

Gyula Pulay

# *Does Counters' Responsibility end at the Margin of the Marginal Utility?*

*Reflection on „The Marginal Utilities and Marginal Costs of Having Children” by Péter Mihályi*

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**SUMMARY:** In his article published in the 2019/4 issue of the Public Finance Quarterly, Péter Mihályi argues that in Hungary, population reduction and aging cannot be significantly reduced within national frameworks, no matter how large the amount of money by which the state tries to reduce the individual costs of childbearing is. In contrast, on the one hand, this article points out that there are realistic options for reducing the gap between the number of children desired and the number of children actually delivered, and thereby significantly increasing the fertility rate. On the other hand, the article outlines a number of factors (emigration, high rates of childlessness) that should be taken into account when designing a model for the individual utility of childbearing, and thus give families additional aspects to consider when making decisions in terms of childbearing.

**KEYWORDS:** population reduction, childbearing

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A few years ago, I got a mug from one of my colleagues for my name day, with a sign that said: “2 litres per day, for real”. This colleague of mine saw during the long years spent next to me that I drink very little whilst working, while he knew that an adult has to drink at least two litres of water to preserve their health, not including black coffee that

dehydrates our body. Instead of the mug, he could have written a mini-study repeating the well-known example of the theory of marginal utilities, which states that the first glass of water is much more valuable for a thirsty man than the second or the third one, and they do not even drink the fourth one. My colleague could have ended his scientific argument with the conclusion that I drink a maximum of one litre of water per day, concluded from the theory of marginal utilities, and, therefore, my

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*E-mail address:* szvpulay@uni-miskolc.hu

health cannot be saved. He would have been right from a scientific point of view, but I was much happier with the mug. Since then, I make a large batch of tea every morning and I drink it over the day sip by sip. Although, most probably I don't drink the two litres even this way.

This is what I thought while reading the article of Péter Mihályi titled 'Marginal Utilities and Marginal Costs of Having Children' (Public Finance Quarterly, 2019/4). The principal argument of the article is that in today's modern society "*when families make decisions about having a child ex ante, they calculate with steeply decreasing marginal utilities. In other words, the 1st baby brings a huge amount of pleasure (utility), while the 2nd and further babies bring less and less utilities.*" The author also substantiates his argument with the theoretical derivation, comparison and illustration of the utilities and costs of having children with functions. The author points out that "*the social utility of having children only has a slight influence on families; however, every new child's social utility is almost the same. This explains politicians' intentions to encourage families to have more children.*" The final conclusion of the article is that "*within the factors taken into consideration in the study, there is no equilibrium, and the observable trends will not result in a social optimum. Decreasing population and the aging of the society cannot be eliminated or significantly alleviated on national level, no matter the amount of money the government is willing to spend to take over some of the costs parents bear to have children.*" (Citing from the abstract of the article.)

I cannot argue with the first part of the final conclusion: the conclusion that can be drawn from the model set in the study and the factors taken into consideration that the total fertility rate of 2.2 necessary for halting the aging of the population within national

boundaries cannot, in fact, be achieved, as there will not be enough women giving birth to three or more children that could even out the contribution of women who do not have a child over their lifetime or women who "only" give birth to one child to the total fertility rate. It should, however, be noted that Péter Mihályi's model makes having two children seem like a rational decision even from an economic point of view. As a result, population policy should, by all means, strive to help families in the actual birth of the desired first and/or second child. The main obstacles to this include the lack of stable relationships, postponing having children until existential safety, as well as health issues. The state subsidies serving the elimination of these obstacles can be evaluated as rational and effective population policy measures even according to the models of Péter Mihályi, as they lead to the increase of the total fertility rate. (Making the total fertility rate exceed 2 does not only require more women to have at least three children but also the reduction of the rate of childless women and women giving birth to only one child compared to those having two children.) Naturally, these measures are rational also from the point of having the third child, as the third child can only be born if the second one has already been born.

And we have already arrived to one of the big dilemmas of population policy. Is the promotion of the birth of the desired third and additional children more effective from the point of increasing the total fertility rate, or should state assets rather be focused on eliminating the obstacles preceding the birth of the first and second child? The obvious answer is that the former cannot be effective without the latter, as many families having two children are needed for it to be possible that an appropriate number of families consider having the third child.

