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## **Adaptation versus mitigation policies on demographic change in Europe**

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### **Introduction**

Concerns about expected negative consequences of future population ageing in Europe are reaching larger and wider segments of society. In addition to those scientists who have been pointing out the issue for more than 30 years, media commentators and politicians started to pick it up a decade ago, mostly with respect to the looming pension crisis when the baby boomers retire. Now even the business community—which typically has a shorter planning horizon—is becoming increasingly interested in the issue. For example, at the recent Munich Economic Summit, chief executives of BMW, Siemens and other major multinational corporations not only debated about what population ageing means to the future structures of their customers and employees, but also about its implications for European economic competitiveness. Discussions at such events usually ramble from the need for life-long learning to more flexible employment strategies to all kinds of proposals for how birth rates could be pushed up again. While many of the industrial leaders appreciate the rapid increase of a wealthy and healthy elderly population as a great business opportunity for themselves, they also see it as a major challenge for Europe's standing in the world.

In this rather confusing state of public debate about demographic change, the recent communication of the European Commission (2006) is a welcome attempt at a more systematic, European-level consideration of the different aspects involved in Europe's demographic future. It is largely successful in covering the state of the art in a broad array of relevant topics, but in a few key areas the document confuses rather than clarifies the discussion. In particular, the Communication tends to mix policies and strategies aimed at adapting our institutions to an (externally given) demographic change with those trying to influence (mitigate) the demographic trends. In the following section I will draw a comparison to the ongoing, parallel discussion about climate change policies and show how demographers can learn from the climate change debate in terms of analytical clarity for discussing this long-term challenge.

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The second part of this short comment will address the dominating mitigation policy propagated by the Communication, namely that governments have the responsibility to help couples fill the supposedly big gap between desired and actual family size. I will address some serious problems with this politically very convenient and almost universally acclaimed policy paradigm.

### **What we can learn from the climate change policy discussion?**

Policy makers in Europe are currently struggling with two major, long term challenges, both of which have the potential to significantly influence the lives and wellbeing of future generations (already including today's younger age group) and for which they still lack more specific knowledge about what exactly the implications are likely to be because both are unprecedented in recorded human history.

These two major challenges, which have a surprising number of commonalities, are climate change and population ageing. Both are unintended consequences of otherwise positive and highly welcome trends. In the case of climate change, higher standards of living and greater personal mobility have brought about several most desirable increases in the quality of life and personal freedom, but they also require a lot more energy, which given today's technologies results in greenhouse gas emissions that in accumulation alter our climate. We do not yet see any significant systematic changes in temperatures (although we increasingly interpret every series of hot days or storms in this sense), but we trust scientists who tell us this will be happening over the coming decades. The same is true for population ageing, which is the consequence of highly welcomed increases in life expectancy and the equally appreciated choice that potential parents have through modern contraception to decide how many children they want. In sum these two achievements of human development result in a process that leads to more elderly people living longer lives, and to fewer children. Since the strong cohorts of the baby boom are still of working age today, we do not yet see much of the predicted worsening in the ratio of contributors to beneficiaries in the pension system, but we have good and convincing reasons to expect a doubling of the old-age dependency ratio over the coming decades.

How dangerous are the consequences of climate change and how dangerous are those of population ageing to future wellbeing? In both cases science has developed fairly good analytical handles as to what will happen to the processes themselves. Global circulation models (GCMs) have made a lot of progress in terms of drawing up likely future maps of temperatures and precipitation under different emissions scenarios. But it is hard to anticipate the way in which human populations will be able to adapt to these long term changes. Many of the horror stories about the consequences of climate change result from an illegitimate match of the likely climate of 2080 with the infrastructure and technology of today. Take malaria as an example, where many of the numbers circulated result from a combination of future climate conditions with today's public health

systems. It does not take much in terms of public health measures to get rid of malaria as can be seen from past successes in Europe, North America and parts of Asia. Social, economic and institutional development over the coming decades will hopefully enable more countries to have similar success. This is comparable to shocking projections that result from matching, e.g., the projected age distribution of 2050 to the age pattern of disability observed today, which results in a huge increase of the disabled population in need of long-term care. If one considers the likely trend that disability-free life expectancy increases roughly in parallel with total life expectancy, then the future looks much less dramatic.

This is not the place to enter into a deeper substantive discussion about the dangers associated with both of these secular changes. Rather I want to point out the very important and useful distinction between mitigation and adaptation policies that has become the basis for all climate change discussions. Interestingly, and in sharp contrast to the population ageing discussion, climate change policies so far have focused almost exclusively on mitigation strategies: What can be done to lower the amount of greenhouse gases (GHG) that enter the atmosphere every year, or—more realistically at the global level—how can the rate of increase in GHG emission be slowed? Like population dynamics, climate change has a huge momentum: Alternative emissions scenarios over the coming two decades will only marginally influence the climate by 2080. Irrespective of what we do in the near future, the climate will get warmer, so change is already pre-programmed in the system, as it is for population ageing. But since in the very long run atmospheric GHG concentrations will largely depend on the emissions trajectory that we will choose during the coming decades, it is so important that mitigation policies are put in place now. Over the coming years, policy attention will then undoubtedly also move to adaptation policies aimed at reducing the possible negative impact of unavoidable (given) climate change.

