SOLVING THE SAVERS’ CREDIT ENIGMA: REDESIGNING THE TAX CREDIT FOR RETIREMENT SAVING

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Abstract

Increasing retirement saving, especially among low income earners is one the biggest challenges governments in the western world face. The aging population is projected to turn public pension funds to insolvent and private savings for retirement are inadequate due to various behavioral effects. The U.S. has confronted this problem through initiating the Savers’ Credit scheme. The Scheme effectively matches low-income earners contributions for retirement. Surprisingly, even given the generous benefit provided, the take-up rate has been significantly low. While various explanation have been offered in the scholarship to explain this enigma, in this Article I offer an explanation that has been overlooked in the scholarship. The high option value low-income individual attribute to the possibility to spend the resources in the near future accompanied with the penalty on early withdrawals deters individuals from participating in the scheme. I offer a revenue-neutral program that provides the same incentive to save for retirement but overcomes this problem: the Savers’ Premium. The alternative scheme suggested in the Article takes the benefit provided by the Savers’ Credit upfront for locking funds for retirement and spreads it over each of the years till retirement the funds are saved. For each year of saving the individual receives a portion of the initial credit, independent of whether the funds have been saved till retirement. This structure eliminates the need to impose any penalty on early withdrawals and thus does not require individuals to forgo option value when participating in the scheme. The rationale behind the Savers’ Premium—an ex-ante subsidization of public goods instead of an ex-post subsidization—could be applied to a wide range of public goods besides retirement savings.

INTRODUCTION

Increasing saving for retirement is one of the most important goals which governments in the Western World including the U.S. face: the aging population is projected to turn public retirement and pension funds to insolvent in the not-so-far future.1 In order to cope with the unsustainability of public pension funds and insufficient private retirement savings, governments are aiming at incentivizing individuals to develop private pension funds,

1 Jonathan Gruber & David A. Wise, Introduction in SOCIAL SECURITY PROGRAMS AND RETIREMENT AROUND THE WORLD (Jonathan Gruber and David A. Wise eds., 2007) 1. The book devotes a chapter for each of the several developed countries which their public retirement system faces serious solvency problems such as Belgium, Italy, Denmark, France, Germany, Italy, Japan, The Netherlands, Spain, Sweeden, U.K. and the U.S.
especially low-earners that barely save for retirement.\(^2\) Saving for retirement, especially of low income individual is commonly viewed as a public good that the government should supply.\(^3\) Assuming assistance to individuals in a dire condition is a public good,\(^4\) making sure that individuals will not reach this situation will save public resources, and thus is also a public good. For this purpose, the U.S. has enacted in 2001 the Savers Credit (henceforth: SC) in order to incentivize especially 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 receive the benefit do not make the required contribution and do not receive the benefit.\(^6\) The enigma of the low participation rate of the saver’s credit has troubled many scholars who have tried to analyze the problem.\(^7\) What is the problem with the scheme of the savers credit? Is there any way it is possible to construct a matching program that will be more successful in incentivizing individuals?

In this Article I would like to tackle these question from an angle that the scholarship has ignored. I would like to emphasize a feature of the credit that may have deterred individual from contributing and reaping the significant benefits provided by the scheme. This feature is the high option value of funds, especially to the low income individuals targeted by the scheme. The benefit of contributing toward pension savings is coupled by a penalty for early withdrawal of funds.\(^8\) Even though value of the benefit is significant, the high likelihood that these individuals will be in need for these funds and will have to incur the penalty of an early withdrawal, deters these individuals from participating in the scheme. The penalty element of the scheme seems to be an integral part of the scheme, which without the scheme will lose its efficacy in increasing the funds available for individuals in retirement. Yet in this Article I would like to purpose an alternative scheme that could be more effective in increasing savings for pension, without the penalty element, which I label the Savers’ Premium (henceforth: SP). I suggest a scheme that instead of frontloading the credit to the time of the contribution, spreads the benefit on the time span the individual maintains the fund in the pensions saving account till his retirement. This design of the scheme does not require a penalty on early withdrawals in order to significantly increase the savings toward retirement. The SP could be designed as a revenue-neutral scheme in comparison to the current form of the SC, yet still intensifying the incentive of low-earners to contribute funds for their retirement.

\(^2\) A.K. Sen, Control Area and Accounting Prices: An Approach to Economic Evaluation 81 Econ. J. 486, 493 (1972): “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.”

\(^3\) See: Milton Friedman, Capitalism and Freedom 190 (2002)
The SP 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 that that of the SC and most other governmental schemes. While the SC and most other governmental schemes compensate individuals ex-post—provide individuals with a benefit if these individuals actually generated a positive externality, the SP compensates individuals ex-ante—provide a benefit to individuals who have generated an expectancy for generating a public good even if it eventually the public good has not been generated. This Article will analyze this unique ex-ante approach and its justifications.

Besides the central justification for the SP—its ability to maintain the option value of resources saved for retirement through the utilization of the ex-ante approach toward compensating the generation of public goods, it has 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 affected the lower participation rate in the SC: the punishment feature of the SC and its distant horizon.

The Article will precede as follows: part I will survey the general problem of the insufficient resources set aside for retirement. Part II will introduce the Saver's Credit that was established to confront this problem. The first section of part II will present the legal framework of the SC. The second section of part II will present the actual effect of the SC and its inability to solve the problem that it was designed to solve. Part III will discuss the solution for the SC enigma. The first section will suggest a solution for the SC enigma: the fact that the SC eliminates the option value of the resources contributed. The second section will introduce an alternative for the SC that overcomes the option value problem: The SP. Part IV will discuss additional advantages of the SP over the SC scheme besides circumventing the elimination of option value. Part V will discuss objections to the SP Scheme: its administrative costs, the claim that it wastes public funds and the weaker behavioral effect it may have due to its gradual structure. Part VI will conclude.

I. THE PROBLEM OF RETIREMENT SAVING

Many OECD countries and especially the U.S. face the problem that a significant number of the future retiring individuals will not have sufficient funds for maintaining a decent standard of living during their retirement. The assumption of policy makers is based on the central models of normative economics that find that individuals should equalize their post-retirement consumption pattern to their pre-retirement consumption. Such pattern, which was labeled by the Nobel Prize Laureate Milton Friedman as ‘the permanent income hypothesis’ enables the
individuals to maximize the utility they derive from their life-time consumption. Many other economist marched along these lines, developing similar models termed consumption smoothing or life cycle hypothesis, such as Franco Modigliani, also a Nobel Prize Laureate, Richard Brumberg and Angus Deaton. 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 dominating view.

There is ample evidence that individuals do not actually save sufficient amount of resources toward retirement. The key factor in these studies for assessing whether individual’s have sufficient savings for retirement is the income replacement rate: The ratio between post-retirement income and pre-retirement income. This factor focuses on the individual’s ability to continue, more or less, the life style she had prior to retirement. This normative assumption is based on the life-cycle hypothesis that smoothing’s ones’ consumption maximizes her lifetime utility. In most cases and in most models, the target income replacement rate is around the 75 percent of one’s pre-retirement income, depending on one’s income and personal status. While the range around the 75 percent target is the dominate view in the literature, Allen Steinberg and Lori Lucas argue that the models that support the 75 percent target do not fully account for inflation. Steinberg and Lucas that the proper income replacement ratio target should be much higher: between 85 to 95 percent.

12 Angus Deaton, UNDERSTANDING CONSUMPTION 214 (1992)
13 For an objection to the view that this equalization of consumption maximizes utility, see: Edward P. Lazear, Some Thoughts on Saving, in David A. Wise (ed.), STUDIES IN THE ECONOMICS OF AGING (1994). Lazear claims that the fact that de-facto people do not equalize consumption, does not demonstrate that they don’t optimize, but demonstrates that are assumption regarding consumption preferences in wrong. One reason for this may be is that at older age people’s ability to generate utility from a consumption unit declines. A person who loves hiking, and not thing else provides him with such pleasure may rational 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 less resources at his disposable. Lazear and also and Bernheim and Rangle at 17.
14 See supra n. 10-13
17 Id.
There are a few reasons for why the target income for retirement is only a fraction of one’s pre-retirement income. The first, is that there are barely any taxes on post-retirement income, thus a lower post-retirement income can still equal post-tax a higher pre-tax pre-retirement income. The second, one does not have to save toward retirement from one’s post-retirement income. In addition, in most cases one has paid off her mortgage before retirement and has accumulated additional savings that will not have to be further accumulated during retirement. The third is that a significant portion of one’s pre-retirement expenses are work-related such as clothing and transportation—expenses that will not be required during one’s retirement.

The reasons for the need of only a fraction of one pre-retirement income give rise for differentiating the target replacement income ratio of different individuals. There are two main lines along which individuals are differentiated: income level and status of household. The more significant factor is income level. Because individuals from lower income groups, get a significantly higher retirement benefit from social security and other governmental retirement schemes, they need to save less in order to fund their retirement consumption. As a consequence, their income replacement ratio target is higher due to the fact that they consumed a higher share of their pre-retirement income. This effect is augmented due to the fact that they have save a smaller portion of their income whether in their mortgage payments or savings in general. According to Munnel, while the income replacement target is 61% for couples of the top third income earners, it is 81% for couples of the bottom third income earners. According to Munnel’s calculations, the income replacement target for the couples from the middle third of the income earners is 72%. The differentiation in the income replacement target rate based on household type is more limited with only around a 2 percent variations from the mean. For example for the middle third group of income earners, the income replacement target for a couple with one earner should be 75 percent; a two earner couple should be 72 percent; a single man should be 70 percent and a single woman should be 71 percent. The Aon consulting and Georgia State University’s 2004 Replacement Ratio Study has similar results. According to the study, the replacement income for a one earner couple earning $20,000 should be 89 percent and when earning $90,000 it should be 78 percent.

According to most of the studies, the actual savings for retirement do not even meet the lower income replacement ratio target. Alicia Munnel Rebecca Frenkel and Josh Hurwitz point

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20 Susan Alford, CEBS, D. Bryan Farment and Mike Schachet, *Affordable Retirement: Light at the End of the Tunnel*, BENEFITS Q., 7, 10 (4th Quarter, 2004). 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.)
out to the fact that over 40 percent of the workforce do no have any pension plan. As a consequence, 34 percent of the household will not have any supplementary private savings for retirement, and will be totally dependent on Social Security. This will leave them in the range of a 40 percent income replacement ratio, which is half of their target—80 percent.\(^{27}\) Dalirazar, Vornovytsky and Hendengren find that the median replacement ranges between 66 to 75 percent.\(^{28}\) Nari Rhee finds that an outstanding 92 percent of working families do not meet her estimation of the recommended target - 85 percent.\(^{29}\) Gaobo Pang and Mark Warshawsky find that over 44 percent of the current work force are saving inadequately—with 10 percent less savings than they should have in order to meet their income replacement target.\(^{30}\) While there are few scholars that there isn’t a significant problem of insufficient savings,\(^ {31}\) the dominant view in the scholarship is that there is a widespread problem of insufficient savings for retirement.

The insufficient saving for retirement aren’t only a private problem for those individuals, but a public problem for the state—many more individuals well need to rely on public welfare programs or risk political unrest. There are three main sources for this problem. The most prominent is the projected insolvency of public funds that are supposed to finance retirement benefits. There are two reasons for how this situation has evolved. The first and central reason is the increase in life expectancy.\(^ {32}\) The second is the conventional political economy phenomena that governments tend to over-provide benefits and under-finance them through tax collection.\(^ {33}\) The insolvency of the government retirement schemes will have a disproportional effect on low wage earners, for two reasons. The first, is that government benefit programs are mostly progressive – low wage earners receive in benefits much more than

\(^{27}\) Alicia H. Munnell, Rebecca Cannon Fraenkel, and Josh Hurwitz, *The Pension Coverage Problem in the Private Sector*, CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE (2012). Available at http://hubbell-llc.com/Media/Files/Article%20-%20The%20Pension%20Coverage%20Problem%20in%20Private%20Sector%20-%20September%202012%20%20CRR.pdf. (although the average target is 75 percent, it is a bit higher for low income earners and lower for high income earners, see infra. n.


\(^{32}\) Gaobo Pang & Mark J. Warshawsky, *Retirement Savings Adequacy of U.S. Workers* (2013). Available at SSRN http://ssrn.com/abstract=2263379 or http://dx.doi.org/10.2139/ssrn.2263379 (they also reference the fact that the financial crises might be a primary cause to their findings, and attribute a role also to the change in employer’s pension plans, that are now much less generous).