The solution of the dilemma also includes a common part, namely to facilitate having children at a younger age. Between 1992 and 2011, the mean age of giving birth to the first child shifted from 23 to 28.3. On the one hand, this carries the risk that the women postponing to have their first child run out of their fertile life phase, and on the other hand, postponing childbearing to a later date also results in the fact that there will not be sufficient time for having the second and the third child. In 1992, the difference between the mean age of having the first child and the age when women have given birth to all of their children was more than three years. This difference dropped below two years by 2010 (Kapitány, Spéder, 2012). From the point of the success of the population policy, halting the tendency of postponing childbearing is a fundamental factor. Population policy is not left without means in this regard, either. One group of means is formed by the establishment of the employment security of mothers (and fathers) with children, as a result of which women who decide to have children will not have to be afraid of losing their jobs. My own research (Pulay, 2010) showed that the countries where family and employee roles could be concerted achieved a relatively high fertility index in the past two decades. The other group of means is formed by the material subsidies enabling the earlier establishment of existential safety. A good example of the complex approach is the childbirth incentive loan that contributes to bringing forward the creation of the existential conditions considered necessary for having children (e.g. proper housing) in the case of all young married couples (of fertile age), but the extent of subsidy depends on the number of children the couple commits to have. The impacts of the family policy measures taken in the past couple of years can already be felt in this regard, as the

mean age of having the first child increased by only 0.3 years between 2011 and 2017. The mean age of women when having all their children also increased with the same rate, thus, the difference between the two mean ages has not narrowed further (Kapitány, Spéder, 2018). Although this does not mark the reversing of the trend, only the stopping of the unfavourable tendency, it can already be considered a result.

With the foregoing, I strived to point out that there is a scope of actions for taking effective population policy measures (increasing the total fertility rate) even if we accept the model of Péter Mihályi. At the same time, it cannot be disputed that for achieving the total fertility rate of 2.2, it is needed for many families to desire three or more children and that such children be born, too.

In his article (on page 531), Péter Mihályi puts it like this: *“the fact that we assumed a monotonously decreasing utility function in the present paper does not represent anything special – equilibrium models almost always make this assumption. The novelty of this approach is that we assume a steeply decreasing function, because we model today’s situation in Hungary, when the majority of families don’t plan 3-4-5 or more children by default.”*

I consider it forward-thinking that Péter Mihályi considers and shows the factors influencing childbearing by setting up a model, as this motivates those discussing population policy to follow the strict logic of mathematical models. Taking up the gauntlet, in the remaining part of my paper, I will substantiate my argument that the assumptions of Péter Mihályi incorporated into the model are not all correct and that the model does not take into consideration many significant factors.

Equilibrium models do, in fact, assume a reducing utility function, but this does

not necessarily mean that the reduction of marginal utility will occur right after the “consumption” of the first unit. This also depends on the nature of the phenomenon examined. If anyone wants to quench their thirst with a glass of wine, the principle of reducing utility prevails from the second glass on. If, however, they want to lift their mood with the wine, we can only talk about the reduction of utility after the third or fourth glass. And if our subject wants to get drunk, the utility of drinking wine will hardly reduce until consuming the first litre. It’s similar in the case of having children, too. The parents planning more than one child do not simply want two or three children: they want to have a vibrant community that love each other, in which the children also have their partners and where there is a lively family life. The family raising three children is not a family having 1+1+1 children, but a family with three children, where marginal utilities do not add up, but create a different quality. Naturally, if this quality difference is not incorporated into the model, utility will, indeed, drop dramatically, just like when we were thinking about puppies or hamsters: if we already have one, why would we need two, and especially three?

The young people or married couples who say that they would like at least three children do not have these ideas because they try to meet the expectations of the person asking them. They long for the big family way of life, because they were also raised in a big family, or they saw other big families amongst their acquaintances and it was appealing to them, or they have experienced that it is not good to grow up as an only child or without a sibling of the same sex. As a consequence, the unit of measurement of Péter Mihályi’s utility function is incorrect. After two children, the scale starts all over: those wanting to have three or more children do not want 2+1

children, but a big family, which is another quality. Naturally, it occurs frequently in practice that a family planning many children only has one or two children, as the hardships of life hinder their desires from being fulfilled. There are also examples of what Péter Mihályi mentions that in the case of two children of the same sex, families who originally planned on having a boy and a girl would venture to have a third child. In such situations, family policy has an obvious scope of competence, as it can eliminate the obstacles of having the desired third child.

By elaborating the new quality of families with several children, we arrived to the other great dilemma of family policy: can the big family way of life be made appealing? Up until recent times, the big family way of life (with a few exceptions) meant relative poverty, which meant that families with three children were in much worse financial situation than those without any children or those having one or two children. It is obvious that the situations arising from this relative poverty did not make the big family way of life appealing to outsiders. They did not have a proper car in which they could all fit into, women were vulnerable to their husbands financially, they didn’t have money for trendy clothes, vocational training or denture. (There’s good reason why I wrote the latter, as many pregnancies can ruin women’s teeth, and denture costs astronomical sums.) The children could not go abroad to learn languages. If men ensured better living circumstances for their families through hard work, they lost their eligibility for social subsidies, as there was no independent family policy, only social policy. At the same time, those having lived in the big family usually found their joy in it, and this joy was also radiated to others.