While it has been politically correct for climate policies to focus mostly on mitigation strategies and best not to mention adaptation strategies (because they could be seen as excuses to do less about mitigation), exactly the opposite is the case with respect to population ageing. Most politically correct discussions (including the Communication) focus on a wide spectrum of adaptation policies which essentially view demographic change as a given. As important as these policies are, demography (at least in the longer term) is not destiny. The two mitigation factors that (at least theoretically) can be influenced by policies are migration and fertility. While migration can always be used as a short-term option as long as enough potential migrants are waiting on the door step (and hence comes close to an adaptation strategy), fertility in its long-term dynamics is in fact similar to GHG emissions: increases in fertility will only influence the size of the labour force with a lag of several decades. These dynamics would hence justify an urgent and explicit focus on fertility.

But somehow mitigation strategies to population ageing in Europe are currently (still) considered terribly politically incorrect. This is also reflected in

the Communication's key paragraph dealing with fertility. Evidently, the authors were afraid to even mention the words "fertility" or "birth rate" in the title of this paragraph and rather chose the—presumably euphemistic but in fact rather awkward—wording "Promoting demographic renewal in Europe". Unfortunately, in population analysis the term "demographic renewal" refers to the process by which older members of the population die and are being replaced by younger ones, but I assume the statement does not want to suggest enhancing the first element of this process. Leaving the specific terminology aside, in this paragraph as well as in many others of the document, the dimensions of mitigation and adaptation are not separated well enough but indeed still intertwined with yet another important though separate issue, namely the question of how dangerous the consequences of population ageing are. These are three important issues that all need more research, but first of all more we need more analytical clarity in dealing with them.

### **Is the gap between ideal and actual family size a valid policy rationale?**

The paragraph on policies affecting fertility mentioned above subscribes entirely to one rationale for why governments should become active in this field. The key sentence on "Reactions to the falling birth rates" goes as follows: "These reactions are both necessary and realistic: necessary because surveys show that in all EU countries couples would like to have more children; realistic because international comparisons underline the effectiveness of family and other policies..."

This short text contains three important assertions:

- 1) That there is indeed a significant gap in low-fertility countries of Europe between the numbers of children that people of childbearing age consider as ideal ("would like to have") and the number of children they actually have;
- 2) That governments can do something that will be effective ("it is realistic") in closing this gap; and
- 3) That governments in fact have an obligation ("it is necessary") to try to close this gap.

Let me first address the third issue because it is the easiest. In a discussion, Paul Demeny once made the following point on the government's supposed obligation to help in filling gaps: it is plausible to assume that most people desire to have more days of vacation on a Caribbean beach than they actually have. Does this necessarily imply that the government has to jump in to fill the gap? Of course not. Put in more economic terms, governments should try to help close individual gaps between desire and reality only if there is a positive externality for society from having this gap closed. However, this important and all-decisive point for the reasoning is not given in the White Paper. Is it indeed important for European societies to have more births? This is a highly complex and difficult

question which requires much more research for a science-based answer, considering all relevant dimensions from national identity to intergenerational relations and from gender interests to environmental concerns. And only if the answer is that viewing all things together there is indeed a significant positive externality, can this constitute a need for governments to help close the gap—or possibly even to go beyond that, if it turns out that there is no gap left to be filled.

The next fallacy in this very popular and evidently politically convenient reasoning is that as proof for the existence of a major gap, the proponents usually compare the cohort measure of ideal family size (often even including people beyond reproductive age) with the tempo-distorted period measure of the Total Fertility Rate (TFR). As Table 1 shows, this inconsistency is not a minor technical issue but rather casts some doubts on the whole reasoning.

**Table 1:**  
**Different family size measures for selected EU countries and different ways to calculate the “gap” between ideal and actual family size**

	(1) Personal ideal family size	(2) Actual + intended family size	(3) TFR 2004	(4) Tempo adjusted TFR	(5) <b>Gap 1</b> (1)-(3)	(6) <b>Gap 2</b> (1)-(4)	(7) <b>Gap 3</b> (1)-(2)
Finland	2.61	2.62	1.80	1.88	<b>.81</b>	<b>.73</b>	<b>-.01</b>
France	2.48	2.36	1.91	2.02	<b>.57</b>	<b>.46</b>	<b>.12</b>
UK	2.43	2.38	1.63	1.85	<b>.80</b>	<b>.58</b>	<b>.05</b>
Portugal	2.23	2.06	1.40	1.80	<b>.83</b>	<b>.43</b>	<b>.17</b>
Czech Republic	2.04	1.98	1.22	1.67	<b>.82</b>	<b>.37</b>	<b>.06</b>
Italy	2.02	1.76	1.33	1.41	<b>.69</b>	<b>.61</b>	<b>.26</b>
Romania	1.81	1.71	1.29	1.58	<b>.52</b>	<b>.23</b>	<b>.10</b>
Austria	1.69	1.54	1.42	1.63	<b>.27</b>	<b>.06</b>	<b>.15</b>