\(^{31}\) John Karl Scholz, Ananth Seshadri, and Surachai Khitatrakun, *Are Americans Saving Optimally for Retirement?* 114 J. POL. Econ. 607 (2006). Scholtz, Seshadri & Khitatrakun argue based on their augmented life cycle model, that not only households are not undersaving but they are oversaving. Yet even in their study, in which 08 percent of the population over-saves, the 20 percent in the bottom cohort under-saves.
their payment into the program.\textsuperscript{34} The second is that high wage earners supplement their contribution to the public program, with contributions to private pension programs. Low wage earners do not tend to contribute to private retirement programs. Their reliance on the public scheme is much stronger and thus the insolvency of such schemes will have a much greater effect on their projected pensions than its effect on high wage earners.\textsuperscript{35}

The second is the low absolute level of public benefits provided in the U.S. as well as other OECD countries. Even if public funds do not reach insolvency, in most countries and especially in the U.S., the level of benefits these programs provide toward retirement is only a small fraction of the funds required for maintaining a decent standard of living.\textsuperscript{36} In such countries including the U.S., the publicly provided benefits have to be supplemented with private savings in order to reach a decent standard of living during retirement. The existence of a public retirement scheme causes individual to ignore the issue of saving toward retirement and shrug this responsibility off their shoulders. Once again, it is low wage earners who tend to shrug off their personal responsibility for retirement savings, for various reasons. They have less spare resources to investigate the level of public benefits provided for them by the government in case of retirement as compared to their actual assessed needs.

The third is the low level or private retirement saving. Even if individuals are aware to their need to supplement the public provided benefits with private retirement accounts, they tend to save a lower amount than they actually need to maintain a decent standard of living during retirement. This is for two reasons. The first is due to behavioral biases.\textsuperscript{37} The second is due to the possibility of permanent decrease in market returns for capital that has a significant effect on retirement savings.\textsuperscript{38} Next section will turn to examine each of the sources listed above.

\textbf{A. Insolvency of Government Retirement Programs.}

Each year the social security trustees release their annual report, which includes a projections for the year that social security trust fund will become insolvent.\textsuperscript{39} The Social Security Trust Fund is comprised of two, technically speaking, separate trust funds: The Disability Trust Fund and the Old Age and Survivor Insurance Trust Fund. In the last report, the projection has been that the Disability Trust Fund will turn insolvent in 2016, and the Old Age and Survivor Insurance Trust Fund will turn insolvent in 2034.\textsuperscript{40} Although technically the

two funds are separate funds, they are treated as one fund. The Social Security Trustees estimate that the combined trust fund will turn insolvent in 2033.\textsuperscript{41} Even when insolvent, the Trust Fund will be able to pay a partial of the benefits based on incoming revenue. It is projected that in the first year of insolvency the Social Security Trust Fund will have sufficient funds to pay 77\% of the scheduled benefits and by 2089 it will be able to pay only 72\% of the scheduled benefits.\textsuperscript{42}

What is the reason for the projected insolvency of Social Security? There are two reasons: the increase in the living period expectancy and the political economy barrier on social security reform.

1. \textit{Increase in Life period Expectancy}

Over the last century, there has been a steep increase in living period expectancy or in other words, a decrease in the mortality rate.\textsuperscript{43} According to the Chief Actuary at 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.\textsuperscript{44} The decline mostly took place in the age cohort of ages under 15 that declined in an average rate of 3.13 percent, but a significant decline also took place in the age cohort of 65 and over that decline in an average rate of 0.79 percent.\textsuperscript{45} Other studies reflect similar conclusions. For example, Dormont, Martins, Pelgrin and Suhrcke come to a conclusion that every decade the average life period expectancy increases by one year.\textsuperscript{46}

This significant increase in life period expectancy and decrease in the mortality rate have had a major effect on the solvency projections of the social security trust fund. The increase in life expectancy increase the time over which social security pays to individuals old age benefits, while the payments made by individuals during their life time haven’t increased accordingly. When the design of the social security system took place, this vector hasn’t been taken into account.\textsuperscript{47} This is the central source for the social security’s future insolvency.

2. \textit{Political Economy Barriers in Reforming Social Security}

The second reason for social security insolvency is the political economy dimension. The increase in the life period expectancy it of itself, does not necessitate the Social Security Trust Fund to become insolvent. Government could have updated payments and benefits along

\textsuperscript{41} Regarding the different forms in which the partial benefits could be paid (timely but partial payments, or deferred but full payments), see Noah P. Meyerson, Social Security: What Would Happen if the Trust Funds Ran Out? August 28, 2014, available at https://www.fas.org/sgp/crs/misc/RL33514.pdf
\textsuperscript{42} The office of the Chief Actuary at the Social Security Administration mainly focuses on mortality rate, due to the fact that changes of low-age individuals has a lesser impact on mortality rate than on life expectancy.
\textsuperscript{43} Social Security 2014 report, p. 78
\textsuperscript{44} Id.
\textsuperscript{45} B. Dormont et al., Ageing, Health and Productivity (2010)
\textsuperscript{46} E. Browning, \textit{Why the Social Insurance is too Large in a Democracy} 13 ECON. INQ. 373 (1975)
the way. Why doesn’t this happen? According to the basic political economy model of social security dynamics it actually should happen: the model projects that in aging societies a reform that increases the payments should take place. According to this model the crucial parameter for decision on changes in the payments or benefits of social security is the age of the median voter.48 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 the benefit level.49 This only reinforces the question: why doesn’t reform take place in order to prevent the insolvency social security?

Juan Carlos Conesa and Diego Gruber have provided an answer to this question: the distributive impact of social security creates heterogeneity within age cohorts. The different income levels of individuals with a certain age cohort, eliminate the possibility that an age cohort will form a coalition for reforming social security. The better-off individuals within the older age cohorts, will not cooperate with the poorer individuals in increasing payments from the younger cohorts that will mainly be targeted to the poorer individuals. In other words, the fact that social security has both an intergenerational distributive function and an intragenerational distributive function impedes on the possibility to form a coalition to reform it.50

B. Insufficiency of Government Programs to Reach Level of Optimal Retirement Savings

There are two central mechanisms by which government can enforce mandatory retirement savings. The first is establishing a government fund to which individuals are mandated to make a contribution. In time of their retirement, individuals receive benefits from the fund which are tied to some extent to the contribution they have made to the fund. The second is mandating individuals and their employers to set aside a certain portion of their income into a private retirement account, which they will able to draw funds only when reaching retirement age.

In the U.S., on the Federal level, only the first retirement saving enforcement mechanism is deployed.51 There is no mandated private saving toward retirement. There is mandated saving to what could be defined as the governments retirement fund—social security. Individuals have to make a contribution through their payroll taxes of 6.2 percent of their income which is matched by their employers and totaling 12.4 percent. The payroll tax is

49 The fact that social security has also an intragenerational distributive aim is also grounded in political economy considerations.
50 Examples of mandated saving in states.
limited up annual wages of $118,500 for 2015.\textsuperscript{52} In short, the benefit is computed by calculating the Average Indexed Monthly Salary (AIME) that is comprised by the individual’s highest 35 annual incomes below the annual wage limit, each multiplied by the appropriate adjusted wage income factor (AWI) in order to adjust for inflation and divided to twelve.\textsuperscript{53} The Primary Insurance Amount (PIA) is derived by multiplying the AIME by three separate salary brackets: the first 826 dollars of the aim are multiplied by 0.9; the amount of the AIME between 827 till 4,980 is multiplied by 0.32; the amount over 4,980 is multiplied by 0.15.\textsuperscript{54} The maximum possible PIA a retiree can receive from social security is $2,788 given the aforementioned annual wages ceiling. As the steep brackets reflect, the social security retirement scheme has a significant distributive function and is heavily biased toward low-income earners.

There are two main features that differentiate between mandated savings through public funds and mandated savings through private funds. The first, is that in private funds the benefits the individual receives are tied more closely to the payments he made. The second is that in private accounts the individuals is exposed to the market return, enabling him to increase his expected benefits on the one hand, but exposes him to market risks on the other.\textsuperscript{55}

While the benefit provided by social security for retirement are significant they certainly are not sufficient.

In the U.S. there is a considerable gap between the income replacement rate provided by mandatory retirement programs—social security in the U.S. context. For 2013 Social security provides an income replacement rate of 49.5 percent for working individuals with half an average wage rate; 38.3 percent if earning an average wage rate and 33.4 percent if earning 150 percent of the average wage.\textsuperscript{56} 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, is seems to stand around a 30 percent of pre-retirement income. In other words, the U.S governmental retirement program provides only approximately two thirds and a half of the capital level required for the desired retirement benefit level. The existence of a significant gap between governmental programs and the desired retirement benefit level exists in many more

\textsuperscript{52} 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 individuals contributions entitle him to a fixed benefit, disconnecting the benefits he receive from both the amount he contributed and the returns the market has generated. Defined benefit plans used to be the common employer pension plan, but now defined contribution pension plans dominate the market. Although private plans can be similarly designed to government plans, the individuals still has the possibility to choose over these dimensions.

OECD countries, but the in the U.S. this gap is one of the largest gaps. The U.S. income replacement ratio generated by mandatory retirement saving (both public and private) is well below the OECD average. It scores 20.6 percent less than the OECD average for income that is half the average wage (70.1%); 57 15.7 percent less than the OECD average for average income (54%); 58 14.6 percent less than the OECD average for income that are 50 percent higher than the average income (48%). 59 In fact the U.S. income replacement rate 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 countries with lower replacement rates out of the 34 OECD countries: Poland (48.8%) and Germany (42%). 60

The insufficiency of mandated governmental retirement saving schemes for reaching desired level of pension saving does not necessarily imply that there is a systematic problem with retirement savings levels. Mandated saving could be supplemented with voluntary private savings. Not only is it possible but it also is the reasonable structure for retirement saving. Paternalistic compulsion of saving could be more easily justified in the first marginal dollars of retirement saving but not 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 that hadn’t saved even the first marginal dollar will be in such a dire condition in his retirement years that the government will be obligated to support him. This is not true for the more advanced marginal dollar. Even if these dollars are still below the target for retirement, there social value of these dollars of retirement saving are not as high and do not justify ‘strong compulsion’, but only ‘soft compulsion’ by subsidizing saving these dollars toward retirement. The marginal dollars around the retirement saving target, do not justify any government intervention, due to their low social value, and relative low impact on the individual’s welfare level during retirement. Whether these dollars should be saved is a matter that should be left for the full discretion of the individual. In other words there is a decreasing marginal justification for paternalistic compulsion of saving toward retirement. The fact that ‘strong’ compulsion mechanism such as mandated saving fall considerably short from the retirement saving target, can be fully justified, as long that most individuals get close to the target through voluntary savings. As the next subsection will demonstrate, the complimentary private retirement savings of individuals could not be taken for granted.

C. Insufficiency of Voluntary Private Savings to Reach Optimal Level of Retirement Savings

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57 Id.
58 Id.
59 Id.
60 Id.
Ample data has been presented in the beginning of this part of the article regarding the insufficient private savings for retirement. Some scholars argue that these findings are mostly effected by the financial crisis, and do not necessarily reflect a broader phenomenon. There is merit to this claim, and the financial crisis has caused a significant decrease in the value of retirement accounts. Yet as Daniel Shaviro points out, there have been similar findings regarding the insufficient private retirement savings also in pre-crisis studies. Thus these findings do seem to reflect a broad phenomenon of insufficient savings that is not merely affected by local causes.

What are the sources of this phenomenon? Why is there a need for any kind of government interference in the savings for retirement? If saving for retirement maximizes individuals overall utility, why can’t we count on individuals to maximize their utility as we do in general consumption? We don’t mandate or even nudge an individual to buy vanilla ice-cream, knowing that it is the taste that will maximize his utility and fearing he would make the suboptimal choice of buying chocolate for various reasons. Why do we do not rely on the individual’s choice when it comes to retirement savings? Is it only because the decision regarding retirement saving has negative externalities on society? Over a certain level of retirement saving the amount of retirement savings does not seem to generate a negative externality, yet we still nudge individuals to save more for retirement. Why is this so?

There are two general directions for answering this question of why individuals do not save the optimal amount toward retirement. One is based on conventional economic analysis and pointing to limited planning ability and information asymmetries. The second is based on behavioral economic analysis, pointing to various biases and framings that might cause an individual to refrain from making the optimal choice regarding his decision for saving for retirement.

61 Gaboo & Warshawsky, supra n. 30, p.
The decision how much should one contribute toward retirement is a complex decision. Various studies have demonstrated the limited planning ability and low financial and economic literacy individuals exhibit in decisions regarding retirement. Yet there are a few elements that may impede on the decision regarding retirement, even if an individual does not exhibit the basic flaws of economic and financial literacy. Even if one has clearly defined the amount of resources he needs on a monthly bases in order to have a comfortable retirement, there are two parameters that have to be taken into account in order to determine the monthly contribution one has to make in order to have the required resources at retirement. The first, is the period he will live while retired and the second is the expected market return on the capital saved. One’s primary preference is not regarding the amount of funds he will have saved when reaching retirement, but the monthly amount he will receive when retired. This monthly amount depends on the period in which he will have to fund his stipend. Without knowing how long he will live one cannot know his exact saving target he needs to reach by retirement.

