
ARTICLES

CAUSATION, SCIENCE AND TAXATION

BRET N. BOGENSCHNEIDER*

I. INTRODUCTION.....	2
II. WHAT IS “SCIENTIFIC INQUIRY” WITH RESPECT TO TAXATION?	9
III. CAUSATION AND TAX POLICY	14
A. <i>Laffer Curve</i>	15
B. <i>“Small Open Economy” Model of Tax Incidence</i>	16
C. <i>“Trickle-Down” Economics/“Deadweight Loss” of Income Taxation But Not Wage Taxation</i>	17
IV. EINSTEIN’S QUERY: WHERE DO HYPOTHESES COME FROM?.....	20
V. CLINICAL OBSERVATION IN TAXATION.....	22
A. <i>The Hypothesis that Tax Cuts Cause Economic Growth</i>	23
B. <i>The Relative Value of Tax Deductions</i>	25
C. <i>Estimating the Other Side of a Zero-Sum Equation</i>	27
D. <i>Historical Evidence (Testing the Tax Cuts Hypothesis)</i>	28
VI. CONCLUSION.....	30

The legal topic of causation typically arises in respect of tort law and criminal law and not in other areas of law such as tax law. This may be because the theory of taxation is a type of applied moral philosophy where the idea is to justify a preferred tax policy and not to discuss how a tax policy would cause a desirable outcome. Scientific inquiry as a method of analysis would instead begin by identifying a theory of causation with respect to tax policy. A scientific approach to taxation requires us to systematically test theories of taxation, since science proceeds at least in part by the falsification, or at times the augmentation, of theories of causation. Hence, ideas about tax causation that seem to be wrong (i.e., where proffered explanations of cause-and-effect seem to be subpar) should be of special interest to tax scholars. Several of these are discussed here as follows: (i) the Laffer curve positing a negative relation between statutory tax rates and tax collections; (ii) the “small open economy” model of corporate tax incidence as passed entirely to labor; and (iii) the “trickle-down” economics or deadweight loss of income taxation however posited without any corresponding deadweight loss from wage taxation. The combination of these ideas forms the basis for much of modern tax policy design. However, the thesis of this paper is that these theses are subpar and that tax clinicians (such as, tax lawyers and accountants) may be able to infer causation in the tax context as a more advanced type of scientific inquiry. The practical experience of practitioners amounts to a clinical form of scientific knowledge about taxation.

Keywords: Popper; HLA Hart; economic theory; taxation; clinical knowledge; tax incidence; Laffer Curve; deadweight loss.

I. INTRODUCTION

Causation in legal analysis is most often discussed with respect to tort law and criminal law.¹ The topic of causation is generally not discussed explicitly by tax lawyers, even those concerned with the philosophical foundations of tax knowledge.² HLA Hart famously referred to this mode of legal analysis, absent causation, as “causal minimalism.”³ Hart

* Senior Lecturer (Assoc. Prof.), Finance Law & Ethics, University of Surrey (UK); FWF Austrian Science Fund.

¹ See Paul K. Ryu, *Causation in Criminal Law*, 106 U. PA. L. REV. 773 (1958) (exploring causation and how it applies in criminal law); Richard W. Wright, *Causation in Tort Law*, 73 CALIF. L. REV. 1735 (1985) (discussing the variety of ways causation is used within tort law).

² Andrew Blair-Stanek, *Using Insurance Law and Policy to Interpret the Tax Code’s Loss and Medical Expense Provisions*, 26 YALE L. & POL’Y REV. 309, 330 (2007) (stating tax law is an area where lines of causation are hard to draw).

³ H.L.A. HART & TONY HONORE, *CAUSATION IN THE LAW* XXXIV (2d ed. 1985) (“According to [‘causal minimalism’] genuine causal issues are of small importance in settling questions of legal responsibility. In most instances they are confined to the issue whether the harm would have occurred in the absence of the wrongful conduct, and even this factual-sounding question is often answered in a way which owes more to considerations of legal policy than to any genuine attempt to determine the facts of the case.”).

gave several examples of what he called “common-sense” analyses in law⁴ which serve to supplant causal analysis to varying degrees. These types of “common-sense principles” are ubiquitous to tax law analyses.⁵ Yet, many of the questions of tax law and policy seem to relate to problems where tax results are not in line with common-sense ideas about taxation and in many cases paradoxes seem to predominate.⁶ The existence of a paradox suggests that some aspect of tax analysis cannot be resolved by common-sense principles alone. Hart went further to make the broader claim that it would be absurd to apply common sense principles in many circumstances of legal analysis:

[Y]et it would be absurd to pretend that common-sense principles, subtle and flexible though they are . . . would be always adequate to answer the type of question that may perplex the lawyer Common-sense principles could not yield an answer to the type of question concerning the place where a contract was made which arises in the conflict of laws⁷

The thesis which will be defended here is consistent with Hart’s analysis of causation in law and is that clinical tax knowledge of lawyers and accountants is helpful in the derivation of scientific causal knowledge with respect to tax policy. The claim to exclusive knowledge about taxation derived from empirics alone, such as “[t]his is what we *know* about tax policy,”⁸ reflects a mistaken conception of science and scientific inquiry.

⁴ *Id.* at 92 (“[C]ommon-sense principles of causation in the law is similar to the conventional view of the law’s use of other highly general notions such as . . . the notion of an ‘attempt.’”).

⁵ See generally ROBERT MCGEE, *THE PHILOSOPHY OF TAXATION AND PUBLIC FINANCE* (2004) (discussing background information pertaining to common-sense principles in tax law).

⁶ WILLIAM D. ANDREWS, *INSTITUTIONAL FOUNDATIONS OF PUBLIC FINANCE: ECONOMIC AND LEGAL PERSPECTIVES* 227, cmt. 1 (Alan J. Auerbach & Daniel N. Shaviro eds., 2008) (“Now suppose there is an opportunity to make a large business capital investment, one not previously planned. Is that precluded by the formula limiting investment to undistributed profits? The answer is of course not if the corporation can borrow to pay the cost, since debt-financed investment is not included in net equity investment until the loan is paid. Borrowing for capital investment is regularly understood as spreading out the burden of lumpy capital expenditures over some part of the life of the acquired asset.”); see also Bret N. Bogenschneider, *The Tax Paradox of Capital Investment*, 33 J. TAX’N INV. 59, 59–60 (2015) (discussing several paradoxes within tax theories).

⁷ HART & HONORE, *supra* note 3, at 92.

⁸ See generally Alan Auerbach, *Who Bears the Corporate Tax: A Review of What We Know*, 20 TAX POL’Y & ECON. 1 (2006); Michael P. Devereux & Simon Loretz, *What Do We Know About Corporate Tax Competition?* (Oxford U. Ctr. for Bus. Tax’n, Working Paper No. 12/29, 2012), eureka.sbs.ox.ac.uk/4386/1/WP1229.pdf; Dhammika Dharmapala, *What Do We Know About Base Erosion and Profit Shifting? A Review of the Empirical Literature* (Ill. Pub. L., Research Paper No. 14-23, 2014).

The flawed idea is that logical deductions from direct observations yield conclusive knowledge about taxation or any subject.⁹ Karl Popper pejoratively referred to this line of inquiry as the search for empirical “bed-rock.”¹⁰ Scientific knowledge is never derived in this way, although tax hypotheses could at times be tested in this way.¹¹ Popper agreed with Einstein very much to the contrary: that the origin of hypotheses is theory and a form of *Einführung* (translates to mean “creative intuition”).¹² Some creative intuition is necessary to achieve scientific discovery; scientific research without a creative element amounts to merely a defense of “conventionalism.”¹³

Of course, many tax scholars have developed objections to moral and non-causal methods of tax analysis.¹⁴ As Hart explained, moral theories fail in causal terms by “restricting in various ways what counts as a consequence.”¹⁵ However, the failure of moral philosophy to describe causal events does not suggest a broader problem with causal or scientific analysis in the context of taxation. This is to say that the philosophy of science is relevant to legal analysis. Hart accordingly explained the role of philosophical description of causation in legal analysis as follows:

Philosophers, whose discussions of causation, protracted over the centuries, have certainly contributed something to the understanding of causation in the natural sciences, till very recently have contributed little to further

⁹ See Bret N. Bogenschneider, *Professional Ethics for the Tax Lawyer to the Holmesian “Bad Man,”* 49 CREIGHTON L. REV. 775, 781 (2016) (stating that under legal realism tax laws are not logically determinative).

¹⁰ KARL POPPER, *THE LOGIC OF SCIENTIFIC DISCOVERY* 94 (2d ed. 2002).

¹¹ John C. Chommie, *Toward a Theory of Group Interests in Federal Income Tax Law-Making*, 13 RUTGERS L. REV. 485, 496 (1959) (addressing the way empirical data is used in tax law); Richard J. Vann, *Improving Tax Law Improvement: An International Perspective*, 12 AUSTL. TAX F. 193, 230 (1995) (discussing the importance of empirical data in tax law).

¹² See POPPER, *supra* note 10, at 9 n.6.

¹³ *Id.* at 59.

¹⁴ See, e.g., Jeffrey A. Schoenblum, *Tax Fairness or Unfairness? A Consideration of the Philosophical Bases for Unequal Taxation of Individuals*, 12 AM. J. TAX POL’Y 221 (1995) (explaining the lack of an ethical basis for many tax laws in the argument for and against moral and non-causal tax analyses).

¹⁵ HART & HONORE, *supra* note 3, at 69–70 (“The Utilitarian assertion that the rightness of an action depends on its consequences is not the same as the assertion that it depends on all those later occurrences which would not have happened had the action not been done . . . whenever we are concerned with such connections, whether for the purpose of explaining a puzzling occurrence, assessing responsibility, or giving an intelligible historical narrative, we employ a set of concepts restricting in various ways what counts as a consequence.”).

understanding [in the law]: lawyers, indeed, have seen this and said very clearly that the issues which philosophers discuss fail to illumine the specific aspects of causation which trouble them. So they have rejected philosophical theories usually with the insistence that the lawyer's causal problems are not 'scientific inquests' but are to be determined on 'common sense principles.'¹⁶

As such, the relevant inquiries of tax law, as a sub-discipline of legal inquiry, are often informed by the traditional methods of science. If this is true, it follows that the design of tax law cannot rest on "common-sense" principles alone.¹⁷ Tax laws are usually presumed to cause human taxpayer behaviors.¹⁸ If law directly causes taxpayer behavior, then it follows that the further development of scientific theories of "cause-in-fact" as relevant to taxpayer behavior are strictly necessary. In other words, "common-sense" analyses should be taken as insufficient to resolve all issues relevant to taxation.¹⁹ A more scientific analysis of tax policy is warranted.

