



Demographic transition and economic welfare: The role of in-cash and in-kind transfers[☆]



Stephen M. Miller^a, Kyriakos C. Neanidis^{b,*}

^a College of Business, University of Nevada, Las Vegas, 4505 Maryland Parkway, Las Vegas, NV 89154-6005, USA

^b Economics, Centre for Growth and Business Cycle Research, University of Manchester, Oxford Road, Manchester M13 9PL, United Kingdom

ARTICLE INFO

Article history:

Received 16 October 2013

Received in revised form

20 November 2014

Accepted 6 January 2015

Available online 19 February 2015

JEL classification:

F35

F43

I12

O41

Keywords:

Fertility

Health

Growth

Transfers

Welfare

ABSTRACT

Do in-cash and in-kind transfers to families affect parental fertility choices and economic welfare differently? We examine this question via a demographic transition channel in the context of a two-period overlapping generations model. In childhood, reproductive agents face a non-zero probability of death, while as adults, they allocate their time to work, leisure, and childrearing activities. Health status in adulthood exhibits “state dependence,” as it depends on health in childhood. We find that cash transfers lead to both higher fertility and welfare if parents strongly value the quantity of their children. This positive welfare effect dominates an indirect negative welfare effect due to a lower growth rate. But, if parents value the quality of their children, in-kind transfers yield greater welfare, along with lower fertility and higher economic growth. These findings guide the choice, or mix, of in-kind and in-cash transfers by being based on the government’s objectives regarding demographic transition and economic outcomes.

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1. Introduction

Developing and developed countries implement government transfer programs, as a mechanism of social protection that promotes societal and economic development of the most vulnerable groups of the population (i.e., the children, the old, the poor, and the sick, among others). Although most analysts do not question the importance of government transfers for social inclusion and economic well-being, a debate exists concerning the optimal type of transfers. We can broadly divide the policy interventions dedicated to improving the material welfare of the targeted groups of people into two categories: transfers in-cash and in-kind.¹ The current study contributes to this discussion by comparing the

growth and welfare implications of monetary (cash) and in-kind transfers. It tackles this issue in a model with endogenous fertility so that we consider issues that relate to demographic transition. Our findings offer an alternative interpretation regarding the dominance of each type of transfers to those outlined in the literature.

Microeconomic theory generally argues that money transfers leave individuals better off than targeted, in-kind, transfers since individuals allocate the money to their own best use. This means that monetary transfers should leave individuals better off in terms of welfare when compared to in-kind transfers, as the former do not constrain the behavior of the recipients.² In practice, however, we observe widespread and sizeable use of in-kind transfer programs

a service. Typical examples of in-kind transfers are food subsidies, healthcare and medical provision, childcare and public housing.

² A detailed analysis of the weak dominance of cash transfers over cost-equivalent in-kind transfers appears, among other sources, in [Aaron and Von Furstenberg \(1971\)](#).

[☆] We acknowledge the helpful comments of an anonymous referee.

* Corresponding author.

E-mail addresses: stephen.miller@unlv.edu (S.M. Miller), kyriakos.neanidis@manchester.ac.uk (K.C. Neanidis).

¹ Transfers in-cash include social pensions, unemployment insurance, sickness, maternity, family allowance, and workplace injury benefits. Transfers in-kind consist of either the transfer of particular goods other than cash, or the provision of

across the world.³ This contradiction between traditional theory and observed practice generates a literature that offers competing explanations for the prevalence of in-kind transfers. The rationale for in-kind transfers include the improved targeting of benefits and self-selection (Nichols & Zeckhauser, 1982), the improved efficiency of the tax system (Munro, 1992), the Samaritan's dilemma (Buchanan, 1975), the presence of pecuniary effects (Coate, 1989), and political economy considerations (Janvry, Fargeix, & Sadoulet, 1991). A popular explanation, paternalism, involves the conflict between donor (government) and recipient (household) preferences. Since recipients do not calculate the social benefits while donors do, the social benefits from the provision of certain goods and services can provide the rationale for using in-kind transfers. Currie and Gahvari (2008) conclude in their survey of the theory and data on cash and in-kind transfers that paternalism with interdependent preferences provides the best overall explanation of the presence of in-kind transfers in practice.⁴

In parallel to these plausible causal factors of in-kind transfers, a number of studies have examined the effect of government transfers on economic performance. Early work on this subject involved either monetary transfers, or a bundling of all types of transfers into one category. Studies investigated, among others, the effect of transfers on saving, capital accumulation, and growth (Barro, 1974; Cigno and Rosati, 1996; Feldstein, 1974; Zhang, 1995), fertility and human capital (Ehrlich and Kim, 2005; Ehrlich and Lui, 1998; Zhang and Zhang, 2004; Zhang, 1995), income inequality (Aghion and Bolton, 1997; Keane and Prasad, 2002), and longevity (Philipson and Becker, 1998; Zhang, Zhang, & Leung, 2006).