This problem seems to have a pretty straight forward solution – one should utilize the data regarding the life period expectancy, and design the contributions around the assumption that he will reach the average life expectancy. There is evidence indicating that this is exactly what people do. Yet this calculation has left people with insufficient funds for reaching their desired monthly retirement stipend. As noted above, life expectancy is not a static and constant factor, but is a dynamic factor that is increasing over time at an approximate pace of one year per decade. Thus someone who has calculated the contribution required to obtain a certain stipend based on the average life expectancy at 1980 when he started making contributions that was 79, will most likely find himself with insufficient funds for the monthly, given that his expected life period was prolonged by three year. In order to compensate for the insufficient funds individuals have saved base on the static factors, government subsidizes contribution in order that individuals will increase their contribution and compensate for the insufficient past contributions.

The second parameter that has to be taken into account in determining the size of contributions for retirement, is the expected market return on capital. Also this parameter seems to have a pretty simple solution—to base one’s calculation on the market’s average return in the past. Basing one’s decision on average return is especially helpful in the case of retirement saving, due to regression to the mean effect. One’s retirement savings are exposed to the market returns for a period of approximately 40 years. This diversification over time, increases the chance that one’s actual average market return will converge with the long-term average.

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64 Shaviro, supra n. at 32-3; Bernheim & Rangel, supra n. at 19
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The solution for the market return factor has a similar problem to the solution for the life expectancy factor – the average is deceiving due to a dynamic effect. Many scholars, the leading of which is Professor Larry Summers, have pointed to the possibility of a secular stagnation.\textsuperscript{66} The secular stagnation means that we are entering an era in which the demand for investments will be rather low, and will not absorb all household saving. In this era the average return on capital will be much lower than in the past.\textsuperscript{67} According to such view, basing ones’ assessment of future market return on historical market returns will lead to an onerous conclusion that the returns for capital will be higher than what they are actually expected to be.

According to economist holding the view that we are at the brink of a secular stagnation, individuals’ contributions to their retirement will not be sufficient in order to meet their targets. Individual could take these dynamic models into account, yet it seems that they don’t. There are two main reasons why individuals do not take into account these dynamic dimensions. The first, is that it may be beyond their capacity, to admit a dynamic element to 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 explanation are congruent with the finding that insufficient retirement is especially prevalent among low income earners. There is a correlation between level of income and sophistication. It is reasonable to assume that low income earners will suffer more from the exclusion of these dynamic features in their projections.

Even if individuals \textit{do} take these dynamic dimensions into account, it is sufficient that in past years their contribution were based on projections that didn’t take into account these dynamic effects in order to justify soft government involvement. Individuals may not have the financial capabilities to correct their under-funding of retirement savings, and thus government subsidies are required in order to meet their initial target.

One may argue that if one’s central preference is over one’s annual benefits during retirement, he can easily shield himself from his exposur to the two elements of life expectancy and market return by buying an annuity. Essentially when one buys an annuity, the seller of the annuity is the one that absorbs the risk that is involved with life period and market return. Thus if individuals would buy an annuity, government would not have to interfere in retirement saving due individuals onerous assessments of these factors. While in theory it is true that an annuity can solve these problems, in practice it does not seem relevant. There are many

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indicators that there is a market failure in the annuities sector. The primary indicator is the high premiums financial institutions charge for annuities.68

2. Explaining Insufficient Voluntary Private Savings through a Behavioral Lens

The primary explanation for the low level of private voluntary savings is behavioral: the decision for saving for retirement suffers from a few biases that cause the individuals to save less than the optimal amount.

A. Myopia

Myopia describes a behavioral phenomenon of agents that prefer to consume excessively in the present at the expense of future consumption, although such consumption pattern clearly does not maximize their utility from consumption. It is possible to differentiate two types of Myopia.69 The first is on the cognitive level: excessive weight is attributed to sooner as compared to later consumption in a way that is not in lined with an individual’s overall utility function exhibits myopic behavior. Choi, Laibson and Madrian have labeld such behavior as Naïve Myopic bevhavior.70 The Naïve Myopia stands in contrast to the second type of Myopia—Sophisticated Myopia which works on the motivational level. In Sophisticated Myopia the agent does not place significantly more weight on sooner consumption, he only can’t stop himself from consuming all what he can in the present. This type of Myopia is exemplified in the Greek Myth of Odysseus and the Siren’s that ties himself to the mast of the ship in order to prevent himself from fulfilling a present-time desire of jumping into the water in order to maintain the future-time desire of living. This type of Myopia is on the motivational level—individuals inability to execute their inter-temporal preferences.71 It could be described as a “weakness of the will” problem, to which present consumption is much more exposed to than future consumption.72

68 The central reasons 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 premium for the annuity will be significantly high, even for those who do not necessarily have a lower life expectancy. These individual will not want to buy the annuity and exist the market, further decreasing the average life expectancy of those buying an annuity which increases the annuity premium even further etc.  
69 Shaviro, 35-6.  
70 James J. Choi, David Laibson, Brigitte C. Madrian, and Andrew Metrick, Passive Decisions and Potent Defaults, NATIONAL BUREAU OF ECONOMIC RESEARCH WORKING PAPER 9917 (2003), at 6  
71 Richard Thaler and 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 at the present, they still have a problem to abstain from consuming in the present. In order to deal with this problem people develop all kinds of commitment mechanisms, one of which is the Christmas Clubs, a savings program that although pays them bellow the market interest enables them to have resources available for consumption in the holidays.  
72
Both types of myopia may have a considerable effect on saving for retirement. Individual’s both attribute less weight to consumption during retirement than its actual impact on their overall utility. Even given that individuals do internalize the full value of consumption during retirement, the sophisticated myopia may bar them from abstaining from consuming more in the present at the expense of future consumption. The classic solution for overcoming these problems is mandating saving for retirement. ‘Nudges’ do not necessarily seem to be an effective tool to deal with the two types of Myopia. Generally speaking, there are two forms of nudges that could also be utilized in the retirement saving context. The first is a price nudge - subsidizing retirement saving or taxing present consumption and thus changing the effective price of saving a dollar for retirement in terms of present consumption. An alternation of the price of retirement saving may overcome the first type of myopia. The problem with this individuals is that the discount rate he uses for present consumption is much higher than what his utility function would prescribe. If the price of retirement saving would decline, even under his inflated discount rate the value of the retirement saving he may purchase with his marginal dollar might be higher than the value of present consumption he can purchase. Although it is possible that the individual would be affected by the change in price, there are good chances that he won’t be affected, and that the governmental dollar for subsidizing retirement will be spent in-vain. Naïve myopia in the canonical case of irrationality. It may be that the individual uses an infinite discount rate to discount future consumption, and not only a limited inflated discount rate. If the former is the case, and it might actually be the case, altering the price would only waste governmental resources.

If the price nudge does not seem the perfect fit for the first type of myopia, it certainly does not seem to provide a good solution for the second type. In the second type the individuals does not exhibit any cognizant problem—he understands that saving for retirement is better for him than consuming resources in the present. His problem is only motivational. Thus increasing the value of future consumption that a marginal dollar can buy will most likely not alter the individual’s decision. Even without the price alternation the individual realizes that it is better for him to save for retirement, the only problem is the execution of his preferences. While it might be that intensifying the preference for later consumption might assist in overcoming the motivational problem, the valuation of later consumption is not the central locus of this individual’s problem.

The second nudge is a default nudge. Turning the saving for retirement the default option from which the individual must opt out. While there have been findings that this kind of nudge is very effective in inducing people to save for retirement and may assist in

73 See Shavriro
74 Shavriro, 45.
75 The Chetty et al, Active Vs. Passive Decisions
overcoming other biases, it does not seem to be capable of effecting the two types of myopia. The defaults to not alter the individual’s valuation or motivation for saving for retirement. They do not enhance the individual’s attentiveness to the decision made. Default alternation overcomes individual’s procrastination and evasion from incurring decision-making costs. According to Bubbs & Pildes, defaults do not affect the individuals decision-making process; effectively, defaults function as direct mandates disconnected from the individual’s choice-making. Thus while defaults have a significant effect on the outcome, they do not mend the effects of myopia on rational decision-making.

B. Omission Bias

Daniel Kahneman and Amos Twersky have shed light onto a bias of individuals in favor of harms caused by an omission rather than equivalent harms caused by commission. Their findings have been replicated in experiments of various forms. The implications of the omission bias in the legal field has also been examined extensively. Bronchetti et al. underscored the relevancy of omission bias to the context of retirement savings. They claimed that the omission bias and “the tendency for acts of commission to be psychologically more costly than acts of omission”, explains the stickiness of enrollment defaults in employer-run retirement savings plans. A similar observation has been made by Choi et al. Thus if an

77 Ryan Bubbs and Richard H. Pildes, How Behavioral Economics Trims its Sails and Why, 127 HARV. L. REV. 1593, 1616 (2014); Cf. Shaviro, supra n. 63 at 36-37. Shaviro notes that it is possible that default rules may enable to overcome both kinds of myopia to some extent; it may assist in ameliorating naïve myopia by reducing the immediate decision cost for retirement saving and thus takes advantage of excessive weight the agent attributes to present costs and benefits. It 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 Bubbs and Pildes supply supports the claim that the default rule circumvents any decision-making from the side of the agent, and does not merely assist the agent to overcome the biases in order to make rational decisions. See infra, n. 87 and accompanying text.

78 Daniel Kahneman & Amos Tversky, The Psychology of Preferences, 246 SCI. AM. 160 (1982). Kahneman and Tversky demonstrated the omission bias with an experiment that asked subjects to evaluate two scenarios. In the first scenario, an individual owns stock in A and considers switching to B. The individual sticks with A, but later learns that, had he switched to B, he would have made an additional $1200. In the second scenario, an individual owns stock in B, 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 $1200. Kahneman and Tversky's showed that the individual in the second scenario would be more upset, even though both economic outcomes were the same.

83 Id. at 613
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 seem as a bias which it is quite easy to overcome. All what it needed is to shift the default: from a no-contribution-for-retirement default, to a default under which some portion of one’s income is set aside for retirement. Such change in the default rules of contributions towards retirement has actually taken place, and it is celebrated as one of the successful applications of behavioral scholarship to public policy. 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 public policy reform: reaching the objective of increasing contributions for retirement savings without directly mandating contributions and limiting one’s choice. Yet Scholars have noted that this might not be necessarily the case. Ryan Bubb and Richard Pildes claim that changing the default has not obtained any of the two objectives noted. They have argued that the savings have decreased the overall level of retirement savings rather that increased them. The 3 percent default rule that was widely accepted indeed increased the number of individuals saving for retirement by nudging individuals who have not saved previously to save the default amount. Yet it decreased significantly the level of savings for many individuals who when actively opting to save have saved a higher percentage, and reduced their savings level to the default percentage.

Furthermore, Bubbs and Pildes have argued that while the supporters of the reform in the default contributions have hailed it as preserving individual choice, effectively the default functions similarly to a direct mandate. While in case of a direct mandate there is careful deliberation over the exact level mandated, in case of default rules there isn’t such a deliberative process due to the illusion that the individual could always opt out. Bubbs and Pildes argument against the use of default rules, 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 manipulate the default.

85 The PENSION PROTECTION ACT of 2006 [29 U.S.C. §1104(c)(5)(2012); C.F.R § 2550.404c-5 (2013)] has enabled automatic enrollment to 401(k) plans, by shielding employers from fiduciary liability for such plans.
87 BUBBS & PILDES, supra n. 77 at 1618.
88 Id. at 1616
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. This discount structure sets up a conflict between today’s preferences and the preferences that will be held in the future. The discount rate between two periods in the future—t and t+1, will be higher in the present than points in time closer to t. As a result, while in the present I will be willing to postpone consumption from t to t+1 for a rate of return X, when period t arrives, I will not be willing to postpone consumption to the same period of time—t+1 for the same rate of return X.

The phenomenon of hyperbolic discounting was first formalized by George Ainslie. David Laibson has demonstrated the significant welfare gains commitment mechanisms may generate, given the hyperbolic discount structure. The intuition behind his results, is that in most periods of time both before and after period t, the individual would prefer postponing consumption to period t+1 for a given rate of return X. Only in the periods of time close before t, the individual would prefer to forfeit the X rate of return and not to shift consumption to period t+1. Overall, when taking into account the individual’s dynamic preferences over time, postponing consumption to t+1 would increase his welfare significantly. This justifies developing a commitment mechanism that would require the individual to postpone consumption in period t, even though that in that period of time the individual would not prefer postponing consumption for the given rate of return.