Scientific inquiry means, in part, moving beyond "common-sense" platitudes often given in relation to taxation.²⁰ It turns out that the common-sense principles often given with respect to taxation are plainly wrong; for example, higher tax rates are historically associated with higher rates of economic growth, not lower rates of economic growth, in virtually all nations (except Singapore and Ireland).²¹ Furthermore, if taxes ought

¹⁶ HART & HONORE, *supra* note 3, at 9 nn.1–2.

¹⁷ See generally John G. Steinkamp, *Common Sense and the Gift Tax Annual Exclusion*, 72 NEB. L. REV. 106, 126 (1993) (explaining that facts and common-sense are needed to solve tax law issues).

¹⁸ See Keith Fogg & Sime Jozipovic, *How Can Tax Collection Be Structured to Observe and Preserve Taxpayer Rights: A Discussion of Practices and Possibilities*, 69 TAX LAW. 513 (2016) (illustrating the idea that tax policy leads taxpayers to behave in different ways).

¹⁹ Lawyers use the terms "factual," "objective," or "scientific" when attempting to describe a necessary condition account of events, such as the effect of tax cuts on economic growth. See HART & HONORE, *supra* note 3, at 69 ("Legal theorists have developed [the necessary condition account] of cause and consequence to show what is 'factual,' 'objective,' or 'scientific' in these notions: this they call 'cause in fact' and it is usually stressed as a preliminary to the doctrine that any more restricted application of these terms in the law represents nothing in the facts or in the meaning of causation, but expresses fluctuating legal policy or sentiments of what is just or convenient.").

²⁰ See generally Richard Delgado & David R. Millen, *God, Galileo, and Government: Toward Constitutional Protection for Scientific Inquiry*, 53 WASH. L. REV. 349, 366 (1978).

²¹ See *Revenue Statistics—Provisional Data on Tax Ratios for 2015*, ORGANISATION FOR ECONOMIC CO-OPERATION & DEVELOPMENT (OECD), www.oecd.org/ctp/tax-policy/revenue-statistics-ratio-change-latest-years.htm (last visited Aug. 25, 2017) (showing the percentage of GDP of countries from 2008-2009); *Indicators*, THE WORLD BANK,

to be levied on the immobile factor of production on efficiency grounds (as economists nearly unanimously urge as a matter of tax policy),²² then the immobility caused by death would seem to be an apt opportunity to *efficiently* levy tax.²³ However, economists do not seem to advocate for death taxes on efficiency grounds, indicating some factor other than supposedly “common-sense” principles must be in play.²⁴ Similarly, as I have explained in prior articles, tax deductions relating to capital investment are worth more, *not less*, under higher statutory rates, so the announcement of a tax increase by the government is likely to cause capital reinvestment, not capital disinvestment, which is exactly what occurred as “cause-in-fact” with the enactment of the Tax Reform Act of 1986.²⁵ At that time, the announcement of a *tax increase* on capital served as a catalyst for economic growth, not vice versa.²⁶

As these examples illustrate, tax clinicians such as tax lawyers and accountants are excellent sources of creative intuition about tax causation. This is particularly true because causation relates at least in part to compliance with tax laws. For this reason alone, it is strictly *necessary* to be informed about tax laws and accounting when engaged in tax research. Then, it follows that “science” with respect to taxation is not solely pattern identification in the laboratory. A tax researcher unfamiliar with tax laws might even attempt to apply trial-and-error research by running repeated regressions on a dataset, in an attempt to identify patterns, and then infer causation from the patterns. Such an approach is not properly described as “science” for many reasons, most significantly being the failure to state the hypothesis subject to testing, in advance, fails to control for spurious patterns that will exist in every dataset.²⁷ The tax literature is also rich in examples of situations where economists have, in modeling, switched the respective meaning of economic or tax words, thus prompting Daniel

<http://data.worldbank.org/indicator> (last visited Aug. 25, 2017) (listing links for data concerning external debt and economy and growth of countries in the past years).

²² See *infra* Section III.B.

²³ *Id.*

²⁴ *Id.*

²⁵ Bogenschneider, *supra* note 6, at 70–71.

²⁶ *Id.* at 69.

²⁷ Bret N. Bogenschneider, *How Helpful is Econometrics to Tax Research?*, 21 N.Z. J. TAX L. & POL’Y 292 (2015) (“As a matter of statistical analysis, it is often plausible to draw unrelated correlations between variables that are not casually related. This is referred to generally as ‘spurious’ statistical analysis. In this sense, the adjective ‘spurious’ refers to variables that are indeed correlated but which should not be the subject of claims as to causation.”).

Shaviro to sagely object to what he referred to as the “degrees of freedom” of economic research with respect to taxation.²⁸

A prerequisite question for the field of taxation is thus how hypotheses about taxation ought to be derived if not by “common-sense” or pattern identification in datasets.²⁹ It is indeed the resolution of this basic question which informs the scope and direction of ongoing tax research, particularly the level of deference that should be given to “conventionalist” tax theories, as Karl Popper put it.³⁰ A major problem is that empirical economic researchers often claim an exclusive right to derive hypotheses about taxation, but lack any clinical experience in the actual practice of tax law or accounting. Empirical research in the field of taxation and tax law in this respect often applies a Baconian version³¹ of scientific inquiry (Feyerabend also referred to this as a “Newtonian approach”).³² However, the Baconian method of science has been significantly challenged by

²⁸ See Daniel N. Shaviro, *On the Relative Generality of Fiscal Language*, in INSTITUTIONAL FOUNDATIONS OF PUBLIC FINANCE: ECONOMIC AND LEGAL PERSPECTIVES 257 (Alan J. Auerbach & Daniel N. Shaviro, eds., 2008) (“Laurence Kotlikoff has played a vital role in demonstrating that prevailing fiscal language terms, such as ‘taxes,’ ‘spending,’ and ‘budget deficits,’ lack fundamental economic content, causing them to be misleading and manipulable.”).

²⁹ The testing of theory should clearly be performed at least partly in the laboratory with assistance and direction of lawyers and accountants.

³⁰ See POPPER, *supra* note 10, at 58–59 (“I regard conventionalism as a system which is self-contained and defensible Whilst I do not demand any final certainty from science (and consequently do not get it), the conventionalist seeks in science ‘a system of knowledge based upon ultimate grounds’ This goal is attainable; for it is possible to interpret any given scientific system as a system of implicit definitions.”).

³¹ See SIR FRANCIS BACON, *NOVUM ORGANUM* 50 (Joseph Devey ed., 1902) (“There are and can be only two ways of searching into and discovering truth. The one flies from the senses and particulars to the most general axioms, and from these principles, the truth of which it takes for settled and immoveable, proceeds to judgment and to the discovery of middle axioms. And this way is now in fashion. The other derives axioms from the senses and particulars, rising by gradual and unbroken ascent, so that it arrives at the most general axioms last of all. This is the true way, but as yet untried.”); Francis Bacon, *Thoughts and Conclusions on the Interpretation of Nature or a Science Productive of Works*, in THE PHILOSOPHY OF FRANCIS BACON 73, 89 (Benjamin Farrington tr., 1653) (Liverpool U. Press, 1964).

³² See, e.g., PAUL FEYERABEND, 1 REALISM, RATIONALISM AND SCIENTIFIC METHOD: PHILOSOPHICAL PAPERS 65–67 (1981) (“First we find the facts (or, ‘phenomena,’ in Newton’s terminology). Then we derive laws. Finally, we devise hypotheses for explaining the laws. Hypotheses and facts must be kept apart. It is not the imagination of the theoretician but the skill of the experimenter that determines what counts as a fact and how the facts are to be presented.”).

subsequent measures of science.³³ For example, Popper wrote the following with respect to the relation of theory and experiments:

[T]he theoretician must long before [experimentation] have done his work, or at least what is the most important part of his work: he must have formulated his question as sharply as possible. Thus it is he who shows the experimenter the way. But even the experimenter is not in the main engaged in making exact observations; his work, too, is largely of a theoretical kind. Theory dominates the experimental work from its initial planning up to the finishing touches in the laboratory.³⁴

To the extent clinical tax theory describes *causative* events in the world (i.e., the *how* or the *why*, as opposed to the *meta*), this methodology is not properly described as “metaphysics” even where numbers are not part of the respective analysis. To the contrary, the practice of tax law and accounting is what might be called a “clinic” of tax research. The practice of tax law entails the study of the causal effects of complex tax law on human behavior partly apart from whether taxpayer behavior is taken to be right or wrong.³⁵

Therefore, it is tax clinicians, such as tax lawyers and accountants, who are very likely to derive causal theories about taxation by “creative intuition” because they are the professionals with experience in observing human behavior as it relates to taxation and tax laws.³⁶ An empirical approach to tax research premised exclusively on data analysis accordingly devalues causal theories about taxation derived in part by tax lawyers, accountants, or others experienced tax clinicians, in favor of laboratory analysis of datasets. In empirical tax research the causal claim is often offered implicitly with respect to how tax policy may achieve a desired tax policy outcome. A primary example of implicit causal theory is the idea that corporate tax cuts cause economic growth by so-called “dynamic” effects.³⁷ It is not an exaggeration to say that all evidence for this causal claim is missing, and in fact, there are good reasons to think the counter-vailing hypothesis that higher tax rates on corporations causes economic growth is true.

³³ See generally BACON, *supra* note 31.

³⁴ POPPER, *supra* note 10, at 90.

³⁵ See generally Fogg & Jozipovic, *supra* note 18 (illustrating the general principles in tax law and its causal effects on taxpayer behavior).

³⁶ See, e.g., POPPER, *supra* note 10, at 8–9. See generally Fogg & Jozipovic, *supra* note 18 (demonstrating an instance of causal theories about taxation being deduced from the study of human behavior).

³⁷ See generally Bogenschneider, *supra* note 6.

