive externality by itself. Capital formation in the short run is the first step to capital formation in the long run. An increase in the amount of savings in year t_1 increases the likelihood of having savings in year t_2 , which increases the likelihood of having savings in year t_3 , and so on. From a policy perspective, due to the law of large numbers, increasing the ex ante likelihood of saving for retirement will eventually increase the ex post actual savings for retirement. Thus, even if an individual has withdrawn the funds due to an emergency, he has still promoted the public goals of increasing the ex ante likelihood for an increase in retirement savings funds.

¹⁶⁷ Regarding the classification of retirement savings as a public good, see Sen, *supra* note 3.

It is true that an expectation of a public good has less value for society than the actual public good. However, this discrepancy could be resolved by providing the benefit in proportion to the social value produced: that is, providing a lower benefit for a behavior generating an expectation for a public good than a benefit provided for the actual production of the public good.¹⁶⁸

2. *Justifying the Ex Ante Subsidy Regime*

Accepting the logic above, one question remains open: if what we are interested in is the public good itself, why not subsidize it directly? I will begin by providing two general justifications for an ex ante subsidy scheme over an ex post subsidy regime. I will provide a more specific justification for the structure of the SCC subsidy, which contains an ex post component. This component justifies the application of the subsidy to all participants, even if the basic condition for the justification of the ex ante regime—that there is some chance that the individual will save for retirement—is not fulfilled.

a. *General Justifications for an Ex Ante Subsidy Regime*

i. *Ex Ante Subsidy as an Insurance Policy*

The first justification applies to cases in which the individual is uncertain regarding her ability to save the funds until retirement. Especially in the case of low-income earners that have no other savings besides their retirement savings, there is a chance that financial need will emerge and cause the individual to withdraw the funds early. In other words, there is an inherent risk that the behavior will take place but the public good will not be produced. The existence of such risk raises the question of who should bear it. An ex ante subsidy means that the government will incur the risk, while an ex post subsidy places the risk on the individual. If the efficient risk bearer is the government, an ex ante subsidy regime should be adopted whereas an ex post subsidy regime should be adopted if the individual is the efficient risk bearer. If the individuals are highly risk averse, it may be more efficient for the government to incur the risk in order to achieve the optimal output of the public good. This is especially true if the government's overall risk is smaller due to the law of large numbers—as the number of agents is higher, the likelihood that the actual output of the public good will meet the expected output is correspondingly greater. In other words, under an ex ante subsidy regime, the government provides insurance for individuals performing the

¹⁶⁸ I.e., in the example above, if only 75 percent of those who are willing to save for the additional premium in the first year will actually save for the premium in subsequent years, the premium could be adjusted to 4.5 percent annually. Thus the benefit provided under the SCC will be 75 percent of the benefit provided under the SC, reflecting the gap in social value between generating a 0.75 *expectancy* for generating a public good and the *actual* generation of that public good.

desired behavior that they will get some benefit even if the public good does not materialize.

The insurance the government provides for individuals creates moral hazard. The *ex ante* regime is justified for individuals who in principle are interested in saving for retirement but various needs prevent them from saving. Yet some individuals that are not interested in saving for retirement will intentionally save for the short term in order to obtain the tax benefits. The subsidy regime treats these individuals as if they increased the expectation for retirement savings when they have not—they knew all along that they would not save for retirement. The moral hazard problem is therefore a problem for this subsidy regime.

It is true that the *ex ante* subsidy regime creates moral hazard. Yet moral hazard is mitigated in much the same way it is in the case of standard insurance. With standard insurance, shifting some of the cost of the harm to the individual mitigates moral hazard, even if he does not incur the full cost.¹⁶⁹ Similarly, the fact that most individuals attribute some private value to retirement saving, even if significantly less than the social value, mitigates the moral hazard problem. Under some conditions, they would also prefer to save for retirement and generate the public good. Thus, if the group that assigns no value to retirement savings is relatively small, there should be no significant moral hazard.

ii. The Proximity in Time to Agent's Action

The second justification for adopting an *ex ante* subsidy regime has to do with the timing of the benefits. Schemes in which there is a time gap between the action and the actual production of the public good may require the benefit to be provided at the time of the action in order to be effective.¹⁷⁰ The long time gap between the action and the production of the social good

¹⁶⁹ See Steven Shavell, *On Moral Hazard and Insurance*, 93 Q.J. ECON. 541, 541 (1979).

¹⁷⁰ There may be a few additional examples in which there is a time gap between the agent's action and the materialization of the public good, in which frontloading the benefit may intensify the agent's motivation to perform the action. One example is academic grants. The grant is not provided when the public good materializes: the completion of a successful study or experiment. The subsidy is provided for the initial action that augments the expectation that such a public good will be generated by beginning the study. Thus, the risk that the study will not be successful is imposed on the government and not on the individual. Also, the subsidy provided to non-profit organizations may be viewed as an *ex ante* subsidy regime. The main explanation for the tax benefits provided to contributions to non-profits is that it serves as a public mechanism to subsidize their production of public goods. See Henry B. Hansmann, *The Role of Nonprofit Enterprise*, 89 YALE L.J. 835, 843–45 (1980); Mark P. Gergen, *The Case for a Charitable Contribution Deduction*, 74 VA. L. REV. 1393 (1988). Yet the subsidy is not provided for the actual production of public goods, but for a non-profit's *attempt* to produce the public good. This policy is once again in line with the *ex ante* subsidy rationale, due to the time gap between the first phases of the non-profit's activity and its actual production of the final public good, which may take years. An additional example is jury duty. The subsidy given for producing the public good of the sentence is not provided *ex post*, but *ex ante*; the individual receives compensation for his part of the process, even if he ultimately does not take part in the trial.

