

# Conflict or Fair Deal Between the Generations?

## Alternative economics for pensions<sup>1</sup>

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**Abstract:** For thousands of years, our ancestors operated a pension system that modern economists have declared obsolete, and which a new system has been introduced to replace. However, this new system is beginning to go bankrupt, while the maintaining of the old by the young is increasingly becoming a battle between generations. In other words, the modern pension system – it would seem – has not solved, but exacerbated the pension problem. But the old principle can still be applied, since the upcoming generation does not maintain future pensioners for nothing. Future transfers to the latter by the young have been preceded by transfers from that older generation towards the young. This means that the elderly are justified in demanding a pension from the young, but only those to whom the young owe a debt, and only to the extent of that debt. Having recognised this, we can lay the foundations for a new pension system based on the equitable settling of accounts between generations, which in principle will be similar to the old system, but which provides solutions that are more characteristic of the modern system.

**Keywords:** pension reform, social contract, human capital

## Introduction

The economics of pensions seems simple and logical, but it is problematic because we can derive from the situation that we may leave a huge (equal to some years' GDP) pension debt for (perhaps yet unborn) children and grandchildren, which can also be interpreted as meaning that greedy old people are exploiting the young. Furthermore, the whole pension system and the pension economics that support/explain it are a very new phenomenon – a product of the twentieth century. Before this time there was no system of this kind, although pension-like solutions did exist. But these earlier solutions did not produce the contradictions that the present system does. So the obvious question arises: is it inevitable that the system should function in this way? It is only possible to establish this type of modern pension system along the same principles? Or are only funded pension systems reliable, and should we forget about pay-as-you-go systems?

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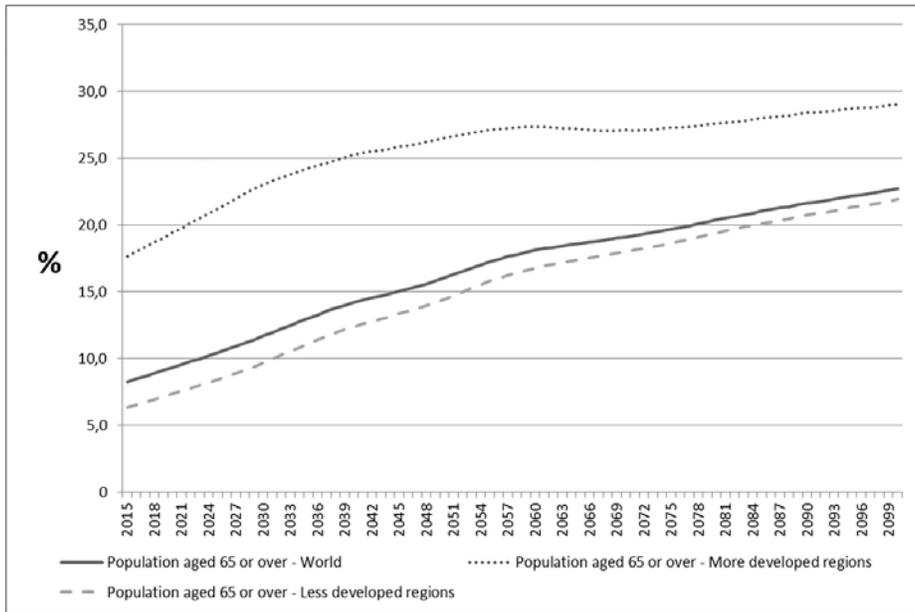
Examination of the topic in detail suggests that traditional pension-like solutions provide the key to present-day problems. Such systems were well designed: parents brought up their children (i.e. they provided them with quantifiable transfers), and children supported their ageing parents (i.e. they gave back these transfers via reverse transfers).

In the present pension system, it is very peculiar that the problem is formulated in such a way that the elderly are 'exploiting the young'. It is strange because the most important 'capital' of young people – their knowledge and abilities – were established with the financial help (and other transfers) of older people. So it is logical to make a settlement between the two parties, and one possible type of the latter involves a kind of contribution payment on the part of young people. However, in exchange for this contribution, young people should not apply for any reimbursement (e.g. in the form of a pension) later in time if they receive this contribution in advance during their childhood. In other words, an early contribution payment is not commensurate with any right to a later pension. Such payments must go directly to those who contributed to the investment in the human capital that created this capacity for a contribution payment in the form of a pension. Thus, if somebody wishes to receive a pension, they can follow one of two paths (or a combination of these): 1. make an investment into human capital (i.e. bring up children) or 2. accumulate 'material' capital. In other words, youth should not be expected to maintain all old people, but only those who have contributed to their upbringing and through whose efforts the human capital they possess came into existence, and only to the same extent. Approaching the issue from this perspective, the pension system could represent nothing other than a kind of equitable settling of accounts between the generations.

## Increasing burdens on younger generations

According to UN forecasts, by the end of the century the global population will increase such that the proportion of the population that is (now) regarded as old will also increase dynamically, almost tripling compared to the current level. Developed countries are expected to undergo a similarly proportionate increase, but beginning from a much higher level. The percentage of old people will increase from the current level of around 18% to almost 30%.