II. WHAT IS “SCIENTIFIC INQUIRY” WITH RESPECT TO TAXATION?

An appropriate place to begin is with the meaning of “science” or “scientific discovery.” In *The Logic of Scientific Discovery*, Popper begins with the re-defining of “science” or scientific discovery from its colloquial meaning.³⁸ Popper accepted Einstein’s definition of “science” as including an irrational element in the origin of hypotheses.³⁹ Popper then claimed the origin of hypotheses to be irrelevant to the logical analysis.⁴⁰ The significant point is that Popper defined the *logic* of “science” as beginning after the hypothesis is formulated.⁴¹ The “logic” of science thus means the actual evaluation of the scientific hypothesis.⁴² Popper’s next step is to exclude inductive reasoning from the methodology of science.⁴³ He accomplishes this in part by breaking down the universal⁴⁴ and singular⁴⁵ statements to show that science may not proceed via induction.⁴⁶ The pertinent introductory passage is accordingly as follows:

The initial stage, the act of conceiving or inventing a theory, seems to me neither to call for logical analysis nor to be susceptible of it. The question how it happens that a new idea occurs to a man—whether it is a musical theme, a dramatic conflict, or a scientific theory—may be of great interest to empirical psychology; but it is irrelevant to the logical analysis of scientific knowledge.⁴⁷

Popper thus dealt with what might be called the easier case of scientific discovery as it relates to the natural sciences.⁴⁸ The social sciences are the harder case insofar as such deal with variant human social behaviors.⁴⁹ A skeptic might even respond that applying Popper to tax research is impossible because taxation is the study of a social science and thus dependent on the fickle preferences of taxpayers, rendering the entirety of

³⁸ POPPER, *supra* note 10, at 3.

³⁹ *Id.* at 8–9.

⁴⁰ *Id.* at 7.

⁴¹ *Id.* at 7–8.

⁴² *See id.* at xviii–xxvi.

⁴³ *Id.* at 6–7.

⁴⁴ *Id.* at 4.

⁴⁵ *Id.* at 38.

⁴⁶ *Id.* at 3–7.

⁴⁷ *Id.* at 7.

⁴⁸ *See generally* POPPER, *supra* note 10, at 48 (discussing the theories of natural science).

⁴⁹ Phoebe Ellsworth, *Legal Reasoning and Scientific Reasoning*, 63 ALA. L. REV. 895, 897–99 (2012).

the analysis probabilistic only.⁵⁰ Popper argued foremost against the use of inductive reasoning in scientific inquiry.⁵¹ This article sets out to expand the logic to the scientific methodologies applied in the field of taxation. With regard to the construction of scientific theories relevant to taxation, Popper referred to these as analogous to erecting piles above a swamp.⁵² He wrote:

Science does not rest upon solid bedrock. The bold structure of its theories rises, as it were, above a swamp. It is like a building erected on piles. The piles are driven down from above into the swamp, but not down to any natural or 'given' base; and if we stop driving the piles deeper, it is not because we have reached firm ground. We simply stop when we are satisfied that the piles are firm enough to carry the structure, at least for the time being.⁵³

If research in the field of taxation appears to be stuck in a “swamp” that would suggest the foundational “piles” are not driven deeply enough. The “natural law” and economic approach to tax theory does not appear to be sufficient to ground tax research at least as a matter of science; a better tax theory may be required.⁵⁴

⁵⁰ POPPER, *supra* note 10, at 6. See also Frank Ramsey, *Truth and Probability*, in FOUNDATIONS: ESSAY IN PHILOSOPHY, LOGIC MATHEMATICS AND ECONOMICS 58 (D.H. Mellor ed., 1978) (“Indeed the general difference of opinion between statisticians . . . and logicians . . . renders it likely that the two schools are really discussing different things, and that the word ‘probability’ is used by logicians in one sense and by statisticians in another.”).

⁵¹ POPPER, *supra* note 10, at 24 (“[A] subjective experience, or a feeling of conviction, can never justify a scientific statement, and that within science it can play no part except that of an object of an empirical (a psychological) inquiry.”); see also Ellsworth, *supra* note 49, at 898–901.

⁵² POPPER, *supra* note 10, at 94.

⁵³ *Id.*

⁵⁴ See JOHN LOCKE, SECOND TREATISE OF GOVERNMENT 53 (1690); Richard A. Epstein, *Taxation in a Lockean World*, 4 SOC. PHIL. & POL’Y 49 (1986); Roger Paul Peters, *Tax Law and Natural Law*, 26 NOTRE DAME L. REV. 29, 45 (1950) (“[N]atural law . . . is an essential foundation for the enactment of tax statutes, decisions of tax cases, and the operation of the tax system.”); see also Michael A. Livingston, *Reinventing Tax Scholarship: Lawyers, Economists, and the Role of the Legal Academy*, 83 CORNELL L. REV. 365, 374 (1998) (“For tax scholars, the question of method has been answered largely by relying on economics to supply a normative framework . . . even ‘traditional’ tax scholarship has something of a law-and-economics flavor.”); Martin Rhonheimer, *The Political Ethos of Constitutional Democracy and the Place of Natural Law in Public Reason: Rawls’ “Political Liberalism” Revisited*, 50 AM. J. JURIS. 1 (2005).

With regard to exclusively empirical methods of inquiry, which are often a part of tax analysis,⁵⁵ Popper rejected that conception of scientific discovery.⁵⁶ The process of scientific discovery does not include conventionalist models that are beyond any question or beyond the possibility of falsification; scientific inquiry entails first and foremost the narrowing of hypotheses.⁵⁷ The premise of scientific discovery is the ongoing development of science by the falsification of existing hypotheses.⁵⁸ As such, where any tax researcher takes a claim as self-evidently true, that person has transcended from scientific discovery to something else entirely. The oft-overlooked advantage of Popperian science is that with the potential for falsifiability it provides a means to distinguish science from religion.

The trouble is that Popper's objection to inductive reasoning in the logic of science has been misinterpreted to mean that deductive reasoning is necessary to the origin of scientific hypotheses, and not just to the logical analysis of hypotheses.⁵⁹ That is, the modern view of empiricism is often that the scientist produces *objective* empirical data (i.e., observations), then formulates the hypotheses, and finally tests the hypothesis by deductive means.⁶⁰ But, that is wrong; both Einstein and Popper expressly

⁵⁵ See generally MILTON FRIEDMAN, *ESSAYS IN POSITIVE ECONOMICS* (1953) (arguing that theories should be evaluated on the accuracy of their predictions, not on the validity of their assumptions); Robert Cooter, *Maturing into Normal Science: The Effect of Empirical Legal Studies on Law and Economics*, 2011 U. ILL. L. REV. 1475, 1475 ("Empirical Legal Studies, according to this Article, is the maturation of law and economics into normal science. Together they constitute the long-awaited science of law.").

⁵⁶ POPPER, *supra* note 10, at 7.

⁵⁷ *Id.* at 9.

⁵⁸ *Id.* at 10 ("If this decision is positive, that is, if the singular conclusions turn out to be acceptable, or verified, then the theory has, for the time being, passed its test: we have found no reason to discard it. But if the decision is negative, or in other words, if the conclusions have been falsified, then their falsification also falsifies the theory from which they were logically deduced.").

⁵⁹ Popper referred to this as "deductivism." *Id.* at 7.

⁶⁰ *Id.* at 22 ("Now I hold that scientific theories are never fully justifiable or verifiable, but that they are nevertheless testable. I shall therefore say that the objectivity of scientific statements lies in the fact that they can be inter-subjectively tested."); Brian Leiter, *The Epistemology of Admissibility: Why Even Good Philosophy of Science Would Not Make for Good Philosophy of Evidence*, 1997 BYU L. REV. 803, 806 ("Logical empiricists held that what distinguishes science is its commitment to testability, to seeing whether scientific claims are borne out by our observations. Karl Popper suggested that the hallmark of science was not simply 'testability,' but more precisely falsifiability: that is, the possibility that the theory can be shown to be inconsistent with our experience.").

state that view is wrong.⁶¹ In fact, this modern idea of empiricism, as held by many in the field of econometrics and often applied in the field of taxation, is simply the re-assertion of the ideas of Francis Bacon from several centuries past,⁶² which amounts to the following logic: scientist → empirics → science. In the modern day we have too many economists purporting to be scientists endowed with special knowledge about taxation, rendering the Baconian method of science unworkable since we have too many hypotheses to evaluate.⁶³ The phenomenology of an exploding number of hypotheses, characteristic of econometric research, is indicia of a *non-scientific* methodology in the origin of hypotheses for study.⁶⁴

Furthermore, at least in the field of taxation, scientists never seem to act in a neutral or “objective” fashion in setting out to falsify an existing hypothesis. The objective of science with respect to taxation appears to be overly “normative,”⁶⁵ however, the use of data in the testing or falsification process should be “objective.”⁶⁶ Every scientist engaged in the study of taxation acts normatively in looking at the world and then deriving the hypothesis to test; in other words, the scientist sets out to falsify an existing hypothesis and not to objectively evaluate data. However, the scientist must act objectively in the testing of data as part of the scientific

⁶¹ POPPER, *supra* note 10, at 8 (“[M]y view of the matter, for what it is worth, is that there is no such thing as a logical method of having new ideas, or a logical reconstruction of this process. My view may be expressed by saying that every discovery contains ‘an irrational element,’ or ‘a creative intuition.’”).

⁶² See generally BACON, *supra* note 31 (providing insight into Bacon’s scientific philosophies).

⁶³ See Franklin C. McLean, *The Happy Accident*, 53 SCI. MONTHLY 61, 63 (1941) (“[I]t is almost universally agreed by scientists that the Baconian method, taken by itself, is unworkable . . .”).

⁶⁴ See, e.g., ARIS SPANOS, *STATISTICAL FOUNDATIONS OF ECONOMETRIC MODELING* 660 (1986); Donald McCloskey, *The Rhetoric of Economics*, 21 J. ECON. LITERATURE 413, 482 (1983). But see Leiter, *supra* note 60, at 807 (“First, ‘theoretical’ statements (which are to be tested) cannot be simply demarcated from ‘observation’ statements (the ones against which we test theory). Observation, various philosophers argued, is itself ‘theory-laden.’ It appears, then, that theories are not tested against the world, but rather against other (implicit) theories about the world. Second, the problem of ‘auxiliary hypotheses’ renders all testing (and especially falsification) problematic.”).

⁶⁵ See generally George H. Sabine, *Descriptive and Normative Sciences*, 21 PHIL. REV. 433 (1912).

