

# PHILOSOPHY OF ECONOMICS

## SHOULD ASSUMPTIONS BE REALISTIC?

F53 Milton Friedman's (1953), often referred to as simply "F53", has been the most influential statement on economic methodology in the twentieth century. In the essay, Friedman seems to subscribe to a number of philosophical doctrines, or theses, as may be usefully categorized by following (Mäki, 2003).

To begin with, Friedman distinguishes between economics as a "normative" discipline, and economics as a "positive", or descriptive, discipline. Positive conclusions have repercussions on normative issues. Still, positive economics is "in principle independent of any particular ethical position or normative judgements" (146). Positive issues are prior to normative issues. They can be decided without making value judgements. Instead, policy decisions must be based on, and follow, positive conclusions. The choice of the ends themselves is not scientifically justifiable. But once the desirability of an end is accepted (e.g., "living wages"), it is a *matter of fact* whether a means (e.g., minimum wages) is instrumental in achieving that end and policies aimed at implementing that means should be promoted. Scientific assessment of policy decisions depends on means-end relations only, and requires no value-judgement. Let us call this claim Friedman's *positivist thesis*.

Next, the aim of a scientific theory, for Friedman, is to make correct predictions as regards "the class of phenomena which it is intended to "explain" (149)—this is Friedman's *instrumentalist thesis*:

[economics'] task is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances. Its performance is to be judged by the precision, scope, and conformity with experience of the predictions it yields. (146)

Strictly speaking, hypotheses cannot be proven to be true, or confirmed. They are endorsed if they survive severe tests—if experience does not falsify them—let us call this claim Friedman's *falsificationist thesis*:

The hypothesis is rejected if its predictions are contradicted ("frequently" or more often than predictions from an alternative hypothesis); it is accepted if its predictions are not contradicted; great confidence is attached to it if it has survived many opportunities for contradiction. Factual evidence can never "prove" a hypothesis; it can only fail to disprove it, which is what we generally mean when we say, somewhat inaccurately, that the hypothesis has been "confirmed" by experience. (149)

Due to the difficulty in performing experiments in the social domain, observation rarely provides conclusive evidence in favour or against a hypothesis. This may lead to mistaking economics for a branch of mathematics, a "purely formal or tautological analysis" (151), whereas in fact economics does and must have empirical content.<sup>1</sup> Experience underdetermines which hypotheses to accept—potentially, infinitely many are compatible with it. Besides falsification, additional factors, such as simplicity and fruitfulness, contribute to the selection of hypotheses. The role of these additional factors, too, is evaluated with respect to prediction (150).

In particular, one should be careful not to regard the "truth" of the *assumptions* as an additional way of testing the truth of a *hypothesis*:

[...] to suppose that hypotheses have not only "implications" but also "assumptions" and that the conformity of these "assumptions" to "reality" is a test of the validity of the hypothesis different from or additional to the test by implications, this widely held view is fundamentally wrong and productive of much mischief. (152-53)

<sup>1</sup>By contrast, Rosenberg (1994) maintains that (positive) economics is "applied mathematics" (see WEEK 11).

[...] the relevant question to ask about the “assumptions” of a theory is not whether they are descriptively “realistic,” for they never are, but whether they are sufficiently good approximations for the purpose in hand. And this question can be answered only by seeing whether the theory works, which means whether it yields sufficiently accurate predictions. The two supposedly independent tests thus reduce to one test. (153)

Why are assumptions never realistic, or true? For Friedman, this is because as many predictions as possible should be derived from as few assumptions as possible. And for the assumptions to fulfil this role, they must necessarily involve idealisations and abstractions that misrepresent reality in some way. Let us call this claim Friedman’s *antirealist thesis*.

