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Choice overload paradox and public policy design. The case of Swedish pension system

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Abstract: In this paper we focus on an adverse effect of extensive choice widely known as 'choice overload'. We draw on the case of Swedish funded pensions for illustration and analyze consequences of the design that allowed for maximizing the choice set. The analysis shows limitations of employing the rational choice approach to the real choice decisions biased with common psychological factors and demonstrates that government's responsibility for the privatized pension system does not end with the design. We also emphasize the need for a decent default option, which would mitigate socially harmful results of adverse behavior effects like procrastination, status quo bias or abstaining from choice. After all, privatized pension systems still belong to a sphere of public policy.

Introduction

Decisions of choice are one of the key issues of economics. Sound choices contribute to increased welfare of groups and individuals, determine efficiency of economic endeavors and are essential for society's long-term economic development. In psychological terms enjoying the possibility of choice provides a sense of personal control over one's life and fuels intrinsic motivation for purposeful actions leading to increased task enjoyment and performance. The choice itself reassures our perception of environment control and self-efficacy stemming from our very biological condition (Leotti et al. 2010). Many choice options are thus usually presumed to be desirable and beneficial. Yet as recent literature suggests, this belief has serious limitations. An overabundance of choice possibilities can lead to adverse effects both in consumption decisions and life satisfaction (Schwartz 2004). In contrast, constraints imposed on choice sets facilitate the process of decision making and increase subsequent satisfaction.

This choice dialectics had seemed so far rather detached from public sphere as the state usually provided beneficiaries of public policies with very limited choice compared to the amount of goods and services offered by markets. However, the recent turn in welfare policies assumed that they should become more choice oriented just like critics of public monopolies and standardization demanded. This way what seemed to be an exclusive issue of consumer choice and marketing strategies entered the arena of public policy (see Lynch and Zauberman 2006). As a result the questions of 'choice architecture' have become increasingly important as well as the need of rethinking government's role and responsibility when it comes to designing public policies of marketized welfare state (Thaler and Sunstein 2009).

This paper aims at broadening our understanding of the choice overload phenomenon by examining the case of Swedish pension system. It illustrates the fact that privatization of public sphere brings not only benefits, but also market failures that used to be addressed by traditional welfare states. We also show the shortcomings of employing the principles of rational choice into real world situations like the choice architecture of pension savings system. On this background we point to the consequences of this phenomenon being cast on government's role and responsibility in a democratic state.

The paper is organized as follows. Second section provides brief information on the methodology of research. Third section reviews the latest literature on choice overload sketching the current state of the art. Third section discusses the question of choice in modern welfare state

policies focusing on pension systems. Fourth section presents shortly the general design of the Swedish pension reform. Fifth section scrutinizes on the Swedish premium pension system and observed overload effect. Final section concludes.

The methodology of the research

The methodology of this research draws both on literature study and data analysis which is reflected in the paper's structure. Theoretical sections review the latest literature on the choice overload effect published mainly in journals committed to consumer research and psychology of economic agents. This way the model of *homo economicus*, which is usually employed in economics, can be contrasted with empirical research coming from outside pure economics. The subsequent discussion on introducing choice into public policies is based on this approach as well.

The sections devoted to the Swedish case of premium pensions draw on empirical material. We use the latest data published by the Swedish Pension Authority which include data statistics to be found on Authority's webpage (www.pensionsmyndigheten.se) and official publications on pensions (inter alia annual pension reports named *Premiepensionen – Pensionsspararna och pensionärerna*). Unfortunately since 2012 the annual reports are published in shorter form and thus some data is missing. We also make use of official government reports and directives evaluating the performance of the pension system and recommending desirable changes therein.

Choice overload and the limits of *homo economicus*

The standard economic model of rational choice is based on a number of simplifying assumptions (see for example Schotter 2009). Economic agent is, for example, aware of all of the choice options that are available to him and displays no cognitive limitations in processing and ordering them. Driven by expected utility maximization he takes decision that are *always* optimal given existing constraints. His preferences are stable and do not depend on context. Being a self-oriented actor, he does not take into consideration utility of others nor existing social structures. However, this view of an economic agent, a fictional character usually referred to as the model of *homo economicus*, is an abstract construction designed for a specific kind of scientific reasoning, preferably to be employed in formal modeling, and modern economics is rather well aware of this caveat (O'Boyle 2007; Thaler 2000). As a matter of fact, a whole branch of economic science – behavioral economics – has been developed in order to

trace the inconsistencies of this model with respect to reality searching why people behave differently from what the model predicts and what it means for economic theory and praxis (see Wilkinson 2008 for a comprehensive introductory text). So even though some scholars argue that models of rational choice are nowadays flexible enough to incorporate the critical insights and still prove to be useful in explaining economic phenomena (Gilboa 2010), one has to be aware of their limitations for they were not designed to reflect the reality of human nature, but for the sake of particular scientific cognition.

An example of phenomenon that the theory of rational choice fails to explain is the situation in which an agent faces excessive choice options which actually deter him from making an informed and rewarding choice. In effect, he does not maximize his utility, because he falls short of being a perfect calculating machine. This stands in opposition to the claim that a large number of options to choose from contributes to an increased welfare of individuals. Following the logic of standard economic model, for a numerous population of individuals holding various preferences, the greater set of choice, the better. In this situation each and every individual has the possibility to examine the choice set for himself and choose an option that fits him best leading in aggregate terms to the lowest general welfare loss possible. Preferences of most people are met and thus the highest utility for all is achieved. The relation between preferences, choices and individual welfare is, however, not so straightforward. First, satisfaction of interests does not have to imply increased welfare (Hausman 2012). And second, individuals facing extensive number of options have lowered motivation to choose and achieve lower level of contentment than previously expected. More choice does not have to automatically imply that people will be better-off with it (Botti and Iyengar 2006).