⁶⁶ POPPER, *supra* note 10, at 25 (“Whatever may be our eventual answer to the question of the empirical basis, one thing must be clear: if we adhere to our demand that scientific statements must be objective, then those statements which belong to the empirical basis of science must also be objective, *i.e.*, inter-subjectively testable.”).

process. As an example, Einstein was not objective as between the theory of relativity and Newtonian physics and neither were the Newtonian physicists who first railed against the theory of relativity.⁶⁷ The flawed idea of the objectivity of scientists is especially clear in the field of taxation where much of the analysis appears to be biased in favor of a particular policy result and where tax researchers are often paid by interest groups favoring a particular tax policy outcome. The determination of science accordingly relates to the gathering of the data in the first place and whether it was done in a proper way, and once collected, whether the data was manipulated in the proper way.⁶⁸ This yields an approximate definition of the econometrics and what econometricians think constitutes scientific observation and analysis in the field of taxation.⁶⁹ Furthermore, if in the common situation in the tax field, there is more than one such dataset, then multiple instances of science de facto arise, thus rendering the results either indeterminate or entirely dependent on the psychological assessment of the strength of the underlying dataset.⁷⁰

The identification of patterns within a dataset is different from the analysis of patterns. To do pattern analysis, clinical expertise in the practice of tax law and accounting is helpful to understand the possible significance of the pattern, if any.⁷¹ A really good empiricist in taxation is someone talented at using computers to identify patterns in complex datasets; yet, any sort of data analysis also requires a clinician to interpret the viability of patterns in the respective dataset.⁷² Any empirical project of pattern identification is further limited by the strength of the dataset.⁷³ Crucially, if multiple datasets are available, then equally valid yet contradictory results may be derived regarding precisely the same tax issue, as often occurs with respect to tax research.⁷⁴ Accordingly, spurious results must somehow also be excluded from “data-mining” (also now

⁶⁷ See generally Janet D. Stemwedel, *The ideal of objectivity*, SCI. AM. (Feb. 26, 2013), <http://blogs.scientificamerican.com/doing-good-science/the-ideal-of-objectivity/>.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ See generally Plamen Angelov et al., *Empirical Data Analysis: A New Tool for Data Analytics*, SYSTEMS, MAN, & CYBERNETICS SOC'Y (2016), <http://eprints.lancs.ac.uk/80044/1/1008.pdf>.

⁷² See *id.* (providing pattern analysis support).

⁷³ *Id.*

⁷⁴ *Id.*

referred to as “p-hacking”)⁷⁵ where the causal hypothesis is not identified prior to the undertaking of empirical testing and statistical analysis.⁷⁶

In summary, Popper did not give the colloquial idea of “science” as comprised of empirical observations followed by deductive syllogisms; science does not begin with data-gathering observations to then be analyzed by econometric methods or deductive syllogisms.⁷⁷ Furthermore, the scientific nature of tax inquiry relates in part to the difference between the derivation of hypotheses versus the testing or evaluation of hypotheses.

III. CAUSATION AND TAX POLICY

In non-scientific modes of inquiry, analysis focuses primarily on the defense of “conventionalist” ideas about a subject.⁷⁸ Perhaps the foremost illustration of a “conventionalist” idea in any field is the hypothesis that tax cuts cause economic growth.⁷⁹ Popper argued that a defense of conventionalism qua science was a coherent method of inquiry, albeit a method that effectively precludes *discovery*.⁸⁰ Popper’s book is thus entitled *The Logic of Scientific Discovery*,⁸¹ with the last word of key importance in distinguishing *science* from merely the defense of conventionalism. Of course, as long as “conventionalist” ideas are functioning well, then there is not an apparent need for discovery.⁸² The merit of tax “conventionalism” accordingly depends on an assessment of how well the “conventional” method seems to function for society with respect to tax policy.

⁷⁵ See generally Christie Aschwanden, *Science Isn't Broken*, FIVETHIRTYEIGHT (Aug. 19, 2015), <https://fivethirtyeight.com/features/science-isnt-broken/> (discussing P-hacking as a method of expanding or narrowing data in order to shape the outcome of scientific results).

⁷⁶ *Id.*

⁷⁷ See generally POPPER, *supra* note 10 (discussing the “problem of induction,” and arguing that there are insurmountable difficulties with using inductive logic).

⁷⁸ See POPPER, *supra* note 10, at 58–60.

⁷⁹ *Id.* at 59 (“Whenever the ‘classical’ system of the day is threatened by the results of new experiments which might be interpreted as falsifications according to my point of view, the system will appear unshaken to the conventionalist. He will explain away the inconsistencies which may have arisen; perhaps by blaming our inadequate mastery of the system.”).

⁸⁰ See generally *id.* at 57–61 (explaining some objections conventionalists have about falsifiability).

⁸¹ See *id.* at 32.

⁸² See *id.* at 64.

If neoclassical economics is taken as the “conventional” idea of the day with respect to tax policy, then it follows that skeptics of the conventionalist claims of economic theory may wish to begin to create a record of the accuracy of such claims. As Jerry Green and Laurence Kotlikoff wrote with respect to fiscal analysis of taxation:

Like time and distance, standard fiscal measures, including deficits, taxes, and transfer payments, depend on one’s reference point/reporting procedure/language/labels. As such, they too represent numbers in search of concepts that provide the illusion of meaning where none exists. Economists must accept this fact and acknowledge that much of what they have been writing and saying about fiscal policy has been an exercise in linguistics, not economics.⁸³

A challenge to “conventionalism” would then arise where the predictions did not seem to function very well in retrospect; discovery could then take place out of the need for better causal analysis.⁸⁴ A shift based on discovery could also be classified along the lines of a “paradigm shift” under the framework of Thomas Kuhn.⁸⁵ The following are some economic ideas with respect to taxation, with the falsifying citations to formally begin the process of scientific inquiry with respect to taxation and tax policy.

A. *Laffer Curve*

The Laffer Curve was supposedly drawn by Arthur Laffer for Dick Cheney and Don Rumsfeld on the back of a restaurant napkin.⁸⁶ The Laffer Curve is a type of supply-side economics and suggests that tax revenues are a function of the tax rate (and presumes the economy is on the right or downward-sloping side of the curve) such that a reduction in the tax rate may lead to an increase in tax revenue.⁸⁷ More recently, Her Majesty’s Revenue and Customs (HMRC) has proposed a Laffer Curve redux model now optimistically referred to as the “dynamic effects” of corporate

⁸³ Jerry Green & Laurence J. Kotlikoff, *On the General Relativity of Fiscal Language*, in INSTITUTIONAL FOUNDATIONS OF PUBLIC FINANCE: ECONOMIC & LEGAL PERSPECTIVES 255 (Alan Auerbach & Daniel Shaviro, eds., 2009).

⁸⁴ See generally POPPER, *supra* note 10, at 38–40 (explaining the relationship between causation and predictions).

⁸⁵ THOMAS KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* 119 (2d ed. 1970).

⁸⁶ Arthur B. Laffer, *The Laffer Curve: Past, Present, and Future*, HERITAGE FOUND. 1 (June 1, 2014), <http://www.heritage.org/taxes/report/the-laffer-curve-past-present-and-future>.

⁸⁷ See *Laffer Curve*, INVESTOPEDIA, <http://www.investopedia.com/terms/l/laffercurve.asp> (last visited Nov. 24, 2017).

tax reductions.⁸⁸ A further discussion of the dynamic effects idea of corporate tax cuts is discussed in the next section relating to economic stimulus and not solely tax receipts.

Proposed: Canto, Jones and Laffer, 1981.⁸⁹

Methodology: Neoclassical theory (supply & demand functions).⁹⁰

Theory Falsified (by empirics): Gravelle and Maples, 2014;⁹¹ Andrews (2008).⁹²

B. “Small Open Economy” Model of Tax Incidence

Tax incidence analysis refers to questions about who ultimately bears the burden of taxation.⁹³ The “small open economy” model refers to a theory of the incidence of capital taxation (i.e., corporate taxation) where taxation is averred to be borne by labor because labor is taken as “immobile” in the small open economy.⁹⁴ Capital is defined as “mobile” and able to avoid the incidence of taxation by moving elsewhere; therefore, the

⁸⁸ HMRC is a non-ministerial department of the United Kingdom government. See *Analysis of the dynamic effects of Corporation Tax reductions*, HM REVENUE & CUSTOMS 19–30 (Dec. 5, 2013), www.gov.uk/government/uploads/system/uploads/attachment_data/file/263560/4069_CT_Dynamic_effects_paper_20130312_IW_v2.pdf.

⁸⁹ Victor Canto, Douglas Joines & Arthur Laffer, *Tax Rates, Factor Employment, and Market Production*, in *THE SUPPLY-SIDE EFFECTS OF ECONOMIC POLICY* 3–32 (L.H. Meyer ed., 1981).

⁹⁰ See CHARLES BALLARD ET. AL., *GENERAL EQUILIBRIUM MODEL OF TAX POLICY EVALUATION*, 189 fig. 10.1 (1985).

⁹¹ JANE G. GRAVELLE & DONALD J. MARPLES, CONG. RESEARCH SERV., *TAX RATES AND ECONOMIC GROWTH* 9 (2014) (“Claims have been made that a corporate rate cut would pay for itself through capital flows from abroad. However, using estimates from an international general equilibrium model with capital flow responses consistent with empirical evidence to simulate a 10 percentage point cut in the corporate tax rate, this factor offset corporate revenue losses by about 5%.”) (citing JANE G. GRAVELLE, CONG. RESEARCH SERV., *INTERNATIONAL CORPORATE TAX RATE COMPARISONS AND POLICY IMPLICATIONS* 1 (2014)).

⁹² Green & Kotlikoff, *supra* note 83, at 241–42 (“[T]he time paths of reported fiscal variables are determined relative to each other, rather than being determined independently. That is, what deficits one reports has implications for what taxes and transfer payments one reports.”).

⁹³ See Arnold C. Harberger, *The Incidence of the Corporation Income Tax*, 70 J. POL. ECON. 215, 233–34 (1962).