The implication of hyperbolic on retirement saving decisions are quite straightforward. Over the long horizon, individuals’ would decide to save for retirement. If an individual is asked whether he is interested to save for retirement from the income he will receive in the distant future, a few years ahead, the answer is likely to be positive. Yet when that individual will reach the year in question, his discount rate will increase and he will not be willing to save some of his income for future consumption at retirement. As David Laibson’s model has exposed, a commitment mechanism, committing the individual to save for retirement at the given year will generate substantial welfare gains for the individual. While it will decrease the aggregated lifetime welfare as perceived at the time when the contribution for retirement saving is made, it will increase the aggregated lifetime welfare, from the perspective of most other periods of time both before and after the period in which the contribution is made.

90George W. Ainslie, *PICOECNOMICS* 56-95 (1992)
II. THE SAVERS CREDIT AND ITS EFFECT ON RETIREMENT SAVING

The U.S. has acknowledged the problems noted above regarding the insufficient saving for retirement, especially among low income earners. Its primary policy tool in order to deal with this problem is a scheme labeled ‘The Savers Credit. This Scheme is one of the primary federal expenditures for low income individuals—besides the EITC it is the scheme with largest expenditure of the government on low-income individuals.

A. The Legal Framework of the Saver’s Credit

The SC offers a 50% non-refundable credit on funds up to $2000 deposited into a retirement saving account (401(K), I.R.A account, Roth I.R.A. account) for households with low income. The tax benefit provided by the SC, is in addition to the standard tax benefits provided to retirement contributions: Exemption from taxation of capital for contributions to Roth I.R.A accounts; Tax deferral to time of withdrawal for contributions to I.R.A accounts by enabling to deduct income in time of contribution.

For married couples filing jointly the cap for the SC is $4000. Effectively, through the credit the government matches the contribution of the savers: for savings of $2000 the savers has to make an out of pocket contribution of $1000. A married couple filing jointly are entitled for the 50% credit, if their AGI is not more than $36,500. Higher earners are also entitled for the credit, but for a lower rate of 20% of their contribution. Married couple filing jointly are entitled for the 20% credit if their AGI is between $36,501 to $39,500. The third and last credit level is 10% of the capped contribution level, which married couples filing jointly are entitled for if their AGI is between $39,001 to $60,000. Filers with AGI that exceeds the cap for the 10% credit, are not entitled to any credit. There are a few additional restrictions besides AGI level: in order to be entitled for the credit one has to be 18 years old or older, not a full time student and not claimed as a dependent on any other person’s return.

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92 26 U.S.C. §408A(d)(1). Contribution to Roth I.R.A accounts are not deductible, but qualified distributions are excluded from gross income.  
93 26 U.S.C. §219(a)  
94 26 U.S.C §25B(b). Head of Household is entitled for a credit if her AGI is no more than $27,375 and all other filers and entitled for the credit if their AGI is not more than $18,250  
95 26 U.S.C. §25B(b)(B). Head of households are entitled for such credit if their AGI is between $27,376 and $29,625. All other filers are entitled for such credit if their AGI is between $18,251 and $19750.  
96 26 U.S.C. §25B(b)(C). Heads of households on AGI between $29,251 to $45,000 and all other filers on AGI between $19,501 and $30,000  
97 26 U.S.C. §25B(c)(1)  
The steep declines in the credit level, create notches—points in which making an additional dollar will trigger an effective tax that is greater than one dollar. A rational tax payer should increase his income by small amounts in those points. These notches have an effect also on reporting behavior: due to the steep increases in the effective tax rate, there is a strong incentive for individuals to report income levels right below the level in which there is a ‘cliff’ in the credit rate, a phenomenon labeled as ‘bunching’.100

An important legal supplement to 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 from retirement account.101 In some types of accounts, the penalty might be higher and reach 20 percent of the funds withdrawn in addition to tax the capital returns that otherwise would have been tax-free.102 Although the penalty on early withdrawal, is a general provision that is not specifically linked to the SC, the SC is built on the early withdrawal penalty. If there would have been no penalty on early withdrawals, the SC could not have been effective: individuals would have contributed to retirement savings in order to receive the credit and immediately withdraw the funds.

Given the level of the penalty, that in most cases is lower than the credit, suggests that the penalty is not effective: it is still profitable for individuals to withdraw early right 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 empirical data regarding the low take up rates of the SC, there is no such exploitation of the scheme.103 There are two possible explanations for the non-exploitation of the scheme, an explanation within the rational framework and a behavioral explanation outside the rational framework. The rational explanation is that individuals are aware of the penalty, but do not incur the cost of obtaining information regarding the exact level of the penalty. They assume that the legal framework does not have ‘holes’, and if there is a penalty, the legislators fixed its level so it would be an effective penalty that would expose exploitation.104 The behavioral explanation is that individuals have a strong aversion to any payment that is framed as penalty, even when the absolute size of the payment is small. This ‘penalty bias’ will be discussed later on in this paper.105

B. The Enigma of the (lack) Effect of the Savers’ Credit on Retirement Savings.

Scholarship has exposed the limited success of the program in incentivizing saving for retirement (Gale, 2004; Ramnath, 2013). Scholarship has emphasized the fact that the credit

100 26 U.S.C. §72(t)(1)
applies only to low-earner individuals with a positive tax liability because the credit is not refundable (Basset et al., 1998; Gale, 2004). Yet surprisingly, even among individuals with tax liability that are entitled for the credit, the take-up rate is extremely low. Effectively, the actual match rate to the saver’s contribution, may even exceed the generous 100 percent federal match rate through the SC. Contributions of many employees have a 50 percent match rate by the employer that together with the SC adds up to a 200 percent match rate. The benefit provided for the this saving individual does not culminate in this outstanding match rate—in addition, the contributing individual receives the standard benefit of tax free capital gains.

Astonishingly, even given this incredible match rate, the take-up rate of the scheme is surprisingly small. Koening and Harvey have found that 34 percent of the eligible taxpayers fail to claim the credit, and almost 0.5 Billion dollars of potential credits have not been claimed. Recent survey reinforce the low take-up rate of the SC. In a survey conducted by Jade Shipman Bevans. Only 19 percent of the individuals have knowledge of the SC. Although this survey includes individuals to which the credit is not relevant due to their high income, it still signifies a significantly low rate of individuals that are acquainted with the scheme.

The most comprehensive study that exposed the failure of the Saver’s Credit in incentivizing low income individuals to save was conducted by Esther Duflo, William Gale, Jeffery Liebman, Peter Orszag and Emanuel Saez. They have examined H&R Block data, and found a mere increase of 1.4 percent in the take-up rate between individuals entitled to a 20 percent credit and individuals entitled to a 50 percent credit. 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 and stood on a 0.3 percent. A similar non-significant difference was also found between individuals not entitled to any credit and individuals entitled to a 10 percent credit—0.4 percent. The actual difference is lower, when tax filers with an AGI around the cliff of $30,000 separating the 20 percent and 50 percent credit. The reason for excluding tax filers around the cliff is the “pilling up” effect bellow the cliff that indicates that a large share of those indicating their AGI being bellow $30,000, have artificially manipulated the AGI to be below

106 Gale (2005)
107 Gary Koenig and Robert Harvey, *Utilization of the Saver’s Credit: An Analysis of the First Year*, 58 NATL. TAX. J. 787 (1
109 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 (2007)
that sum. When excluding tax filers between $29,501 and $30,500 the difference in the take-up rates decreases to 1.0 percent.\textsuperscript{110}

The finding in the Dulfo et al. study, reinforces various studies that find that price mechanisms are relatively weak and ineffective in incentivizing individuals to save for retirement. These studies have found that individuals decisions regarding retirement savings are relatively inelastic to the price of saving. Yet the findings in the Duflo et al. study pronounces this result to a much greater extent in the setting of the savers’ credit.

In addition to the low take-up rate of the SC, it is questionable whether even those that do take advantage of the SC, actually increase their savings for retirement. Many scholars hold the position that schemes such as the SC for incentivizing savings, do not actually increase the overall savings for retirement; their primary effect is in shifting the resources from one account to the other.\textsuperscript{111} While most of these scholars agree that among low-income earners,\textsuperscript{112} the schemes effect on increasing contributions is stronger that its substitution effect, the rate of individuals that actually increase their contribution for retirement is even lower than this relatively low take-up rate. Shanthi Ramnath points out that the bunching effect of AGI incomes around the notch, also indicates that the effect of SC on increasing savings is to a lesser degree than the low take-up rates mentioned above.\textsuperscript{113}

The “bunching” effect that Ramnath and previous studies have underscored,\textsuperscript{114} is a phenomenon in which there is a is an especially high number of individual’s that report an AGI just a bit lower than the AGI in which there is a notch in the effective tax rate. The SC creates such a notch, especially around the $30,000 AGI the “cliff” in 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 that has made a $2,000 contribution toward retirement reports an additional dollar of income, he pays an additional $600 in taxes.

\textsuperscript{110} Even this meager difference in contributions between the different levels of AGI may be attributed to also the greater propensity to save for retirement of higher income earners, 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 are not entitled to the credit because they have no tax liability. but with no tax liability
\textsuperscript{112} Munnel & Sunden (2004)
\textsuperscript{113} Sahnthi Ramnath, Taxpayers’ Responses to Tax-based Incentives for Retirement Savings: Evidence from the Saver’s Credit Notch, 101 J. PUB. ECON. 77 (2013)
\textsuperscript{114} Regarding other studies that have examined the bunching effects of notches and kinks in the tax system, see: Esther Duflo et al., Savings Incentives for low- and middle-income families: evidence from a field experiment with H&R Block, 121 Q. J. Econ. 1311 (2006); Duflo et al., Savings 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 (2007); Emanuel Saez, Do Taxpayers Bunch at Kink Points, 2 Am. Econ. J.: Econ. Policy 189 (2010); Raj Chetty et al., Adjustment Costs, Firm Responses and micro vs. Macro labor supply elasticities: Evidence From Danish Tax Records 126 Q. J. ECON. 749 (2011); Raj Chetty, Bounds on Elasticities with Optimization Friction: A Synthesis of Micro and Macro labor Supply, 80 ECONOMETRICA 969 (2012).
Ramnath presents evidence 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.\textsuperscript{115} In Ramnath’s empiric analysis, there does not seem to be *any* increase in contribution level around the SC notch, besides the constant increase in contributions as a factor of the increase of income.\textsuperscript{116} The increase in contributions around the notch could be solely explained as being caused by the under-reporting of income around the notch while contributions as a function of income is constant, independent of whether the individual is entitled for the SC. Thus even the meager effect of the SC to which Gale,\textsuperscript{117} Koeing\textsuperscript{118} and Duflo\textsuperscript{119} pointed out to, does necessarily exist. According to Ramnath the effect of the SC might even be nil.\textsuperscript{120}

Scholars have not been contented with underscoring the enigma around the low take-up rate of the SC; they have attempted to provide explanations for it. The central explanation is the general insensitivity to price mechanisms. Studies analyzing employer’s matching schemes found that they had a limited and weak effect on contributions of employees.\textsuperscript{121} This is congruent also 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. 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 eventually withdrew the funds for non-matchable purposes.\textsuperscript{122}

An additional explanation that scholars have provided for the low-take up rate of the SC is the lack of knowledge about the credit, especially given that it is not an independent and salient scheme, but an additional element hided within the tax system. Koeing & Harvey support this claim with their finding of 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, 75.6 percent of those entitled for the credit have claimed it. Among the latter only 44.4 of those entitled to the credit have actually claimed it.\textsuperscript{123}

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\textsuperscript{115} Ramnath, supra n. 113 at 87 \textsuperscript{116} Id. at 88 \textsuperscript{117} Id. at 90 \textsuperscript{118} 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 (2008); \textsuperscript{119} Mark Schreiner et al., *Savings and Asset Accumulation in Individual Development Accounts*, CENTER FOR SOCIAL DEVELOPMENT GEORGE WARREN BROWN SCHOOL OF SOCIAL WORK (2001), available at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.217.3468&rep=rep1&type=pdf. \textsuperscript{120} Id., 803
\end{flushright}
Findings of Spader et al. also reinforced the claim that knowledge regarding the SC is one of the central explanations for its low take-up rate. Based on these findings, Spader ran an experiment examining whether the take-up rate for the SC could be increased through utilizing Volunteer Income Tax Assistance (VITA) sites. While VITA sites solved the knowledge problem regarding the SC, Spader et al. have still a high-rate of individuals not interested in participating in the scheme. One of the central factor 33.6 of the individuals have pointed to as the impediment for saving for retirement, was the inability to withdraw funds in an emergency. This factor trailed less than 2 percent the matching rate as the most important factor in retirement savings decision.