Figure 1: Projected global population aged sixty-five and over

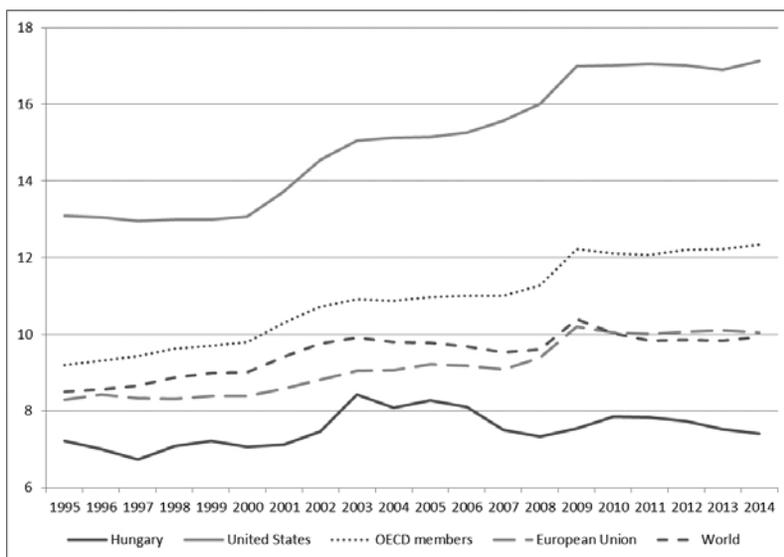


Source: UN, World Population Prospects, the 2015 Revision - <https://esa.un.org/unpd/wpp/Download/Standard/Interpolated/>

If we regard the pay-as-you-go pensions systems that are in place in the majority of developed countries as a given, then the financing of pensions will increase the burden on the youth of today and future generations.

However, the problem of having to maintain an increasing number of old people will not only be felt with regard to pensions, but also by the healthcare system. Here too, the healthcare of old people is usually financed from the taxes and contributions paid into the system by active workers. We are not in possession of dependable forecasts with regard to changes in healthcare expenditure, but it is easy to develop a picture based on the figures below. The proportion of GDP being spent on healthcare, although starting at different levels and to various degrees, is continuously increasing throughout the world.

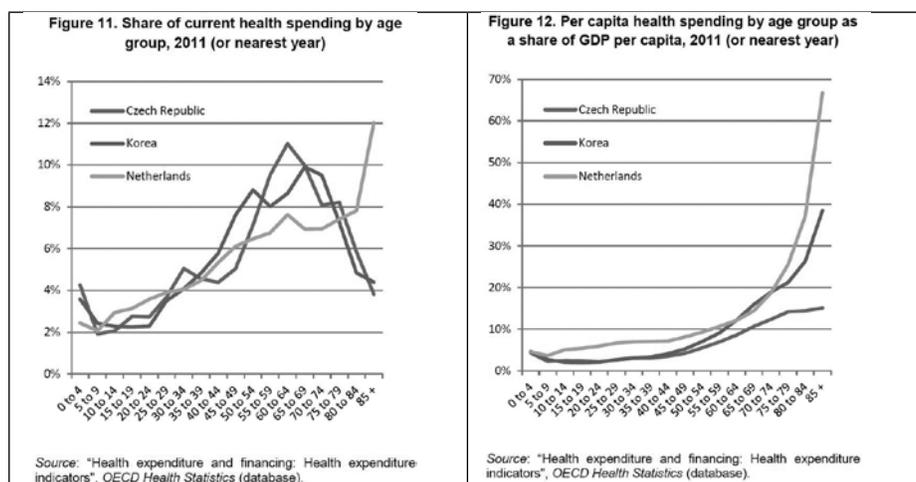
Figure 2: Health expenditure total, % of GDP



Source: World Bank, World Development Indicators, Health Expenditure - <http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS>

Ageing has presumably already played a major role in this increase, and these healthcare costs are expected to increase further as a result of ageing, in view of the fact that – according to OECD data – healthcare expenditure gradually increases with age (OECD [2016]).

Figure 3: Share and per capita health spending by age group in some OECD countries<sup>2</sup>



2 Please note that Figure 3 is taken directly from OECD (2016).

In summary, if we take the current financing solutions as given, providing for the old will increase the burden on younger generations.

## Social contract between generations

However, the fact that the proportion of old people is increasing, and that of younger generation decreasing, will not necessarily lead to an increase in the burden for younger generations. Things could happen in exactly the opposite manner: young people become more valued as they become rarer, leading to an increase in their incomes, while older people fall into poverty *en masse*. Poverty in old age is not a particularly rare phenomenon during the course of history, and presumably this trend will appear again in future. However, this tendency is expected to be much weaker than it otherwise could be, or rather used to be, within the developed world thanks to the fact that a social contract<sup>3</sup> was concluded between the age groups two or three generations ago. The essence of this Hobbes-Rousseau social contract, as it was called and set down in writing (Samuelson [1958]) by its main ideologist Paul Samuelson, and which includes all generations, including those as yet unborn, is that currently active workers forego part of their income for the benefit of the current older generation, and in exchange, the active workers of the future will also forego part of their income for their benefit when they also become old. This kind of social contract (which replaced an earlier, non-functioning version) was first concluded during the era of the New Deal, became universally popular following the Second World War, and became the modern system of social security. It has two important functions: assuring income in old age (pension system), and financing healthcare in old age (health insurance). A third system aimed at financing nursing in old age is also beginning to gain in popularity in some developed countries (such as Germany and Japan).

## The younger generation's possible counter-strategies

As a result of the above-mentioned worsening demographic tendencies and the social contract currently in effect, the younger generation of today (and future generations) must transfer an increasing proportion of their income to the old people of today (and future generations of old people). It is logical that they regard this as unfair and are fighting against it. What other possibilities exist? From this perspective, it is worth distinguishing between individual and collective strategies.

The essence of the individual strategy is that young people attempt to reduce the pressure on their income that results from ageing. This again may take two forms:

<sup>3</sup> Here I have adopted the metaphor of Samuelson [1958] as the whole pension profession did. Hobbes and Rousseau introduced the concept of the "social contract" in relation to power, but the logical structure is as follows: social classes behave as if there is a valid explicit contract between them, albeit they may not be conscious of it. Samuelson generalised the term "social contract" in this sense, replacing social classes with generations. In this sense, the pension system gives the impression that there is a contract between consecutive generations. The epithet "Hobbes-Rousseau" was used by Samuelson and was adopted by the present author, not considering that the issue was discussed widely after the two original creators of the phrase.

