The Assurance Problem for Transfers Between Generations and the Necessity of Economic Growth

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Abstract. Population ageing is a fact of all advanced economies. Fewer people are born all the while current members live longer. The support which old people have come to depend on, for example through elderly care and pensions, thus becomes increasingly expensive. This accentuates an assurance problem. Although it has been and still is the case that the young are willing to support the currently old, this support is not unconditional. In return they trust that coming generations will support them one day. Historically pro-old welfare state institutions (e.g., pension systems) have offered individuals this assurance: their claim on future generation to support them has been credible simply by positive economic and demographic development. Economic growth has been a blessing for the cooperation between generations necessary to realise old age support. This paper describes this assurance problem in simple game theoretical terms, argues that it has been neglected in historically prominent justifications of pro-old welfare state institutions, and discusses what can be done to preserve trust in times of population ageing and weak economic growth.

Introduction

Population ageing is a growing problem in all advanced economies. Each new birth cohort is smaller than the previous one due to falling birth rates and because people live longer. The elderly dependency ratio increases, which means that more people

are in need of support and fewer are in a position to support them (see e.g., Harper, 2016; Bongaarts, 2004). This is a challenge to the social arrangements found in all welfare states through which some goods are transferred from those who work to the senior citizens who no longer can or will provide for themselves but yet have extensive needs. I will refer to such arrangements as pro-old welfare state institutions (Birnbaum et al., 2017) and focus mainly on unfunded, pay-as-you-go public pension systems, such as Social Security in the US, National Insurance in the UK and the National Public Pension System in Sweden.

I shall argue that population ageing reveals a problem with a previously considered unproblematic assumption behind the most common justifications of these pension systems, that is, that they depend on economic growth. The justification in question comes in prudential terms and is supplemented with only a weak sense of fairness. It goes: despite the fact that pro-old welfare state institutions seem to transfer vast sums of money between those currently in the workforce to the old, this is not an altruistic gift to the old, but rather a kind of loan or investment that is later paid back with interests by the next generation of workers. Pay-as-you-go pension systems are cooperative schemes between generations: Generation 2 (those currently working) pays for the old age support of Generation 1 and in return Generation 3 pays for their support, and so on. The goods in question are transferred upstream, from the young to the old, and indirectly reciprocated if and when the next generation makes their contributions. Thus, no one has to sacrifice anything in supporting these systems. Contributors are, as it were, investing in their own retirement, in the form of an institutionalised claim on future generations. In return they get a promissory note that they will be reciprocated by those who will work when they themselves are retired.

The problem with this is that the promise of a future return on contributions made today becomes less credible with population ageing because the upfront investment costs rise drastically. In the following section, I will elaborate on how population ageing erodes the trust young contributors need to support pension systems and pro-old welfare state institutions more generally. I call this *the assurance problem for transfers between generations* and argue that the only credible solution to it is further economic growth. In section three, I show that this fact has been insufficiently appreciated in the literature for the simple reason that it has seemed so obvious that economic growth will continue. But now, with population ageing and other threats to these prospects, this assumption must be scrutinised. In section four, I argue that the problem cannot be dealt with by merely switching to another justification – e.g., intergenerational justice or altruism – and so the conclusion is that if we want to maintain pro-old welfare state institutions, there is no alternative but to support economic growth (more concretely this could, for example, be done by increasing immigration or raising the retirement age).

2. The Assurance Problem for Transfers Between Generations

As we grow older, the risks of disease, injury and frailty increase (but note that on average, the number of healthy and able-bodied years also increase with population ageing). At a certain age individuals will no longer be able or willing to participate in productive work and thus need income support to maintain a decent standard of living. Before the establishment of the welfare state, old people depended on the good will of their younger relatives, which was a precarious dependence (Stuifbergen and van Delden 2011). Some had no relatives, others no one who cared for them. Another way of addressing this predicament is for individuals to save for their own retirement. An individual could, in theory, plan for their old age by putting away some of the surplus of their productive years to spend it when it is better needed in their old days. However, because no one knows how long they will live or how great needs they will come to have, individuals will in practice have difficulties in determining how much they should save. Furthermore, most of us are not that prudent but rather subject to various biases, and so likely to end up regretting our actual savings.

