Positive Public Economics: Reinterpreting "Optimal" Policies

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Abstract

The standard positive/normative divide fails to capture the way economists use "optimal" policy models. This paper argues that the better way to understand public economics is as a tripartite divide between positive, normative, and instrumental models. An instrumental model is about means and ends. Once this additional dimension is acknowledged, one can see that "optimal" policy models are closely connected to what are generally seen as purely positive models. I argue that economists have been using similar standards to assess "optimal" policy models as they use to assess positive models. I conclude by suggesting that "optimal" policy models can be seen as tentative hypotheses about policy improvements and that some of these hypotheses have been verified within the political sphere.

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"Propositions of positive economics find their political support or refutation in observable economic quantities or in observable market behavior of individuals. Propositions in political economy find empirical support in the observable behavior of individuals *in their capacities as collective decision-makers*—in other words, in politics. "– Buchanan [1959, 127-8]

Introduction

Public economists have a tense relationship when talking about "optimal" policies. We are hesitant to say we know what a society's goals are. At the same time, we often assume a social welfare function, because we recognize that the more agnostic Pareto-criterion leaves little to say. One resolution of this tension is to completely reject the normative models as outside of economic science. Economics is about positive statements and the science does not deal with what policy *should be*. This is the approach taken by Friedman [1953].

Yet, economists do work with and will continue to work with models that are explicitly related to one's understanding of what policies should be. The field attracts people with these concerns.How can economists provide value to policy discussions by utilizing the unique skills that economists have in modeling and data analysis, but without requiring that they pronounce a normative standard from on high? In this paper, I argue that this tension over discussing optimal policy comes from a weakness in the positive/normative dichotomy that has been a major part of economics since Friedman [1953].

Instead, models of optimal policies are better understood within the tripartite division proposed by Machlup [1978]. Models can be positive: A causes B in the real world. Models can be normative: B is good. Models can be instrumental, or means-ends: if you want B, A will get you there. The first part of the article shows how optimal policy models are actually made up of all three aspects. They are positive, normative, and instrumental at the same time, but to varying degrees. I argue that this taxonomy helps make sense of how economists actually use these models. Recognizing the positive aspect of these models could allow economists to better assess what models are useful for what purpose.

I conclude this article by proposing another possible positive assessment of these models. Instead of checking the assumptions of the model, economists should check the results. However, this requires a reinterpretation of such models, not as declarations of optimality, but as tentative hypotheses put forward by the economist. Following the Buchanan quote above, economic hypotheses find their support or refutation in politics. Economists can use

models to generate better hypotheses. Optimal policy models are useful if they generate insights that can improve policy, in terms that the people in the society under question see as an improvement. That could be a Pareto improvement or it could be a social welfare improvement. However, under this test the social welfare function must reflect an actual society's social preferences, say the United States social welfare function. If the social welfare function does not relate to an actual society, it is unclear what it does represent. One possibility is that the social welfare function captures the economists normative desires, although I am unaware of any economist who says that is the use of a social welfare function.

Economists can move beyond purely normative statements in models. This testing hypotheses by economists only makes sense in a positive context. If models are purely normative or instrumental statements, then the task should be left to the ethicists or logicians. They are better equipped for that task. Instead, models are better understood as a combination of positive, normative, and instrumental aspects. As with standard positive economic models, the economist has developed skills in the generation and testing of positive hypotheses in optimal policy models. The unique social role for economists within the policy area is to find possible gains to be had, to generate successful hypotheses about policy improvements.

However, instead of simply declaring such gains as existing, the model is simply meant to generate hypotheses to test. The test of such hypotheses is the collective decision making system. Such an interpretation of normative economic models utilizes the skills of an economist, without involving the standard concerns about normative models. The remainder of this paper analyzes how economists use models of optimal policy. I argue that reinterpreting results as hypotheses fits naturally within the way that economics use these models already.

Taking Normative Models Seriously

Over the last 60-plus years, since Friedman's essay on positive economics [Friedman, 1953] the standard interpretation of models, at least as told to undergraduates, is that models are tools for prediction. A better model will lead to a better prediction. That is what it means to do economic science, at least nominally. Economic Science is positive. As Desmarais-Tremblay [2014, p.283] says, "following Robbins [1945] and Friedman [1953], normative theorizing has been condemned as unscientific, if not worthless."

