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The Inherent Faults of the State Pension System and the Main Direction of its Improvement

Summary: In my study, I took into account the design faults of the state-funded, pay-as-you-go system and realised that its principle (created in arrears) is defective, and it is necessary to move to a new operating principle to correct it. We have to forget about the existing so-called 'unfunded' pension system, and the state pension system shall be explicitly placed on its real basis, human capital. This results in an automatic asset/liability matching that is currently totally missing, and we can forget about the usual debates about the sustainability of the pension system. The result of such a system would probably be an increase in the number of births compared to today, but this is not the purpose of the proposed reform, which I intend to elaborate in a separate study, i.e. how this can be put into practice.[1]

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Over the past few decades, a rigorous protocol has been developed for studies and lectures on state-funded, pay-as-you-go (PAYG) pension systems around the world, including in Hungary[2].

STATE PENSION SYSTEMS AND DEMOGRAPHICS – 'SURFACE TREATMENTS'

The author/lecturer describes the demographic trends in the developed world and the country covered by the article, the low and typically declining total fertility rate (TFR) and ever increasing life expectancy. He mentions that these reduce the number of children and juveniles and increase the proportion of older people in the population, and the dependency ratio is steadily increasing, and concluded that measures have to be taken to stop this tendency. I also agree with the latter; however, I would disregard these 'compulsory' circles because related information can easily be obtained by the reader [e.g. Oksanen (2003); Orbán, Palotai (2006); Bajkó et. al. (2015); Berki, Palotai, Reiff (2016); Varga (2014)]. As a way out of the situation, experts tend to

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recommend a variety of solutions, which are usually divided into two groups: parametric and paradigmatic reforms.

Parametric reforms, which I will propose elsewhere, aim to improve the balance in a deteriorating situation. Their most important forms are, for example, raising the age limit and tightening the indexation of pensions, which was applied, for example, by the Bajnai government in 2009, or the abolition of unjustified benefits in 2011 applied by the Orbán government. These are important tools, but the improved balance between the revenue and expenditure side of the public pension fund is temporary. In addition, tightened indexation, for example, opens up a kind of 'welfare inequality' among old and new pensioners in the longer term (e.g. Simonovits, 2018).

Many people, therefore, expect the solution to be the result of 'more serious', paradigmatic reforms. Two important directions can be distinguished here, partial funding, which, for example, was introduced in Hungary in 1998 on the recommendation of the World Bank (World Bank, 1994) (with many errors that substantiated its almost complete termination in 2011); and the Swedish pension system with individual accounts, which is currently one of the main recommendations of the World Bank (Holzmann, Palmer, ed. 2006; Holzmann, Palmer, Robalino ed. 2012-13), although its expansion has recently came to a halt (Guardiancich et al., 2019).

The essence of a partial (or even full, like in Chile) funding would be to reduce the portion of pension funded from current contributions, which would allow pension to be paid at the usual rate, even in a declining population. The downside is that in the meantime less contributions will be acquired by the public pension fund, so the state will have to make up for the deficit. In other words, it does not solve the underlying problem, it only dampens the exacerbation of financial difficulties by delaying it.

The introduction of individual accounts, or on its 'official name' the Notional Defined Contribution (NDC) system, could be defined as a kind of 'back to basics' reform in which pensions are paid strictly based on individual contribution, as the official ideology behind the PAYG system explains. However, this only helps to rationalise the system and to make it (slightly more) sustainable over the long term by depriving it of the hard-to-justify eligibilities that have been introduced in the meantime.

However, these solutions, even though they are useful, because they can temporarily avoid exacerbating problems, can only be considered 'surface treatments', because they do not solve (or even seek to solve) the underlying problem: low TFR, since the possibilities of rationalisation become exhausted over time, while uncovered pension promises (measured by implicit public debt) remain.