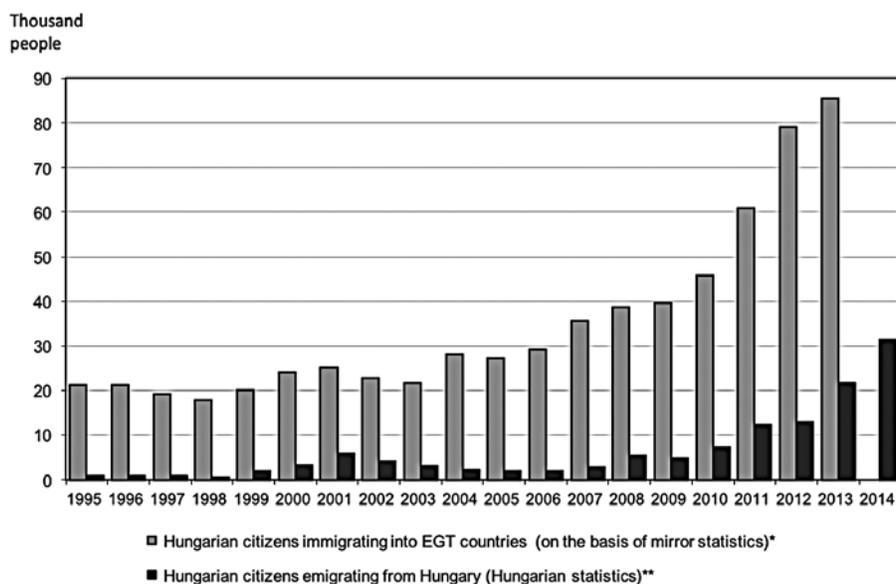
direct and indirect. The direct strategy is aimed at ensuring that individuals need transfer as little as possible to the older generation, while people who adopt the indirect strategy accept this fact, but strive to reduce other burdens to compensate.

The third option, a collective strategy, is to fight to create a new social contract between generations.

## Direct individual strategies

As a result of the whitening of the grey and black economies, it will presumably become increasingly difficult to find loopholes by which to avoid paying taxes and social security contributions. Accordingly, the most effective direct individual counter-strategy to reduce public burdens is emigration, and this phenomenon may indeed be observed from the periphery of the European Union towards its centre. One such example is Hungary, from where emigration towards the more developed countries of the EU is continuously increasing (see Gödri [2015]<sup>4</sup>).

Figure 4: Annual outflow of Hungarian citizens to EGT countries according to "mirror" and Hungarian statistics



Source: Gödri [2015], including: a) Eurostat (2015.05.25) from 2009, complemented by German (DESTATIS) and Austrian (Statistik Austria) data, and Gödri's own calculation; b) HCSO, Demographic Yearbook.

4 The table primarily indicates the change and rough order of magnitude of the trend, because it was only possible to partially supplement missing Eurostat data – Irén Gödri, personal communication.

Furthermore, this primarily involves the younger working generation:

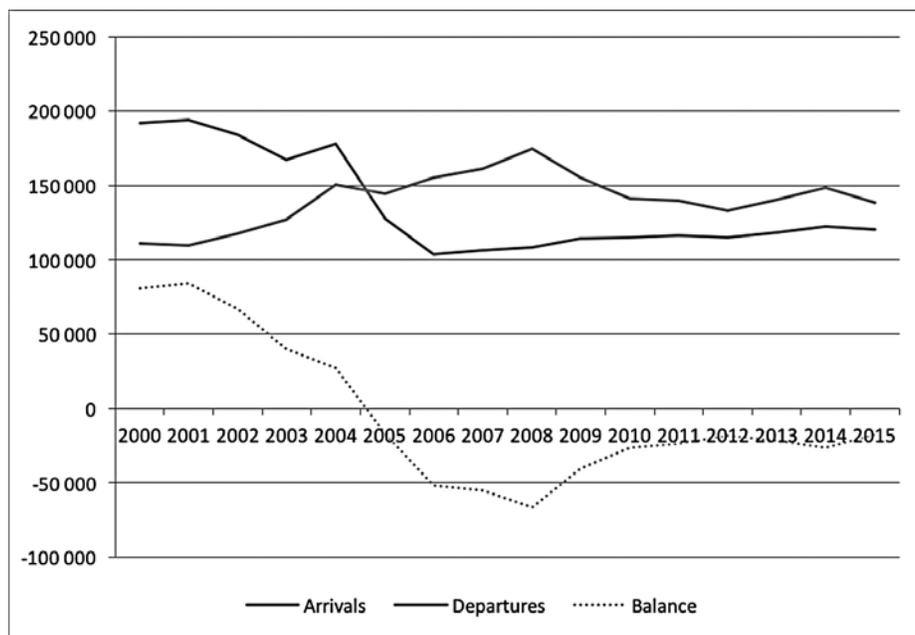
*Table 1: Distribution of emigrants from Hungary according to various socio-demographic factors compared to the resident population of Hungary aged 25 to 59 (%)*

Age at time of emigration	Hungarian citizens aged 20-59 living in Hungary	Hungarian citizens aged 20-59 who emigrated after 1989	Hungarian citizens aged 20-59 who emigrated between 1990 and 2009	Hungarian citizens aged 20-59 who emigrated after 2009
Under 20	–	4	7	2
20-29	–	51	55	48
30-39	–	29	27	31
40-49	–	11	9	14
50-59	–	4	2	6
20-39 in total		80	82	79

Source: Blaskó-Gödri (2014)

Naturally, in moderately developed economies like Hungary's and those of similar countries, the high level of public burdens on income is only one of the reasons for emigration; the more important reason is the actual level of wages, or rather the significant increase that can be achieved through emigrating to a more highly developed country. It may also be observed, however, that one-way emigration also occurs between more highly developed countries: highly trained young people from certain countries are escaping high levels of tax and social security contributions (or an overly balanced pay scale) to countries that rake in lower public taxes (or that provide particularly high salaries to highly trained workers). Germany is often cited as one such country. Official statistics indicate that, during the past decade or so, the balance of migration with regard to German nationals (i.e. people born in Germany), which has always been positive (meaning that the "homeland" attracted people of German origin living abroad), has become negative.