would make a benefit provided at the end of the term ineffective for both economic and behavioral reasons mentioned earlier.¹⁷¹ The proximity between the action and the benefit increases the saliency of the action's positive effect. Tax-advantaged retirement saving is a classic example of such a scheme. In most cases, the benefit is frontloaded and provided at the time of action—the initial savings.¹⁷² However, frontloading the tax benefit causes a problem in cases in which the public good is not produced but the tax benefit has already been distributed. Since no public good was produced, the individual does not deserve the benefit received and thus should return it. Yet the possibility of returning the benefit may also undermine the scheme. Economically, it lowers the value of the benefit, especially if the individual is risk-averse. Additionally, on both economic and behavioral grounds, imposing a payment may signal that the payment is a penalty, and thus may further deter individuals from entering a situation in which they may be penalized.¹⁷³ Thus the SCC's ex ante regime produces a similar positive effect but without the negative effect of imposing a penalty.

b. Justifying the Application of an Ex Ante Subsidy Through an Ex Post Lens

The SCC could also be justified from an ex post perspective, in addition to the two justifications above from the ex ante perspective. It is true that retirement savings are a significant public good,¹⁷⁴ but they are not the only public good. Incentivizing low-income earners to save is generally a public good and justifies subsidization even if these funds are ultimately not saved for retirement.¹⁷⁵ The level of overall savings among low-income earners is extremely low. A third of the population has zero or negative liquid assets.¹⁷⁶ The average savings rate among individuals who earn half of the median income or less is negative.¹⁷⁷

There are three aspects in which savings in general are a public good. First, they stabilize fiscal value by lowering consumption and increasing investments. The government may prefer a higher savings rate than individuals would, due to macroeconomic considerations that a higher savings rate will

¹⁷¹ See *supra* Section III.A.

¹⁷² In some cases, there is backloading, such as in Roth IRA accounts, but in those cases, the agent also has the choice to frontload the benefit (e.g., through conventional IRA accounts). See *supra* notes 108–109.

¹⁷³ See *infra* Section IV.B.1.

¹⁷⁴ See Sen, *supra* note 3.

¹⁷⁵ J. Michael Collins & Leah Gjertson, *Emergency Savings for Low-Income Consumers*, 30 FOCUS 12 (2013).

¹⁷⁶ Stacie Carney & William G. Gale, *Asset Accumulation Among Low-Income Households*, in ASSETS FOR THE POOR: THE BENEFITS OF SPREADING ASSET OWNERSHIP 165 (Thomas A. Shapiro & Edward N. Wolff eds., 2000).

¹⁷⁷ Mark Hugget & Gustavo Ventura, *Understanding Why High Income Households Save More than Low Income Households*, 45 J. MONETARY ECON. 361, 363 (2000).

strengthen the economy in the long run.¹⁷⁸ In other words, savings are a public good because they create a positive externality, are non-rivalrous, and are non-excludable.¹⁷⁹

The second reason is the effect of savings on the long-term welfare of low-income earners. Capital formation for low-income earners is extremely difficult. Yet capital formation may have a much stronger impact on the long-term increase of these individuals' welfare. Even though capital formation will improve their long-term welfare, the same behavioral and rational reasons that prevent saving for retirement may also be applicable to short-term savings. As it does with retirement saving, the government may be justified in adopting a paternalistic approach: individual decisions regarding savings may generate a negative externality on society. A lack of short-term savings may increase an individual's dependence on society in the long run.¹⁸⁰ If enhancing the welfare of low-income individuals is a public good,¹⁸¹ increasing their savings rate logically also constitutes a public good.

The third reason is that pre-retirement consumption of savings may have a significant post-retirement effect. Purchases with relatively low depreciation in value over time, such as a home, furniture, etc., may leave some value to be consumed post-retirement. Under the assumption that retirement savings are a public good, savings that enable purchases of products usable through retirement also constitute a public good. Furthermore, some types of consumption may enable an individual to replace other costs that are more expensive over time. An individual may purchase a car, which replaces alternative transportation expenses that may still be more expensive over time than the initial investment of thousands of dollars. While the purchase of a car is an expense, it is one which enables saving for the long-run, including toward retirement.

To summarize, offering an *ex ante* subsidy regime for retirement saving schemes may assist in circumventing the elimination of option value that

¹⁷⁸ IAN MICHAEL DAVID LITTLE & JAMES A. MIRRELES, PROJECT APPRAISAL AND PLANNING FOR DEVELOPING COUNTRIES 34 (1975). See also BARRY P. BOSWORTH, THE DECLINE IN SAVING: A THREAT TO AMERICA'S PROSPERITY? 95–120 (2012). This reason is less applicable for more developed countries that may have an alternative and more effective fiscal machinery for increasing the saving rate, such as the interest rate. For an additional version of the argument that savings are a public good due to their higher social value than individual value, see Robert H. Frank, *The Frame of Reference as a Public Good*, 107 ECON. J. 1832 (1997) (arguing that a collective action problem prevents achieving the optimal saving rate that is higher than the existing saving rate). Frank argues that the utility derived from consumption in present levels is positional—it is a factor of the level of consumption in relation to others. As a result, everyone would be better off if everyone consumed less. Thus one's savings increases the utility others derive from consumption. *Id.* at 1842–43.

¹⁷⁹ Paul A. Samuelson, *The Pure Theory of Public Expenditures*, 36 REV. ECON. & STAT. 387 (1954).

¹⁸⁰ See Carney & Gale, *supra* note 176. The strengthening of the macroeconomic elements of the market is non-rivalrous; one individual's benefit from the strength of the market does not come at the expense of any other individual. It is also non-excludable; it is impractical to bar an individual from benefiting from the market's strength.

