Philosophy Of Economics

Are There Higher-level Explanations?

Ceteris Paribus Laws   Economic laws are typically "qualified" by a *ceteris paribus* clause. For instance: "The demand for widgets depends on the price for widgets, *ceteris paribus*". The clause literally adds to a generalization the proviso "everything else being the same".

In (1992), Hausman stresses the difference between two kinds of *ceteris paribus* clauses in economic theorizing (134). A first kind is for instance used in partial equilibrium analysis, where one may be interested in the relation between two quantities, such as price and demand, assuming everything else away. Here, the kinds of factor which are assumed away (although not necessarily the factors themselves) are known, and comprise the causes that can interfere with the causal relation in question. Demand depends on price, *as well as* other prices, incomes, and tastes. It is the economic theory itself that identifies the fundamental categories of causal factors, which are relevant in a given situation.

A second kind of *ceteris paribus* clause has to do with the fundamental assumptions of the theory, such as the transitivity of the preferences. Contrary to the first kind, this second kind adds some *vagueness* to the generalisations, because the kind of factors that belong to the clause and the way they interfere with the law are not well known. And since the fundamental assumptions are more basic than the assumptions that involve additional, non-mentioned causal factors, all economic generalisations inherit some vagueness.

What is the meaning of "*ceteris paribus*"? For Hausman, "*ceteris paribus*" has "one *meaning* – "other things being equal," which in different contexts picks out different *properties* or *propositions*" (134). For instance, in partial equilibrium analysis the clause picks out the proposition "Other prices, tastes and incomes do not change". But then, in what sense are *ceteris paribus* laws vague?

Let be "F" and "G" indicate predicates with definite extensions, that is, such that the sets of all individuals are known of which, respectively, F and G are true. An unqualified generalization, "Everything that is an F is a G" means that there is nothing in the extension of the predicate F, which is not in the extension of the predicate G. In the case of the qualified law "*Ceteris paribus*, everything that is an F is a G", some individuals belonging to the extension of F do not belong to the extension of G. What individuals, exactly? For Hausman, that depends on the existence of a "completer" condition C, such that the F's that are C are G, and the F's that are not C are not G.

> In my view, "*Ceteris paribus* everything that is an F is a G" is a true universal statement if and only if in the given context the *ceteris paribus* clause picks out a property – call it "C" – and everything that is both C and F is G. [...] The predicate C belongs in the antecedent of the law, although it may be awkward to state the law in this form. (136)

Importantly, the extension of C cannot be fully specified. Inexactness is "ineliminable" (133). But that does not mean that C has no definite extension, if the qualified law is truly to be a law. For instance, in the case of "Everybody's preferences are transitive, *ceteris paribus*", C picks out whatever (partially unknown) property such that any human being who has that property has transitive preferences. C will include, for instance, stability of tastes. Since violations of transitivity that depend on changes in tastes lie outside the scope of C, they do not count as counterexamples to the generalization.

The existence of the completer C is key for the *ceteris paribus* law to play an explanatory role:

> [...] when one takes an inexact generalization to be an explanatory law, one supposes that the *ceteris paribus* clause picks out some predicate that, when added to the

antecedent of the unqualified generalization, makes it an exact law. (137)

EXPLANATION BY *CETERIS PARIBUS* LAWS In (1990), Hausman investigates the explanatory role of the laws of supply and demand. He maintains that they provide *causal* explanations for the price and quantity of goods, because they "state what *influences* or *determines* prices and quantities exchanged" (170). The laws in question are: (1) an increase in demand causes a shortage, and thus a higher equilibrium price; (2) a decrease in demand causes a surplus, and thus a lower equilibrium price; (3) an increase in supply causes a surplus, and thus a lower equilibrium price; (4) a decrease in supply causes a shortage, and thus a higher equilibrium price. All of (1) to (4) hold *ceteris paribus*[1]: (1) and (2) hold constant (among other things) supply; (3) and (4) hold constant (among other things) demand.

The laws of supply and demand are used in "comparative statics", where one explains the effect on the price-quantity equilibrium as a result of a shift in one function (either the supply or the demand curve) when the other function is held fixed, without considering the dynamics of the adjustment process. Consider the following example.