Figure 5: Migration between Germany and foreign countries



Source: Destatis - <https://www.destatis.de/EN/FactsFigures/SocietyState/Population/Migration/Tables/MigrationTotal.html>

According to data from Eurostat, German citizens who emigrate are generally members of the younger generation, and presumably also their children. Some three-quarters of emigrants are younger than forty-five years of age.<sup>5</sup>

5 As we can see, Destatis and Eurostat figures contain a discrepancy with regard to the total number of emigrants. The probable reason for this is that the two institutions use different definitions, meaning that, to a certain extent, Eurostat “cleanses” the German data they receive - according to Irén Gödri.

Table 2: Emigration by age group, gender and citizenship - Germany (former territory of the FRG until 1990)

Age group	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
0-15	23 237	24 710	:	29 299	31 557	22 460	21 629	22 220	19 405	19 185	19 298	17 989
15-19	6 191	6 314	:	6 966	7 139	4 562	4 198	3 679	3 280	3 373	3 737	3 411
20-24	16 202	14 433	:	15 133	16 258	8 655	8 928	8 547	7 533	8 010	8 957	8 224
25 - 29	19 971	19 830	:	23 121	25 828	17 073	16 508	15 664	14 290	14 774	17 559	17 415
30 - 34	18 437	17 200	:	19 470	20 944	15 130	14 634	15 607	13 807	14 388	15 739	15 095
35 - 39	19 481	17 888	:	17 955	17 591	12 361	10 749	10 777	10 094	10 598	11 789	11 067
40 - 44	15 155	14 233	:	15 927	17 289	11 548	10 003	9 632	8 189	7 909	8 327	7 262
45 - 49	9 818	9 563	:	11 197	12 857	9 392	8 272	8 340	7 727	7 806	8 101	7 372
50 - 54	7 060	6 431	:	7 154	8 124	5 821	5 548	5 658	5 256	5 664	6 457	6 042
55 - 59	4 640	4 415	:	4 772	5 573	3 989	3 447	3 572	3 473	3 725	4 062	3 788
60 - 64	4 518	3 822	:	3 550	3 929	3 146	2 854	2 967	2 786	2 824	3 102	2 940
Total	150 667	144 815	155 290	161 105	174 759	120 374	112 303	112 049	101 384	104 245	113 884	106 682
0-44	118 674	114 608	0	127 871	136 606	91 789	86 649	86 126	76 598	78 237	85 406	80 463
0-44 - %	79%	79%		79%	78%	76%	77%	77%	76%	75%	75%	75%

Source: Eurostat - <http://ec.europa.eu/eurostat/data/database>

It is important to note that these are the official statistics, which presumably underestimate the actual level of migration; in the case of Hungary, mirror statistics indicate that only about a third of actual migration appears in the official statistics.

One of the disadvantages of this strategy is that if young people escape from the country that raises them – and from their exploitation by the older generation who live there – by emigrating, then this will only mean that they will be using their contributions to support complete strangers; people from whom they did not receive a thing when they were children, instead of their parents. However, according to the current pension philosophy defined by Samuelson this is perfectly normal, and is something we need not worry about. (In fact, two years ago, the director of Germany's state insurance organisation explicitly stressed this – citing the current pension philosophy – in relation to Hungarian claims that it is unfair that young Hungarians who emigrate should pay contributions that benefit German pensioners, instead of their own parents' pensions.)

## Indirect individual strategies

If an increasing proportion of a person's income is deducted in the form of public burdens such as social security contributions to support old people, it is logical that

they will attempt to reduce their expenses in other areas so as not to have to reduce consumption.<sup>6</sup> The most logical step in this respect is if they reduce the costs relating to raising children by only having one child, or not having children altogether, because:

- Everything they do not spend on their children they can spend on themselves,
- By saving money on raising children they will not only have more income, but also much more time, part of which can be spent on money-earning activities through which the income available to spend on themselves can be further increased.
- Although giving up children can lead to a certain emotional deficit, such individuals suffer no financial disadvantage, and in fact enjoy the advantage that the increase in contributions they can make (in relation to the higher income derived from the extra work they are able to perform instead of raising children) will mean in terms of a larger pension when they retire, compared to those who were unable to eliminate their (rationally unjustified) child-raising instincts. People who have children can expect nothing in return from the children they have raised, and in fact experience shows that they will have to continue supporting their children even in old age, meaning this is another added advantage of this strategy.

However, it is obvious that if many people choose this strategy then by the time they reach old age there will be very few taxpayers whose social contributions can be distributed in the form of pensions. In view of the fact that we described this strategy as an intrinsic reaction to a situation in which there are not enough children, it serves as positive feedback and further aggravates the basic problem, although at the community level, not the individual.

## Collective strategies – the possibility of a compromise

At a community level, the above-mentioned strategies clearly serve to worsen an already bad situation, and accordingly it is expedient to try to create some kind of collective strategy; i.e., to force a new social contract through a process of bargaining. But what arguments or trump cards do young people have in this bargaining? What is it worth targeting at all? Does a compromise exist that could be viewed by both parties as equitable?

