Absurd Assumptions & Counterintuitive Conclusions: The Case of David Friedman

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In a recent article, this author demonstrated that two of Steven Landsburg's 'surprising' results were due to his false assumptions, and that the 'naïve' layman was thus exonerated from Landsburg's criticism. In this article, we will attempt to do the same with an argument presented by the eminent David Friedman in his fascinating book, *Hidden Order* (HarperCollins, 1996).

As with Landsburg it will be first necessary to quote extensively from Friedman. The following analysis is presented in his section, "Heads I Win, Tails I Win":

> You have just bought a house. A month later, the price of houses goes up. Are you better off (your house is worth more) or worse off (prices are higher) as a result of the price change? Most people will reply that you are better off; you own a house and houses are now more valuable.
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> You have just bought a house. A month later, the price of houses goes down. Are you worse off (your house is worth less) or better off (prices are lower)? Most people reply that you are worse off. The answers seem consistent. It seems obvious that if a rise in the price of housing makes you better off, then a fall must make you worse off.
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> It is obvious, but wrong. The correct answer is that either a rise or a fall in the price of housing makes you better off! We can see why using [simple geometrical indifference curve analysis].

[Friedman then refers to his diagram which has "Amount of housing" on the vertical axis and "Dollars spent on everything else" on the horizontal axis. He draws an initial budget line and finds the optimal point *A* (where the line is tangent to an indifference curve). He then shows that, whether we make the budget line steeper or more shallow, since it still must pass through *A* (since the owner can always choose to *retain* his original

consumption bundle after the price change) the resulting new point of tangency—in both cases—by simple geometry *must* be on a higher indifference curve.]

> By looking at the figure, you should be able to convince yourself that the result is a general one; whether housing prices go up or down after you buy your house, you are better off than if they had stayed the same. The argument can be put in words as follows:
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> What matters to you is what you consume—how much housing and how much of everything else. Before the price change, the bundle you had chosen—your house plus whatever you were buying with the rest of your income—was the best of those available to you; if prices had not changed, you would have continued to consume that bundle. After prices change, you can still choose to consume the same bundle, since the house already belongs to you, so you cannot be worse off as a result of the price change.
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> But since the optimal combination of housing and other goods depends on the price of housing, it is unlikely that the old bundle is still optimal. If it is not, that means there is now some more attractive alternative, so you are now better off; a new alternative exists that you prefer to the best alternative (the old bundle) that you had before.
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> The advantage of the geometrical approach to the problem is that the drawing tells us the answer. All we have to do is look at [the figure]. The initial budget line was tangent to its indifference curve at point *A*, so any budget line that goes through *A* with a different slope must cut the indifference curve. On one side or the other of the intersection, the new budget line is above the old indifference curve—which means that you now have opportunities you prefer to bundle *A*.
> What the drawing does not tell us is *why*. When we solve the problem verbally, we may get the wrong answer (as at the beginning of this section, where I concluded that a fall in the price should make you worse off). But once we find the right answer, possibly with some help from the figure, we not only know what is true, we also know why. (34-36)

Friedman's analysis is obvious, but wrong. Its most fundamental error is an illegitimate application of a static optimization problem to the real world of markets which change over time. In other words, Friedman assumes he can handle the phenomenon of a price change by finding the

optimal bundle *A* at one price, then drawing a different line through that point, and finding the new optimum bundle *B*. If *B* is on a higher indifference curve, Friedman interprets this to mean that the agent has benefited from the price change.

This procedure is completely unjustified. The determination of the optimum bundle *A* only makes sense if the price is (and always will be) the original price. One cannot compare the utilities of two static equilibrium points in order to say anything about a model that (more realistically) allows the possibility of changing prices.

Friedman feels his geometric analysis can adequately 'capture' the real world phenomenon of holding assets amidst price changes. But this step in his argument is not so self-evident. What Friedman's diagram *really* shows is that the agent would prefer to be endowed with bundle *A* and face the second (or third) price ratios. Friedman assumes that this *is the same thing* as the proposition that the agent, initially buying bundle *A*, would prefer a price change. In many settings, this equivalence is perhaps justified. But it is certainly not in Friedman's example, and his 'refutation' of the verbal reasoning in the beginning of his section is consequently wrong.

Housing is peculiar in that it is a durable asset that also provides a flow of services. We can test the rigor of Friedman's analysis by shifting to the two extremes of this spectrum. First, let us suppose the good in question is not durable, like housing, but rather extremely perishable. Thus, let the vertical axis represent "Amount of food," while the horizontal represents "Dollars spent on everything else." We have an original price of food relative to everything else, and our agent buys his optimum quantity. Now, a worldwide catastrophe causes all vegetation to die. (No one knows why, not even those with a Ph.D. in physics.) Consequently, the price of a "unit" of food rises, say, to $1 billion. Silly writers for the *Wall Street Journal* and even lesser newspapers conclude that humanity is doomed, and that everyone is much worse off as a result of the price increase. But these critics fail to realize that no one will go hungry, at least not as a result of the price increase. If anyone had thought buying more food would be desirable, he or she would already have done so. In fact, everyone is much better off. A person can sell just a fraction of a unit of food, and with the proceeds buy all manner of luxury goods that were previously outside of his budget set.

Now suppose that the vertical axis represents "Number of gold coins." An eighty-year-old man, close to death, sells virtually all of his possessions and purchases their equivalent in gold coins at a certain price, intending to bequeath them to his heirs. The day after his purchase, an advance in alchemy allows the easy transformation of copper into gold, such that the price of the latter falls until it equals the price of the former. At first the man is terribly upset, for his heirs will no longer be able to afford the same bundles of goods that they would have under the previous price structure. But his friend points out the error of this view: Before, the old man held on to a few hundred dollars in cash, feeling that the marginal gold coin was not worth its purchase price. But

now the man can afford to give his heirs one hundred *additional* gold coins, with only sacrificing one single dollar. Truly the price fall is a boon, not a curse.

The staunch defender of indifference curve analysis will no doubt be unconvinced by the above examples. If we want to model the more complicated process of buying (and selling) houses *over time*, then our vertical axis should be interpreted to denote, not simply the number of houses purchased *today*, but rather the (contingency) plan specifying how many houses will be purchased, and at what dates, for the rest of eternity, as a function of their spot market prices. Once we adjust the model to capture the real world phenomena we are trying to describe, the absurdities described above disappear.

This is certainly true, but then, as it was argued much earlier, we can no longer allow for a 'price change,' since this possibility has already been built into the original price (vector). One cannot have it both ways; either the model incorporates time or it does not. If it does not, then we cannot use it to draw any conclusions regarding the effects of changing conditions. Friedman's result is so completely unexpected that he should have tested its ability to generate even more sweeping conclusions. For example, his figure would also 'prove' the really counterintuitive proposition that a governmental decree prohibiting future housing sales would have no effect on anyone, even young couples who were planning on buying a house tomorrow.