Recent literature has grouped negative effects of choosing from an extensive number of options under term ‘choice overload’. These effects usually include abstaining from making a choice decision, lower satisfaction derived from one’s choice and feeling of regret after making a choice. The choice overload paradox has originally derived from consumer research. In a seminal paper Iyengar and Lepper (2000) reported findings of three experimental studies in which participants made choices from a differentiated sets of choice options. They found that too much choice was a negative factor in choosing and buying products. While at first vast array of choice seemed attractive and desirable, it turned detrimental for actual behavior and decision making. Participants made more confident decisions when their choice was limited: they felt more inclined to purchase items, reported higher satisfaction from the decision made, and performed better with tasks chosen from a limited set of possibilities. Too much choice, on

the other hand, caused decision paralysis, poor decision quality and feelings of regret due to rising opportunity costs and escalation of expectations. The feelings of regret were confirmed in the studies of Sagi and Friedland (2007) who found that regret is positively related with rising number of alternatives and their diversity and of Haynes (2009) who observed that larger set of alternatives led to decreasing satisfaction from the choices made. A number of adverse effects of choice overload was also found by Vohs et al. (2008) who demonstrated that choosing among many alternatives is effortful and depletes cognitive resources leading to deterioration in self-control, stamina and pain tolerance, persistence in the face of failure, and performance in numerical calculations.

A number of earlier studies was also very critical of the rationality assumption employed by conventional models of choice, because people's ability to process information is limited and results either in third party influenced choice or in abstaining from choice. Tversky and Shafir (1992) challenged the idea that each alternative is assigned a value so that individual can choose the one with the highest rating. In the situation of conflict among the alternatives, one rather tends to defer decision, search for new alternatives, or choose the default option. Dhar (1997) confirmed these findings stressing the fact that small differences in alternatives between options increase the preference for a no-choice option. Timmermans (1993) found that when faced with increasing number of alternatives, people tend to assimilate less information on the attributes of offered options and to adopt absolute rather than relative comparisons due to the inability to process such an amount of information[1]. It has also been convincingly argued on philosophical grounds that rational choice theory works best when choice is seriously constrained (Satz and Ferejohn 1994). Agents' preferences are not a matter of individual psychology and cognition, but they rather stem from social structures and interests.

When faced with overwhelming choice people tend to defer choice explicitly. Dhar (1997) for example found that expansion of the choice set even by adding more attractive alternatives actually drove people into the no-choice option. Also, when asked to point to the features of alternatives that appeared attractive to choice makers, participants felt discouraged from committing to a firm decision. However, the possibility to choose more than one option increasingly mitigated the effect. A study by Jessup et al. (2009) identified two factors that fostered no-choice decisions. First, people avoid choice when their preferred option changes too often. And second, when time runs out. However, as Anderson (2003) points out, no-choice

[1] However, when it comes to comparing interpersonal well-being, it is the relative standing that counts, not the absolute one (Solnick and Hemenway 1998).

decision is not a homogenous concept, but may include procrastination, preference for status quo, or trade-off between effort to make a choice and expected benefits. One can also consciously wait for better options to emerge in the future. No-choice can be thus a deliberate – and rational – decision.

The decision to abstain from making a choice may involve staying at the status quo position (Samuelson and Zeckhauser 1988; Masatlioglu and Ok 2005), which stems either from a direct preference for the status quo or from being overwhelmed by choice options. This bias increases with the number of choice alternatives, which may be perceived as a rational response due to transition costs and uncertain outcomes. Samuelson and Zeckhauser (1998) argue, however, that it is rather psychological factors that discourage people from transition to better allocative positions and we should turn to loss aversion, endowment effect and psychological commitments in explaining this phenomenon.

The choice overload effect can, however, be moderated in certain circumstances and not all experiments were satisfactorily replicated when it came to report negative feelings. Scheibehenne et al. (2009) claim that the effect depends on multiple boundary conditions and interaction between several factors, so even if the choice overload effect exists it is not as robust as previously thought. The moderators of the effect can be grouped into three categories (Scheibehenne et al. 2010): assortment structure, decision strategies of individuals, and the perception of options' quality. For example specific arrangement and categorization of options, mindful decision strategies and choosers' heuristics can facilitate the process of choosing. Also Inbar et al. (2011) found evidence that regret from choosing even from a large set of option is eliminated if people have enough time to consider their choice. All this implies that there exist important preconditions for the choice overload effect to occur, but there is still no comprehensive study incorporating these factors into more general theory.

Other studies show that people actually experience the greatest satisfaction when choosing from intermediate set of choices, not too small and not too big. Reutskaja and Hogarth (2009) suggested that with increasing number of alternatives both costs and benefits rise. The difference is, however, that costs tend to escalate, whereas benefits satiate. The discrepancy between them rises leaving people less satisfied. Also, the change in perceived costs and benefits will affect the satisfaction function – the framing of options and decision does matter. Similar results were obtained by Reed et al. (2011) who linked the dissatisfaction from extensive choice with effort needed to evaluate options.

