Referee Report on MS 20060753 "Social Change from a Macroeconomic Perspective"

I really enjoyed reading this paper. It undertakes the ambitious task of trying to explain changes in sexual mores over the 20th Century. The paper proposes a prototype general equilibrium matching model to explain the rise of premarital sex among teenagers over this period. The model represents society as consisting of two social classes with different taste for sex. It has a two-sided search structure where agents seek partners that share the same view on sex. Memberships in these social classes are endogenous, and changes in the size of these groups create social change. I find this idea of modelling social change very attractive, innovative and potentially influential. The key variable that explains changes in membership between the two classes is the fall in the cost of premarital sex over the period. The author condenses the numerous technological and social changes over this period into this single index of the cost of premarital sex.

Comments:

i) I would like to push the author to address the general issue of non-stationarity. As it currently stand, the proposed model makes to many convenient approximations that limit its applicability. What makes the task explaining changes in the 20th Century difficult and challenging are the numerous things that happened over this period which makes it hard to disentangle one effect from another. The model conveniently shuts down many of what I think are important 'complications'. This issue arises in a number of instances.

The model makes the convenient assumption that the number of individuals entering the system maintains the proportion of Abstinence and Promiscuous class. Why is this a reasonable assumption? How would one address changes in populations like the baby boom and the world wars? The author made passing reference to the fact that time is implicitly a state variable – why isn't it explicitly a state variable?

The calibration exercise considers the case where the cost of sex falls every period. I find it troubling that agents do not internalize this change in their decision making. Is it possible to have a model where agents have rational expectation about this change in their preference for sex?

Is it possible to allow $\mu$ and $\delta$ to vary over time? I think it is unreasonable to assume that the probability that teenagers match never changed over the 20th Century and remained at the value in 2002.

ii) The main real world data used in the calibration exercise is displayed in Table 1 and 2. I find numbers in Table 2 particularly unconvincing. While the author
quotes the source of these rates, it is hard to see why this numbers are a reasonable reflection of reality.

For example, using no contraception has a failure rate (or a risk of pregnancy) of 85%. This cannot be right. If you assume that the monthly cycle take 28 days, a woman's egg last between 24 to 48 hours. Even the most conservative estimate says that a woman is fertile for 5-6 days in the cycle. How do we get a failure rate of 85%? I am also astonished that the condom doesn't even half the failure rate of the withdrawal methods. I feel that the author took this numbers too casually.

iii) What is the significance of having both exogenous and endogenous divorce? I am guessing that this confusion could be cleared up with clearer exposition. Why do you need exogenous divorce when couples can endogenously choose to get divorced? At the steady state, why would a couple (endogenously) want to get divorced? There is no stochastic component in match value and types do not evolve.
Some Thoughts

Matching up papers with referees must at times be a difficult task for an Editor. Here the referee states that she “really enjoyed reading the paper.” At the same time she tells the Editor that “that it doesn’t yet convince on truly explaining social change.” It is clear that the referee has some very basic problems understanding the formal analysis. She states that “the calibration exercise considers the case where the cost of sex falls every period. I find it troubling that agents do not internalize this change in their decision making.” The paper models a non-stationary rational expectations equilibrium along a perfect foresight path. Thus, all individuals fully internalize the declining risk of pregnancy into their decision making. Time is a state variable in the analysis. The time dependence of the system is implicit in the recursive notation that is adopted in the analysis. This would be familiar to most macroeconomists trained in the methods advanced by Stokey and Lucas with Prescott (1989). And, the definition of equilibrium explicitly writes everything as a function of time. Also, the model does not “make the convenient assumption that the number of individuals entering the system maintains the proportion of Abstinence and Promiscuous class(es).” When entering the system an individual is free to select the social class that s/he wants to mix in. Last, this person also worries about the failure rate numbers that are used for contraception. These are the best available numbers from the medical literature, which is cited extensively. It’s hard to understand her concern that the paper takes these “numbers too casually.” Furthermore, the referee fails to suggest any better sources. All of this speaks to difficulty of doing research that draws from many different areas. It’s hard to find a referee that will be both familiar with, and sympathetic to, the ideas being presented and methodology used.