The complexity of the scheme is also mentioned as a possible explanation for the low take-up rate of the SC. Jade Shipman Bevans found in a survey he conducted of over 1,000 low income earners, that complexity is one of the prime reasons for not claiming the credit. Within his sample, he found that only 6 percent of the respondents have every claimed the credit. When analyzing the grounds for not claiming the credit, he found that 59 percent has mentioned the fact that they don’t know whether they are eligible for the credit; 54 percent have responded that they weren’t sure what their financial benefit as a result of the credit would be; 49 percent mentioned the fact that they don’t understand exactly how the credit works. These responses reflect that the complexity of the SC is one of the main impediments for not claiming the credit. Other scholars have mentioned complexity as the main barrier preventing wider participation in the SC. Jonathan Spader has also asserted that complexity is one of the main barierers for participation in the SC. Spader has recommended to simplify the SC by having only possible rate for the credit—the 0 percent rate.

As noted above, effectively, this means the government fully matches the individual’s contribution for retirement. I would like to shed light on an additional dimension that discourages low income earners to save for retirement that a credit designed differently could overcome.

Many of the low income earners have no short term savings, due to the fact that they barely have any disposable income. This is a significant fact when facing the decision of what one should do with one’s marginal dollar of disposable income. When one does not have any ‘cushion’ for emergencies, it is fairly rational for one to be reluctant to commit to long-term

124 Jonathan Spader et al., Encouraging the Use of the Saver’s Credit through VITA sites: Evidence from a Pilot Demonstration in Two Cities, 11-7 CENTER FOR FINANCIAL SECURITY RESEARCH BRIEF, 2 (2011)
125 Id. at 3.
126 Jade Shipman Bevans, Retirement Savings Among Lower Income Populations: Challenges and Opportunities to Improve the Effectiveness of the Saver’s Tax Tax Credit, EARN RESEARCH BRIEF (2013), 8
127
saving. Essentially, one has to give up the option of being able to spend the marginal dollar on emergencies or vital expenses that might come up before she reaches the age of 59.5 without a penalty.\textsuperscript{128} Such option is of very high value and might be worth more than saving for retirement, even for an individual with no hindsight and who is fully aware of the need and importance of saving for retirement.

III. The Solution for the Savers’ Credit Enigma: The Savers’ Premium.

Many Scholars have provided many answers as to the limited impact of the Savers’ Credit on retirement savings of low income earners.\textsuperscript{129} There is no doubt that some of these answers provide a reasonable, but partial, account for the phenomenon. I argue that the attempts to solve the Savers’ Credit have overlooked an important element of the scheme that may significantly deter low income earners from cooperating with the scheme. This element is the elimination of the option value of funds which is especially high for low income earners. After elaborating on this element and its chilling effect on the participation of low income earners, I would like to provide an alternative scheme that is intended to promote the same goal of the Savers’ Credit, but without eliminating the option value of funds. The hidden assumption regarding retirement saving schemes is that they have to eliminate the saver’s option value from funds; after all, that what retirement saving is—making sure that the individuals will have resources for consumption in the future entails forfeiting the option to consume the resources in the present. At least to some extent. The Savers’ Premium scheme I suggest challenges this assumption. It aims to provide a scheme that incentivizes retirement saving, without eliminating the option value of the funds.

Although the central pillar for the Savers’ Premium is maintaining the option value of funds while incentivizing saving for retirement, The Savers Premium has additional advantages. These will be discussed after presenting how it maintains the option value of funds and why it is so important.

C. The Cause of the Enigma: Option Value of Funds

Numerous studies have examined the enigma of the low participation rate in the SC scheme although it offers very generous benefits and offered various answers. I argue that this scholarship has overlooked a central feature of the SC that explains its low participation rate: the elimination of the option value of funds. The targeted individuals of SC place a high value to the option value of funds, and thus is elimination deters them from participating in the SC scheme.

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In what sense does the Savers’ Credit eliminate the option value of funds? The Savers’ Credit only provides a credit – it does not seem to be eliminating anything. While true that SC doesn’t eliminate anything directly, the SC could work only in the legal context that there is some sanction for drawing 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 tax on the accounts value, and in some cases even a 25 percent tax.\textsuperscript{130} The deterring effect of the penalty causes individuals to treat funds that go into the retirement account as funds that are unavailable for use till time of retirement. There are three reasons why the penalty has such an effect. The first is economic in the narrow sense. 10 or 20 percent of all funds in the account, including the tax-free capital return of the initial deposits, is a fairly heavy price that essentially rules it out from the start. For individuals receiving the lowest 10 percent credit, the benefit does not cover the significant cost they would incur in case of early withdrawal. A wider economic view justifies why an individual who receives a higher credit of even 50 percent, may still be deterred by the penalty. When making a decision of whether to save, an individuals does not necessarily gather the appropriate information for every contingency. Needless to say that information gathering is a costly project. An individual may assume that if a penalty is imposed on him for early withdrawal, the penalty is designed to make withdrawal a hefty and not worthwhile and not even pursue to find out the exact amount of the penalty. The third justification is on behavioral grounds: labeling something as a penalty may deter the individual from incurring it, even when the economic price of the penalty is lower than the benefit the credit for the deposit provides.

The exact reason for why the penalty deters individuals could be left aside. At the end of the day the fact is that the penalty is effective and prevents individuals from withdrawing funds from retirement accounts.\textsuperscript{131} Why is it problematic?

\textsuperscript{130} There is a 10% penalty on early withdrawal from most retirement accounts (I.R.S § 401(t)) and a 25% penalty on withdrawals from SIMPLE IRA accounts in the first two years with an exclusion for only certain emergencies. The penalty is especially significant for the lion share of individuals to which the Saver’s Credit applies, who only receive a credit that equals 10% of their contribution. It may seem that this isn’t really a penalty for individuals who receive a 20% or 50% credit – the penalty is significantly lower that the credit they receive. Yet even in such case, 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 behavioral effect from the fact that even among individuals entitled the 50% credit and have a tax liability from which they could offset the liability, due not take the credit (Spader et al., 2011). Koening and Harvey (2005) found that only 14% from individuals who are entitled for a credit and have a positive tax liability utilize the credit. These individuals will gain economically even if they do not save for retirement, but would deposit the funds and would immediately withdraw them. Even given the penalty, they would still make a net gain: the credit is greater than the penalty. A possible explanation for why individuals do not take advantage of such scheme is behavioral – the framing of early withdrawal as a penalty deters them from utilizing such option, even when it would be economically beneficial to them. The scheme suggested omits the need of any kind of penalty.

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The problem is that this may be the feature that deters individuals from opting into the SC scheme. Although they receive a credit in the present, they understand that by depositing funds into the accounts, they are essentially 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 execute the option and continue to save.

Although saving does not require forgoing option to consume in the present, the sanction does seem as a necessary element for governmental schemes incentivizing retirement for two reasons. The first is that the individual is provided with a benefit if he is willing to save for retirement. If he has the option of withdrawing the funds with no sanction, the scheme will lose its efficacy—individuals will deposit the funds without any intention for saving for retirement in order to receive the benefit and withdraw the funds immediately.

In order to prevent such a scenario, there is no need for a sanction—it is sufficient to make the individual return the benefit he received in order that he won’t take advantage of the governmental scheme. It is possible to view the existing sanctions as doing exactly that—aiming at taking away the benefit that one received, and not penalizing in the strong sense.

Yet it seems that the structure of the scheme and the sanction have a different purpose. The benefit is given not only for an action that enables to save for retirement, but for the commitment to save for retirement. As noted above, there are many impediments for saving for retirement, both behavioral, such as myopia,\textsuperscript{132} and rational, such as the costs of constant decision making and the problem of different selves.\textsuperscript{133} 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 his option to consume her resources in the present. The government is not interested in giving the individual the possibility to refund the benefit and consume the resources in the present. It undermines one of the central objectives of the scheme – committing the individual to save for retirement. For that reason the government penalizes the individual for early withdrawal—not only that she should refund the benefit she receive in order to prevent taking advantage of the governmental scheme, but in order to deter the individual from withdrawing the funds. Even if she now values present consumption of those resources more than future consumption.

I argue that the commitment element of the Savers Credit it what undermines the scheme and causes its ineffectiveness and low participation rate. The individuals the scheme targets—low income earners—attribute a very high value for the option to consume the resource. There
is ample data regarding the low savings in general of these groups.\textsuperscript{134} Many of the targeted individuals of the SC do not have any other savings besides the potential dollars for the SC. Having no financial cushion at all in the present, the value of the option of using these resources in the present sky-rockets. Because the individual doesn’t have any other financial resources available, and due to the decreasing marginal value of money, there are many scenarios in which the value of these first dollars are extremely high. The high expected value of these first dollars due to these possible scenarios, causes the option to use these dollars to be extremely high. Although the law attempts to address this problem by excluding withdrawals made for certain expenses from the penalty,\textsuperscript{135} a \textit{numerus clausus} cannot entirely solve this problems. 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. What deters these individuals from participating in the SC scheme is not the actual saving for retirement but the option value for consuming these resources.

Some studies reinforce this assertion, that the option value of resources is the central element that bar individuals from participating in the SC. Benvans has found in his survey of low-income earners that their top purpose for saving, was saving for an emergency or “just in case”. 83 percent of the respondents have mentioned saving for an emergency or “just in case” as a saving priority, while only 70 percent have mentioned retirement as a saving priority. Other priorities for savings trailed behind by a large margin: only 57 percent mentioned saving for a specific event like a wedding or a vacation as a priority for saving; 49 percent mentioned saving for a big purchase like a home or a car as a priority and only 45 percent have mentioned education or trainings for member of the family as a saving priority.\textsuperscript{136} These finding have caused also Bevans to come to the conclusion that in order to intensify the incentive for saving for retirement among low-income earners, there is a need to cancel the penalty for a large set of withdrawals, or at least reduce it significantly.\textsuperscript{137}

The Question is whether it is possible to design a scheme that incentivizes these individuals to save for retirement without \textit{committing} them to save for retirement? As noted above this may not be sufficient. Both for behavioral and rational reasons, any payment made in case of withdrawal may deter entering the scheme. On the behavioral level, any requirement of payment, even a low payment may be perceived as a penalty, and deter individuals from acting in a way that may eventually 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 punishing him, especially knowing that it may have an interest in committing him to saving. The signal

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\textsuperscript{135} \\
\textsuperscript{136} Bevans, \textit{supra} n. 126 at 10 \\
\textsuperscript{137} Id., 23
\end{flushright}
may be strong enough to justify him not incurring the costs of obtaining the information regarding the exact sum he will pay and calculating this costs in comparison to the benefits he received.

In light of this remark the question should be rephrased: is it possible to design a scheme that incentivizes individuals to save for retirement without imposing any payment on pre-retirement withdrawal? A positive answer to this question, seems to be more problematic. How can one design such scheme without leaving it exposed to manipulations? I would to propose exactly that kind of scheme: that provides an incentive for retirement saving without imposing any payment on pre-retirement withdrawal and not open to manipulations.

D. The Solution of the Enigma: The Savers’ Premium Scheme

1. The Basic Design of the Savers’ Premium Scheme

The Savers Premium Scheme is designed to provide a solution that on the one hand incentivizes retirement saving, but on the other does not impose a payment on early withdrawals. The solution it proposes is changing the timing of the credit, enabling to prevent taking advantage of the scheme with requiring a payment upon withdrawal. Instead of receiving the credit in the same year that the contribution is made, it is possible to spread the credit over the years till retirement, while enabling the taxpayers to withdraw the funds every year with no penalty. This design does not require additional resources spent by the government, and could be revenue neutral. For example, instead of enabling the tax payer to take a tax credit of $1000 in the year he makes the contribution, provide him with a $50 dollar credit every year he saves the $1000. This could be done by a special saving accounts, in which the government tracks the money going in and out without penalizing withdrawals. In other words, the government will add a 5% interest in addition to the market’s yield every year till the age of retirement.

Under such benefit scheme, the credit is transformed from a binary credit that rewards the individual only if fund are locked up to reach retirement to a graded benefit that provides a credit every year the funds approach retirement. The central feature of this scheme is that it doesn’t require the saver to forgo the option of making use of the funds in the present. He could withdraw the funds any moment he want with no payment, penalty or any strings attached.