At first glance, in a democratic society young people are at a disadvantage in such a deal, because as a result of ageing, politicians are increasingly inclined to take into account the point of view of the older generation, not only because are they the largest and most rapidly increasing group of voters, but also because they are the most active part of the electorate. Elections have been lost in Hungary because of the rational reduction of pensions, and elections have also been won thanks to promises made primarily to pensioners. And this takes us in a direction in which the

<sup>6</sup> In her 2005 study, Mária Augusztinovic argues that ageing is not a problem for now, because the increase in the number of old people is occurring parallel to the decrease in the number of children, and although the old-age dependency rate is increasing, the proportion of young people is decreasing. Accordingly, the total dependency rate is still lower than it was in the previous century (which was characterised by a large number of children).

burdens on the younger generations are continuously increasing as a result of ageing, while their opportunities for achieving a deal of a political nature are continuously decreasing, leaving them only with individual opportunities to opt out and desert the system, such as emigration.

However, at a second glance, if we do not consider those who are already pensioners and who are unable to change their situation themselves (and must accordingly rely on politics, and for whom as a result it is rational to exploit the instruments for applying political pressure), but instead consider those who are not yet pensioners, then there opens up a certain amount of room for manoeuvre in terms of bargaining. This is because – if their attention is drawn to the fact in time –, it should not be impossible to get people who are currently middle aged to realise that if they follow the example of the present older generation when they too retire, then they will only be forcing more young people who pay social security contributions to desert *en masse*, due to which contributions will have to be increased, which in turn will create even greater impetus for young people to opt out. And the end result will be that, despite their power to exert political pressure, pensions will still not be high enough. This end result can be avoided through the timely conclusion of a new deal with regard to the future and an equitable distribution of burdens. So this bargain would come about between the middle-aged and the young, and would affect transfers between future active workers and old people. Of the generations affected, even old people are still young enough to adapt to the new situation. But for the acceptance of the young people of the future, who are unable to take part in its development either because they are too young or have not yet been born, it must be well-founded from the beginning; a deal that is regarded as fair by all parties. What would a deal of this kind look like?

## Collective strategies – searching for an equitable deal

Such a deal would fundamentally involve today's middle-aged active workers – the old people of the future – foregoing certain transfers from the active workers of the future, meaning they would have to reduce their old-age income that is derived from this source, and (partly) assume responsibility for the payment of certain expenses (e.g. healthcare) that are currently also (mainly) paid instead of them by active workers.

This very roughly determined principle is logical, but what level would both parties regard as equitable?

### *An opportunity for a practical deal*

A practical solution that lacks all theoretical considerations can be envisioned by taking a look at the past level of transfers from active workers to the older generation, and determining the observed level which we still regard as bearable

today. The two most important financial transfers from active workers to old people are pension contributions and health insurance contributions; the other elements are smaller and difficult to express in numbers (such as, for instance, savings on travel for pensioners).

According to figures from the Central Administration of National Pension Insurance (see ONYF [2016]):

*Table 3: Pension Insurance Fund contribution rates as a percentage of earnings serving as basis for contribution - %*

Pension insurance contribution paid by	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
employers	24,5	24,5	24,5	24,5	24,0	24,0	22,0	22,0	20,0	18,0	18,0	18,0
the insured	6,0	6,0	6,0	6,0	6,0	7,0	8,0	8,0	8,0	8,0	8,5	8,5
Total	30,5	30,5	30,5	30,5	30,0	31,0	30,0	30,0	28,0	26,0	26,5	26,5
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
employers	18,0	18,0	21,0	24,0	24,0	24,0	24,0	24,0	27,0	26,0	23,1	
the insured	8,5	8,5	8,5	9,5	9,5	9,5	10,0	10,0	10,0	10,0	10,0	
Total	26,5	26,5	29,5	33,5	33,5	33,5	34,0	34,0	37,0	36,0	33,1	

The National Health Insurance Fund (OEP) only publish data as a percentage of GDP (OEP [2016])

*Table 4: Changes in National Health Insurance Fund expenditure as a percentage of gross domestic product (GDP)*

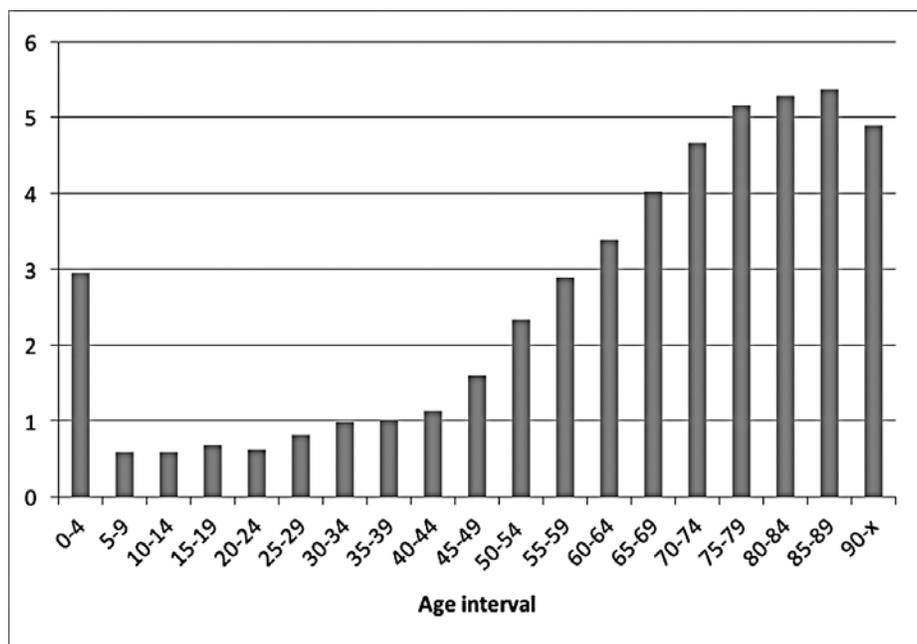
1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
7,7	7,2	6,3	6,1	6,0	6,0	6,0	6,4	7,0	6,9	7,1
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
7,0	6,5	5,4	5,4	5,5	5,3	6,3	6,2	6,0	5,8	

This indicates that – at least in Hungary – the two values have fluctuated around a significantly high level during the past two decades, and accordingly we might state that the above-mentioned “past figure” could easily be equal to the current figure, which we could then freeze as a result.