¹⁸¹ See FRIEDMAN, *supra* note 4.

accompanies most retirement saving schemes, providing a solution to the SC enigma. It can enhance the participation of low-income earners in retirement saving schemes. While intuitively an ex ante Pigovian subsidy regime seems obscure, I have illustrated reasons why it should be adopted: shifting risk of materialization of public good to the government and eliminating the considerable time gap between the action and the materialization of the public good. I have suggested a specific form of ex ante subsidy regime in the context of retirement saving: the Saver's Continuous Credit, which pays low-income earners a periodic premium on the amount saved until the individual reaches retirement. In addition to the conventional justification for an ex ante subsidy regime, the SCC can be justified through an ex post lens: short-term saving of low-income earners is also a public good that merits a subsidy. The central justification for SCC is its ability to incentivize retirement saving without eliminating the option value of the resources saved. Besides this major advantage of the SCC over the SC, it exhibits other advantages as well.

IV. ADDITIONAL ADVANTAGES OF THE SAVER'S CONTINUOUS CREDIT

The central justification for the SCC is the avoidance of the imposition of a commitment mechanism on the participating individual and the preservation of the option value of resources. However, this scheme has three additional significant advantages over the SC. First, it has greater potential to include low-income individuals with no tax liability because it is refundable. Second, it neutralizes the behavioral effects of punishment and myopia. Third, it more accurately tailors the private benefit it provides to the public benefit generated.

A. *Greater Inclusion of Low-Income Individuals with No Tax Liability*

One of the central concerns with the SC is its exclusion of the lowest-income earners who have no tax liability. Because the SC functions as a nonrefundable credit, it offers no incentive for earners with no tax liability to save for retirement at all.¹⁸² Their exclusion is especially troubling because of their limited resources and the intensity of the incentive needed to induce them to save.

The creators of the SC were aware of this problem, and the initial SC included a refundable credit to low-income earners saving for retirement.¹⁸³

¹⁸² See 26 U.S.C. § 25B(a) (2012).

¹⁸³ The legislative impetus for the SC originated from President Clinton's Universal Savings Account (USA) initiative, under which the government would match contributions deposited into a special account. The Treasury Department designed a refundable tax credit based on the Clinton initiative. A similar proposal gained the support of the Finance Committee Chair, Sen. William V. Roth Jr. (R-Del), and the ranking minority member, Max Baucus (D-Mont.). Even though the refundable element of the proposal gained bipartisan support, it was stripped

The main impediment to implementing a refundable credit within the SC was budgetary. Due to the significant government benefit that is given for each contribution, a spike in the level of contributions could have a significant impact on government spending.¹⁸⁴

The SCC can ameliorate this problem of budgetary uncertainty by providing better control over spending for incentivizing retirement saving. As noted above, the SC frontloads the entire tax benefit for retirement saving to the time of the contribution. This feature of the SC is responsible for most of the uncertainty regarding the budgetary impact of the scheme. The government commits itself to provide a certain benefit for a public good that will materialize in the distant future, providing a lump sum for such contributions, which are especially susceptible to yearly variations.

The SCC spreads the benefit provided by the SC over several years. Doing so enables the government to adapt continuously and more effectively to changes in the level of retirement savings. If there is a general increase in retirement savings that reduces the marginal social value of saving for retirement, the government could reduce the premium that it pays for contributions made in subsequent years. Similarly, if the government faces sudden budgetary constraints, it could reduce the premium it pays for past contributions in order to decrease its expenses. Under any policy, it is possible to react and reduce future expenses, but in contrast to the SC, the SCC enables the reduction of benefits paid for past contributions.¹⁸⁵

Reducing benefits provided for past contributions may seem problematic: retroactively altering the benefit provided for past contributions appears duplicitous. Under the SCC this is less problematic; just as individuals were not committed to saving until retirement and could opt out with no strings attached, the government can also opt out of the arrangement of the SCC in subsequent years. It is a symmetrical relationship. In other words, the SCC feature of maintaining the option value for individuals may also be valuable for the government, giving it a symmetrical option to opt out, decreasing the budgetary risk that accompanies such an expensive scheme. The government's ability to opt out at any time under the SCC may enable it to expand

from the final law enacted due to budget constraints. For the legislative history of the SC, see Gale et al., *supra* note 121, at 602.

¹⁸⁴ *Id.* After the enactment of the Saver's Credit as part of the Economic Growth and Tax Relief Reconciliation Act of 2001, a few bills were introduced proposing the addition of refundable element to the SC: one by House minority leader Richard Gephardt (D-Mo.) in 2002, H.R. 4482, 107th Cong. (2002) and the second by John Edwards (D-N.C.) in 2004, S. 2303, 108th Cong. (2004). The main reasons that these bills have not passed the floor is their significant budgetary impact, estimated at four billion dollars. See William Gale et al., *Improving Tax Incentives for Low-Income Savers: The Saver's Credit* (Urban Institute Discussion Paper No. 22, 2005), <http://www.urban.org/sites/default/files/alfresco/publication-pdfs/411177-Improving-Tax-Incentives-for-Low-Income-Savers.PDF> [<https://perma.cc/QF3D-WCJL>].

¹⁸⁵ This solution would not raise a constitutional concern of cutting a benefit that was guaranteed by the government. The government guarantee applies only to the credit that applies to the current year, in which the individual deposited the funds. It does not guarantee providing a similar credit the following years. If in subsequent years it reduces the credit for the funds in the account, the individual is free to withdraw them, no strings attached.

the scheme to the lowest-income earners, providing them a cash premium not conditioned on having a tax liability. Essentially, such a premium is equivalent to a refundable tax credit, and incentivizes these individuals to save for retirement, as well.

In addition, the SCC can more accurately target low-income earners that have the greatest need of enhanced retirement saving. In contrast to the SC, the SCC can be more responsive to changes in the individual's socioeconomic status. As a result, the SCC can refrain from providing the premium for funds contributed in the past as soon as the individual passes a certain socioeconomic threshold. This can save sizeable amounts of resources. Assuming a significant level of social mobility, individuals that needed the additional benefit at the time of contribution may find later that their income has substantially increased, rendering the benefit less useful as an incentive to save. The benefit distribution of the SCC can, over time, be adjusted in accordance with changes in a taxpayer's income in subsequent years.