The fact that the individual can withdraw the funds whenever he wants with no sanction, raises the question how effective is the scheme in incentivizing retirement savings. It is true that it eradicates the side effect of eliminating option value that may accompany retirement saving schemes, but hasn’t it sacrificed on its way the central objective of incentivizing saving for retirement? The fact that the individual could withdraw the funds at any point in time raises the concern that it won’t increase individual’s saving toward retirement. An individual could take advantage of the premium for a few years and then spend the funds he saved including the extra premium he received for saving for retirement, much before retirement.
The Saver’s Premium Scheme is motivated by a fundamentally different approach toward governmental programs subsidizing the production of public goods by individuals. While most of the government programs including the SC subsidize public goods ex-post, the SP subsidizes public goods ex-ante. Meaning—most governmental programs subsidize public goods according to the quantity of goods that have actually been produced. The SP 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 eventually the public good has not materialized. The logic behind such scheme is that if there is a statistical correlation between the behavior and the production of the public good, it is sufficient to incentive the behavior in order to increase the production of the public good and it isn’t necessary to reference to the actual amount of public goods that have been produced. Increasing the amount of actions that have a positive impact and are positively correlated to the production of the public good will also eventually increase the amount of the desired public good. The rationale of the ex-ante approach standing behind the SP, is that even if an individual does withdraw the funds including the premiums much before retirement, he had not taken an advantage of the scheme. According to the scheme it is fully justified in such case that the individual should receive the benefit of the premium. Although he hadn’t generated additional retirement savings, he has generated an expectancy for additional retirement saving, a positive externality in itself. Capital formation in the short run is the first step for capital formation in the long run. An increase in the amount of saving one has in year t1, increases the likelihood of having savings in year t2, which increases the likelihood of having savings in year t3 and so on and so forth. 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 saving for retirement. Thus even if one has eventually withdrawn the funds due to an emergency, he still promoted the public goals of increasing the ex-ante likelihood for an increase in retirement saving funds.

It is true that an expectancy for the production of a public good has less value for society than the actual public good, yet this could be accounted for by providing the benefit in proportion to the social value produced. Namely, providing a lower benefit for a behavior generating an expectancy for a public good that the benefit provided for the actual production of the public good.

3. Justifying the Ex-ante Subsidy Regime

Accepting the logic presented above, still leaves a question open: What is the point for such ex-ante subsidy scheme? If what we are interested in is the amount public goods, why not subsidize them directly? I will begin by providing two general justification for an ex-ante subsidy scheme over an ex-post subsidy regime. I will provide a more specific justification for the structure of

Baseline problem (security example)
the SP subsidy highlighting its 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 Justification for an Ex-ante Subsidy Regime

The first and more general justification applies to cases in which the risk barer is the state and not the individual. In the typical case discussed, there is an inherent risk that the behavior will take place but the public good will not be produced. This existence of such risk opens the question who should bare this risk. Under an ex-ante subsidizing regime for public goods the government incurs the risk while under an ex-post regime the individual incurs the risk. If the efficient risk barer is the government, an ex-ante subsidy regime should be adopted and if the individual is the efficient risk barer, an ex-post subsidy regime should be adopted. In instances in which 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 governments overall risk is smaller due to the law of big number—as the number of agents is higher, the greater the likelihood that the actual output of the public good will meet the expected output. Another way of putting it, is that under an an the ex-ante subsidy regime the government provides an insurance for individuals preforming the desired behavior, that they will get some benefit even if the public good does not materialize.

The insurance the government provides for individuals creates the moral hazard problem. In the case of saving, the ex-ante regime could be fully justified in cases of individuals that were interested in saving for retirement, but some emergency or subjective crucial need came up which required them to withdraw the fund. Under an ex-ante subsidy regime, these individuals deserve a benefit for the expectancy they generated for the production of a public good. These individuals were really interested in saving for retirement, but the circumstances has caused them to change their plans. If no subsidy will be given in such cases, many of the individuals that realize that there is high chance that something will come up and they won’t be able to save till retirement and obtain the benefit, will not save in the first place. As a result, the amount saved for retirement will decrease: the savings of many of these individuals would have reached retirement. Yet some individual that also ex-ante are not interested in saving for retirement will save for the short term in order to obtain the benefit. These individuals are treated as if they increased the expectancy for retirement savings, but actually they haven’t—they knew all along that they would not save for retirement. The moral hazard problem seems to impede on the ex-ante subsidy regime.

It is true that the ex-ante subsidy regime exhibits the moral hazard problem that accompanies insurance. Yet the moral hazard problem is mitigated similarly to the way it is mitigated in the case of standard insurance. In the case of standard insurance, shifting some of the cost of the harm to the individual mitigates the moral hazard problem, even if the full cost of the harm is not shifted on him. Similarly, the fact that most individuals attribute private value to retirement saving, even if significantly less that the social value, mitigates the moral hazard
problem. Thus if the group that assign no value at all to retirement savings is virtually nonexistent, there should not be a significant problem of moral hazard.

The second justification for adopting an *ex-ante* subsidy regime has to do with the timing in which the benefit is transferred. Schemes in which there is a time gap between the action and the actual production of the public good, may require providing the benefit at the time of the action in order for it to be effective. Additional possible examples: Jury duty, training for jobs for which there is a market failure, and maybe even tax benefit for NGO’s. Retirement saving is a classic example for such scheme. In most cases, the benefit is frontloaded and provided in the time of action – the initial savings. Uploading the benefit may be required in order to generate an effective incentive. The long time gap between the action and the production of the social good would make a benefit provided at the end of the term ineffective, for both economic and behavioral reasons mentioned earlier. Frontloading the benefit causes a problem in cases in which the public good hadn’t materialized, but the individual has already received the benefit. Under an *ex-post* subsidy regime the individual needs to return the benefit he received. The benefit is given on grounds that the individual produces a public good. Since he had not actually produced a public good he does not deserve the benefit he received and thus should return it. Yet the possibility one might have to return the benefit may also undermine the scheme. Economically, it lowers the value of the benefit limiting its uses if it might have to refunded. Additionally, on both economic and behavioral grounds, imposing a payment may signal that the payment is a penalty, and thus further deter individuals from entering a situation in which they may be penalized.

*b. Justifying the Application of the Savers’ Credit Ex-ante Subsidy From an Ex-post Lens*

The third justification highlights how the ex-ante regime of the SP, has an ex-post element that justifies its application over SC. It is true that retirement saving is a significant public good, but it is not the only public good. General Saving of low-income earners is also a public good to some extent and justifies subsidization even if funds never had the potential to materialize to savings for retirement. The level of any kind of savings among low-income earners is extremely low. Carney and Gale reveal that a third of the population has zero of negative liquid assets.

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139 Additional possible examples: Jury duty, training for jobs for which there is a market failure, and maybe even tax benefit for NGO’s

140 In some cases there is backloading, such as in Roth IRA accounts, but in those cases the agent has also the choice to frontload the benefit (conventional IRA accounts).

141 Supara.

142 See supra n. 3

143 See supra n. 3

Hugget and Ventura find that the average saving rate among individuals who earn half of the median income or less is negative.145

There are four aspects in which general saving is a public good. One, its stabilizing fiscal value of lowering consumption and increasing investments. Government may find it desirable to have a higher saving rate than that desired by individuals, due to macroeconomic considerations that a higher saving rate will make the economy stronger in the long-run.146 In other words, saving rate creates a positive externality and in this sense is a good. It maintains the two conditions that Samuelson notes for qualifying as a public good: non-rivalry and non-excludable. The strengthening the macro elements of the market is a non-rival: one individual’s benefit from the strength of the market does not come in expense of any other individual. It is also non-excludable: it is impractical to bar an individual from benefiting from the markets’ strength.

The second, is the effect of savings on the long-term welfare of low income earners. Capital formation for low 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 these individuals long-term welfare, the same behavioral and wide-sense rational reasons that prevent saving for retirement may be applicable also to short term savings. Similarly to retirement saving, there might be a justification for the government to adopt a paternalistic approach: Individual’s decisions regarding saving, may generate a negative externality on society. Not having any short term savings, may increase in the long-run the dependency of the individual on society.147 If enhancing the welfare level of low-income individuals is a public good,148 as a consequence increasing their saving rate should also constitute as a public good.

The third reason is that in many cases the pre-retirement consumption the savings are used for, may have a significant post-retirement consumption elements. Starting from the purchase of a home, but also the purchase of a car, furniture etc. Anything purchased that its depreciation in value over time is relatively low, may most likely leave some value to be consumed post-

146 I.M.D Little and J.A. Mirrlees, PROJECT APPRAISAL AND PLANNING FOR DEVELOPING COUNTRIES 34 (1975). It should be noted that 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 a additional version of the argument that saving is a public good due to the fact that it has social value that is higher than the value of saving for each individual, 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 would consume less. Thus one’s saving increases the utility others derive from consumption).
147 Carney & Gale, supra n. 144
148 See Friedman, supra n. 4
retirement. Furthermore, some types of consumption may enable the individuals to replace other types of consumption that are more expensive over time. An individual may have purchased through his savings a car that although costs thousands of dollar is a perfect replacement for his expenses on cabs that overtime surpass the price of the case significantly. An individual may save to buy a juicer that although costs hundreds of dollars, overtime it enables him to save the additional hundreds of dollars he would have spent on purchasing Tropicana. Under the assumption that retirement saving is a public good, saving that enables purchases of products that their consumption will extend way after retirement also constitute partially a public good.

Offering an *ex-ante* subsidy regime for retirement saving schemes may assist in circumventing the elimination of option value that accompanies most retirement saving schemes. I argued that circumventing the option value feature may provide a solution for the SC enigma. It can enhance the participation of low income individuals in retirement saving schemes and increase their savings for retirement. While intuitively an *ex-ante* subsidy regime seems an obscure form for a subsidy, I have illustrated the general reasons why it should be adopted: shifting risk of materialization of public good to the government and a considerable time gap between the action and the materialization of the public good. I have suggested a specific form of an *ex-ante* subsidy regime in the context of retirement saving: The Savers’ Premium that pays low income savers’ a premium on the amount saved till the individual reaches retirement. In addition to the conventional justification for an *ex-ante* subsidy regime, the SP can be justified through an ex-post lens: short-term savings of low-income earners are also a public good that merits a subsidy. The central justification for SP is its ability to incentivize retirement saving without eliminating option value of the resources saved. Besides this major advantage of SP over SC, it exhibits other advantages that I will now turn to analyze in the next part of this Article.

IV. **ADDITIONAL ADVANTAGES OF THE SAVERS’ PREMIUM SCHEME**

The central justification for the SP is its feature that it incentivizes retirement saving without imposing any commitment on the individual and without eliminating option value of resources. While this is the central justification for the SP, this unique scheme has other significant advantages over the SC and similar retirement saving schemes that this part will now turn to discuss. The SP has four additional significant advantages over SC. First, it tailors more accurately the private benefit it provides to the public benefit generated. Second, its greater ability to include low-income individuals with no tax liability that the SC neglects. Third, in neutralizes behavioral effects towards punishment and myopia.

**A. Greater Inclusion of Low-income Individuals with no Tax Liability**

One of the central concerns with the SC, its exclusion of the very lowest income earning individuals with no tax liability. Because the SC function as a non-refundable credit, it offers
no incentive to save for retirement for low-income earners that due to their extremely low income, have no tax liability to start with. Their exclusion is especially troubling, because both the need of them saving for retirement and the intensity of the incentive to induce them to save are even greater.

The Initiators of the SC were aware of this problem, and the initial SC scheme included a refundable credit to low-income earners with no tax liability that save for retirement. The main impediment for an implementation of the SC that includes a SC is its potential for creating budgetary uncertainty. Due to the significant government benefit that is given to each contribution, a spike in the level of contributions could have a significant impact on governmental spending.

A SP scheme can ameliorate this problem of uncertainty regarding governmental spending, by providing better control for government over its spending for incentivizing retirement savings. As noted above, the SC frontloads the entire 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 only in a number of many years. Furthermore it essentially provides a lump-sum for such contributions, which are especially bumpy in their impact on the budget.

The graduation of the SP, enables the government to maintain more control over its spending on incentives for retirement savings, enabling it to be more responsive both to changes in levels of retirement savings and changes in the government’s budgetary constraints. Essentially, the SP spreads the benefit provided by the SC over several years. Spreading the benefit over these years, enables the government to react to changes in the level or retirement savings. If there is a general increase in retirement savings that reduces the marginal social value of saving for retirement, government could reduce the premium that it pays for contributions made in subsequent years. Similarly, if government faces sudden budgetary constraints it could reduce the premium it pays for past contribution in order to decrease its expenses. Under any policy including the SC it is possible to react and reduce future expenses, but in contrast to the SC and similar schemes, the SP enables to reduce benefits paid also for contributions made in the past.

This step of reducing benefits provided for past contribution may seem problematic: retroactively changing the benefit that was supposed to be provided to individuals who made contributions to their retirement accounts. Under the SP this should not be bothering at all: just

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like individuals weren’t committed to saving till retirement, and had the option to opt out with no strings attached, also the government has the option every year to opt out of the arrangement of the SP. It is a symmetrical relationship. In other words the SP feature of maintaining the option value for individuals, may be valuable also for the government, enabling it a symmetrical option to opt-out which decreases the budgetary risk that accompanies such an expensive scheme. The governments’ option to opt out in any point of time under the SP, may enable it to expand the scheme also to lowest income earners. Providing them a cash premium that is not conditioned in having a tax liability that is equivalent to a refundable tax credit, incentivizes these individuals to save for retirement as well.