⁹⁴ MIHIR A. DESAI ET AL., *LABOR AND CAPITAL SHARE OF THE CORPORATE TAX BURDEN: INTERNATIONAL EVIDENCE* 3–5 (2007).

taxation of labor (as opposed to capital) is thought to translate into economic growth.⁹⁵

Theory/Model Proposed: Harberger, 1962.⁹⁶

Empirical Basis Claimed: Desai, Foley & Hines, Jr., 2004.⁹⁷

Empirics Falsified: Clausing, 2012.⁹⁸

Theory Falsified: [Bogenschneider, 2016]⁹⁹

C. “Trickle-Down” Economics/“Deadweight Loss” of Income Taxation
But Not Wage Taxation

The “deadweight loss” (or “deadweight burden”) of income taxation refers to a reduction in economic output caused by disincentive effects from an increase in *marginal* income tax rates.¹⁰⁰ The model is typically applied selectively by economists where only the income tax is thought to carry a deadweight burden.¹⁰¹ Other types of taxes, such as wage taxes on earned income, are posited not to carry a deadweight burden;¹⁰² the distinction given is that workers must take into account the value of future benefits payable through social insurance programs.¹⁰³ A variant of the well-known theory of “trickle-down” economics can then be applied to tax policy with the idea of eliminating the purported deadweight burden of income taxation by tax cuts for high-earners, without the possibility of parallel “trickle-up” effect from tax cuts to lower-earners.¹⁰⁴ In practical

⁹⁵ *Id.*

⁹⁶ See Harberger, *supra* note 93, at 215–17; Arnold C. Harberger, *Tax Policy in a Small, Open Developing Economy*, in *THE ECONOMIES OF THE CARIBBEAN BASIN 1–3* (M.B. Connolly ed., 1985).

⁹⁷ DESAI, *supra* note 94, at 1 (“Evidence from applying this framework to these data indicates that between 45 and 75 percent of the burden of corporate taxes is borne by labor with the balance borne by capital.”).

⁹⁸ See Kimberly A. Clausing, *In Search of Corporate Tax Incidence*, 65 *TAX L. REV.* 433, 438–45 (2012).

⁹⁹ Bret N. Bogenschneider, *Tax Incidence and Scientific Inquiry*, 7 *J. PHIL. INT’L L.* 26, 30–32 (2016).

¹⁰⁰ See Martin Feldstein, *Tax Avoidance and the Deadweight Loss of the Income Tax*, 81 *REV. ECON. & STAT.* 674, 674 (1999).

¹⁰¹ *Id.* at 678.

¹⁰² See GRAVELLE & MARPLES, *supra* note 91, at 2.

¹⁰³ Feldstein, *supra* note 100, at 674.

¹⁰⁴ GRAVELLE & MARPLES, *supra* note 91, at 1.

terms, tax policy informed by economists always begins with tax cuts for the wealthy and never the poor.¹⁰⁵

Theory/Model Proposed: Harberger, 1964, 1966,¹⁰⁶ Auerbach, 2015 (positing no “deadweight loss” from wage taxes on earned income).¹⁰⁷

Empirical Basis Claimed: “Deadweight loss” of income taxation, Feldstein, 1999.¹⁰⁸

Empirics Falsified: (i) “Trickle-Down” falsified: Gravelle and Marples, 2014;¹⁰⁹ (ii) Feldstein empirics falsified with respect to analysis of the U.S. Tax Reform Act of 1986: [Bogenschneider and Heilmeier, 2016].¹¹⁰

Of course, in the situation where economic analysis comprises moral philosophy without any explicit causal theory whatsoever, then tax policymakers would need to create their own theory of causation in order to have something to test. HMRC attempted to do exactly that in the year 2013 in respect to corporate tax competition policies for the United Kingdom (and as relevant to the European Union).¹¹¹ Notably, the attempt at creation of a causal theory related to corporate tax policy is the highest compliment to HMRC and its tax experts because it reflects a scientific approach.¹¹² Indeed, many tax scholars think the United Kingdom benefits greatly from the smartest tax policy advice of any nation in the world; for example, concerns are frequently raised that HMRC is actually *too*

¹⁰⁵ See generally *id.* (summarizing the relationship between tax rates and economic growth).

¹⁰⁶ Arnold C. Harberger, *Efficiency Effects of Taxes on Income from Capital*, in EFFECTS OF CORPORATION INCOME TAX, 107, 114–17 (Marian Krzyzaniak ed., 1966); Arnold C. Harberger, *Taxation, Resource Allocation and Welfare*, in THE ROLE OF DIRECT AND INDIRECT TAXES IN THE FEDERAL RESERVE SYSTEM 25, 42–52 (1964), <http://www.nber.org/chapters/c1873.pdf>.

¹⁰⁷ NAT'L ACADEMIES OF SCIS. ENG'G & MED., THE GROWING GAP IN LIFE EXPECTANCY BY INCOME: IMPLICATIONS FOR FEDERAL PROGRAMS AND POLICY RESPONSES 68 (2015) (“Thus, [in the U.S. social security system] there is no perception of unfairness, and no distortion of decisions about labor supply.”).

¹⁰⁸ Feldstein, *supra* note 100, at 674–76.

¹⁰⁹ See GRAVELLE & MARPLES, *supra* note 91, at 2–6.

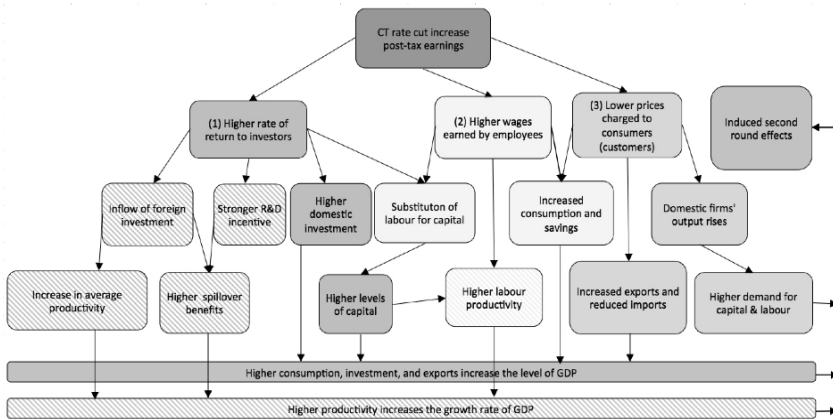
¹¹⁰ Bret N. Bogenschneider & Ruth Heilmeier, *Income Elasticity and Inequality*, 5 INTERDISC. J. ECON. & BUS. L. 34, 36 (2016).

¹¹¹ See *Analysis of the dynamic effects of Corporation Tax reductions*, *supra* note 88, at 6.

¹¹² See generally *id.* at 11 (discussing the causal theory related to corporate tax policy).

successful in negotiating bilateral tax treaties with developing nations.¹¹³ HMRC gave its causal theory with respect to corporation tax cuts with the following diagram:

[HMRC Chart 3.1] Channels through which a reduction in Corporation Tax affects GDP



The *dynamic effects* theory posits what are referred to as “induced second round effects” that supposedly result from corporate tax cuts.¹¹⁴ As such, a point-by-point response is warranted to each of the causal claims developed on the HMRC diagram. First, the box marked “higher wages earned by employees” is a version of the “tax incidence” analysis discussed herein already falsified outright in the existing tax literature.¹¹⁵ Second, the box marked “lower prices charged to consumers” is implausible as consumer prices (inflation) have steadily increased during a time of sharply declining corporate effective tax rates (1995-2005); large corporations extract economic rents in many sectors of the economy and there is accordingly imperfect competition in the marketplace with a fixed level of profits where tax cuts would be passed through to consumers.¹¹⁶ Third, the box marked “higher rates of return to investors” is worthy of

¹¹³ See generally *id.* at 3–4.

¹¹⁴ See generally *id.* at 11 (explaining that corporate tax cuts lead to second round increase in demand after said tax cuts).

¹¹⁵ See generally *id.* at 11, 15–16 (discussing the second channel of the diagram).

¹¹⁶ See generally *id.* at 12–13.

investigation as citations were given by HMRC, at least for this proposition.¹¹⁷ However, the obvious problem with the neoclassical economic theory cited is that large corporations are often in competition with small businesses in the domestic economy and cutting corporate tax rates increases the competitiveness and rate of return to large corporations, but decreases the rate of returns to small businesses by an offsetting amount.¹¹⁸ And, since smaller firms grow faster than large corporations, the result is a reduction in domestic productivity, self-employment, and rates of economic growth.¹¹⁹ Also, since many large corporations are foreign (i.e., U.S. multinationals), the incremental profits of multinational firms may not be re-invested into the domestic economy at all.¹²⁰ Finally, HMRC presented a metaphysical argument based on economic models about why corporate taxes are bad and corporate cuts are good while failing to test the hypothesis by citation to any evidence that corporate tax cuts have previously caused economic growth.¹²¹

IV. EINSTEIN'S QUERY: WHERE DO HYPOTHESES COME FROM?

As the prior section on causation and tax policy illustrates, the dilemma formally given by Einstein (*where do hypotheses come from?*) remains of paramount importance to the present day.¹²² Einstein gave an answer with a German word: *Einführung* (translated by Popper as “intellectual love”).¹²³ Popper noted Einstein’s observation of an intuitive (or, abductive) element to the origination of scientific hypotheses.¹²⁴ One of Popper’s principal aims was to dispel the idea that scientific discovery starts with an empirical observation, which is then built on and built on

¹¹⁷ See, e.g., *Analysis of the dynamic effects of Corporation Tax reductions*, *supra* note 88, at 36 n.53 (discussing another method for analyzing investment put forth by James Tobin).

¹¹⁸ See generally Bret N. Bogenschneider, *The European Commission’s Idea of Small Business Tax Neutrality*, 25 EC TAX REV. 221 (2016).

¹¹⁹ See generally OFFICE FOR BUDGET RESPONSIBILITY, FORECAST EVALUATION REPORT 18, 49 (2016).

¹²⁰ See generally *Analysis of the dynamic effects of Corporation Tax reductions*, *supra* note 88, at 19 (discussing foreign profits being kept out of the model to prevent added complexity).

¹²¹ See generally *id.* at 12–13.

¹²² See generally POPPER, *supra* note 10, at 484.

¹²³ *Id.* at 8–9.

¹²⁴ *Id.* (“Einstein speaks of the ‘search for those highly universal laws . . . from which a picture of the world can be obtained by pure deduction. There is no logical path’, he says, ‘leading to these . . . laws. They can only be reached by the logic of science intuition, based upon something like an intellectual love (‘Einführung’) of the objects of experience.’”).

again to reach an overall epistemology of science.¹²⁵ Economists working in taxation often aggressively pursue the empiricist argument toward science as empirical observation alone – which in the social sciences is referred to directly as Kelvin’s Dictum¹²⁶ – and then argue that scientific knowledge about taxation can only derive from econometrics.¹²⁷ Of course, Popper vehemently rejected this view.¹²⁸ So, the citation to Einstein was given by Popper ostensibly to defeat the idea of Baconian empiricist conception of science.¹²⁹ A version of “revised empiricism” has also been proposed as follows:

[R]evised empiricism, unlike logical empiricism, assigns proper weight to the role of social factors in the constitution of scientific knowledge: [S]cientists’ collective judgments – facilitated and established through devices such as peer review and publication and measured by general acceptance – are as distinctively characteristic of science as testability itself.¹³⁰

The problem with this approach in the context of taxation is that it reverts to an authoritative view of knowledge. In the field of taxation and tax law, however, an authoritarian approach breaks down at the very least because we do not have any agreement on who counts as an authority figure in the field of taxation.¹³¹ The idea of science as the coalescing of consensus expert opinions also does not exclude the possibility of a neo-classical economic religion manifesting as science.¹³² In other words, the scientists’ collective judgment would simply perpetuate itself as illustrated

¹²⁵ See *id.* at 3.