Yet economists continue to use what are called optimal policy (particularly optimal taxation) models within public economics that have followed from Mirrlees [1971]. Since norma-

tive models are explicitly *not* about predictions, Friedman's justification and understanding of such models cannot work. To be fair to Friedman, as his title says, he was talking about positive economics. So without the Friedman story to fall back on, economists must search for another justification for and interpretation of normative public economic models.

Such models cannot be seen as worthless within the economics community, since they continue to be used. This paper asks how economists use and should use models on optimal policies. Since Friedman's article, economists and philosophers have put forward explanations of how models within the social sciences are used, when their focus is not on prediction. The major articles and books that study how economists use models fail to focus on normative models [1]. For example, Clarke and Primo [2012, p.83] explicitly say they are not looking at normative models. They are focused on positive models. Only McCloskey [1983] doesn't emphasize positive models, but that happens by rejecting the positive/normative distinction. Yet, economists continue to use the positive/normative distinction, as I will in this article. Given the analysis that has been done on positive models, one might expect more work that focuses on normative models. The work that has been done that looks at public economics (e.g. Desmarais-Tremblay [2014], Cherrier and Fleury [2014]) look at the question from a different angle than those that look at positive models. This literature is worthy of further study, but it is not the equivalent type of analysis, but about normative models, as say Gibbard and Varian [1978] or Hausman [1992].

The importance of understanding how normative models are used is especially important within public economics. First of all, unlike say normative vs. positive decision theory, public economics cannot possibly have a clear separation when they use a social welfare function. A social welfare function will always carry a normative connotation. But public economists still make the distinction. Atkinson and Stiglitz [1980] splits the book into two parts: the first, normative, the latter, positive. While there are certain models that are clearly positive and certain models that are clearly normative, many models are somewhere in between. In the latest volume of the *Handbook of Public Economics*, every paper discusses optimal policies, although only Piketty and Saez [2013] is explicitly about optimal policies. Yet, public economists continue to rely heavily on normative models, although recently there has been a pushback against these type of public economics models. For example, Mankiw and Weinzierl [2010], raises many questions about the uses and abuses of optimal taxation models that economists must continue to think about. This article is another attempt to

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[1]See Gibbard and Varian [1978], McCloskey [1983], Hausman [1992], Sugden [2000], Clarke and Primo [2012].

analyze how economists can use such models.

Limits of Standard Definition

The textbook distinction in economics is between positive economics and normative economics. Textbooks, literally, at both the undergraduate level (Cowen and Tabarrok [2013, p. 386], Mankiw [2010, p. 28]), and graduate level (Mas-Colell et al. [1995, p.116-8]) create this dichotomy. The elementary distinction is that positive economics concerns what *is* and normative economics concerns what *ought to be*. This distinction may not be perfect, as many positive models are "normatively loaded" [Hausman, 1992, p. 261], but in many fields of economics, this distinction is quite helpful.

From such a dichotomy, any model about optimal policies would be classified as normative. However, the positive/normative dichotomy does not capture the uses of the models within public economics. Consider the following two explanations of what different economists call normative economics:

> "This book is *normative*... It tries to figure out what taxes we *should* have... The ultimate goal of (New Dynamic Public Finance) is to provide relatively precise recommendations as to what taxes should be."[Kocherlakota, 2010, p. 4] (emphasis in original)

Kocherlakota's argument fits well within the textbook distinction. The models are a way to discuss how taxes should be. Kocherlakota is open and straightforward about what the goal of his book. Everyone would classify it as normative and not positive.

However, this is not the only way that economists use "normative" models. For a classic example, take the introduction to the section "Normative Analysis" in Atkinson and Stiglitz [1980]:

> The aim of the Lectures that follow is *not* to argue the case for particular policies; it is not their intention to provide an answer to the question, "what ought the government to do?"... [O]ur concern here is with the *structure* of arguments rather than with the arguments themselves. The aim is to explore the relationship between specified objective and the policy recommendations to which these objectives lead... (emphasis in original)

Atkinson and Stiglitz [1980] explicitly reject the textbook definition of normative economics. Instead of being about what ought to be, normative models are about the structure of arguments. The models are tools to connect specified objectives to policy recommendations,

regardless of whether the economist using them thinks the policy recommendations should be put into place. These two are just examples, but they highlight a tension within public economics. Economists use the word "normative" to mean different things. How can economists and philosophers of economics make sense of this?