Welcoming choice into pension policy schemes

For the last three decades policies of welfare state and social security have undergone extensive transformations in many advanced countries. According to the retrenchment slogan, the state was supposed to gradually back off from providing social benefits, because the market-based alternative promised delivery of the same services, only in a cheaper and more effective manner with greater respect to citizens' preferences[2]. The state was thus supposed to guarantee that everybody, who was eligible, would be provided with social benefits or social assistance, but there was apparently no reason for the state to be the only supplier of such goods and services. It was widely believed that the previous system with public monopolies and uniformed service was inefficient, expensive and of poor quality. In effect, it was not matching the expectations of beneficiaries and offered very limited rewards for professionals employed in welfare services. Introduction of new policies was also expected to lessen the burden for public finances, reduce unnecessary administration and bureaucracy, and eliminate inefficiencies that tend to appear in the public sector.

The policy shift entailed a turn toward more individual approach to recipients; it encouraged private initiative and above all allowed for more personalized choice. However, introducing more choice into welfare policy raised a number of important issues. In principle, the expansion of choice should increase opportunities and enhance equity if we still assume that public policy should increase welfare of citizens (Le Grand 2007, Greve 2009). From this standpoint more choice can actually be largely useless if it is not possible to use it or only some recipients are able to take advantage of it. Traditional policies of welfare state utilized standardized measures for a reason. They were expected to eliminate market failures by exercising public intervention where there was no well-functioning market and by doing so reduce inequalities for the sake of public good. However, current trends of reintroducing choice can restore previous concerns if done without thoughtful reflection on how to deal with market failures that can aggravate social divisions in the long-term. One can name several conditions that should be fulfilled to minimize this risk, like wide information access, low transaction costs, right incentive structure, sound design of competition, and social trust (Greve 2003, 2009), but virtually none of them can be accomplished by mere market forces. They all require the state to take responsibility for institutional design and continuous monitoring of relevant developments in the new public-private sphere of

[2] See Winston et al. (2002) or Pierson (2006, ch. 6) for a brief survey of arguments in favor of retrenchment.

economic activity. Yet even then there is no guarantee that these market failures will be eradicated successfully.

The changes in welfare policies took place in many areas: health care, elderly care and primary to tertiary public education (see Blomqvist 2004 for developments in Sweden). However, one of the most far-reaching privatization reforms occurred within pension systems bringing up issues of institutional design and on-going governance (see Ebbinghaus 2011). Many countries adopted notional defined contribution scheme complemented with fully or partially funded individual accounts administered by private companies. As a result large streams of publicly collected funds were directed into private sector for long-term management. Reasons for reforms were numerous and its advantages highly praised. The former usually included society aging (increasing life expectancy combined with declining fertility), fiscal issues (budget deficits and rising public debt), transformations of labor markets (declining employment rates, growth of non-standard employment contracts and low-paid jobs, persistent unemployment), falling productivity of postindustrial economies, and finally changes in social life (earlier retirement, one-child family, raise of individualistic philosophy of life). New rules were expected to address at least some of these issues thanks to their impact on public finances, financial markets and microeconomic incentives[3]. For example the adoption of defined contribution principle assumed that annuities could be adjusted to the existing demographic and economic conditions so that public finances would be more sustainable facing adverse shocks. The new system would also contribute to higher economic growth through increased savings and development of capital markets.

Expected benefits concerned not only the macro level, but individuals were supposed to be better-off as well. With respect to funded accounts pension savers were granted choice that they did not have in the PAYG system. Now they could decide on their own on the allocation of a part of their savings and were granted influence on portfolio structure both in terms of bonds/stocks ratio and dispersion of risk granted by access to foreign markets. Individuals would also have stronger incentives for continuous participation in the labor market and for investments in skills and education, because the relation between contributions and benefits would be now more direct. Old-age consumption smoothing became thus more personalized and a matter of own foresight weakening its link with societal developments and inter-generational redistribution.

[3] Many of those beliefs seem, however, mistaken or exaggerated. See Barr and Diamond (2010, 2009) and Barr (2002) for more detailed elaboration and critical discussion.

The expansion of choice had its limits though. Despite the fact that the system of individual capital accounts glorified personal responsibility and initiative, it remained mandatory in virtually all cases of reforming national pension systems. Pension savers were not allowed to opt-out in order to adopt their own saving schemes or to refrain from saving at all thus taking full responsibility for their future. Leaving reasons for this coercive aspect aside, it should be emphasized that this solution implied that the state took the responsibility for designing the institutional framework of saving schemes and still bears, at least partially, responsibility for functioning and social results of the new system. The main underlying reason is that a market for pension funds is not a straightforward, competitive market like one for simple consumption goods. This is a market established and designed by government presumably with the intention to construct healthy microeconomic incentives for competition between funds, which should depend rather on price and quality of products than on exercise of market power or successful marketing measures, so that certain socially desired goals can be achieved like old-age consumption smoothing or relatively secure pension saving. Yet even with successful design, markets for pension funds have features of their own which differentiate them from other, more simple markets of choice and competition. For instance, as we could see in the previous paragraph, the participation on this market is mandatory for all the wage-earners and individual entrepreneurs and as such they cannot abstain from pension saving within this particular framework. Demand for the product is guaranteed by the government, which makes it easier for the suppliers to sell, yet at the same time may induce reluctance or ignorance of buyers toward evaluation of offered options, even if their future incomes depend on it. These specific features of pension fund markets call then both for cautious design and continuous monitoring of developments.