Pro-old welfare state institutions offer an effective, efficient, and fair solution to this problem. Collectively financed and organised pensions, health and elderly care pool risks and utilise economy of scale to provide an efficient insurance against these age-related social needs. Although such institutions have been designed differently in different places, they are typically justified in prudential terms. The argument is that *if* we were prudent, we would want to save some of the surplus we make in our productive years for when we are old. Rather than saving the money ourselves, which again is insecure, we can enter a social insurance agreement in which society as a whole is a risk-pool. To be actuarially fair, such a deal requires low premiums on the young with lesser needs and higher premiums on the old with greater needs – contrary to their differentiated abilities to pay. But the fact that all age allows for a neat solution to this mismatch: individuals can even out their contributions by paying more than their actuarially fair share during their productive years, as a saving for the higher premiums of their olden days which they otherwise could not afford. This enables mutually beneficial insurance solutions to the risks of old age.

Pro-old welfare state institutions, however, depend on cooperation between generations over time. This is easiest to see in the case of funded pension systems, as the contributions to them are later returned by coming generations. Whether the contributions come in the form of taxes or social levies, they give rise to legitimate expectations on a later return, often of a return with interest. For example, even if all transfers in pay-as-you-go pension systems are synchronic, it is not the case that the young simply give to the needy old (although a few particularly altruistic contributors may perhaps view it that way). Rather, they pay premiums to qualify

for later benefits. Contributors get promissory notes saying that they will be provided for when they are at a certain age. This is why these institutions depend on the cooperation between generations over time. Even when all transfers are synchronic, they depend on a continued inflow of contributions over time because this is how the transfers are justified: individuals contribute because they expect to get something in return.

This cooperation can be modelled in game theoretical terms as a version of a Hi-Lo game (Binmore, 2011; Heath, 2013). Consider the following scenario proposed by Ken Binmore (2011: 87):

> [I]magine a world in which only a mother and a daughter are alive at any time. Each player lives for two periods. The first period is her youth, and the second her old age. In her youth, a player bakes two (large) loaves of bread. She then gives birth to a daughter, and immediately grows old. Old players are too feeble to work, and so produce nothing. One equilibrium requires each player to consume both her loaves of bread in her youth. Everyone will then have to endure a miserable old age, but everyone will be optimizing given the choices of the others. All players would prefer to consume one loaf in their youth and one loaf in their old age. But this 'fair' outcome can only be achieved if the daughters all give one of their two loaves to their mothers, because bread perishes if not consumed when baked.

There are two equilibria here: one according to which there is no cooperation between the players and everyone ends up with more goods than they need in their youth and less than they need in their old days; and another according to which the players cooperate to produce the outcome in which the goods are continuously distributed between the players and so between each players' life periods. This explains the possibility of cooperation between generations needed to sustain pro-old welfare state institutions (in a steady state economy). In the world described by Binmore all that is needed to arrive at the fair outcome, as he calls it, is that previous players have given bread to their mothers, i.e., that the cooperative behaviour is under way. If this is a fact, then each new daughter can do no better for herself than to also give a loaf to her mother. Doing so is the only way in which she can expect bread when she is old. A nonconformist daughter risks being severely punished by her own daughter. Her fate is in the hands of her own future child; the cooperation is upstream.

As we see in Binmore's analysis, the cooperation required to sustain is not a solution to a Prisoner's Dilemma, that is, the situation is not such that each player is rationally required to defect. This is important because it suggests that the public goods served by pro-old welfare state institutions can be maintained over time and that free riding is not a major concern. It also suggests that the cooperation in question does not presuppose sentimental feelings, filial obligations or altruism. Even egoistic individuals can even out their consumption over the different life segments of a typical life and thereby protect themselves against age-related risks.