In the case of capitalisation or funding, the picture is a bit more complicated. If, as it happened in Hungary, 'capital' simply became public debt, then we simply converted implicit public debt to explicit (Németh, 2009), meaning we converted a low-cost, long-term debt portion into a high-cost, short-term debt portion and therefore even worsened the situation (Banyár, 2011; and 2017b). If we capitalise the pension system so that the capital we use is actually domestic public debt, we have not replaced the PAYG system, since we have only transformed implicit public debt into explicit public debt. (This was recognised by generational accounting, which attempts to take into account the whole, that is, implicit and explicit public debt and share it among generations – Kotlikoff, 1993; in Hungary, see: Gál, Simonovits, Tarcali, 2001.)

However, the requirement to capitalise the pension system so that capital used is

not actually public debt (Kotlikoff, 1993; Feldstein, Martin, 2005) also does not result in improvement in the long run. While this seems to make the pension system independent of the birth rate, we know that an economy will only be viable in the long term if the population is changing in a suitable (even if declining) rate, otherwise even the funded system will not be able to eventually provide people with pension. In addition, announcing a funding would mean significantly reducing our current consumption in order to have an adequate pension. This even more questions whether it is worthwhile to 'waste' our limited income on economically unproductive things like raising children. In other words, funding is likely to further reduce TFR, thus exacerbating the pension problem in the long run, as this does not solve the underlying problem. (Banyár, 2019a)

THE BASIC PROBLEM AND THE SOLUTION ARE DIFFERENT: INVESTING IN HUMAN CAPITAL IS NOT WORTH IT FOR THE PEOPLE CONCERNED

The underlying problem, that is low TFR, is probably because the cost of raising a child is increasing, while its economic benefit, at least to the individuals who finance most of it, is virtually zero, meaning it is not only bad business, but also a luxury consumption, which only few can afford.

TFR on different levels is declining worldwide. We do not know the reason for this, but by now all the factors justifying the so far high values have disappeared. High TFR used to be necessary, because:

- for the vast majority of the population, children had significant economic benefits. From a relatively young age, the child could be employed on the family farm or hired out to work. In addition, they also provided care for elderly parents who could not work any longer, which in retrospect is referred to as the 'traditional pension system';
- due to the high infant and child mortality rate it was advisable to have many children so that at least one or two survive to become adults, and can effectively help elderly parents when the time comes;
- contraception was very difficult and generally illegal, and marriage was common, so having a baby was a cheap, no-action required default;
- childcare costs were low, no money was spent on education, health care, parents did not care too much about their children, etc. – and was completed relatively quickly at a low age.[3]

All these have changed radically by now, having a child has become a 'project' that can be planned rationally, and according to the calculation it is not worth it, because a child 'only' has emotional value now. While the economic benefit of a child to society remains enormous, it is not society that wants to have a child, but individuals to whom society pays only a small part of the cost. The social benefits of children (they continue to operate the economy, pay taxes and social security contributions) are common; however, they are not realised by those who finance the majority of the ever-increasing costs of raising children in modern societies.

So, if we want the pension system to be sustainable in the long term, parenting needs to become an economically 'good business', that is, we seem to have to deal with a factor outside the pension system. It is also clear that it is not having several children that is usually important. We should, however, raise more children who are given the impulses to make them fit into modern economy and division of labour. This is largely decided at a young age, so initial investment in human capital is key.

In principle, there are two ways to make child raising 'good business' (for those who are capable of proper parenting), which we can call 'input-' and 'output-financed'. According to the first, society provides resources for child raising; that is, it covers the costs, and according to the second, society reimburses the costs of child raising in arrears when it 'takes over' the 'finished' raised child. In practice, a combination of these shall be implemented, and the pension system is certainly worth incorporating (through 'output financing'). The reason beyond this concept is easier to understand if we take a look at where the developers of the principles of the modern pension system applied today made a mistake.

THE GENESIS OF THE PROBLEM: PROBLEMATIC PENSION PRINCIPLES

Retirement solutions developed before the modern PAYG pension system

Modern PAYG pension systems are considered general in the developed world, including Hungary, are nowhere near exclusive, but where they exist, they form a major part of the pension system, are recognised even by the World Bank for making it famous for its typology since then (World Bank, 1994) by referring to this as the first pillar of pension systems. However, this pillar was the last one, the earlier elements of the pension system are much older.