Moreover, to say that assumptions are “sufficiently good approximations” is not to say that they are approximately *true*, but rather that they allow approximately correct predictions. If they do so, we may regard them *as if* they were true—this is Friedman’s *fictionalist thesis*. Accordingly, one should not ask whether it is true that, say, a market is perfectly competitive or perfectly monopolistic (153), or that firms really maximise profits (154), but how useful it is to assume so. Or, when explaining the motion of a dropped body, one should not ask whether it is true or approximately true that air pressure is null, and the container is a perfect vacuum, but how accurate is the body’s predicted behaviour (154-55). Or, when explaining the distribution of leaves on a tree, one may hypothesize that “the leaves are positioned as if each leaf deliberately sought to maximize the amount of sunlight it receives” (156), even if leaves have no beliefs and intentions, as long as one gets sufficiently accurate predictions. Similarly, the maximization assumption is accepted not because it is true but because it works:

It is only a short step from these examples to the economic hypothesis that under a wide range of circumstances individual firms behave *as if* they were seeking rationally to maximize their expected returns (generally

if misleadingly called “profits”) and had full knowledge of the data needed to succeed in this attempt; *as if*, that is, they knew the relevant cost and demand functions, calculated marginal cost and marginal revenue from all actions open to them, and pushed each line of action to the point at which the relevant marginal cost and marginal revenue were equal. (158)

In addition to predictive power, Friedman lists two further motivations for the acceptance of the maximization assumption. The first is natural selection:

[...] unless the behavior of businessmen in some way or other approximated behavior consistent with the maximization of returns, it seems unlikely that they would remain in business for long (158)

The second is the conformity to the norms accepted by a given scientific community, which is a “matter of tradition and folklore” (159):

[...] the continued use and acceptance of the hypothesis over a long period, and the failure of any coherent, self-consistent alternative to be developed and be widely accepted, is strong indirect testimony to its worth. (*ibid.*)

**THE MANY FACES OF F53** Friedman’s essay has been the subject of much philosophical discussion.<sup>2</sup> In what follows, I shall report some of Mäki’s (2003) remarks on F53, to the effect that Friedman’s theses are contradictory at worst, and ambiguous at best.

For instance, the instrumentalist thesis says that the truth of the assumptions does not matter (§2). However, if one is to compare two equally empirically adequate theories, the antirealist thesis seems to recommend that one choose the theory with *less realistic* assumptions. So, the truth of the assumptions does make a difference.

The antirealist thesis seems interpretable in two incompatible ways (§3). According to the former, the unrealisticness of the assumptions is irrelevant. According to the latter, it is a virtue. One thing is to say that the false assumption that firms maximize profits is acceptable because it does no harm. Another thing is to say that

<sup>2</sup>See, for instance, Simon (1963), Musgrave (1981), and Hausman (1992).

the more unrealistic the assumption, the better, which would for instance justify the assumption that firms maximize *losses*. If one agrees that the former view is preferable to the latter, then closeness to the truth does—in a sense to be qualified—matter in economics.

The degree of approximation of the predictions may be, according to the interpretation, of two different kinds (§4). Pragmatically, it depends on the purpose in hand. Ontologically, it depends on the strength of the causal factors at work. The ontological kind of approximation, differently from the pragmatic kind, does not fit well the instrumentalist thesis.

A theory may violate the truth in two different ways: it may not tell “the whole truth” or it may not tell “nothing but the truth” (§5). In the latter case, a theory may still be true if it identifies, or “isolates”, nothing-but-the-truth about a tendency (e.g., the tendency to fall with  $1/2 gt^2$  acceleration) in certain circumstances, even if the theory does not tell the whole truth, because the tendency does not manifest itself in all circumstances (e.g., it is sometimes counteracted by another tendency, say, air resistance).<sup>3</sup> Assuming maximization may violate the whole truth without violating nothing-but-the-truth.

The fictionalist thesis can be interpreted as stating that phenomena behave as if certain ideal conditions were met. Or it can be interpreted as stating that phenomena behave as if the isolated

tendencies were real (§7). Of the two readings, the latter is compatible with the antirealist thesis. But the former is not.

Simplicity and unification—that is, the having as many predictions as possible derivable from as few assumptions as possible—are in themselves compatible with both instrumentalism and realism (§8).

In this light, Mäki contends that Friedman has failed to offer a clear reconstruction of the nature of economic methodology.

## References

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<sup>3</sup>The theme of “isolation” is central to Mäki’s interpretation of economic models.