The analysis does not, however, show that there are no threats against the stability of this neat solution.

Whether or not a young contributor can later enjoy a certain level of old age benefits provided by the welfare state depends on what others do, in particular future workers, employers, politicians and officials. The value of the 'investment' depends on future generations making good on the claim thereby imposed on them. Thus, the young must trust that they – the future agents – will do their part in this transgenerational project if they – themselves – are to get their due. This is an instance of what Amartya Sen (1967) calls an 'Assurance Problem' (see also e.g., Runge, 1984; Kogelmann and Stich, 2016).[1] This is a problem of coordinating expectations in situations of interdependent choices, i.e., when what is best to do depend on what others do. If the young can trust that others will reciprocate, then it is best for them as well as for society at large to contribute. If they cannot so trust, they better not contribute and end up a sucker.

Considering the fact that pro-old welfare state institutions exist in most developed countries, one might then think that this problem has been dealt with. But this is not so. The reason is population ageing and other threats to economic growth. In the light of these dim prospects, these institutions cannot offer credible promises that everyone will continue to cooperate. As noted by Runge (1984: 171): 'If contributions to public goods depend on institutions' capacity to predict behaviour, then these institutions must be continually maintained in the face of normal degradation'. The specific assurance problem for transfers between generations highlighted by population ageing is overcoming the reasonable worry an individual might have today about how pro-old welfare state institutions are not maintained. Population ageing requires of each new generation that its members transfer an increasing share of the goods they produce during their productive years to maintain current benefit levels. Each generation gets a worse deal than the previous one and the rules determining contributions and benefits will become increasingly contested. The expectations for future benefits may soon exceed future generations' willingness to pay.

In Binmore's game, trust is easy to establish: each player must just expect that all other players (including future players) are rational and act on their own self-interest. In reality, however, it is more difficult. The payoff function of pro-old welfare state institutions is not only determined by the rationality of other agents, but also by exogenous factors, such as socioeconomic and demographic changes. As birth rates fall and life expectancy increases, each new player enters a less favourable cooperative system than their predecessors. Each new generation must transfer a greater share of what they produce during their productive years. This makes the promissory note they get in return riskier. It is as if each new daughter

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[1] Note that the Assurance Problem has implications similar to a repeated PD (with the fear of retaliation), which is why Heath (2013) uses a repeated PD to analyse the structure of intergenerational cooperation.

had to produce an increasingly large loaf to feed their increasingly hungry mother. Even if their daughter *can* bake bigger breads, the upfront costs still increase which may make other options more tempting. There are always opportunity costs on savings for the future. Furthermore, if for whatever reason the granddaughter defects, that will primarily affect her compliant mother and the cost will be all the more burdensome on her because they will also be unfair: the mother would thus be punished both by the hard work she put in to baking the large bread and by not having any bread in her old age.

The rationality at play here involves more than the three directly adjacent generations, that is, the mother, daughter and granddaughter. The risk of defection ripples down backwards from one generation to the next. If some future generation finds that the deal is not to their advantage, that they would be better off eating their bread than passing it on, then it is not in the interests of their predecessors to cooperate either as they could not then count on their cooperation being reciprocated, and then this is true of their predecessors too, and so on. The assurance needed is that the cooperation will be maintained indefinitely (Heath, 2013).

That is not to say that the benefit ratio must stay put throughout the different iterations of the game. In Binmore's game it does: the difference between the contributions of the daughter (a loaf of bread) and the benefits she later receives from her granddaughter (a loaf of bread) is the same (=1) for each generation. In reality, however, benefit ratios often change from one generation to the next. Depending on economic productivity and demographic changes, a generation may get a handsome return on their contributions, whereas another ends up net-contributors over the course of their lives.