The situation of individuals coerced to participate in the pension funds market is extraordinary as well. Most of all, an extensive choice invariably implies a trade-off: more choice equals more costs in terms of choosers' time, psychics and risk borne (Loewenstein 1999). Even a partial shift from PAYG system to individual capital accounts involves increased dependency on financial markets, which display inherent uncertainty. This means that there is no safe investment strategy and even seemingly similar strategies may bring mixed results depending on stock/bond portfolio or developments of particular markets. In effect savers with the same history of contributions may receive very differentiated pension benefits. An obligatory system relying on choice imposes its adverse effects even on individuals that consciously abstain from making decisions: such savers are

unintentionally drawn into comparisons and may experience feelings of anxiety caused by the fact that even no-choice implies an actual choice.

Moreover, when it comes to finances, people face a number of cognitive limitations as summarized by Barr and Diamond (2009), which add up to the limitations briefly described in the previous section. Individuals, for instance, tend to misunderstand uncertainties they face and options they are offered, they do not understand basic concepts of finance and complex systems of saving (like pension plans), they have difficulties with processing information of pension products even if they are provided with it (see also Lusardi and Mitchell 2011). In effect, the rising complexity of financial schemes and operations at the individual level has detrimental effects on personal involvement and results in disinterest, biased decisions and withdrawal from informed participation in saving programs. These psychological and cognitive factors of 'irrational' behavior are surprisingly common as reported by Fear (2008) in his study on Australia. Besides, it would be also very optimistic to assume that all citizens care about their pensions or that they do have preferences for saving schemes. Limited interest in pension saving may also be amplified by the fact that rewards of current foresight are usually located far in the future, which implies high uncertainty of the actual size of annuities and at the same time fuels procrastination and negative perception of future consumption capacity.

Empirical investigations on pension systems that allow for extensive choice have confirmed many of the above reservations. Most of the literature refers to the case of 401(k) pension system in the United States which features high degree of voluntariness, but the results are nevertheless meaningful. Iyengar et al. (2004) found that the increasing number of options offered to pension savers leads to falling participation in these programs. For every ten funds added to the choice set, the number of participants fell by 1,5-2%. In another study Iyengar and Kamenica (2010) observed that when faced with a large number of options, people not only refrain from participation, but also tend to choose simple, easy-to-understand options even if these are more risky or inferior to other alternatives. Surprisingly, better options could have been chosen from a limited set of choice indicating that the search for simplicity impairs our abilities to process data. Beshears et al. (2006) and Madrian and Shea (2001) reported significant inertia of sticking to the default saving scheme in terms of contribution rate, fund allocation, and post-saving distribution. This bias for status quo accentuates the procrastination issue and emphasizes the need for sound default schemes in saving programs, which have substantial impact on long-term saving outcomes. The importance of the default option design has also been confirmed by the comparative study of pension systems from ten countries differentiated by economic

development level and cultural and historical background (Tapia and Yermo 2007).

An overview of the Swedish pension reform

The new pension system was introduced in Sweden in 1999 as the previous defined-benefit system was found to be unsustainable in the long term for financial and demographical reasons. It also had structural flaws inter alia in being tied to the development of prices instead of the real economic growth or penalizing long working career and flat earnings profile over life time. The reform was expected to address these shortcomings and meet other goals, which can roughly be reduced to three basic premises that led the reform (Barr 2013):

- the need to introduce a clear link between contributions and benefits with respect to fairness across generations,
- financial sustainability of the system should be achieved by tying it to economic growth and demographic change,
- individuals should be granted more choice in investing part of their savings.

Essentially all these assumptions were met, at least in the pure design. The new rules for pensions have eliminated the regressive redistribution patterns of the old system. A brake mechanism was introduced in order to sustain the self-financing of the system, though at the cost of shifting the costs of adjustment on pensioners and pension savers. And finally introduction of fully funded premium pension system allowed individuals to make their own choice in funds' allocation, even though in relatively limited scope. This paper focuses on the third aspect of the reform that is on the institutional arrangements of the choice given to pension savers and on the adverse effects of extensive choice possibilities. Yet before we proceed with the analysis, it is worthwhile to briefly sketch the concept of the whole reform so that the premium pensions can be viewed in a proper context[4].

The previous pension system based on the pay-as-you-go principle provided a full pension after 30 years of contributions based on worker's 15 best years. Its introduction in 1960 was perceived as a capstone of socialdemocratic welfare policies. The need for reform was realized already in 1980s., but it was only in 1990s. that political circumstances were favorable enough to pursue necessary changes. The new system was designed in a cooperative manner by a parliamentary Pension Group

[4] For more detailed elaboration on the Swedish pension reform see Barr (2013), Palmer (2004), Palme (2005), Anderson (2006) or simply refer to the Pension Authority webpage www.pensionsmyndigheten.se.

consisting of the representatives of five parties representing ca. 85% of votes. The very essence of the reform was a change from defined-benefit principle into defined-contribution scheme. Final legislation was passed in 1998 and since 1999 the new system has been in power. It consists of three fundamental components:

- partially-funded notional defined contribution (NDC) pension scheme administered by the state (*inkomstpension*),
- fully-funded individual accounts in which a pension saver is allowed to choose up to five privately managed funds to administer his savings (*premiepension*),
- the guaranteed pension providing poverty relief for those with insufficient history of contributions (*garantipension*).