¹²⁶ See McCloskey, *supra* note 64, at 484 n.2 (citing 1 SIR WILLIAM THOMSON (LORD KELVIN), POPULAR LECTURES AND ADDRESSES: CONSTITUTION OF MATTER 80 (Macmillan and Co., 2d ed. 1891) (“When you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind.”)).

¹²⁷ See, e.g., *id.* at 484 (describing a view that scientific data can only come from statistics and science).

¹²⁸ See POPPER, *supra* note 10, at 25 (explaining that statistics aren’t the only factor in scientific knowledge).

¹²⁹ See *id.* at 3.

¹³⁰ Heidi Li Feldman, *Science and Uncertainty in Mass Exposure Litigation*, 74 TEX. L. REV. 1, 15–16 (1995), in Leiter, *supra* note 60, at 808 (“Science progresses as scientists trade in one theory for another, as they collectively come to recognize that a rival to the established theory better satisfies the various scientific [needs] The impetus for change arises from shortcomings in the settled view.”).

¹³¹ See generally Wolfgang Schön, *Tax Competition in Europe – The Legal Perspective*, EC TAX REV. 89, 102 (2000).

¹³² See generally Feldman, *supra* note 131, at 10 (explaining how scientific knowledge is defined by the collective judgment of scientists and evaluated by scientists’ general acceptance thereof).

by the widespread acceptance of the “small open economy” model of tax incidence, for example. Yet, another way to say this is that a true definition of science requires more than a claim of economists to be “objectively” pursuing science in the field of taxation and tax policy.

V. CLINICAL OBSERVATION IN TAXATION

The clinical observations of scientists in various fields is analogous to the clinical observations of taxpayers performed by lawyers and accountants. Knowledge about causation in the world is derived at least in part by clinical observation and analysis.¹³³ Clinical expertise yields major advantages in deriving a meaningful social science. For example, a clinician can help to derive hypotheses about taxation to subsequently analyze using econometric methods.¹³⁴ If all human experience is regarded as empiricism, then narrowing hypothesis is in fact the foremost feature of scientific endeavor. This is also to say that empiricists are not necessarily the appropriate parties to *derive* hypotheses about taxation for empirical testing.

Science is in part the identification of causal significance from events in the world.¹³⁵ Replicability is the verification of meaningfulness, which is generally achieved via the scientific method.¹³⁶ The hallmark of scientific inquiry is accordingly an application of the scientific method.¹³⁷ In the case of the social sciences, where an experiment cannot be replicated exactly because it involves human behavior, then the standard of scientific inquiry is differentiated from the natural sciences.¹³⁸ The differentiation is more complicated than in the natural sciences because social behavior

¹³³ See generally George S. Grossman, *Clinical Legal Education: History and Diagnosis*, 26 J. LEGAL EDUC. 162, 186–87 (1974) (discussing clinical observation and analysis as a key learning methodology in legal education).

¹³⁴ See generally D.H. Kaye, *The Dynamics of Daubert: Methodology, Conclusions, and Fit in Statistical and Econometric Studies*, 87 VA. L. REV. 1933 (2001) (exemplifying how econometric methods are used to formulate hypotheses as evidence in court).

¹³⁵ See generally Ellsworth, *supra* note 49, at 898–99 (describing how science implements a specific process that enables scientists to conceptualize the world based on a theory or observation).

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ See generally John E. Drotning & Bruce Fortado, *Arbitral Decisions: A Social Science Analog*, 1984 MO. J. DISP. RESOL. 77 (outlining the scientific process behind social science research).

is probabilistic only and subject to inherent change in the preferences of the human subjects.¹³⁹ Thus, the “science” of social science is subject to the additional condition that the hypothesis also holds to be true for society in the future.¹⁴⁰ The econometric word for this is “ergodicity” or dynamics in the population.¹⁴¹ All social science is thus subject to falsification by ergodicity.¹⁴²

An explosion in the number of hypotheses regarding taxation and tax policy accordingly indicates non-science by virtue of non-meaningfulness.¹⁴³ An example of non-meaningfulness from too many hypotheses of causation is the inability to distinguish among hypotheses in a systematic way.¹⁴⁴ Of course, this is essentially the lay view of any subject matter but especially the field of taxation. Doctrinal professionalism is in part the screening of many hypotheses to arrive at the more meaningful investigation.¹⁴⁵ Clinical observation also functions to limit the scope of potential subject matter out of the universe of possible hypotheses.¹⁴⁶

A. *The Hypothesis that Tax Cuts Cause Economic Growth*

The hypothesis that tax cuts cause economic growth is a central tenant of neoclassical economic theory.¹⁴⁷ Yet, it is not clear why economists hold this belief, as empirical evidence of any posited causal relation is conspicuously absent.¹⁴⁸ Gravelle and Maples wrote:

Historical data on labor participation rates and average hours worked compared to tax rates indicate little relationship with either top marginal rates or

¹³⁹ Ellsworth, *supra* note 49, at 915.

¹⁴⁰ See generally *id.* at 913 (exemplifying how social science studies are evaluated by their accuracy in making predictions for the future).

¹⁴¹ See Adrian Patrascioiu, *The Ergodic Hypothesis*, LOS ALAMOS SCI. 263, 267 (1987).

¹⁴² *Id.*

¹⁴³ In addition to the exploding number of hypotheses derived from econometric methods, various authors note the inability to apply econometric analysis to potentially falsify competing hypotheses. See Lawrence H. Summers, *The Scientific Illusion in Empirical Macroeconomics*, 93 SCAND. J. ECON. 129 (1991).

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ POPPER, *supra* note 10, at 91.

¹⁴⁷ See, e.g., JANE G. GRAVELLE & DONALD J. MARPLES, TAX RATES AND ECONOMIC GROWTH 1 (2014) (discussing in part how tax cuts may increase employment and output thereby generating short-term economic growth).

¹⁴⁸ *Id.*

average marginal rates on labor income. Relationships between tax rates and savings appear positively correlated (that is, lower savings are consistent with lower, not higher, tax rates), although this relationship may not be causal. Similarly, during historical periods, slower growth periods have generally been associated with lower, not higher, tax rates.¹⁴⁹

The available evidence indicates that *higher* ratios of taxation to gross domestic product are associated with *higher* rates of national economic growth in most countries.¹⁵⁰ Also, some of the highest rates of economic growth on record in the United Kingdom and United States occurred during World War II where tax rates were set above 90%.¹⁵¹ An immediate question is how could businesses grow relatively *faster* with a tax rate of 99%?

The answer to that question is as follows. Taxes, especially corporate taxes, are not remitted at the statutory rate;¹⁵² in fact, the term “taxable income” means something different than “income.”¹⁵³ *Taxable income* means a hypothetical calculation of an amount upon which the tax rate will be levied after all deductions and adjustments.¹⁵⁴ The difference is lost on many economists, such as Thomas Piketty, who set out to chart income inequality in the United States based on changes in taxable income.¹⁵⁵ If we re-insert the Federal Reserve’s measure of “holding gains” (meaning essentially untaxed accruals to wealth)¹⁵⁶ as a proxy for tax planning by the wealthy and large corporations, then it turns out that Piketty’s purported pattern analysis is not meaningful and has substantially understated levels of economic inequality.¹⁵⁷ This emphasizes the critical difference as between taxable income and income and explains why tax practitioners,

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* at 4.

¹⁵¹ GRAVELLE & MARPLES, *supra* note 148, at 4–5. See generally Thomas Piketty & Immanuel Saez, *Income Inequality in the United States, 1913-1998*, 118 Q.J. ECON. 1 (2003).

¹⁵² See Bogenschneider, *supra* note 6, at 73–75.

¹⁵³ *Id.*

¹⁵⁴ *Id.* at 60.

¹⁵⁵ THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* 24 (Arthur Goldhammer trans., Harv. U. Press 2014); see also Piketty & Saez, *supra* note 152, at 4–6.

¹⁵⁶ Erin E. Ferris, Soo Jeong Kim Syron, & Bernd Schlusche, *Confidence Interval Projections of the Federal Reserve Balance Sheet & Income*, BOARD GOVERNORS FED. RES. SYS. (Jan. 13, 2017), <https://doi.org/10.17016/2380-7172.1875>.

¹⁵⁷ See Bret N. Bogenschneider, *Income Inequality and Regressive Taxation in the United States*, 4 INTERDISC. J. ECON. & BUS. L. 8, 10 (2015).

such as tax lawyers and accountants, generally speak of tax rates in terms of *effective rates* as opposed to *statutory rates*.¹⁵⁸

The corporate *effective tax rate* is accordingly the proper starting point for testing the corporate tax cuts hypothesis as it reflects the many tax incentives given to large corporations within the tax code.¹⁵⁹ The statutory rate may be reasonably seen as largely irrelevant to causal analysis of the simulative effects of tax cuts where less tax is collected from a taxpayer (i.e., a reduction in the effective tax rate);¹⁶⁰ nonetheless, economists often design mathematical “models” to measure economic changes “at the margin” as a shortcut mathematical method premised on using changes in statutory rates instead of effective tax rates.¹⁶¹ And, this is why economists do not provide empirical or econometric evidence in support of the “dynamic effects” hypothesis of corporate tax cuts and instead provide economic “models.”¹⁶²

However, the countervailing hypothesis that higher corporate tax rates might cause higher rates of economic growth *is* supported by much of the empirical evidence.¹⁶³ In those countries with relatively higher taxes the rate of economic growth is higher.¹⁶⁴ There are good reasons based on the knowledge of tax practitioners to think that the correlation between higher tax rates and higher rates of economic growth is causal,¹⁶⁵ and several are summarized here.

B. *The Relative Value of Tax Deductions*

Tax practitioners are often concerned with maximizing the value of tax deductions to profitable businesses already operating in more than one location.¹⁶⁶ The tax methodology premised on maximizing the value of tax deductions is quite different than simply including taxes as a reduction to the return on investment (the economic method cited by HMRC in its

¹⁵⁸ Bogenschneider, *supra* note 6, at 73–75.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² *Id.* at 74.