Considering the fact that existing pro-old welfare state institutions have produced varying benefit ratios and still continued to operate one might think that this is not a problem. Perhaps individuals will accept even a negative benefit ratio, i.e., that they are net-contributors, because they would still benefit from the possibilities of having protection against age-related risks (even if say, they end up taking not full advantage of the concrete benefits) and, if we are not comparing to alternative means of saving, something is of course better than nothing. But there are alternatives. If the benefit ratio is too low in the publicly funded pension system, an individual could do better for themselves by individual savings. To the extent that pro-old welfare state institutions rest on the rationale of indirect reciprocity as described above, each player must reasonably expect to get a fair return. The point is that if at some future time, the benefit ratio falls below a fair level, then individuals can no longer expect future generations to cooperate and so they may judge that it is in their best interest to find another solution to the risks of old age. If a player comes to suspect that the others (including future generations) will not do their part, they have a reason to defect to avoid the worst-case outcome of contributing to a system bound to crash.

3. Cheap Assurance in Good Times

Economists and philosophers have not seriously considered this assurance problem. The explanation for this oversight, I submit, is that they have had a positive outlook and not seriously entertained the prospect that economic growth could come to an end (cf. Forrester, 2019: ch. 6). They have assumed that the economy will continue to grow and that each new cohort will be larger than the previous one. As a result, they have not paid attention to this problem, but been assured by the growth prospect. In this section, I will substantiate this point by critically discussing two prominent accounts of pro-old welfare state institutions: one by the economist Paul Samuelson and the other by the philosopher Norman Daniels.

Paul Samuelson (1958), which is the original source of the standard justification of pension systems, assumed a growing economy: young contributors could generally expect benefits higher than their contributions because if there is population growth, each new generation contains more productive workers and so produces more things. If one expects this demographic trend to continue indefinitely, it is in the interests of all generations to contribute. As long as there is an inflow of new productive workers, everyone is made better off by agreeing to transfer goods from the young to the old. But he did, however, recognise something like the assurance problem. He noted that even as it is the self-interest of both the young and the old in a society to agree to support the elderly, this optimal distribution of goods between age groups cannot be guaranteed by 'cold and selfish competitive markets' (1958: 473). This is because individuals are not unconditional co-operators. They are only willing to transfer goods to the old if they are given some assurance that future generations will do so too. To overcome this problem, he argued, one should change the rules of the game: 'Let mankind enter into a Hobbes-Rousseau social contract in which the young are assured of their retirement subsistence if they will today support the aged, such support to be guaranteed by a draft on the yet-unborn' (1958: 479-80). The contract he envisioned was simply money and the institutions needed to maintain their value.

Money allows the young to store value they produce during their productive years and exchange it for consumption goods when they are old. That is, conditional on everyone accepting the value of money at a plausible exchange rate. The problem with this solution, though, is that this condition need not obtain: there is inflation. The money the young store during their productive years may lose its value, leaving them with insufficient protection when they need to exchange it for consumption goods. Whether or not their savings are maintained and protected against inflation is partly in the hands of future generations. The value of money, whether collected in pension funds or cookie jars, depends partly on the productivity of workers yet unborn when the savings decision is made.

This creates another assurance problem. The present generation investing their produce in money need some kind of assurance that the value of this intangible

goods will remain intact over time and allow them to exchange it for more tangible goods, such as food and housing, when they so need. Money in itself is an insufficient assurance to produce the social optimum. This also points to an important similarity between unfunded, pay-as-you-go pension systems and funded, individual or collective, savings schemes (see also Heath, 2013: 60ff). Both of them essentially are claims on future generations and depend on future generations making good on these claims by engaging in productive work.

Money alone does not provide a solution to the assurance problem. Although the function of money to store value over time is remarkable, this is a function which can only be effectively discharged in societies whose economies are well-maintained, which means that various institutions, such as a well-functioning government and a central bank, need to be in place.