The system is complemented with occupational and voluntary pension schemes, which however lie beyond the scope of state's direct responsibility. One ought to realize though that occupational pensions provide significant incomes for many workers, especially those with the history of high earnings (even up to 25% of future pensions).

The basic logic of the reformed pension system is following. Every month 18,5% of worker's earnings is transferred into the pension system. 16% goes to the NDC scheme forming the basic income pension and 2,5% goes to individual accounts generating fully funded benefits. Both contributions are compulsory and collected by tax authorities. In order to receive full pension a contribution history of 40 years is required. The pension is calculated on the whole history of earnings and one cannot retire earlier than at 61 years of age. There is no fixed retirement age, but one is no longer protected by the Employment Protection Act after turning 67. A pensioner is also allowed to withdraw his funds from individual capital account flexibly both in terms of timing and percentage of funds (25%, 50%, 75% or 100%). This way capital left within funds still brings interests, but is exposed to market risk, whereas after withdrawal the funds are transferred into Pension Authority fund which provides a fixed interest of 2,2% per year, yet with minimal risk. The new system also contains several microeconomic incentives for the development of labor market as its performance was considered crucial for the future of the system. One thus gets credits for rearing children and having tertiary education, whereas staying outside the labor market (for instance due to unemployment or sickness) or working part-time results in lower pension. Persons with insufficient contributions history are guaranteed a basic pension or a

supplement to the income pension, though one is eligible for full size basic pension only if one lived in Sweden for at least 40 years and has turned 65[5].

Although the income pension has lost its fully redistributive character and the benefits are now more directly related to contributions, it is still based on a pay-as-you-go principle and cross-generational redistribution. However, the most progressive and far-reaching solutions concerned the premium pension system. This was largely a response to the critique of the previous system that was perceived as a vehicle for pensions' standardization and detrimental paternalism that deprived an individual of any influence on pension savings' management. Thus the center-right parties insisted on giving it more individual tint that would allow pension savers to make their own decisions and take more responsibility for their life as pensioners. It was also argued that individuals have the best knowledge of their own living and financial situation and thus are capable of making allocative decisions suited best to their preferences with respect to risk and potential profits. In effect the official aims of introducing the system were threefold (Socialdepartamentet 2013, p. 13-14):

- workers should be given opportunity to invest in the capital market in order to gain higher profits than an exclusively NDC system could provide. This way their future pension would not be limited only to the PAYG system which depends largely on GDP per capita growth,
- investments on the capital market would diversify the risk of receiving the pension solely from the PAYG system. This way pensions would be less dependent on the developments in Swedish economy and demography as well as in the sector of domestic economy one used to work in. The risk of Swedish economy would be minimized mostly by promoting investments on foreign capital markets,
- the freedom of choice would offer pension savers individualized risk and profit schemes. By making individual decisions concerning investments one would adjust the expected profit to the bearable risk according to age, risk aversion, specific life situation etc.

As a result pension funds market was created that offered pension savers the possibility to manage a part of their savings in line with their own preferences of risk, level of management fees and potential profits. One was allowed to choose up to five funds at the same time for the allocation of premium pension's contributions. It was expected that a reasonable individual would now follow the developments on his savings account and

[5] In 2015 the guaranteed pension was 7046 SEK per month for a married person and 7899 SEK per month for a single person (ca. 30% of average salary).

react accordingly so as to maximize future benefits and reduce the risk. Who would perform it better than the pension saver himself? The adverse effects of pay-as-you-go system and state's inefficiency would now be at least in part eliminated especially that the design of the system was also supposed to reduce some of commonly known market failures.

The choice architecture of Swedish premium pension system and its results

The pension funds market was worth almost 615 bln SEK in the end of 2013 and was still growing. It grouped 6,7 mln pension savers and pensioners and is eventually expected to grow to 7 mln participants. As a result of the new legislation, in the fall of 2000 70 financial companies offered 4,4 mln Swedes 465 funds to choose from. The number of funds was growing steadily until 2006, when it stabilized at just below 800. However, in January 2015 there was already 843 funds offered to pension savers administered by 102 companies. Most of the funds invested in stocks (566), much less in bonds (145), and some had mixed stock and bond portfolios (98). In addition there were 34 funds with generational design.

Such a large number of funds was expected to match best the differentiated preferences of cohorts joining the system every year, just as theory suggested. It was realized however that such an extensive choice set could produce significant transaction costs of information gathering and processing as well as a risk of being exposed to asymmetry of information and power between pension saver and fund managing companies. It was thus up to the 'choice architecture' whether these effects would actually appear or how strong they would be. A careful design of the premium pension system could eliminate or at least mitigate some of the factors causing the choice overload phenomenon.