In addition, the SP may enable to reduce the overall benefit paid, because it can target more accurately the low income earners that are in need for enhanced retirement saving. In contrast to the SC, that provides the full benefit at the time of contribution according to the individual’s socio-economic status at the time of contribution the SP can be more responsive to changes in the individual’s socio-economic status. As a result that SP can refrain from providing the premium for funds contributed in the past as soon the individual passes a certain socio-economic threshold. This can save sizeable amount of resources. Assuming there is a significant level of social mobility of individuals that needed the additional benefit in the time of contribution, but a few year later their income has substantially increased and thus do not require the benefit in order to incentivize them to save for retirement.

Lastly, the SP applies to many individuals overtime, and thus even if one does not have income in the present but may have significant income in the future, the SP enables to smoothen the benefit according to income.

B. Neutralizing Behavioral Effects of Punishment and Myopia

The Second Part of this Article has 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. I argue that the SP could overcome more effectively than the SC two major biases: the punishment bias and myopia.

1. Penalty Bias

As noted above in section II, the SC is accompanied with a penalty on early withdrawals. This is a necessary feature of the SC—otherwise individuals will take advantage of the scheme: deposit a sum into a retirement account, receive the credit and withdraw the sum right after.

Behavioral studies have exposed the penalty effect: how the framing of a payment as a penalty enhances significantly individual’s aversion from performing the penalized activity, even when the payment irrelatively low. Patricia Funk demonstrated how lifting an insignificant fine as a result of lifting a legal obligation, may cause a significant increase in the performance
of the sanctioned activity.\textsuperscript{152} She examined effect of the abolition of the voting duty and the symbolic fines that accompany them on the voting behavior in Switzerland. She found that although the fine itself is only symbolic, its cancelation had a strong effect on voting behavior, and caused a significant decrease in voting turnout rate.\textsuperscript{153} A penalty may encompass a social sanction on top of the financial sanction. As studies have demonstrated, the social sanction element may even have a stronger effect than the financial sanction, especially in establishing long lasting norm even after the sanctioning mechanism has been removed.\textsuperscript{154}

One of the strongest findings of the behavioral effect of the framing of a payment as a penalty, has been exposed in the context which is the focus of this paper—retirement savings. Leonard Burman, Norma Coe, Michael Dworsky and William Gale found that the framing of a payment as a penalty as opposed to a conventional tax has a significant impact on behavior,\textsuperscript{155} Burman et al. have examined the tax treatment of pre-retirement lump-sum distributions. They have focused on how a tax and its framing as a penalty affect the probability that the lump-sum distribution would be rolled-over to a retirement saving account. They have used the policy change caused by the 1986 Tax Reform Act as a natural experiment to test this question. The 1986 Tax Reform Act has imposed a tax on cash-outs by treating it as ordinary income and has also imposed a 10 percent penalty on cash-out of individuals 54 years old or less.\textsuperscript{156} Burman analyzed the rollover rate before and after the Act. They found that in age cohort of 55 and over although the average effective tax rate has increased from 11 percent to 13 percent, roll-overs have not only increased, but even decrease.\textsuperscript{157} In contrast, in the age cohort of 54 and less the effective average tax rate including the penalty has increased from 7 percent to 29 percent and also the rollover rate has jumped from 21 to 41 percent.\textsuperscript{158} This data enabled them to compare the effect on role-over of the penalty component in the 54 and less age cohort in comparison to the conventional tax component, especially in the 55 years and above cohort. When they ran a regression on their data, they have found that 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.\textsuperscript{159}

\textsuperscript{153} Id. at 864
\textsuperscript{156} Id. at 864
\textsuperscript{157} Id. at 874
\textsuperscript{158} Id.
\textsuperscript{159} Id. at 880
The Burman et al. study clearly demonstrates the behavioral impact of the penalty element particularly in the context with which this Article is concerned with: retirement saving. While in the lump-sum distribution context, the penalty aversion phenomenon incentivizes individuals to keep on saving for retirement, in the SC context penalty aversion may prevent individuals to enter the scheme and save for retirement. Entering the scheme exposes an individual to the possibility of being penalized in case of an emergency or crucial need in which he will need the funds.

The SP offers an equivalent incentive to save for retirement as the SC, but without the deterring effect of a looming penalty. As a consequence in the overall, the SP may have a greater ability to attract low-income earners to save for retirement. The possibility of being penalized that accompanies the SC, has been eradicated in the SP. It is true that there may be many individuals who start out saving for retirement but will bail out early due to the fact that there is no penalty on withdrawals. Yet the studies discussed above and especially the Burman study exposed the strong and powerful behavioral effect of penalties that will deter many individual from participating in a scheme that exposes them to a penalty. Eradicating the penalty that bars individuals from participating in a retirement saving scheme may more than offset the decrease in retirement saving due to the early-withdrawal option.

2. Confronting Myopia

One of the major behavioral biases mentioned above that curtails retirement saving is myopia. In the naïve myopia mentioned above, the individual attributes excessive weight to sooner as compared to later consumption. The excessive weight seems to be a factor of the time distance. As the valued event is more distant in time, the divergence from its real value is greater. In the motivation myopia mentioned above it is a bit more complicated. It is possible to understand the myopia on the motivational level 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. While the key factor seems to be whether the option is available for the individual in the present, availability might be a function of time: events that are not that distant in time may seem more ‘available’ to the individual, and he may exhibit less motivational failures as event are closer in time. While the intensity of both types of myopia may be a function of the time frame, it seems reasonable that the distance in time will have a greater impact on the type of naïve myopia.

Assuming that the distance of the horizon is a key factor to the level of myopia exhibited, especially in the case of naïve myopia, if a scheme makes the individual focus only on the close in time horizon the myopia exhibited should decrease.

Looking through the horizon lens, it seems that the SP should have the ability to mitigate the myopia effect, especially the naïve myopia effect. While the horizon which the SC focuses on is the year of retirement, which is the point in time in which the individual will be permitted to consume the resources saved in the scheme, the SP has no such focus. The SP doesn’t not have to make any reference to the year of retirement. There are no resources that ‘open up’ for consumption only in that point of time. The SP shifts the focus on the horizon of the distant
future to the horizon of the immediate future—the next unit of time. While one may argue that myopia applies to any future point in time, as we noted above, data demonstrates that myopia is a nonlinear function of time. As the event being evaluated is more distant in time, the divergence of the estimated value of the event from its appropriate value, grows exponentially.

The comparison between SC and the SP regarding the effect of myopia on these schemes may be more complicated. Even if one accepts that argument above, that myopia increases as the time horizon is more distant, it is not clear that its effect on SC is greater than its effect on SP. Even though that the SP 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 private benefit provided is *front loaded* and provided at the time the contribution is made (or the same financial year). This in contrast to SP under which the benefit provided to the individual is spread over many years, till retirement. Thus in the agent analysis of the benefit each of the scheme provides, he is much prone to myopia in evaluating SP that in his evaluation of SC.

It is true that the benefit of the SC is closer in time than the benefit provided through the SP. Yet the benefit in only one element of the scheme and not the most important element. Even though the SC frontloads the benefit, the time frame for assessing the scheme has to be the time range from the present till retirement. The event with the strongest economic impact on the scheme takes place in the point of time of retirement: the time when the savings are available for consumption with no sanction. In contrast, the proper time frame for assessing the SP scheme is only the near future. There is no difference between any specific time period, and nothing special about the point in time of retirement under the SP.

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

SC and similar schemes for incentivizing retirement saving, provide an equivalent tax benefit to deposits made into retirement saving accounts independently of when they were made. Apparently equal treatment seems reasonable: Why should there be any differentiation between equal contributions for retirement? Yet, a deeper analysis will reveal that there are strong grounds for differentiating between contributions made in different points of time.

Let us take two individuals making a contribution of $100 toward their retirement: Al and Cal. Al is 20 years old and Cal is 59. While Al and Cal’s contribution is equivalent, there is significant difference in the actual retirement benefit they have each enabled by their contribution. A substantial share of the actual resources one will have at his disposal on retirement is generated by the interest or capital gains that have accrued to the individual’s original contribution. If we assume that the average annual return on capital is 5 percent, the savings of Al will accrue to a sum of $687 when reaching retirement while Cal’s will accrue to a mere $102.5. Even though Al and Cal contribute an equal amount, there is a significant difference of $585.5 in the retirement saving each of their contribution generates. This analysis seems to go against the practice of treating each of the contributions equally, because of the distinctive level of public good the two contributions generate.
While it seems that we provide a similar treatment to the two contributions, this is not actually the case. Taking into account the timing of the benefit relatively to retirement changes the picture. Although Al and Cal receive the same amount as a credit, Al receives the credit 39.5 years before retirement, and Cal receives it half a year before retirement. Thus Al receives the credit 39.5 years before the public good actually materializes—consumption of goods during retirement, while Cal receives the same amount, but half a year before the materialization of the public good. When taking into account the time value of money (once again, assuming a 5 percent annual interest rate) and assessing the value each received in time of retirement, Al received a value of $343 and Cal received a value of $52.5. Thus when taking into account the time value of the benefit provided the value of the private benefit seems to be in straight proportion to the value of the public good. While the public good Al has generated is almost 7 times bigger than the one generated by Cal’s contribution, the present value of the benefit in time of retirement that Al receives, will also be almost 7 times higher than the value of private benefit Cal receives.

This section has presented additional advantages of the SP, besides its central feature of eliminating option value. From a political economy perspective, I have highlighted the greater ability of the SP to expand the application of the scheme to include also lowest income earners with no tax liability. I argued that the SP may be more effective in curtailing the behavioral biases that curtail retirement savings, especially myopia and the punishment bias. I have also raised the possibility that the SP could be more efficient than the SC in tailoring the private benefits to the level of public good generated.

While the SP seems to have additional advantages besides the central advantage of maintaining option value for saver, it raises a few problems and possible objections that I will know turn to discuss in the last part of this Article.

V. POSSIBLE OBJECTIONS TO THE SAVERS’ PREMIUM

The SP offers an innovative approach toward retirement saving schemes. Its unique structure enables to circumvent the elimination of the option value of funds. This article has elaborated much on the importance of this feature of circumventing the elimination of option value. In addition, the article has pointed to additional advantages of the novel structure to the Savers’ Premium. While the unique structure of the Savers’ Premium does embody these advantages, it is also accompanied by some serious concerns that I will now turn to address. The first, is the adverse effect of the gradual structure of the SP that might weaken the incentive to participate in the scheme. The second, is the administrative costs of the SP: it requires the participating individual to have some kind of government accounts and requires the government to constantly intervene in these accounts. The third, is the possibility that the scheme will waste government funds. Although this point has been partially addressed earlier on in the paper, it deserves more thorough consideration.

A. The Adverse Effect of the Savers’ Premium Gradual Structure
The Graduation of the Savers Premium scheme enables it to circumvent the elimination of option value. While this attribute of 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 amounts 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, that can even fully match the sum he contributed. There is evidence that one large sum is more effective in effecting behavior than when it is chopped up to a few smaller sums.\textsuperscript{160} An additional source that may turn a one-time choice for a one-time lump sum to be more attractive for the individual, than a chopped up credit, is the tyranny of small decisions phenomenon. The tyranny of small decisions raises the possibility that an individual might react differently to a bundled up benefit on which the individuals makes one choice whether to take or not and a benefit that is chopped up to many small units in which the individual has to make several distinctive choices for accepting each one of the small benefits. 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. The tyranny of small decision could be both viewed also in terms of a behavioral bias, and as a rational decision making phenomenon in the wide sense. From the behavioral perspective the lump sum decision can be viewed of having greater saliency, 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 in broken up to many small decisions, the costs involved with decision making may out weight the benefit from each of the decisions and thus the agent will not make the decision or ignore the need to make a decision. When the decisions are bundled up to one decision, the decision costs do not out weight the benefit, and thus the individual makes the proper decision.

There are three main replies to this critique. Firstly, there isn’t such difference in the graduality of the SP in comparison to the SC. Secondly, the existence of such behavioral effect of the graduation of the credit is questionable. Thirdly even if such effect does exists, it is doubtful whether it is strong enough to cancel the positive effect of the scheme: primarily maintaining the full option value of resources in addition to the other advantages mentioned in Part V. I will elaborate on the two first replies. I have elaborated regarding the third reply and the various other advantages of the SP, so I will not address it further here.