This brings us to Norman Daniels's (1988) justification of pro-old welfare state institutions, which is contractualist and focused on the design of just institutions. The key idea is that a fair design of institutions such as pension systems is in everyone's self-interest due to the fact that everyone ages. There is no conflict between generations: the care for the elderly that the young provide is in their own interest. When they in turn are old and in need of assistance, they will be grateful that such services are available at an affordable price. In other words, if we were to think prudently about it, we would organise society such that a decent standard of living is maintained throughout the different stages of our lives.

The problem with this so-called 'prudential lifespan account' is that it assumes static background conditions and thereby fails to account for socioeconomic changes (for a more general critique see McKerlie 2013). This is not an accidental consequence, but a feature of this account (Daniels, 1988: 51f). If the prudent deliberator, for instance, knew that she was young, she might bias the savings plan towards the interests of the young, and vice versa, if she knew she was old, she might choose substantial transfers from the young to the old. Furthermore, the prudential choice must be binding on the entire lifespan of the agent. The alternative would allow the prudential agent to buy into a scheme with low contributions when she was young and then switch to one with high benefits when she grew old. The choice of the prudential deliberator must be set in stone and binding on all individuals in society, regardless of age and previous contributions. Thus, the prudential deliberator faces the choice behind a veil of ignorance, where she has no knowledge of her age, and furthermore faces the task of allocating an already fixed budget, a fair lifetime share. In reality, however, society is subject to socioeconomic change, as the economy and the population either grow or shrink.

Daniels recognises that socioeconomic and demographic changes may lead to a birth cohort problem, which is different from the age group problem he addresses with the justification laid out above. But he sees this as a practical problem with no bearing on the justification of the institutions in question. He writes: 'On my approach, at least in the case of health care and income support, the solution to the age-group problem is basic and the solution to the birth-cohort problem is

secondary, though both are important. Solving the birth-cohort problem requires "fine-tuning" the institutions which solve the more basic problem' (Daniels, 1988: 136). The fine-tuning he has in mind is marginal adjustments of the benefit levels of health care and pensions as the economy grows or shrinks. Inequalities between birth cohorts are unfortunate in that they may lead to a discontent which undermines the support for such institutions. Thus, 'approximate equality in benefit ratios should be a practical target of public policy' (Daniels, 1988: 128).

Daniels' reasoning glosses over the difficulties involved in dealing with the assurance problem and in particular the seemingly inevitable decay which these institutions presently are subject to. If benefit ratios of health care and pension systems slowly decline, each new generation is offered a worse deal than that of the previous generation. At some point on this slope, individuals will judge that it is not in their long-term interest to contribute to such institutions. However, even before that point is reached, they may reasonably judge it unfair that they pay more and benefit less than their predecessors did. A birth cohort which enjoys the benefits of systems, such as health care and pensions, without paying enough to maintain these systems is effectively a free-rider on the cooperation between generations which such systems rely on. This problem goes to the roots of the justification of these institutions.

Daniels argues that the conflicts over resource distribution between the young and the old in society are overblown. Once we reckon with the fact that we all age and adopt an age-neutral point of view in justifying age-related welfare state institutions, we will see that they are in everyone's interest. Again, this is only true against the background of a growing economy. A growing economy will likely lead to one kind of change in benefit ratios, namely the positive one that each generation turns out better off than its predecessors – and this inequality between birth cohorts does not strike many as unfair (indeed, the opposite: many believe that this is what intergenerational justice demands). The problem arises when considering the prospect of a shrinking economy. Even a credible possibility that this might be in the cards risks the cooperative project between generations which allows for a prudent allocation of consumption goods over the course of a lifetime. This is a central problem welfare states face these days and a clearly formulated response to it is lacking in the normative-political literature.