The textbook distinction between normative and positive economics does not fully capture what economists are actually doing with optimal policy models. To move forward our understanding on this front, economists must move beyond the positive/normative distinction. Such a dichotomy awkwardly forces the analysis of Kocherlakota and Atkinson and Stiglitz under the umbrella of "normative" economics. Instead, a tripartite division, such as proposed by Fritz Machlup [1978] will help avoid such confusion over optimal policy models.

Machlup distinguishes between three types of theories within economics: (1) positive economics, (2) normative economics, and (3) instrumental economics. Desmarais-Tremblay [2014, p.276] summarizes Machlup's division[2] as:

> Positive science comprises causal propositions (e.g. if A, then B), normative is synonymous of evaluation (e.g. B is good) and art is formed of instrumental, or means-end propositions (e.g. If you want B, A will bring you there).

Within such a division, Kocherlakota's comment remains normative while Atkinson and Stiglitz's comment described as instrumental economics. With this terminology, economists no longer need to lump together Kocherlakota with Atkinson and Stiglitz.

This division, between positive, normative, and instrumental economics, creates ideal types. In reality, many models and papers including those of Kocherlakota [2010] and Atkinson and Stiglitz [1980] fall somewhere in between. Optimal policy models within public economics have causal claims of the form "a policy A would cause B." They have instrumental claims of the form "if a government wants to be utilitarian, policy A will get it there." They may have normative claims too, "policy A should be implemented." Individual models in public economics then become points within the triangle in Figure 1. Understanding the use of such models requires disentangling the different aspects of each model. The next three sections attempt to disentangle them.

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[2]Readers will notice that Machlup's and Friedman's uses of "positive" are different too. The subtleties involved are beyond the scope of this paper.
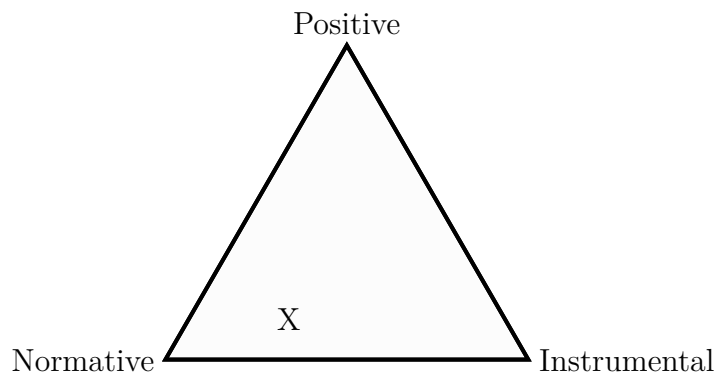
Figure 1: Tripartite Models

Normative Aspects of "Optimal" Policy Models

While few economists are as explicit that their models are normative as Kocherlakota [2010], the normative aspects are still present in many papers within public economics. For example, Saez [2001, p. 218] argues "therefore, the government should apply high marginal rates at levels where the density of taxpayers is low compared to the number of taxpayers with higher income." Considering that Saez uses data on the United States to reach this result, readers could be expected to take such a statement as normative about what the United States *should* do. Of course, the authors are quick to point out that this is not definitive. "The fact that the (hazard) ratio increases from $80,000 to $200,000 suggests that, with constant elasticities, optimal rates should be increasing in that range [Saez, 2001, p.219]." The evidence only suggests increasing tax rates.

The framing in Saez is not unique. Golosov et al. [2011, p. 160] argue that "the main insight here is that any optimal dynamic tax policy or a social insurance system has to take into account agents' ability to save. Generally, though, taking into account agents' ability to save implies that savings *should* be discouraged." Farhi and Werning [2007, p. 386] say

> "How should privately felt parental altruism affect the social contract? What are the long-run implications for inequality? To address these questions, we modeled the trade-off between equality of opportunity for newborns and incentives for altruistic parents. In our model, society should exploit altruism to motivate parents..."

All of these examples have more than a hint at normative results, compared to purely instrumental. They make statements about what should happen.