There are at least four features worth mentioning in this context. First and foremost, Pension Authority (*Pensionsmyndigheten*) was established to act like a clearinghouse and a middleman between pension savers and managing companies. It groups together all the requests to join particular funds, withdraw capital, change the investment fund etc. and executes them jointly. This means that it is Pension Authority that is allocating capital into pension funds, not individual pension savers. This has several important consequences (see Palmer 2004), but relevant to our study is that savers' legal and institutional position against the pension fund is significantly strengthened and thus countervails a potential asymmetry of power. Savers are also anonymous to managing companies and hence free of being subject to adverse selection practices or various marketing-related pressures. All pensions are also paid out by Pension Authority, not by private sector

funds. Second, all relevant information concerning funds (portfolio structure, history of results, costs of management etc.) has been available since the beginning of the system at any time at the Pension Authority webpage contributing to the creation of extensive and reliable access to information, favoring high transparency and offering a possibility of making unproblematic comparisons between funds. This way an important step towards reducing transaction costs of information gathering and processing has been made. Third, a pension saver is allowed to change funds every day at no charge. One thus allowed to allocate one's pension capital freely with no fees or legal limitations put against him by managing companies. The factor of time is also made insignificant as one has as much time as one wishes to make a firm decision and execute it instantly. Thanks to the possibility of choosing up to five funds at once one does not have to commit to one fund only. And fourth, because the Pension Authority acts as a clearinghouse and pools all individual allocation decisions, it demands significant rebates from pension funds for managing pension capital compared to the fees charged on voluntary transactions. Pension system is thus cost-competitive toward traditional capital market and cannot differentiate between pension savers.

At the beginning effects were promising. In fall of 2000, when pension savers were first offered choice, 67% of individuals made one. Those that did not were transferred into state's administered fund AP7 Såfa. However, 67% was the best result the system ever achieved (see table 1) as the percentage of newcomers that committed a deliberate choice began to fall steeply and since 2007 holds at 1,6% level. In 2000 it was a breath of novelty: after a long political struggle for introducing choice into pension systems individuals were granted one and so many committed to making a deliberate choice. It was also a time of massive media campaign encouraging pension savers to choose for themselves and stressing that a proper choice will make a decent pension. Later the campaign faded away as much less persons was joining the system, usually at the beginning of their careers and so with very small capital to administer. The falling involvement in making a thoughtful choice contrasts with rising number of investment funds (figure 1). Between 2000 and 2006 the number of funds rose to almost 800, but this rather discouraged than stimulated potential choice makers. Recent rise to 850 funds probably did not help either.

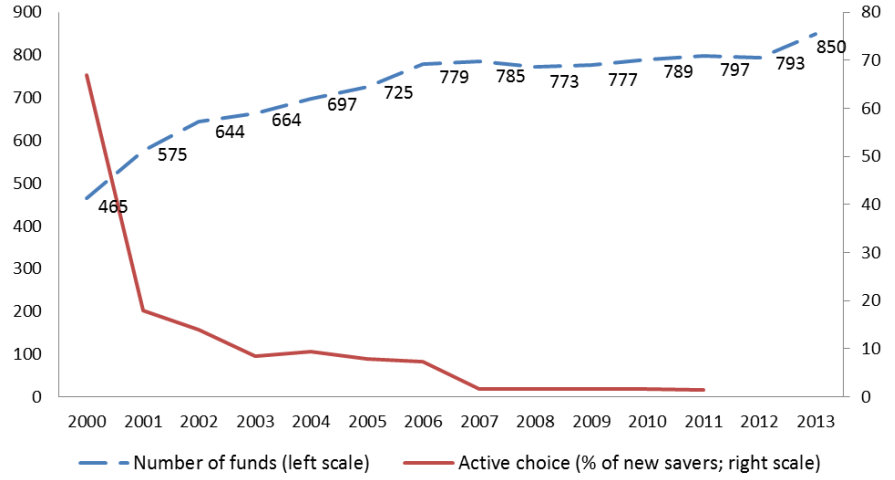
Table 1. Percentage of newcomers making an active choice

Year	Total (%)	Women (%)	Men (%)	New savers (thousands)
2000	67,0	68,0	66,0	4420
2001	18,0	18,2	16,8	493
2002	14,0	14,0	14,3	196
2003	8,4	8,4	8,3	150
2004	9,4	9,3	9,5	129
2005	8,0	8,3	7,7	117
2006	7,4	7,4	7,5	115
2007	1,6	1,6	1,7	133
2008	1,6	1,4	1,8	163
2009	1,6	1,5	1,8	183
2010	1,6	1,4	1,7	178
2011	1,5	1,4	1,7	129
2012	<2			172
2013	<1			175

Source: Socialdepartamentet 2013, p. 28; Pensionsmyndigheten 2013, 2014.

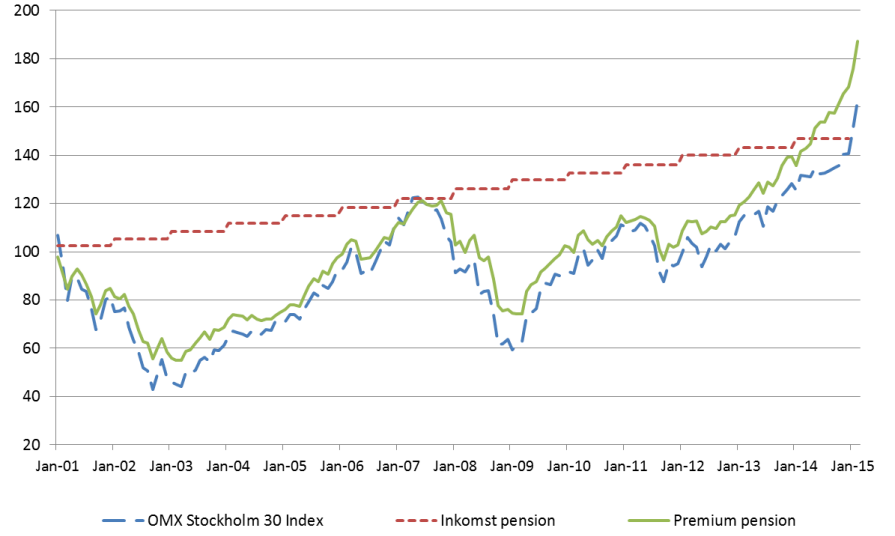
Another factor that may have contributed to the falling number of active choice makers was that the rate of return on capital was highly negative (see figure 2). 100 SEK put into the system in 2000 was worth on average less than 60 SEK two years later. Even though market recovered during following years, it plummeted again in 2008-2009 – the same 100 SEK was now worth below 80 SEK. This situation showed that individual choice in fact did not matter against overwhelming market forces, so why bother with time-consuming and stressful choice if the result was negative anyway? On top of all, even if the rate of return was generally positive at the end of 2000-2013 period, it was still below the accumulated growth rate of the income pension based on PAYG principle. The notional defined contribution system generated thus higher returns for individuals than stock and bond markets during 13-years' period. In 2014 the situation finally reversed, but no one can guarantee that there will be no downturn again. This explicitly highlights the risk involved in retiring at the wrong moment when markets are contracting and accumulated savings are thawing.