B. *Neutralizing Behavioral Effects of Punishment and Myopia*

Part II of this Article highlighted the role of behavioral biases in explaining the suboptimal amount of retirement savings. Thus the effectiveness of any scheme incentivizing retirement saving is affected by its ability to overcome these biases.¹⁸⁶ I argue that the SCC will have greater success with two such biases: the penalty aversion and myopia.

1. *Penalty Aversion*

As noted in Part II, the SC is accompanied by a penalty on early withdrawals. This is a necessary feature of the SC—otherwise, individuals would take advantage of the scheme by depositing into a retirement account, receiving the credit, and withdrawing the funds immediately.

Behavioral studies have exposed the penalty aversion effect: the framing of a payment as a penalty significantly enhances an aversion to the penalized activity, even when the payment is relatively low. Even an insignificant fine may cause a significant effect in the performance of the sanctioned activity.¹⁸⁷ For example, although the voting duty in Switzerland and the accompanying fines were meant to be symbolic, their cancelation caused a significant decrease in the voting turnout rate.¹⁸⁸ A penalty may encompass a social sanction on top of the financial sanction. This element may have even a stronger effect than the financial sanction, especially in

¹⁸⁶ The effect of behavioral biases may be especially strong in cases of low-income earners to which the SC and SCC apply. See Duflo, *supra* note 9 at 374–75.

¹⁸⁷ Patricia Funk, *Is There an Expressive Function of Law? An Empirical Analysis of Voting Laws with Symbolic Fines*, 9 AM. L. & ECON. REV. 135 (2007).

¹⁸⁸ *Id.* at 138.

establishing long-lasting norms even after the sanctioning mechanism is removed.¹⁸⁹

Within the context of retirement savings, the framing of a payment as a penalty instead of a conventional tax has also been found to have a significant impact on behavior.¹⁹⁰ The 1986 Tax Reform Act is a classic example of such an effect. It imposed a tax on lump-sum cash-outs by treating them as ordinary income and also imposed a ten percent penalty on cash-outs of individuals 54 years old or less.¹⁹¹ For taxpayers aged 55 and older, the 1986 Act did not have a significant effect on the rate of rollovers to retirement savings accounts.¹⁹² In contrast, in the age cohort of 54 and less, the rollover rate nearly doubled, from 21 to 41 percent.¹⁹³ When controlled for the different changes in effective tax rates, the penalty component had a large and statistically significant effect. The results implied that holding the overall effective tax rate constant, labeling part of the effective tax rate as a “penalty” rather than a change in “ordinary” tax rates raised rollovers by 16 to 24 percentage points.¹⁹⁴

While the penalty aversion phenomenon incentivizes individuals to keep saving for retirement in the lump-sum distribution context, it may prevent individuals from using the SC to save for retirement. Entering the scheme exposes an individual to the possibility of being penalized in case of an emergency or crucial need.

The SCC offers an equivalent incentive to save for retirement as the SC, but without the deterrent effect of a looming penalty. The SCC therefore may have a greater ability to attract low-income earners to save for retirement. It is true that there may be many individuals who start out saving for retirement but will not succeed due to the lack of a penalty on withdrawals. Yet the studies discussed above expose the powerful behavioral effect of penalties that will deter many individuals from participating in a scheme that exposes them to a penalty in the first place. Eradicating the penalty that discourages individuals from participating may more than offset the decrease in retirement savings due to the early-withdrawal option.

2. *Confronting Myopia*

One of the major behavioral biases mentioned above that curtails retirement saving is myopia. As noted above, a distinction should be made be-

¹⁸⁹ Rob M. A. Nelissen & Laetitia B. Mulder, *What Makes a Sanction “Stick”? The Effects of Financial and Social Sanctions on Norm Compliance*, 8 *SOC. INFLUENCE* 70 (2013).

¹⁹⁰ Leonard E. Burman et al., *Effects of Public Policies on the Disposition of Pre-Retirement Lump-Sum Distributions: Rational and Behavioral Influences*, 65 *NAT'L TAX J.* 863 (2012).

¹⁹¹ *Id.* at 864.

¹⁹² *Id.* at 874.

¹⁹³ *Id.*

¹⁹⁴ *Id.* at 880.

tween two types of myopia: naïve myopia and sophisticated myopia.¹⁹⁵ Under naïve myopia, the individual attributes excessive weight to *sooner* as compared to *later* consumption, which seems to be a result of the time distance.¹⁹⁶ As a given valued event is more distant in time, the divergence from its “real” value is greater.¹⁹⁷ Sophisticated myopia, which works on the motivational level, can be understood as binary: the inability of the agent to abstain from opting for the option available for him now in order to gain a better option in the future.¹⁹⁸ While the key factor appears to be whether the option is available in the present, availability might be a function of time; events that are not distant in time may seem more “available” to the individual, and the individual may exhibit less motivational failure as events move closer in time.¹⁹⁹ While the intensity of both types of myopia may be a function of the time frame, the distance in time will likely have a greater impact on naïve myopia.

Assuming that this distance is a key contributor to the level of myopia exhibited, especially in the case of naïve myopia, a scheme that mandates individual focus on the immediate future should decrease the myopia exhibited. Thus, the SCC can mitigate myopia. While the SC focuses on the year of retirement, which is the point in time at which the individual can consume the resources saved in the scheme, the SCC has no such focus. The SCC does not have to make any reference to the year of retirement. Under the SCC, no resources would become available for consumption only at retirement. The SCC shifts the focus to the immediate future. While one may argue that myopia applies to any future point in time, as we noted above, data demonstrates that myopia affects periods of time in a nonlinear fashion.²⁰⁰ As the event being evaluated becomes more distant in time, the divergence of the perceived value of the event from its actual value grows exponentially.²⁰¹

The comparison between the SC and the SCC regarding myopia may be more complicated. Even if one accepts the argument that myopia increases as the time contemplated becomes more distant, it is not clear that its effect on the SC is greater than its effect on the SCC. Even though the SCC does not focus on the point of time of retirement, the benefit it provides is more distant in time than the benefit of the SC. As noted above, under the SC the benefit is provided at the time the contribution is made (or the same financial year). Under the SCC, the benefit provided is spread over many years. Thus,

¹⁹⁵ See *supra* Section I.A.