There are three former pension solutions that were originally specific to different social strata, but have now become different pillars of a mixed system.

❶ For the upper classes, pension means living off the returns of accumulated (inherited) wealth. The 'minimum' form of this is insurance annuity. Technically, this is a (fully) funded defined contribution (DC) system. This was also tested as a state system: the Bismarck pension system was a funded system until its capital was used up by successive world wars and attempts to replace it were eventually given up.

❷ Retirement itself was invented for employees. And retirement was funded by keeping employees on the 'payroll'. An early version of this was the civil list pension provided by the king or other aristocrats, which gradually evolved into a more financially sound and well-founded occupational pension. Its institutional form is the pension fund, which means a technically (often only partially) funded, defined benefit (DB) pension. In the West, this form has become more widespread, extended from employees to workers, and has become the main source of pension in many places and for many years. The level of the pension is guaranteed by the employer, and it is the 'sponsor' behind the pension fund, who holds its ground in the long run. This is why it is possible that such pension funds are not necessarily and always 100 percent funded (that is, the amount of capital in the fund is less than the expected value of promised pensions) – so it is possible to grant a delay to the sponsor to perform its funding obligation later, at a more suitable time.

❸ For ordinary people, retirement (or its functionally equivalent 'something') was in fact a kind of intra-family transfer, facilitated by the transfer of the family business under the traditional division of labour from father to son, and generations were living together in one household. In the family farm, the economic performance and personal consumption of young children and the very old were not commensurate with each other, and they both received transfers from the active members of the family. However, young people received these transfers from

those whom they later returned it as active ones, namely from/to their parents; therefore the system can be considered as a kind of intra-family transfer based pension system, where the cycle of transfers is always closed. In a more general sense, we can say that parents invested in raising their children, and they received the returns of this investment in their old age, more generally, this system can be called funded, where capital is human capital. Expanding the analogy, this could also be called a fully funded DB system. Today, this system has gone almost completely out of fashion in the developed world (but continues to exist in the developing world), due to changes in the division of labour, primarily as a result of the disintegration of traditional families living in one household. This change opened the way for a modern pension system, which was why there was a mass demand for it.

The overall conclusion is that until the modern pension system was established, there were only (at least partially) funded pension systems, but the capital behind the systems included human capital, and the 'owner' was who created it.

The modern PAYG pension system as an unprincipled combination of previous solutions

The source of the modern PAYG state pension system is twofold: It is linked to the New Deal of Roosevelt in the USA and the failure of Bismarck's pension systems in Europe.

The Roosevelt system of the late '30s and early '40s was admittedly an improvisation without any theoretical basis (Blackburn, 2003). If we want to find out what could have happened, we can say that the state actually copied the occupational pension funds and created a 'quasi-all-employer' pension fund. With this 'innovation' it considered itself such a strong 'sponsor' that it went beyond the extreme value of the partial funding of the pension fund, i.e. 0 percent, which made it necessary to distinguish it conceptually (see PAYG) from funded systems.

Previously established European systems imitating the Bismarck system (including the Hungarian pension system) were originally funded; however, capital was taken away virtually everywhere by the two world wars. Presumably, they saw the 'success' of the unfunded American system and decided to stop funding virtually everywhere after World War II, not to mention that this period coincided with a major expansion of pension systems (or the nationalisation of possible investment targets in the Soviet sphere of influence[4]), which would have made this requirement inherently illusory.