Figure 1. Number of funds and active choice



Source: own.

Figure 2. Value of 100 SEK paid into income and premium pension systems compared to the developments on Stockholm Stock Exchange



Source: own calculations based on Pension Authority statistics, OMX Stockholm 30 Index and Pensionsmyndigheten 2014a, p. 45.

Statistical data confirms that most pension savers are not interested in managing their accounts (see table 2). No more than 7% of savers made at least one change per year in their portfolios under 2000-2011 period. 51% of savers have never bothered to choose managing fund and were automatically transferred into AP7 Såfa fund. 20% of savers made an active choice once, but have been passive since that time, and 22% made less than one change per year. There is a possibility to deliberately choose AP7 Såfa or one of its subfunds (cautious, balanced or aggressive) which could explain the high participation rate in the state administered fund, but out of 3,1 mln participants only 142 thousands made intentionally such a decision until the end of 2013 (Pensionsmyndigheten 2014). 2,76 mln savers were transferred there because they have withdrawn from making any choice and 174 thousands due to inaction when their preferred fund was terminated.

Table 2. Average yearly activity of pension savers until 31.12.2011

Activity	Choice/No. of changes per year	Pension savers (thousands)	Percentage
Inactive	AP7 Såfa	2664	51
Low activity	Chosen once, never changed	1082	20
	Less than 1 change	1156	22
Active	1-2	195	4
	2-3	105	2
	3-4	49	1
	4-5	18	0
	5-6	10	0
	6-7	6,7	0
	7-8	3,9	0
	+8	10,4	0
Altogether		5300	100

Source: Socialdepartamentet 2013, p. 58.

Weaver (2004) reported results of polls which tried to find out rationale behind this kind of adverse behavior when the system took off. The most popular answers in 2004 were as follows. 28% of non-choosers claimed that they had no time or energy to make a choice; 18% were simply not interested in making any choice; 13% did not have sufficient knowledge to make an active choice; 14% believed that they still got much time until retiring and 10% felt that they had too little money to make any difference. Similar answers were noticed within the group that deliberately chose AP7 fund. 24% did not have the energy or want to choose; 24% wanted to be

spared choice for now; 21% felt that they had too little information to make a choice; 17% had too little money; 13% felt that AP7 is safe and secure and only 6% thought that the results of the fund were good. A study by Palme and Sunden (2004) confirmed that the broad choice offered was rather pacifying, not stimulating, and that many individuals misunderstood or did not wish to take advantage of the features offered by the new system. Pension savers hardly diversified the risk; they tended to invest in home economy or even in a particular branch of economy, possibly the one they worked in. Many have also decided to make choice 'once and forever'.

Recent research have largely confirmed that Swedes do not feel comfortable in this particular field of decision making. Report by Social Insurance Inspectorate (Inspektionen 2013) showed that individuals in Sweden have very limited knowledge on pensions and pension saving system even though they are provided with extensive information by authorities. It turns out that information campaigns performed by the Pension Authority have had very limited effect on increasing this knowledge in the long-run. This knowledge is, however, positively related with age, incomes, and education. Almenberg (2011) has reported on deficiencies in financial literacy in Sweden. Even if simple calculations gave satisfactory results, more complicated ones (like understanding compound interest) caused much more trouble. Many Swedes also have poor understanding of basic financial instruments. It is thus little wonder that a significant percentage of Swedes do not feel competent to make decisions that will determine their old-age economic security and so prefer to rely on the state or simply postpone the decision into future. Not everybody wishes to be a financial expert anyway – one could also doubt if it would be socially profitable. Was it not a principle of specialization and a division of labor that spurred economic success of the West?

The Swedish case described above indicates two important points so far. First is that the Swedish premium pension system *is* burdened with choice overload paradox even though many measures have been taken to at least partly mitigate this effect. *Homo economicus* turned out to be human again, with all the consequences involved. His cognitive abilities proved to be very limited and he acted according to his temporary feelings and changing preferences as well as biases towards status quo or procrastination.