**Notes:** Columns (1) and (2) are based on the Eurobarometer 2006 data for women aged 25-39.

**Sources:** VID-IIASA (2006) and computations of Testa (2006) based on Eurobarometer 2006 data.

Table 1 lists four different fertility indicators for eight selected EU member countries. The first column lists the personal ideal family size as collected in the Eurobarometer 2006 for women aged 25-39 (Testa 2006). The second column gives another family size measure from the same Eurobarometer for the same group of women which simply adds the number of children already born per woman to those she says she still intends to have. This second measure is much closer to the real childbearing behaviour of women since it includes the actual birth experience plus intended pregnancies, which are more realistic predictors than ideal family size. A comparison between these two family size measures from the same survey, one measuring the personal ideal and the other the reality (plus intentions), shows that there is almost no gap to be filled (see Gap 3 in

column 7. Only in the very low-fertility countries Italy and Portugal is the gap more than 0.15.

The third and fourth columns in Table 1 list the TFR for 2004 and the tempo-adjusted TFR as published in the European Demographic Data Sheet (VID-IIASA 2006), calculated using the Bongaarts-Feeney method. The difference between the raw TFR and the ideal family size (Gap 1 in column 5) is indeed very significant, above half a child in seven of the eight countries and even 0.8 children or more in half of them. But as mentioned above these two figures are not comparable because they measure very different things, one cohort ideals and the other tempo-distorted period fertility. If one wishes to compare the ideal family size from the Eurobarometer to a period fertility measure, then tempo-adjusted TFR should be used. And as column 6 shows, here the gap (Gap 2) is much smaller, with Austria having the lowest gap. It is also important to notice that in most countries where the TFR is very low, such as Romania, Austria and the Czech Republic, the gap is particularly small. Does this constitute less reason for governments to take action in these countries? On the other hand, high-fertility countries such as Finland, France and the UK have some of the biggest gaps measured this way. Should governments be particularly active in those countries? Actually however, Finland, which has by far the greatest Gap 2 with 0.73 children according to this measure, is often used as an example of what kind of policies governments in low-fertility countries should introduce in order to make it easier to combine work and family.

The data presented in Table 1 cast serious doubts on the validity of the gap rationale for fertility policies. At the high end, despite the highest measured gap, there is probably little need for new strong government action in Finland because that country has a satisfactory fertility level for what is needed for longer term demographic stability. At the other extreme, the Austrian government is unhappy with its low fertility rate, but not because there is such a big gap (it is only 0.06) but because the overall level is so low. If there is a problem in Austria, then it is that ideal family size recently declined. Like other German-speaking countries, Austria has seen a recent fall of ideal family size and already one-third of young Austrian males now consider not having any children as ideal. This trend is the basis for the Low Fertility Trap Hypothesis (Lutz et al. 2006) which assumes that ideal family size declines for the generation that is already socialized in a low-fertility environment. If this is indeed the case, then ideal family size will soon start declining in the Mediterranean and central/eastern European countries. Then unhappy governments will have to address the desire for children directly, rather than pointing at the politically convenient self-deception of only wanting to help couples to meet their desires.

And what about the second assertion that government policies can indeed make a difference, if they are crafted in the right way? This is a hard question to answer, although it is not as difficult as the first one about the socially desirable level of fertility. Although it has been around for decades, no satisfactory answer

has been found. This is one of the reasons why the 2007 conference of the Vienna Institute of Demography (held in Vienna, December 6-7, 2007) is exclusively dedicated to the question: “Can policies enhance fertility in Europe?” While the Communication seems quite certain on this question (“it is realistic”), many scholars in population have serious doubts about it. Since the empirical basis for such analysis is still very limited—few countries aside from France have actually pursued strong and explicit pro-natalist policies for longer periods—at a minimum we need to make sure that current political efforts in influencing the birth rate in Europe and parts of East Asia are well monitored using the most powerful analytical tools available. Collecting parity-specific information on births (possibly on a monthly basis as is regularly done for unemployment rates), which can also be adjusted for various distortions including the tempo effect (Sobotka et al. 2005), would be a rather easy way to improve the empirical basis for addressing this difficult question. But some governments—most prominently Germany—who say that they are very concerned about fertility do not even collect birth order specific information on fertility. Here would be an obvious place to start, and even a very cheap one at that.

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