The theoretical foundations of the American system were provided by *Samuelson* (1958), but this was almost two decades after its introduction. The foundation laid down by Samuelson was a great success, and probably also contributed to the European acceptance of the American system. Beforehand the operators of the system had a bad feeling about operating 'Ponzi-scheme', but Samuelson dispelled these concerns (Blackburn, 2003). Emphasising this (and somewhat refuting it), the Economist put it this way in 2017 (in a dedicated part of a series of articles on top performances in economics): Samuelson showed us that good 'Ponzi schemes' do exist! (The Economist, 2017)

According to Samuelson, pensioners were formerly dependent on their children ('traditional pension system'), but 'it went out of fashion' (he did not elaborate this). Therefore, successive generations have entered into a new 'Hobbes-Rousseau social contract, whereby the present active ones support the present elderly, and in return can expect to

be supported by the active ones of the future. In addition, as the population grows (which is essentially expected), the elderly receive a kind of 'biological interest', meaning that they receive a higher pension in proportion to their contributions to the extent of growth in the population. Even though Samuelson never said so, he clearly provided a description of a DC pension system where contributions are made by the individuals concerned and indexation is essentially a contribution mass indexation. And this is where the problems begin.

The implemented PAYG systems were exclusively DB systems, and this feature, 'imported' from the occupational pension system, was taken for granted to the extent that at first there was great resistance to the conversion of PAYG systems to DC (NDC) systems, which was first implemented by Sweden at the turn of the millennium, but was followed by many since. Although this is actually 'the' Samuelson system, it is attributed to *Buchanan*, also a Nobel laureate (Buchanan, 1968). In occupational DB systems, the contributor is the employer and the employee 'deserves' his or her pension and may even lose it. In the DC system, the employee is the contributor by default (or, if the employer is the contributor, it transferred the contribution to the employee's ownership), and the resulting pension is, therefore, his or her own and cannot be taken away. However, in the majority of PAYG systems implemented, the contribution is paid partly by the employer and partly by the employee, so the eligibilities are unclear.

To make matters even more complicated, everyone seems to have readily accepted that pensioners would benefit from the population growth, but they did not really want to bear the burdens of population decline.

Another problem is that if we consider the PAYG system as a partially funded occupational DB system, we can calculate the missing capital of the system. This is the commitment or debt of the sponsor behind the system. Because in this case this is the state, it is public debt, and because it is not 'printed' public debt, it is called 'implicit public debt'. [Initially, it was not so obvious that the discovery of implicit public debt was also a huge act associated with Martin Feldstein (1974).] This, in turn, is a huge amount of multiannual GDP that has to be paid to the active generations, which creates tension when the number of the active ones decreases, thus increasing their burden. Since the EU requires the Member States to announce their implicit public debt behind pension systems in a mandatory manner starting 2017, it (also implicitly) recognises its nature. (See the Hungarian data on the MNB's website: https://www.mnb.hu/statisztika/statisztikai-adatok-informaciok/adatok-idosorok/xii-a-nemzetgazdasag-penzugyi-szamlai-penzugyi-eszkozok-es-kotelezettsegek-allomanyai-es-tranzakcioi/a-penzugyi-szamlakhoz-kapcsolodo-egyeb-adatok/a-haztartasok-tarsadalombiztositasi-nyugdijjogosultsaga.)

It actually turned out that the current systems – in a deteriorating demographic situation – are basically Ponzi-schemes and are making unfounded promises. This can also be put in such a way that the assets and liabilities sides of the modern pension system are independent of each other compared to other pension systems and contain no mechanism to reconcile or align them, and even the liability side (that is, pension promises) tends to inflate relative to the asset side (contribution capacity) (Banyár, 2019b).

The sustainability of the PAYG pension system, just like the traditional pension system (and even Samuelson himself emphasised it), really depends on the right number of children. The system, however, does not recognise this, and even punishes child

raising, since those who raise children take away money from their own consumption and do not get any reimbursement for it, since the result of 'investing' in the child becomes a public good through the payment of contributions.

Samuelson was wrong, the traditional pension system did not go out of fashion, but because of the new circumstances, it no longer worked without the intervention of the state; therefore, it is now up to the state to enforce and organise that children, in the form of a pension, continue to reimburse their parents the cost of raising them. In other words, he should have explicitly linked pension promises to their fundamentals, to raising children, as happened in the 'traditional pension system' that was replaced by the modern system. In the case of a growing population, the mistake was not noticed, since it was only a matter of distributing the surplus, but in the case of a declining population, the situation is quite different, and the theoretical mistake was transformed into a practical tension and requires an intervention.