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Instrumental Aspects of "Optimal" Policy Models

As highlighted above by Atkinson and Stiglitz [1980], optimal policy models are **not** purely normative. Atkinson and Stiglitz see their "normative analysis" as deductive reasoning to analyze the structure of arguments. As Piketty and Saez [2013] say, "Models in optimal tax theory typically posit that the tax system should maximize a social welfare function subject to a government budget constraint, taking into account how individuals respond to taxes and transfers." They take no stance on whether the social welfare function posited is what one "should" want. It is simply part of the logic in a model.

For a more concrete formulation of what Piketty and Saez [2013] are saying, one way to set up models of optimal taxation is to say

1. If a government's wants A, and

2. if a government has policy tools B, and

3. if a government has information C, and

4. if the citizen's have attributes D, E, and F,

5. then a government should set policies X, Y, and Z.

This way of looking at a model highlights the instrumental aspect of optimal tax theory. Such models are if-then statements about means and ends. Policies X, Y, and Z are means to achieve end A. The standard reason such models are called normative is because of point 1. The goals that are generally placed in that statement are such things as Utilitarian, Rawlsian, or Libertarianism. These are what the government thinks a society "should" be. These are normative philosophies about how things should be, so the models generally inherit the title "normative."

The key economic steps are to derive 5 from 1-4. This is where the unique tools of economics help. However, such a derivation is not necessarily about what the economist who uses such a model thinks should be. The deduction does not mean that the person doing the deduction thinks that any part of the deduction *should* happen. The deduction and the recommendation are connected, but conceptually distinct. To take a more extreme example, if the government's goal is to kill all puppies, no logical deduction about the means and ends has any reasonable connection to what the economist thinks should happen. The instrumental aspect of a model is conceptually distinct from the normative aspect.

Positive Aspects of "Optimal" Policy Models

All models with public finance also have some aspect that is positive. They may either have predictions about the effect of a policy on an outcome or causal arguments that relate policies to outcomes. Put differently, such models must take a positive stance on how actual people market decisions in their collective decision making process.

Positive economics is sometimes associated with prediction. Predictive models can be formulated into a similar deductive structure. The premises could be that (1) price ceilings create shortages in a market, (2) rent control is a price ceiling, (3) New York City created rent controls. This will lead to the deductive conclusion that New York City will have shortages.

Upon inspection it is not clear how this positive aspect is different than the instrumental aspect. But not all positive models are about prediction. Take one example from Clarke and Primo [2012, p. 79] that relates to how the world "is", not how it "should" be:

1. Democracies do not wage war against one another.

2. The United States and Iraq fought a war.

3. The United States is a democracy.

4. Iraq was not a democracy at the time the war was initiated.

The last statement logically follows from the first three. It makes a claim about whether Iraq is or is not a democracy. There does not seem to be anything generally called normative about such deductions. Above is a standard approach to interpreting positive models, although people might disagree on what makes a "good" positive model. Certain economists may give more emphasis to prediction. Others may give more weight to causal exploration. Still, any model about optimal policies have an element that is positive.

Again, this looks remarkably close to the instrumental example above. But, where we were left with no guidance in the literature of how to assess normative models by the literature, for the positive models we have a long history of how to judge them. The next section explores how economists test models of optimal policies.

Normative and Instrumental Criteria

Given that models of optimal policy are a combination of positive, normative, and instrumental aspects, it isn't immediately clear how economists can assess these models. How can someone tell whether such models are useful? What is a good optimal policy model? One

possibility is to ignore the multidimensionality of these models and assess them along only a single dimension. However, solely assessing the uses of such models along normative or instrumental lines becomes problematic.

While "usefulness" is sometimes straightforward in positive economics (maybe as prediction), it gets messier when looking at normative or instrumental economics. From a normative criterion, the debate within economics cannot directly deal with disagreements between model. As stated earlier, economists who disagree over what a social welfare function should be will not find answers within economics. One possible use of such models could be for an economist to start with a philosophical stance, say Utilitarian. Then the economist uses models to derive what the utilitarian policy should be. I want to argue that this is outside of economics. While this use of a model might rely on tools developed with economics, the task is fundamentally outside the scope of economic science.