¹⁹⁶ Shaviro, *supra* note 72, at 1246–47.

¹⁹⁷ R. H. Strotz, *Myopia and Inconsistency in Dynamic Utility Maximization*, 23 REV. ECON. STUD. 165 (1955). In this sense, hyperbolic discounting is connected to the phenomenon of naïvemyopia.

¹⁹⁸ See Shaviro, *supra* note 72, at 1248.

¹⁹⁹ *Id.* at 1246–48.

²⁰⁰ See *supra* notes 103–104.

²⁰¹ Shane Frederick et al., *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LIT. 351, 361 (2002).

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in the agent analysis of the benefit each of the schemes provides, an individual is more prone to myopia in evaluating the SCC than in evaluating the SC, because the full benefit of the SCC is more distant in time.

It is true that the benefit of the SC is closer in time than the benefit provided through the SCC. Yet the benefit is only one element of the scheme and not the most important element. Even though the SC frontloads the benefit, the appropriate timeframe for assessing the scheme is the time range from the present until retirement. The event with the strongest economic impact on the scheme takes place at retirement, when the savings are available for consumption with no sanction. In contrast, the timeframe for assessing the SCC is the near future. There is no difference between any specific time period, and nothing special about the point in time of retirement under the SCC. Assuming the intensity of myopia is a function of the size of the time frame the deciding agent it facing, the SCC, with the shorter timeframe, has greater potential to curtail the effect of myopia.

3. *Optimal Tailoring of Private Benefit to the Public Benefit*

Under the SCC, the private good (i.e., the credit) that is delivered to the contributing individual is proportional to the public benefit society derives from the public good the individual has generated by contributing (i.e., the benefit to society of the individual having saved for retirement). This proportionality between the private benefit and the public benefit is an important factor in the full internalization by the agent of the public benefit generated that enables achieving the optimal level of public goods.

The level of public benefit is a factor of the agent's economic condition at the time of retirement. The contribution is a public good, because it provides resources to individuals in a poor economic state to consume in retirement, and because it saves society the resources that would have been spent to enable such individuals a minimum level of consumption.²⁰² The agent's economic status at retirement is not only a function of his income at the time of the contribution, but also a function of his income path (and savings) in subsequent years. The fact that the SCC spreads the benefit it provides over all years until retirement enables it to be more sensitive to the agent's future income path and tailor these benefits accordingly. The SCC could exclude providing the benefit for past contributions in years in which the individual's income exceeds a certain threshold. In contrast, the fact that the SC frontloads the benefit to the time of contribution eliminates this possibility and thus is not sensitive to the level of public good the contribution will effectively generate.²⁰³

²⁰² See FRIEDMAN, *supra* note 4, at 190.

²⁰³ The flexibility of the SCC in comparison to the SC and its potential for greater sensitivity to changes in future income paths has also been alluded to in Section IV.A, *supra*.

While the SCC has additional advantages besides the central advantage of maintaining option value for savers, it raises a few problems and possible objections as well.

V. POSSIBLE OBJECTIONS TO THE SAVER'S CONTINUOUS CREDIT

The SCC offers an innovative approach for retirement savings. Its structure enables preservation of liquidity and has other advantages but is also accompanied by some serious concerns. The first concern is the adverse effect of the gradual structure of the SCC that might weaken the incentive to participate in the scheme. The second is the administrative costs of the SCC; it requires the participating individual to have some kind of savings account and requires the government to monitor these accounts. The third is the possibility of waste of government funds. Although this last point has been partially addressed, it deserves more thorough consideration.

A. *The Adverse Effect of the Gradual Structure of the Saver's Continuous Credit*

The gradual effect of the SCC enables it to circumvent the elimination of option value. While this graduation has a positive effect on individuals and their willingness to save for retirement, it might be accompanied by a negative effect: the ineffectiveness of small benefits in affecting behavior. Under the SC, an individual does not have the option to freely use the resources he has accumulated, but he is offered a significant sum if he opts into the scheme. A single sum is likely to be more attractive due to the tyranny of small decisions phenomenon.²⁰⁴ An individual might react differently to a single choice to accept a large benefit compared to a situation in which the individual has to make several distinct choices to accept each smaller benefit. Only a set of several choices that accepts all the small benefits will provide an equivalent benefit to the one provided as a lump sum.²⁰⁵

There are three main replies to this critique. First, there is not a large difference in the gradual nature of the SCC in comparison to the SC. Second, the existence of such behavioral effects is questionable. Third, even if such an effect does exist, it is likely not strong enough to cancel the positive

²⁰⁴ Alfred E. Kahn, *The Tyranny of Small Decisions: Market Failures, Imperfections and the Limits of Economics*, 19 *KYKLOS* 23 (1966).

²⁰⁵ The tyranny of small decisions can be viewed both in terms of a behavioral bias and as a rational decisionmaking phenomenon in a broader sense. From the behavioral perspective, the lump sum decision can be viewed as having greater salience, while the equivalent series of small decisions are not as salient and thus are ignored by the individual. From the rational point of view, when the decision is broken up into many small decisions, the costs involved with decisionmaking may outweigh the benefit from each of the decisions, causing the agent either not to make or to ignore the decision. When the decisions are bundled into one decision, the costs do not outweigh the benefit, and thus the individual makes the decision unencumbered by this cost.

effect of the scheme: primarily maintaining the full option value of resources in addition to the other advantages mentioned in Part IV.