More recently, a few studies distinguished between monetary and in-kind transfers and evaluated and compared their effects within specific economic environments. Such studies include Gahvari (1994) who compares the effect of cash and in-kind transfers on labor supply, Cunha, De Giorgi, and Jayachandran (2011) who examine their effect on (normal) goods prices in a partially closed economy, Cunha (2014) who finds that both types of transfers increased children's nutritional intake in Mexico and improved children health by the same margin, and Lieber and Lockwood (2013) who estimate the costs and benefits of providing Medicaid home-care benefits in cash and in-kind. A shortage of research, however, exists in combining both types of transfers with the view of comparing their effects on macroeconomic outcomes, especially economic welfare and the determination of Pareto optimal distributions.

This paper addresses this gap by investigating how monetary and in-kind transfers influence economic growth and welfare via a demographic transition mechanism. Within a two-period overlapping generations model with endogenous fertility, government transfers influence parental decisions with regard to the number and the quality of children, in line with the economic model of fertility (Becker, 1960; Chakraborty, 2004; Galor and Weil, 2000). In this view, parents value both the number of their children and their education (or health), and given that both childrearing and education (health) involve costs, a trade-off emerges. As a result, government transfers change the rate of return on human capital, thereby inducing parents to substitute between child quality and quantity. This outcome leads to different rates of fertility

and economic growth through human capital accumulation, thus offering a link between demographic and economic transitions.⁵

Our model, by incorporating both in-kind and in-cash transfers, allows the illustration of the multi-faceted effect of social protection programs on welfare. Specifically, endogenizing fertility decisions demonstrates that public transfers do not always improve welfare. In our analysis, both in-kind and monetary transfers affect welfare, with the sign of the effect depending on the parents' preferences toward child quantity (or quality). In-kind transfers lead to higher welfare, along with lower fertility and higher growth, only if parents value the quality of their children. If instead, they strongly value the number of children, in-kind transfers diminish welfare. But in this case, monetary transfers yield higher welfare, which coexists with higher fertility and lower growth. Thus, our model generates a condition that determines whether cash or in-kind transfers are welfare-dominant and, in this way, offers an alternative explanation for which of the two types of transfers dominates in terms of the recipient's utility.

As stated earlier, microeconomic theory generally argues that money transfers leave individuals better off than targeted, in-kind transfers. We show that in-kind transfers can also lead to higher growth and social welfare. Thus, our model offers another explanation for the importance of in-kind transfers. Overall, the analysis shows that allocation of public transfers tied to certain activities (in-kind) can produce both positive growth and welfare effects.

Further, our results give a clear role to the government regarding the choice of transfer programs that can help achieve its objectives regarding the outcomes of fertility, economic growth, and welfare. If the main objective aims to achieve demographic transition and raise economic growth, then a transfers program should include in-kind transfers. If, on the other hand, the objective aims to increase welfare, then the government can use both types of transfers effectively. Importantly, the objectives of lower fertility and higher growth and welfare are not mutually exclusive, since the use of in-kind transfers can achieve them all, as long as the recipients of transfers attach a relatively low value on the number of children. In this way, our findings provide unambiguous policy recommendations once governments set their objective functions.

The paper proceeds as follows. Section 2 presents the model. Section 3 solves the model for the equilibrium outcomes of the endogenous variables and derives the expressions for economic growth and welfare. It then determines the effects of changes in monetary and in-kind transfers on economic growth and welfare. Section 4 concludes and describes the implications of our findings for the design of transfer programs.

2. Model

Consider an overlapping generations (OLG) economy, where activity extends over an infinite discrete time period. The economy produces one homogeneous good, which is consumed only in that period, with labor as the single input. Individuals in each generation live (at most) for two periods: childhood and adulthood. Each individual receives one unit of time in childhood and two units in adulthood. Children depend on their parents for consumption and healthcare. Adults supply one unit of labor inelastically at a given wage rate, which finances consumption in adulthood and raises children. They use their remaining non-work unit of time

³ Currie and Gahvari (2008) report that in the early 2000s the governments of seventeen OECD countries have spent on average more than 12% of their GDP on just three in-kind programs combined (health, childcare, and education).

⁴ See Daly and Gertz (1972), Garfinkel (1973), and Olsen (1980) for earlier studies of paternalism with interdependent preferences. Khera (2014) provides recent empirical support in favor of paternalism for India.

⁵ Moffitt (1997), in a review of numerous studies regarding the effect of welfare programs on fertility in the United States, found mixed results, as did more recent studies (Grogger & Bronas, 2001).

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