However, we also know that the above two elements are not homogeneous: while in pay-as-you-go pension systems such as Hungary’s pension contributions exclusively burden active workers and exclusively serve the consumption of old people, healthcare contributions may also exclusively burden active workers, but also partly serve their healthcare consumption. However, we also know that old people use healthcare services to a proportionally greater extent, meaning healthcare contributions must increase for two reasons as a result of ageing. Accordingly, freezing healthcare contributions for active workers would mean that old people would also have to pay such contributions (and moreover, increasing contributions)

for a long period, meaning the proportion of their pensions that can be spent on other things would decrease. It is already visible in the above OECD data that healthcare consumption by older people is much higher than by younger generations. This is also confirmed by the Hungarian data:

Figure 6: OEP healthcare expenditure in relation to one thousand citizens of identical age, 2010



Source: Lecture by Gyula Kincses, 2017, OEP

Accordingly, freezing the part of healthcare contributions that serves for the healthcare consumption of old people would mean that the increasing deficit in the financing of healthcare services for the old would have to be paid for out of pensions. This would lead to a reduction in pensions. If this is something that future pensioners can see in advance, then they can prepare for it through planned savings, with which they can supplement their pensions. In other words, they can capitalise part of their pension services. Overall, and from a functional perspective, this is the same as if they were to capitalise part of the collateral for their healthcare insurance services, and this can be formally organised in this manner.

But the pensions of old people in the future (or at least, the part that is derived from currently active workers) also decreases because we are freezing their pension payments while ageing continues, leading to the following situation: the number of active workers paying social security contributions decreases, leading to a reduction in the total sum of contributions paid into the system, which in turn

must be distributed among an increasing number of old-age pensioners. Old people can defend against the resulting reduction in pensions in two ways: first through a continuous increase in the age of retirement, and second, through savings, which is equivalent to the further partial funding of the pension system. Increasing lifespans mean that for pensions not to be reduced, retirement age must be increased by a greater level than the expected increase in lifespan, or in other words, in a way that means the average time spent as a pensioner continuously decreases.

This practical solution may seem viable at first glance, but there are a few problems, including but not limited to the following two, which I would like to highlight here:

1. Since this solution is not based on principle, we cannot be sure that it will be permanent. It may seem equitable now, according to our current experience, but this is fundamentally subjective; we cannot be sure that upcoming generations will feel the same. As a result, we can never be sure that the upcoming generation will not withdraw from this agreement.
  2. It is clearly unfair with regard to women who raise children, because they will receive less and less from the continuously decreasing distributable pension money in view of the fact that, in contrast to men, they have spent a significant part of their active working years raising their children and not performing earning activities that include the payment of social contributions. This has, of course, always been the case, but there have so far been additional resources available to compensate for this, which will later dwindle and eventually run out. In addition, it will become increasingly evident that people are only entitled to a pension because they have raised the next generation of contributors. And it is precisely those who have contributed the most to this who will benefit the least.
- At first glance, we could handle this situation by examining the fundamental philosophy behind the current pensions system and returning to its strict, “fundamentalist” interpretation. This, with a few amendments, could provide a solution to these problems.

### *The fundamentalist solution*

The pay-as-you-go pension system was eventually underpinned by a philosophy – much later than its practical introduction – by Samuelson (1958). This was welcomed with joy by the system’s practical implementers, because until then they had had the bad feeling that they were operating a gigantic Ponzi scheme (Blackburn [2003]). This bad feeling was dispelled by Samuelson, and everyone calmed down (although the bad feeling was justified and should not have been dispelled, but rather further reinforced, as has now transpired – but more about that later!).

According to Samuelson, it used to be the case that children took care of their ageing parents in exchange for having been brought up by them (“traditional pension system”), but this has now gone out of fashion. Because of this, consecutive generations concluded a Hobbes-Rousseau social contract. According to the

agreement, current active workers pay for the upkeep of current pensioners, and in return the active workers of the future will also pay for their upkeep. Furthermore, old people will also receive a kind of “biological” interest, meaning their pensions will be higher than the sum they paid into the system, because the increasing population means there will be more active workers paying social contributions than there are old people, and the additional contributions of these active workers will also be distributed among current pensioners. This philosophy was widely adopted (although not strictly adhered to in the sense that contribution payments were not generally defined, but instead the level of pensions was somehow determined and contributions were then continuously adapted to this level), and only one major amendment was included. This was put forward in a short article by Aaron in 1966, who said that the biological interest should also be supplemented by the effect of increased productivity. Although Samuelson concentrated on the likely population increase, he did note that it follows from the model that if (in an extreme case) the population were to fall, then biological interest would be negative.

In other words, freezing pension contributions at an acceptable level and only paying pensioners a pension that corresponds to the contributions paid corresponds to the original philosophy of the pay-as-you-go pension system, except this principle has generally not been followed so far. Accordingly, the first failing of the above-mentioned practical solution can be remedied, and the solution is not difficult to find: we must simply return to the official philosophy of the pay-as-you-go pension system; we need only put a stop to the lenient practices employed until now and adhere strictly to the official philosophy. Demand for the fundamentalist approach has increased steadily with the worsening of the demographic situation, meaning the setting of contribution levels and the introduction of the equitable distribution of gradually dwindling pension resources. And with regard to the fall in pensions, their distribution cannot be handled with the same ‘laxity’ as before, but must be well-justified. Moreover, according to the original philosophy put forward by Samuelson, such a justification is the fact that pensions shall be in proportion to the total contributions paid by the individual until they retire, which accordingly must be recorded (in a valorised manner, although this was defined by another Nobel prize winner, Buchanan [1968]). This kind of pension system is called an individual account, or NDC (notional defined-contribution) system, and for a long time I too felt that this was the right direction for pension reforms (Banyár-Mészáros [2003], Banyár-Gál-Mészáros [2010]).