Regarding the gradual nature of the SCC, it is not obvious that the tyranny of small decisions critique is more relevant to the SCC. It is not necessarily true that under the SCC a taxpayer's decisions are fractured and that under the SC that decision is bundled. Under the SCC, the agent constantly has the option to withdraw the funds, and thus must constantly decide to maintain her savings. Yet in the SC, the agent also has the option at any point in time to withdraw the funds for some price. Just as the SC is viewed as a one-time decision regarding the default, and the possibility to stray away from the default is not counted as such, the SCC could be viewed the same way. It could also be viewed as one fundamental decision regarding the default to save, even though the individual can stray from that decision at no cost.

Even if one accepts that the nature of the SCC is more gradual, this phenomenon may trigger an additional behavioral effect that may cancel out the tyranny of small decisions. This effect has been labeled the "foot-in-the-door" technique.²⁰⁶ Simply put, "once a person has been induced to comply with a small request he is more likely to comply with a larger demand."²⁰⁷ For example, people who were asked to put a small safe-driving sign on their lawns were much more likely to comply with a later request to put up a very large sign that said "Drive Carefully" than those who were not asked to put up a small sign at all.²⁰⁸ The effect of putting a "foot-in-the-door"—having the individual comply with a minor request—uses a gradual approach in order to induce an individual to engage in more demanding activities. It might stand to reason that adding an extra phase in which a more limited task is requested may nudge individuals who potentially would perform the demanding task to do so. Graduation may in practice increase the number of individuals willing to perform the demanding task.

B. Administrative Costs of the Saver's Continuous Credit

The SCC seems to entail prohibitive administrative costs in comparison to the SC. There are two main possible sources for these higher costs. The first is the excessive level of governmental involvement that the credit requires. The second is the unique administrative structure required for its application.

The SC does not require constant government involvement, as it mainly focuses on one event—the decision to contribute to retirement savings. If the individual has made a contribution, he takes a tax credit that year, and no

²⁰⁶ Jonathan L. Freedman & Scott C. Fraser, *Compliance Without Pressure: The Foot in the Door Technique*, 4 J. PERSONALITY & SOC. PSYC. 195, 195 (1966).

²⁰⁷ *Id.*

²⁰⁸ *Id.* at 199–200.

additional government involvement is needed. In contrast, the SCC requires more consistent government oversight. The credit to the contribution is given annually over several years. The government has to check these accounts every year to see if the individual still qualifies for the credit. Needless to say, this government involvement is costly.

Institutionally, the SC also does not require any unique administrative structure or agency to be implemented. It is administered through the conventional tax system. An additional tax credit may require additional audits, but the key factor on which the credit depends—income—is already audited to some extent to make sure individuals are not deflating income. In contrast, the SCC cannot be administered through the conventional tax system, because the credit is not merely added to one's tax liability. Rather, the credit has to be added to a retirement account in which a government agency has to be involved. Furthermore, the relevant agency for the administration of such accounts is not necessarily the IRS but most likely the Social Security Administration, especially if the scheme applies to individuals with no tax liability.

Although the administrative costs of the SCC appear significantly higher, this is not actually the case. It is true that under the SCC the credit is accrued over a long period of time, but it is accrued automatically based on a percentage of the contribution. There is no need to audit the account or the individual over this period of time. Every year the government provides a credit in proportion to the amount left in the account. Furthermore, under the core model of the SCC, the income level criteria could be used exclusively at the time of the initial contribution. In the previous section, I suggested that it is possible under the SCC to condition the credit in following years upon being below an income-level cutoff.²⁰⁹ This suggested version of the SCC would require considerable government involvement in the following years but is not required to implement the SCC—it is only a possibility for which the SCC has sufficient flexibility. If the administrative costs for such a feature of the SCC are too high relative to the additional benefit it generates, the core SCC could still be implemented without any such add-ons.

The other argument that the costs associated with the SCC are too high is based on the notion that the administrative costs of the tax system, and thus the SC as currently constructed, are relatively low. Studies show that the cost of raising revenue is approximately 0.5 percent of the revenue raised.²¹⁰ Other studies have exposed strong social norms of tax compliance,

²⁰⁹ See *supra* Section IV.C.

²¹⁰ See INTERNAL REVENUE SERVICE, INTERNAL REVENUE SERVICE COLLECTIONS, COSTS, PERSONNEL, AND U.S. POPULATION, FISCAL YEARS 1980–2009, in 2009 I.R.S. DATA BOOK 66 tbl. 29, <https://www.irs.gov/pub/irs-soi/09databk.pdf> [<https://perma.cc/7ZWV-CCYQ>]. It should be noted that these are only the estimated direct costs. When the compliance costs of taxpayers are taken into account, the collection costs are estimated to reach seven percent. See Joel Slemrod & Nikki Sorum, *The Compliance Cost of the U.S. Individual Income Tax System*, 37 NAT'L TAX J. 461, 467 (1984).

which enable the collection of significant revenue with minimal expenses on audits.²¹¹ In contrast to the SC, the SCC may require administration through a separate government agency, similar to Social Security.

While the tax system is efficient in raising revenue, it is questionable whether the tax administration can apply this efficiency to its role in spending schemes. This question has been raised about the tax system's primary spending scheme: the Earned Income Tax Credit.²¹² Many have supported schemes that encompass tax-transfer integration, arguing that such integration enhances efficiency and reduces administrative and bureaucratic costs.²¹³ However, the view that integration of spending programs into the tax system increases the efficiency in the implementation of the program has also been questioned.²¹⁴ Various costs accompany the execution of spending programs through the tax system. Spending and welfare programs have different techniques for measuring income than the tax system does.²¹⁵ This differentiation could be justified based on the divergent goals of the tax system vis-à-vis welfare programs.²¹⁶

For example, the trade-off between the cost of a comprehensive definition of income and the administrative costs of such differentiation might be different for the tax and transfer systems.²¹⁷ In addition, spending programs may be much less concerned with income and more concerned with the direct measurement of need. This is also true with respect to the SC; the individuals we may want most to incentivize to save for retirement are not necessarily those with the lowest incomes. Other factors may be more relevant, such as the individual's general consumption level or whether she owns a house, which might be more related to her geographic location than to her income level. The tax system is also less responsive due to the long measurement intervals—annual income.²¹⁸ This cost of integration with the tax system is less relevant to the SC. In contrast to other spending programs, which attribute a high value to responsiveness, the long-term goal of retirement saving makes it unnecessary to demand such sensitivity.