Assessing the instrumental aspect has a different problem. Unless there is a flaw in the deduction, the implication **must** follow from the premises. The if-then framework of instrumental models forces a tight connection. This leads to a problem of interpretation. If assumptions X and Y hold, then policy Z is optimal. If models are simply if-then statements, how does one justify the antecedent? What if X doesn't hold for any society? It is always a simplification. But since the "if" part will never truly hold in any real society, the deduction sufficient for any policy conclusions. Yet, the if-then framework is still used within economics to say something about the world, not just about the model. This has also been a problem with the if-then structure of positive models. Economists have found a mean of dealing with such concerns by testing models, comparing the model to reality. One type of justification for optimal policy models moves such models toward positive economics. Seeing the connection between optimal policy models and positive models gives a framework for getting around the simplified nature of if-then models. However, as the next section argues, this process isn't straightforward.

Quest for Positive "Optimal" Policies

To be "scientific," economists attempt to avoid the normative part of the triangle, if possible. But given that normative aspects are inherent in the model, if economists don't want their models to be purely normative, they need to "push" such models in the positive/instrumental direction. To get the most out of such models, economists must address all three dimensions of a model. The tricky dimension will always be the positive one. The quest for positive

optimal taxation theory has been elusive.

The distinguishing feature of optimal policy models is the use of a social welfare function as a way to compare different policies. The optimality is with respect to a given social welfare function. Otherwise, these models share the structure of positive models. Since they are so "similar", the criteria for judging the positive element of optimal policy models could be the same. Given that the structure of positive and instrumental models is so similar, economists can use similar standards for assessing optimal policy models as they use for standard positive models. This creates a realm for positive optimal policy models, which requires a positive analysis of such models.

The quality of the assumptions matter in public economics. For example, Chetty and Finkelstein [2013, p. 163] are worried that for their model "the analysis above rests on a static model that makes several strong assumptions that are unlikely to hold in practice." If these models are purely normative or instrumental, that concern doesn't make sense. The authors say this after assessing results that are both positive and normative. It is only once we recognize that all optimal policy models have a positive element that this concern about strong assumptions makes sense.

Positive models are tested in two general ways. One test of such models is to examine the core assumptions directly. The second way is addressed in the next section. If the assumptions of Model A are closer to reality than the assumptions of Model B, then we have one positive comparison between the two models. On this criterion, Model A is better. Much of the development within this literature revolves around improving assumptions within the model. Implicitly or explicitly, improving is often associated with being more realistic. That appears to be the concern of Chetty and Finkelstein [2013] mentioned above.

For example, one way to interpret the development of optimal taxation models within New Dynamic Public Finance is that these models are an attempt more deeply understand the dynamic aspect of policies and decisions [3]. Tax systems are inherently dynamic, so any model that ignores dynamics is failing to touch on a part of real tax systems and the incentives they create. Again, that is a positive assessment of models. For example, Farhi and Werning [2012] include richer aspects of the life-cycle. Golosov et al. [2015] use recent empirical work to better understand the nature of shocks that people face to their productivity. Golosov and Tsyvinski [2015] say that such models better match reality:

> Advances in theoretical methods and computational techniques dramatically increased the *realism* of the models used for the analysis. It is now possible

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[3]See Kocherlakota [2010] for a summary of many of the early results in the field.

to study optimal policy in environments with rich heterogeneity and realistic uncertainty that closely *match* microeconomic data. (p. 148, emphasis added)

If models were purely normative or purely instrumental, such arguments would be superfluous. Instead, economists see a positive argument as important when using models of optimal policy.

But shocks are not the only assumptions made. The structure of an argument within optimal policy models also requires an assumption about what the government wants to do. This is generally captured using a social welfare function. If such models are going to remain positive, they must resemble the way the world is. This becomes more difficult when talking about a social welfare function. There are two ways to interpret social welfare functions. One is more positive and about what a government will do. This is generally the approach followed in political economy or economic analysis of politics.

Public economics models generally follow a second interpretation of social welfare functions and use them as a statement of what "society" wants. This is where it gets easy to see such models as normative. For example, Piketty and Saez [2013, p. 405] say that "use a 'universal' social utility function $u(c)$ to evaluate social welfare. The concavity of $u(c)$ then reflects *society's value for redistribution...*" (emphasis added). The social welfare function comes from the society being analyzed. Therefore, Piketty and Saez are working to move beyond purely normative into the land of positive economics. For in order to make any statement about optimal policy, the economist needs at least to estimate the concavity of $u(c)$. Again, the model is assessed based on how close it resembles people in real decision making processes. The standard for judging the model is positive.