The second point is that having a decent default option is of key importance when so many individuals abstain from making a deliberate choice. There is of course possibility to randomly distribute those pension savers among the existing funds forcing them to join private-sector administration (that kind of policy works for example in Poland), but it seems rather unjust and unethical. Pension funds have various rates of return and therefore two persons with equal contributions' history could

end up with different pension benefits although *none* had made any active choice. Understandably, this caveat does not apply to voluntary participation in premium pension. Very similar case has actually been touched upon by recent government report indicating that the premium pension system will probably produce higher pension inequalities than expected (Socialdepartamentet 2013). An extreme example shows that for a very small number of individuals there is a difference of 25 percentage points in the average rate of return since the introduction of the system: 0,01% of pension savers got annual rate of -8% and 0,02% of +17%. If this trend continues, the first group is expected to receive 1000 SEK of premium pension per month and the second group up to 200 000 SEK per month when retired. However, 95% of pension savers had the rate of return within -1% and +6% brackets. But even here the difference can be substantial: 3000 versus 10 000 SEK per month. Apart from rising inequality this situation also increases the risk of old-age poverty for a number of pension savers and can even be amplified by an unfortunate moment of retiring when markets contract.

The Swedish default pension fund AP7 Såfa seems to be a very reasonable alternative to staying at private sector pension funds. It produced an average yield of 6,2% for 1995-2013 period, whereas an average pension fund only 4,8%. In 2013 the difference was exceptionally huge: 26,6% in AP7 compared to 16,7% in privately managed funds (Pensionsmyndigheten 2014). Such a favorable outcome for the state-administered fund can be attributed to the fact that as much as 90% of its assets consists of stock holdings (of which only 10% of Swedish shares), whereas in private funds less than 80%. AP7 Såfa is therefore more profitable, yet burdened with higher risk at the same time. An important feature is that in 2013 the public fund enjoyed management cost of 0,12% of accumulated capital every year compared to an average of 0,39% in privately managed funds. The costs of state's management are thus much lower than in private sector even after the negotiated rebates. One has to remember though that even the state administered fund is vulnerable to markets' instability and it produced negative results in the same years as private pension funds did. It confirms, however, that the state is able to provide a decent substitute to private sector even within the exiting paradigm of fully funded individual capital accounts. Such common default fund is also a more ethical solution which can minimize pension inequalities and the risk of old-age poverty if carefully designed.

It is worth mentioning before concluding that the shortcomings of the existing choice architecture have not gone unnoticed and Swedish government is preparing a reform. The recent report (Socialdepartamentet 2013) indicated that there is a serious threat of arriving at socially

unacceptable inequalities of pensions coming from the premium system and that too many individuals feel overwhelmed with choice options. The report points to the very limited knowledge on pensions among pension savers and an extensive number of funds as underlying causes of these developments. It also sketches two possible scenarios for the government to follow. First assumes staying within the same paradigm of choice leaving the huge number of options available. It will, however, overtly promote the default solution for those that not wish to make a choice as well as impose cost and risk limits on private funds so as to lessen the issue of future annuities' inequality. The second scenario breaks off with the extensive choice and assumes introduction of a limited number of funds (possibly ten). The default alternative will stay in power. These proposals are currently under detailed investigation by the parliamentary Pension Group and a final report is expected to be presented in September 2015 (Finansdepartamentet 2014). Interestingly, the report openly admits that scenario analyses are essentially questions of values that constitute government's priorities and expectations of specific results. Efficiency of institutional solutions are here of secondary meaning as it is largely easy to estimate costs and benefits of the changes. Here it is rather a trade-off between broad old-age security and current freedom of choice. It is government's task and responsibility to decide which one to choose.

Concluding comments

The case of Swedish premium pension system confirms that an extensive choice leads to choice deferral and a preference for staying at status quo even in situation of paramount importance for one's future economic security. These findings are hardly new in the light of choice overload literature. However, the occurrence of choice overload in the field of public policy is a rather new phenomenon and implicates new issues to reflect on. A democratic public policy ought to ensure – at least in principle – that more choice should bring about more efficient delivery of welfare and should not foster increase of inequalities. And therefore even the privatized system of public policy should be under constant observation of democratic government and adjusted in line with the adopted values and principles of social life.

Government's responsibility invokes the question of choice architecture: who it was designed for and what principles it was based on. Both in theory and in praxis, as the Swedish case shows. The premium system has been designed with rationally perceived interest of a pension saver in mind. It does the utmost to equip him with plenty of relevant information, allows for frequent and costless change of funds, aims at far-reaching reduction of

administrative costs and protects his identity. And in doing so it mitigates the acknowledged effects of market failure and choice overload. Alas, flaws in this careful construction appeared when pension savers turned out not to be perfectly rational agents and the measures that were supposed to facilitate the choice decision process proved pretty useless. This brings a lesson that a design based on rational choice is not everything. Policymakers should rely more on findings in psychology than mainstream economic theory to design tools efficient enough to remedy market failures. As Madrian (2014) recently argued, it is very often not about the inefficiencies of market structure or wrong incentives that make certain solutions fail – it could well be about human nature. Effective public policy should take this into account, even if it could be politically incorrect.

The Swedish case illustrates one more unintended effect of a theoretically well-designed public policy. It could happen that the falling number of active choosers, if not countervailed, will end up in a situation that the premium pension system was introduced only to benefit a small number of pension savers at the expense of majority. For the sake of giving the former freedom of choice and flexibility of allocation, the security of savings for all population has dropped. In turn, this can result in erosion of social solidarity and increased risk of old-age poverty. Current attempts to reform the system prove that government wants to resolve this problem before it gets too far. The forthcoming public discussion will show, however, if those that benefit on the new system are already strong enough to kill the reforming efforts.

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