

Axiomatic Assumptions and Employee Utility

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As made clear last week, the GEM Project properly constructs employee preferences on axiomatic assumptions. Enter utility functions, the workish vehicle economic theorists typically employ to organize their analyses of human behavior. Noneconomists hate the mechanistic sound of “utility function”. But what should really be objected to is the typically arbitrary mainstream specification of the preferences that such functions embody.

By contrast, in the Project, the familiar von Neumann-Morgenstern discounted utility framework is adapted to the axiomatic employee preferences featured in last week’s post:

$$E_0 \sum_{t=0}^{\infty} ((1+r)^{-t} U_j(C_j(t), L_j(t), W_j(t)/W_j^n(t))), \text{ such that } (\Delta U_j / \Delta (W_j / W_j^n) | W_j \leq W_j^n) > 0.$$

C represents consumption at time t ; L is leisure (moving inversely with hours at work, H); E_0 denotes the expectation of future values of the function’s arguments based on the cost-effective information available at the beginning of the current period ($t=0$); r is the subjective discount factor ($r \in (0,1)$); Δ is the change operator; and the series are summed from $t=0$ to $t=\infty$, the employee’s desired tenure at firm j . The remaining notation is from last week. The function is temporally separable; and, to assure its existence, preference relations motivating the arguments are reasonably posited to be complete, transitive, and continuous.

Axiomatic Preferences

Instantaneous utility, the focus of the GEM Project’s static analysis, is assumed to be positive and convex in consumption and leisure. The innovation here is the reference wage (W^n). To reiterate from last week, three classes of reference standards calibrate the additional preference for equity: W^a (his or her best alternative wage), W^b (the interpersonal reference standard), and W^c (the intertemporal reference standard). There exists a set of labor prices $\mathbf{K}_j = \{W^a, W^b, W^c\}$, for which the worker’s preference for fair treatment is satisfied by the set’s least upper bound: $W_j^n = \sup \mathbf{K}_j$. The preference relation implies that instantaneous utility is strictly increasing in W_j/W_j^n up to unity and unchanged thereafter. The axiomatic preferences used in generalized-exchange theory are broadly consistent with the extended-utility approach pioneered by Duesenberry (1949) and Modigliani (1949) and used more recently by a number of economists, notably including Gary Becker (1996).

For a still up-to-date review of the use of extended preferences in macroeconomic modeling, see de la Croix (2003). In general, care must be taken in the search for topological transformations of preferences that make one’s model more consistent with the data. That practice has too often amounted to little more than the hidden use of free parameters. Such transformations are admissible in model building only if the reformulated preferences are both intuitively plausible and strongly supported by the evidence, i.e., they must be axiomatic. The real-world importance that employees assign to equitable treatment by management easily satisfies those requirements. No other worker-preference set widely used in economic models today (e.g., the dominant urge to shirk) can make that claim.

Workers still prefer higher to lower wages, but they are now dissatisfied (experiencing damage to utility) when their compensation falls below the established reference standard. Moreover, given consumption and leisure, wages in excess of the reference standard are posited to produce nil gain in satisfaction. (The greater consumption and leisure that result from higher wages do, of course, increase satisfaction.) As has been emphasized, positing reference-dependent utility is consistent with the findings of economists who have been investigating the psychological foundations of economic behavior. In reviewing that literature, Rabin (1998) concluded: “Overwhelming evidence shows that humans are often more sensitive to how their current situation differs from some reference level than to the absolute characteristics of the situation.”

More fundamentally, as was also noted last week, evidence continues to accumulate that, over the course of human evolution, an elemental concern with respect to relative position has been hard-wired in the human brain. The naturally-selected adaption facilitates cooperation and improved survival probabilities that accompany the capacity to specialize by working together. Arthur Robson (2001), for example, came to the hard-wired conclusion in his review of the literature on the biological basis of economic behavior; and researchers in the emergent field of neuroeconomics have provided consistent support for the idea. (See also Frank (1999, 2005), Fehr *et al.* (2005), Zak *et al.* (2005), and the extensive work on “ultimatum” and “social dilemma” games in experimental economics.) At some level, we all know this. Along the lines of H. L. Mencken,

a poor man can be defined as someone who earns less than his wife's sister's husband.

The employee preference for fair treatment by management is stable. He or she always wants to be treated equitably. But, in application, that preference must be calibrated by the choice of reference standards, which are given in the baseline analysis but made endogenous in the website's e-book (Chapter 3). Endogenous calibration of the reference wage (W^n) is motivated by intertemporal substitution of perceived fair treatment for consumption, the analysis completes the GEM Project's microeconomic modeling of optimizing behavior on the job.

Momentary Utility and Labor Rents

Momentary utility and labor rents. The existence and circumstances of $W_j = W^n_j > W^m$ are also derived from axiomatic model primitives in the e-book (Chapters 3 and 4). For now, simply note that the payment of wage rents powerfully constrains worker optimization. Preferred jobs are rationed, and employment by a rent-paying establishment implies that job seekers from market-wage-paying firms have been pushed off the neoclassical labor-supply schedule, suppressing. From the perspective of employees receiving rents, work-leisure choice is suppressed. Hours on such jobs are exogenously determined, limiting the active pursuit of instantaneous utility maximization to adjusting on-the-job behavior:

$$\max U_j(C_j, L_j^o, W_j/W^n).$$

In baseline analysis, the reference wage is also given, implying fixed consumption (C^o) unless the firm attempts to reduce rents by cutting compensation from established W^n_j . Employee dissatisfaction with the inequitable change would then be reinforced by his or her preference for more to less consumption. Workers maximize momentary utility on the job at $W_j/W^n_j = 1$.

The employee, occupying an inherently subordinate position in the establishment's hierarchy of authority, prefers fair treatment, defines that preference along three dimensions, and formulates optimizing workplace decision rules accordingly. His or her equilibrium is understood as a rest period in the space of those decision rules. If the equity-based preference relation is violated, the now dissatisfied employee is in disequilibrium with respect to on-the-job behavior. Moreover, if the nature of the workplace does not permit the establishment of interpersonal and intertemporal standards, the operative reference system collapses to the best-alternative-job comparison, making the reference wage equivalent to the worker's market opportunity cost ($\sup \mathbb{K} = \{W^a\} = W^m$). Employees, no longer earning wage rents, return to their market labor-supply schedule and their focus on work-leisure choice. New Keynesian market-centric macroeconomics must ignore endogenous on-the-job behavior in information-challenged workplaces, making it unsurprising that mainstream modeling is stabilization-irrelevant.

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