Sparse Maximization and Human Capital Investment

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Gabaix (2014) proposes a fully tractable, unifying theory of limited attention in decision-making. The idea is that the decision-maker pays less or no attention to some features of the situation. A potential application of sparse maximization is human capital investment, since young individuals could (partially or even fully) neglect some relevant features, which could tilt their choices. This may imply that a considerable share of the US labor force is misallocated.

Following the career choice model by Keane and Wolpin (1997), an individual's objective when making career decisions can be modeled the following way

$$V(\mathbf{S}(a), a) = \max_{d_m(a)} \mathbb{E}[\sum_{\tau=a}^{A} \delta^{\tau-a} \frac{1}{1-\sigma} \sum_{m=1}^{5} h_m(a) R_m(a)^{1-\sigma} d_m(a) | \mathbf{S}(a)] \tag{1}$$

In contrast to Keane and Wolpin (1997), we consider more general CES-preferences, which is a technical assumption to make preferences concave. The importance is augmenting the model by $h_m(a)$, denoting the attention weight as in Gabaix (2014). If $h_m(a) = 1, \forall m, a$, one yields the fully rational model as in Keane and Wolpin (1997). However, according to Gabaix (2014), $h_m(a)$ is endogenous. Specifically, he proposes a cost function of considering $R_m(a)$ of the form:

$$C(h_m(a)) = \kappa |h_m(a)|^{\alpha} \tag{2}$$

where $\alpha \geq 0$. In a first stage, the agent chooses the attention vectors $\mathbf{h}_m$ by maximizing 1 minus the cognition cost specified in (2). In the second stage, once the attention vectors

are obtained, the agent chooses the optimal sequence of occupations as to maximize (1), incorporating the attention vectors.

This paper would add to the literature in structural behavioral economics, since it obtains estimates for κ and α using data from the field. Since preferences have been augmented by another parameter σ, a natural question is to what extent this parameter contributes to the model fit as opposed to κ and α. A possible robustness check is to consider log-preferences, which retain concavity (since they are a special case of CES-preferences), but they do not introduce an additional exogenous parameter.

Bibliography

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