Firstly, the SP is not necessarily more gradual than the SC. It is not obvious that the Tyranny of Small Decisions critique is much more relevant to the SP than to the SC. The assumption that under the SP the decisions are fractured and that under the SC the decision is bundled up, is not necessarily true. The SP is more bundled up than what it seems and the SC is more fractured than what it seems. It is true that under the SP, the agent has the option in every minute to withdraw the funds, thus in order to be left with funds for retirement he has to
constantly decide to keep up saving. Yet, this is not much different than the situation in the SC, where the agent also has the option in every point in time to withdraw the funds for some price. Just like the SC is viewed as one a one-time-decision regarding the default, and the possibility to stray away from the default is not counted as a decision not to stray away, the SP 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 away from that decision at no cost.

Secondly, even if on accepts that the graduation of the SP is significantly stronger, the phenomenon of graduation 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.\textsuperscript{161} Jonathan Freedman and Scott Fraser have found in their study that ‘once a person has been induced to comply with a small request he is more likely to comply with a larger demand.’\textsuperscript{162} In their experiment they found when people who have been asked to put a small sign of safe driving, were much more likely to put a very large sign of “Drive Carefully” than those who have not been requested the small request. The effect of putting a ‘foot and the door’—having the individual comply with a minor request—on individual’s compliance with more demanding requests, reinforces the usage of graduation in order to induce an individual to engage in the most demanding activity. One would have hypothesized that adding a phase in which the individual is requested to perform a more limited task, may shift individuals who potentially would perform the demanding task to be contented with the less demanding task. Yet the findings of Freedman and Fraser have demonstrated how graduation may not only not decrease the performance of the most demanding task, but may even enhance it.

\textbf{B. Administrative costs of the Savers’ Premium}

The SP scheme seems to entail prohibitive administrative costs in comparison to the SC. There are two main sources for the high administrative costs that accompany the implementation of the SP. The first excessive level of governmental involvement that the scheme requires. The Second is its need for a unique administrative structure for its application. The increase in the administrative cost gives rise to its impracticability.

I will start with the first source of the prohibitive administrative costs of the SP in comparison to the SC. The SC does not require constant government involvement, because it mainly focuses on one event—the decision to contribute for retirement saving. If the individual has made a contribution, he can take a tax credit the same year of making the contribution, and it doesn’t require any additional government involvement. In contrast, the SP requires constant government involvement. The credit to the contribution is given annually over a long period of

\textsuperscript{161} Jonathan L. Freedman and Scott C. Fraser, \textit{Compliance Without Pressure: The Foot in the Door Technique}, 4 J. PERSONALITY & SOC. PSYC. 195 (1966)

\textsuperscript{162} Id..
time of several years in average. The government has to check these accounts every year, to see if the individual still deserves the credit. Needless to say that this government involvement is costly.

The second source for the SP significant administrative costs is the institutional dimension. The SC 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 SP cannot be administered through the conventional tax system. The credit is not added to one’s tax liability and just changes the sum of the individual’s tax liability that had to be reported to the tax authorities in any case. It has to be added to his retirement account—an additional balance that a government agency has to be involved with besides the balance of one’s tax liability. Furthermore, the relevant agency for the administration of such accounts, is not the tax authorities, but the social security administration. Especially due to the fact the scheme is designed to apply to individuals with no tax liability.163

Although in both of these dimensions it may seem that the administrative costs of the SP is significantly higher, I will argue that actually this is not the case. The gap in government involvement isn’t as large as perceived. It is true that under the SP the credit is accrued over a long period of time, but it is accrued in the mode of an automatic pilot: a certain percentage on the amount contributed under the scheme. There is no need to audit the account or the individual over this period of time: also under the core model of the SP the income level criteria is only relevant at the time of the initial contribution. In the previous section it has been suggested that under the SP it is possible to condition the credit also in the following years upon meeting an income-level criteria. No doubt that this suggested version of the SP would require considerable government involvement in the following years. Yet it is not required to accept this version in order to implement the SP— it was only mentioned as a possibility that opens up only in the case of the SP. If the administrative costs for such a feature of the SP is too high relatively to the additional benefit it generates, the core SP could still be implemented, with implementing this additional possible feature of the SP.164

The second possible source mentioned for the prohibitive administrative cost of the SP is based on the notion that the administrative costs of the tax system are relatively low. Studies show that the cost of raising revenue is approximately 0.5 percent from the revenue raised.165 This cost for raising funding for public goods is fairly low, especially in comparison to the costs

163 The discussion regarding the EITC and administration through the tax system or through the SS. Maybe should be above the line.
164 Explain why the administrative costs of this feature aren’t too high.
165
of NPO’s for raising revenue which is estimated at 40 percent from the resources raised.\textsuperscript{166} Other studies have exposed the strong social norms of tax compliance which enables to raise significant revenue with a minimal expenses on audits.\textsuperscript{167}

While it does seem true that the tax system is a fairly efficient in raising revenue, it is questionable whether the tax administration encompasses its efficiency also in its role in spending schemes. This question regarding the efficiency of the tax system in executing spending schemes has been raised regarding the tax system primary spending scheme: the EITC. Many have supported such schemes that encompass a tax-transfer integration, arguing that such integration enhances efficiency and reduces administrative and bureaucratic costs.\textsuperscript{168} Ann Alstott has questioned the view that integration of pending programs into the tax system increases the efficiency in the implementation of the program.\textsuperscript{169} Execution of spending programs through the tax system, and accompanied by various costs. Spending and welfare programs have different techniques in measuring income that the measurement of income through the tax system.\textsuperscript{170} This differentiation could be justified based on the distinctive goals of the tax system and that welfare programs.\textsuperscript{171} For example, the trade-off between a comprehensive definition of income and the administrative costs of such differentiation might be different for the tax and transfer systems.\textsuperscript{172} In addition, spending programs may be much less concerned of income and more concerned in direct measurement of need. This is true also in respect to the SC—the individuals we may want most to incentivize to save for retirement, aren’t necessarily those with the lowest income. There may be other factors that may be even more relevant such as the question of whether the individual owns his house, and his general consumption level that might be more connected to his geographic location than to his income level. Alstott points out to an additional cost of implementing spending schemes through the tax system: less responsiveness, due the long measurement intervals of the tax system—annual income.\textsuperscript{173} This cost of integration with the tax system is less relevant to the SC. In contrast to other spending programs which attribute high value to responsiveness, the long term goal of retirement saving make it less sensitive to responsiveness. The last cost that Alstott notes is the low participation rate in program administered through the tax system. Participation in the program requires compliance with tax authorities in filling out tax forms. The compliance rate

\textsuperscript{168} Id. at 564-65
\textsuperscript{169} Id. at 566-67
\textsuperscript{170} Alstott, 567
\textsuperscript{171} Id. at 579-580
is especially low among individuals with low incomes, and thus a programs that is administered through the tax system excludes these non-complying individuals from participating in the program. In the case of SC the exclusion of these individuals may be especially costly, because these may be the individuals that it is most important to incentivize to save for retirement. Noncompliance may be a proxy for a non-disciplined individual, which is a proxy for a low retirement saving rate.

Similarly to Alstott, also Weisbach and Nussim have limited the general claim that implementation of spending programs through the tax system is more efficient due to its lower costs. Weisbach and Nussim have generalized Alstott analysis, and argued that the question whether implementation of a spending program through the tax system is more efficient depends on the balance between the costs and benefits of coordination on the one hand and specialization on the other. The benefits of coordination are apparent and more straightforward—saving on administrative costs by merging two system into one and information sharing. Yet there are also significant benefits of specialization: enabling to monitor more effectively that contributions are actually made, if they are made to separate accounts and not only reported on the tax returns.

Having governmental retirement accounts in not something unheard of. The existing federal scheme of MY RA is based on having such federal retirement account. The scheme suggested in this paper will not impose a significant administrative burden on top of such an existing scheme. It will merely utilize similar accounts and apply a premium to the balance in such accounts.

E. The Savers’ Premium as a Waste of Government Funds

The fundamental feature of the SP is that it provides benefits to individuals, even if eventually these individual spend the resources in the near future and do not save for retirement. This seem to be a waste of government funds: the government pays these individuals even though they haven’t generated the desired quasi-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 quasi-public good of retirement saving, from an ex-post 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 still generated a quasi-public good to some extent—savings by low income individuals.

174 David A. Weisbach and Jacob Nussim, The Integration of Tax and Spending Programs, 113 YALE L. J. 955, 985 (2004)
175
These two responses are problematic and do not abate the cloud of waste of governmental funds that is hovering over the SP. The problem with the first response is that is not necessarily true that that the individuals who have saved for the short term and then pulled out 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 these 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 SP will increase the quasi-public good even of short-term savings. Its central effect may be in shifting savings from regular saving accounts to the savings accounts that are associated with the SP, without effecting the overall amount of savings of low-income individuals. Thus the SP 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 do expose genuine problems with the SP. Both of these point rest on empirical assumption regarding the SP: how many of the potential participants in the SP have no intention to save for retirement, and how many of them will use the SP solely for shifting funds from regular saving accounts to SP.

These empirical questions are surely important for designing the exact benefit level of the SP and the scope of its implementation in terms of individuals’ level of income. I hope to conduct studies in the future that will examine these empirical dimension regarding the implementation of the SP. Yet these empirical questions may be less important than what they seem. There are a few reasons why the SP should be implemented even if the rate between individuals who have no interest to save for retirement or who will solely shift savings from one account to the other is high compared to the individual which the scheme is designed for—those who have a general interest in saving for retirement and those that the SP will actually increase their overall savings. Even if individuals have no interest in saving for the long run, and are willing to save for the short run for the additional premium, 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 strong reason to believe that they will keep on saving in the following years, even if they don’t attribute any special value to retirement savings. Even if there are individuals that may be willing to save only for a limited number of years, they are still in the pool of individuals that play it by the ear, and as more of these individuals make the decision to save in the first year there are greater chances that they will reach retirement with these savings. If there would be a way in which it is possible to detect the individuals for which there is no way that they will save after the short run, it would have been more efficient to exclude them from the pool. But because it is not possible to exclude them, they should be counted as part of the pool that their short term saving might endure till
retirement and thus should be regarded as generating an ex-ante expectancy for retirement saving.

Also the phenomenon of account switching, should not be such a great concern for SP. First, data shows that there aren’t much low income individuals with short term saving, so the potential for such phenomenon is quite limited. Second, even if the SP does make individuals shift accounts, the error costs of providing these individual with benefits that they should not have been entitled of, is quite limited. Providing these low income individuals with a propensity to save additional resources, would most likely still increase their savings: it increases their dispensable income, an increase that for an individuals who is currently saving is likely to transform to additional saving.

The ability to manipulate the scheme is not unique to the SP: as scholarship has demonstrated, these manipulations could be executed through the SC—it might also not increase the overall saving but only cause ‘account shifting’. Even if there are some manipulations to which only the SP is exposed, there are manipulation that only the SC is exposed, such as the ability the deposit and withdraw funds immediately, with paying only a minor fine.176 In this sense the SC is more sensitive to manipulations, due to the fact that the individual could extract the full benefit for retirement saving, while under the SP only a fairly limited portion of the benefit could be extracted.

VI. Conclusion

The current scheme for incentivizing retirement saving—the SC—is ineffective with 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 I argued causes the ineffectiveness of the SC, and has been over looked by previous scholarship: the elimination of option value of resources that accompanies participation. The implementation of the SC is supported by a sanction on individuals who withdraw funds before retirement. Due to the fact that most low income earners have no saving cushion available, forfeiting the option to make use of the resources 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 SP. Under the SP, the individual receives a premium for every year he saves a certain amount of resources with no strings attached: he can withdraw the funds at any point in time at no cost. The SP seem problematic, by entitling individuals to receive a benefit in a retirement saving scheme, even though no resources have been saved for retirement. This Article justifies this feature of the SP by a novel perspective on the subsidization of quasi-public good: the ex-

176 Explain also why fine cannot be augmented (greater option value loss)
ante prospective. According, to the ex-ante perspective, a benefit is provided to individuals who have increased the expectancy for generating a public good or quasi-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 ability to circumvent the elimination of option value is the central justification for the SP, yet this article has emphasized additional advantages of the SP over the SC. The SP is better suited to include low income individuals with no tax liability; the SP 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 SP raises a few serious concerns: the high administrative costs of its implementation compare to the SC; the adverse effects the graduation of the credit may have on incentivizing individuals to save for retirement; the waste of public funds that the ex-ante structure of the SP may arise. I have addressed these concerns, and while acknowledging that there is some merit to these critiques, I have argued that the problems they arise are much more limited than it seems.

Enhancing retirement savings of individuals is one of the most important challenges modern governments face in this aging world. I believe that the scheme I have offered in this article—the SP—opens up a new effective venue for incentivizing retirement saving, which circumvent the problems exiting schemes arise. The core feature of the scheme, 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.