There are more general concerns about how assumptions about what society wants get translated into a policy goal. Mankiw and Weinzierl [2010] discuss whether their result that governments should tax people based on how tall they are in a standard model requires a rethinking of the Utilitarian framework. One way to approach such a concern is to generalize models of social welfare functions. This allows for more general concerns than just redistribution captured through the concavity of the function. Weinzierl [2014] and Saez and Stantcheva [2016] both attempt to develop general models to handle different policy goals. They are attempts to make optimal policy models closer to how the world is.

Even with a general framework, it still remains to be shown which social welfare function should be assumed, especially if the optimal policy is sensitive to a specific social welfare function. This question had received relatively little attention until the past decade or so. This is puzzling, as Weinzierl [2014, p. 128] points out, since "tax theory is one of

few forthrightly normative fields in economic research." Recently though, there has been a growing field trying to figure out what people would actually want to be considered in a social welfare function. One attempt is to use surveys to better estimate what people in a society actually want. Weinzierl [2014] attempts to see what people say taxes should be. He finds evidence that people say they want taxes to be partially based upon Equal Sacrifice, compared to pure Utilitarianism. If that result is to be taken seriously, it requires a re-examination of many results within public economics that are based on an assumption of a Utilitarian social welfare function. In a different setting, Kuziemko et al. [2015] use surveys to find out people's preferences for inequality and how malleable these preferences are. Such surveys are clearly positive. They are about what real people say they want. They are also clearly about optimal policy, but still a big push forward in the search for positive optimal policies.

Surveys are not the only way that economists are trying to better understand what social welfare functions match reality. A recent literature on "Inverse-Optimum" tries to figure out what social welfare function could rationalize a government's policies. This literature attempts to back out the underlying social welfare function. Bourguignon and Spadaro [2012], Brendon [2013], Lockwood and Weinzierl [2014] and Heathcote and Tsujiyama [2016] all partially attempt to better characterize a government's social welfare function that is revealed through its actions. Results in these papers can be used to improve assumptions about what governments actually want. This literature is the clearest example of an attempt at positive optimal policy analysis.

Models as Hypotheses

Positive models outside of public economics are not only tested based on how closely their assumptions match reality. The implicit logic of testing models is too weak for that to be the sole arbiter within models. The antecedent never holds in the real world. No model is literally equivalent to the real world, so many economics questions are outside of the realm of deductive logic proper. Since assumptions cannot be completely tested directly, positive economics have developed another test. Positive models are also tested based on the hypotheses they generate. This section argues that seeing models as hypotheses allows economists to test optimal policy models in another important positive dimension. This test could help economists better understand how the world is.

Instead of declarations of optimality, models of optimal policies can be seen as genera-

tive hypotheses that are subject to testing. The idea of models as hypotheses comes from Buchanan [1959]. Reinterpreting optimal policy models as hypotheses to be tested is not without some loss. Instead of seeing the optimal policy in these models as optimal with regards to the world (a normative stance), the economist must see such results as "tentative hypotheses." The model is an instrumental tool to generate hypotheses. Instead of saying that "tax system X is optimal," the hypothesis is of the type, "tax system X is preferable to tax system Y." The test of such a hypothesis is the actual decision of the society. It is in this sense that I am talking about *positive* economics.

Of course, the connection between a government's actions and its citizens' preferences isn't perfect. It is just the best standard the analyst has. If the public economist cannot rely on the collective decision making mechanism to implement the "true" social welfare function, there is no way out. Surveys don't reveal preferences in the economic sense. The Inverse-Optimum defines the social welfare function based on what governments do. The connection between social welfare and governmental policy must be direct in such models. There is no other standard, besides the imposition provided by the economist of a social welfare function, which would make such a model purely normative. Therefore, the collective decision making mechanisms (such as the relevant government) provide a way to judge whether a certain policy is welfare improving. In fact, the decision making processes are the **only** positive standard for judging policy beyond simple assertion of a Utilitarian, Egalitarian, or some other approach. There are of course other standards that fall outside of positive economics.

Models in the tradition of Mirrlees [1971] generate hypotheses about what possible improvements exist within a tax system. Some of these hypotheses can be seen as tentatively rejected, such as the hypothesis in Mankiw and Weinzierl [2010] that a tax on height would be an improvement for social insurance. Until some society taxes height, such a hypothesis does not have support. This gives evidence that such models and their Utilitarian assumptions don't fully capture people's preferences for social policy.