Participation rates in programs administered through the tax system also tend to be low, as it requires compliance with tax authorities in filling

²¹¹ See James Andreoni et al., *Tax Compliance*, 36 J. ECON. LIT. 818, 820–21 (1998); Donna D. Bobek et al., *The Social Norms of Tax Compliance: Evidence from Australia, Singapore and the United States*, 74 J. BUS. ETHICS 49 (2007).

²¹² Anne L. Alstott, *The Earned Income Tax Credit and the Limitations of Tax-Based Welfare Reform*, 108 HARV. L. REV. 533 (1995).

²¹³ DAVID T. ELLWOOD, POOR SUPPORT: POVERTY IN THE AMERICAN FAMILY 114 (1988); ROBERT HAVEMAN, STARTING EVEN: AN EQUAL OPPORTUNITY PROGRAM TO COMBAT THE NATION'S NEW POVERTY 156–58 (1988); Jonathan B. Forman, *Administrative Savings from Synchronizing Social Welfare Programs and Tax Provisions*, 13 J. NAT'L ASS'N ADMIN. L. JUDGES 5, 64–72 (1993).

²¹⁴ Alstott, *supra* note 212.

²¹⁵ *Id.* at 564–67.

²¹⁶ *Id.* at 566–68.

²¹⁷ *Id.* at 567–68.

²¹⁸ *Id.* at 579–80.

out tax forms.²¹⁹ The compliance rate is especially low among individuals with low incomes, and thus a program administered through the tax system excludes these noncompliant individuals from participating.²²⁰ In the case of the SC, the exclusion of these individuals may be especially costly, because these individuals may be the most important to incentivize to save for retirement. Noncompliance may be a proxy for an undisciplined individual, which is a proxy for a low retirement saving rate.

On a more general level, whether implementation of a spending program through the tax system is more efficient than implementation through a separate, specialized system depends on the balance between the costs and benefits of coordination on the one hand and of specialization on the other.²²¹ The benefits of coordination are apparent and more straightforward—saving on administrative costs by merging two systems into one and sharing information. Yet specialization allows monitoring of contributions more accurately and effectively.²²²

Governmental retirement accounts are not unheard of. The existing myRA scheme is based on federal retirement accounts, with a special bond for low-income earners.²²³ The SC originated from President Clinton's Universal Savings Accounts (USA) initiative, which on the administrative level has a similar structure to that of the SCC.²²⁴ The scheme suggested in this paper would not impose a significant additional administrative burden. It will merely utilize similar accounts and apply a premium to the balance in such accounts.

C. *The Saver's Continuous Credit as a Waste of Government Funds*

The fundamental feature of the SCC is that it provides benefits to individuals even if these individuals spend the resources in the near future instead of saving for retirement. This seems to be a waste of government

²¹⁹ *Id.* at 585.

²²⁰ *Id.*

²²¹ David A. Weisbach & Jacob Nussim, *The Integration of Tax and Spending Programs*, 113 *YALE L.J.* 955, 985 (2004).

²²² According to the Treasury Inspector General for Tax Administration, the value of improper claims for contributions made to qualifying retirement accounts in order to receive the SC was \$53 million in tax year 2011. See U.S. DEP'T OF TREASURY, TREASURY INSPECTOR GEN. FOR TAX ADMIN., SEMI-ANNUAL REP. TO CONGRESS, OCTOBER 1, 2013–MARCH 31, 2014 16 (2014), http://www.treasury.gov/tigta/semiannual/semiannual_mar2014.pdf [<https://perma.cc/YJ37-29SA>].

²²³ 31 C.F.R. § 347.0 (2016). The establishment of the MyRA was President Obama's initiative to deal with the problem of low-income earners without sufficient retirement savings, which he announced in his 2014 State of the Union Address. President Barack Obama, State of the Union Address (Jan. 28, 2014), <https://www.whitehouse.gov/the-press-office/2014/01/28/president-barack-obamas-state-union-address> [<https://perma.cc/XFP8-9R39>].

²²⁴ See *supra* note 183. While on the administrative level, the two schemes are similar—they both are administered through government accounts in which funds are deposited—the benefits are frontloaded in the USA scheme, in contrast to the SP, in which the benefits are spread over many years.

funds: the government pays these individuals even though they have not generated the desired public good of retirement savings.

This Article has provided two responses to the critique. The first is that even if from an ex post perspective these individuals have not generated the public good of retirement saving, from an ex ante perspective they have generated an additional expectancy for retirement saving, and thus actually have generated a quasi-public good. The second is that even if the individuals' have not generated the quasi-public good of retirement saving, they have still generated a quasi-public good to some extent: short-term savings by low-income individuals.

The problem with the first response is that is not necessarily true that the individuals who have saved for the short term and then removed their money have increased the ex ante expectancy for retirement savings. Many of these individuals may have clearly decided not to save for retirement, and planned from day one to withdraw the funds in the near future. They have cashed in on the benefit the government offered them without generating any incremental increase in the expectancy for retirement saving. Thus even if one accepts the ex ante perspective for subsidizing quasi-public goods, in this set of cases there still seems to be a waste of federal resources.

The problem with the second response is that it is not necessarily true that the SCC will increase the quasi-public good of even short-term savings. Its central effect may be in shifting savings from regular savings accounts to the savings accounts that are associated with the SCC without affecting the overall savings of low-income individuals. Thus the SCC may still waste funds in many cases, even if we accept the broad definition of quasi-public goods to include short-term savings.

These points expose genuine problems with the SCC and rest on empirical assumptions: how many of the potential participants would have no intention to save for retirement, and how many of them would use the SCC solely for shifting funds from regular savings accounts.²²⁵ These empirical questions are surely important for designing the exact benefit level of the SCC and the scope of its implementation. I hope to conduct studies in the future that will examine these empirical questions.