4. Are There Alternative Justifications?

Considering the facts that pension systems presuppose economic growth and that there are constraints imposed by population ageing, one might seek to anchor these systems in something more solid than that offered by the standard justification. I will here discuss some alternative justifications and reforms of these institutions, but argue that they all fall short of successfully dealing with the problem outlined.

A Signalling Device

The first suggestion is a signalling device by which co-operators can signal their willingness to cooperate. This kind of solution is often suggested for dealing with assurance problems in general and so might work in this instance too. A classic example (see e.g. Kogelmann and Stich, 2016) is a blood oath through which two agents signal their commitment to a joint project. The idea in short is that instead of merely saying that they will do their part of the project (cheap talk), they confirm their commitment by jointly taking on an upfront cost. Having done that, each of them knows that they are serious about undertaking the project and that they have a reason to want to get the project going. These days, the equivalent of a blood oath may be something like a down payment. The question, then, is if one could find a similarly credible commitment device in the case of pro-old welfare state institutions. Is there some way in which individuals could assure one another that they will continually contribute come what may?

It does not seem so. There is no obvious way in which future, yet unborn, contributors could signal their commitment to the project, and that is the kind of assurance requested. Present contributors could, of course, do so by transferring vast sums to the presently old, much like the daughter signals her cooperative intention by giving bread to her mother, but their upfront commitment will not be reciprocated now. One possibility, though, might be for the state itself to signal the commitment of future generations on their behalf. That is, something like a contract or constitution on future generations which compels them to follow through on their commitments. Let us therefore evaluate one solution which might be seen as an instance of this.

Musgrave's Rule

Musgrave's Rule states that the benefit ratio should be fixed at some level, such that each individual, no matter their birth cohort, enjoys the same (or roughly the same) benefit ratio (Musgrave, 1981: 109). If this is applied, then perhaps each contributor could trust that their cooperation would be meaningful because they would be guaranteed a fair return.

Underlying Musgrave's rule is a principle of fair risk-sharing between generations (Musgrave, 1981: 104). Different institutional designs have different risk profiles, as is seen in considering the two main kinds of pension systems: defined benefit schemes (DB), in which the benefits are determined and contributions varies in accordance with what is required to realise the benefits given socioeconomic change, and defined contribution schemes (DC), in which the opposite is true, contributions are determined and the effects of socioeconomic change only affect benefit levels. If we follow Musgrave in distinguishing only two variables in this context, productivity development and demographic change, then these two systems impose different risk profiles: roughly speaking, DB schemes

place all risks on the contributors whereas DC schemes place all risks on the beneficiaries. If productivity decreases or the elderly dependency ratio increases in a DB scheme, this imposes a greater burden on those in the labour force as they will have to make bigger contributions to social security, whereas in a DC scheme, contributions remain the same and the benefits instead decrease. Musgrave thought that neither of these risk distributions were fair, and argued instead for sharing the risks, as well as the windfalls, between contributors and beneficiaries. That is because they would produce differences in lifetime expectations of individuals belonging to different birth cohorts. In either a DB or DC scheme, an individual may be penalised by unfortunate socioeconomic changes. She may end up with a much lower benefit ratio than her older or younger relatives.

If Musgrave's Rule can be implemented in some feasible institutional design, it would indeed provide additional assurance that the inter-generational cooperation is worthwhile. A fixed benefit ratio would make these systems stable over time. It would also lessen certain risks which otherwise could make an individual reluctant to sign up to the intergenerational cooperation. But the rule is still relatively vague and so may fail for that reason. In particular, it says nothing about what is an appropriate ratio of benefits to contributions. Even if it gives assurance against suddenly falling benefit levels by pre-determining benefits, it could not fully guarantee the continuation of the cooperative project. Population ageing might lead to absolute burdens so extensive that some future generation still choose to opt out. Again, for the benefit ratio to be maintained in an ageing society, contributions must increase exponentially. Fewer contributors share the payment burden and increasingly numerous beneficiaries demand the benefit levels they were promised. This will strain the willingness to contribute: the system may seem like a pyramid scheme too risky to invest in.