SOLUTION: INCENTIVES AND ASSET/LIABILITY MATCHING INSTEAD OF PONZI SCHEMES

The first step to finding a solution is to recognise that there is no system that produces long-term returns without investment. Such systems only work temporarily and are called a Ponzi scheme (see, for example, Banyár, 2019b), which always ends up with big losses and many losers (who could not get out in time), because previously paid returns turned out to be the result of capital depletion.

Current pay-as-you-go pension systems are gigantic Ponzi schemes, as it is acknowledged and even emphasised that they are not based on any kind of investment.[5] By the logic of the system, this can only be quit by death or the denial of contribution. One option is basically for actual pensioners (and older active contributors who already pay a lot of contributions), and the other is for the young active ones, so avoiding personal bankruptcy will offer different solutions to different age groups, resulting in a conflict among different generations, which becomes increasingly visible nowadays. (For an analysis on this, see Banyár, 2017a.)

The Ponzi scheme nature of the system is also clear from the fact that the contributions are paid out immediately, without any investment period in between. And many people are misled by the fact that in many ways similar things happen in a funded pension fund. After all, the distinction between contribution and payment is made here, contribution is made into reserves, and payment is made from the reserves, in practice it is simplified: the contribution and the payment are 'netted', which means that payment is made from the current contributions and only the remainder is put into reserve, or only the missing part is taken out of the reserve. There may be a balanced position in which the reserve is not touched at all, and the payment is the same as the contribution, plus, technically, exactly the same amount of money is paid out that was recently received as contribution. But it is incorrect to think that it means that capital accumulation is completely unnecessary: this will be particularly clear when payments will be bigger than contributions and capital will be used up.[6]

What conceals the Ponzi scheme nature of a system is that, on the one hand, is very similar to a funded pension system (it 'only' lacks capital) and, on the other hand, it actually used to be, at least in Hungary (and across Europe, but not in the United States!). However, by declaring that it is now operating

as a pay-as-you-go system, another important thing has been declared, but this has gone unnoticed. From here, the system depends on how many and what kind of children we raise.[7] In other words, they actually switched to a system that was funded with human capital without drawing the resulting conclusions, and they continued to look at the system as if it were funded. By analogy, which is (would be) the exact opposite of this mistake: they pretended that the pensions of the participants of a funded pension system were not determined on the basis of the contribution to the capital, but distributed according to the number of children raised – of course, participants would be exempted from contribution for the duration of child raising. That too would be an unfair system and would slip towards unsustainability, but the problem would be exactly the opposite of what emerges now.

So the solution is: the promises of a system built on the return on human capital should be tailored to the actual investment in human capital, and that return should be given to the person who created it. As a result, asset/liability matching would take place in the system and would ultimately eliminate the issue of 'sustainability' of the pension system.

Therefore, the task is to lead the current pay-as-you-go system back to its economic basis, as Professor *Werding* put it (Werding, 2014 – though he did not strictly adhere to this in his specific proposal). The economic basis is that the pay-as-you-go pension system should be a human capital-based system that has been transformed into a Ponzi scheme instead. The Ponzi scheme characteristic here is, with a slight twist to the 'classic' Ponzi schemes where investment is reclassified as a return, the difference here is that the return (which is practically the pension contribution) is classified as an investment, that is, it is considered as a contribution to the scheme (even the name suggests it).

Contrary to the bad logic behind conventional PAYG systems and unlike fully funded (FF) systems, the so called 'pension contribution' should not be treated as a contribution to a reformed PAYG system, which should henceforth be referred to as a human capital based (HC) system, since here that is the return side. The investment side here is clearly and exclusively a child raising effort. That is, in an HC system, this needs to be accounted for as accurately as possible, and the income from child raising, or the pension funded from it, should be allocated as accurately as possible based on this effort.

