



*Econ Journal Watch,  
Volume 1, Number 1,  
April 2004, pp 19-25.*

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## Response to Tabarrok

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“Think you’re an organ donor? Not if your family doesn’t know.”  
—Advertising billboard 2003.

**EVERY GRADUATE OF PRINCIPLES OF ECONOMICS LEARNS THAT** supply curves slope upwards. But most of them quickly forget the assumptions that make this so. Some may recall that a perfectly competitive market of identical firms yields a horizontal long-run supply curve. Others may recall that monopolists don’t have one at all. Relatively few will recall the obvious, but usually implicit, assumption that payment for goods and services supplied are actually made to those who create the supply. In Byrne and Thompson (2001), we made this trivial idea the cornerstone of an analysis of financial incentives for cadaveric organ donation.

We constructed a model in which property rights over the organs of the deceased are assigned to their surviving relatives and analyzed the consequences for the supply of cadaveric organs of paying for organ donation. We showed that in a world in which individuals are imperfectly informed about the preferences of their family members, in which survivors try to balance their own preferences about donation against the preferences of the deceased, and in which some members of the population consider posthumous organ donation a psychic cost, payments may induce a perverse

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supply response. The mechanism behind the perverse supply response is straightforward. Registering, or failing to register, as an organ donor provides a noisy signal to one's family members about the strength of one's preferences for being a donor.<sup>1</sup> Adding financial payments into the mix simply increases the noise-to-signal ratio of the registration decision in such a way that Bayesian surviving family members reduce their estimate of the strength of preferences for organ donation of the deceased.

Our analysis led us to two central policy conclusions.<sup>2</sup> First, property rights should be assigned unambiguously to the registered organ donor, eliminating the family from the decision-making process. Second, all individuals should be required to register explicitly either as a donor or non-donor. We concluded with the speculation that, under these institutional arrangements, the financial rewards necessary to induce an adequate increase in the supply of cadaveric organs will be modest.

In his commentary on our work, Tabarrok (2004) raises no objections to our policy recommendations. But he does object to how we got there. He complains that our preference structure is implausible, that most people view being an organ donor as a psychic benefit rather than a cost, and that what compensation buys is the effort of signing a donor card. Moreover, he argues, our analysis is irrelevant because a majority of states have already passed laws stating clearly that the intent of the donor is legally binding.

We do not doubt that in many states becoming a donor may be unnecessarily costly to the individual, and that financial incentives may help overcome this. This issue is fully addressed by our second policy conclusion, but it is not the central concern of our paper.<sup>3</sup> Similarly, wider issues such as meta preferences for honesty, intrinsic motivation, altruism, and the evolution of social norms, have been put to one side in our attempt to explain the possible consequences of introducing financial incentives in the

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<sup>1</sup> The signal is imperfect because there is a continuum of strengths of preferences, but the signal is binary.

<sup>2</sup> A third policy recommendation was that financial incentives should be limited to payments made posthumously. This was not central to the theme of the paper, but is rather based on ethical considerations. We showed in our analysis that payments made at the time of registering for organ donation, such as the discount on driver license renewals offered to registrants by the state of Georgia (a bill emulating this policy was introduced during the 2000 legislative session in Connecticut [HB 5461]), can induce time-inconsistent decisions that could lead in some instances to the unethical harvesting of organs from non-donors. Byrne and Thompson (2000) were the first to make a link between time-consistency and medical ethics.

<sup>3</sup> Tabarrok sidesteps the time consistency problem raised by financial payments made for registration that we discuss at length in the paper.

current institutional environment. Simplification is, of course, the core of economic modeling and we make no apologies for it.

Tabarrok's dismissal of our concerns about the psychic costs of being a donor and the signaling problem is premature. Contrary to his claim, we make no assumption about the distribution of preferences over organ donation, and only a fraction of the population need view organ donation as costly for our results to hold. Survey evidence unambiguously shows that a significant fraction of the population thinks this way.<sup>4</sup> Survey evidence equally clearly shows that individuals are imperfectly informed about the preferences of their family members,<sup>5</sup> and that in making donation decisions they try to take into account these unknown preferences.<sup>6</sup> Finally, survey evidence also indicates that these problems affect the donation decision (Siminoff and Lawrence 2002, Morgan 2004, and Morgan and Miller 2001).

But showing that the assumptions behind our model are factually relevant does not mean that their mathematical consequences are empirically important. Tabarrok rightly notes that we fail to present "any evidence . . . that financial compensation would reduce family agreement to donate" and that we "do not attempt to test [our] model." Is the signaling problem sufficiently important, relative to complicating features excluded from the model, that we would actually observe a perverse supply response? Of

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<sup>4</sup> In a well-known study, Gallup (1993) conducted a telephone survey of over 6,000 individuals to elicit attitudes toward organ donation. The study is frequently casually cited to show overwhelming support for organ donation, in much the way that Tabarrok cites it. Table 1 of the report shows that 85 percent of respondents to the survey question: "In general, do you support or oppose the donation of organs for transplants?" chose "support," but the practical import of this question is far from clear. After all, only 37 percent of these same respondents indicated that it was very likely that they themselves would become organ donors (Table 2), only 55 percent claimed they would be willing to be an organ donor (Table 10), and the non-survey evidence says that the number who actually will is even smaller.