> A severe frost cut Brazilian coffee output in 1976 to less than one-third of its previous level. During 1976 coffee prices were much higher. The simple and relatively uncontroversial explanation is that buyers competing with one another for the decreased supply of coffee bid up its price. (168)

Here, the increase in the price of coffee is explained by a drop in supply, *ceteris paribus*. Other factors, in fact, most notably the demand for coffee, are assumed to remain constant, or approximately constant, so that the responsibility for the new equilibrium price can be ascribed to the drop in supply only. In Hausman's words,

> [t]his is a sketch of a causal explanation. The decreased supply and the actions of buyers and sellers on a market are causally responsible for the increase in price. The

actual story is of course much more complicated. Any moderately detailed history of the 1976 coffee price increase would have to consider questions of international trade, transportation, and exchange rates, the role of wholesalers and retailers and their expectations concerning the consequences of the frost, the effects on different grades of coffees, the possibilities of employing different methods of roasting coffee beans and brewing coffee, the extent of substitutability between coffee and tea and so forth. But the simple supply and demand explanation surely captures the heart of the story. (169)

More precisely, the explanation captures the "heart of the story" only if the *ceteris paribus* conditions attached to the law, which is supposed to explain the new price, are (approximately) met— that is, "only if the other factors that influence supply and demand remain constant or if one takes into account the shift in supply or demand caused by a change in these other variables" (174). For instance, the *ceteris paribus* clause for a demand curve, which expresses the dependence of quantity demanded on price, includes:

> 1) all those factors besides the price that within the given time period significantly affect the amount of the commodity or service demanded; and 2) none which are themselves within the given time period significantly affected by the price. (174)

That is, the clause includes (1) all the causes besides the price of the good demanded that may (if not constant) influence the quantity demanded, except from (2) those causes which in the time interval considered are affected by the price of the good itself. For instance, if one wants to use the law of demand to explain the new demand for coffee as a result of a drop in supply, (1) recommends that other prices, tastes and incomes are held fixed, and (2) recommends that prices influenced by the price of the good in question— the price of substitutes such as tea and of complements such as cream—are *not* held fixed. For the price to be able to have an effect on demand, changes in such other prices *cannot* remain equal.

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[1]Here the *ceteris paribus* clause seems to be of the first kind (see above).

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The *ceteris paribus* clause would be violated if they were held fixed.[2]

Notice how, for Hausman, explanation presupposes knowledge of the *causal structure* in which the *explanandum* event (e.g., the new demand) takes place, so as to distinguish the factors that should figure in the *explanans* from those that should not.[3]

Can the laws of supply and demand provide *genuine* explanations? From a dynamic perspective, price and quantity bear a causal relation to one another. So, the answer may seem negative to those who claim that the aim of economics is to explain everything (prices included) in terms of general equilibrium primitives only, that is, tastes, initial endowments, and production possibilities. In general equilibrium analysis, one studies how price is the result of "the maximizing efforts of individuals given tastes, endowments with resources and abilities, and the set of production or technological possibilities" (172). Instead, in the supply and demand explanations typical of partial equilibrium analysis, prices are taken as givens, which influence the behaviour of consumers and firms. But, one may ask, if only economic primitives are genuine causes, how can supply and demand really explain? In response, Hausman argues that supply and demand do explain as long as they can be ordered along a causal path between the economic primitives and the resulting price-quantity. For instance,

> claims such as, 'Jones eats lots of potatoes because she is poor' may be true even though Jones's poverty is not an economic primitive. [... S]uppose that one adds Jones with Jones's tastes and her tiny endowment to an ongoing economy. The economy's price vector may be almost completely unaffected. In this case Jones's endowments and the more or less given prices jointly determine her income. Her tastes, her income and the prices then in turn determine her consumption. Her income can thus be causally between the general equi-

librium primitives and her consumption. (173)

Supply and demand functions provide legitimate explanations of prices,

> provided that the particular supply and demand functions are causally prior to the equilibrium prices and quantities they are supposed to explain. They will be causally prior if and only if the causal factors which affect the supply and demand for a given commodity or service (apart from its price) are to some degree of approximation independent of its price, so that the *ceteris paribus* condition can be met. (177)

By contrast, supply and demand functions do *not* provide legitimate explanations when their *ceteris paribus* clause is *not* met, for instance if one wants to explain higher wages (that is, a higher equilibrium price for labour) in terms of a drop in the supply of labour. Here the relative prices of all other goods (among other things) should not change. However, they do significantly depend on the wage rate.[4]

SOME CONCERNS   Since the existence of higher-level explanations hinges—for Hausman (1990; 1992)—on the existence of *ceteris paribus* laws, it may be useful to point out that Hausman's view on *ceteris paribus* laws has been criticized, for instance by Mäki.

In relation to the second kind of Hausman's *ceteris paribus* clause, Mäki (1996) argues that, when economists refer to the "inexactness" of the laws, they have in mind the *incompleteness* of the causal factors considered—namely, the first of Hausman's two kinds (cf. Mäki, 1992, 331-332)—rather than *vagueness*—namely, the second. Mäki's point seems to be that the appeal to vagueness makes *ceteris paribus* laws unanalysable in terms of their implications. Any failure of the law can be imputed to (unknown) factors in the *ceteris paribus* clause. Thus, the law becomes vacuous, that is, it loses empirical content.