Certainly the results of child raising can be very different, and what matters to us here is, first and foremost, how good a contributor the child is expected to be, i.e. how much contribution he/she will pay and for how long, and how intermittently he/she will receive earnings. As a result, there are some things that need to change in the HC system compared to the PAYG systems currently in operation, such as:

- pension shall be increased by raising more and better educated children instead of by increasing contributions, meaning that the system does not incentivise increasing contributions;
- however, child raising does not mean an exemption from the payment of pension contributions, since – as *Hyzl* et al. (2005) says – the contribution goes to the parents' pension and child raising contributes to our pension; therefore, everyone is obliged to pay a pension contribution;
- if our pension does not depend on pension contribution, it is reasonable to expect people to contribute in the same way. It shall not be the same amount for everyone, the contribution may remain with their

salaries, as this will provide a return on the parents' investment in their children as human capital. If it was not efficient, both the salary and the contribution would be low, and vice versa. But the problem is that we expect contributions to be made for different durations; for example, contributions are compulsory throughout one's active life, because they are different in duration. Therefore, the length of the contribution period in the HC system shall be standardised;

- it is certain that the HC system cannot be operated by itself, there is a need for a traditionally funded subsystem for those who do not want or are unable to raise children.

Whether the implemented system will be more input- or rather output-financed is simply decided by the extent of increasing the direct reimbursement of the cost of raising children from taxes.[8] However, this does not change the fact that even with 100 percent output financing, the pension contribution will not constitute the basis of the pension; therefore, even in this case, this transformation of the standard PAYG pension system is defective. How to deal with the different rates of input and output financing in the pension system is going to be explained in another specific article.

BIRTH RATE PROMOTION IS NOT THE GOAL BUT THE RESULT OF THE REFORM

It is very important to see that, despite it is communicated by both the supporters of linking child raising and pension (above all Botos, Botos, 2011, 2012; Botos, 2018 and Giday, Szegő, 2012, 2018) and its opponents (Kovács (ed.) in 2012, P. Mihályi, A. Simonovits, P. Holtzer), the purpose of introducing the HC pension system is not to encourage child raising. (Even neutral analyses – such as Simonovits, 2014 and Regős, 2015 – examine whether fertility is affected by the consideration of child raising in pension allocation. The pronatalist line was characteristic already at the first international time linking pensions and child raising were mentioned – see Demény, 1987).

The problem with this is that, if that were the purpose, objections would be justified, such as why the pension system was being 'touched' to solve such a problem, and that child raising could be more efficiently encouraged by other means. But the objections are not justified, because this is not the problem either: the HC system has to be implemented, because it is inherent in the internal logic of the PAYG system.

In other words, the purpose of introducing the HC system is not to encourage child raising, but to restore equity, so that the person who contributed to the pension base receives the pension.[9] Fortunately, this is economically consistent with promising pension only to those who have created the contributory capacity to pay for it, meaning that this pension system will be sustainable in the long term, independent of the number of children born in the future. The HC system will automatically adjust to any number of children, so the biggest demographic public finance problem will be eliminated and the pension system will be independent of the number of children.

Of course, overall and logically we expect that the introduction of such a pension system will increase the willingness to have children[10], not because the new system directly encourages childbirth, but because it eliminates the counter-incentive measures existing today in the poor PAYG system.

The fact that the HC system does not consider itself as an incentive to have children also means that it is not intended

to force anyone to raise children, it is in the best interest of everyone (especially unborn children) if only dedicated parents decide to have children.

However, the goal is twofold

❶ No matter how many children are born, the pension system must be sustainable, which means that the assets and liabilities of the system are automatically matched by making having or not having a child financially neutral.

❷ In the future, people should not be fooled by the illusion that they will receive a pension without saving or making any economic sacrifices. As in the future paying contribution does not make anyone eligible to pension, who does not have children shall put money aside and shall complement his/her pension with the money saved.

It is fair to say that it is logical what people say that the Earth is overpopulated, so it is advisable not to have children or only few. However, on this basis, it is not logical to attack the HC pension system, because its aim not to encourage child raising, but, through the recognition of child raising, neutralises whether a person receives pension from investment in human or 'physical' capital. On the other hand, it would be inconsistent if one were to argue for a reduction in population while arguing for the current PAYG pension system, because the former obviously hinders the existence of the latter.