<sup>5</sup> Further findings from the Gallup poll are as follows. Among respondents who had indicated a wish to become an organ donor, only 52 percent had told family members (Table 14); among those who did not wish to become an organ donor, only 32 percent claimed to have told family members (Table 15); and 27 percent did not know whether most of their family members supported the "idea" of organ donation (Table 13). This limited communication is in part because thinking about one's death makes a significant minority (36 percent, Table 9) uncomfortable. It also appears to affect decision-making: while 42 percent of respondents had already made a decision about their own organs, only 25 percent had made a decision about their family members' organs (Table 10). See Guadagnoli et al. (1999) for a statistical analysis of the Gallup survey results. In interviews with family members of 360 dead patients in Pennsylvania trauma centers, Siminoff and Lawrence (2002) report that over 52 percent of the families had to guess the patient's preferences.

<sup>6</sup> Siminoff and Lawrence (2002) report that when making the donation decision, 82 percent of families considered how the deceased patient might have felt about organ donation.

course, we do not know. Until such time as extensive use of financial incentives has been made, it is not apparent to us what data we could use to test the model. But we do explain what institutional changes could be made so as to sidestep the potential problem entirely.

As proponents of a wider use of financial incentives in health care,<sup>7</sup> we would be very happy to be responding today to a commentary that had tested our model and found it wanting. But, instead, we find ourselves responding to an armchair critic. Tabarrok does not test the model, he does not suggest how we, or others, may test it, and he presents no new evidence. Instead, he selectively reports and interprets just three pieces of previously available data. First, he cites a finding in Siminoff *et al.* (2001) that 89.3 percent of families who knew that the deceased had a donor card agreed to donate as evidence that relatives take donor intent seriously, missing both the relevant evidence in Siminoff and Lawrence (2002) and the fact that in our model the strength of the perverse supply response is *increasing* in the weight family members put on donor intent. Second, he cites the evidence in Table 1 of the Gallup poll, the relevance of which is questionable, while ignoring the remainder of the study. To Tabarrok, this evidence is enough to condemn us with an allusion to methodological positivism.<sup>8,9</sup>

Tabarrok's dismissal of our paper as irrelevant is equally premature. He argues that our work is just not relevant because as of January 2003 twenty-seven states had on their books "first-person consent" legislation clearly assigning property rights to the donor rather than the donor's family.<sup>10</sup> He notes approvingly a wider and more aggressive movement toward increased personal autonomy for organ donors. We are also encouraged

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<sup>7</sup> In Byrne and Thompson (2000) we argue for cash payments to be made to encourage terminally ill patients to reject futile treatment.

<sup>8</sup> While Tabarrok finds our model sufficiently unconvincing that no testing is necessary to dismiss our work, he worries that our model might sufficiently convince others that "financial compensation is a bad idea [precluding] the test that is supposed to justify the model" (Tabarrok 2004, 3 n4).

<sup>9</sup> We did not cite Gallup (1993) in our original study for the simple reasons that (i) economists, as a rule, do not put much stock in survey results, and (ii) the Gallup poll is, in our view, utterly untrustworthy as scientific evidence. Tabarrok's use of the poll forces us to put that view to one side here. But we urge the reader not to take these telephone polls too seriously. Gallup reports in their survey that less than 2 percent of all respondents indicated that they did not intend to donate their organs because they wanted to be buried as a whole person (Tables 2 and 3), but 17 percent of them agreed with the statement that "it is important for a person's body to have all of its parts when it is buried." (Table 27).

<sup>10</sup> Tabarrok acknowledges that some of these states implemented legislation after our paper went to press (in June 2000). In fact, over half of them did.

by the direction policy is taking as it is in exactly the direction we recommended. But we shouldn't get too complacent. First, as we made clear in our paper, first-person consent laws do not resolve the signaling problem when individuals are not required to declare themselves to be non-donors. Second, there remain 23 states without first-person consent laws, and an enormous gulf between law and practice continues to exist among those states that do have first person consent laws. Pennsylvania, for example, enacted first-person consent in 1994. The first of its three organ procurement organizations (OPOs) to enforce the law, the Center for Organ Recovery and Education, only did so in the face of much controversy in 1999. Many states are further behind in following their own laws. Texas, for example, has first-person consent, but none of its OPOs are prepared to harvest organs against the family's wishes.

We believe strongly that pilot studies are needed to determine whether financial incentives can improve organ donation rates. If the policy changes we advocate are adopted and followed, we believe that financial incentives *will* be successful. However, without mandated choice and proper assignment of property rights over organs to the donors, financial incentives may have perverse effects.

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