¹⁶³ *Id.* at 64.

¹⁶⁴ *Id.*

¹⁶⁵ Bogenschneider, *supra* note 27, at 10.

¹⁶⁶ Bogenschneider, *supra* note 6, at 60–62.

“dynamic effects” whitepaper).¹⁶⁷ The severity of the difference in methodology can be illustrated as follows:

- A large multinational firm needs to decide in which country to locate a new research and development center. The firm expects the research center to be a significant capital expenditure but also to be extremely profitable and thus to operate as a “profit center” within the firm. The firm is indifferent on all matters other than tax; for example, the firm has the ability to find qualified personnel in either jurisdiction.
- The proffered choice is between a tax haven in the Caribbean with zero (0%) corporate tax rate; or, South Korea with a high corporate tax rate (30% plus).

So, on this simple fact pattern where the tax issues are the foremost consideration, in which jurisdiction will the multinational firm locate the research and development center for tax purposes? The answer is South Korea. Tax analysis depends on assessing the value of capital expenditures, and not just profits after tax.¹⁶⁸ This is largely because of the time value of money; if the capital outlay is presumed to be tax deductible, the value of the tax deduction is recognized first, and any potential profits are recognized second.¹⁶⁹ Most often, the time value of money dictates the tax answer which is to maximize the value of the tax deduction (notably, in a taxing jurisdiction where the firm is already profitable and subject to a high tax rate);¹⁷⁰ such maximization of the value of tax deductions is perhaps the foremost aspect of the actual practice of tax law and accounting undertaken by tax practitioners all over the world.¹⁷¹

In tax policy terms, that practical tax knowledge of valuing deductions explains in significant part what we actually observe in the world, and that is that higher tax countries grow faster than lower tax countries.¹⁷² The value of the tax deduction actually mitigates in favor of making capital investment in higher tax nations (not lower tax nations such as in the

¹⁶⁷ *Analysis of the dynamic effects of Corporation Tax reductions*, *supra* note 88, at 11.

¹⁶⁸ Bogenschneider, *supra* note 6, at 60–62.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

¹⁷² *Id.* at 79.

Caribbean);¹⁷³ and, it turns out that the question of how the tax revenue is spent by the government is a secondary factor.¹⁷⁴ Furthermore, largely because of lax enforcement of “transfer pricing rules” in many countries, multinational firms generally presume they can shift future profits out of the high taxing authority via aggressive tax avoidance planning with inter-company transactions.¹⁷⁵ The Base Erosion and Profit Shifting (BEPS) initiative of the Organization for Economic Cooperation and Development (OECD) may restrict the ability of multinational firms to engage in aggressive transfer pricing.¹⁷⁶

C. *Estimating the Other Side of a Zero-Sum Equation*

Economic analysis of tax policy might also be described as disingenuous where tax policy is not described as part of a zero-sum fiscal equation (i.e., where tax cuts need to be offset by increased taxes on someone else, or, increased government borrowing that entails an offsetting cost).¹⁷⁷ In that case, the economic costs of a tax are estimated without estimating the costs of the replacement tax (or the inflationary aspect of increased deficits).¹⁷⁸ Economists are engaged in the type of rhetoric identified by Richard Rorty where an argument is presented with knowledge of a reason why the argument is not a very good argument.¹⁷⁹ As a prime example, economists that favor increased wage taxes pursuant to the “small open economy” model of tax incidence generally make no attempt to measure the social costs of wage taxation, but they do measure the social costs of

¹⁷³ See *Tax Effects on Foreign Direct Investment*, OECD: POLICY BRIEF (Feb. 2008), <https://www.oecd.org/investment/investment-policy/40152903.pdf>.

¹⁷⁴ See Erdal Demirhan & Mahmut Masca, *Determinants of Foreign Direct Investment Flows to Developing Countries: A Cross-Sectional Analysis*, 4 PRAGUE ECON. PAPERS 356 (2008).

¹⁷⁵ See *International Transfer Pricing 2015/16*, PWC (Apr. 28, 2015), <https://www.pwc.com/gx/en/services/tax/transfer-pricing/international-transfer-pricing.html>.

¹⁷⁶ See *Transfer Pricing Documentation and Country-by-Country Reporting-Action 13-2015 Final Report*, OECD: G20 BASE EROSION AND PROFIT SHIFTING PROJECT (2015), <http://www.oecd-ilibrary.org/docserver/download/2315381e.pdf?expires=1512936178&id=id&accname=guest&checksum=D137434B9829EE4E4B71BA718C109C82>.

¹⁷⁷ See Robert Tannenwald & Iris J. Lav, *The Zero-Sum Game: States Cannot Stimulate Their Economies by Cutting Taxes*, CTR. ON BUDGET & POL’Y PRIORITIES (Mar. 2, 2010), <https://www.cbpp.org/research/the-zero-sum-game-states-cannot-stimulate-their-economies-by-cutting-taxes>.

¹⁷⁸ *Id.*

¹⁷⁹ See RICHARD RORTY, *PHILOSOPHY AND THE MIRROR OF NATURE* 379 (1979).

capital taxation.¹⁸⁰ A major cost variable is accordingly simply left out from the analysis. Of course, economists know that the costs of wage taxation ought to be taken into account if the costs of capital taxation are taken into account. Furthermore, various lines of inquiry relating to the relative efficiency are simply missing from the tax policy literature; such as, an economic model of how increased estate or death taxes (as opposed to wage tax increases) might be used to fund corporate tax cuts. Obviously, the dead are not very “mobile,” so if the idea is to levy tax based on the criteria of relative mobility, then death would seem to be a good time to levy tax.

D. *Historical Evidence (Testing the Tax Cuts Hypothesis)*

Mankind has practical experience with how low corporate taxes impact economic growth. Such practical experience is surely a better guide to tax policy than any abstract economic model. History teaches us that immediately after the Great Depression, the United States Congress set out to *increase* corporate taxes as a means to prevent future economic catastrophes.¹⁸¹ The role of the corporate tax, at that time, was understood to function as a withholding tax on corporate profits in lieu of the assessment of individual taxes on the dividends – exactly because corporations have the option of when to pay dividends (where the dividends trigger shareholder level taxation).¹⁸² The corporate tax system is not simply a silly or stupid “double” tax intending to penalize successful corporate businesses.¹⁸³ The true economic problem that the corporate tax is designed to address is not tax efficiency at all, but what happens to capital reinvestment in the economy when large corporations get to be so profitable that it becomes inefficient (or undesirable) for the managers to reinvest the profits into new business ventures. To function properly, capitalism actually requires that accumulated dividends be paid out to shareholders to make capital available for new business ventures. A more reasonable fiscal policy would accordingly be to eliminate the corporate tax, but require that dividends equal to corporate earnings and profits be paid out each year

¹⁸⁰ See Reuven S. Avi-Yona, *Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State*, 113 HARV. L. REV. 1575 (2008).

¹⁸¹ See Steven Bank, *Is Double Taxation a Scapegoat for Declining Dividends? Evidence From History*, 56 TAX L. REV. 463, 506–10 (2003).

¹⁸² See *id.* at 463–69.

¹⁸³ See Michael Doran, *Managers, Shareholders, and the Corporate Double Tax*, 95 VA. L. REV. 517, 521 (2009) (arguing the corporate double tax is preferable).

and not held in corporate solution. The neoclassical economic theory calling for a reduction in corporate taxes without taking into account the causal implications of corporate tax deferral is reckless, akin to a form of economic suicide by tax cuts.

Furthermore, after the Great Depression, Congress was well-aware of the potential for accumulation of earnings in corporate solution and implemented a back-up system of corporate taxation referred to as the “Accumulated Earnings Tax” (AET).¹⁸⁴ The AET is designed to levy a tax where the corporate form is used to accumulate earnings.¹⁸⁵ The AET assesses a special tax on corporations where profits are accumulated in corporate form and not reinvested in active businesses.¹⁸⁶ However, in recent times, the Internal Revenue Service has applied the AET only against small- and medium-sized business, but decisions of the U.S. Supreme Court do allow the AET to be applied against large corporations as well.¹⁸⁷

To summarize, even if a correlation was someday found between corporate tax cuts and economic growth, we would still not have a *causal* theory. The causal element might then be thought to be something like: *Economic growth is caused by an improvement in morale amongst the leaders of large corporations thus leading to an increase in capital investment in the economy by large firms.* The causal element is in that case, corporate morale, exists where such morale was indirectly improved by a change in tax policy. Of course, this begs the question of whether corporate tax cuts are the best (or only) means to improve corporate morale. Corporate morale might also be improved by cutting taxes on workers, building roads, educating workers, and so forth. There is no reason for tax experts to talk solely about whether corporate tax cuts are a positive influence on corporate morale without analyzing other factors that might also influence corporate morale either positively or negatively; the structure of the conversation centered solely on corporate tax cuts actually presupposes the desired answer.

¹⁸⁴ Bret N. Bogenschneider, *A Proposal for Equal Enforcement of the AET*, 147 TAX NOTES 931 (2015).

¹⁸⁵ I.R.C. § 531 (2012).

¹⁸⁶ I.R.C. § 532 (2012).

¹⁸⁷ See generally Homer L. Elliot, *The Accumulated Earnings Tax and the Reasonable Needs of the Business: A Proposal*, 12 WM. & MARY L. REV. 34 (1970).

VI. CONCLUSION

Scientific discovery begins where a causal theory is thought to be unsatisfactory.¹⁸⁸ The general equilibrium economic models cited by HMRC in support of the hypothesis that corporate tax cuts cause economic growth are unsatisfactory.¹⁸⁹ The tax policy debate in the United States not premised on causation is incoherent. Notably, President Harry Truman assessed the general quality of economic advice, including on tax policy design, as unsatisfactory.¹⁹⁰ The application of the Laffer Curve in defense of corporate tax competition policy is also unsatisfactory¹⁹¹ and neither supported by clinical tax knowledge nor historical, or contemporary evidence.

Econometrics as applied to taxation is also often not conducted in a way that is replicable¹⁹² or falsifiable,¹⁹³ and applies the scientific method in reverse where the hypothesis is derived after the initial regressions are applied to the dataset.¹⁹⁴ Perhaps this is why so many scientists have

¹⁸⁸ See Saras D. Sarasvathy, *Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency*, 26 ACAD. OF MGMT. REV. 243 (2001).

