

# WHAT EXPLAINS FERTILITY? EVIDENCE FROM ITALIAN PENSION REFORMS

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## 1. Introduction

Couples in industrialized societies have much fewer kids than they used to. In 1950-55, only 0.4% of the world's population lived in areas in which the total fertility rate (i.e., the average number of children per couple) was below the replacement level of 2.1 kids. This figure has risen to 43.3 in 2005-10, and is expected to reach 79.9 in 2045-50 according to UN forecasts, although reversals are not to be excluded.

Faster population ageing and the consequent demand for more immigrants are among the main direct demographic consequences of low fertility. Yet, additional important effects exist for the economy as a whole. A key example is the financial sustainability of pay-as-you-go pension systems, which depends crucially on the balance between the contributions paid into the system and the pension benefits awarded – and therefore on the ratio between the share of workers and retirees. Since surveys suggest that, in Europe for example, individuals and couples wish to have larger families than they actually do, emphasis is put on policies relaxing constraints that bind fertility choices. The compatibility (especially for women) between paid work and family choices is an explicit target.

Given the high cost of raising children in developed societies, explaining why couples choose to have children at all represents a challenge. In the past, children constituted an investment that would repay itself rather quickly, as kids soon contributed to family income by working. Moreover, their future support would insure parents against the risk of old-age poverty. Yet, researchers have extensively documented that, with the expansion of social security and (especially) pay-as-you-go pension systems, this investment (or insurance) motive for children has lost its relevance. The expansion of social security can thus account for part of the fertility decline that most developed countries have recently witnessed. So, why would we still want to have kids today? An alternative theory suggests that kids are instead a “consumption good” – parents choose to have kids because they derive direct utility from their well-being (see Becker and Barro, 1988). Which motivation is currently behind childbearing? Italy's pension reforms in the 1990s may help provide an answer.

## 2. The retrenchment of Italian pensions raised fertility

While being somewhat unfair for the unequal treatment of individuals who had only marginal differences in their pension contribution history, the pension reforms that took place in Italy during the 1990s constitute a “natural experiment” to test these two theories of fertility. Did “affected” individuals, who suddenly learned that their future pension benefits were reduced, respond by having fewer or more children? Two pension reforms, the so-called “Amato” reform in 1992 and

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the so-called “Dini” reform in 1995, reduced future benefits only for individuals with fewer than 15 years of contributions at the end of 1992 (or 18 years of contributions at the end of 1995). This introduced a big discontinuity between “affected” and “unaffected” individuals, who might have differed only by a handful of weeks of contributions. For instance, Attanasio and Brugiavini (2002) estimate that the differential drop in social security wealth due to the “Amato” reform was equal to 27.6%.

What impact should these reforms have on fertility? According to the “kids as consumption good” theory, affected individuals should have lower fertility, since – due to the reforms – they have lower lifetime income and can thus only afford to “consume” fewer kids. The “old age security” motive suggests instead that affected individuals should have more kids, since the reduction in old age resources induced by the lower pension benefits has to be compensated by higher investments in assets as well as in kids.

In our CEPR Discussion Paper 7014, we show that affected individuals indeed had more children as a consequence of this pension reform. A simple comparison shows that unaffected individuals had on average 1.7 children, while affected individuals had on average 1.87 children. The magnitude of this difference is reduced once one controls for factors such as individuals’ age, but a difference of about 13% higher post-reform fertility remains. These empirical results are consistent with the “kids as investment good” rather than “consumption” motivation, even in modern societies. They are also consistent with the link between the expansion of pay-as-you-go pension systems and lower fertility – in this case the retrenchment of a pay-as-you-go pension system induces higher fertility.

### 3. Some policy implications

The results that pension reform raises fertility, i.e. that children are mostly an investment good in our advanced society, have important policy implications. First, economic models might have underestimated the role of kids as an investment and overemphasized the view that kids are only a cost to parents. Transfers at old age from children to parents might also be underestimated, e.g. because co-residence is hardly considered explicitly as a transfer. Policy implications drawn from economic models that analyze the interaction between demographic and economic factors based on uncertain assumptions, e.g. that children are mostly “consumption” goods, may be mistaken. Second, pension reforms that address the financial sustainability of these systems by reducing pension benefits may have an additional positive effect: to increase fertility.