Policy Evaluation Based on Moral Virtue Ethics in the Tough Love Model: A Progress Report

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Abstract

Three major ethics theories are utilitarianism, deontology, and moral virtue ethics. Policy evaluation in traditional economics by Pareto efficiency is based on a broadly defined utilitarianism which does not require comparisons of utilities between individuals. However, in behavioral economics, there are many difficulties in using Pareto efficiency because utility functions are endogenous in many models. This paper proposes to use moral virtue ethics as the basis for evaluating policies in behavioral economics. For the purpose of analyzing policies in a mathematical model, we employ a tough love model. In the model, the parent is faced by a trade off between giving material satisfaction of the child during the childhood versus focusing on development of a virtue of patience during the childhood by avoiding spoiling her. We compare government policies that are based on utilitarianism and those based on moral virtue ethics.

Key Words: Moral Virtue, Tough Love, Intergenerational Altruism, Endogenous Discounting

JEL Classification Numbers: D03, D1, D64, D91, E2

1. Introduction

This paper is a progress report for our research in Bhatt and Ogaki (2012b) in which we perform policy evaluation based on moral virtue ethics advocated by Ogaki (2012). For this purpose, we use a modified version of Bhatt and Ogaki's (2012a) tough love model

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in order to evaluate government policies. In the tough love model, the parent is faced by a trade off between giving material satisfaction of the child during the childhood versus focusing on development of a virtue of patience during the childhood by avoiding spoiling her. We analyze and compare policies advocated by moral virtue ethics and those advocated by Pareto efficiency in the model.

Three major ethics theories are utilitarianism, deontology, and moral virtue ethics. Policy evaluation in traditional economics by Pareto efficiency is based on a broadly defined utilitarianism which does not require comparisons of utilities between individuals. However, in behavioral economics, there are many difficulties in using Pareto efficiency because utility functions are endogenous in many models (see Ogaki 2012 for an explanation). This paper proposes to use moral virtue ethics as the basis for evaluating policies in behavioral economics. Moral virtue ethics was proposed by Aristotle (see, e.g., Ross 1925 and Chapter 8 of Sandel 2009). Policies that promote moral virtue are evaluated as good.

For the purpose of analyzing policies in a mathematical model, we modify Bhatt and Ogaki's (2012a) tough love model{Their model has been supported by empirical evidence in Kubota et al. (2012ab).. One modification is to include bequest to the model.[1] This modification allows us to analyze effects of policies to change bequest tax rates. In the tough love model, the child's time discount factor is endogenous. How patient the child will grow when she becomes an adult depends on how much consumption she enjoys during her childhood. The idea is that if the parent spoils the child by buying too many toys during her childhood, then the child will grow to be impatient.[2] We take the time discount factor value of one to represent moral virtue of patience. Moral virtue is always a mean between two extremes (see Section 2 of Book II of Ross 1929) according to Aristotle. It seems a deficiency to value your present self more than your future self (the discount factor less than one), and an excess to value your future self more than your present self (the discount factor greater than one). In the model, the government can change incentives of the parent to give childhood consumption by changing the bequest tax rate. If the representative future generation seems too impatient, then the government can lower the bequest tax rate in order to achieve moral virtue of patience. This policy can be compared with policies that maximize various social welfare functions that put various weights to the parent's and the child's utility functions.

2. A Tough Love Model with Bequests

Imagine a three-period model economy with two agents, the parent and the child. For simplicity, we consider the case of a single parent and a single child. The three periods

[1]Bhatt and Ogaki (2012a) did not include bequest in the model to simplify the model in order to analytically prove some properties of the model.

[2]The model abstracts from education expenditures on the child to make her more patient for simplicity. It will be important to incorporate such expenditures into the model in future research.

considered are childhood, work and retirement.[3] The model has seven features. First, the timing of the model is assumed to be such that the life of the parent and the child overlaps in the first two periods of the child's life. Hence, the parent has the child in the second period of his own life, which in turn corresponds to the first period of the child's life. Second, the parent not only cares about his own consumption, but is also altruistic toward the child. He assigns a weight of η to his own utility, where $0 < \eta < 1$. Third, the parent receives an exogenous income, denoted by y_p, in period 2 of his life. For simplicity, we assume that the parent receives no income in the last period of his life but simply divide savings from the previous period into his own consumption and bequest, which is taxed by the government. Fourth, the parent maximizes utility over the last two periods of life by choosing consumption, inter-vivos transfers, denoted by C_2^p, T, and B, respectively, in period 2 of life and dividing savings in the last period of life into his own consumption and bequests. Fifth, the child is assumed to be a nonaltruist and derives utility only from her own consumption stream $\{C_t\}_{t=1}^3$.[4] We assume that the child's income in periods 1 and 2, denoted by y_1 and y_2, respectively, is given exogenously and she receives no income in the last period of life. Sixth, the child is assumed to be borrowing constrained in period 1. Lastly, there is no uncertainty in the economy.

