

Should ART be part of a population policy mix?

Assessing the demographic impact of Assisted Reproductive Technologies

Governments are concerned because people are living longer and having fewer babies. Declining mortality and fertility rates across Europe mean that the older, and especially the retired, members of the population are gradually outnumbering the younger, working population. By 2050, almost one-third of Europeans will be over 65 years old, and one in sixteen will be over 85. This demographic shift is extremely worrying because it threatens not only standards of living, but also social and international stability.

Having an older population brings a range of problems, from how to pay the increased pensions bill to who will look after those who need long-term care. Traditionally, those in employment have financed the pensions of the retired, but this model comes under pressure when the size of the retired population grows relative to the working population. The additional health and social care needs associated with older age also add to the economic burden, not least because with shrinking family size, a greater proportion of the workforce will be dedicated to caring for the older population.

While older populations are expensive in economic and social terms, a less obvious but perhaps more startling consideration is the political cost. Because ageing populations are associated with a decrease in the number of people working, this has implications for productivity and economic growth. Nations that maintain a young population will have a continuing incoming stream of young labourers in their economy, whereas those with a relatively ageing population may well see a decline in their relative economic importance, which could alter their political standing on the world stage.

Clearly, governments need to address the issue of ageing populations before the problems outlined above start to take effect. Since they will not act against the decline in mortality rates, they must look for other ways to reverse population trends.

An earlier investigation by RAND Europe found various policies aimed at offsetting ageing populations in place across Europe. The three main options are increasing immigration, reforming the

Abstract

If demography is destiny, then it appears that destiny for Europe includes a rapidly ageing population, increasing economic, social and healthcare burdens and a weakening position on the world stage. Governments are waking up to the need to address the demographic shift, but so far have not discovered the ideal mix for an effective population policy. This Project REsource details the results of a preliminary investigation into whether Assisted Reproductive Technologies can play a part in preventing European countries from falling into the low fertility trap.

welfare state and raising fertility rates.

Increasing immigration will not provide a long-term solution. The sheer number of immigrants needed to compensate for population ageing would be politically unacceptable, and, while immigrants might contribute to the workforce for a while, they too will eventually reach retirement age and become part of the problem rather than part of the solution.

Welfare state reform, such as increasing the retirement age, is high on the agenda for many governments, but will only go some way towards addressing the problem. The continued existence of the welfare state requires financial support, and the dependency ratio (the number of people dependent on the working population) is a key figure. If the dependency ratio doubles, then the amount required per person to fund the welfare state will need to be doubled.

The third way to slow down population ageing is to increase fertility rates by encouraging child-bearing, and the need for this is becoming urgent.

The total fertility rate (TFR) for every nation in the European Union is now below replacement level, usually taken as 2.1. For some countries, it is below 1.5, arguably a point of no return. Policies such as flexible working, maternity and paternity leave, and increasing benefits for second and third children, can affect birth rates by encouraging parents to have more children than they might other-

This product is part of the RAND Corporation research brief series. RAND research briefs present policy-oriented summaries of an individual peer-reviewed document or body of published work; current or completed work; and innovative research methodologies.

RAND Europe

Westbrook Centre
Milton Road
Cambridge CB4 1YG
United Kingdom
TEL +44.1223.353.329
FAX +44.1223.358.845

