

Exercise on the model of Acemoglu and Wolitski (2011)

The purpose of the exercise is to disassemble the model. As for an machine, one attempts to separate building blocks. This provides, hopefully, insights. One block is to reduce the model to the following.

$$\text{The landlord maximizes } a(x - w^h) + (1 - a)(-w^\ell), \quad (1)$$

subject to the participation constraint $a(w^h - p^h) + (1 - a)(w^\ell - p^\ell) - c(a) \geq u$,

and the ICC $a \in \arg \max \bar{a}(w^h - p^h) + (1 - \bar{a})(w^\ell - p^\ell) - c(\bar{a})$.

The “serfdom variable” is omitted. One purpose of the reduced model is to analyze the role of this variable.

1. Use the ICC to express a as a function of $w^h - p^h$ and $w^\ell - p^\ell$.
2. Use a simple argument, with equation (1), that in the solution, $w^\ell = p^\ell = 0$.
Thereafter, use the notation $w^h = w, p^\ell = 0$.
3. Substitute in equation (1) to reduce the problem to the maximization of a function in a . Analyze the optimization. You may try a cost function that seems suitable, for example, (suggestion only), $c(a) = \beta/(1 - a)$, with β not too large. (You may want to analyze through a numerical simulation).
4. Introduce a “serfdom parameter,” g , as in the A-W paper with a marginal cost (for the landlord) that is small. Show that the landlord would use such a device. Comment.
5. Extend the A-W framework to introduce the issue analyzed by Mayshar et al. (2017). Ask an interesting question. Comment.