Comment on Botond Köszegi: On the feasibility of market solutions to self-control problems

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I very much enjoyed reading the interesting paper by Botond Köszegi on self-control and health-related consumption. He focuses on two types of health-related consumption: harmful consumption exemplified by smoking and beneficial consumption exemplified by exercise. If individuals have a self-control problem, they would like to increase the future price of smoking and decrease the future price of exercise; one way of achieving this is to tax smoking and subsidize exercise, thereby suggesting a role for government intervention on these markets. The main question in the paper by Köszegi is to what extent the market can resolve this problem without government intervention; i.e. if it is a sustainable market solution to offer contracts that increase the future price of cigarettes and decrease the future price of exercise.

He finds that this is difficult for smoking, but possible for exercise. I agree with these conclusions. Offering a contract that increases the future price of smoking seems impossible with competition; when the consumer reaches the future period, a competitor will simply offer a lower price on the "spot market" and the consumer will buy at the lowest possible price. The problem is that for a harmful good, the optimal future price is above the marginal cost, and a competitor can therefore always offer a lower price and still make a profit. For exercise, on the other hand, the optimal future price is below the marginal cost and there is no scope for a spot market to offer a lower price and the contract is therefore sustainable.

An intriguing finding by Köszegi is also that for harmful goods, competition may be socially harmful. A price above the marginal cost is optimal and a competitive market is therefore not optimal. A monopoly would lead to a price above the marginal cost and may be preferable to a competitive market. Naturally, the monopoly price is unlikely to be first-best optimal; it could, in principle, be higher or lower than the optimal price with self-control problems, depending on the degree of self-control. The estimations of Gruber and Köszegi (2001) imply that the optimal price increase of cigarettes due to self-

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control problems is substantial. An interesting implication is therefore that in the market for cigarettes, competition is harmful and the government should encourage anticompetitive behaviour like collusion and mergers to increase the market power! But a corrective tax may be preferable, as that would enable the government to, in principle, set the optimal price and the tax revenues can also be used to decrease other distortive taxes. A price above the marginal cost due to lack of competition or taxes can encourage smuggling. It is, however, possible that smuggling is a bigger problem with taxes than with monopoly pricing. With monopoly pricing, the tobacco companies would have an incentive to avoid smuggling and keep prices high on all markets.

For exercise, it is an interesting issue to what extent we see the type of contracts predicted by the quasi-hyperbolic self-control model. For gym contracts, it is common to offer contracts that reduce the marginal monetary cost to zero, e.g. an annual contract with unlimited use of the gym. This is seemingly consistent with the self-control model. But one also has to bear in mind that the marginal cost of exercise in a gym is low. Gyms are characterized by high fixed costs and a low marginal cost of an additional gym visit. So these contracts may be due to the high fixed costs and low marginal costs rather than to self-control.

With a self-control problem, it would seem natural to induce individuals to precommit to start exercising in the future, i.e. offer contracts where individuals in the current period decide to start exercising in the next period and pay for the gym card in the next period (this delayed payment makes the contract more attractive for an individual with a self-control problem, compared to paying in the current period). This is similar to the structure of the save more tomorrow program of Thaler and Benartzi (2004), where individuals decide now to start saving in the future period (when they get the next pay rise). Although I have not properly examined this, I am not aware of that type of contracts on the gym market, but these contracts may be difficult to enforce. Another possible contract would be to start exercising this period but pay in the next period, i.e. pay the monthly or annual gym fee with a lag of one period. This is like borrowing from the gym and maybe this is better handled by the credit market, thus explaining why these contracts may not arise. Anyway, there may be scope for innovations like the save more tomorrow program for exercise where

market solutions are used to increase exercise without government interventions, i.e. an exercise more tomorrow program!

I also have a couple of more general comments concerning the self-control model and the rationale for government intervention. In using the self-control model to estimate optimal policy, it seems important to allow for heterogeneity in self-control. A tax will reduce both "irrational consumption" (consumption due to a lack of self-control) and "rational consumption" (consumption not due to a lack of self-control). Therefore, it would be better with policies that reduce the "irrational consumption" without affecting the "rational consumption."

The degree of self-control in the quasi hyperbolic model (the beta parameter) is also considered to be exogenous, which is not obvious. Testing this assumption and exploring the implications of endogenous self-control would be interesting. One could, for instance, imagine that individuals could invest in self-control so that the beta parameter is endogenous in a similar way as in the work of Becker and Mulligan on endogenous time preferences (1997). With this type of model, a tax on, for instance, smoking that decreases the return on investments in self-control could lead to less self-control (i.e. a lower beta parameter). This implies that even though smoking will decrease, the lower degree of self-control may increase drinking and decrease investments in education. This is because the quasi hyperbolic model assumes that all behaviour is governed by the same general self-control parameter. If this assumption is correct and self-control is endogenous, individuals in societies with a large degree of regulation on health behaviour would, everything else constant, be expected to have a lower degree of self-control. Evidence on this is limited. It would also imply that self-control related characteristics would be clustered among individuals, i.e. low education, low income, obesity, smoking and drinking. There is some evidence on this, but whether it is due to a lack of self-control or some other underlying mechanism is unclear.

One could also imagine that self-control is domain specific which would reject the quasi-hyperbolic model. With such a model, the implications for regulations of endogenous self-control are less clear. It would depend on how investments in self-control in one dimension affect the marginal costs and benefits of investments in the other dimension. If investments in one dimension increase the marginal cost in another dimension (assuming constant marginal benefits), a tax on

smoking could increase investments in other dimensions, i.e. the reverse effect from the quasi hyperbolic model with endogenous self-control sketched out above.

Self-control problems are one argument for paternalistic policies. But an additional related argument is that other-regarding preferences could be paternalistic, i.e. paternalistic altruism. This seems plausible in the health arena and if individuals are more concerned about the health of other individuals than the other consumption of these individuals, this implies that health enhancing goods should be valued over and above the individual willingness to pay (Jones-Lee, 1992). In a series of experiments, Jacobsson et al. (2005) found relatively strong evidence of health-related paternalistic altruism. Thus, this provides an additional argument in favour of regulating health-related behaviour and consumption over and above self-control problems.

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