¹⁸⁹ *Analysis of the dynamic effects of Corporation Tax reductions*, *supra* note 88, at 3 (“HMRC has been developing a Computable General Equilibrium (CGE) model, capable of modeling the dynamic macroeconomic effects, and subsequent Exchequer revenue effects of a major policy change.”).

¹⁹⁰ Herbert Stein, *How to Introduce an Economist*, in ON THE THIRD HAND: HUMOR IN THE DISMAL SCIENCE, AN ANTHOLOGY 5 (Clotfelter ed., 1996) (“As President Truman said, ‘I wish that I had a one-armed economist, so that he wouldn’t say on the one hand and on the other hand.’”).

¹⁹¹ See JANE G. GRAVELLE & THOMAS L. HUNGERFORD, CORPORATE TAX REFORM: ISSUES FOR CONGRESS (2007) (portraying the corporate tax policies and their effect on competition).

¹⁹² POPPER, *supra* note 10, at 66 (“We shall take it as falsified only if we discover a reproducible effect which refutes the theory. In other words, we only accept the falsification if a low-level empirical hypothesis which describes such an effect is proposed and corroborated. This kind of hypothesis may be called a falsifying hypothesis.”); see Richard Anderson & William Dewald, *Replication and Scientific Standards in Applied Economics a Decade After the Journal of Money, Credit and Banking Project*, 76 FED. RES. BANK ST. LOUIS REV. 79, 81 (1994).

¹⁹³ See POPPER, *supra* note 10, at 18.

¹⁹⁴ Bogenschneider, *supra* note 27, at 14 (“In econometric practice . . . ‘data-mining’ involves the researcher approaching a dataset with a vague ‘hypothesis’ and running an initial regression using a first set of variables in order to derive a ‘hypothesis.’ In other words, the econometric researcher does not [formalize] the first hypothesis before beginning the data analysis. If the results are not significant, the researcher examines the first results, and then modifies the regression with a new set of variables. In general terms, this approach amounts to testing with an entirely new ([i.e. second]) hypothesis or the application of the scientific method in reverse. The

declared economics not to be in the nature of a true “science.”¹⁹⁵ Empirical tax researchers at one point claimed to have confirmed the implications of the “small open economy” model of tax incidence.¹⁹⁶ The preliminary results were then cited by the both the United States Federal Reserve and the European Central Bank.¹⁹⁷ This illustrates what Popper referred to as *ad hoc* research practices¹⁹⁸ given in defense of “conventionalist” ideas about taxation.

Economists also often set out to defend neoclassical economic theory by making an exclusive claim to scientific inquiry;¹⁹⁹ the idea is to thereby exclude tax lawyers and accountants from participation in the project of empirically-driven “science.” This reflects a version of economic positivism where tax legal analysis is described as “normative” or “metaphysical.”²⁰⁰ Popper critiques the idea of positive empirical science as follows:

researcher then continues the test, re-test, process until significant results are obtained for publication.”).

¹⁹⁵ See, e.g., J. Doyne Farmer, *Hypothesis non fingo: Problems with the scientific method in economics*, 20 J. ECON. METHODOLOGY 377, 378, 382 (2013); David F. Hendry, *Econometrics: Alchemy or Science?*, 47 ECONOMICA 387, 401 (1980); Cornelis A. Los, *A Scientific View of Economic Data Analysis*, 17 E. ECON. J. 61, 63–64 (1991).

¹⁹⁶ See Wiji Arulampalam et al., *The direct incidence of corporate tax on wages*, 56 EUR. ECON. REV. 1038, 1040, 1052 (2012).

¹⁹⁷ See Bogenschneider, *supra* note 27, at 16–17 (“Although this first version was subsequently deleted, the abstract is still available which indicated a result of \$0.92 rate of incidence of capital taxation as to labor. This result is potentially of extraordinary significance because it would imply that labor bears the incidence of capital taxation which is ostensibly consistent with the “small open economy” the most popular model of corporate tax incidence. The working paper’ results were then cited both by the Federal Reserve Board in the United States and also the European Commission in incremental technical articles on tax incidence (each referencing the \$0.92 incidence level in support of a position of tax policy). However, in the year 2009, the results of the first version of the ‘working paper’ were revised. At this point, the results were revised downward to reflect a \$0.75 rate of incidence of capital taxation as to labor In the final version the results were revised downward once again to reflect merely a \$0.49 rate of incidence of capital taxation as to labor.”) (citing R. Alison Felix, *Do State Corporate Income Taxes Reduce Wages?*, FED. RES. BANK KAN. CITY (2009), <https://www.kansascity-fed.org/PUBLICAT/ECONREV/PDF/09q2felix.pdf>; Gaëtan Nicodème, *Corporate Income Tax and Economic Distortions* (Free U. of Brussels, Solvay Bus. Sch., Full Working Paper No. 15, 2009), <http://dspace.africaportal.org/jspui/bitstream/123456789/28373/1/Corporate%20Income%20Tax%20and%20Economic%20Distortions.pdf?1>).

¹⁹⁸ See POPPER, *supra* note 10, at 59–61 (discussing the operation of ad hoc hypotheses).

¹⁹⁹ See Charles R.P. Pouncy, *Economic Justice and Economic Theory: Limiting the Reach of Neoclassical Ideology*, 14 U. FLA. J.L. & PUB. POL’Y 11, 15 (2012).

²⁰⁰ See generally Ben B. Seligman, *The Impact of Positivism on Economic Thought*, 1 HIST. POL. ECON. 256 (1969).

Positivists usually interpret the problem of demarcation in a naturalistic way; they interpret it as if it were a problem of natural science. Instead of taking it as their task to propose a suitable convention, they believe they have to discover a difference, existing in the nature of things, as it were, between empirical science on the one hand and metaphysics on the other. They are constantly trying to prove that metaphysics by its very nature is nothing but nonsensical twaddle—‘sophistry and illusion’, as Hume says, which we should ‘commit to the flames.’²⁰¹

Even if metaphysics is useful as Popper claims,²⁰² a clinical theory of taxation is not necessarily metaphysics. Of course, not everything clinicians report would necessarily be meaningful; the tax related theories of the social sciences must be a theory of the empirical world and not in relation to an economic “model” or metaphysical world.²⁰³ A corollary example is easily identified with respect to physics and Einstein’s theory of relativity, which was also not metaphysics when it was proposed. The challenge to Newtonian physics given by general relativity was not to falsify a premise or some parts of its syllogism, or its empirical results, but to propose an incremental system of analysis. Several commentators have thus described this example as the supplementation of an auxiliary hypothesis to Newtonian physics.²⁰⁴ One element of the existing Newtonian theory was in that respect simply missing from the prior theory; such is a possible corollary to the valuation of tax deductions as worth more when the corporate tax rate as higher is missing from neoclassical economic theory.²⁰⁵

²⁰¹ See POPPER, *supra* note 10, at 12.

²⁰² See *generally id.* (attempting to define “empirical science” and “metaphysics” in such a way so as determine whether the study of metaphysics is a concern within the realm of empirical science).

²⁰³ See *id.* at 16 (“I do not even go so far as to assert that metaphysics has no value for empirical science. For it cannot be denied that along with metaphysical ideas which have obstructed the advance of science there have been others—such as speculative atomism—which have aided it. And looking at the matter from the psychological angle, I am inclined to think that scientific discovery is impossible without faith in ideas which are of a purely speculative kind, and sometimes even quite hazy; a faith which is completely unwarranted from the point of view of science, and which, to that extent, is ‘metaphysical.’”).

²⁰⁴ Adina Schwartz, *A “Dogma of Empiricism” Revisted: Daubert v. Merrell Dow Pharmaceuticals, Inc. And the Need to Resurrect the Philosophical Insight of Frye v. United States*, 10 HARV. J.L. & TECH. 149, 186–87 (1997) (“From a historical point of view, a primary vice of falsificationism is that it underestimates the difficulty of developing auxiliary hypotheses that can be used to test a theory. Thus, for example, the major difficulty in establishing Newton’s theory of universal gravitation was formulating the auxiliary hypotheses needed for the theory to have observable implications.”).

²⁰⁵ See Bogenschneider, *supra* note 6.

Since many economic papers about taxation begin with a “model” section (similar to the general equilibrium model applied by HMRC),²⁰⁶ it is also important to note that a “model” is not necessarily a scientific theory for at least two reasons. First, a “general equilibrium” model is metaphysics; such a model sets out to describe a separate hypothetical (or metaphysical) universe that economists think is for some reason relevant to the real world.²⁰⁷ Accordingly, equilibrium models using deductive reasoning on Greek letters do not automatically yield science or physics; in many cases, the economic theory is a type of moral philosophy masquerading as science where the economist is acting disingenuously by not providing both sides of a zero-sum equation, for example. Second, the “model” section of empirical papers on tax policy rarely cites to tax laws, yet it is these tax laws that provide the framework for human behavior with respect to taxation.²⁰⁸ A clinical analysis of tax laws is in many cases more likely to arrive at a causal theory than a metaphysical economic model. If a scientific hypothesis is posited inductively using an economic version of metaphysics, then an alternative hypothesis can also be posited by those same means and used to falsify the first hypothesis.²⁰⁹ In conclusion, tax practitioners are, at minimum, a critical part of scientific inquiry; the creative intuition of persons with clinical knowledge is the foremost means to formulate hypotheses and advance the human understanding of taxation as a social science. In some relatively rare cases, empirical economics and economic theory are also conducted in a scientific manner and could be used to test or evaluate hypotheses about taxation; in those limited cases, collaboration between tax clinicians and economists is the most effective means to advance scientific knowledge.

²⁰⁶ See generally HM Revenue & Customs, HMRC’S CGE MODEL DOCUMENTATION (Dec. 2013), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263652/CGE_model_doc_131204_new.pdf (discussing the equilibrium model applied to the HRMC).

²⁰⁷ Andrews, *supra* note 6, at 229 (“According to Gordon and Dietz, the principal distinguishing characteristic of the new view is that it assumes no share repurchases For this the new view gets very low marks because there are now substantial share repurchases by American corporations, publicly held as well as closely held. This is absurd. The function of an assumption is not to make a prediction but to indicate what a model does and does not cover If the facts are not consistent with the constraint, then the model makes no prediction at all since it does not apply.”).

²⁰⁸ See Tyler A. LeFevre, *Justice in Taxation*, 41 VT. L. REV. 763, 784–85 (2017).

²⁰⁹ See POPPER, *supra* note 10, at 9–10.