The big question is this: if family policy establishes enhanced financial security

for moms with multiple children (with exemption from paying personal income tax, right to flexible employment, supporting their vocational training, making denture free of charge), and if it pulls out big families from relative poverty (with tax allowances, housing and vehicle subsidies) and so it eliminates their alienating qualities, could the desire for a big family be aroused in more young people? I think this is not hopeless, as the pattern coming from above has a significant demonstration effect. (The significant increase taking place in the number of marriages in the past few years is remarkable. Presumably it was not the result of the tax allowances worth a couple of thousand Forints: it rather occurred because marriage became the pattern to be followed instead of the previously popular co-habitation without marriage.) If the big family way of life becomes exemplary in the upper third income layer of a society, it has a quite significant radiant effect. At the same time, this influence could only be amplified in the long term and it is difficult to estimate its exact extent. It can, however, be calculated that the subsidies concentrating and aggregating on 30-35 percent of women of childbearing age cannot reverse population trends. For the significant increase of the total fertility rate, family policy measures should make a much wider scope of big families be in a substantially favourable position.

It is also reasonable to ask the question in relation to the article of Péter Mihályi whether the families that only want one or two children account the marginal utilities of having children properly. Mihályi discusses the benefits of having children over the entire life of people very correctly, including not only the emotional fulfilment coming with little children, but the safety provided by adult children and the joys caused by grandchildren, too. However, while doing so, his model fails to consider many other factors. For example

the fact also mentioned by him elsewhere that a substantial part of men and women do not have children at all. What does this mean from the point of grandchildren? The risk that even if I have a child, I may not be having a grandchild. If the rate of childlessness is 30 percent, the probability of a person to have a grandchild in the case of having one child is 70 percent, in the case of two children it is 91 percent, and in the case of three children, it amounts to 97.3 percent. This means that one must have three children to make it almost absolutely certain that they will also get to enjoy grandchildren.

Another factor not incorporated into the model is migration abroad. If the probability of Hungarian young person settling abroad after the age of 30 was 20 percent, then the probability of the parent hardly having any sense of the joy coming with children after their child's age of 30 will be 20 percent in the case of one child (in the case of the grandchildren to be born abroad, the amount of joyful time spent together will be even less). In the case of two children, however, the chance of both of them settling down abroad is only 4 percent, and, in the case of three children, the chance of all three of them living abroad drops to 0.8 percent.

In spite of all that, the author could argue that he did not include these factors in his model, because these are generally not assessed by families either. This is true, but this is where the responsibility of counters weighs in. What does this mean? It means that not only the people who can argue with their papers smartly bear an increased responsibility for their words, but also the experts of the world of numbers and calculations are responsible for their models and the conclusions drawn from them. For example for making simplistic assumptions, or for the uncertainty factors they choose to calculate with in their models. Can the author of a scientific paper

be satisfied with incorporating the narrow perspective preferences of uninformed people into his model and drawing conclusions from that or is it his task to eliminate the information shortfall amongst people? This is not a theoretical question. We have just put a financial crisis that concerned hundreds of thousands in Hungary behind us, the reason of which was that the population could not assess the risks of indebtedness in foreign currency properly, took out all the low interest loans and then their instalments multiplied after the fall of the exchange rate of the Forint. The leaders of counters (instead of a loud warning) incorporated the narrow perspective decisions of uninformed people into their narrow perspective models as positive factors.

Péter Mihályi also takes into consideration the social utility of families with multiple children in a limited manner. The utilities that are now gaining appreciation in modern societies have been left out of consideration exactly. One of them is team work. Every paper on the sociology of work highlights that in today's society, one of the most important competencies is the ability to carry out work as a team, the adaptability necessary for working as a team, the ability to consider the aspects of the other person, etc. Where does one have the best shot for obtaining a competency like this? In a big family with multiple children. And one has a minimal chance to obtain this skill in a family where the two parents and the four grandparents spoil the single child or grandchild. 90-95 percent of future economies will be provided by services. Where will the workers willing to serve others be raised? In big families with multiple children. If the creator of the model fails to consider these quality factors, it is no wonder that the model indicates the lack of social optimum.

In his article, Péter Mihályi mentions several relevant historical parallels. There are plenty of historical examples for the incorrect nature of people's utility function, too. One of them is the tendency of having one child in entire regions, where peasant families only had one child so that they did not have to divide the estate between more children. Then they regretted it deeply when they were standing at the grave of their only child who died young. It turned out that their utility function did not consider fundamental conditions. This is not an intimidation: the large masses of old, lonely and vulnerable people without relatives is already a threatening reality today.

The model of Péter Mihályi confronts us with the fact that in the long run, the utility function of the totality of specific people cannot differ from the utility function of the society. If the social utility function requires the production of five units of a product, but only the production of three comes out from the entirety of the individual utility functions of the specific participants, it will result in a significant shortage. (At best, the shortage can be replaced from import, but then the conditions of importing must also be considered.) The responsibility of counters does not end with forecasting the catastrophic shortage. They must also pinpoint which factors are not taken into account by the utility function of individuals and how the utility function could be changed.

It was an intellectual experience to read Péter Mihályi's article. I am, however, happy that I did not receive an intellectual study radiating despair from my counter colleague for my name day, but a mug instead, with a sign motivating for action and for rethinking my marginal utilities.

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