Intergenerational Justice and Altruism

Another possibility is to argue that the justification of these institutions does not stand or fall by population ageing. One might, for example, suggest that they are matters of intergenerational justice. The argument might be that each generation is bound to do their fair share in the ongoing scheme of cooperation between generations. Or alternatively that the reason why a generation should contribute is an altruistic one: it is because of the needs of the elderly and nothing else. However the population ages and the strains of contributing to these systems increases, it is still a fact that there are old people with great needs. This, one might argue, is reason enough and it is simply unfortunate – but not unjust – that those in the workforce will have to work a bit harder to achieve this result.

Both of these proposals seem problematic though. The empirical trends we have considered risk making each new generation slightly worse off than their predecessors and now the argument is that they are still required to make sacrifices for their better off predecessors. This regressive transfer seems to be a perversion of

justice. Another problem is that they moralise pro-old welfare state institutions. If the demands imposed by institutions of intergenerational cooperation are grounded in some moral or perfectionist ideal which some citizens may reject (if not now, then at some later point), then contributing to these institutions by complying is all the more risky and costly. It is a great strength of the standard justification that the reason to contribute to these institutions is not a controversial moral ideal, such as filial obligations, rewards in the afterlife, or the present government dictating that this must be done. According to the liberal conception of legitimacy, which is prevalent in most of the states having these kind of institutions, political power is legitimate if and only if it is exercised in a way in which all those subjected to it can accept in the light of an understanding of themselves as free and equal members of society (Rawls, 2005; cf. Song, 2012). If every citizen sees the institutional order to which they are subject to as harmonising with their own view of themselves rather than as something alien, imposed on them by others, this will secure stable support for it over time.

Yet another problem is that future generations may at some point reasonably refuse to contribute as the contractual conditions have become just unacceptable (see also Vidlund et al., 2017). If population ageing continues and is not offset by e.g., productivity growth, the demands of complying with this principle will gradually become so burdensome that the young have to sacrifice resources they need to live a decent life to provide for their much more numerous predecessors. Again, it is not a Prisoner's Dilemma in which the young have reason to think that future generations will not cooperate irrespective of what they do. But they do have reason to worry that coming generations may reasonably refuse to comply with the cooperative enterprise because it is not in their interest as the expected benefit ratio is too low. The high equilibrium of cooperation between age groups risk being upset by unaddressed population ageing or even credible prospects thereof.

Ignoring the Problem or the Race to the Bottom Solution

Another possible response to the assurance problem is to lean on the built-in stickiness of these institutions and argue that this problem is merely theoretical. In reality, it is not the case that individuals of some cohort can opt out of contributing. Individuals are born into authoritative institutions and compelled to contribute whether they want it or not. In other words, the game theoretical model of the assurance problem is a misleading idealisation. In the real world, it is very difficult to mobilise enough political support to change these institutions. Consider, for instance, a scenario under which current workers have to pay hefty sums to fulfil existing pledges to the elderly and someone proposes to lower the benefit levels to reduce the payment obligations. Now, this may be clearly in the interests of the youngest workers (say, those under the age of 30), but not so for workers closer to their own retirement and for those who will retire within 10 years, it is perhaps to their disadvantage. Thus, it would be difficult to mobilise political support for

change and the more likely trajectory would be a race to the bottom with an increasingly worse benefit ratio for each generation.

Existing institutions create path dependencies and make certain otherwise irrational actions rational. This may be the most important explanation for why pro-old welfare state institutions so far persist despite ageing population structures. Then, of course, it is another matter whether this is just or right. One could judge that such a race to the bottom, where each new birth cohort is offered a worse deal than their predecessors due to population ageing is unfair and that future agents *ought* to opt out. It is furthermore unlikely that each new generation would let such unfairness pass. A dissatisfaction with pro-old welfare state institutions has been growing since the 90s and has already led to some reforms to avoid them being quashed under the pressure of the ageing population structure. Most likely, extensive reforms of existing institutions are required and have already been implemented in some countries.