Yet these questions may be less important than expected. There are a few reasons why the SCC should be implemented even if the number of SCC bad-faith users is high. Even if individuals have no interest in saving for the long run, there is no reason that they will be willing to save for the additional premium only for a limited number of years. If the premium makes saving more attractive for them, there is a strong reason to believe that they will keep saving in the following years, even if they do not attribute any special value to retirement savings. Even individuals willing to save for only a limited number of years will likely save in the first year and thus have

²²⁵ Gale & Scholz, *supra* note 134.

a greater chance to reach retirement with these savings.²²⁶ If it were possible to detect individuals who will not save after the short run, it would be more efficient to exclude them from the pool. But because it is not possible to detect and exclude them, they should also be treated as generating an ex ante expectancy for retirement saving.

The phenomenon of account switching should also not be a concern for the SCC. First, data shows that there are not many low-income individuals with short-term savings, so the potential for switching is quite limited.²²⁷ Second, even if the SCC induces individuals to shift accounts, the costs of providing these individuals with benefits that they should not have received is also limited. Providing these low-income individuals with an incentive to save would likely still increase their savings: the increase in dispensable income would likely be converted to additional savings.

The ability to manipulate the scheme is not unique to the SCC: as scholarship has demonstrated, these manipulations could be executed through the SC.²²⁸ Even if there are some manipulations to which only the SCC is exposed, there are also those to which only the SC is exposed, such as the ability to deposit and withdraw funds immediately while paying only a minor fine.²²⁹ In this sense, the SC is more open to manipulation, due to the fact that the individual could extract the full benefit for retirement saving, while under the SCC only a limited portion of the benefit could be extracted.

VI. CONCLUSION

The current scheme for incentivizing retirement saving—the SC—is ineffective due to a surprisingly low participation rate. Scholars have provided various explanations for the ineffectiveness of the SC. In this Article, I have pointed to a major element that causes the ineffectiveness of the SC and has been overlooked by previous scholarship: the sensitivity of low-income earners to any elimination of liquidity due to the high value they attribute to the ability to use their limited funds. The implementation of the SC is supported by a penalty on individuals who withdraw funds before retirement. Due to the fact that most low-income earners have no savings cushion available, forfeiting the option to make use of the resources, an inherent feature of illiquid funds, is extremely costly for them.

While forfeiting the option to make use of the resources seems to be an inherent feature of any retirement scheme, this Article has suggested a scheme that does not exhibit this feature: the SCC. Under the SCC, the indi-

²²⁶ The “foot-in-the-door” technique reinforces the assertion that the first step of saving might cause even the individuals who did not intend to save for the long run to begin saving for retirement. See Freedman & Fraser, *supra* note 206.

²²⁷ Bevens, *supra* note 141, at 10.

²²⁸ See Gale & Scholz, *supra* note 134.

²²⁹ Imposing a significant fine is also problematic. As the fine is greater, so is the loss of option value of using the resources. See *supra* Section III.A.

vidual receives a premium for every year he saves a certain amount of resources with no strings attached; he can withdraw the funds at any time at no cost. The SCC seems problematic as individuals can receive a benefit even though no resources have been saved for retirement. This Article justifies this feature of the SCC through a novel perspective on the subsidization of quasi-public goods: the *ex ante* perspective. A benefit is provided to individuals who have increased the *expectation* for generating a public good even if that public good has not been generated. An individual who has saved in the short run has increased the expectancy that he will be able to save the resources for retirement, even if *ex post* he withdraws and consumes the resources.

The *ex ante* subsidy regime may apply to additional instances of the production of public goods. Assuming the rationale behind agricultural subsidies is the positive externalities they generate, it might still be more effective to subsidize the input, e.g., the size of the field, and not the output: the actual produce generated.²³⁰ Every additional acre generates an expectancy for a certain amount of produce, and it may be more effective to subsidize the *ex ante* expectancy rather than the actual production; it shifts the risk of generating a low amount of produce from the farmer to the government, which may be a more efficient risk-bearer. An additional possible implementation for an *ex ante* subsidy regime might be a subsidy for building a renewable energy plant. Although the public good generated is the clean energy produced, it may be more effective to subsidize the expectancy that the creation of the plant generates, rather than the actual public good it generates of clean-energy units.²³¹ These possible implementations are in addition to examples under current law that may be classified as *ex ante* subsidies such as tax benefits provided for non-profits, and research grants.²³²

The ability to circumvent the elimination of option value is the central justification for the SCC, but there are additional advantages of the SCC over the SC. The SCC is better suited to include low-income individuals with no tax liability, and it may neutralize some of the behavioral effects that deter individuals from participating in the SC, such as myopia and the punishment bias.

The novel structure of the SCC raises a few serious concerns: the high administrative costs of its implementation compared to the SC; the adverse effects the graduation of the credit may have on incentives to save; and the waste of public funds that the *ex ante* structure of the SCC may imply. I have addressed these concerns, and while acknowledging that there is merit to these critiques, I have argued that the problems they identify are limited.

²³⁰ See Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, Stat. 1651 § 1103 (codified as amended in scattered sections of 26 U.S.C.) (providing a direct payment per bushel for certain crops).

²³¹ See 26 U.S.C. § 45(a)(1) (2012) (providing a tax credit of 1.5 cents for the production of each kilowatt of renewable electricity).

²³² See *supra* note 170.

Enhancing retirement savings of individuals is one of the most important challenges the United States and many other Western governments face in this aging world. I believe that the SCC opens up a new effective venue for incentivizing retirement saving, circumventing the problems that arise in the existing scheme of the SC. The core feature of the SCC—ex ante subsidization—may have wider ramifications on models for subsidizing production of public goods, well beyond the issue of retirement saving. I will leave additional applications of the ex ante subsidy structure for future research.