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[2]Alternatively one may calculate not the effect of the price of coffee on the demand for coffee, but the joint effect of the price of coffee, together with its substitutes and complements, on the demand for coffee, its substitutes and complements. That is, one may consider several markets at the same time.

[3]The importance of causation for explanation becomes even more explicit in Hausman's later work (see below).

[4]In this case, Hausman concludes, the explanation of the higher wages cannot be given by *partial* equilibrium analysis, but requires the tools of *general* equilibrium analysis.

Hausman adopts a very broad reading of '*ceteris paribus*' – a reading that goes beyond its literal meaning as 'other things being equal'. Anything – not just violations of equality – that might interfere with what theory says happens in the world becomes covered by the clause. (21)

['*ceteris paribus*' is usually] understood to designate partiality or incompleteness: the premises of a theory cover only a small set of causes, while the rest are put aside by the *ceteris paribus* clause. This typically leads to inexact implications [...] But Hausman talks about inexactness *within* laws and theories so as to make it unanalysable in terms of inexactness of implications. (22)

And in relation to Hausman's first kind of *ceteris paribus* clause, Mäki (1996) objects that Hausman's notion of what counts as a completer is inadequate. Hausman's interpretation of "*ceteris paribus*" is sometimes referred to as "comparative", because it asserts that non-mentioned variables have to remain the *same* (cf. Reutlinger et al., 2011, §3). A law that relates X and Y is true if and only if all variables $Z_1, \ldots, Z_n$ that are not caused by X remain at the same values. However, it is not always sufficient that a completer includes factors that stay the same. The comparative interpretation can be contrasted with the "exclusive" interpretation, which asserts that non-mentioned variables are *absent*, i.e., the possible values of the potential interferers $Z_1, \ldots, Z_n$ are restricted to those value ranges where they cannot disturb the law.[5] Importantly, some *ceteris paribus* laws, such as the law of demand, are *both* comparative (e.g., supply must be constant) and exclusive (e.g., political regulations preventing an increase in prices must be excluded). For those laws, for X to cause Y it is not sufficient that all $Z_1, \ldots, Z_n$ that are not caused by X stay at the *same* value. Some among $Z_1, \ldots, Z_n$ can only take *certain* values.

If Mäki's criticism is sound, the deficiencies in Hausman's view of *ceteris paribus* laws carry over to his account of higher-level explanations, in the sense that the latter are not rationalized by the former.

Partly as a response to this critique (and partly due to the influence of Woodward's 2003 work),

Hausman has come to reject the view that higher-level explanations depend on (*ceteris paribus*) laws, and to emphasize the role of causal generalizations. He has recently (2009) stated:

It is more enlightening to interpret the generalizations economists make as causal claims than as inexact laws. (48)

People are not passive knowers. They act. They seek, among other things, to survive and reproduce, and accordingly they seek knowledge to help them control their environment. People would like to know how to bring about consequences they desire or prevent outcomes they wish to avoid, and only causal knowledge gives them that power. Human interest in the answer to why questions extends, of course, far beyond the realm in which interventions are possible, but this is, I suggest, a generalization of this practical interest. (49-50)

In turn, causal generalizations employed in higher-level explanations do not depend on laws, for Hausman (50-1). To what extent this new view delivers a sound account of higher-level explanations in economics is an open issue.

References

Hausman, D. (1990). Supply and demand explanations and their *ceteris paribus* clauses. *Review of Political Economy*, 2(2):168–187.

Hausman, D. (1992). *The Inexact and Separate Science of Economics*. Cambridge University Press.

Hausman, D. (2009). Laws, causation, and economic methodology. In Kincaid, H. and Ross, D., editors, *The Oxford Handbook of Philosophy of Economics*, pages 35–54. Oxford University Press.

Mäki, U. (1992). On the method of isolation in economics. *Poznan Studies in the Philosophy of the Sciences and the Humanities*, 26:319–354.

Mäki, U. (1996). Two portraits of economics. *Journal of Economic Methodology*, 3(1):1–38.

Reutlinger, A., Schurz, G., and Hüttemann, A. (2011). *Ceteris paribus* laws. E. N. Zalta (ed.): *The Stanford Encyclopedia of Philosophy*. URL = http://plato.stanford.edu/entries/ceteris-paribus/.

Woodward, J. (2003). *Making Things Happen. A Theory of Causal Explanation*. New York: Oxford University Press.

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[5]For this reason, this kind of clause is sometimes called "*ceteris absentibus*".