Pro-growth Policies

As pro-old welfare state institutions presuppose economic growth for stable persistence, there is no better way of addressing the assurance problem than policies which aim to increase economic activity either directly by productivity growth or indirectly by growth of the working population.

Governments should foster an economic climate conducive to economic growth. This means promoting innovation, research and development, required infrastructure investments, controlling debt and inflation, and to not push economic externalities on the future. If there is sustainable economic growth each generation turns out better off than their predecessors and the assurance problem is dealt with. Perhaps there is not even the need for the economy to grow, but just not to contract, that is, at least a steady-state phase of development. Under this condition, new contributors will not get any interest on their, as it were, investments, but still benefit from an efficient way of allocating goods between their different life stages. This, of course, presupposes a constant population: if there is population growth, there must be economic growth.

Fortunately, if there is population growth, there is usually economic growth too because more individuals often mean more producers, innovators and consumers. Another way of seeing this is to think about these systems as pyramid schemes which demands a continual inflow of new contributors. Thus, an indirect way of securing pro-old welfare state institutions is through increasing the number of workers or hours worked. This could come either through increasing the fertility rate such that more people are born into the state, through increasing immigration, or through raising the retirement age. With the current trends in most advanced economies of decreasing birth rates, the first possibility seems less promising. One could, of course, imagine a government implementing various pro-natalist measures to increase birth rates (countries have done this for various reasons, although none

with any great success, see e.g., Togman, 2019), such as child benefits or tax breaks. A better alternative, although not without its problem either, is to increase immigration. An additional reason for this is that population ageing also increases the need for more staff in elderly care and health care. Finally, probably the best option is to offset some of the effects of population ageing by raising the age at which individuals retire. Doing so generates both more contributions through increasing the number of hours worked and lessens the benefit burden by shortening the time during which pension benefits are paid out. This, of course, presupposes that people are able and willing to work longer into old age.

5. Conclusion

Population ageing accentuates a difficult assurance problem for pro-old welfare state institutions. Everyone wants to secure a good standard of living for their old age, but they depend on others to cooperate in a transgenerational project necessary to realise this. Up until recently, this problem has been insignificant because individuals have been able to rely on rosy economic growth as an assurance that they will enjoy an even greater support when they are old. But not anymore. Population ageing means that each new birth cohort is required to make bigger contributions to see to it that existing pledges are met and get more uncertain and less credible promises that they will be fairly reciprocated.

   Pro-old welfare state institutions are public goods, which allow individuals to even out their consumption over the course of their lives, as well as warranting them social protection against the risks of old age. They have been very effective at this by drawing on the economy of scale. They have also had the advantage of not depending on some controversial moral ground, which is why they have existed in different kinds of welfare states (liberal, conservative, and social democratic) and persisted regardless of political shifts. It is, however, a public good that essentially depends on overcoming this assurance problem. I have argued that if we want these institutions to continue to persist, there is no alternative but to promote economic growth.[2]

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[2] It can seem petty and unkind to argue as I have done here and present it to you, Toni, Björn and Dan, as a pension gift. Let me therefore assure you that I sincerely wish you a good pension and that I wholeheartedly believe that you deserve one. The department of philosophy in Lund, where I started as a young student in 2005, has been and still is dear to me. I grew up academically in the milieu which the three of you strongly contributed to creating. This milieu was friendly, appreciative and encouraging but also straightforward, critical and questioning. It forced me to become an analyst and to hone my arguments. When I reflect back on my time as a student in practical philosophy in Lund, I think particularly warmly of Toni who was my first and perhaps most important mentor when I was a student. I can sincerely say that I wouldn't have pursued an academic career if it wasn't for your encouragement then.

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