In the tough love model, the parent has trade off between giving material satisfaction to the child in period 1 versus promoting moral virtue of patience. We introduce the tough love motive of the parent via asymmetric time preferences between generations and endogenous discounting. In this model, the parent uses a constant and high discount factor, denoted by $\beta_{t,p}$, to evaluate the child's lifetime utility. The child herself uses a discount factor that is endogenously determined as a decreasing function of period 1 consumption:

$$\beta_k(C_1) \quad ; \quad \frac{d\beta_k}{dC_1} < 0.$$

With the borrowing constraint faced by the child in period 1, her period t discount factor is given by $\beta_k(T)$.

[3]For expositional ease, we begin by making the simplifying assumption that these three periods are of equal duration. Note that results presented in this section as well as in section 4 are robust to varying durations for the three periods. Further, in section 5 we relax this assumption and study the model with varying durations for childhood, work, and retirement.

[4]In this simple consumption good economy, we view consumption as a composite good that may include leisure activities such as TV time, video game time etc. In section 5, we extend this basic setup and introduce leisure as a second good.

In this model, the parent solves the following optimization problem:

(1)

$$\max_{C_2^p,T,B} \left[v(C_2^p) + \widetilde{\beta} v(R(y_p - C_2^p - T) - B)\right] + \widetilde{\beta} + \eta\Big[u(T) + \beta_p u(C_2^*) + \beta_p^2 u(R(y_2 + (1-\tau)B - C_2^*))\Big]\Bigg\},$$

subject to:

$$\{C_2^*\} \equiv \arg\max_{C_2} \Big[u(C_2) + \beta_k(T) u(R(y_2 + s + (1-\tau)B - C_2))\Big]. \tag{2}$$

where $v(.)$ and $u(.)$ are standard concave period utility functions of the parent and the child, respectively. $\widetilde{\beta}$ is the parent's own discount factor whereas β_p is the discount factor used to evaluate the child's future utility. R is the gross nominal interest rate, B is a bequest, and τ is the bequest tax rate, and s is a lump sum subsidy.

The government can influence the child's patience by changing the bequest tax rate. If the bequest tax rate gets lower, then the parent has more incentives to leave bequests than to make transfers to the child. With a view that the child should equally treat her future self with her present self, we view that $\beta_k = 1$ as moral virtue of patience. When the government's goal is to promote virtue of the child, then it will set the bequest tax rate to the value such that the parent's T solves

$$\beta_k(T) = 1$$

Let τ_v be the tax rate that achieves this.

For the purpose of simulations, we impose the following parameterization:

$$u(C) = v(C) = \frac{C^{1-\sigma}}{1-\sigma}. \tag{3}$$

The discount factor is given by:

$$\beta(y_1 + T) = \beta_0 + \frac{1}{1 + a(y_1 + T)} \quad where \quad a > 0 \; and \; \beta_0 \leq 0. \tag{4}$$

We impose the government's budget constraint: $s = \tau B$. In a simulation, we use the following social welfare function (SWF):

$$SWF = U_p + \eta U_c \tag{5}$$

where

$$U_p = \frac{C_2^{p*1-\sigma}}{1-\sigma} + \widetilde{\beta}\frac{C_3^{p*1-\sigma}}{1-\sigma} \tag{6}$$

$$U_c = \frac{C_1^{*1-\sigma}}{1-\sigma} + \beta_k(C_1^*)\frac{C_2^{*1-\sigma}}{1-\sigma} + \beta_k(C_1^*)^2\frac{C_3^{*1-\sigma}}{1-\sigma} \tag{7}$$

In stead of the parent's β_p, this SWF uses $\beta_k C_1$) to evaluate the child's life-time utility. In this simulation, we find that the SWF is decreasing around $\tau = \tau_v$, implying that the optimum tax rate that maximizes the SWF is different from the tax rate to promote patience.

3. Conclusion

The model explained in this paper introduced bequests and bequest tax to Bhatt and Ogaki's (2012a) tough love model. It can be used to analyze the tax policy to promote moral virtue of patience through parents' behavior. The optimum tax that promotes moral virtue is shown to be different from the optimum tax rate for maximizing social welfare functions. The model can be extended in many ways. For example, it can be extended to incorporate social norms, so that public policies to affect social norms can be analyzed.

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