We have thus turned the above-mentioned practical solution into a for-the-most-part theoretical solution, and have eliminated its first major shortcoming. The second shortcoming is also relatively easy to eliminate (and our proposals for reform mentioned above include the original proposals that harmonise well with the logic of the NDC system): in this solution, pension entitlements acquired during marriage would be regarded as joint entitlements in view of the fact that a kind of distribution

of labour existed between the married couple within the family, with one partner staying at home with the children while the other worked. This means that income and the related acquisition of pension entitlements are a joint acquisition, which must be distributed equally. One embodiment of this could be a joint life pension annuity based on this joint acquisition of pension entitlements (I will not go into detail here, but the specifics can be found in the above-mentioned articles).

So it would seem that demand for the introduction of an NDC pension system, and with it a return to the basic principles established by Samuelson, would solve almost every problem, but unfortunately this is not the case. This is because if we imagine a pay-as-you-go pension system reformed as above, according to fundamentalist principles, while negative demographic trends continue, then we are faced with the following problems:

1. First of all, we have as yet not found a theoretical answer concerning the appropriate definition of pension contributions; all we know is that defining a set value is a theoretical solution. And in the case of a population decline, defining pension contributions at a high level is much more problematic than if the population is increasing.
2. In this case, the youth of today knows that if the population continues to decline, then their pensions will be even less than the reduced pensions of today's older generation. In other words, if we regard their contributions as payments into the system, as suggested by Samuelson, then the ("biological") interest rate on those payments will be negative, meaning it is in their interest to continue to "sabotage" this system and use every possible opportunity to opt out and desert. Simply put, the Samuelson system may not work as effectively with a negative rate of interest as with a positive interest rate, meaning the two cases are not symmetrical, especially in view of the fact that the original principle would only be introduced as a result of a negative interest rate. While the rate was positive, meaning while the population was indeed increasing, it was not in fact the biological interest rate that was positive, but it was rather the rate of contributions that was set to such a low level. Meaning that, in contrast to the system's philosophy, it was not the pensioners of the era who enjoyed the most benefits, but active workers.
3. Furthermore, a fundamentalist reform or a transition to the NDC system would not have the same effect in developed countries with poor demographics as it would in moderately developed countries like Hungary. In highly developed countries, problems that are coming to a head as a result of a strongly negative ("biological") interest rate can be delayed for a long time by encouraging young people to emigrate there from moderately developed countries, in view of the fact that, despite the low number of children, developed countries can acquire new social security contributions. This also corresponds with the intention of young people to desert periphery countries, meaning such migration is in the joint interests of young people from both highly developed countries and moderately developed countries.

Although the price of this is that pension problems become even more severe in moderately developed countries (“positive feedback”), according to Samuelson’s philosophy this is something we should not be concerned with. In fact, in this case the philosophy directly affirms their interests, because it states that source countries are not owed anything in return for the emigration of young people. This may be something that we may increasingly state only in bad faith, but we should not harbour illusions; this is a position that developed countries will hold. And in fact the mechanism of operation of the European Union, and especially the principle of the free movement of labour, is assisting them in this (See Banyár [2014b]). This means that, even in the event of a fundamentalist reform of the pension system, in Hungary the pension problem would reach breaking point much earlier than in more developed countries.

4. Finally, from one perspective the family approach described above solves the problem of unfairness with respect to women with children, which we mentioned as one of the problems associated with the possibility of a practical deal, but it also increases unfairness from a another perspective. This is because people with children (including men) will suffer a reduction in pensions compared to actively working men who do not start a family and generate a similar level of pension contributions. Accordingly, the question arises whether it is equitable for parents who have in effect undertaken to provide a new generation of social security contributors to be paid lower pensions than those who have not done so. In essence, we could ask a similar question with relation to one-way migration between highly developed and moderately developed countries.

As we can see, one option, a return to Samuelson’s principles, represents a highly doubtful solution. Accordingly, neither the practical/pragmatic solution, nor a solution based on old principles will be effective.

### *New principle: the equitable settlement of accounts between generations*

So we have reached a stage where we need a theoretical solution, but the old principle does not work very well; it was developed incorrectly. So what next? What is the right strategy for young people to take? Should they strive to do away with the current pension system after all, in view of the fact that within a Samuelson framework and in a worsening demographic situation, topped with an environment that is draining labour out of the country, they can only be the losers of the pay-as-you-go system, whether it is reformed or not?! Are young people right to be resentful with regard to the social contract that is currently in effect, and which is disadvantageous to them, and are they justified in refusing to maintain the current older generation on the grounds that they are certain to lose out on the deal?

For my part I believe that (possible, or future) resentment on the part of young people is justified, but only to a certain extent. Only to a certain extent because young people cannot claim that they are supporting old people for nothing in view

of the fact that they have received a lot from them, and owe them a lot to begin with. And the fact that old people are asking for something in return for what young people owe them is not in conflict with any fairness-related problem. But what do young people owe the old? Practically speaking, they owe them the cost of their upbringing, because that is something to which they contributed practically nothing. In addition, the human capital owned by the child, and which generates income for them, was created thanks to the financial efforts of the parents (and to a certain extent, other taxpayers). These efforts can thus in fact be regarded as, investments in human capital, with regard to which it is justified to expect not only a simple return, but perhaps also a positive yield. These investments were not made by the child, so it is not a justified demand that the former should receive the full yield, and should not have to return something of it to those who did make the investment. We could also approach things from the perspective that the child invested in his/her own human capital, but using a loan from their parents and other taxpayers, and it is appropriate that this loan should be repaid when the individual is able to do so.