Partially Supported Policy Hypotheses

The process of deciding what tentative hypotheses have been supported or refuted is not an easy one. Some important hypotheses been hypotheses generated by economic models that have found support in a collective decision making process. This section highlights some of those hypotheses and the powerful role that economic models can play in generating hypotheses, to give hope to economists who want to improve policy.

The first example is a hypothesis generated by Ronald Coase's 1959 article on the Federal Communication Commission [Coase, 1959]. The full story is told much better by Leighton and Lopez [2013], but I'll fit the story within the hypothesis and test approach to optimal policies. One could go on and on about the hypotheses that Coase generated that ultimately have found support, but one example should be sufficient (see Leighton and Lopez [2013] for more examples).

The tentative hypothesis generated by the Coase paper could be interpreted as "auctioning off spectrum rights would be an improvement for the United States government and its citizens *as determined by the political process.*" While the support took over 30 years to be realized, support was found. In 1996, the United States government, through the Federal Communications Commission during the Bill Clinton administration, auctioned off ninety-nine licenses for radio frequency property rights [Leighton and Lopez, 2013, p. 136]. The tentative hypothesis about a normative question passed. Rarely is such a hypothesis and test so clear for the economist. Notice how such a hypothesis avoids the concerns that an economist is simply declaring his normative opinion. One does not know whether Coase would have used such a policy if he was the decision maker. Coase's normative stance was irrelevant. Coase used his tools as an economist to develop a model that led to a policy improvement. It is a messy approach, but if it was easy to find policy improvements, they would already have happened.

Another striking example comes from a paper by Montgomery on pollution markets [Montgomery, 1972], although that is not the only paper on the topic. It may seem obvious to economists today, but Montgomery [1972] originally created a model with a market to buy and sell the right to emit air pollution and discussed the efficient amount of emission. Modern papers might use the terminology, "optimal" level of emission, but the point is the same. Is Montgomery [1972] merely saying what he thinks the level of air pollution *should* be? Is it merely an instrumental statement? Both of these interpretations have problems that are avoided, if we reinterpret such models as generating tentative hypotheses.

For the Montgomery model, the hypothesis could be interpreted as "there is a sufficient negative externality from sulfur dioxide that creating a market in pollution emissions would be an improvement for the United States government and its citizens *as determined by the political process.*" This tentative hypotheses found partial support in the Clean Air Act of 1990, which instituted trade permits for sulfur dioxide. (See Popp [2003] for an ex-post analysis of the impact.)

(Un)fortunately, not all the hypotheses from economics models have found support

through the political process. But such successes should show that economists can still help improve policies without falling into the problems of a purely normative or purely instrumental approach.

Conclusion

This article examines how economists use models of "optimal" policies. I argue that such models are best understood by breaking out of the positive/normative dichotomy. Instead, these models are better understood when one thinks about positive, normative, and instrumental models. Further, these models are rarely purely one or two of these categories. They are often a mixture with positive aspects, normative aspects, and instrumental aspects. Recognizing this depth within such models will hopefully help economists to better understand such models and their uses or abuses.

Once optimal policy models are properly placed, it is natural to ask how economists can assess the quality or usefulness of each model. Instead of acting like such models are not three dimensional, I argue that economists should fully embrace the complexity and assess models along all dimensions. Particularly, I argue that economists should continually test and assess the positive aspects of such models. That requires looking at assumptions, but also looking at outcomes of such models. Drawing on Buchanan [1959], I argue that if economists interpret optimal policy models as hypotheses to be tested, economists are able to restore the positive aspect of such models. The policy implications of these models are then no longer normative declarations, but hypotheses that are open to refutation. The support or refutation of such hypotheses must come from individuals within collective decision making processes.

Can optimal taxation models ever generate hypotheses as clearly supported as the examples above? Maybe. New models in dynamic public finance are generating new understandings about the use of taxes as redistribution, insurance, and distortions. Other new models such as the framework presented by Saez and Stantcheva [2016] might further generate hypotheses that incorporate fairness, equality, and justice. That's why these models are better seen as means to generate hypotheses than simple if-then statements or derivation of policies from a priori normative criteria. Economists may eventually be able to prove their worth.

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