It is important to mention that almost all of the recommendations which want to take into account child raising are based on the mistake that the 'traditional' pay-as-you-go system of Samuelson is theoretically correct, meaning that the pension is based on contributions. Accordingly, almost all of the recommendations are based on the notion that not only pension contributions but also child raising should serve as an eligibility criteria; that is, child raising should also be considered as a form of eligibility. (Quoted papers by the Botos couple and authors Giday–Szegő, as well as Werding, 2014 internationally)

To be honest, I also used to agree with them. I noticed early on that due to our upbringing, we owe a debt to society, which can usually be repaid through child raising or the pension system (Banyár, 2001; – later incorporated into Banyár, 2003/2017). In our joint book with *József Mészáros* (Banyár, Mészáros, 2003/2008), we raised the question of considering raising children as a contribution to the pension system, which we repeated in our proposal in 2010 (Banyár, Gál, Mészáros, 2010), and further elaborated in the early 2010s, but it was only published years later (Banyár, Gál, Mészáros, 2016).

In the references, I only found one exception to this approach, namely the study of 4 Czech insurance experts (Hyzl et al., 2005), who had already examined the issue from the point of view of asset/liability matching, and produced a similar proposal (or a proposal similar to my planned more detailed other article). I gave up on this approach back in 2014 (*Banyár*), as I have found that the recognition of pension contributions as an acquisition of eligibility is wrong, and the current pay-as-you-go system itself is incorrect in terms of asset/liability management, even its justification by Samuleson (1958) is questionable. One consequence of this is that the question does not have to be examined from a pronatalist point of view, as *Róbert Gál*, for example, usually emphasises. In his words, the current system imposes a kind of 'child raising tax' on parenting (Máriás, 2014), thus holding back fertility (something that has long been observed with the PAYG system – see, for example, Gál, 2003).

Notes

[1] My research was not funded and I have no special interests.

[2] The present study does not address a specific state-funded, pay-as-you-go pension system, but rather focuses on the common problems of all such systems. However, I took some concrete examples from the Hungarian system.

[3] Of course, it is also true that fertility is still high in the developing world and in those strata of the developed world where these circumstances are still common.

[4] However, paradoxically this is why the state pension systems of the socialist countries could even be regarded as funded, because they were backed by enormous state property. However, nobody really thought about that.

[5] The active defenders of the system consider this as an explicit advantage, saying it is cheaper, because they don't have to pay for expensive investment activities. Interestingly, and somewhat ironically, this 'wisdom' well-known to old pension bureaucrats is also quoted by the Botos couple with approval (Botos, Botos 2012), although they are also proponents of a system capitalised with human capital, but have not recognised the contradiction.

[6] The line of thought comes from Lajos Bokros – see Bokros (2001).

[7] Interestingly, Samuelson, who created the official ideology of the PAYG system, noticed this too, but did not draw the right conclusions from it. This was substantiated by the concept behind his model that he considered the cost of child-raising as 0, so his system was logical, but he did not notice that this was a very special subcase of a general case.

[8] Taxes are used to finance the major part of children's education and health care around the world. There are different types of childcare allowances (GYES, GYED, etc.) financed from taxes in Hungary. As of 1 July 2019, the Hungarian government announced further financial contributions related to raising children (extension of CSOK, soft loans, car purchase discount, etc.). These can be considered as tax-financed parts of child raising and would, therefore, provide pension for child raising based on a proportion of the tax paid.

[9] I only dealt with the financial/economic aspects of child raising here, but, of course, there are many other aspects that I do not discuss; however, many others have already done so.

[10] Some people are sceptical about this, claiming that research proves that child raising is not influenced by financial incentives. I would like to make two comments: 1. Whether or not such a pension system encourages child raising is not an essential element of the line of thoughts above (my subjective belief is that it does). 2. Compared to what this system would provide in exchange for having children, the current financial incentives can only be considered 'pocket money', so it is no wonder that they have had little effect.

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