Inframarginal values and demand: Contra Dwight Lee

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Abstract Happiness studies show that there has been no discernable rise in happiness in the United States between 1959 and 2004, yet the same period saw per capita income nearly triple. Dwight Lee modifies the theory of consumer demand to resolve this apparent conflict. Using the concepts of consumer surplus and rising incomes causing demand shifts, Lee posits that the law of downward sloping demand only fleetingly applies. He hypothesizes that the values of all units consumed become the same as the value of the last unit soon after the change in income. This makes the demand curve horizontal for all units consumed, and that makes the existence of consumer surplus ephemeral. There are difficulties with this; some are: (1) His formulation gives rise to predictions that are at odds with commonly observed market phenomena; (2) The attempted resolution is quixotic because the theory of demand and consumer surplus holds time, place, and circumstances constant, while happiness surveys do not and, indeed, cannot hold things constant over decades; and (3) because standard economic theory is timeless it is inapplicable to many phenomena that occur over extended periods.

Keywords Law of demand · Adaptation · Happiness surveys · Consumer surplus · Relative income · Heraclitus

JEL Classification I31 · B40 · D11

Perhaps the most fundamental finding in economics is the ‘law’ of the negatively sloped demand curve.

Gary S. Becker (1971, p. 11)
Dwight Lee (2009) asks: How might the economic theory of consumer demand be modified to accommodate evidence that shows no increase in surveyed happiness from 1959 to 2004 while over the same period per capita income has almost tripled.\(^1\) Lee alludes to two possible explanations: (1) it is relative income that determines happiness rather than the absolute level of income; an increasing absolute income that has unchanged relative incomes does not affect happiness; and (2) it is the process of changing conditions rather than the absolute levels of income that are key to changing happiness; as Lee (p. 5) explains: ‘more money does increase happiness, but only temporarily.’ Lee chooses to rely solely upon the process of changing income levels in his reconciliation of demand theory and the empirical evidence of happiness studies. Nevertheless, Lee (p. 6) explicitly acknowledges that relative income also matters: ‘This is not to deny the importance of relative income to happiness. The influence of relative income and adaptation can work together in explaining the results of happiness studies.’

1 Lee’s reconciliation: Eschewing the law of demand

Lee starts with standard consumer theory; an increase in income causes a downward sloping demand curve to shift to the right. When increasing income causes a demand shift to the right (for a normal or superior good\(^2\)), this increases ‘consumer surplus’ which is the area bounded above by the demand function and below by the market price line. The presumed increase in ‘consumer surplus’ generated by increased income over the period 1959–2004 is not reflected in any surveys of ‘happiness’. Thus a near tripling of per capita over a 45 year period has had no measurable impact upon ‘happiness’; we all know that money does not buy love, but this suggests that money does not affect happiness! If money is so unimportant in life, why do people make such efforts to acquire it? This is puzzling in the extreme. Lee’s (p. 8) explanation for the puzzle is embedded in his Figure 3; we reproduce the aspects of it relevant to our discussion below in Fig. 1.\(^3\)

In Fig. 1 downward sloping demand curves \(D_1\) and \(D_2\) illustrate standard demand theory for ‘normal’ goods. The original demand curve is \(D_1\) which is associated with a specific income level; when real income increases, then demand shifts to the right to

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\(^1\) The evidence presented in Lee’s (p. 4) Fig. 1 illustrates graphically the absence of correlation between per capita income in the United States and ‘happiness’ from 1959 to 2004.

\(^2\) A normal (and/or superior) good is one where demand increases as income increases. This contrasts to an inferior good where an increase in income reduces demand. (For examples of inferior goods one might think of powdered skim milk, or Boones Farm wine.) We are in complete agreement with Lee’s (p. 9) discussion: ‘A change in national income affects the consumption of all goods in a more uniform way than a change in price, by shifting almost all demand curves (with inferior goods being an exception) in the same direction. And even when inferior goods are considered, it is reasonable to assume that the consumer’s total surplus will be increased with an increase in income and reduced with a reduction.’

\(^3\) There are two differences between Lee’s Figure 3 and our Fig. 1: (1) we have labeled the vertical axis intercepts as \(a\) and \(a’\), whereas Lee (p. 7) did not label these in his Figure 3 (although he did in his Figure 2 using these same labels). (2) We have simplified Lee’s Figure 3 by including only the geometry relevant to the discussion of an increase in income; thus we excluded dotted lines on Lee’s Figure 3 labeled \(-d_1\), \(-d_2\), and \(-d_3\), as well as the solid line labeled \(P - D_2\).