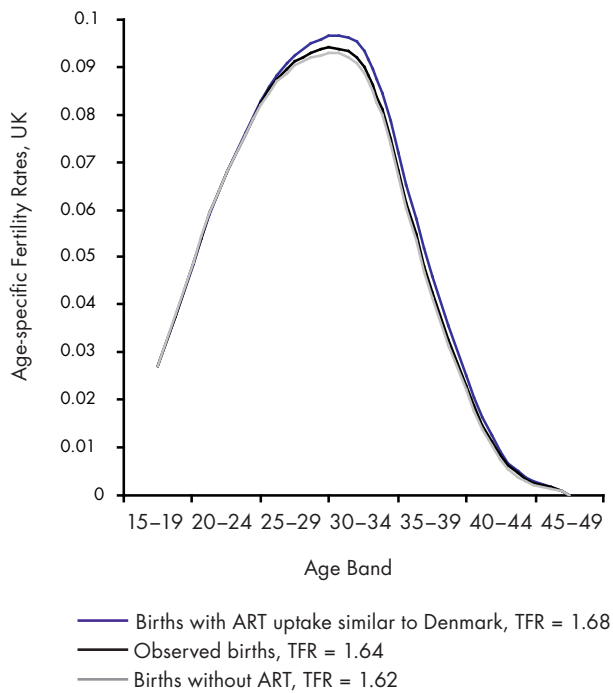
Jonathan Grant
jgrant@rand.org

© RAND 2006
RB-9200-FER

wise have if these policies were not in place. European governments that have introduced policies to make it easier to have and raise children tend to have higher fertility rates than those that do not; nonetheless, even these countries have ageing populations.

Clearly, more must be done to address declining fertility rates, and one option for governments is to widen the availability of Assisted Reproductive Technologies (ART), such as In-Vitro Fertilisation (IVF), to sub-fertile couples. The impact on TFR of policies aimed at helping couples who are having difficulties conceiving has not yet been assessed, and this current study starts the process by examining the contribution of ART to fertility rates.

For this study, RAND Europe developed a model incorporating fertility, costs, population age structure and behaviour components, and used data from Denmark and the United Kingdom for 2002.



The number of live ART births in Denmark in 2002 was 4.2% of total live births, whereas in the UK for the same year it was 1.4%. As illustrated in the figure below, if ART was not available in the UK the TFR would drop to 1.62. If the number of ART cycles per capita in the UK were increased to the same level as in Denmark, TFR in the UK would increase to 1.68. While this does not sound like much, this rise was found to be equivalent to other policy interventions thought to increase fertility. Including ART in a population policy mix may even be more cost-effective than other measures. A comparison of cost per additional birth showed that whereas a 25% increase in child benefits would raise TFR by 0.07, the cost per additional birth was between £50,000 and £100,000. The average cost per additional ART birth was estimated at £15,000–£25,000.

While this study demonstrates that policies aimed at increasing the uptake of ART could increase fertility, the authors sound a note of caution. One of the contributors to the decline in fertility rates is that, for various reasons, women are waiting longer to have babies. Policies that make ART more widely available and affordable could further encourage couples to delay starting a family, because they might assume that ART will overcome any fertility problems they may encounter. A woman's natural fertility starts to drop sharply over the age of 35, and older women find it harder to conceive, either naturally or with the help of ART. Therefore, the contribution that ART might be expected to make to fertility rates could be wiped out by the greatly reduced chances of success for older women.

The problems created by ageing populations across Europe must be addressed. Declining fertility rates are a major contributor to the demographic shift, but it is clear that no single policy will reverse population trends. What this study shows is that ART could be a part of the population policy mix, but that governments need a great deal more information, particularly regarding behavioural responses, before they can design ART policies that will achieve the desired effect.

Further reading

- Grant J et al. (2006) *Should ART be part of a population policy mix? A preliminary assessment of the demographic and economic impact of Assisted Reproductive Technologies*. Cambridge, UK: RAND Europe, DB-507-FER.
- Grant J et al. (2006) 'The new pronatalism? The policy consequences of population ageing', *Public Policy Research*, 13 (1), 13–25.
- Grant J et al. (2006) 'Trends in European fertility: Should Europe try to increase its fertility rate...or just manage the consequences?' *International Journal of Andrology*, 29 (1), 17–24.
- Grant J et al. (2004) *Low fertility and population ageing: causes, consequences and policy options*. Cambridge, UK: RAND Europe, MG-206-EC.
- Bloom D et al. (2003) *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. Santa Monica, CA, USA: RAND Corporation, MR-1274-WFHF/DLPF/RF/UNPF.



EUROPE

THE ARTS
CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND
HOMELAND SECURITY
TRANSPORTATION AND
INFRASTRUCTURE
WORKFORCE AND WORKPLACE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

This product is part of the RAND Corporation research brief series. RAND research briefs present policy-oriented summaries of individual published, peer-reviewed documents or of a body of published work.

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

[Browse Books & Publications](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore [RAND Europe](#)

View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use.