It is interesting to note that Samuelson writes nothing about this aspect of things; in his approach children have no consumption, meaning they have contributed zero investment to child-rearing, which naturally has a yield of zero (he more or less explicitly states exactly this!). This is all the more strange in view of the fact that he mentions the motive itself, because he states that this is exactly what happened within the “traditional pension system”, which has “gone out of fashion”: children supported their parents in exchange for having been brought up. In defence of Samuelson, it may be stated that the idea of investing in human capital was only put forward a little later than his description of his own pension philosophy. Nevertheless, it is strange that the theory has not been corrected since then.<sup>7</sup> These days we take everything into consideration, but only partly consider our most important investment, the one in human capital, although pensions are the yield on this investment. If there is no investment, there is no pension. Pensions can only be as high as is permitted by this investment (and this is something that even Samuelson noticed and mentioned in his 1958 article, but only in very general terms).

The fact that we do not take account of the investment in human capital means that we are potentially allowing that capital to escape from us without settling

7 I have attempted to perform this theoretical correction myself (Bányár [2014a]). The theoretical correction results in a pension system, as also described here, that was already “invented” 10 years earlier without any theoretical consideration by four authors working (at the time) for a Czech-Dutch insurance company (Hylz et al [2005]). It is important to note that, although they do make a positive contribution to the topic, I regard the majority of views concerning the subject of “children and insurance” as a side-track from a theoretical perspective, because of what I regard as the question having been put forward incorrectly. The question that was put forward is: how can fertility rates be increased via the pension system? This arose from the correct observation that the current pension system is a disincentive to having children (see e.g. Gál [2003]), but the reversal of the question seems arbitrary, because why should the pension system be required to promote childbearing? This is what those who objected to the idea concentrated on (for instance, in Kovács’s [ed.] volume [2012]), because this was how the proponents of the idea (and especially the Botos’s, e.g. Botos-Botos [2011]) communicated it. But even the impartial analysts felt that this approach was self-evident (e.g. Regős [2015], Simonovits [2014]). My standpoint is that the pension system must be impartial with regard to this question of fertility, and I deduce the required reforms from deeper financial relationships rather than from the perspective of fertility rates.

accounts. (Although, as I have already mentioned above, developed countries are happy about this [for the moment] and are in no rush to settle accounts, and in fact are shaming those who want this.)

So what we have found is that a correct solution that could be justified in the long term would be for the generations to simply settle accounts with each other<sup>8</sup>, with the young repaying the costs of their upbringing to those to whom they owe it when they are capable of paying, meaning when the investment in their human capital “bears fruit”; i.e., when they become active workers. This means that young people should only resent the fact that the old are demanding money from them to the extent that this demand exceeds the valorised costs of their own upbringing (and perhaps a little yield on that investment).

Accordingly, the principle could be set down (in its initial, draft form) as follows: we take into account the average cost of raising a contributor (individual differences do not matter as long as they do not cause an increase in human capital), and the repayment of this investment is required by all young people (at some point in the future, at a suitable stage of their lives). The money that enters the system in this manner is then distributed in the form of pensions to those to whom these young people belong, meaning to those who have contributed to the creation of this contribution capacity, and in a proportion that corresponds to their investment. Young people do not owe everyone, meaning it is not their responsibility to maintain all old people. They primarily owe their parents (if, as is true in the majority of cases, they raised them; if not then they owe a debt to those who in fact raised them), and secondarily to those who supported their upbringing though paying taxes. The latter is a difficult issue, but not impossible to solve; it may be estimated to a relatively good degree. For instance, we may state that the sum with which people have contributed relative to the raising of the next generation is roughly proportionate to personal income tax that is paid. And we can calculate the absolute value by multiplying this sum with the part of the cost of raising a child that was financed through taxes. This includes, for instance, childcare allowance, state education, public healthcare, etc.

This also means that this contribution is something that young people owe, meaning they cannot demand a pension in exchange for repaying it. This in turn also means that the Samuelson principle of distributing the total sum of pension contributions paid into the system into individual pensions is wrong, meaning what counts is not what contributions the individual has paid, but to what extent they have contributed (directly or indirectly, through paying taxes) to generating new contributors. In other words, individuals are not eligible for a pension simply because they have paid pension contributions, although they must receive something in return for having contributed to the raising of a new generation of contributors through paying taxes.

<sup>8</sup> At this point, many will be reminded of the Kotlikoff-Auerbach theory of “generational accounting”, which is concerned with problems that are to a certain extent similar. However, my approach differs from theirs, which primarily concentrates on the total tax paid by the various generations. In contrast, I concentrate only on how much the individual generations owe each other, which only represents part of tax revenue, and also includes a host of services of a non-tax nature.

All this together represents a new social contract and a new pension system, which, however, is still lacking some elements in this current form. People who decide not to have children will receive a considerably lower pension compared to the present level; this is the price for reducing the burden on future generations to an equitable level. However, it is important to note that people who do not raise children, either because they never wanted to, or because “things didn’t work out”, have also saved (in the main) the money they would have otherwise spent on raising a family,<sup>9</sup> and if they do not need to immediately spend the money they have saved as a result, they can put it aside. And if they do put it aside, and, for instance, the state facilitates this with a targeted savings construction, then they can use this money to supplement their pensions.

We may state that a pension system based on these new principles would not be a pay-as-you-go system, but rather a partly-funded system. Although, if we view things from the perspective of content, then as a bad, Samuelson construction we can forget about the idea of a “pay-as-you-go” system, because the descendent of this system will represent nothing other than an investment in human capital. In other words, the new pension system would be fully funded, but participants can chose – freely, within certain constraints – whether to primarily invest their capital in human or “physical” capital, or perhaps in both, to ensure that they have an old-age pension. This also provides a measure of what they can expect to receive in old age, and why.

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<sup>9</sup> In Hungary researchers have recently found that only a very small percent of Hungarians voluntarily want to be childless, and that lots of childless people participate in some kind of childrearing activities (see: Szalma – Takács [2014]).

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